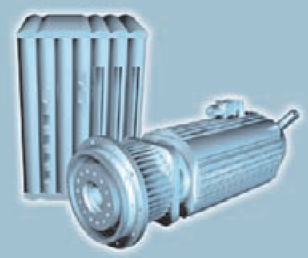
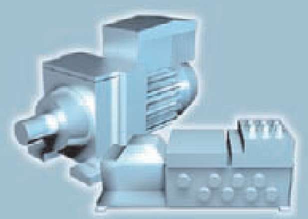
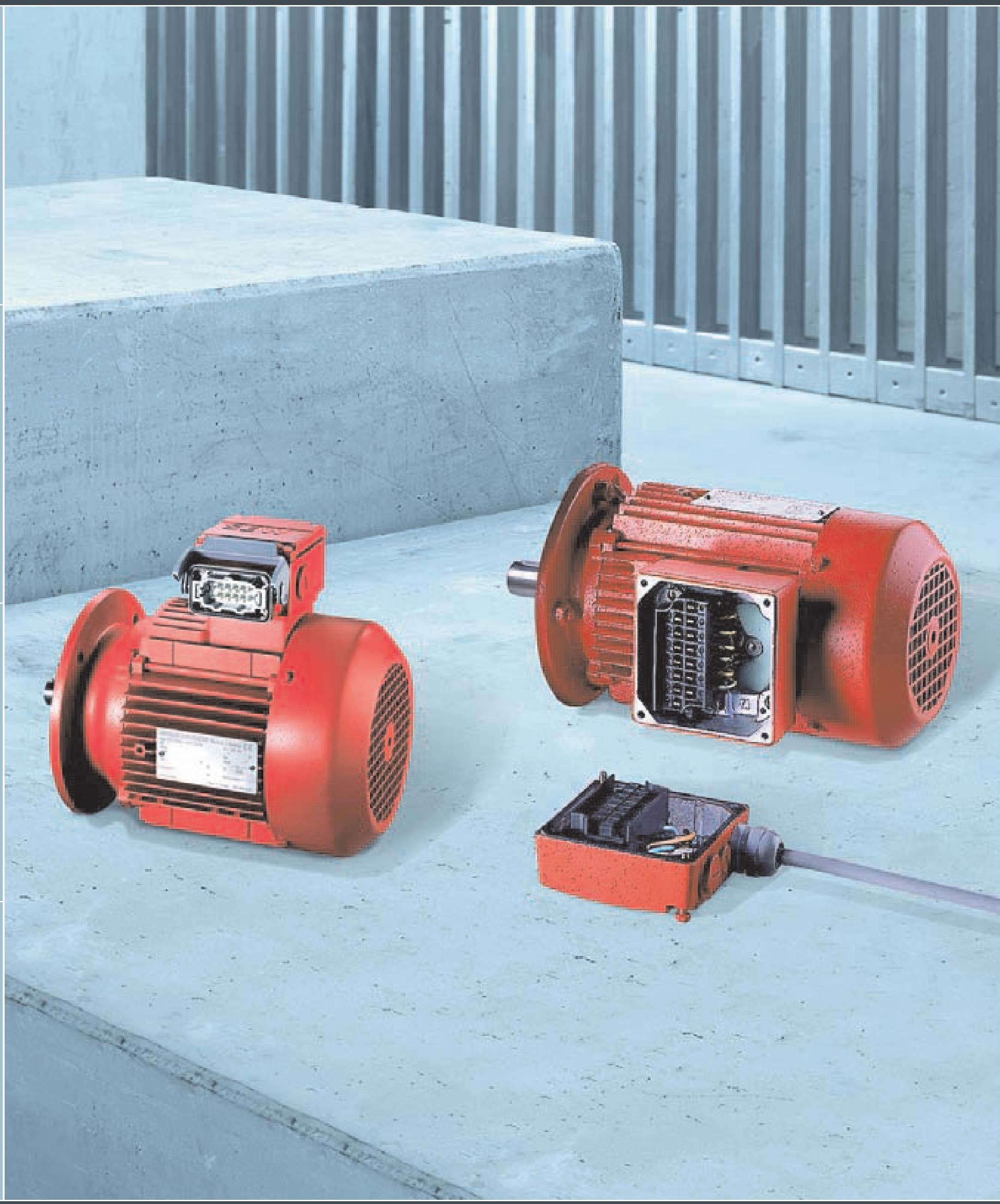
SEW EURODRIVE







Plug Connectors and Pre-Fabricated Cables

BE51000

Edition 12/2004

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System Description


SEW
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1 Introduction

The *Plug Connectors and Pre-fabricated Cables* system description supports system designers and electrical engineers in the selection of required plug-in connections and the matching pre-fabricated system cables.

This system description is based on the SEW-EURODRIVE product groups and includes a description of the connectors and pre-fabricated cables for the following product groups:

- Gearmotors and frequency inverters
- Drive systems for decentralized installation

Each section is divided into a chapter with an overview of combinations and a subsequent chapter with details and wiring diagrams. **Important: The wiring diagrams printed in this publication are only intended for assistance in drive selection. It is essential to use the documents supplied with the drive/unit for installation, startup and maintenance.**

The appendix includes a summary of frequent terms, codes and reference standards.

1.1 Definition of plug connectors

A plug connector is a mechanical combination of contacts arranged in pairs. This component helps you create disconnectable connections in electric lines. These can be main power lines as well as signal lines. The simple handling of these plug connectors usually does not even require any tools and makes for quick disconnection and safe connection of lines. It is important that the function of quick disconnection and safe connection of lines is still ensured at the stated ambient conditions for a long period of time and after many repetitions.

Plug connectors

Plug connectors consist of two main parts, the pin element and the socket element. One of these plug connector parts is often permanently connected to a machine, system or the control cabinet. A plug connector is a device that may **not** be connected or disconnected in live state.

Plug-and-socket device

The plug-and-socket device represents an expanded function of the plug connector. In normal use, a plug-and-socket device is a component that may be connected or disconnected in live state or under load.

1.2 Symbols and icons

Tips and useful information.

Indicates a harmful situation

Possible consequences: Damage to the unit and the environment.

Bookmark

Indicates the corresponding page in the system description.

Actuator-sensor interface

Process fieldbus

Interbus bus system

CANopen bus system

DeviceNet bus system

ECOFAST®-compliant drive components

DESINA-specified components

Power bus

24 V DC voltage supply

RS-485 interface

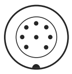
Digital inputs and outputs

M12 connector (male), standard coding, pin
(Standard coding = A coding)

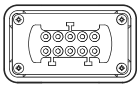
M12 socket (female), standard coding, slot
(Standard coding = A coding)

M12 connector (male), B coding, slot

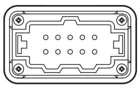
M12 socket (female), B coding, pin



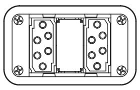
M12 connector (male), 8 pin, slot



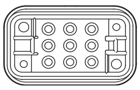
Han® 10 E plug connector (female)
Han® 10 ES plug connector (female)
Han® 10 ESS plug connector (female)



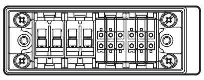
Han® 10 E plug connector (male)
Han® 10 ES plug connector (male)
Han® 10 ESS plug connector (male)



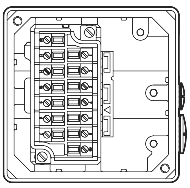
Han-Modular® plug connector (male)



Han® Q8/0 (Han® Compact) plug connector
(female)



PLUSCON VC VARIOCON T3 plug connector (4 inserts)



SEW-EURODRIVE integrated plug connector (IS, ISU)

1.3 Gearmotors and frequency inverters

Pre-fabricated cables

Overview

For simple and error-free connection of different system components, such as AC motors, energy efficient motors, CT/CV asynchronous servomotors on MOVIDRIVE® drive inverters, SEW-EURODRIVE is offering cable sets and pre-fabricated cables for:

1. Cable sets for DC link connection,
2. Motor cables for connecting DT/DV AC motors,
3. Forced cooling fan cables,
4. Brake cables,
5. Encoder cables for connection of the motor encoder to the encoder input,
6. Encoder cables for the connection of an external encoder or a control,
7. Cables for the X14 – X14 Master-Slave connection,
8. Encoder cables for connection of the encoder to the 5 V DC encoder supply,
9. Connection cables for 5 V DC encoder supply of the MOVIDRIVE® encoder input.

It is necessary to differentiate between cables used for fixed installation or for use in cable carriers. The cables are pre-fabricated in 1 m steps to the required length.

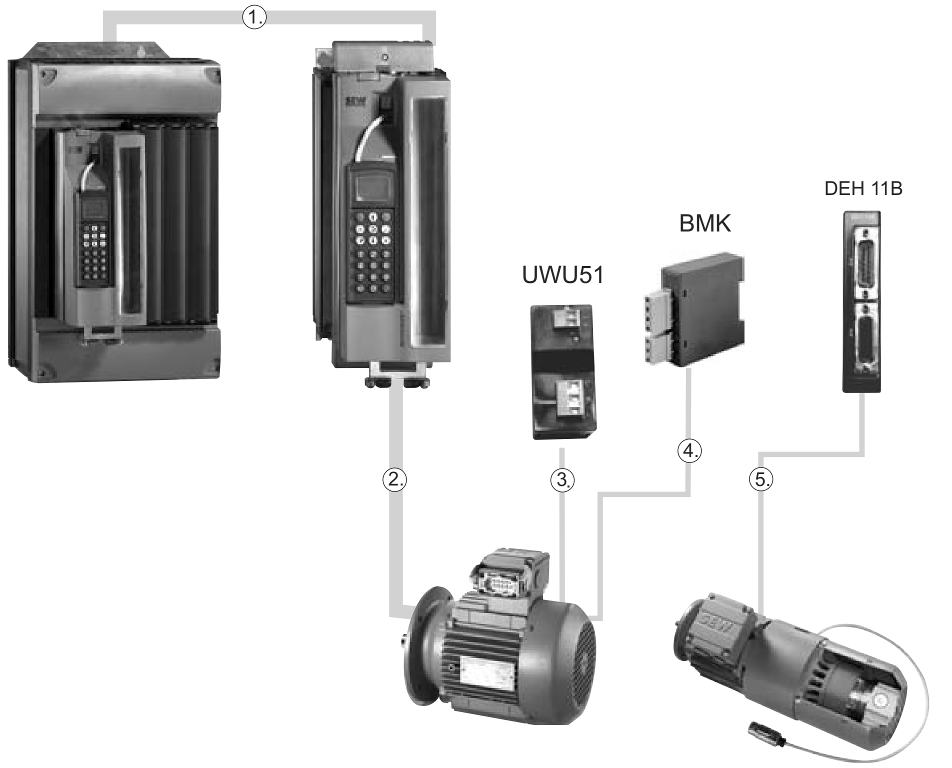


Figure 1: Example cable sets for the MOVIDRIVE® system

Figure 2: Example connection of external encoder, combination encoder and master/slave connection

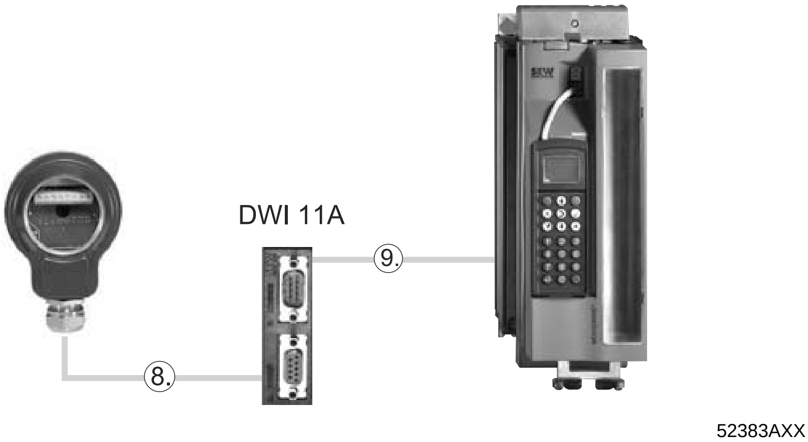


Figure 3: Example connection of motor encoder and master/slave connection

1.4 Technical data on plug connectors

IS integrated plug connector

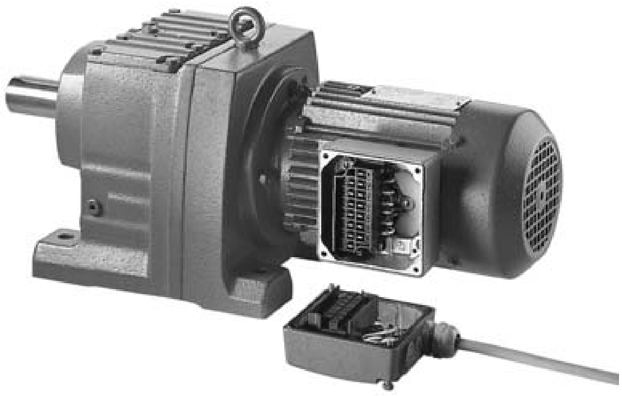


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Figure 4: AC gearmotor with IS integrated plug connector

AC (brake) motors in series DR63 and DT71 ... DV132S.. can be supplied on request with the integrated 12-pole plug connection IS instead of the standard terminal box. The IS top part (mating connector) is included in the scope of delivery. IS is particularly compact and offers the following connection options:

- Motor, single speed or double pole-changing
- Brake
- Temperature monitoring (TF or TH)

As with the terminal box, the cable run with the IS integrated plug connector can be from four different directions offset at 90° (position 1, 2, 3, 4).

Technical data

IS size	**1**	**2**
For motors	DR63 ... DT90	DV100 ... DV132S
Number of contacts	12 + 2 × PE	
Contact connection	Screw connection	
Contact type	Blade / bushing	
Max. voltage / (CSA)	690 V_{AC} / (600 V_{AC})	
Max. contact load	16 $A_{r.m.s.}$	
Enclosure	Corresponding to motor protection type (IP54, IP55, optionally IP65)	
Ambient temperature	-45 °C ... +40 °C (→ diagram see "Gearmotors" catalog)	

- IS requires a clearance of 30 mm for removing the connector.
- **For DR63 brake motors with IS size 1 only:** Only brake control systems BG1.2, BG2.4, BSR and BUR can be accommodated in the IS. Other brake control systems must be installed in the control cabinet.
- In the /ISU version, the IS plug connector will be without connector top. Delivery with protection cover only.
- You will find additional ready-to-connect pre-fabricated hybrid cables in the section "Overview of Decentralized Systems". The IS top part on the hybrid cable is unpainted.

Connecting the motor using the IS plug connector

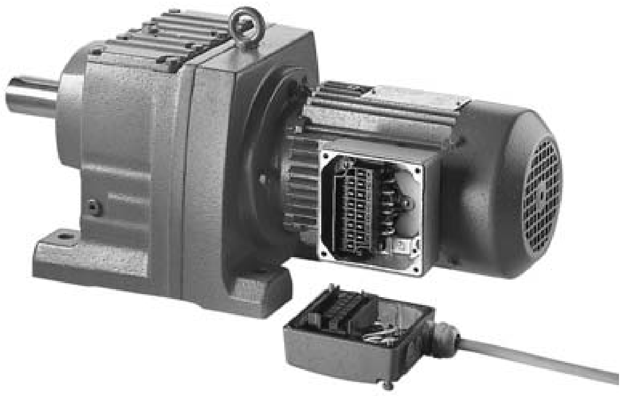

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Figure 5: AC gearmotor with IS integrated plug connector

The IS plug connector is supplied from the factory with its base fully wired-up, including additional features such as a brake rectifier. The upper section of the IS connector is included in the scope of delivery of the /IS option and must be connected as shown in the wiring diagram.

The IS plug connector has CSA approval up to 600 V. Note for application according to CSA regulations: Tighten the M3 terminal screws to a torque of 0.5 Nm! See the following table for American Wire Gauge (AWG) line cross sections!

Line cross section

Make sure the type of line corresponds to the applicable regulations. The rated currents are specified on the motor nameplate. The line cross sections that can be used are listed in the following table.

Without variable terminal link	With variable terminal link	Link cable	Double assignment (motor and brake/SR)
0.25 – 4.0 mm^2	0.25 – 2.5 mm^2	max. 1.5 mm^2	max. 1 x 2.5 and 1 x 1.5 mm^2
23 – 12 # AWG	23 – 14 # AWG	max. 16 # AWG	max. 1 x 14 # and 1 x 16 # AWG

Wiring the upper section of the connector

- Loosen the housing cover screws:
  – Remove the housing cover
- Remove the screws from the upper section of the connector:
  – Remove the upper section of the connector from the cover
- Strip the insulation off the connection lead:
  – Strip about 9 mm insulation off the connecting leads
- Pass the cable through the cable gland

Wiring up as shown in circuit diagram DT82, DT83

- Connect the lines as shown in the circuit diagram:
  – Tighten the clamping screws carefully!
- Install the plug (→ Sec. "Installing the connector")

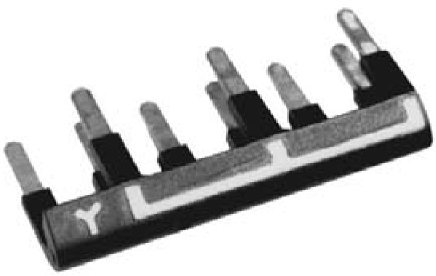
Wiring up as shown in wiring diagram DT81

For ⅄ / △ startup:

- Connect with 6 lines:
  – Tighten the clamping screws carefully!
  – Motor contactors in the switch cabinet
- Install the connector (→ Sec. "Installing the connector")

For ⅄ or △ operation:

- Connect as shown in the wiring diagram
- Install the variable terminal link as shown in the following figures according to the required motor operation (△ or ⅄)
- Install the connector (→ Sec. "Installing the connector")



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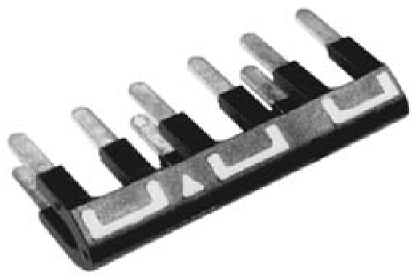

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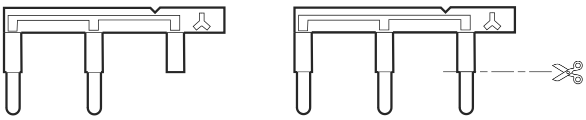
Brake control system BSR – preparing the variable terminal link

For ⅄ operation:

On the ⅄ side of the variable terminal link as shown in the following figure: Remove only the bare metal pin of the marked prong horizontally – touch guard!



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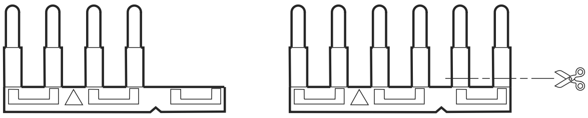
For △ operation:

On the △ side of the variable terminal link as shown in the following figure: Completely remove two prongs horizontally.



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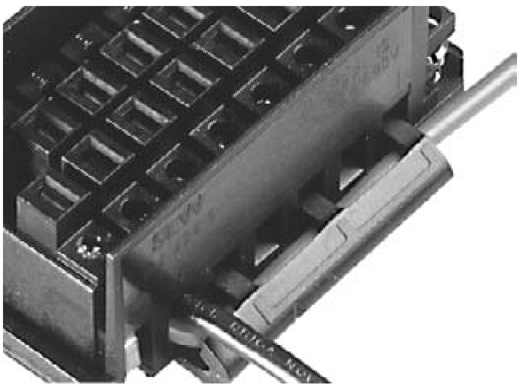
Wiring according to the DT81 wiring diagram for ⅄ or △ operation with double terminal assignment

- At terminal point for double assignment:
  – Connect the link cable
- When operation is as required:
  – Insert the link cable in the variable terminal link
- Install the variable terminal link
- At terminal point for double assignment:
  – Connect the motor lead above the variable terminal link
- Connect the other lines as shown in the wiring diagram
- Install the connector (→ Sec. "Installing the connector")



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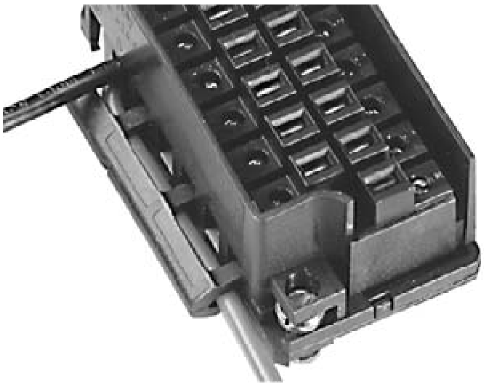
Installing the connector

The housing cover of the IS plug connector can be screwed onto the lower section of the plug connector depending on the required position of the cable lead. The upper section of the connector shown in the following figure **must first be installed in the housing cover so it will match the position of the lower section of the connector:**

- Define the required mounting position
- Install the upper section of the connector into the housing cover in accordance with the mounting position
- Close the plug connector
- Tighten the cable screw fitting



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Mounting position of the upper section of the connector in the housing cover

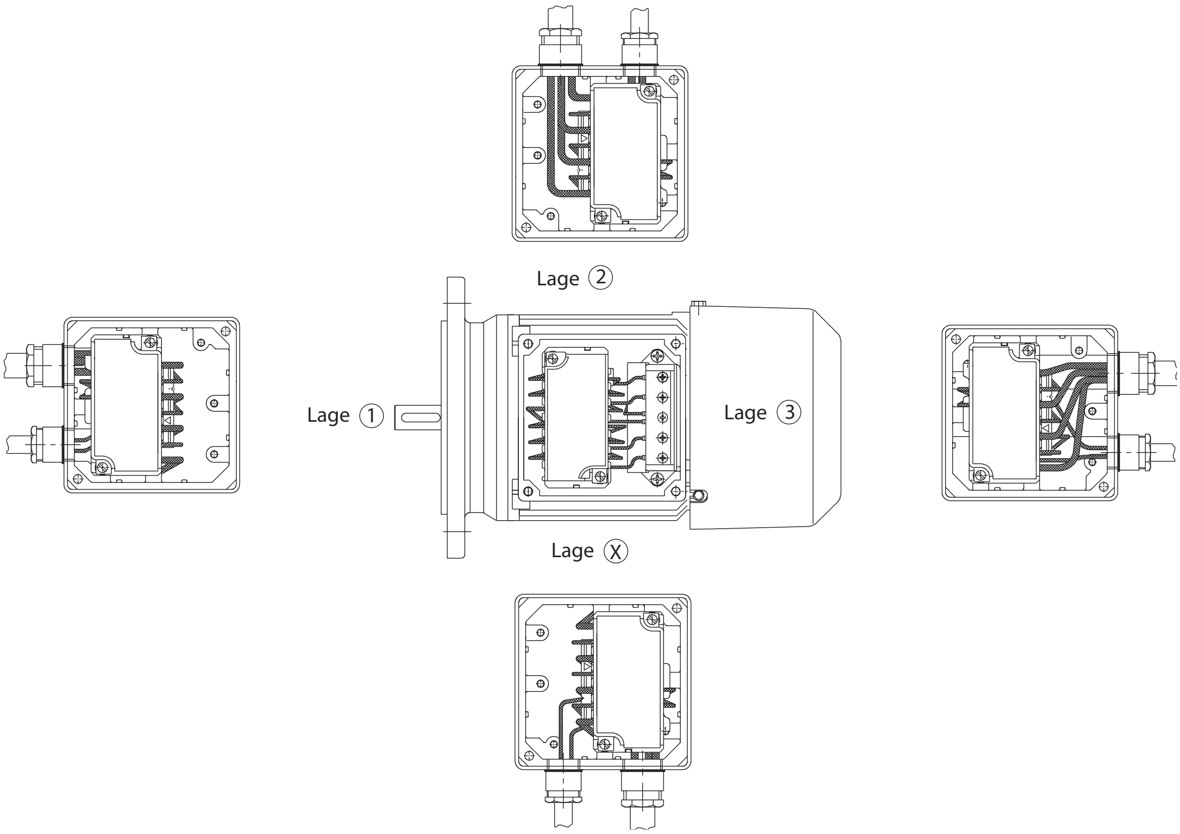

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Figure 6: Mounting position

Installed plug connectors AB.., AD.., AM.., AC.. and AS..

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Figure 7: AC motor with AS.. plug connector

The installed AB.., AD.., AM.., AC.. and AS plug connector systems are based on the plug connector systems made by Harting.

- AB.., AD.., AM.. → Han Modular
- AC.., AS.. → Han 10E / 10ES

The connectors are mounted on the side of the terminal box. They are locked either using two clips or one clip on the terminal box (→ Technical data page 15 and page 16).

UL approval has been granted for the plug connectors.

The mating connectors with contact tubes are not included in the scope of delivery.

AB.., AD.., AM..

Plug connectors AB.., AD.. and AM.. can be used for connecting both single speed motors and double pole-changing motors.

With brake motors, the brake control system can be either located in the terminal box or in the control cabinet. All versions of the brake control system are possible.

AC.., AS..

The ten contacts of the AC.. and AS.. plug connector systems connect the motor winding (six contacts), the brake (two contacts) and the thermal motor protection (two contacts). It is possible to connect both single speed motors and double pole-changing motors.

Types AC.. and AS.. differ as follows:

- AC = Crimp contacts and shortened contacts for thermal motor protection
- AS = Spring cages

With brake motors, it is only possible to select the type with the brake control system in the terminal box. In this case, the disconnection in the DC circuit has to take place electronically using BSR or BUR.

The ASD.. and ASE.. types with single clip longitudinal closure correspond to the DESINA regulation issued by the Association of German Machine Tool Manufacturers (VDW).

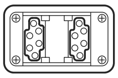
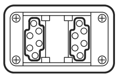
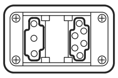
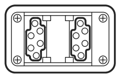
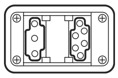
1

Note the following point:

- Cable entry position 1 is generally not possible with motor sizes DT71 ... DV132S.

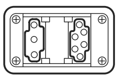
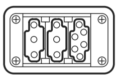
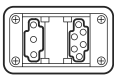
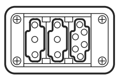
Technical data AB.., AD.., AM..

For motors DR63 and DT71 ... DV132S:

Plug connector	AMD..	AMB..	ABB..	AME..	ABE..
For motors	DR63	DT71 ... DV132S			
Locking of mating connector	Single clamp	Double clamp	Double clamp	Single clamp	Single clamp
Connector viewed from motor end					
Basic connector system	[1]	Harting, EMC aluminum housing Han Modular 10B			
Number of contacts	2 × 6	2 × 6	1 × 3 + 1 × 6	2 × 6	1 × 3 + 1 × 6
Module type[2]	2 × E-module	2 × E-module	1 × C-module + 1 × E-module	2 × E-module	1 × C-module + 1 × E-module
Max. contact load	12 × 16 $A_{r.m.s.}$	12 × 16 $A_{r.m.s.}$	3 × 25 $A_{r.m.s.}$ + 6 × 16 $A_{r.m.s.}$	12 × 16 $A_{r.m.s.}$	3 × 25 $A_{r.m.s.}$ + 6 × 16 $A_{r.m.s.}$
PE connection	2 contacts on articulated frame				
Max. voltage / (CSA)	500 V_{AC} / (600 V_{AC})				
Contact connection	Crimp				
Contact type	Pin / (socket = from customer)				
Enclosure	Corresponding to motor protection type (IP54, IP55, optionally IP65)				
Ambient temperature	-40 °C ... +40 °C (a temperature-dependent derating will be taken into consideration for higher temperatures)				

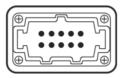
1. Harting, standard aluminum housing (painted) Han Modular 10B
2. The module type depends on the current. C-module for more than 16 A, E-module for less than or equal to 16 A.

For motors DV132M ... DV180L:

Plug connector	ABB..	ADB..	ABE..	ADE..
For motors	DV132M ... DV180L			
Locking of mating connector	Double clamp	Double clamp	Single clamp	Single clamp
Connector viewed from motor end				
Basic connector system	Harting, gray-cast iron EMC housing Han Modular 10B			
Number of contacts	1 × 3 + 1 × 6	2 × 3 + 1 × 6	1 × 3 + 1 × 6	2 × 3 + 1 × 6
Module type[1]	1 × C-module + 1 × E-module	2 × C-module + 1 × E-module	1 × C-module + 1 × E-module	2 × C-module + 1 × E-module
Max. contact load	3 × 36 $A_{r.m.s.}$ + 6 × 16 $A_{r.m.s.}$	6 × 36 $A_{r.m.s.}$ + 6 × 16 $A_{r.m.s.}$	3 × 36 $A_{r.m.s.}$ + 6 × 16 $A_{r.m.s.}$	6 × 36 $A_{r.m.s.}$ + 6 × 16 $A_{r.m.s.}$
PE connection	2 contacts on articulated frame			
Max. voltage / (CSA)	500 V_{AC} / (600 V_{AC})			
Contact connection	Crimp			
Contact type	Pin / (socket = from customer)			
Enclosure	Corresponding to motor protection type (IP54, IP55, optionally IP65)			
Ambient temperature	-40 °C ... +40 °C (a temperature-dependent derating will be taken into consideration for higher temperatures)			

1. The module type depends on the current. C-module for more than 16 A, E-module for less than or equal to 16 A.

Technical data AC.., AS..

Plug connector	ASD..	ACB.., ASB..	ACE.., ASE..
For motors	DR63	DT71 ... DV132S	
Locking of mating connector	Single clamp	Double clamp	Single clamp
Connector viewed from motor end			
Basic connector system	1	Harting, aluminum EMC housing, AC.. = Han 10E, AS.. = Han 10ES	
Number of contacts	10		
Max. contact load	10×16 $A_{r.m.s.}$		
PE connection	2 contacts on insulator		
Max. voltage / (CSA)	500 V_{AC} / (600 V_{AC})		
Contact connection	AC = Crimp contacts AS = Spring cages		
Contact type	Pin / (socket = from customer)		
Enclosure	Corresponding to motor protection type (IP54, IP55, optionally IP65)		
Ambient temperature	-40 °C ... +40 °C (a temperature-dependent derating will be taken into consideration for higher temperatures)		

1. Harting, aluminum standard housing (painted) Han Modular 10E / 10ES

Connecting the motor using IS plug connectors AS.. and AM..

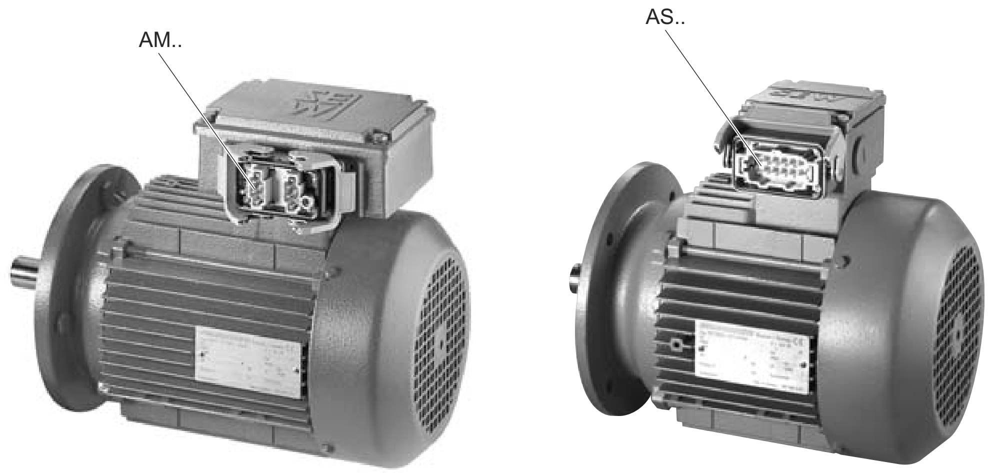


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Figure 8:

AS.. or AM.. plug connectors are mounted on the side of the terminal box. They are fastened onto the terminal box either with two clips as in the AMA.., AMB.. and ASB1 or with one clip as in the AMD.., AME.., ASD1 and ASE1.

The ASD1 and ASE1 types with single clip closure correspond to the DESINA regulation issued by the Association of German Machine Tool Manufacturers (VDW).

The ASA1 / ASD1 or ASB1 / ASE1 as well as the AMA.. / AMD.. or AMB.. / AME.. are supplied from the factory with their bases fully wired up, including additional features such as a brake rectifier.

The customer is responsible for obtaining the upper sections of the connectors from the dealer and connecting them in accordance with the wiring diagrams (supplied with the motor).

Connecting the motor using ASK1 plug connector

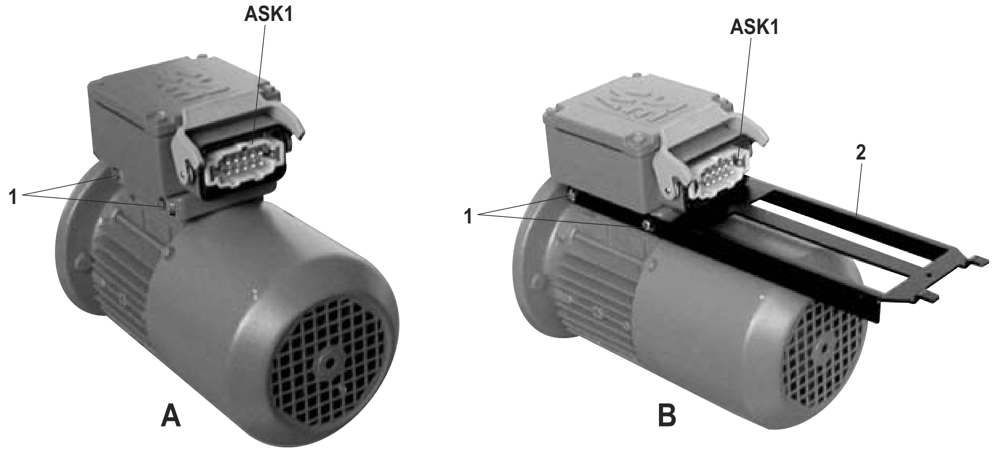

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Figure 9:

Drives with ASK1 plug connectors are certified according to the ECOFAST® specification (version 1.1). Switchgear or control units which also have to be certified can be connected to SEW-EURODRIVE motors using a pre-fabricated system cable or a carrier plate (installation integrated in the motor → Fig. B). The ASK1 plug connector with single-clip locking is mounted on the side of the terminal box and is supplied from the factory fully wired up, including additional features such as a brake rectifier.

- **The customer must obtain the system cable pre-fabricated according to the ECOFAST® specification from a specialist retailer.**
- **For installation integrated in the motor according to the ECOFAST® specification, the customer must obtain the carrier plate from SEW-EURODRIVE by quoting part number 0187 390 3. Carrier plates from other manufacturers do not fit on SEW-EURODRIVE motors.**

Mounting position You will find information on the mounting position in the appendix.

APG.. plug connector

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Figure 10: AC motor with APG.. plug connector

The plug connector with the designation APG.. is based on a plug manufactured by Phoenix Contact and consists of a four-part PlusCon VC VARICON. The mating connector is not included in the scope of delivery but can be ordered as a set from Phoenix Contact.

Two inserts of the PlusCon VC VARIOCON have two contacts each and are used for the three phases and the PE connection. The other two inserts have six contacts each and are used for the three brake lines and for the thermal motor protection.

The APG.. is installed on the narrow side of the motor terminal box. The terminal box can be turned through 4 × 90°.

The plug connector permits an easily separated hybrid cable connection between the motor/brake motor and a field distributor of series MF.../MM../Z.8A with an integrated MOVIMOT® inverter or a suitable third-party field control module (e.g. the Drive Shuttle open-loop speed controller made by Phoenix Contact, type IBS IP 400 VFD...).

The /APG.. plug connector can also be used as standard to connect the motor for mains operation. If this is the case, note that the brake rectifier must be accommodated in the switch cabinet.

Technical data

Plug connector	APG8 (APG1), APG4
For motors	DT71 ... DT90
Basic connector system	Phoenix Contact, PlusCon VC VARICON
Number of modules and contacts	$2 \times 2 + 2 \times 6$ (4 inserts)
Max. connection cross section	4×4 mm^2 + 12×1.5 mm^2
Max. contact load	4×20 $A_{r.m.s.}$ + 12×8 $A_{r.m.s.}$
Max. voltage	4×500 V_{AC} + 12×250 V_{AC}
Contact connection	Screw connection
Contact type	Blade / (socket = from customer)
Enclosure	Corresponding to motor protection type (IP54, IP55, optionally IP65)
Ambient temperature	-40 °C ... +40 °C (a temperature-dependent derating will be taken into consideration for higher temperatures)

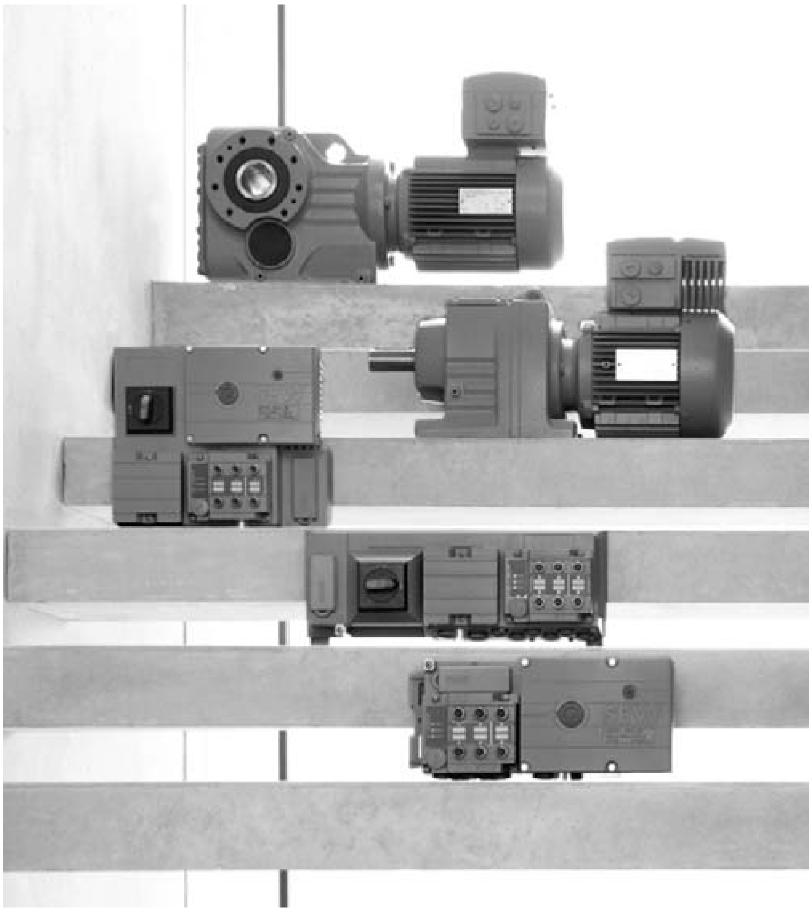
Pre-fabricated cable

SEW-EURODRIVE offers a pre-fabricated cable for making the connection between the field distributor MF.../Z.8A and the AC (brake) motor with option APG4. The cable is pre-fabricated up to a maximum length of 15 meters. The hybrid cable can be ordered from SEW-EURODRIVE. Specify the required length.

1.5 Drive systems for decentralized installation

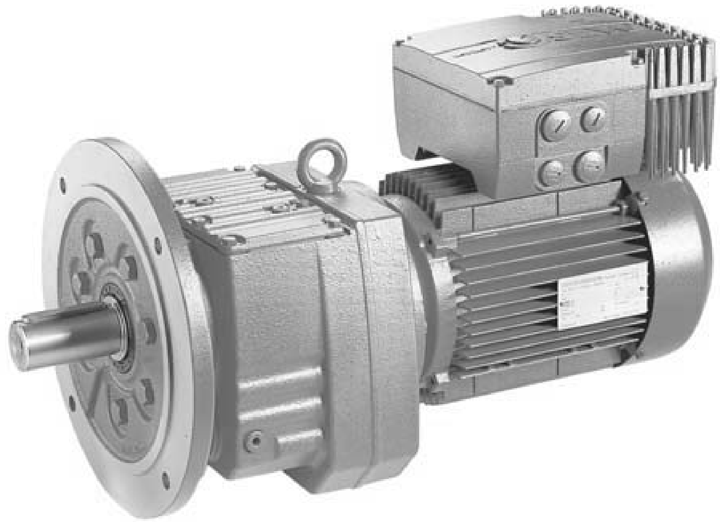
Decentralization with system solutions

Decentralization has become the major topic in automation. The cost-saving systems represent a constant challenge to system designers and the actual drive components. Long rows of control cabinets with complex wiring, expansive space requirements and long distances between control cabinet and motors are too rigid and not very economical. That is the reason why system operators opting for SEW-EURODRIVE as their system supplier are always ahead of the game. We not only reduce the number of components, but constantly develop more compact and efficient drive systems. MOVIMOT®, the gearmotor with integrated frequency inverter and MOVI-SWITCH®, the gearmotor with integrated switching and protection function plus the specifically developed field distributors and cable systems make additional central switching and protection equipment as well as electronic control elements a thing of the past. Of course, this need for fewer components also results in tremendous space savings in the control cabinet. Let alone the savings in the so far very cost and time consuming wiring of motors, sensors and actuators. Of course, these components can be installed in any commercial bus system. For faster, more economical and flexible decentralization.



06764AXX

MOVIMOT® **Functional description:**



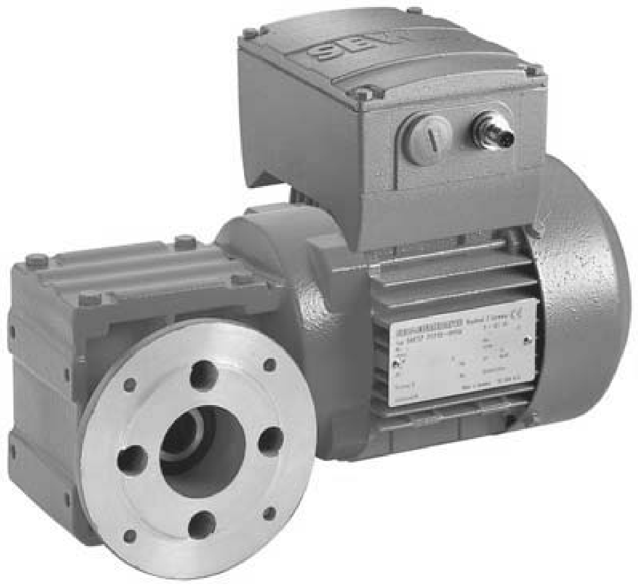
52586AXX

- MOVIMOT® is a gearmotor with integrated digital frequency inverter in the power range from 0.37 to 3.0 kW and integrated brake management.
- The brake coil is used as braking resistor in motors with mechanical brake; an internal braking resistor will be a standard component of MOVIMOT® units for motors without brake.
- MOVIMOT® is available in two designs
  – MM..C-503-**00**: standard version
  – MM..C-503-**30**: with integrated AS-interface
- Control takes place via binary signals, via the serial interface RS485 or optionally via all commercial fieldbus interfaces (PROFIBUS, INTERBUS, DeviceNet, CANopen or AS-interface).
- Overview of MOVIMOT® functions (all designs)
  – Clockwise, counterclockwise operation
  – Changeover between two fixed setpoints
  – Setpoint f1 can be scaled
  – Ready message to control
  – Diagnostics of MOVIMOT® via status LED
  – Additional functions integrated as standard
- Additional functions of version with integrated AS-interface
  – Addressing via M12 (AS-interface address 1-31)
  – Connection option for two external sensors
  – Additional LED for AS-interface status
  – Additional diagnostic interface via modular jack 4/4 (RJ11) plug connector

Refer to the "Drive System for Decentralized Installation" system manual for more detailed information.

MOVI-SWITCH ® 1E

Functional description:



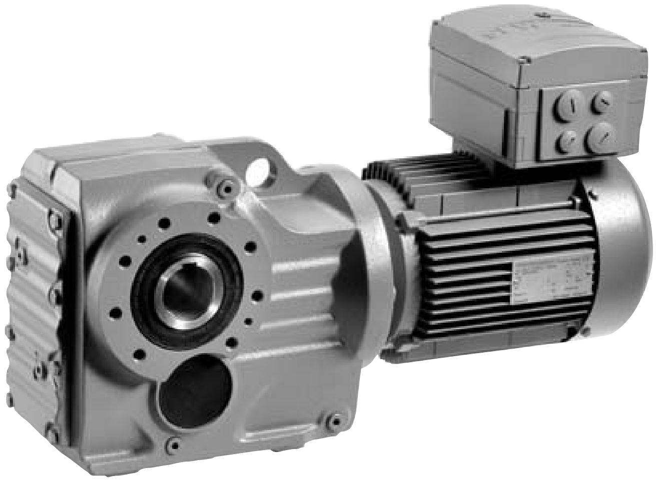
52587AXX

- MOVI-SWITCH® 1E is a drive with an integrated electronic on/off switch for one direction of rotation and integrated thermistor-type motor protection.
- Switching the star point with power semiconductors causes the current flow in the motor to be switched on or off.
- The BGW brake control integrated as standard results in short response times (brake voltage = motor voltage/$\sqrt{3}$, alternatively motor voltage).

Refer to the "Drive System for Decentralized Installation" system manual for more detailed information.

MOVI-SWITCH® 2S

Functional description:



52588AXX

- MOVI-SWITCH® 2S is a gearmotor with an integrated electronic on/off switch for two directions of rotation and integrated thermistor-type motor protection.
- The direction of rotation is changed using a reversing relay combination with a long service life.
- MOVI-SWITCH® 2S is available in two designs:
  - CB0: Binary control
  - CK0: with integrated AS-interface
- Supply system monitoring, phase-sequence monitoring, brake control as well as switching and protection functions are implemented in the controller.
- The various operating states are indicated by the status LED.
- With the CB0 design (binary control), the connection assignment for clockwise direction of rotation (CW) is compatible to MOVI-SWITCH® 1E.
- With the CK0 design (with integrated AS-interface), the connection assignment is compatible to MOVIMOT® with integrated AS-interface.

Refer to the "Drive System for Decentralized Installation" system manual for more detailed information.

Fieldbus interfaces and field distributors

Fieldbus interfaces MF.. / MQ..

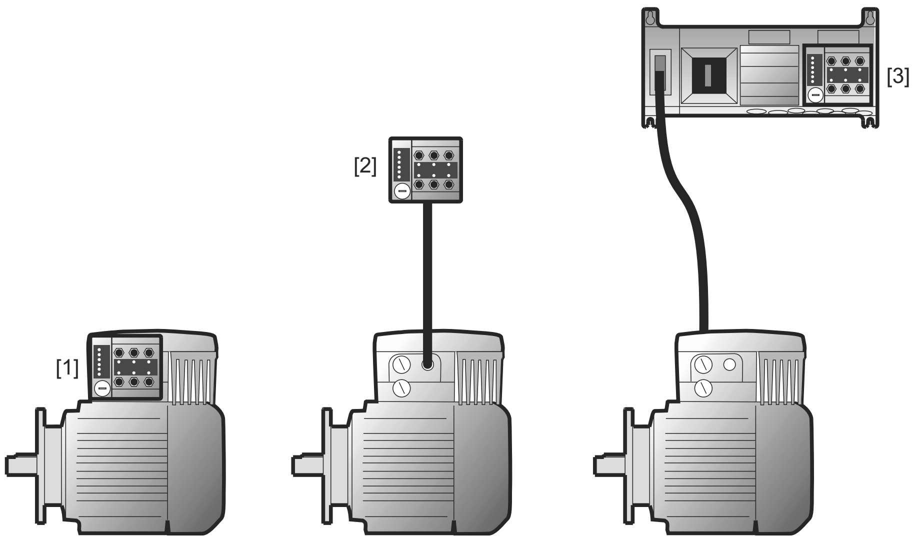
Type MF.. fieldbus interfaces allow for connecting MOVIMOT® and MOVI-SWITCH® drives to a standardized fieldbus system. These fieldbus interfaces not only allow for controlling MOVIMOT® and MOVI-SWITCH® drives but also for reading sensor signals as well as controlling actuators via the digital input and output terminals. All fieldbus interfaces and field distributors are supplied in protection class IP65 as standard.

Type MQ.. fieldbus interfaces are based on the same housing and fieldbus technology as type MF.. fieldbus interfaces but are additionally equipped with an integrated control featuring the following functions:

- Programmable using IPOS$^{plus®}$ or LOGODrive
- Simple positioning with NV26 proximity sensor
- Integrated I/O preprocessing and timing elements
- Protocol modification

Installation options:

The following illustration shows the different installation options of the fieldbus interfaces MF.. / MQ..:



52693AXX

[1] Installation on the drive
[2] Installation in the field
[3] Installation in field distributor

Field distributor

Field distributors rationalize the connection of drives with the power supply system, the control voltage and the fieldbus. The units are based on the bus interfaces technology with additional connection technology for power distribution.

Field distributors reduce the amount of work involved in project planning and the time required for installation and startup to a minimum.

Hybrid cables

SEW-EURODRIVE hybrid cables...

- Connect field distributors with AC motors
- Connect MOVIMOT® or MOVI-SWITCH® 2S units mounted in close proximity to the motor with drives (in combination with option P2.A)
- Combine power transmission, control voltage and communication within one cable sheath
- Ensure optimum EMC shielding and cable impedances
- Are supplied as pre-fabricated cables with plug connectors

The cable lengths specified for pre-fabricated cables (hybrid cables) in this publication refer to the maximum lengths that can be ordered.

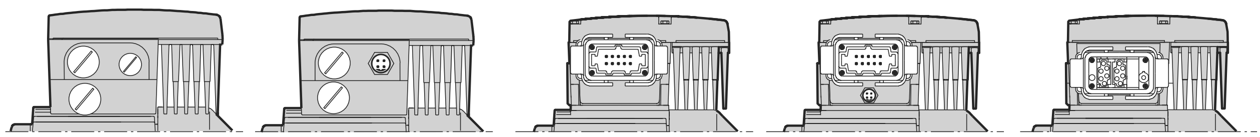
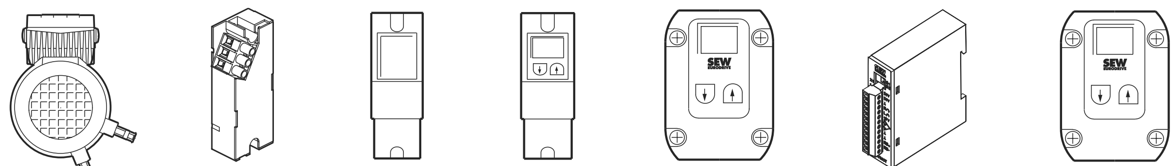
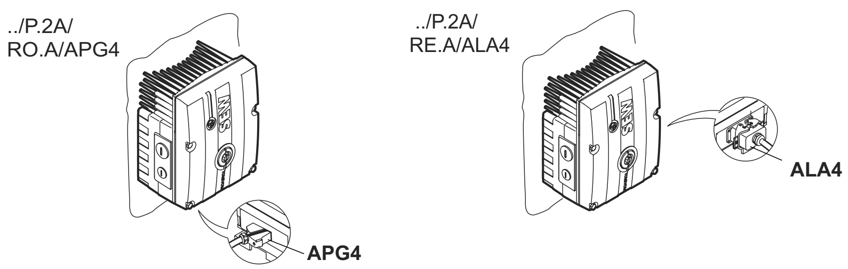
If necessary, the interdependencies between an overcurrent protective device on the input side, power bus system and motor cable must be tested.

This test must be performed on the basis of the relevant national provisions (UL, CSA, etc.). SEW-EURODRIVE can assist you in these project planning issues.

Refer to the "Drive System for Decentralized Installation" system manual for information about specific products.

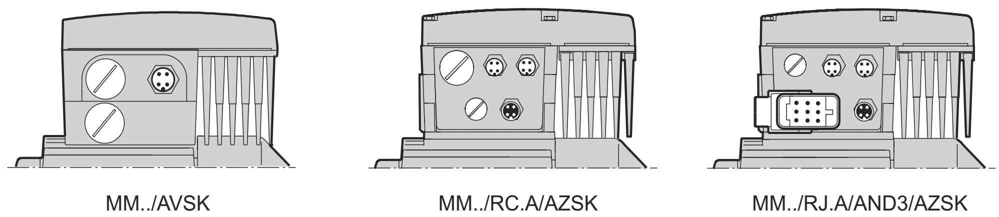
Overview of components for decentralized installation

The following overviews list all standard components or plug connector versions. You will find additional components/plug connectors in Sec. "Overview of Decentralized Systems".

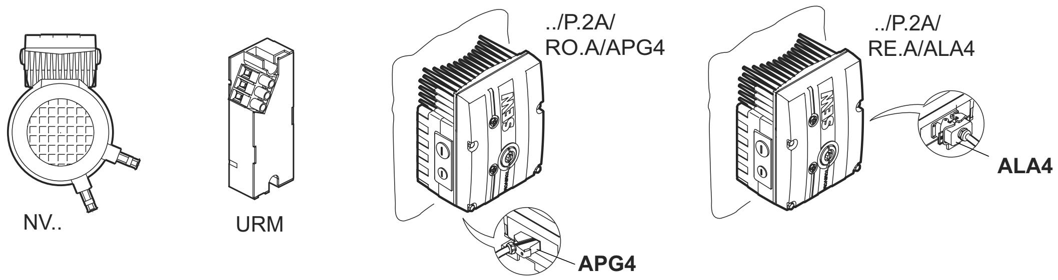
Unit designation	Description	1	2
MOVIMOT® standard design			
 MM.. MM../AVT1 MM../RE.A/ASA3 MM../RE.A/ASA3/AVT1 MM../RE.A/AM.6			
DT/DV.../MM..	MOVIMOT® standard design	X	–
../AVT1	M12 plug connector for RS485 connection	X	–
../RE.A/ASA3	ASA3 plug connector for power connection	–	X
../RE.A/ASA3/AVT1	M12 plug connector for RS485 connection and ASA3 plug connector for power connection	–	X
../RE.A/AMA6 ../RE.A/AMD6	Plug connector for RS485 connection and power connection (AMD6 = one-clip closure, AMA6 = two-clip closure)	–	X
 NV.. BGM BSM URM MLU11A MLG11A MBG11A MWA21A MDG11A			
../NV..	Proximity sensor	X	X
../R..A/../BGM ../R..A/../BSM	Brake control system	–	X
../R..A/../URM	Brake high-speed de-excitation	–	X
../MLU..A	24 V supply	X	X
../MLG..A	Setpoint generator and 24 V supply	X	X
../MBG11A	Setpoint generator	X	X
../MWA21A	Setpoint converter	X	X
../MDG11A	Diagnostic unit	X	X
			
../P.2A/RO.A/APG4	Adapter for mounting the MOVIMOT® inverter close to the motor with APG4 plug connector for motor connection	–	X
../P.2A/RE.A/ALA4	Adapter for mounting the MOVIMOT® inverter close to the motor with ALA4 plug connector for motor connection	–	X
../KPFA	Hybrid cable with PLUSCON VC VARIOCON (1.5 m) plug connector installed at factory	X	X
../KPFB	Hybrid cable with PLUSCON VC VARIOCON (3.0 m) plug connector installed at factory	X	X
../KPF6	Hybrid cable with PLUSCON VC VARIOCON (1 – 6 m) plug connector installed at factory		

1. Standard terminal box
2. Modular terminal box

Unit designation	Description	1	2
MOVIMOT® with integrated AS-interface			

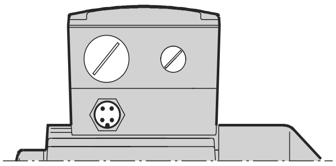
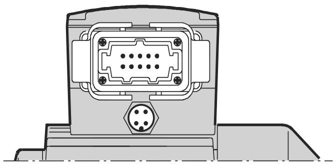


Unit designation	Description	1	2
DT/DV.../MM../AVSK	MOVIMOT® with integrated AS-interface and M12 plug connector[3] for AS-interface	X	–
../RC.A/AZSK	3 x M12 plug connector for AS-interface, AUX PWR and sensor connection	–	X
../RJ.A/AND3/AZSK	3 x M12 plug connector for AS-interface, AUX PWR, sensor connection and AND3 plug connector for power connection	–	X

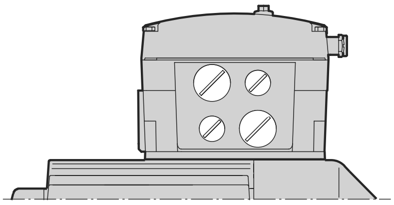
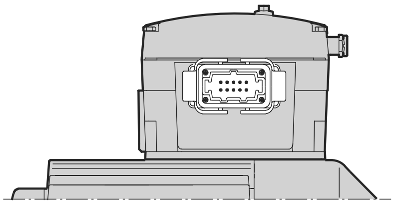
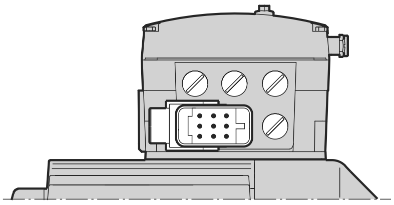
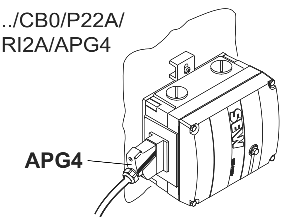
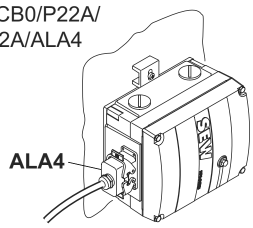


Unit designation	Description	1	2
../NV..	Proximity sensor	X	X
../RA.A/URM	Brake high-speed de-excitation	–	X
../P.2A/RO.A/APG4	Adapter for mounting the MOVIMOT® inverter close to the motor with APG4 plug connector for motor connection	–	X
../P.2A/RE.A/ALA4	Adapter for mounting the MOVIMOT® inverter close to the motor with ALA4 plug connector for motor connection	–	X

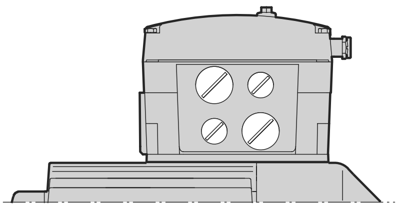
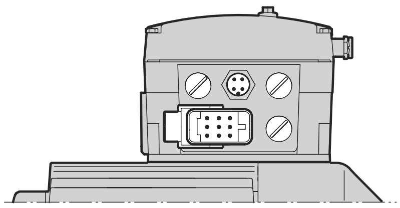
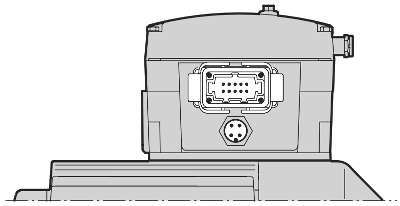
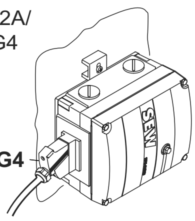
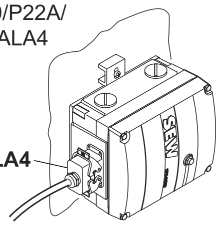
1. Standard terminal box
2. Modular terminal box
3. MOVIMOT® with integrated AS-interface is supplied with M12 plug connector as standard if not specified otherwise in the order

Unit designation	Description	1	2
MOVI-SWITCH® **1E**			
 MSW/AVS1	 MSW/AVS1/ASA3		
DT/DV.../MSW/AVS1[3]	MOVI-SWITCH® with one direction of rotation and AVS1 plug connector for control signals	X	–
../AVS1[3)]/ASA3	AVS1 plug connector for control signals and ASA3 plug connector for power connection	X	–

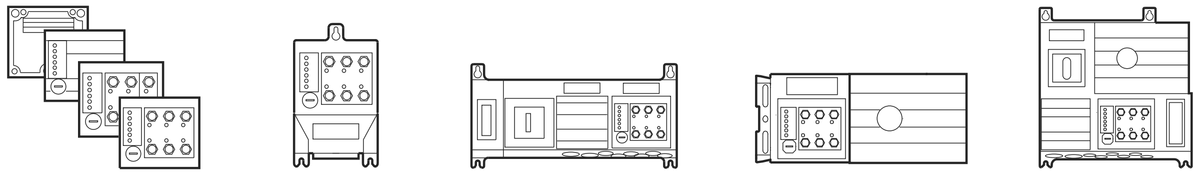
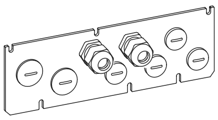
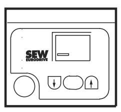
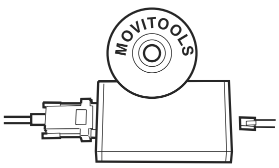
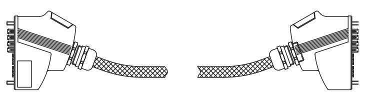
1. Standard terminal box
2. Modular terminal box
3. AVS1 plug connector supplied as standard with MSW-1E

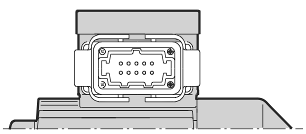
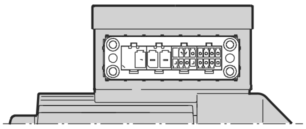
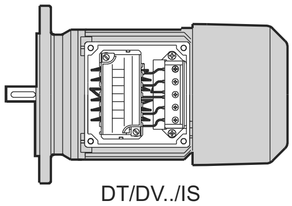
Unit designation	Description	1	2
MOVI-SWITCH® **2S with binary control**			
 MSW/CB0/RA2A	 MSW/CB0/RE2A/ASA3  MSW/CB0/RJ2A/AND3		
DT/DV../MSW/CB0/RA2A	MOVI-SWITCH® with two directions of rotation[3]	–	X
../CB0/RE2A/ASA3	ASA3 plug connector for power connection	–	X
../CB0/RJ2A/AND3	AND3 plug connector for power connection	–	X
../CB0/P22A/ RI2A/APG4 	../CB0/P22A/ RI2A/ALA4 		
../CB0/P22A/RI2A/APG4 ../CB0/CC15/P22A/RI2A/APG4[4]	Adapter for mounting MOVI-SWITCH® close to the motor with APG4 plug connector for motor connection	–	X
../CB0/P22A/RI2A/ALA4 ../CB0/CC15/P22A/RI2A/ALA4[4)]	Adapter for mounting MOVI-SWITCH® close to the motor with ALA4 plug connector for motor connection	–	X

1. Standard terminal box
2. Modular terminal box
3. MOVI-SWITCH 2S is equipped with two plug connectors for control signals and 24 V supply (integrated in the control unit)
4. With line protection

Unit designation	Description	1	2
MOVI-SWITCH® **2S with integrated AS-interface**			
 MSW/CK0/RA2A  MSW/CK0/RJ2A/AND3/AVS0  MSW/CK0/RE2A/ASA3/AVS0			
DT/DV../MSW/CK0/RA2A	MOVI-SWITCH® with two directions of rotation and integrated AS-interface[3]	–	X
..CK0/RJ2A/AND3/AVS0	M12 plug connector for AUX PWR and AND3 plug connector for power connection	–	X
..CK0/RE2A/ASA3/AVS0	M12 plug connector for AUX PWR and ASA3 plug connector for power connection		
../CK0/P22A/ RI2A/APG4  APG4 ../CK0/P22A/ RI2A/ALA4  ALA4			
../CK0/P22A/RI2A/APG4 ../CK0/CC15/P22A/RI2A/APG4[4]	Adapter for mounting MOVI-SWITCH® close to the motor with APG4 plug connector for motor connection	–	X
../CK0/P22A/RI2A/ALA4 ../CK0/CC15/P22A/RI2A/ALA4[4)]	Adapter for mounting MOVI-SWITCH® close to the motor with ALA4 plug connector for motor connection	–	X

1. Standard terminal box
2. Modular terminal box
3. MOVI-SWITCH 2S is equipped with two plug connectors for AS-interface and digital inputs (integrated in the control unit)
4. With line protection

Unit designation	Description
Fieldbus interfaces and field distributors	
 MF../MQ.. Z.3 Z.6 Z.7 Z.8	
MF..	Fieldbus interfaces MFP =PROFIBUS, MFI = Interbus, MFD = DeviceNet, MFO = CANopen, MFK = AS-interface
MQ..	Intelligent fieldbus modules MQP =PROFIBUS, MQI = Interbus, MQD = DeviceNet
MF../Z.3. MQ../Z.3.	Field distributor
MF../Z.6. MQ../Z.6.	Field distributor with maintenance switch
MF../MM..Z.7. MQ../MM..Z.7.	Field distributor with integrated MOVIMOT® inverter
MF../MM../Z.8. MQ../MM../Z.8.	Field distributor with maintenance switch and integrated MOVIMOT® inverter
/AF.. 	Connection technology for field distributors AF0 = Metric cable entry AF = with micro-style connector/M12 connector for DeviceNet and CANopen AF2 = M12 plug connector for PROFIBUS AF3 = M12 plug connector for PROFIBUS + M12 plug connector for 24 V_{DC} supply AF6 = M12 plug connector for AS-interface
Diagnostic tools	
 MFG11A  MWS21A	
MFG11A	Setpoint generator in bus housing (keypad)
MWS21A	Fieldbus diagnostic kit
Hybrid cables	
	
Order information: Part number/length	For connecting • Field distributors and motors • MOVIMOT® and motors with mounting close to the motor • MOVI-SWITCH® and motors with mounting close to the motor

Unit designation	Description
AC motors with plug connectors[1]	
 DT/DV../ASB4	 DT/DV../APG4  DT/DV../IS
DT/DV../ASB4	AC motor with ASB4 plug connector
DT/DV../APG4	AC motor with APG4 plug connector
DT/DV../IS	AC motor with integrated IS plug connector

1. For field distributors Z.7., Z.8 and when the MOVIMOT®/MOVI-SWITCH® unit with P.2A option is mounted close to the motor

ECOFAST®

Decentralization with multi-vendor interfaces

The use of decentralized systems in extensive industrial plants is the present state-of-the-art and is continually growing. The cost benefits of decentralized installation are based on a reduction of expenses for project planning, installation and startup and are decisively influenced by the design of the interfaces and plug connectors. Today, these interfaces are still designed mostly for specific manufacturers or user groups. The installation interfaces of decentralized components have not yet, or only to a limited extent, reached the desired uniform standardization level across manufacturers.

However, the vision of a universal and generally available standardized interface specification cannot be implemented by individual businesses only. For this reason, it is imperative that as many leading businesses as possible with the widest possible range of components come together as system partners to completely implement all functions in an automation system. The available product range must cover all components required in production automation—from drive units via installation components to controller systems.

Objectives of the ECOFAST® system partners

- Standardization of interfaces in decentralized installations
- Standardization of connection technology for the power supply system, 24 V and communication
- Uniform component range from drive to controller system
- Efficient planning through uniform project planning software
- Open and non-proprietary system

Under the trademark ECOFAST® (Energy and Communication Field Installation System), filed by the Automation and Drives (A&D) division of SIEMENS, the system partners offer an open and innovative solution in the area of decentralization without switch cabinet for automation and drive engineering. This approach is based on the completely decentralized installation and direct installation of the units on the machines. In addition to the communication via PROFIBUS-DP and AS interface, power supply of the consumers in the ECOFAST® system is also branch-like via power bus. All automation, drive and installation components are combined to form a standard complete solution with standardized connection technology for data and power transfer. The project planning tool ECOFAST® ES (Engineering Software) supports the power-specific dimensioning of a system. Communication via standardized fieldbuses and uniformly standardized interfaces are based on the DESINA specification and make ECOFAST® an open, non-proprietary and flexible system solution.

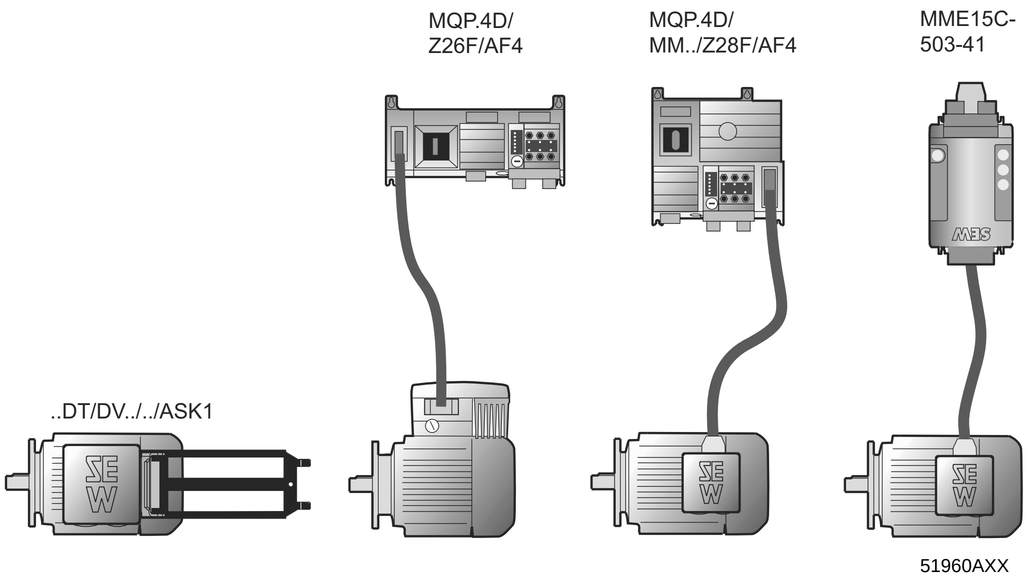
ECOFAST® is a registered trademark of Siemens AG.

ECOFAST®-compliant drive systems from SEW-EURODRIVE

- Gearmotors ..DT/DV../..ASK1 in the power range 0.37 kW to 5.5 kW
- Field distributor segments in the following designs:

– MQP.4D/Z26F/AF4	Field distributors with MOVIMOT® gearmotors
– MQP.4D/MM../Z28F/AF4	Field distributors with associated gearmotors
– MME15C-503-41	Compact MOVIMOT® with associated gearmotors

- Pre-fabricated system cables and hybrid cables with plug connectors



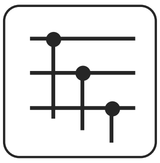
Users of ECOFAST®-compliant components have the invaluable and enormous benefit of being able to use and combine components from different manufacturers without having to observe mechanical and electrical compatibility.

DESINA

DESINA is an overall concept for standardization and decentralization of hydraulic and electrical installation of machines and systems.

The necessary system components were specified by machine designers, the automotive industry as well as suppliers. DESINA incorporates proven solutions, such as open bus systems, industry standards for connectors, etc. Standardization of components, interfaces and connection elements, such as hybrid fieldbus cables (Cu/FO), has resulted in different fieldbus systems based on one common physical base that have been installed in production systems.

Power bus



A central requirement is the use of a power bus system that permits connection of several "consumers" to one power line. National and international standards still apply even with this new installation technology.

While fieldbuses have been an established standard in decentralized automation for quite some time, power busses are only slowly being integrated in applications. The use of power buses is an expansion of the existing fieldbus concept; they make for a cost-effective and part-optimized transmission of power in addition to data transmission.

In realizing this concept, designers can integrate existing and standardized interfaces. The plug connector plays a central part when it comes to developing a power bus system. The key components are compact and small plug connectors that meet the requirements concerning number of contacts, voltage and current carrying capacity.

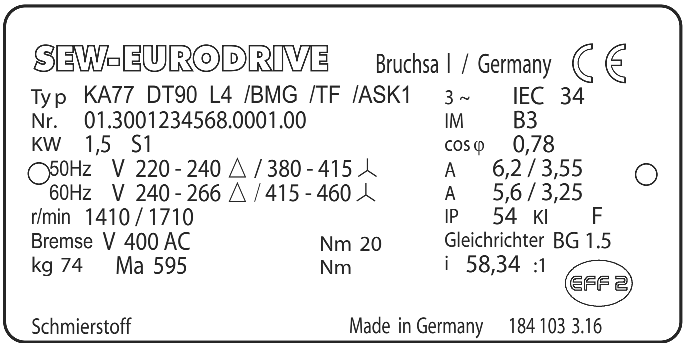
In addition to the mature SEW field distributor concept, decentralized systems by SEW-EURODRIVE GmbH & Co. KG can be connected to a variety of different power bus systems available today.

Advantages of this configuration are:

- Avoiding wiring errors by using plug connectors,
- Shortening standstill times and reducing losses associated with production downtimes,
- Simple interchangeability of components, such as motor and cables.

1.6 Type designation and sample orders

Drive with plug connector



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KA 77 DT 90L4 BMG TF **ASK1**

- ASK1: ECOFAST® plug connectors
- TF: Thermistor sensor (motor option)
- BMG: Brake (motor option)
- 90L4: Size, number of poles on motor
- DT: Motor series
- 77: Gear unit size[1])
- KA: Gear unit series[1)]

1. Detailed information about gearmotor combinations can be found in the "Gearmotors" catalog.

Structure of sample serial number:

3009818304. 0001. 99

- 99: Final two digits of the year of manufacture
- 0001: Running unit number (4-digit)
- 3009818304: Order number (10-digit)

Additional sample orders

KA77DT90L4BMG/MM15**/ASA3/AVT1**

- Plug connector type
- Plug connector type
- MOVIMOT® type
- Brake (motor option)
- Size, number of poles on motor
- Motor series
- Gear unit size[1])
- Gear unit series[1)]

1. Detailed information about gearmotor combinations can be found in the "Gearmotors" catalog.

Explanation for sample order:

Plug connector	SEW order name	Manufacturer designation Description
For power	ASA3	Harting Han® 10 ES pin element (Built-on housing with 2 clips)
For RS-485	AVT1	M12 x 1 round plug connector 4-pin connector (male), B-coded

Sample order of pre-fabricated cable

Cable quality	Part number
Helu Kabel SUPER-PAAR-TRONIC-C-PUR	5 meters: 0815 592 5 10 meters: 0815 593 3

Sample order MF.../MM../Z.8., MQ.../MM../Z.8. field distributors

MFI22A/MM22C-503-00/Z18F 0/AF0

Connection technology
AF0 = Metric cable entry
AF1 = With micro-style connector/M12 connector for DeviceNet and CANopen
AF2 = M12 plug connector for PROFIBUS
AF3 = M12 plug connector for PROFIBUS + M12 plug connector for 24 V_{DC} supply
AF6 = M12 plug connector for AS-interface

Connection type
0 = ⅄ / 1= △

Connection module
Z18 = For InterBus
Z28 = For PROFIBUS
Z38 = For DeviceNet and CANopen
Z68 = For AS-interface

MOVIMOT® inverter

Fieldbus interface
MFI../MQI.. = InterBus
MFP../MQP.. = PROFIBUS
MFD../MQD.. = DeviceNet
MFO.. = CANopen
MFK.. = AS-interface

Make sure to indicate the position of the plug connector when ordering cables and cable accessories for MOVIMOT® or MOVI-SWITCH® gearmotors.
The "Normal" mounting position will be assumed if you do not provide any information about the position of the plug connector or the information is incorrect.
It is also important to define the mounting position clearly if the hybrid cable is pre-fabricated with plug connectors that have outputs to the side.
The position of the plug connector socket element or pin element is fixed and cannot be modified.

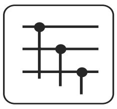
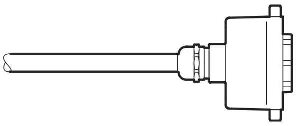
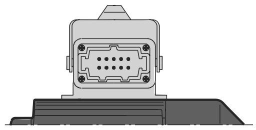
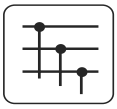
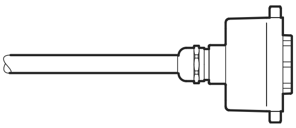
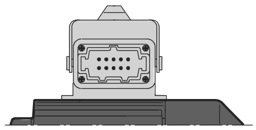
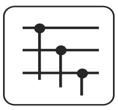
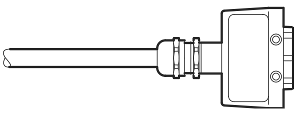
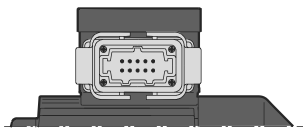
2 Overview of Standard Motors

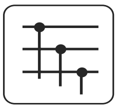
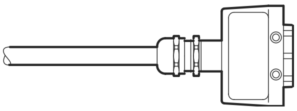
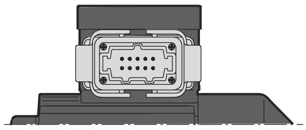
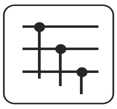
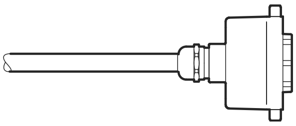
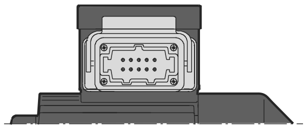
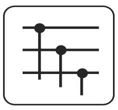
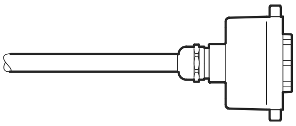
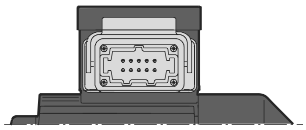
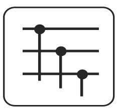
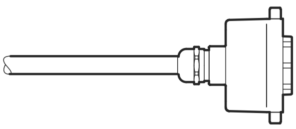
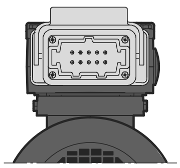
2.1 Plug connectors for standard asynchronous motors

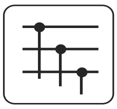
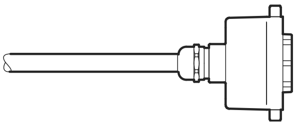
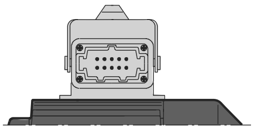
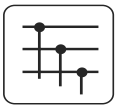
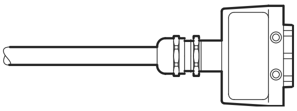
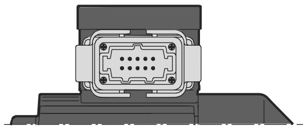
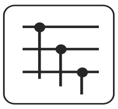
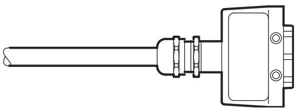
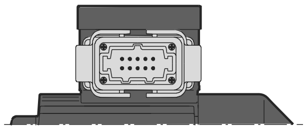
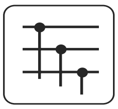
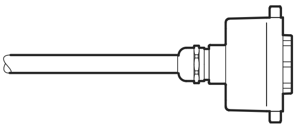
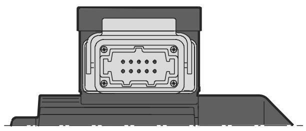
Harting Han® 10E or Han® 10ES

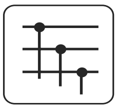
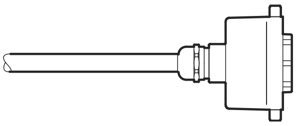
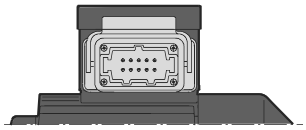
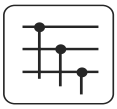
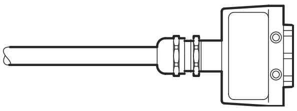
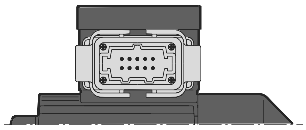
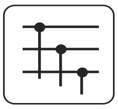
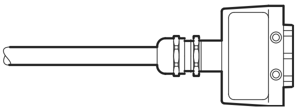
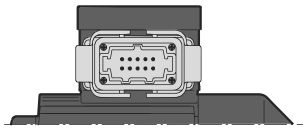
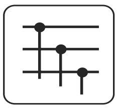
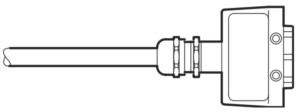
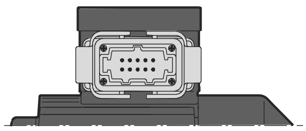
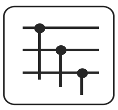
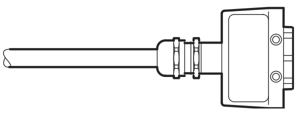
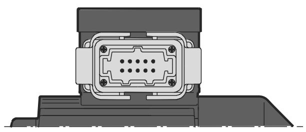
For information on possible "mating connectors," contact your SEW-EURODRIVE sales representative and quote the SEW-EURODRIVE plug connector option or consult the support services of the manufacturer.

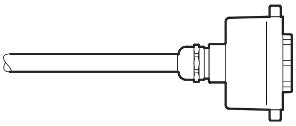
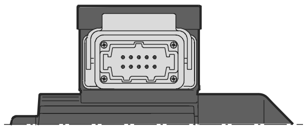
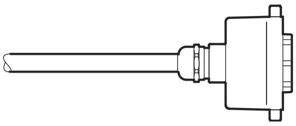
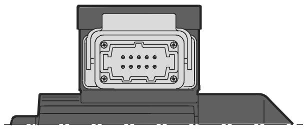
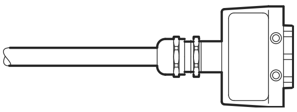
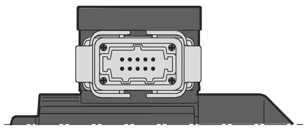
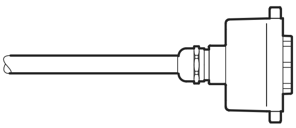
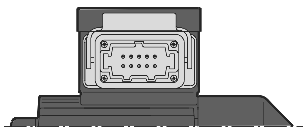
More information is available on the Internet at the Harting website (search term "SEW") or at www.harkis.harting.com (SEW plug connectors/drive connector kits).

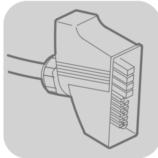
Connection Customer end	Cable	Plug connector option	Drive
	Power supply (brake control) 	ACD1	DR63(/BR)/ACD1  09 768 03 97 (→ page 113) one speed, customer selects ⅄ or △ connection (DT 84) 09 769 03 97 (→ page 115) pole-changing, separate windings (DT 85) 09 770 03 97 (→ page 117) pole-changing, tapped wound (DT 86) 09 774 02 97 (→ page 125) internal brake control (cut-off in the AC circuit only) (AT 106) 09 775 02 97 (→ page 127) brake control BUR/BSR(AT 107)
	Power supply (brake control) 	ASD1	DR63(/BR)/ASD1  09 768 03 97 (→ page 113) one speed, customer selects ⅄ or △ connection (DT 84) 09 769 03 97 (→ page 115) pole-changing, separate windings (DT 85) 09 770 03 97 (→ page 117) pole-changing, tapped wound (DT 86) 09 774 02 97 (→ page 125) integrated internal brake control (cut-off in the AC circuit only) (AT 106) 09 775 02 97 (→ page 127) brake control BUR/BSR(AT 107)
	Power supply (brake control) 	ACB1	DT71...DV132S(/BMG)/ACB1  08 849 01 02 (→ page 74) one speed, customer selects ⅄-△ connection (DT 106) 08 851 01 02 (→ page 78) pole-changing, tapped wound (DT 108) 08 850 01 02 (→ page 76) pole-changing, 2 separate windings (DT 107) 09 774 02 97 (→ page 125) brake control (cut-off in the AC circuit only) (AT 106) internal 09 818 01 02 (→ page 145) brake control BUR/BSR (AT 121)

Connection Customer end	Cable	Plug connector option	Drive
	Power supply (brake control) 	ASB1	DT71...DV132S(/BMG)/ASB1  08 849 01 02 (→ page 74) one speed, customer selects ⅄ or △ connection (DT 106) 08 851 01 02 (→ page 78) pole-changing, tapped wound (DT 108) 08 850 01 02 (→ page 76) pole-changing, 2 separate windings (DT 107) 09 774 02 97 (→ page 125) brake control (cut-off in the AC circuit only) (AT 106) internal 09 818 01 02 (→ page 145) brake control BUR/BSR (AT 121)
	Power supply (brake control) 	ACE1	DT71...DV132S(/BMG)/ACE1  08 849 01 02 (→ page 74) one speed, customer selects ⅄ or △ connection (DT 106) 08 851 01 02 (→ page 78) pole-changing, tapped wound (DT 108) 08 850 01 02 (→ page 76) pole-changing, 2 separate windings (DT 107) 09 774 02 97 (→ page 125) internal brake control (cut-off in the AC circuit only) (AT 106) 09 818 01 02 (→ page 145) brake control BUR/BSR (AT 121)
	Power supply (brake control) 	ASE1	DT71...DV132S(/BMG)/ASE1  08 849 01 02 (→ page 74) one speed, customer selects ⅄ or △ connection (DT 106) 08 851 01 02 (→ page 78) pole-changing, tapped wound (DT 108) 08 850 01 02 (→ page 76) pole-changing, 2 separate windings (DT 107) 09 774 02 97 (→ page 125) brake control (cut-off in the AC circuit only) (AT 106) internal 09 818 01 02 (→ page 145) brake control BUR/BSR (AT 121)
 ECOFAST certified	Power supply (brake control) 	ASK1	DT71...DV132S(/BMG)/ASK1  08 849 01 02 (→ page 74) one speed, customer selects ⅄ or △ connection (DT 106) 09 844 0 02 (→ page 160) brake control BG, BGE, BUR (AT 124)

Connection Customer end	Cable	Plug connector option	Drive
	Power supply (brake control) 	ACD8	DR63(/BMG)/ACD8  08 823 02 02 (→ page 72) one speed, ⅄ or △ factory-set connection (DT 123) 09 857 01 02 (→ page 174) internal brake control (AT 138) 09 848 05 02 (→ page 162) external brake control (AT 125) 09 858 02 02 (→ page 177) brake control BSR (AT 139)
	Power supply (brake control) 	ASA1	DT71...DV132S(/BMG)  09 768 03 97 (→ page 113) one speed, customer selects ⅄-△ connection (DT 84) 09 769 03 97 (→ page 115) pole-changing, separate windings (DT 85) 09 770 03 97 (→ page 117) pole-changing, tapped wound (DT86) 09 774 02 97 (→ page 125) internal brake control (cut-off in the AC circuit only) (AT 106) 09 775 02 97 (→ page 127) brake control BUR/BSR (AT107)
	Power supply (brake control) 	ACA1	DT71...DV132S(/BMG)  09 768 03 97 (→ page 113) one speed, customer selects ⅄-△ connection (DT 84) 09 769 03 97 (→ page 115) pole-changing, separate windings (DT 85) 09 770 03 97 (→ page 117) pole-changing, tapped wound (DT86) 09 774 02 97 (→ page 125) internal brake control (cut-off in the AC circuit only) (AT 106) 09 775 02 97 (→ page 127) brake control BUR/BSR (AT107)
	Power supply (brake control) 	ASD1	DT71...DV132S(/BMG)  09 768 03 97 (→ page 113) one speed, customer selects ⅄-△ connection (DT 84) 09 769 03 97 (→ page 115) pole-changing, separate windings (DT 85) 09 770 03 97 (→ page 117) pole-changing, tapped wound (DT86) 09 774 02 97 (→ page 125) internal brake control (cut-off in the AC circuit only) (AT 106) 09 775 02 97 (→ page 127) brake control BUR/BSR (AT107)

Connection Customer end	Cable	Plug connector option	Drive
	Power supply (brake control) 	ACD8	DT71...DV132S(/BMG)  08 823 02 02 (→ page 72) one speed, customer selects ⅄ or △ connection (DT 123) 09 857 01 02 (→ page 174) internal brake control (AT 138) 09 848 05 02 (→ page 162) external brake control (AT125) 09 858 02 02 (→ page 177) brake control BSR (AT139)
	Power supply (brake control) 	ASA8	DT71...DV132S(/BMG)  08 823 02 02 (→ page 72) one speed, ⅄ or △ factory-set connection (DT 123) 09 857 01 02 (→ page 174) internal brake control (AT138) 09 848 05 02 (→ page 162) external brake control (AT 125) 09 858 02 02 (→ page 177) brake control BSR (AT 139)
	Power supply (brake control) 	ACA8	DT71...DV132S(/BMG)  08 823 02 02 (→ page 72) one speed, ⅄ or △ factory-set connection (DT 123) 09 857 01 02 (→ page 174) internal brake control (AT138) 09 848 05 02 (→ page 162) external brake control (AT 125) 09 858 02 02 (→ page 177) brake control BSR (AT 139)
	Power supply (brake control) 	ACB8	DT71...DV132S(/BMG)/ACB8  08 794 02 02 (→ page 60) one speed, ⅄ or △ factory-set connection (DT 122) 09 857 01 02 (→ page 174) internal brake control (AT 138) 09 848 05 02 (→ page 162) external brake control (AT 125) 09 850 02 02 (→ page 165) brake control BUR/BSR (AT 133)
	Power supply (brake control) 	ASB8	DT71...DV132S(/BMG)/ASB8  08 794 02 02 (→ page 60) one speed, ⅄ or △ factory-set connection (DT 122) 09 857 01 02 (→ page 174) internal brake control (AT 138) 09 848 05 02 (→ page 162) external brake control (AT 125) 09 850 02 02 (→ page 165) brake control BUR/BSR (AT 133)

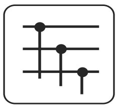
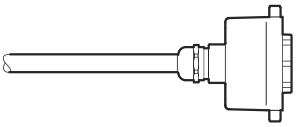
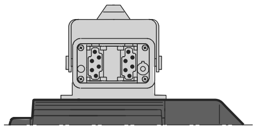
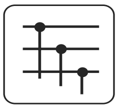
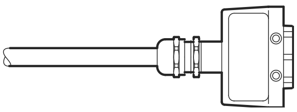
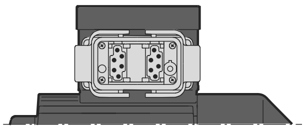
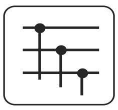
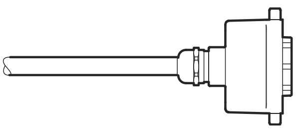
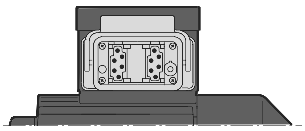
Connection Customer end	Cable	Plug connector option	Drive
	Power supply (brake control) 	ACE8	DT71...DV132S(/BMG)/ACE8  08 794 02 02 (→ page 60) one speed, ⅄ or △ factory-set connection (DT 122) 09 857 01 02 (→ page 174) internal brake control (AT 138) 09 848 05 02 (→ page 162) external brake control (AT 125) 09 850 02 02 (→ page 165) brake control BUR/BSR (AT 133)
DESINA.	Power supply (brake control) 	ASE8	DT71...DV132S(/BMG)/ASE8  08 794 02 02 (→ page 60) one speed, ⅄ or △ factory-set connection (DT 122) configured 09 857 01 02 (→ page 174) internal brake control(AT 138) 09 848 05 02 (→ page 162) external brake control(AT 125) 09 850 02 02 (→ page 165) brake control BUR/BSR(AT 133)
	Power supply (brake control) 	ASB9	DT71...DV132S(/BMG)/ASB9  09 841 0 02 (→ page 156) brake voltage supply from motor in ⅄ brake voltage = phase voltage (AT 129) 09 842 0 02 (→ page 158) brake voltage supply from motor in ⅄ brake voltage = phase voltage(AT 130) 09 851 0 02 (→ page 168) brake voltage supply from motor in △ brake voltage = phase voltage(AT 134)
DESINA.	Power supply (brake control) 	ASE9	DT71...DV132S(/BMG)/ASE9  09 841 0 02 (→ page 156) brake voltage supply from motor in ⅄ brake voltage = phase voltage (AT 129) 09 842 0 02 (→ page 158) brake voltage supply from motor in ⅄ brake voltage = phase voltage (AT 130) 09 851 0 02 (→ page 168) brake voltage supply from motor in △ brake voltage = phase voltage (AT 134)

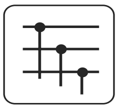
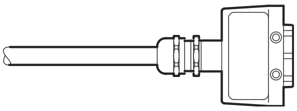
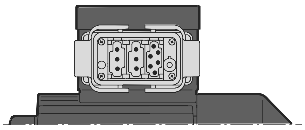
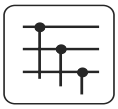
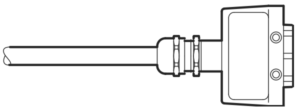
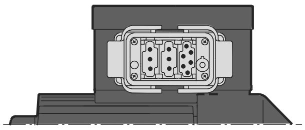
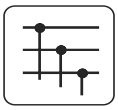
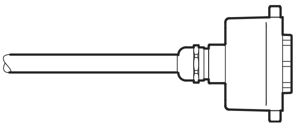
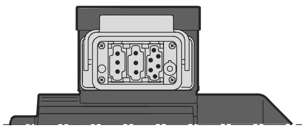
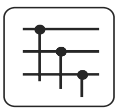
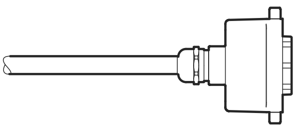
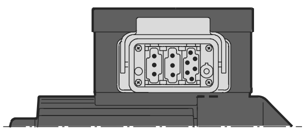


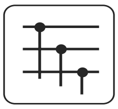
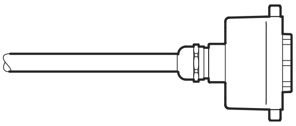
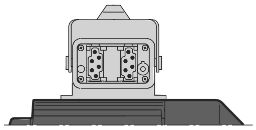
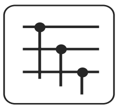
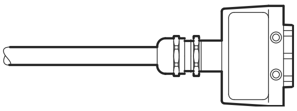
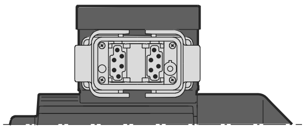
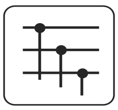
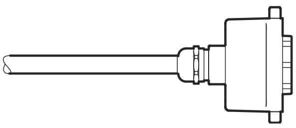
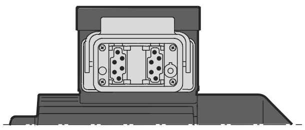
Harting Han-Modular®

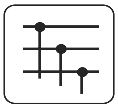
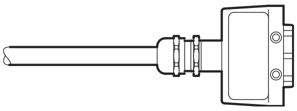
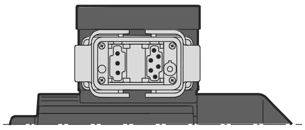
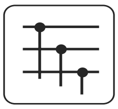
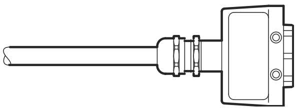
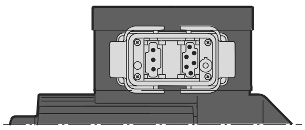
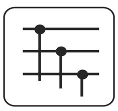
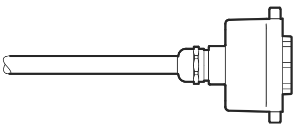
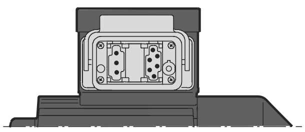
For information on possible "mating connectors," contact your SEW-EURODRIVE sales representative and quote the SEW-EURODRIVE plug connector option or consult the support services of the manufacturer.

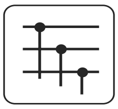
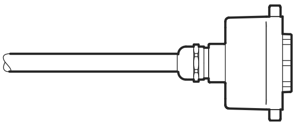
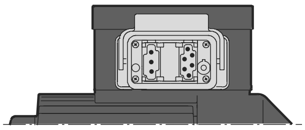
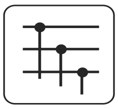
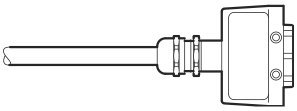
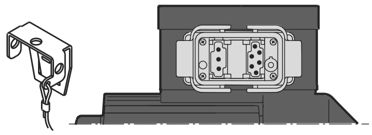
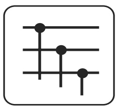
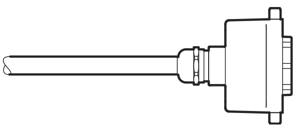
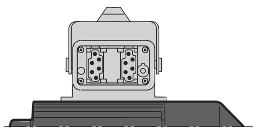
More information is available on the Internet at the Harting website (search term "SEW") or at www.harkis.harting.com (SEW plug connectors/drive connector kits).

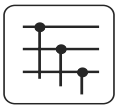
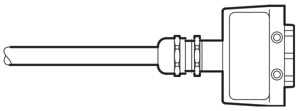
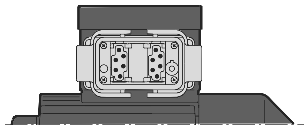
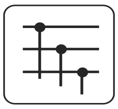
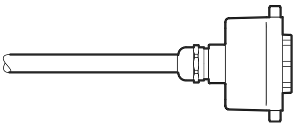
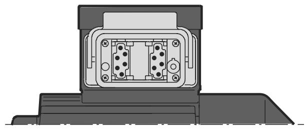
Connection Customer end	Cable	Plug connector option	Drive
	Power supply (brake control) 	AMD2 (replace-ment type of AMD1)	DR63(/BMG)/AMD2  09 773 03 97 (→ page 123) pole-changing, tapped wound (DT 89) 09 772 03 97 (→ page 121) pole-changing, 2 separate windings (DT 88) 09 776 02 97 (→ page 129) internal brake control (AT 108) 09 789 05 98 (→ page 134) external brake control (AT 111) 09 777 03 97 (→ page 132) brake control BUR
	Power supply (brake control) 	AMB2 (replace-ment type of AMA1)	DT71...DV132S(/BMG)/AMB2  08 887 00 04 (→ page 88) one speed ⅄ or △ connection (DT 135) 08 854 01 02 (→ page 84) pole-changing, tapped wound (DT 111) 08 853 02 02 (→ page 82) pole-changing, 2 separate windings (DT 110) 09 776 02 97 (→ page 129) internal brake control (AT 108) 09 789 05 98 (→ page 134) external brake control (AT 111) 09 870 00 04 (→ page 183) brake control BUR/BSR (AT 142)
	Power supply (brake control) 	AME2 (replace-ment type of AME1)	DT71...DV132S(/BMG)/AME2  08 887 00 04 (→ page 88) one speed ⅄ or △ connection (DT 135) 08 854 01 02 (→ page 84) pole-changing, tapped wound (DT 111) 08 853 02 02 (→ page 82) pole-changing, 2 separate windings (DT 110) 09 776 02 97 (→ page 129) internal brake control (AT 108) 09 789 05 98 (→ page 134) external brake control (AT 111) 09 870 00 04 (→ page 183) brake control BUR/BSR (AT 142)

Connection Customer end	Cable	Plug connector option	Drive
	Power supply (brake control) 	ADB2	DT71...DV132S(/BMG)/ADB2  08 013 00 04 (→ page 56) one speed, customer selects ⅄-△ connection (AT 137) 08 013 00 04 (→ page 56) pole-changing, tapped wound (DT 136) 08 014 00 04 (→ page 58) pole-changing, 2 separate windings (DT138) 09 776 02 97 (→ page 129) internal brake control (AT 108) 09 789 05 98 (→ page 134) external brake control (AT 111) 09 035 00 04 (→ page 96) brake control BUR/BSR (AT165)
	Power supply (brake control) 	ADB2 (replace-ment type of AMA1)	DV132M...DV180(/BMG)/ADB2  08 858 01 03 (→ page 86) one speed, customer selects ⅄ or △ connection (DT 129) 08 801 02 98 (→ page 68) pole-changing, tapped wound (DT 95) 08 800 02 98 (→ page 66) pole-changing, 2 separate windings (DT 94) 09 776 02 97 (→ page 129) internal brake control (AT 108) 09 789 05 98 (→ page 134) external brake control (AT 111) 09 871 02 04 (→ page 187) brake control BUR/BSR (AT 143)
	Power supply (brake control) 	ADE2	DT71...DV132S(/BMG)/ADE2  08 013 00 04 (→ page 56) one speed, customer selects ⅄-△ connection(AT 137) 08 013 00 04 (→ page 56) pole-changing, tapped wound (DT 136) 08 014 00 04 (→ page 58) pole-changing, 2 separate windings (DT138) 09 776 02 97 (→ page 129) internal brake control (AT 108) 09 789 05 98 (→ page 134) external brake control (AT 111) 09 035 00 04 (→ page 96) brake control BUR/BSR (AT165)
	Power supply (brake control) 	ADE2 (replace-ment type of AMD1)	DV132M...DV180(/BMG)/ADE2  08 858 01 03 (→ page 86) one speed, customer selects ⅄-△ connection (DT 129) 08 801 02 98 (→ page 68) pole-changing, tapped wound (DT 95) 08 800 02 98 (→ page 66) pole-changing, 2 separate windings (DT 94) 09 776 02 97 (→ page 129) internal brake control (AT 108) 09 789 05 98 (→ page 134) external brake control (AT 111) 09 871 02 04 (→ page 187) brake control BUR/BSR (AT143)

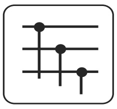
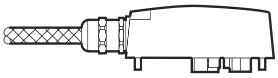
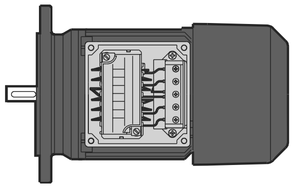
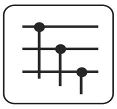
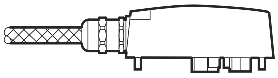
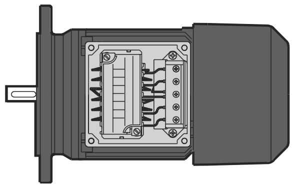
Connection Customer end	Cable	Plug connector option	Drive
	Power supply (brake control) 	AMD8	DR63(/BR)/AMD8  09 771 03 97 (→ page 119) one speed, ⅄ or △ factory-set connection (DT 87) 09 776 02 97 (→ page 129) internal brake control (AT 108) 09 789 05 98 (→ page 134) external brake control (AT 111) 09 874 02 04 (→ page 191) brake control BSR (AT146) brake voltage supply from motor in ⅄ Brake voltage = Phase-to-phase voltage 09 777 03 97 (→ page 132) brake control BUR/BSR (AT 109) brake voltage supply from motor in ⅄ brake voltage = phase voltage 09 777 03 97 (→ page 132) brake control BUR/BSR (AT 109) brake voltage supply from motor in △ brake voltage = phase voltage
	Power supply (brake control) 	AMB8 (replacement type of AMA1)	DT71...DV132S(/BMG)/AMB8  08 852 01 02 (→ page 80) one speed, ⅄ or △ factory-set connection (DT 109) 09 776 02 97 (→ page 129) internal brake control (AT 108) 09 789 05 98 (→ page 134) external brake control (AT 111) 09 853 02 02 (→ page 172) brake control BSR (AT136) brake voltage supply from motor in ⅄ brake voltage = phase-to-phase voltage 09 819 02 02 (→ page 148) brake control BUR/BSR (AT 122) brake voltage supply from motor in ⅄ brake voltage = phase voltage 09 819 02 02 (→ page 148) brake control BUR/BSR (AT 122) brake voltage supply from motor in △ brake voltage = phase voltage
	Power supply (brake control) 	AME8 (replacement type of AMD1)	DT71...DV132S(/BMG)/AME8  08 852 01 02 (→ page 80) one speed, ⅄ or △ factory-set connection(DT 109) 09 776 02 97 (→ page 129) internal brake control(AT 108) 09 789 05 98 (→ page 134) external brake control(AT 111) 09 853 02 02 (→ page 172) brake control BSR (AT136) brake voltage supply from motor in ⅄ brake voltage = phase-to-phase voltage 09 819 02 02 (→ page 148) brake control BUR/BSR (AT 122) brake voltage supply from motor in ⅄ brake voltage = phase voltage 09 819 02 02 (→ page 148) brake control BUR/BSR (AT 122) brake voltage supply from motor in △ brake voltage = phase voltage

Connection Customer end	**Cable**	**Plug connector option**	**Drive**	
	Power supply (brake control) 	ABB8 (replacement type of AMB1 and AMA8)	DT71...DV132S(/BMG)/ABB8 	
			08 797 02 02 (→ page 62)	one speed, ⅄ or △ factory-set connection (DT 125)
			09 776 02 97 (→ page 129)	internal brake control (AT 108)
			09 789 05 98 (→ page 134)	external brake control (AT 111)
			09 005 00 04 (→ page 94)	brake control BSR (AT 153) brake voltage supply from motor in ⅄ brake voltage = phase-to-phase voltage
			09 004 00 04 (→ page 90)	brake control BUR/BSR (AT 152) brake voltage supply from motor in ⅄ brake voltage = phase voltage
			09 004 00 04 (→ page 90)	brake control BUR/BSR (AT 152) brake voltage supply from motor in △ brake voltage = phase voltage
	Power supply (brake control) 	ABB8 (replacement type of AMB1 and AMA8)	DV132M...DV180(/BM)/ABB8 	
			08 799 05 98 (→ page 64)	one speed, ⅄ or △ factory-set connection (DT 96)
			09 776 02 97 (→ page 129)	internal brake control (AT 108)
			09 789 05 98 (→ page 134)	external brake control (AT 111)
			09 860 02 03 (→ page 180)	brake control BSR (AT 141) brake voltage supply from motor in ⅄ brake voltage = phase-to-phase voltage
			09 800 03 98 (→ page 137)	brake control BUR/BSR (AT 113) brake voltage supply from motor in ⅄ brake voltage = phase voltage
			09 800 03 98 (→ page 137)	brake control BUR/BSR (AT 113) brake voltage supply from motor in △ brake voltage = phase voltage
	Power supply (brake control) 	ABE8 (replacement type of AME1)	DT71...DV132S(/BMG)/ABE8 	
			08 797 02 02 (→ page 62)	one speed, ⅄ or △ factory-set connection (DT 125)
			09 776 02 97 (→ page 129)	internal brake control (AT 108)
			09 789 05 98 (→ page 134)	external brake control (AT 111)
			09 005 00 04 (→ page 94)	brake control BSR (AT 153) brake voltage supply from motor in ⅄ brake voltage = phase-to-phase voltage
			09 004 00 04 (→ page 90)	brake control BUR/BSR (AT 152) brake voltage supply from motor in ⅄ brake voltage = phase voltage
			09 004 00 04 (→ page 90)	brake control BUR/BSR (AT 152) brake voltage supply from motor in △ brake voltage = phase voltage

Connection Customer end	Cable	Plug connector option	Drive
	Power supply (brake control) 	ABE8 (replace-ment type of AME1)	DV132M...DV180(/BM)/ABE8  08 799 05 98 (→ page 64) — one speed, ⅄ or △ factory-set connection (DT 96) 09 776 02 97 (→ page 129) — internal brake control (AT 108) 09 789 05 98 (→ page 134) — external brake control (AT 111) 09 860 02 03 (→ page 180) — brake control BSR (AT 141) brake voltage supply from motor in ⅄ brake voltage = phase-to-phase voltage 09 800 03 98 (→ page 137) — brake control BUR/BSR (AT 113) brake voltage supply from motor in ⅄ brake voltage = phase voltage 09 800 03 98 (→ page 137) — brake control BUR/BSR (AT 113) brake voltage supply from motor in △ brake voltage = phase voltage
	Power supply (brake control) 	ABC8	DT71...DV160L(/BMG)/ABC8  TF/TH contacts and brake contacts gold-plated Metal locking clip Locking plate closure (see illustration above) 08 799 05 98 (→ page 64) — one speed, ⅄ or △ factory-set connection(DT 96) 09 776 02 97 (→ page 129) — internal brake control(AT 108) 09 789 05 98 (→ page 134) — external brake control (AT 111) 09 860 02 03 (→ page 180) — brake control BSR (AT 141) brake voltage supply from motor in ⅄ brake voltage = phase-to-phase voltage 09 800 03 98 (→ page 137) — brake control BUR/BSR (AT 113) brake voltage supply from motor in ⅄ brake voltage = phase voltage 09 800 03 98 (→ page 137) — brake control BUR/BSR (AT 113) brake voltage supply from motor in △ brake voltage = phase voltage The locking plate (stainless steel type) is attached to a locking clip to prevent inadvertent removal of plug connector. You need a screwdriver to open the clip.
	Power supply (brake control) 	AMD9	DR63(/BR)/AMD9  09 807 02 98 (→ page 140) — brake voltage supply from motor in ⅄ brake voltage = phase-to-phase (AT117)

Connection Customer end	Cable	Plug connector option	Drive	
	Power supply (brake control) 	AMB9 (replace-ment type of AMB1)	DT71...DV132S(/BMG)/AMB9 	
			09 821 0 00 (→ page 152)	brake voltage supply from motor in ⅄ brake voltage = phase-to-phase (AT 131)
			09 822 0 00 (→ page 154)	brake voltage supply from motor in ⅄ brake voltage = phase voltage (AT 132)
			09 852 0 02 (→ page 170)	brake voltage supply from motor in △ brake voltage = phase voltage (AT 135)
	Power supply (brake control) 	AME9 (replace-ment type of AME1)	DT71...DV132S(/BMG)/AME9 	
			09 821 0 00 (→ page 152)	brake voltage supply from motor in ⅄ brake voltage = phase-to-phase (AT 131)
			09 822 0 00 (→ page 154)	brake voltage supply from motor in ⅄ brake voltage = phase voltage (AT 132)
			09 852 0 02 (→ page 170)	brake voltage supply from motor in △ brake voltage = phase voltage (AT 135)

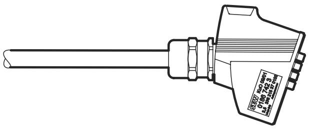
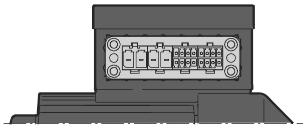
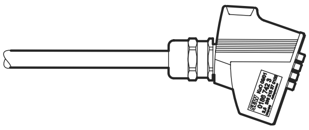
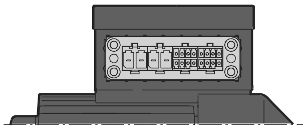
IS plug connector

Connection Customer end	Cable	Plug connector option	Drive
	Power supply (brake control)  Motor delivered with IS top part	IS	DR63(/BR)...DV132S(/BMG) (DT63)  09 760 1 97 (→ page 100) one speed(DT 81) 09 762 01 97 (→ page 105) pole-changing, tapped wound(DT 82) 09 763 3 97 (→ page 107) pole-changing, two separate windings (DT 83) 09 761 2 97 (→ page 102) internal brake control (AT 103) 09 765 3 97 (→ page 111) external brake control (AT 104) 09 764 01 97 (→ page 109) brake control BUR/BSR (AT 105)
	Power supply (brake control)  Motor delivered with cover plate	ISU	DR63(/BR)...DV132S(/BMG) (DT63)  09 760 1 97 (→ page 100) one speed (DT 81) 09 762 01 97 (→ page 105) pole-changing, tapped wound (DT 82) 09 763 3 97 (→ page 107) pole-changing, two separate windings (DT 83) 09 761 2 97 (→ page 102) internal brake control (AT 103) 09 765 3 97 (→ page 111) external brake control (AT 104) 09 764 01 97 (→ page 109) brake control BUR/BSR (AT 105)

Phoenix PlusCon VC VARICON

For information on possible "mating connectors," contact your SEW-EURODRIVE sales representative and quote the SEW-EURODRIVE plug connector option or consult the support services of the manufacturer.

More information is available on the Phoenix Contact website "www.phoenixcontact.com" (search term "SEW").

Connection Customer end	Cable	Plug connector option	Drive
	Power supply (brake control) 	APG1 (predecessor of APG8)	DT71...DT90(/BMG) [factory-set star connection]  08 811 04 99 (→ page 70) one speed (DT 98) 09 809 1 99 (→ page 142) external brake control (AT 118)
	Power supply (brake control) 	APG8	DT71...DT90(/BMG) [factory-set star or delta connection]  08 811 04 99 (→ page 70) one speed (DT 98) 09 809 1 99 (→ page 142) external brake control (AT 118)

3 Wiring Diagrams of Standard Drives

Overview

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08 014 00 04	page 58	AC motor 71-132S with plug connector ADB2, ADE2 Pole-changing 2 separate windings
08 794 02 02	page 60	AC motor with plug connector ACB8, ACE8, ASB7, ASE7, ASB8, ASE8 One speed
08 797 02 02	page 62	AC brake motor with plug connector ABB1, ABB7, ABB8, ABE1, ABE7, ABE8 One speed
08 799 05 98	page 64	AC motor 132M-180 with plug connector ABB1, ABB7, ABB8, ABC8 (71-180), ABE1, ABE7, ABE8, AMA1, AMD1 One speed
08 800 02 98	page 66	AC motor 132M-180 with plug connector AMA1, AMD1, ADB2, ADE2 Pole-changing 2 separate windings
08 801 02 98	page 68	AC motor 132M-180 with plug connector AMA1, AMD1, ADB2, ADE2 Pole-changing Tapped wound circuit
08 811 03 99	page 70	AC motor with plug connector APG1 One speed
08 823 02 02	page 72	AC motor with plug connector ACA8, ACD8, ASA8, ASD8 One speed
08 849 01 02	page 74	AC motor with plug connector ACB1, ACE1, ASB1, ASE1, ASK1 One speed
08 850 01 02	page 76	AC motor with plug connector ACB1, ACE1, ASB1, ASE1 Pole-changing 2 separate windings
08 851 01 02	page 78	AC motor with plug connector ACB1, ACE1, ASB1, ASE1 Pole-changing Tapped wound circuit
08 852 01 02	page 80	AC motor with plug connector AMB1, AMB7, AMB8, AME1, AME7, AME8 One speed
08 853 02 02	page 82	AC motor with plug connector AMB1, AMB2, AME1, AME2 Pole-changing 2 separate windings
08 854 01 02	page 84	AC motor with plug connector AMB1, AMB2, AME1, AME2 Pole-changing Tapped wound circuit
08 858 01 03	page 86	AC motor 132M-180 with plug connector ADE2, ADE2 One speed
08 887 00 04	page 88	AC motor with plug connector AMB2, AME2 One speed
09 004 00 04	page 90	AC brake motor 71-132S with plug connector ABB, ABE8 Brake control BUR, BSR Brake voltage = phase voltage

Wiring diagram number	Page	
09 005 00 04	page 94	AC brake motor 71-132S with plug connector ABB, ABE8 Brake control BSR Brake voltage = phase-to-phase voltage
09 035 00 04	page 96	AC brake motor 71-132S with plug connector ADB2, ADE2 Brake control BUR, BSR Brake voltage = phase voltage
09 760 197	page 100	AC motor with plug connector IS One speed
09 761 297	page 102	AC brake motor with plug connector IS Brake control BGE, BG
09 762 01 97	page 105	AC motor with plug connector IS Pole-changing Tapped wound circuit
09 763 397	page 107	AC motor with plug connector IS Pole-changing 2 separate windings
09 764 01 97	page 109	AC brake motor 63-132S with plug connector IS Brake control BUR, BSR Brake voltage = phase voltage
09 765 397	page 111	AC brake motor with plug connector IS Brake control in switch cabinet
09 768 03 97	page 113	AC motor with plug connector ACA1, ACA2, ACD1, ACD2, ASA1, ASAX, ASD1, KSAX, KSDX One speed
09 769 03 97	page 115	AC motor with plug connector ACA1, ACD1, ASA1, ASD1 Pole-changing 2 separate windings
09 770 03 97	page 117	AC motor with plug connector ACA1, ACD1, ASA1, ASD1, KSAX Pole-changing Tapped wound circuit
09 771 03 97	page 119	AC motor with plug connector AMA1, AMA5, AMAX, AMD1, AMD8, KMAX One speed
09 772 03 97	page 121	AC motor with plug connector AMA1, AMD1, AMD2 Pole-changing 2 separate windings
09 773 03 97	page 123	AC motor with plug connector AMA1, AMD1, AMD2 Pole-changing Tapped wound circuit
09 774 02 97	page 125	AC brake motor with plug connector ACA1, ACA2, ACB1, ACD1, ACE1, ASA1, ASB1, ASD1, ASE1 Internal brake control
09 775 02 97	page 127	AC brake motor 63-132S with plug connector ACA1, ACD1, ASA1, ASD1 Brake control BUR, BSR Brake voltage = phase voltage
09 776 02 97	page 129	AC brake motor with plug connector ABB1, ABB7, ABB8, ABC8, ABE7, ABE8, ADB2, ADE2, AMA1, AMB1, AMB2, AMB7, AMB8, AMD1, AMD2, AMD8, AME1, AME2, AME7, AME8 Internal brake control
09 777 03 97	page 132	AC brake motor 63-132S with plug connector AMA1, AMD1, AMA8, AMD8(63) Brake control BUR, BSR Brake voltage = phase voltage

Wiring diagram number	Page	
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09 800 03 98	page 137	AC brake motor 132M-180 with plug connector ABB8, ABC8 (71-180), ABE8 Brake control BUR, BSR Brake voltage = phase voltage
09 807 02 98	page 140	AC brake motor with plug connector AMAX, AMD9 Brake control BGE, BG Voltage supply from motor
09 809 199	page 142	AC brake motor with plug connector APG1 Brake control system in the control cabinet
09 818 01 02	page 145	AC brake motor with plug connector ACB1, ACE1, ASB1, ASE1 Brake control BUR, BSR Brake voltage = phase voltage
09 819 02 02	page 148	AC brake motor 71-132S with plug connector AMB1, AME1, AMB8, AME8 Brake control BUR, BSR Brake voltage = phase voltage
09 821 000	page 152	AC brake motor with plug connector AMB9, AME9 Motor in ⅄ connection Brake voltage = phase-to-phase voltage
09 822 000	page 154	AC brake motor with plug connector AMB9, AME9 Motor in ⅄ connection Brake voltage = phase voltage
09 841 002	page 156	AC brake motor with plug connector ASB9, ASE9 Motor in ⅄ connection Brake voltage = phase-to-phase voltage
09 842 002	page 158	AC brake motor with plug connector ASB9, ASE9 Motor in ⅄ connection Brake voltage = phase voltage
09 844 002	page 160	AC brake motor with plug connector ASK1 Brake control BGE, BG, BUR External voltage supply
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09 850 02 02	page 165	AC brake motor with plug connector ACB8, ACE8, ASB8, ASE8 Brake control BUR, BSR
09 851 002	page 168	AC brake motor with plug connector ACB9, ASE9 Motor in △ connection Brake voltage = phase voltage
09 852 002	page 170	AC brake motor with plug connector AMB9, AME9 Motor in △ connection Brake voltage = phase voltage
09 853 02 02	page 172	AC brake motor 71-132S with plug connector AMB1, AME1, AMB8, AME8 Brake control BSR Brake voltage = phase-to-phase voltage
09 857 01 02	page 174	AC brake motor with plug connector ACA8, ACB8, ACD8, ACE8, ASA8, ASB7, ASB8, ASD8, ASE7, ASE8 Internal brake control
09 858 02 02	page 177	AC brake motor 63-132S with plug connector ACA8, ACD8, ASA8, ASD8 Brake control BSR

Wiring diagram number	Page	
09 860 02 03	page 180	AC brake motor 132M-180 with plug connector ABB8, ABC8 (71-180), ABE8 Brake control BSR Brake voltage = phase-to-phase voltage
09 870 00 04	page 183	AC brake motor 71-132S with plug connector AMB2, AME2 Brake control BUR, BSR Brake voltage = phase voltage
09 871 02 04	page 187	AC brake motor 132M-180 with plug connector ADB2, ADE2, AXB2, AXE2 Brake control BUR, BSR Brake voltage = phase voltage
09 874 02 04	page 191	AC brake motor 63-132S with plug connector AMA1(71-132S), AMD1 Brake control BSR Brake voltage = phase-to-phase voltage

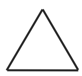
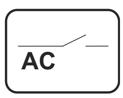
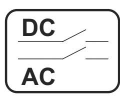
General information

The following applies to all wiring diagrams:

- View of connection end
- Change in direction of rotation: Reversal of 2 incoming cables
- In brake motors:
  - Apply voltage to release the brake (see nameplate). Contacts operate in parallel to motor contactor.
  - Contact rating of brake contactors: AC3 according to EN 60947-4-1
- Colors according to SEW-EURODRIVE table:

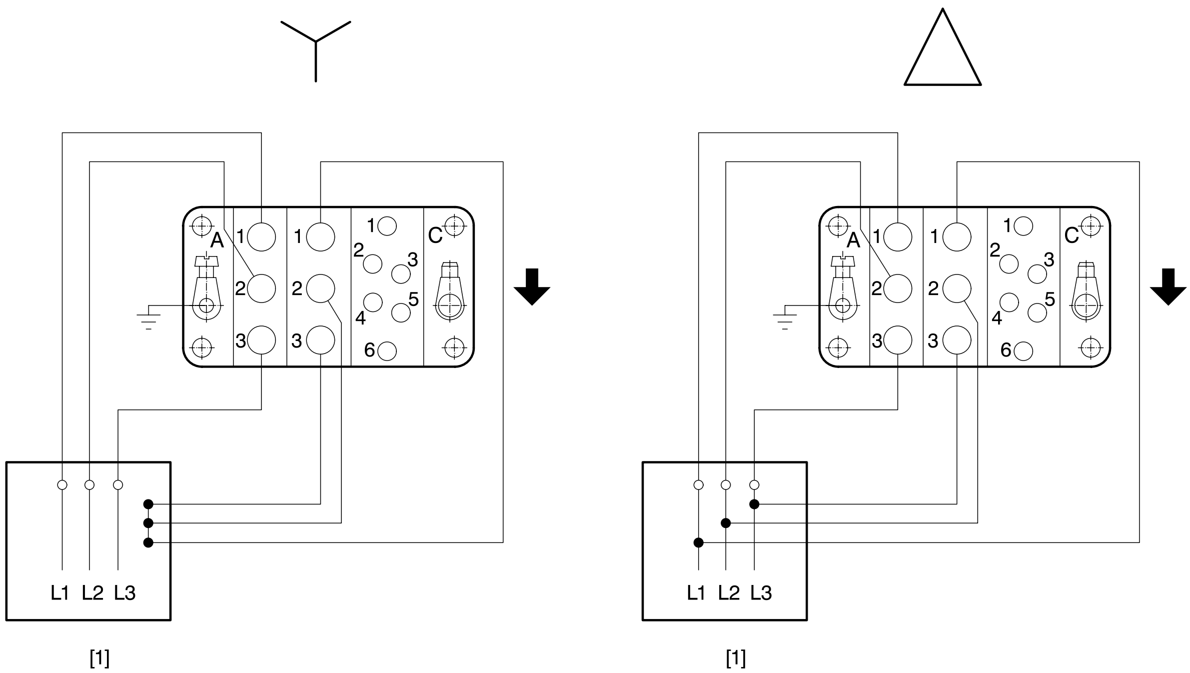
Color code	Color
BK	Black
BKWH	Black/white
BN	Brown
BU	Blue
GN	Green
GNYE	Green/yellow
GY	Gray
GYPK	Gray/pink
OG	Orange
PK	Pink
RD	Red
RDBU	Red/blue
RDWH	Red/white
VT	Violet
WH	White
YE	Yellow

Symbols used

	Plug connector (to be connected by the customer)
	Plug connector (connected in factory)
	Star connection
	Delta connection
	Cut-off in the AC circuit (standard application of the brake)
	Cut-off in the DC and AC circuits (rapid application of the brake)

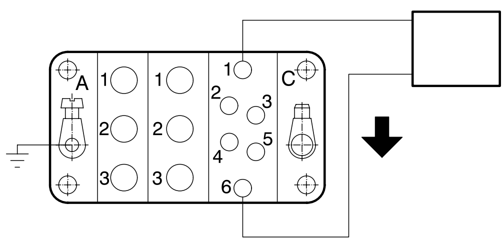
08 013 00 04 AC motor 71-132S with plug connector ADB2, ADE2
One speed

08 013.04_1



[1] Switch cabinet

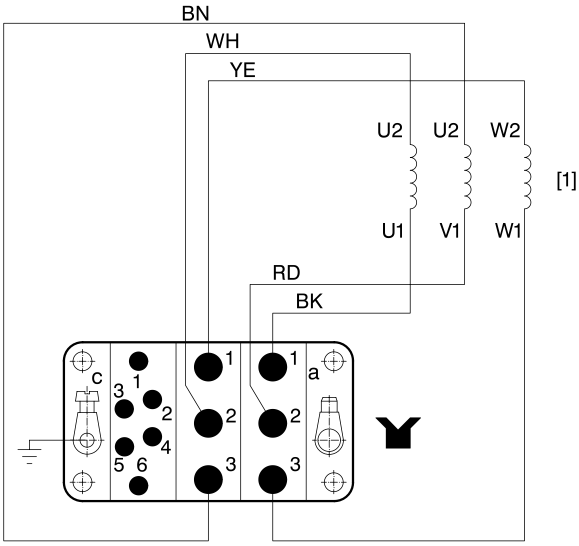
08 013.04_2 Motor protection



[1]

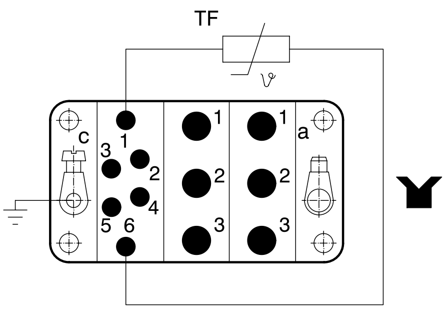
[1] Evaluation

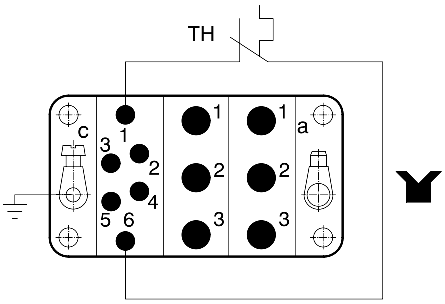
08 013.04_3 ADB2, ADE2



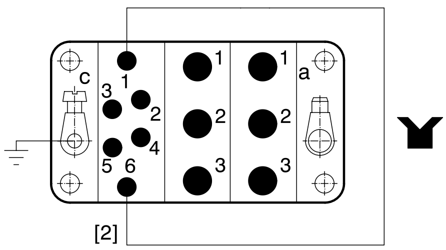
[1] Motor winding

08 013.04_4 Motor protection





[1]



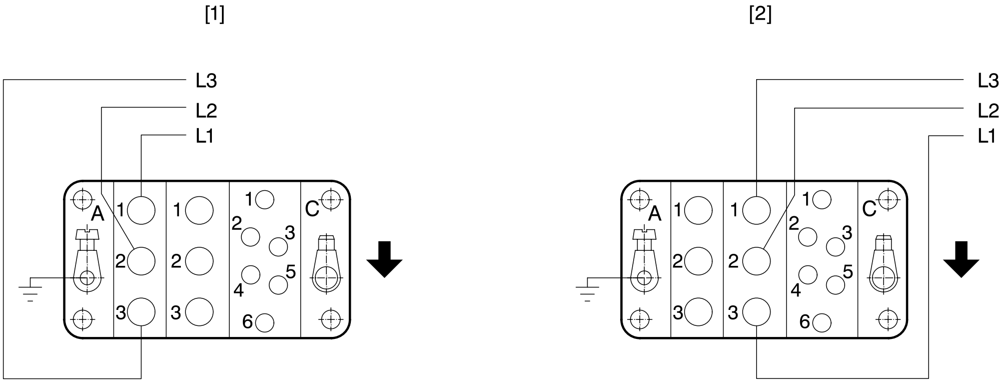
[1] Always with jumper if no TF/TH
[2] Jumper for monitoring

08 014 00 04 AC motor 71-132S with plug connector ADB2, ADE2

Pole-changing

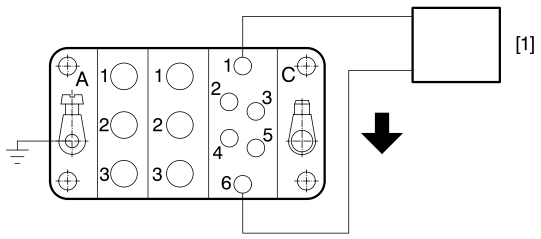
2 separate windings

08 014.04_1



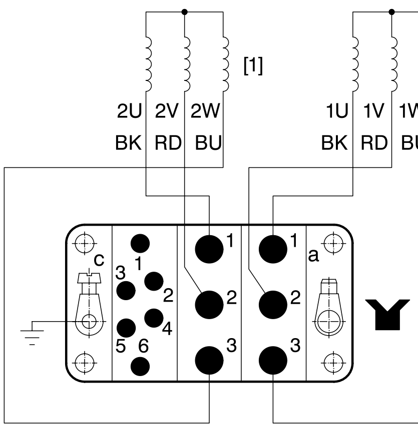
[1] Low speed
[2] High speed

08 014.04_2 Motor protection



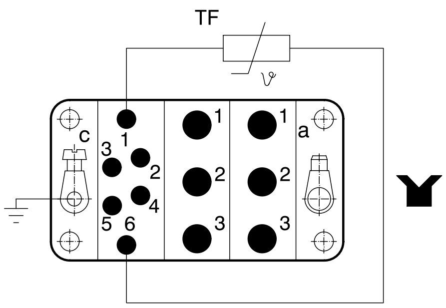
[1] Evaluation

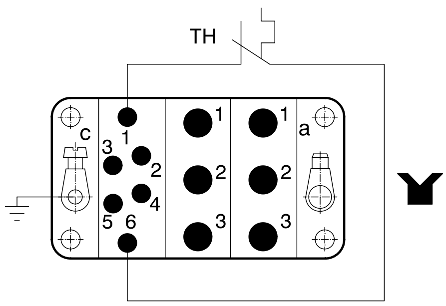
08 014.04_3 ADB2, ADE2



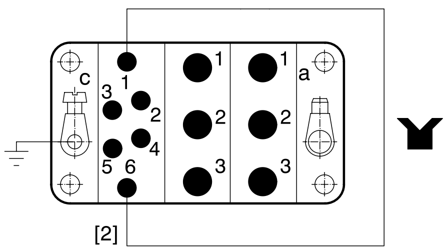
[1] Motor winding

08 014.04_4 Motor protection





[1]

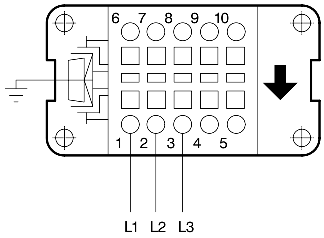


[1] Always with jumper if no TF/TH
[2] Jumper for monitoring

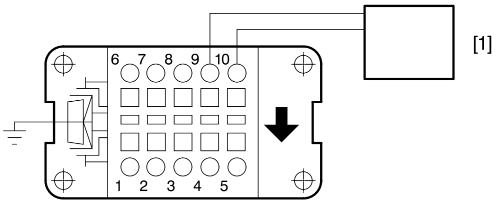
08 794 02 02 AC motor with plug connector ACB8, ACE8, ASB7, ASE7, ASB8, ASE8

One speed

08 794.02_1

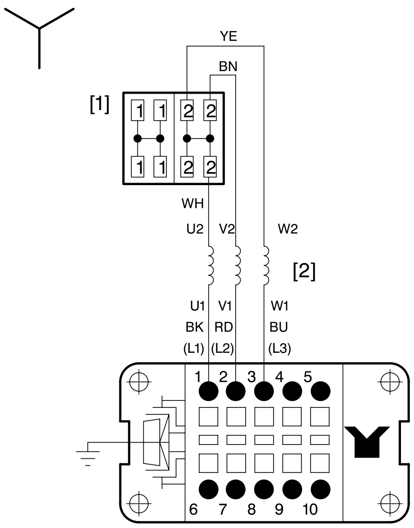


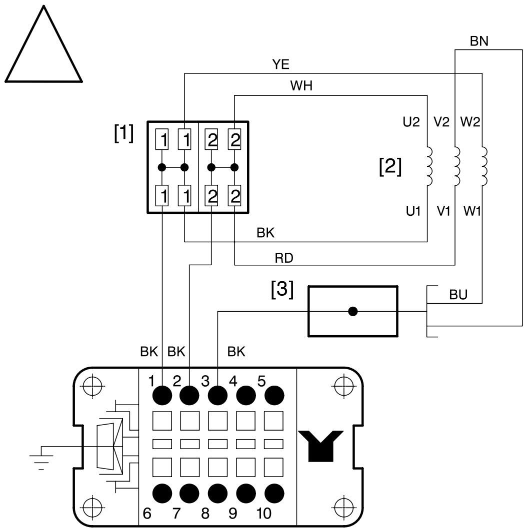
08 794.02_2 Motor protection



[1] Evaluation

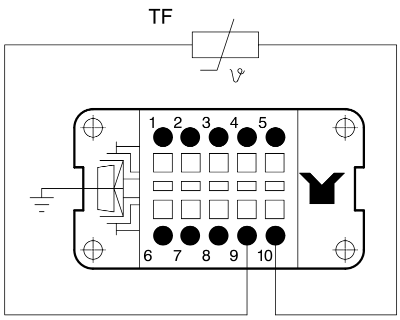
08 794.02_3 ACB8, ACE8, ASB7, ASE7, ASB8, ASE8

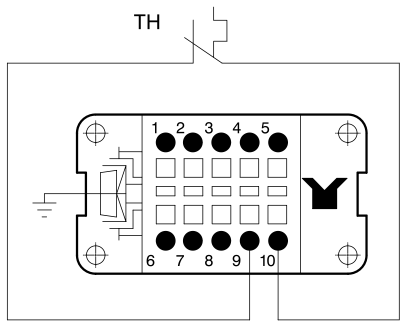


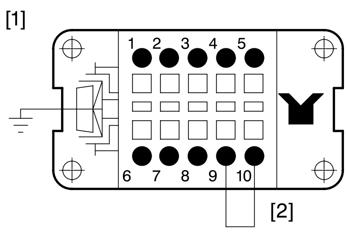


[1] Terminal board
[2] Motor winding
[3] Auxiliary terminal

08 794.02_4 Motor protection





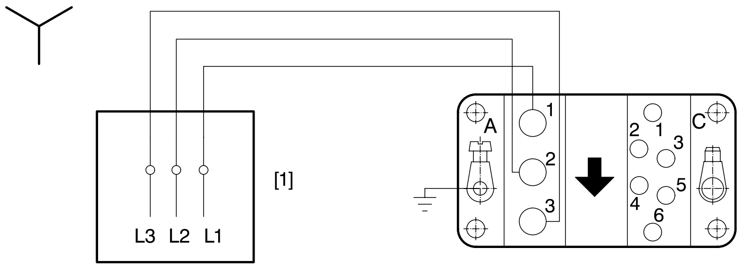


[1] Always with jumper if no TF/TH
[2] Monitoring jumper

08 797 02 02 AC brake motor with plug connector ABB1, ABB7, ABB8, ABE1, ABE7, ABE8

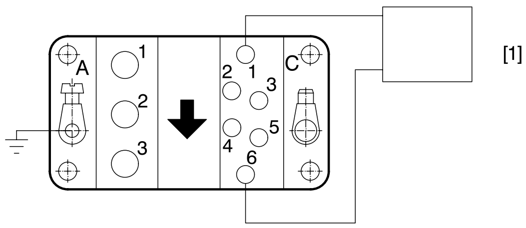
One speed

08 797.02_1



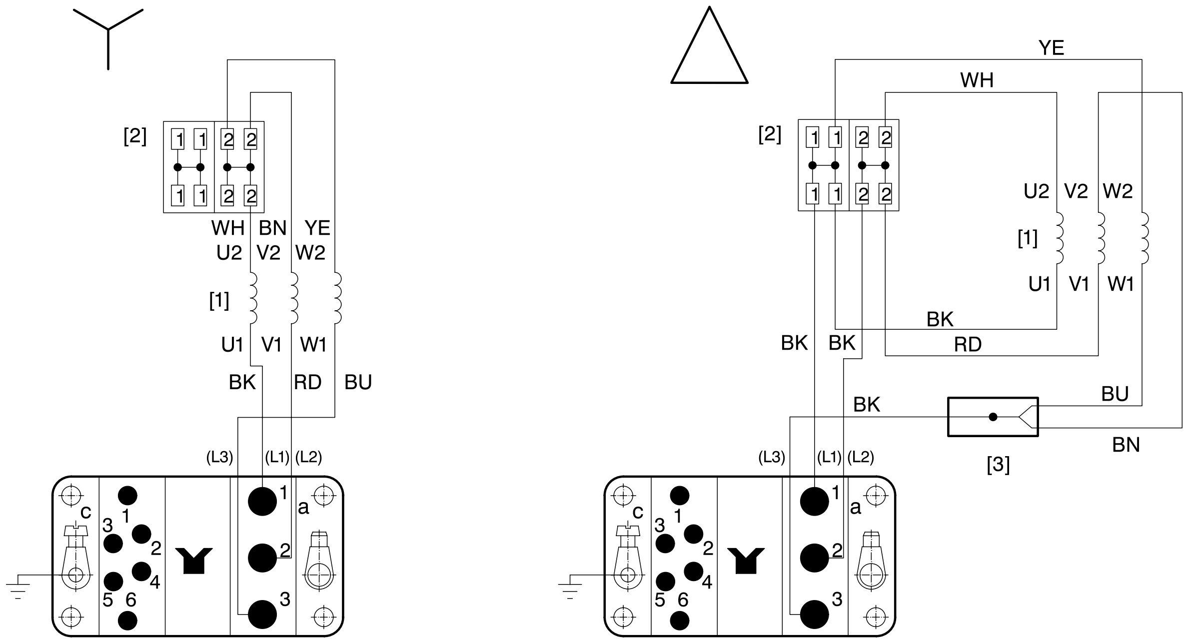
[1] Switch cabinet

08 797.02_2 Motor protection



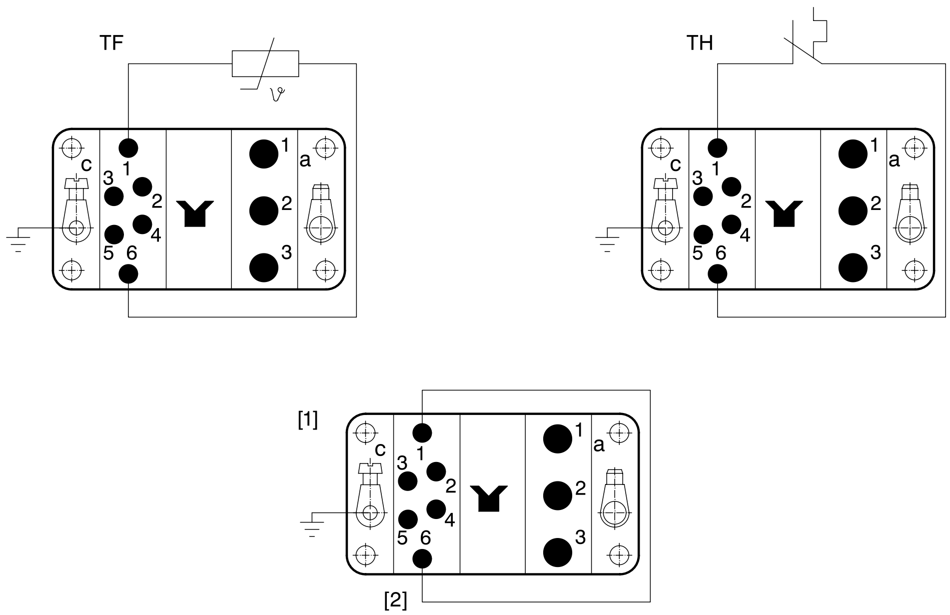
[1] Switch cabinet

08 797.02_3 ABB1, ABB7, ABB8, ABE1, ABE7, ABE8



[1] Motor winding
[2] Terminal strip
[3] Auxiliary terminal

08 797.02_04 Motor protection

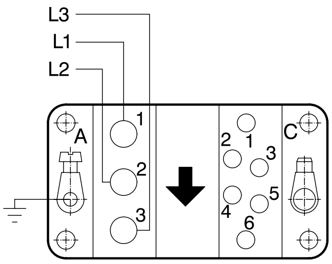


[1] Always with jumper if no TF/TH
[2] Jumper for monitoring

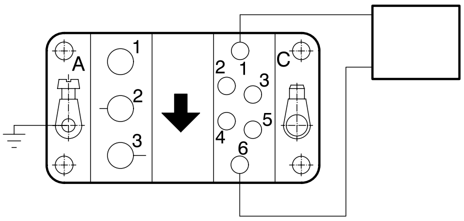
08 799 05 98 AC motor 132M-180 with plug connector ABB1, ABB7, ABB8, ABC8 (71-180), ABE1, ABE7, ABE8, AMA1, AMD1

One speed

08 799.98_1

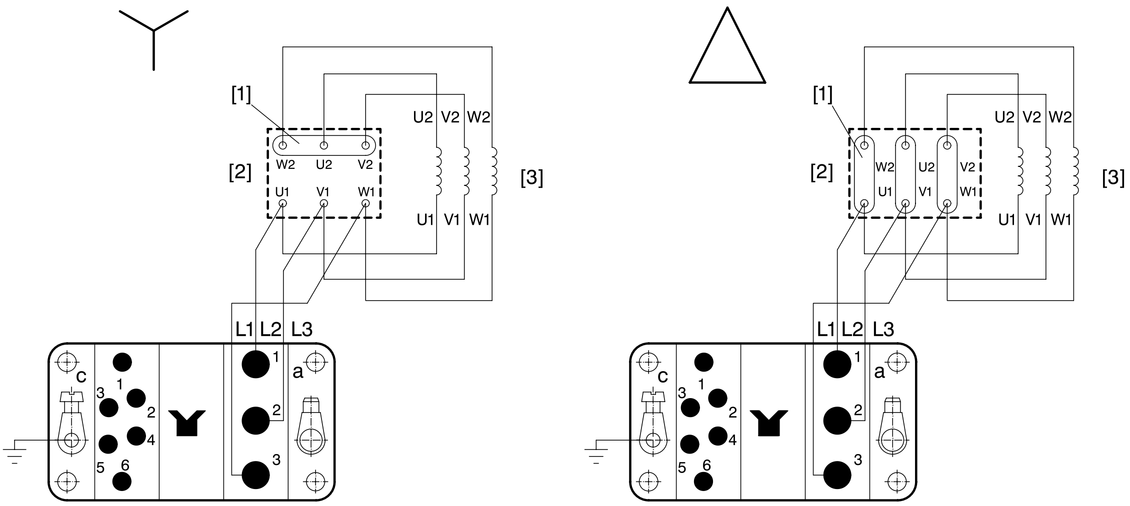


08 799.98_2 Motor protection



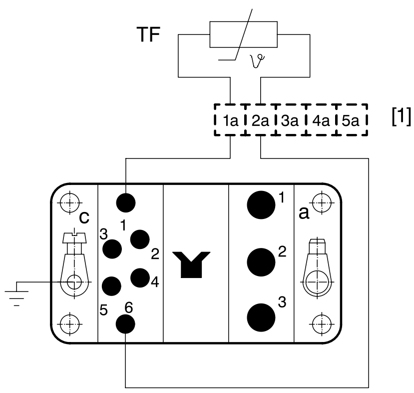
[1] Evaluation

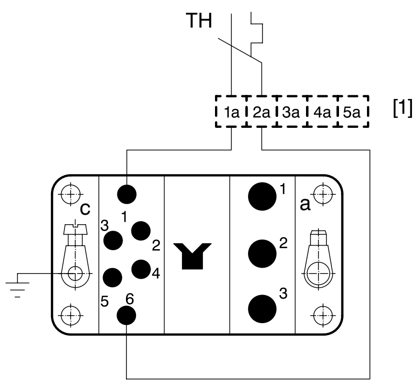
08 799.98_3 ABB1, ABB7, ABB8, ABC8 (71-180), ABE1, ABE7, ABE8, AMA1, AMD1

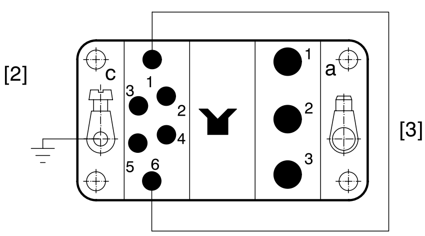


[1] Terminal board
[2] Motor winding
[3] Auxiliary terminal

08 799.98_4 Motor protection







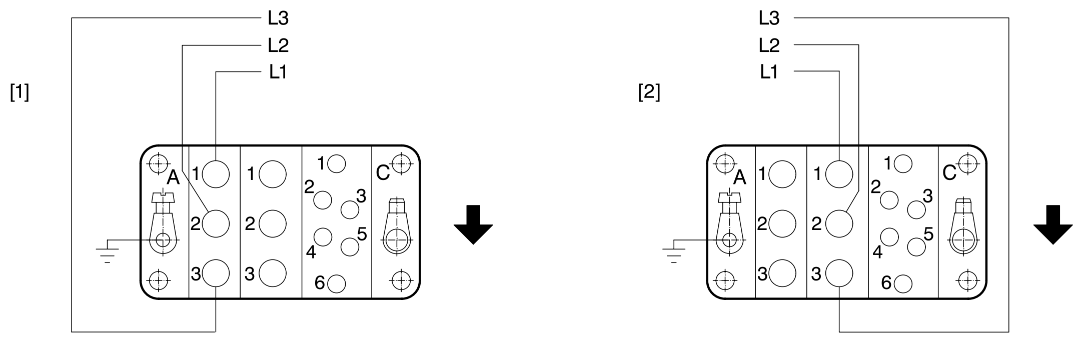
[1] Terminal strip (only with ABC8)
[2] Always with jumper if no TF/TH
[3] Monitoring jumper

08 800 02 98 AC motor 132M-180 with plug connector AMA1, AMD1, ADB2, ADE2

Pole-changing

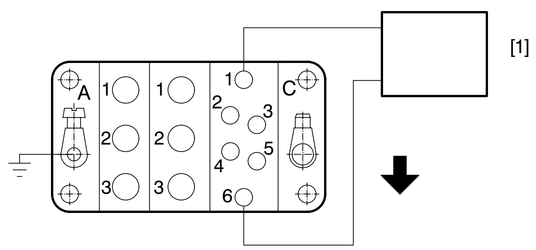
2 separate windings

08 800.98_1



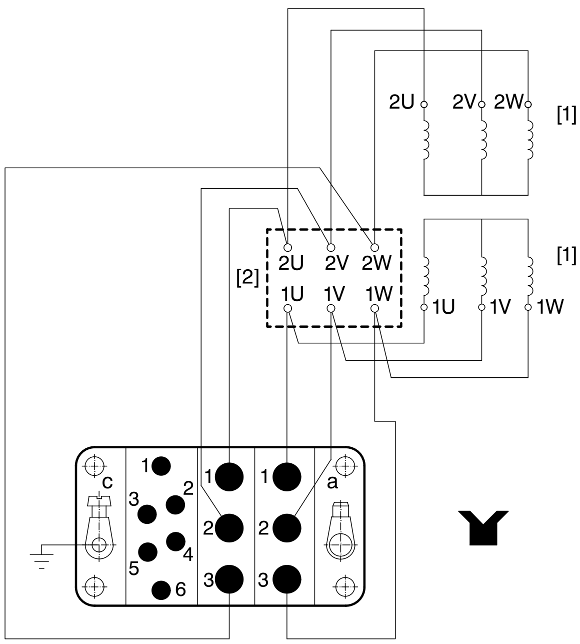
[1] Low speed
[2] High speed

08 800.98_2 Motor protection



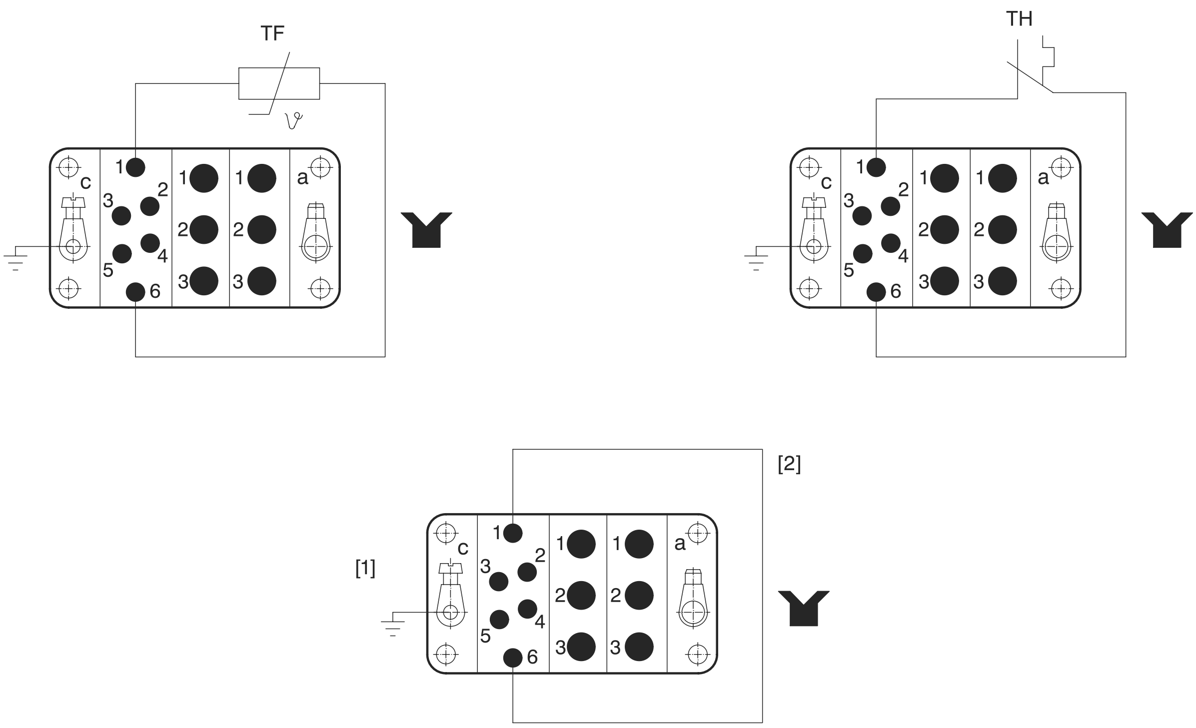
[1] Evaluation

08 800.98_3 AMA1, AMD1, ADB2, ADE2



[1] Motor winding, fixed star point
[2] Terminal board

08 800.98_4



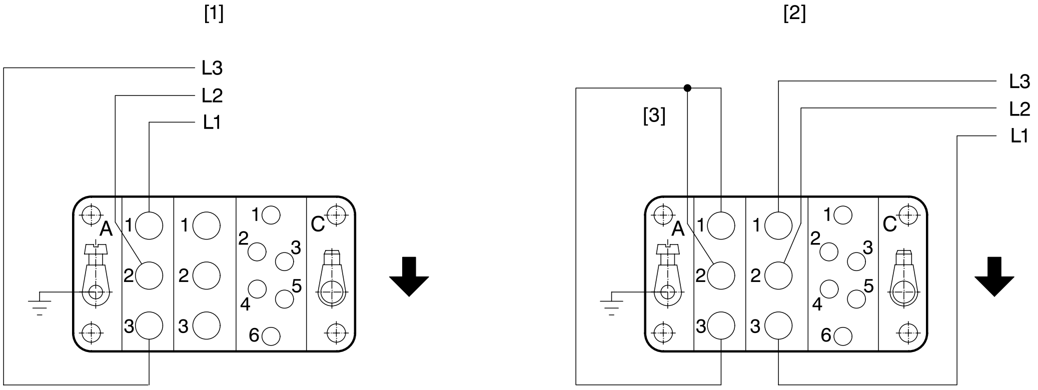
[1] Always with jumper if no TF/TH
[2] Monitoring jumper

08 801 02 98 AC motor 132M-180 with plug connector AMA1, AMD1, ADB2, ADE2

Pole-changing

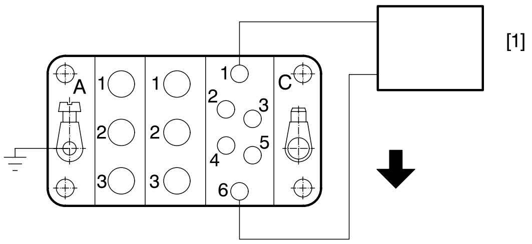
Tapped wound circuit

08 801.98_1



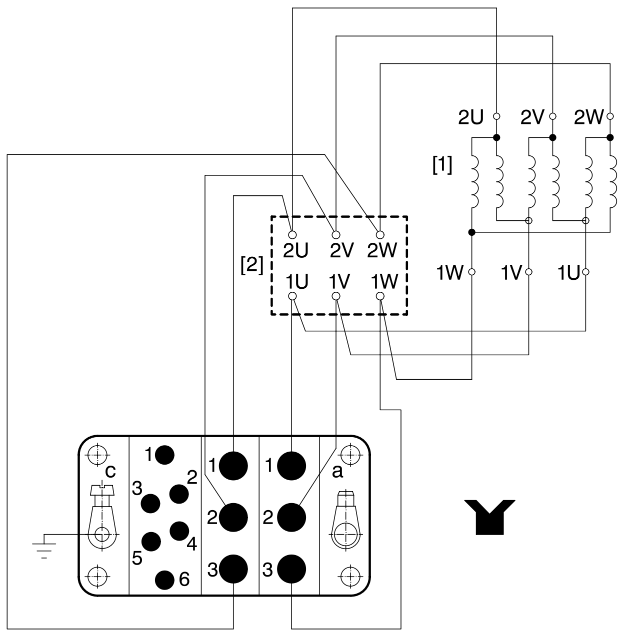
[1] Low speed
[2] High speed
[3] Star point, by customer

08 801.98_2 Motor protection



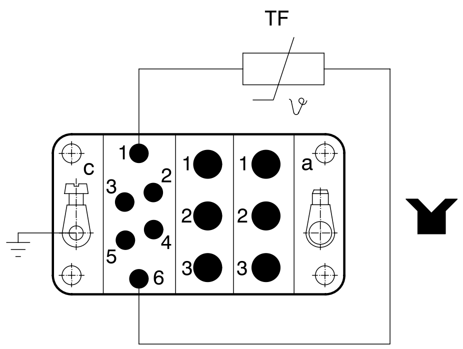
[1] Evaluation

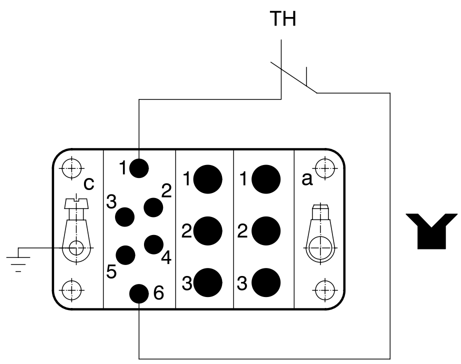
08 801.98_3 AMA1, AMD1, ADB2, ADE2

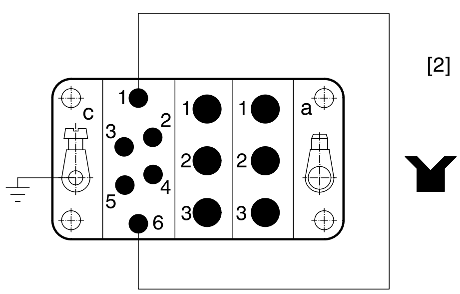


[1] Motor winding
[2] Terminal board

08 801.98_4 Motor protection





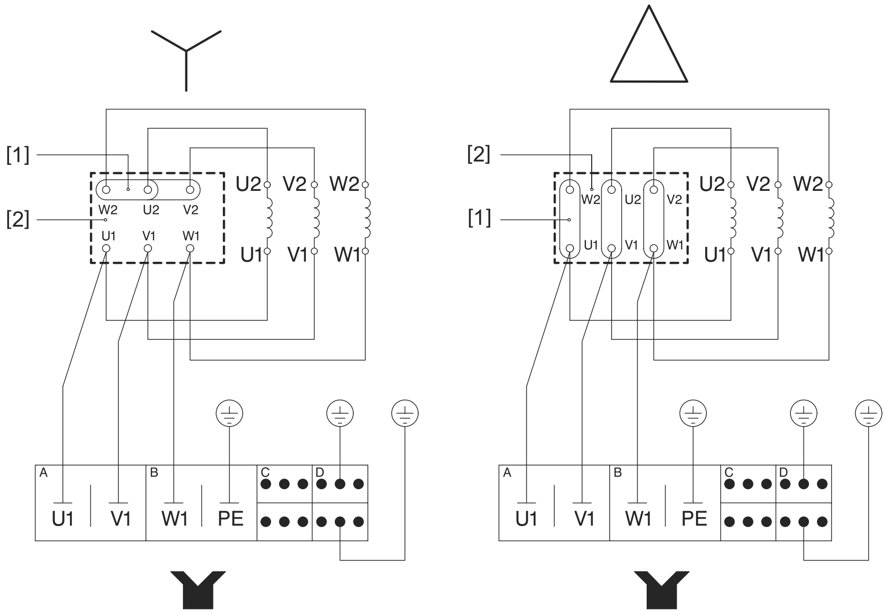


[1] Always with jumper if no TF/TH
[2] Monitoring jumper

08 811 03 99 AC motor with plug connector APG1, APG8

One speed

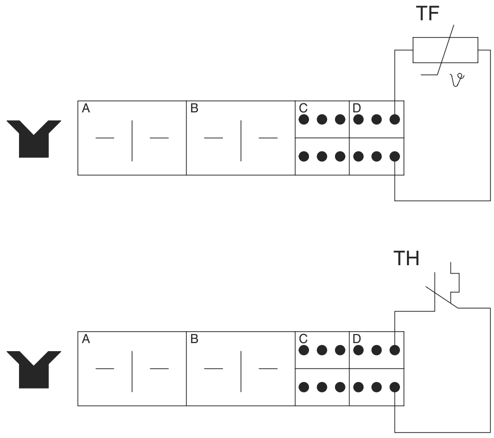
08 811.99_1 Factory connected (star: APG1, star or delta: APG8)



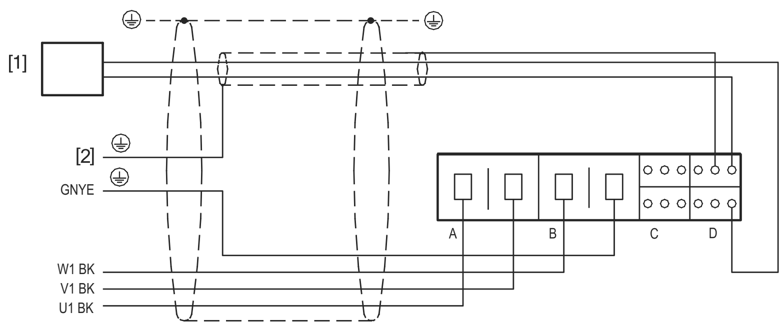
[1] Terminal link
[2] Terminal board

Customer must rewire on motor end with APG1 for △ connection

08 811.99_2 Motor protection



08 811.99_3

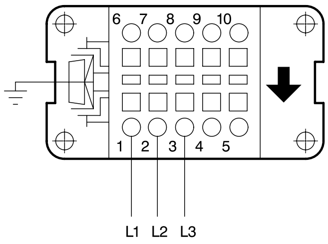


[1] Evaluation
[2] Shield

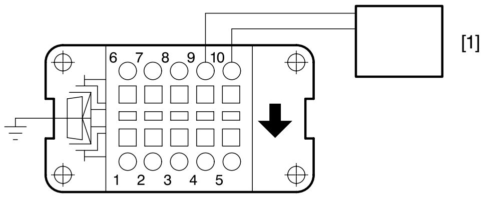
08 823 02 02 AC motor with plug connector ACA8, ACD8, ASA8, ASD8

One speed

08 823.02_1

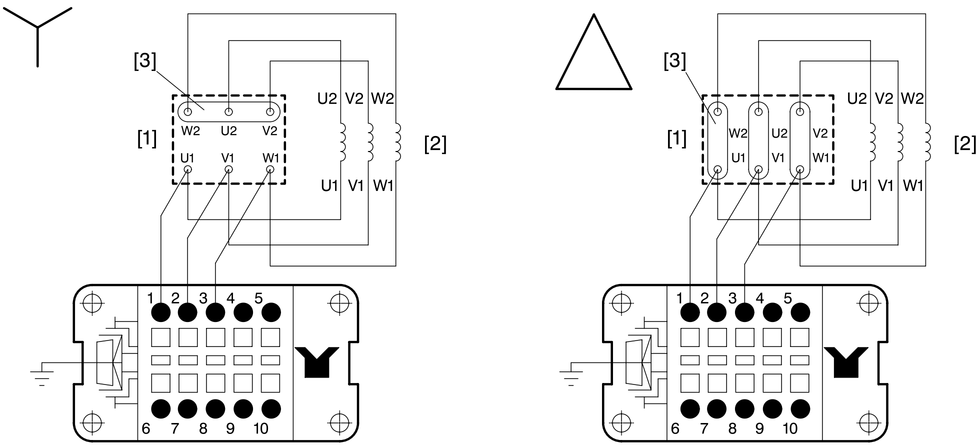


08 823.02_2 Motor protection



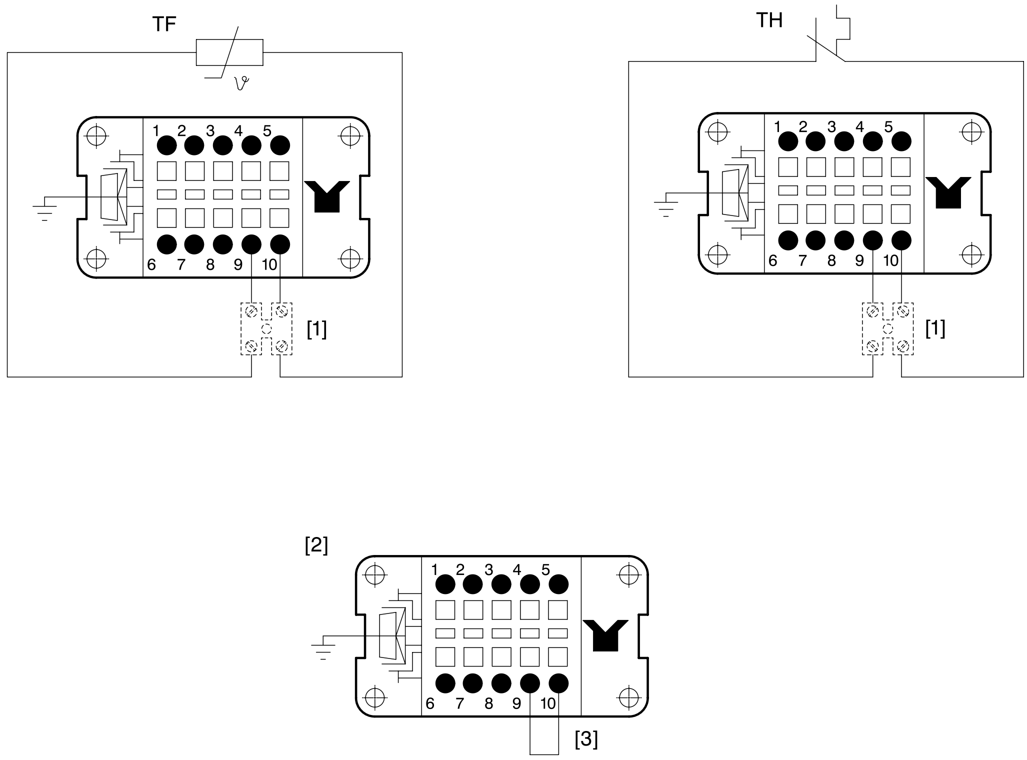
[1] Evaluation

08 823.02_3 ACA8, ACD8, ASA8, ASD8



[1] Terminal board
[2] Motor winding
[3] Terminal link

08 823.02_4 Motor protection

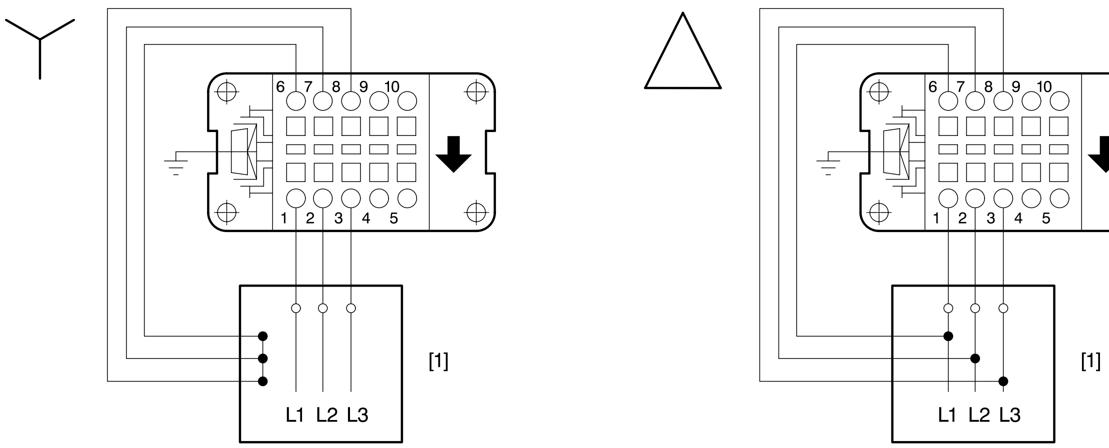


[1] Terminal strip (only with DR63)
[2] Always with jumper if no TF/TH
[3] Monitoring jumper

08 849 01 02 AC motor with plug connector ACB1, ACE1, ASB1, ASE1, ASK1

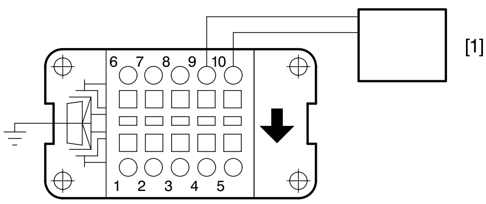
One speed

08 849.02_1



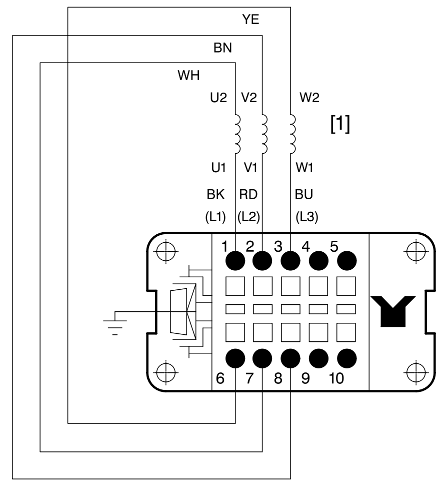
[1] Switch cabinet

08 849.02_2 Motor protection



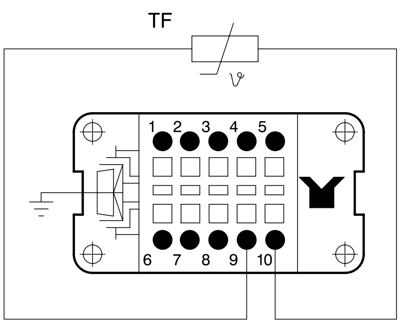
[1] Evaluation

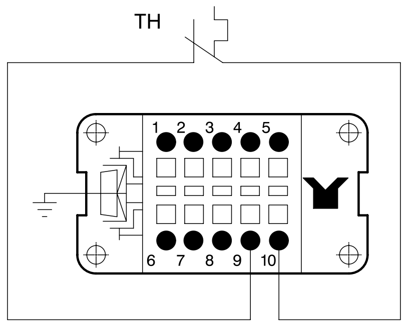
08 849.02_3 ACB1, ACE1, ASB1, ASE1, ASK1

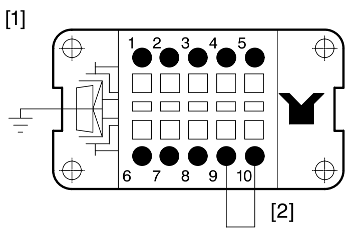


[1] Motor winding

08 849.02_4 Motor protection







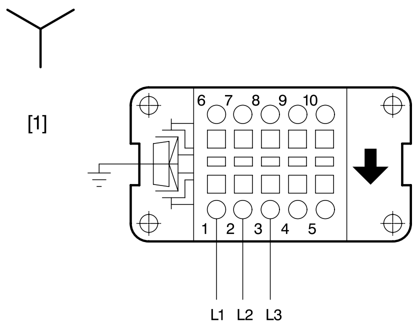
[1] Always with jumper if no TF/TH
[2] Monitoring jumper

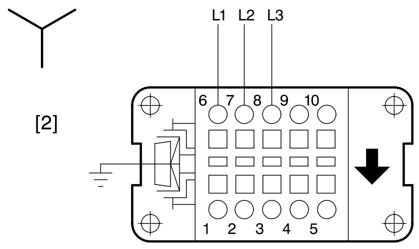
08 850 01 02 AC motor with plug connector ACB1, ACE1, ASB1, ASE1

Pole-changing

2 separate windings

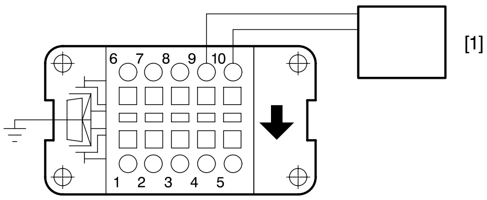
08 850.02_1





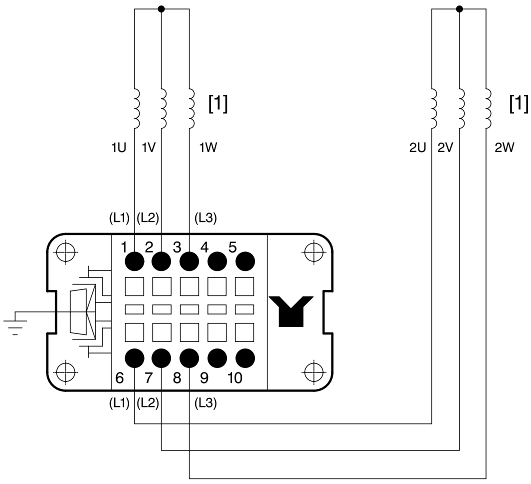
[1] Low speed
[2] High speed

08 850.02_2 Motor protection



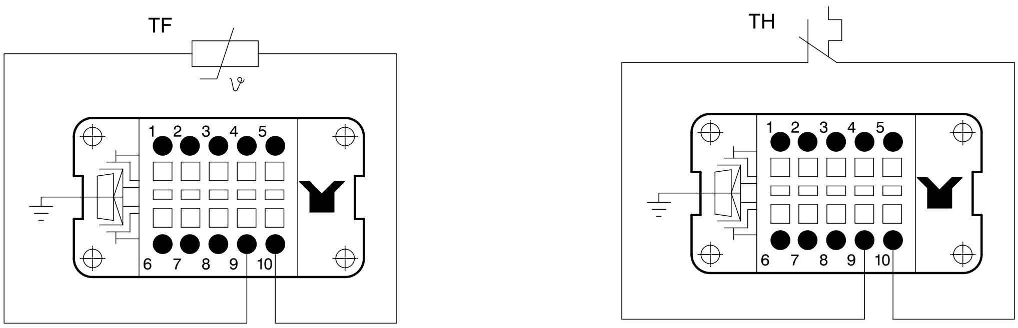
[1] Evaluation

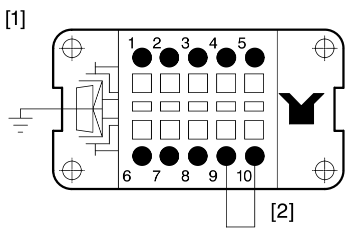
08 850.02_3 ACB1, ACE1, ASB1, ASE1



[1] Motor winding, fixed star point

08 850.02_4 Motor protection





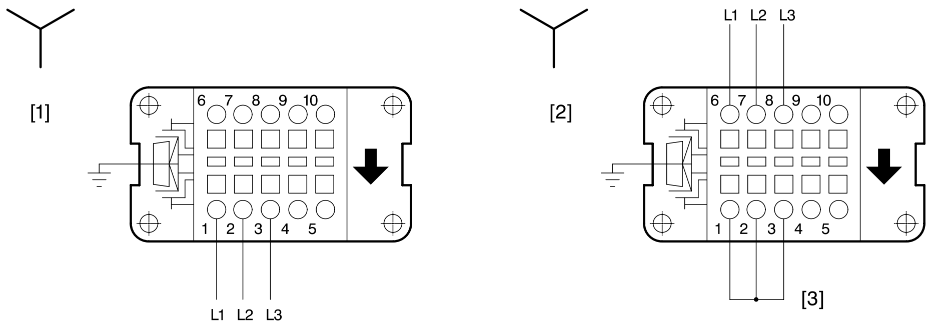
[1] Always with jumper if TF/TH
[2] Monitoring jumper

08 851 01 02 AC motor with plug connector ACB1, ACE1, ASB1, ASE1

Pole-changing

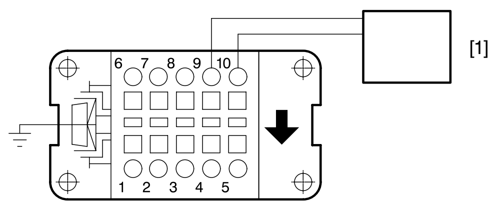
Tapped wound circuit

08 851.02_1



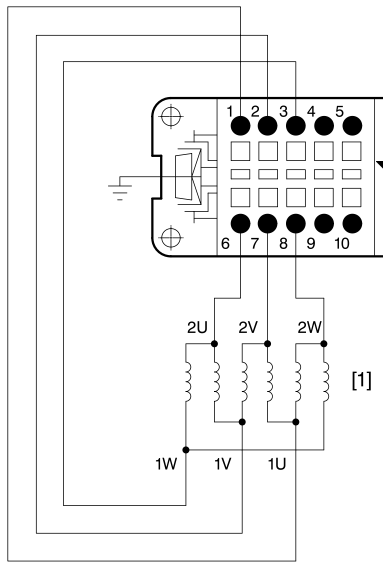
[1] Low speed
[2] High speed
[3] Star point, by customer

08 851.02_2 Motor protection



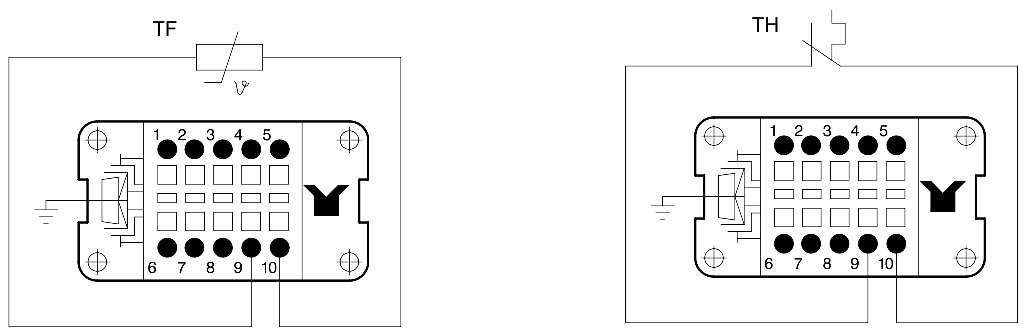
[1] Evaluation

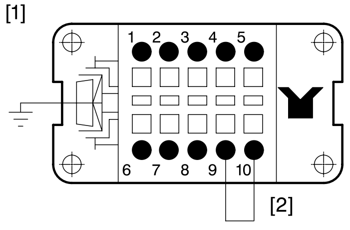
08 851.02_3 ACB1, ACE1, ASB1, ASE1



[1] Motor winding

08 851.02_4 Motor protection



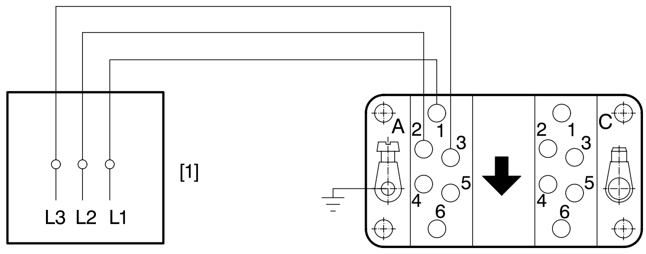


[1] Always with jumper if no TF/TH
[2] Monitoring jumper

08 852 01 02 AC motor with plug connector AMB1, AMB7, AMB8, AME1, AME7, AME8

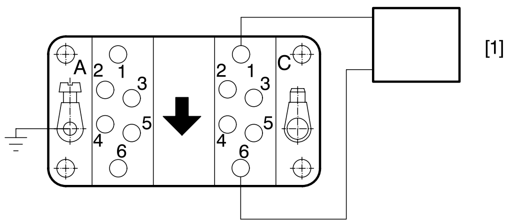
One speed

08 852.02_1



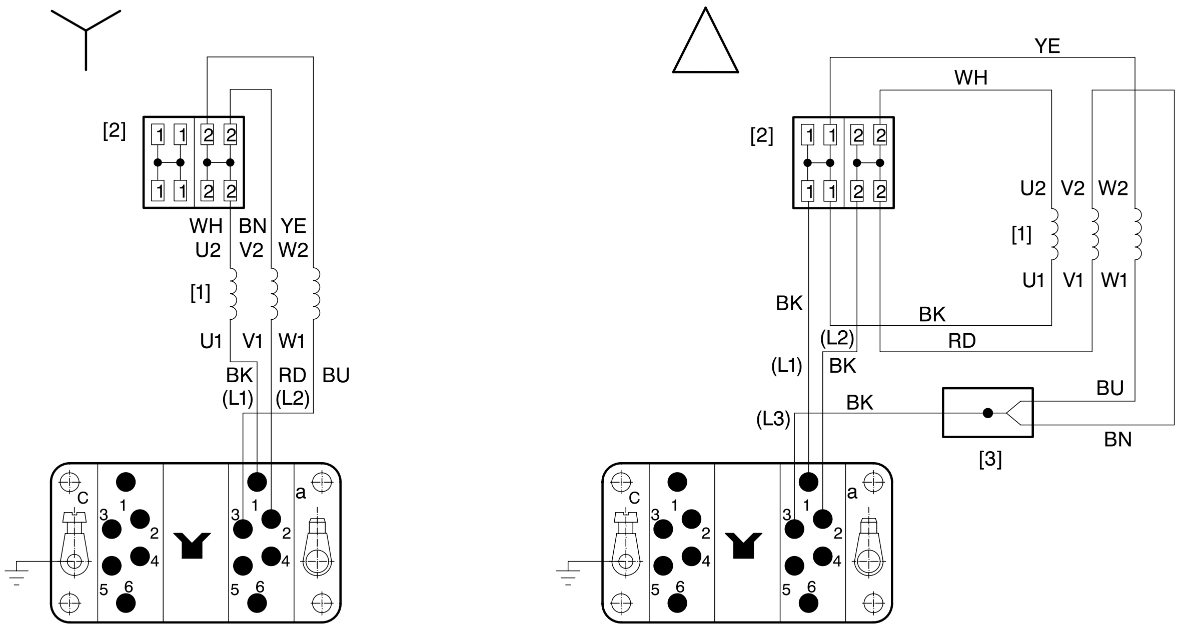
[1] Switch cabinet

08 852.02_2 Motor protection



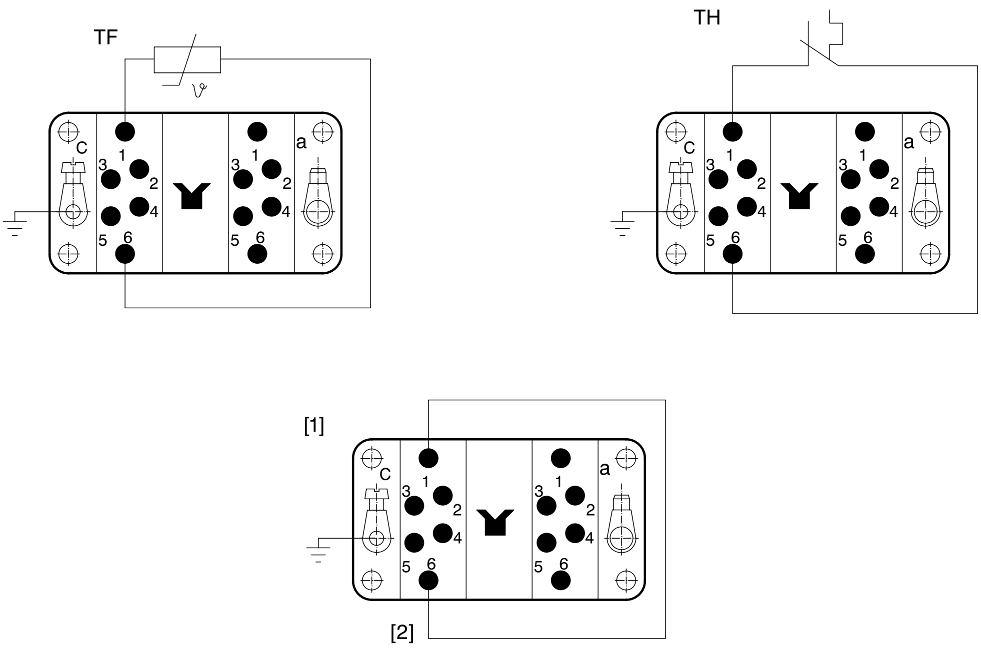
[1] Evaluation

08 852.02_3 AMB1, AMB7, AMB8, AME1, AME7, AME8



[1] Motor winding
[2] Terminal strip
[3] Auxiliary terminal

08 852.02_4 Motor protection



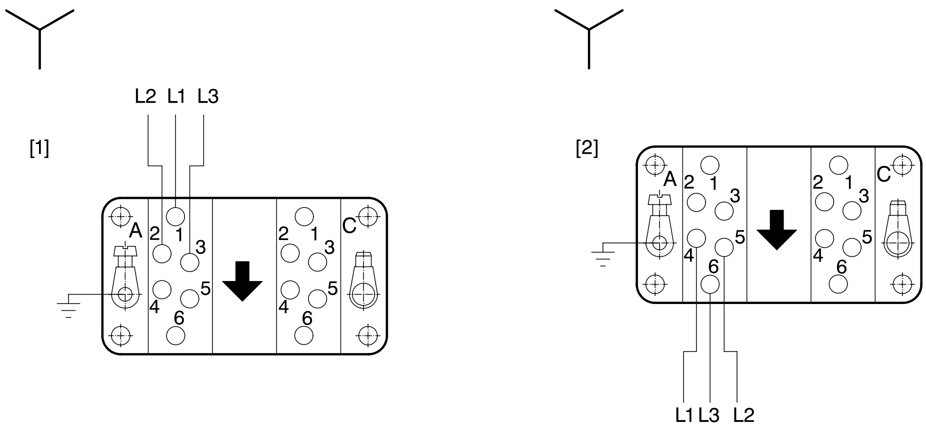
[1] Always with jumper if no TF/TH
[2] Monitoring jumper

08 853 02 02 AC motor with plug connector AMB1, AMB2, AME1, AME2

Pole-changing

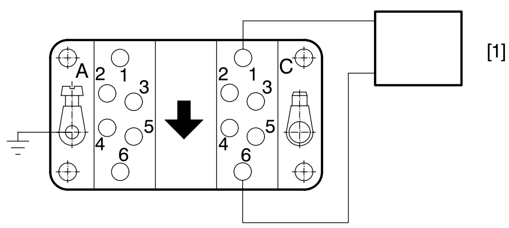
2 separate windings

08 853.02_1



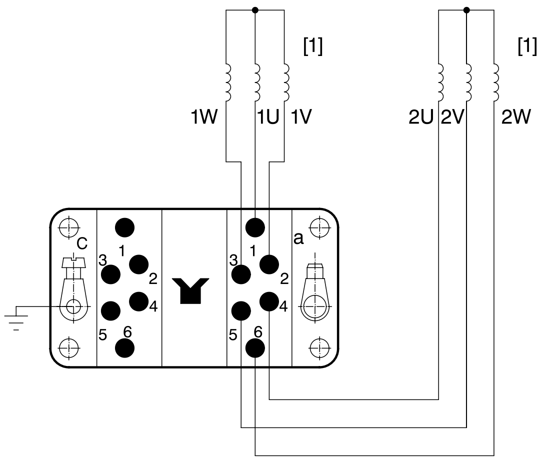
[1] Low speed
[2] High speed

08 853.02_2 Motor protection



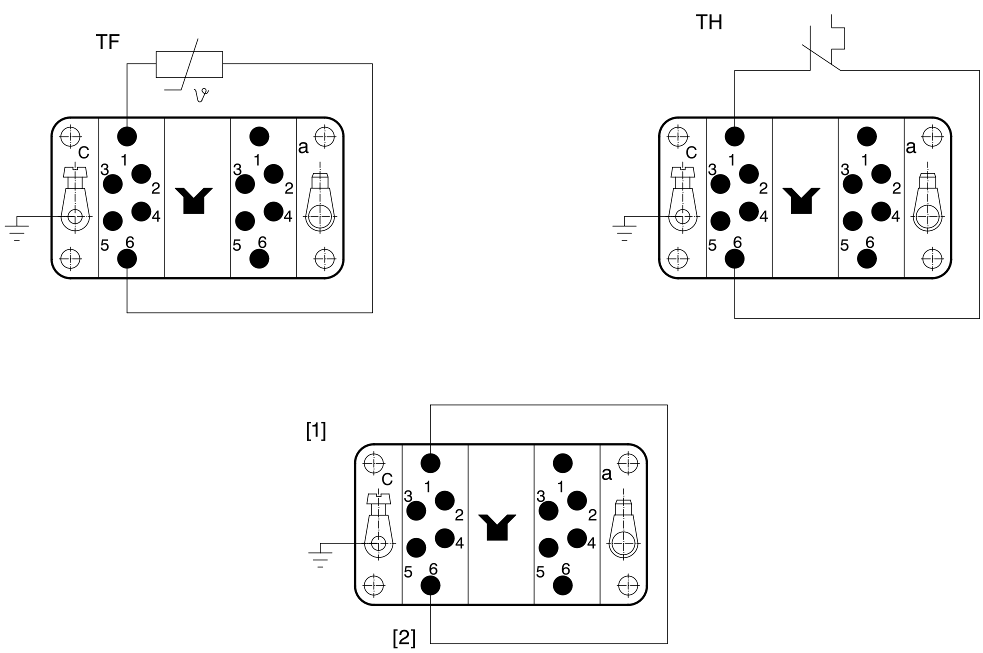
[1] Evaluation

08 853.02_3 AMB1, AMB2, AME1, AME2



[1] Motor winding, fixed star point

08 853.02_4 Motor protection



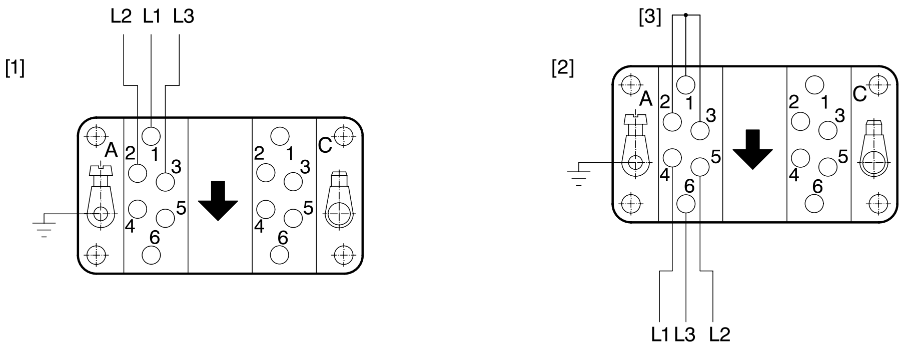
[1] Always with jumper if no TF/TH
[2] Monitoring jumper

08 854 01 02 AC motor with plug connector AMB1, AMB2, AME1, AME2

Pole-changing

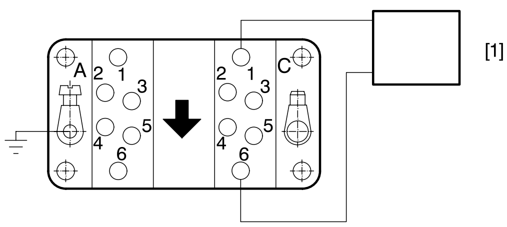
Tapped wound circuit

08 854.02_1



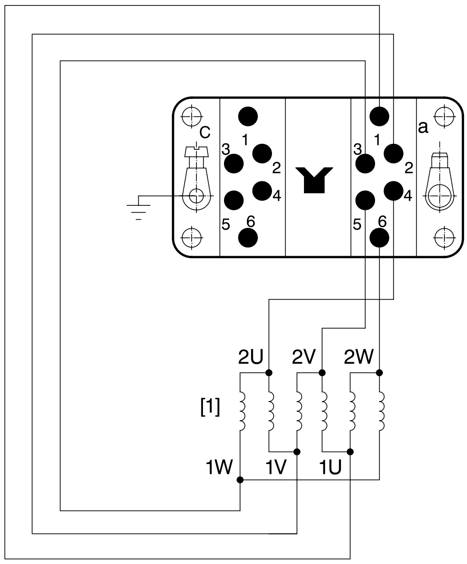
[1] Low speed △
[2] High speed ⅄⅄
[3] Star point, by customer

08 854.02_2 Motor protection



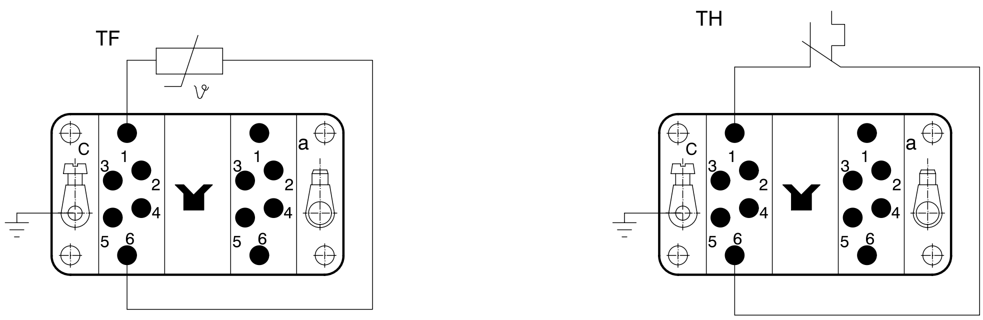
[1] Evaluation

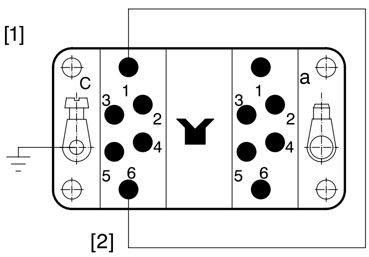
08 854.02_3 AMB1, AMB2, AME1, AME2



[1] Motor winding

08 854.02_4 Motor protection



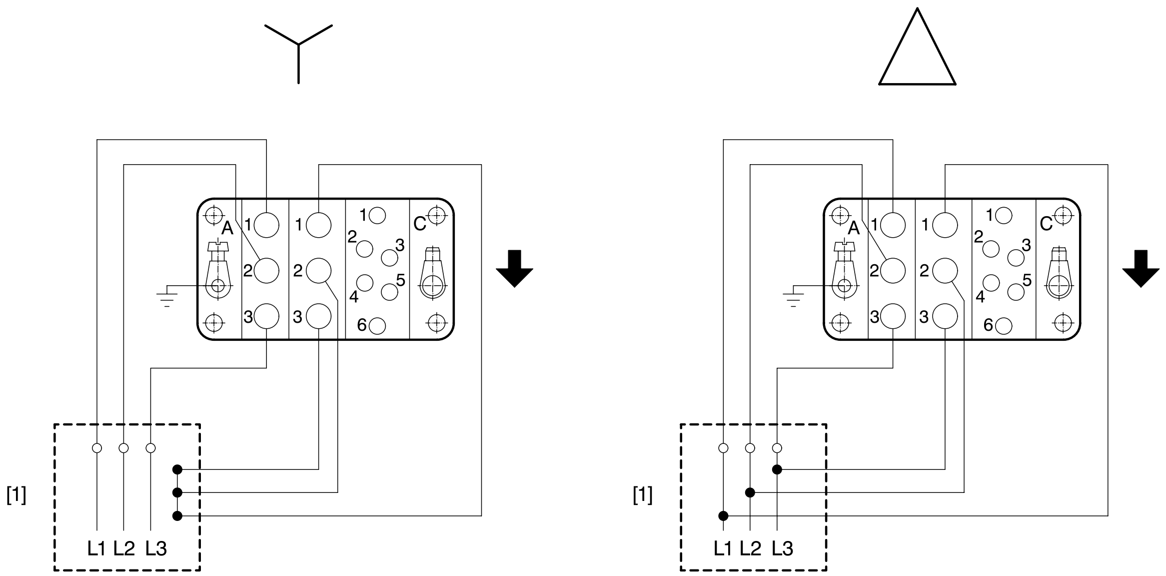


[1] Always with jumper if no TF/TH
[2] Monitoring jumper

08 858 01 03 AC motor 132M-180 with plug connector ADE2, ADE2

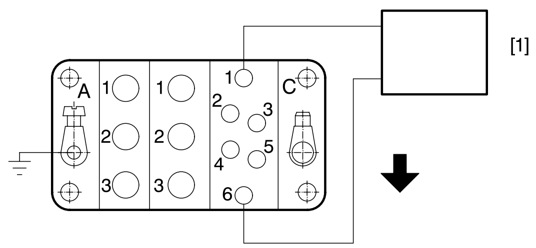
One speed

08 858.03_1



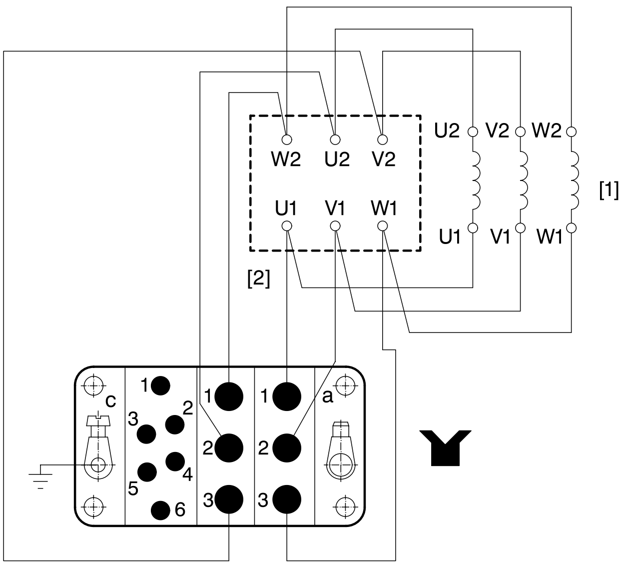
[1] Switch cabinet

08 858.03_2 Motor protection



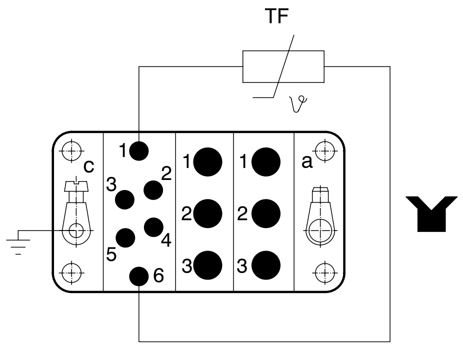
[1] Evaluation

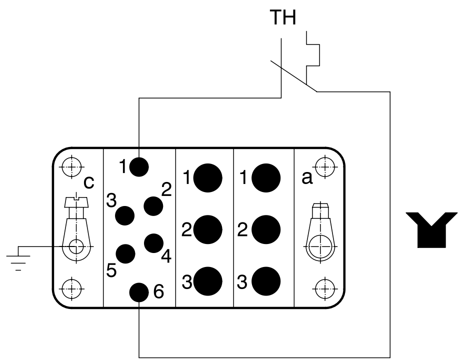
08 858.03_3 ADE2, ADE2

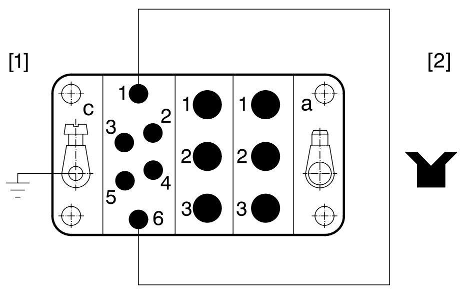


[1] Motor winding
[2] Terminal board

08 858.03_4 Motor protection





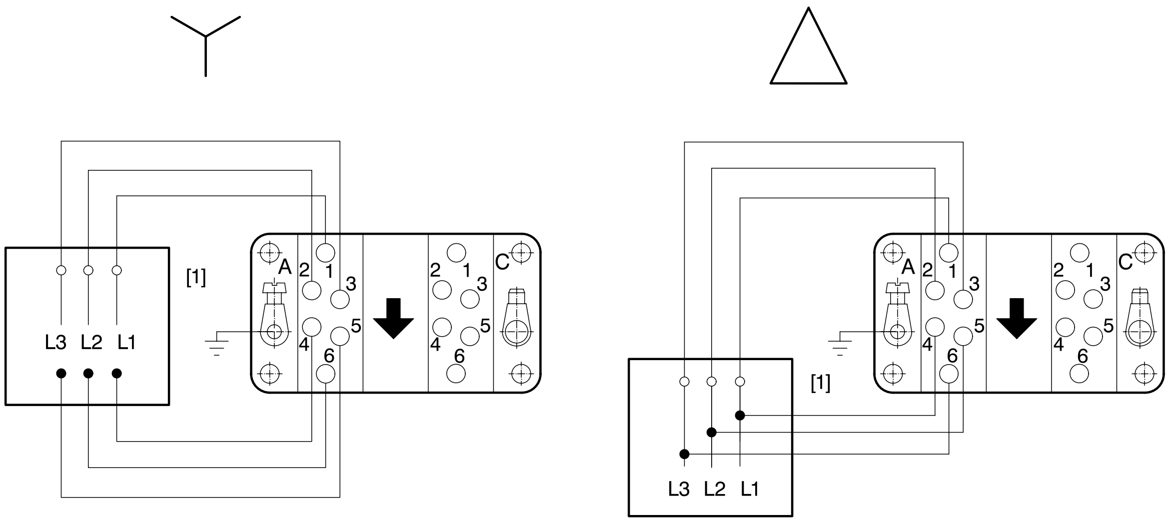


[1] Always with jumper if no TF/TH
[2] Monitoring jumper

08 887 00 04 AC motor with plug connector AMB2, AME2

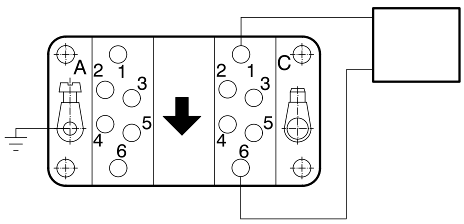
One speed

08 887.04_1



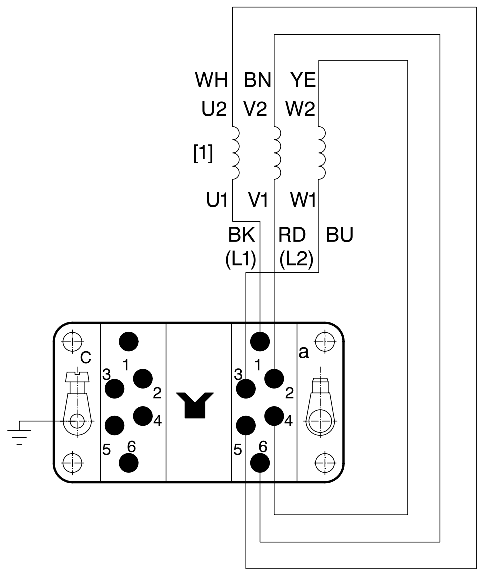
[1] Switch cabinet

08 887.04_2 Motor protection



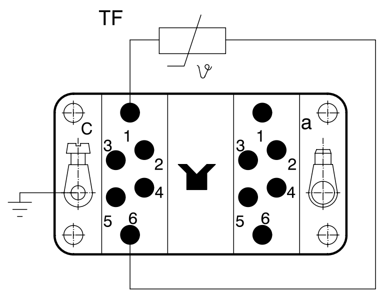
[1] Evaluation

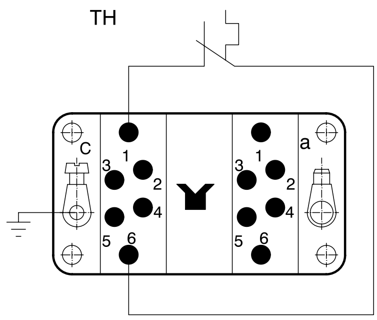
08 887.04_3 Motor protection

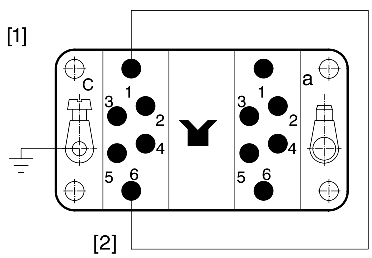


[1] Motor winding

08 887.04_3 Motor protection



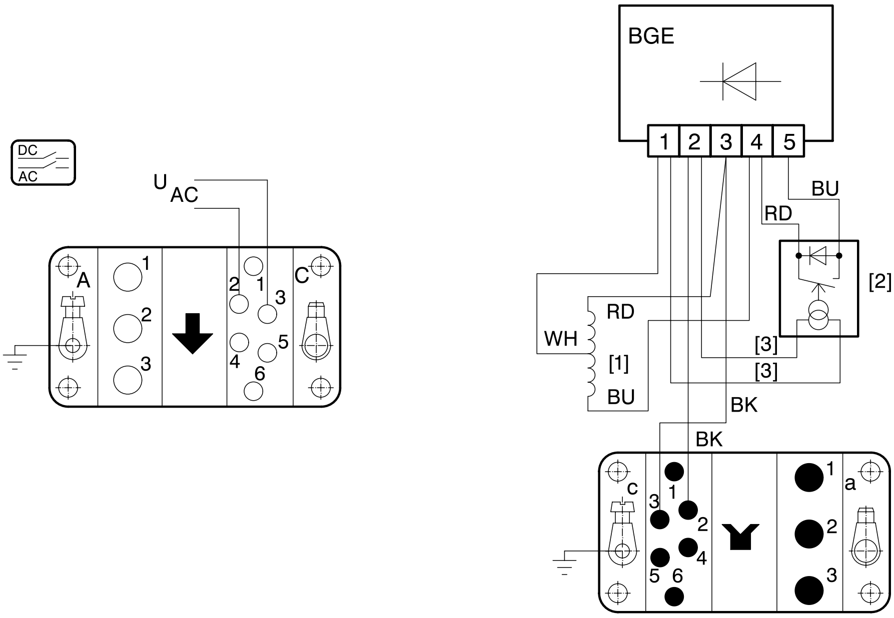




[1] Always with jumper if no TF/TH
[2] Monitoring jumper

09 004 00 04 AC brake motor 71-132S with plug connector ABB, ABE8
Brake control BUR, BSR
Brake voltage = phase voltage

09 004.04_1 BUR brake control

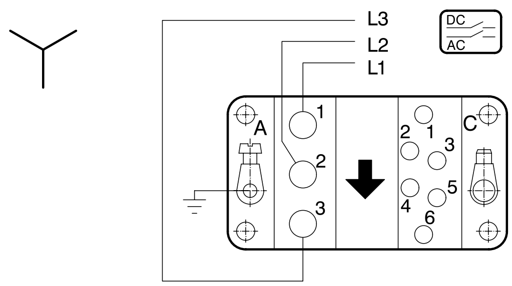


[1] Brake coil
[2] Voltage relay UR11/15
[3] UR11 (42-150V) = BN
UR15 (150-500V) = BK

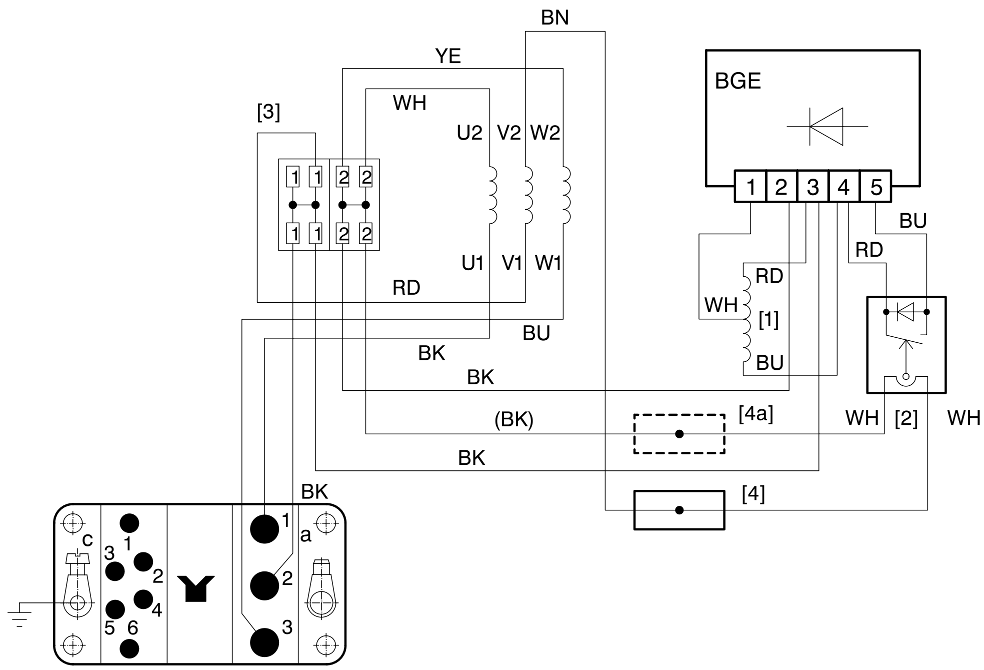
09 004.04_2 Brake control BSR

For example: Motor 400 V ⅄

Brake 230 V AC



09 004.04_3



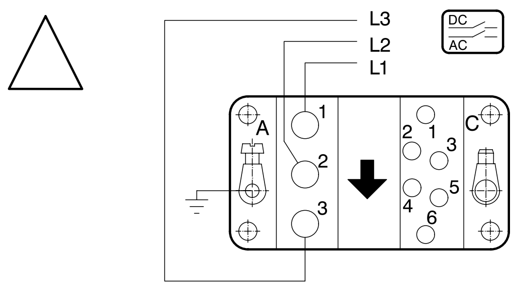
[1] Brake coil
[2] Current relay SR11/SR15
[3] Terminal strip
[4] Auxiliary terminal
[4a] Auxiliary terminal (only with SR15)

09 004.04_4

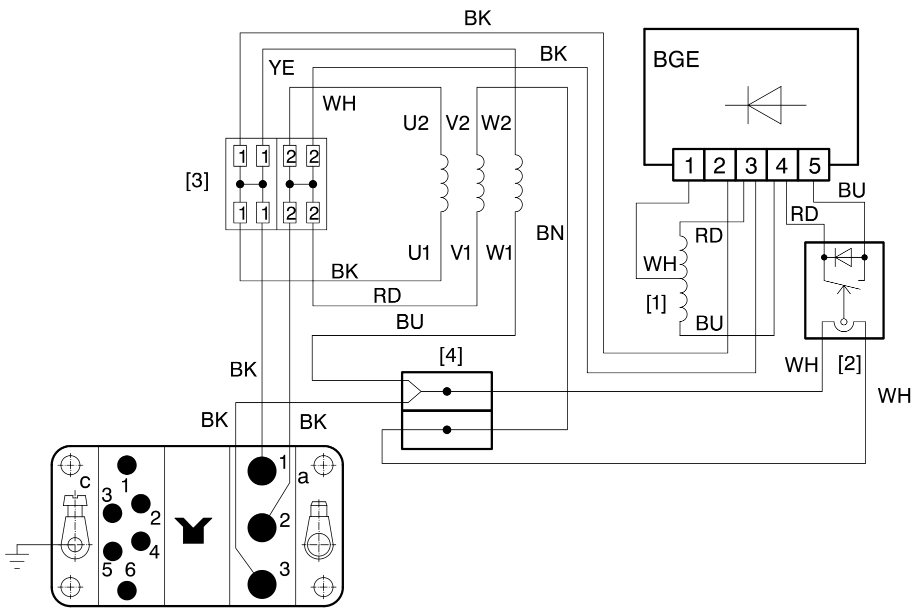
Brake control BSR

For example: Motor 400 V △

Brake 400 V AC

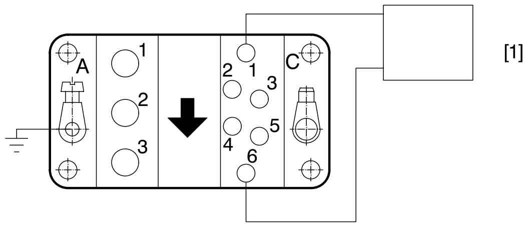


09 004.04_5



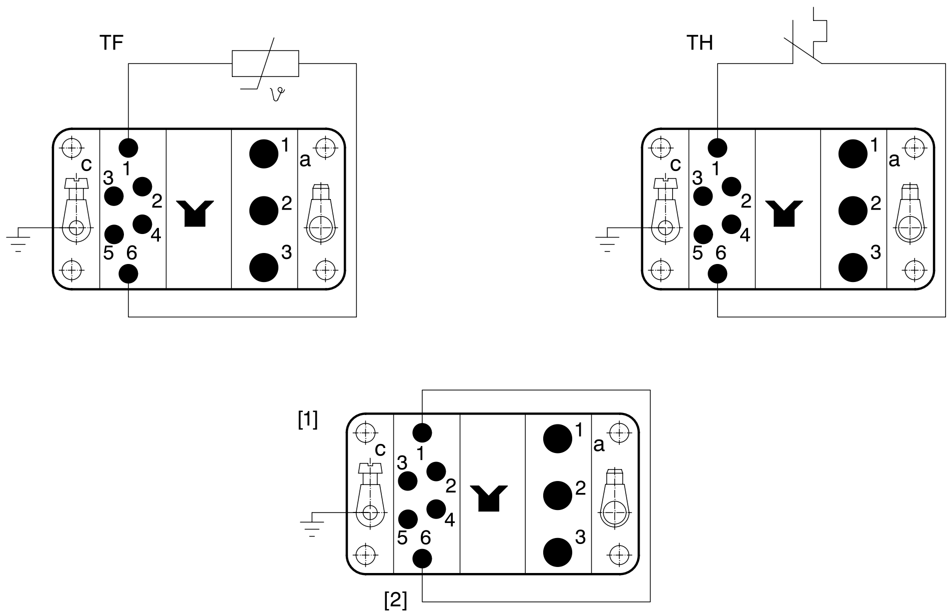
[1] Brake coil
[2] Current relay SR11/SR15
[3] Terminal strip
[4] Auxiliary terminal

09 004.04_6 Motor protection



[1] Evaluation

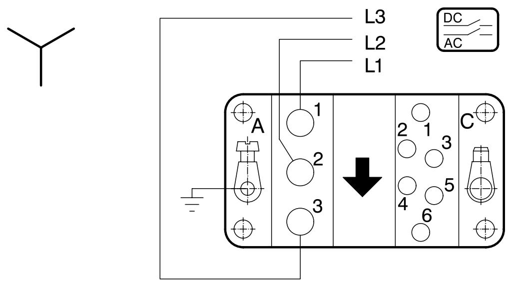
09 004.04_7



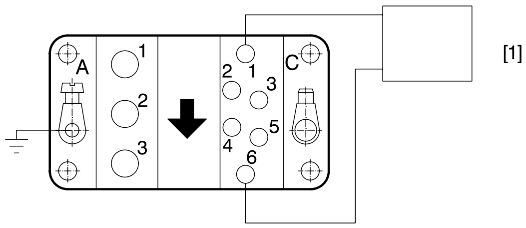
[1] Always with jumper if no TF/TH
[2] Jumper for monitoring

09 005 00 04 AC brake motor 71-132S with plug connector ABB, ABE8
Brake control BSR
Brake voltage = phase-to-phase voltage

09 005.04_1 Brake control BSR
For example: Motor 400 V ⅄
Brake 400 V AC

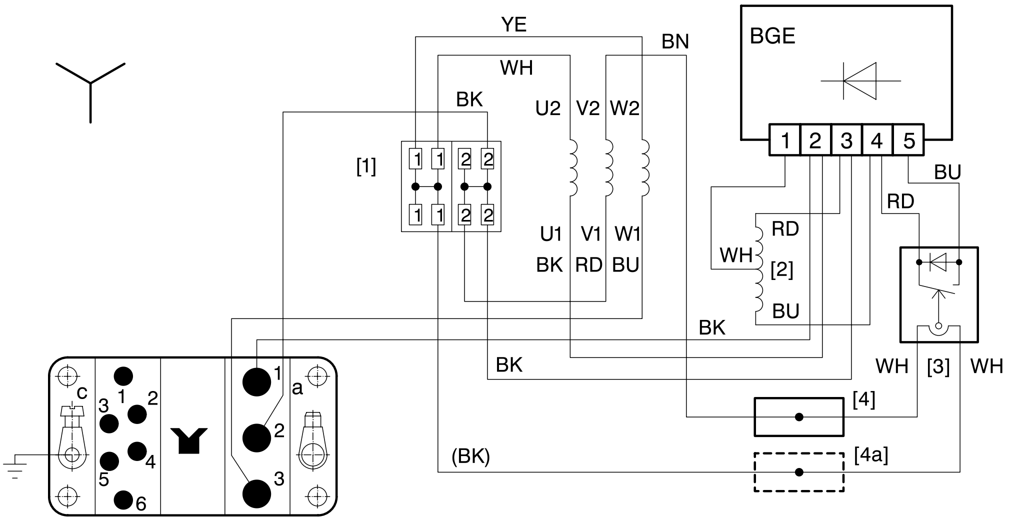


09 005.04_2 Motor protection



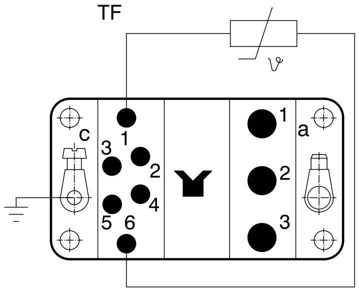
[1] Evaluation

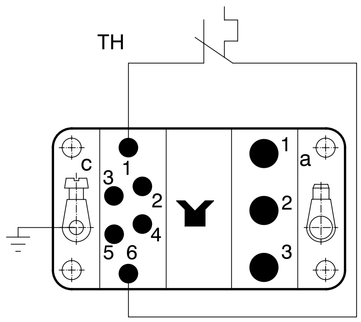
09 005.04_3 ABB8, ABE8

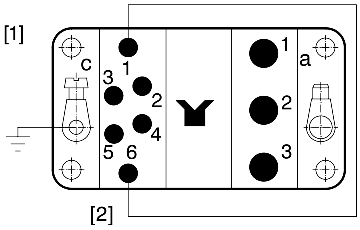


[1] Terminal strip
[2] Brake coil
[3] Current relay SR11/SR15
[4] Auxiliary terminal
[4a] Auxiliary terminal (only with SR15)

09 005.04_4 Motor protection



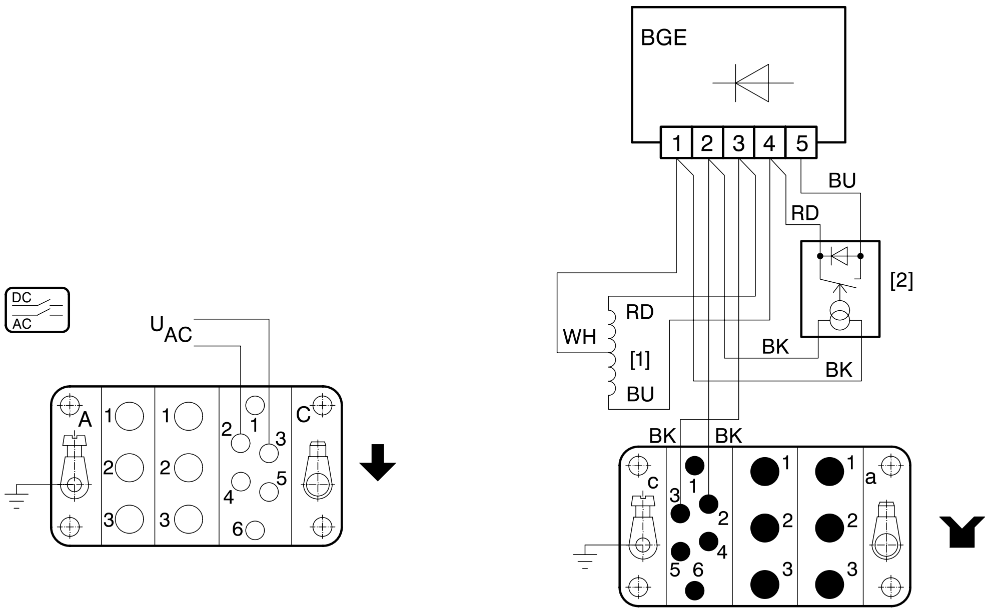




[1] Always with jumper if no TF/TH
[2] Jumper for monitoring

09 035 00 04 AC brake motor 71-132S with plug connector ADB2, ADE2
Brake control BUR, BSR
Brake voltage = phase voltage

09 035.04_1 BUR brake control

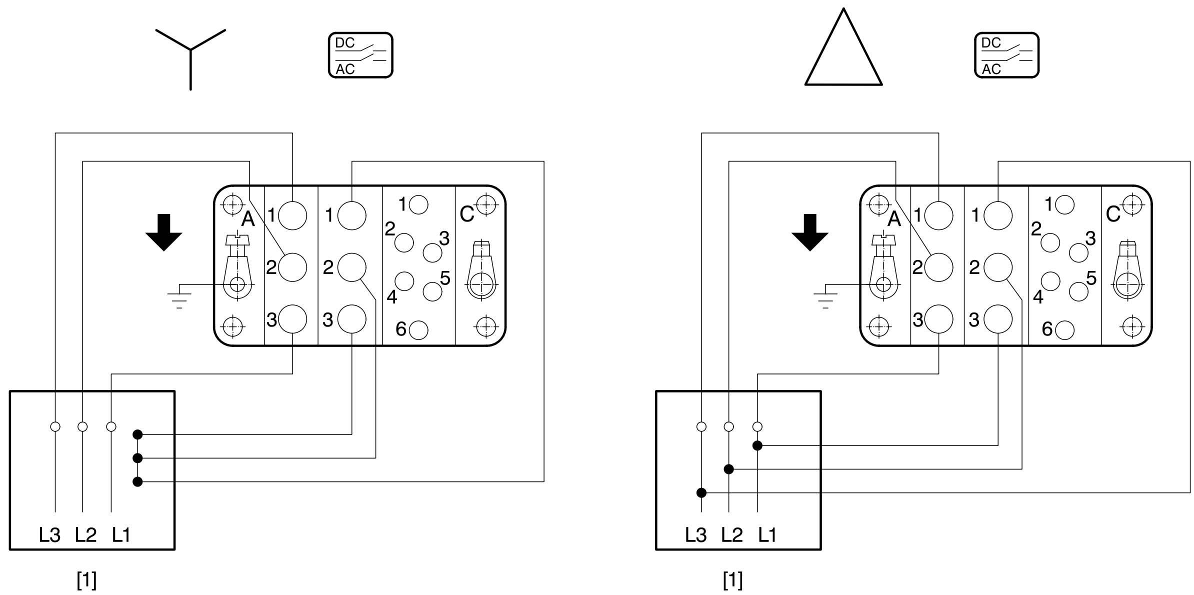


[1] Brake coil
[2] Voltage relay UR15

09 035.04_2 Brake control BSR

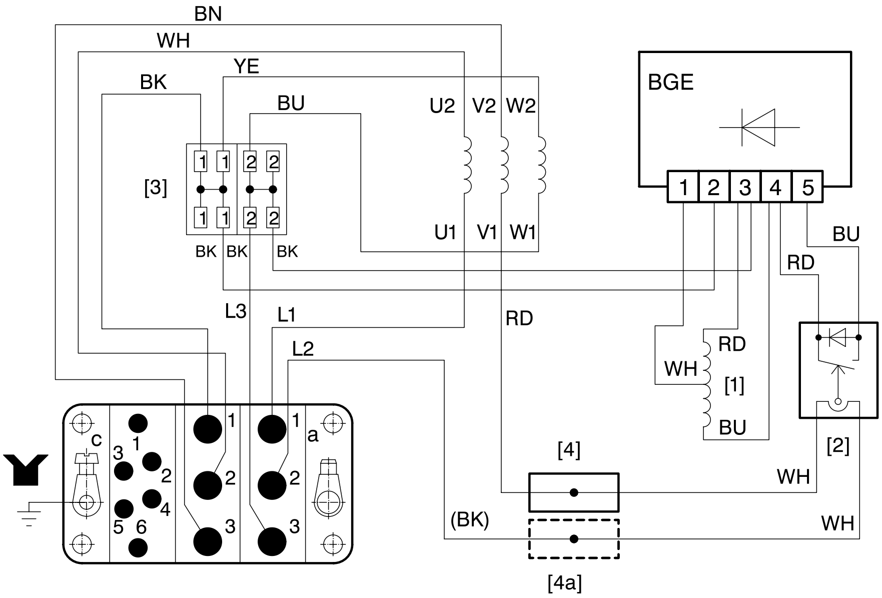
For example:Motor 230 V △ / 400 V ⅄

Brake: 230 V / AC



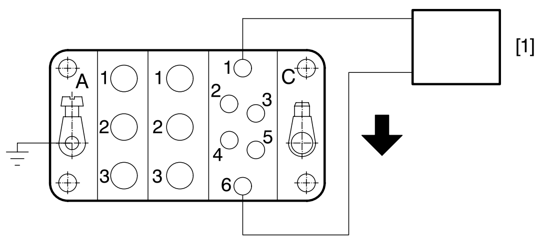
[1] Switch cabinet

09 035.04_3 ADB2, ADE2



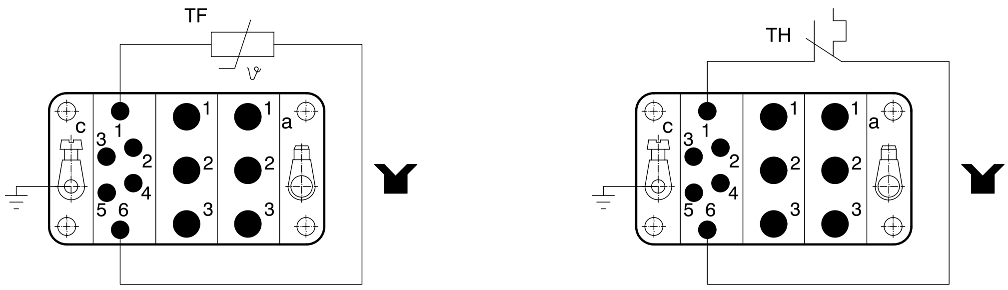
[1] Brake coil
[2] Current relay SR11/15
[3] Terminal strip
[4] Auxiliary terminal
[4a] Auxiliary terminal (only with SR15)

09 035.04_4 Motor protection

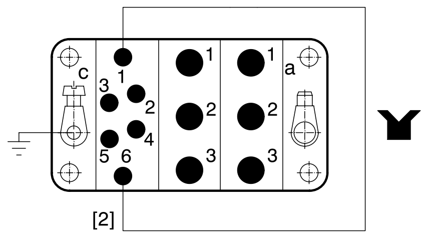


[1] Evaluation

09 035.04_5 ADB2, ADE2



[1]

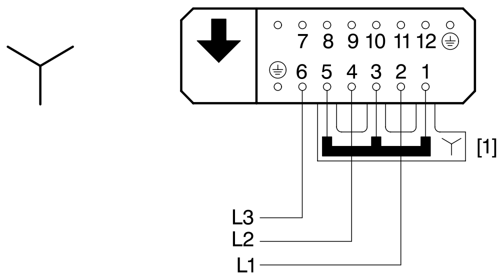


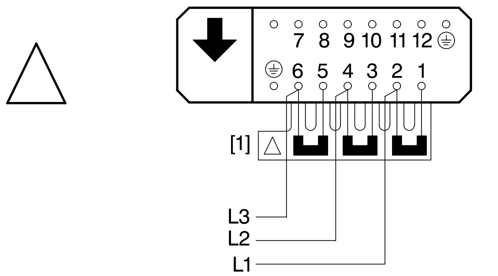
[1] Always jumper if no TF/TH
[2] Jumper for monitoring

09 760 197 AC motor with plug connector IS

One speed

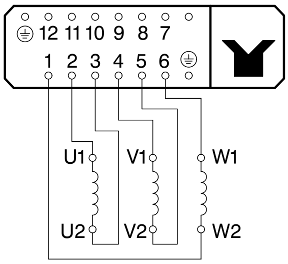
09 760.97_1



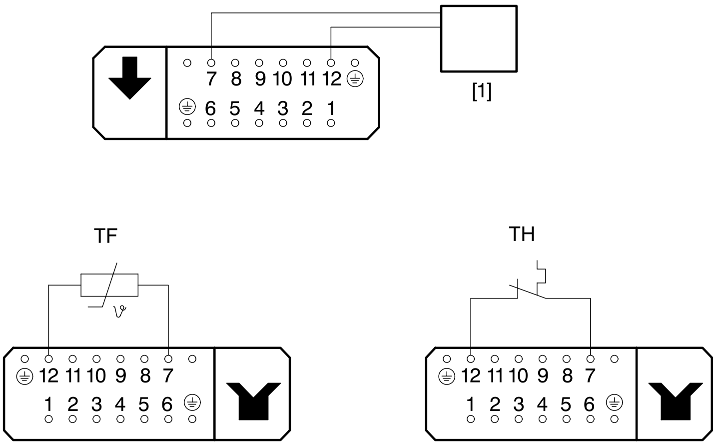


[1] Variable terminal link (do not install with ⅄△ startup)

09 760.97_2



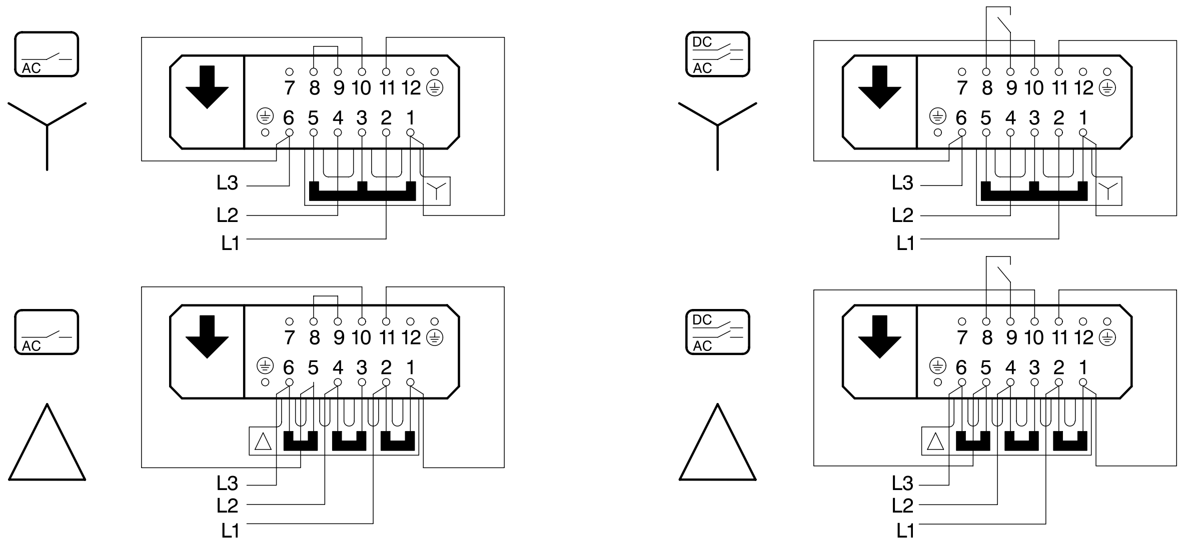
09 760.97_3 Motor protection



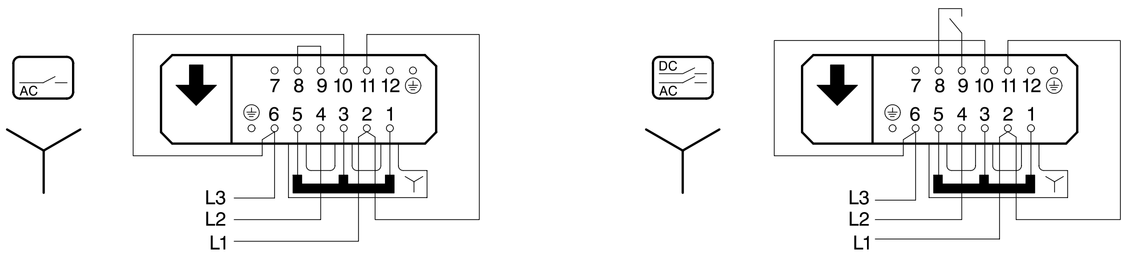
[1] Evaluation

09 761 297 AC brake motor with plug connector IS
Brake control BGE, BG

09 761.97_1A Voltage supply from motor
not for multi-speed and controlled motors
Brake voltage equal to △ voltage
For example:Motor 230 V △ / 400 V ⅄
Brake 230 V AC



09 761.97_1B Brake voltage equal to ⅄ voltage
For example:Motor 230 V △ / 400 V ⅄
Brake 400 V AC

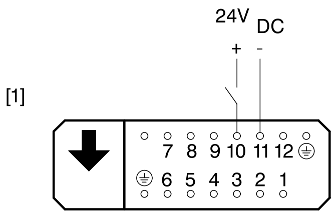


09 761.97_2

Brake control BGE, BG
External voltage supply

09 761.97_3

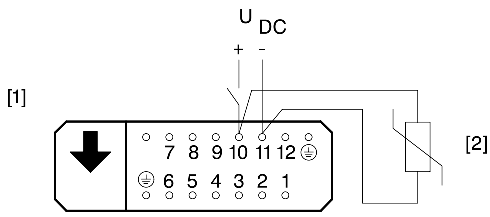
Brake control BSG



[1] Not for motors size 63

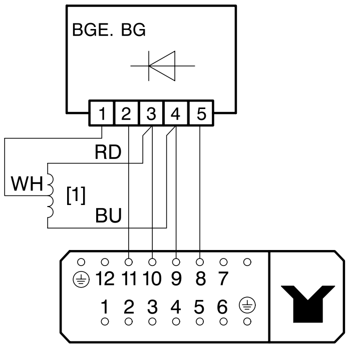
09 761.97_4

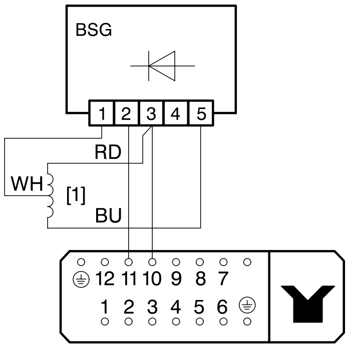
Direct DC voltage supply



[1] Not for motors size 112 and up
[2] Varistor:
S10K300 (Epcos)
10M250VB (Conradty)
V2B300 (Thomson)

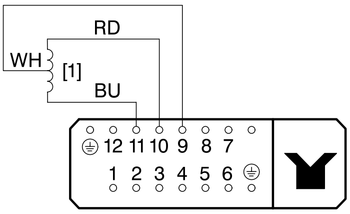
09 761.97_5 Brake control BGE, BG, BSG





[1] Brake coil

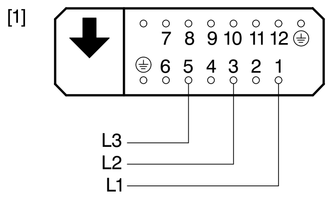
09 761.97_6 Direct DC voltage supply



[1] Brake coil

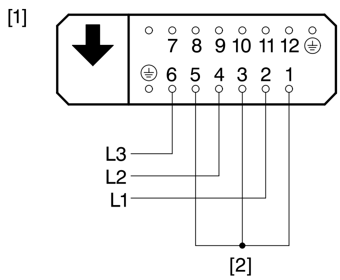
09 762 01 97 AC motor with plug connector IS
Pole-changing
Tapped wound circuit

09 762.97_1



[1] Low speed △

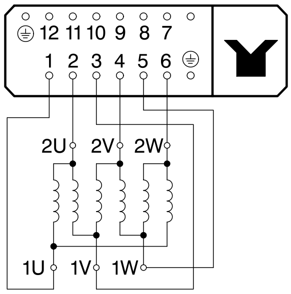
09 762.97_2



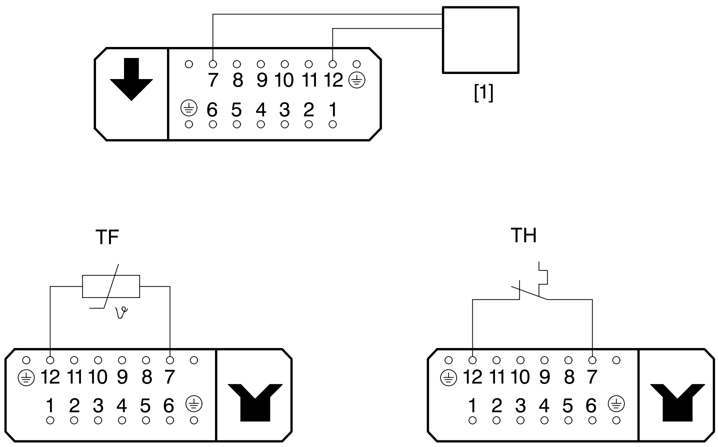
[1] High speed ⅄⅄
[2] Star point, by customer

3

09 762.97_3



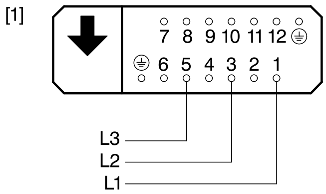
09 762.97_4 Motor protection



[1] Evaluation

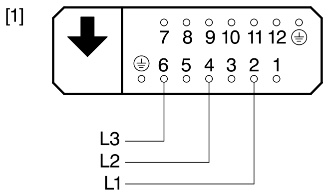
09 763 397 AC motor with plug connector IS
Pole-changing
2 separate windings

09 763.97_1



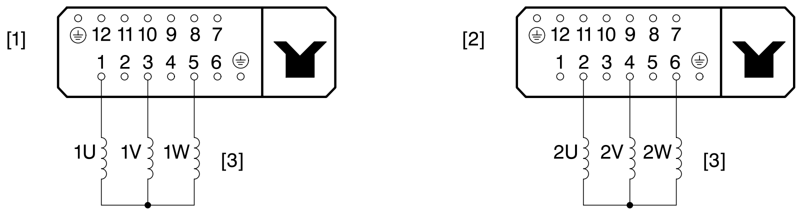
[1] Low speed

09 763.97_2



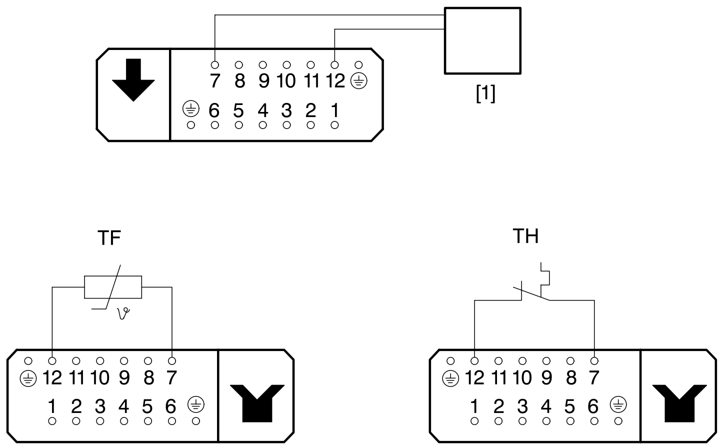
[1] High speed

09 763.97_3



[1] ⅄ connection, low speed
[2] ⅄ connection, high speed
[3] Motor winding, fixed star point

09 763.97_4 Motor protection



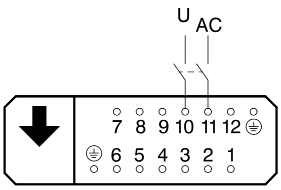
[1] Evaluation

09 764 01 97 AC brake motor 63-132S with plug connector IS

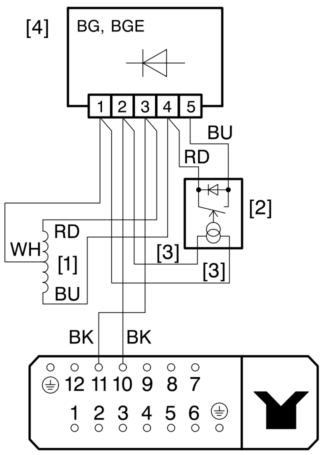
Brake control BUR, BSR

Brake voltage = phase voltage

09 764.97_1 Brake control BUR



09 764.97_2



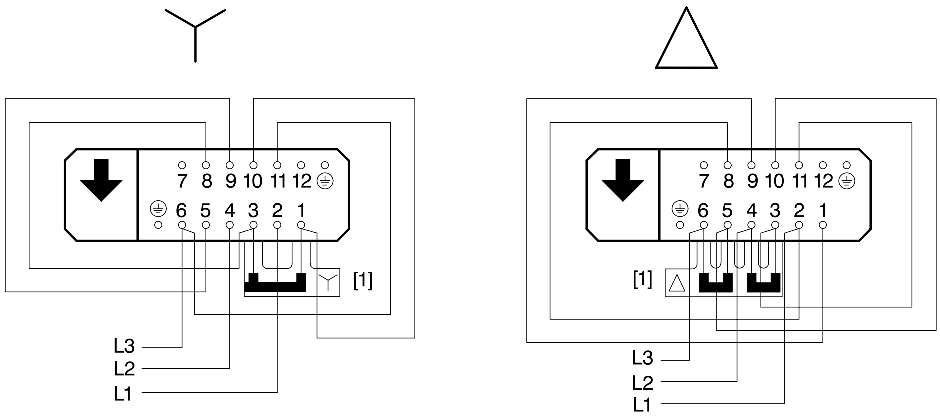
[1] Brake coil
[2] Voltage relay UR11/15
[3] UR11 (42-150 V) = BN
UR15 (150 V-500 V)
[4] BG only with DR63

09 764.97_3

Brake control BSR

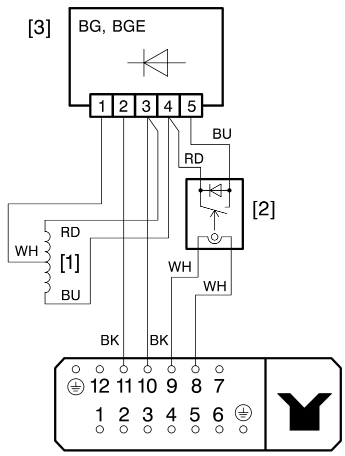
For example: Motor 230 V △ / 400 V ⅄

Brake 230 V AC



[1] Variable terminal link separated

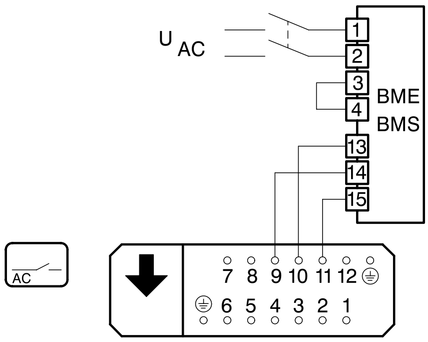
09 764.97_4

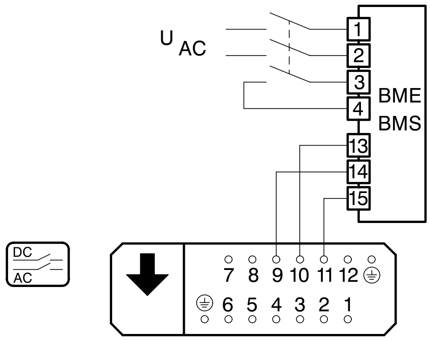


[1] Brake coil
[2] Current relay SR11
[3] BG only with DR63

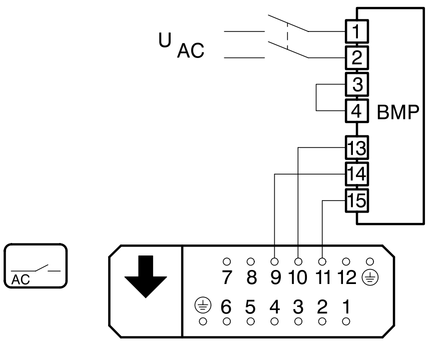
09 765 397 AC brake motor with plug connector IS
Brake control
in switch cabinet

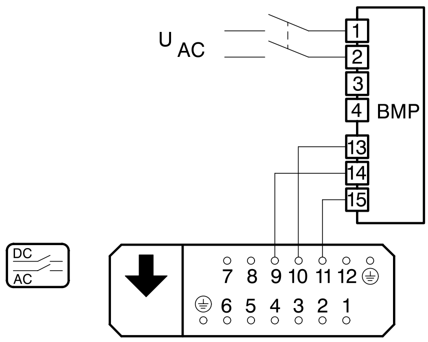
09 765.97_1 Brake control BME, BMS



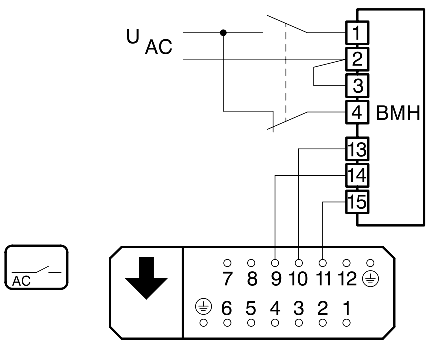


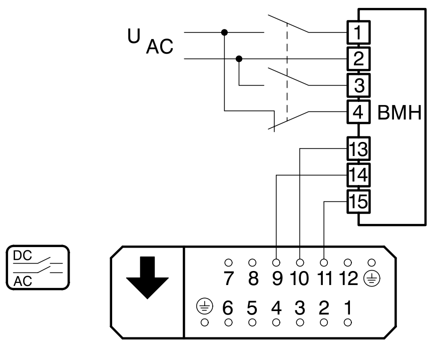
09 765.97_2 Brake control BMP



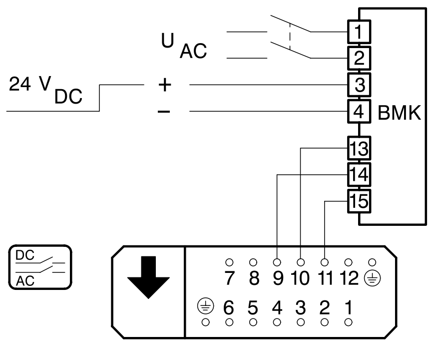


09 765.97_3 Brake control BMH

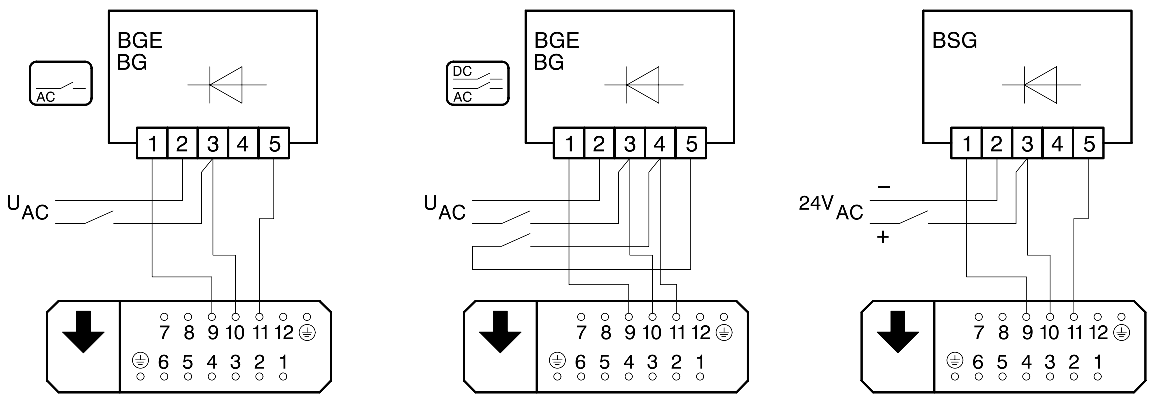




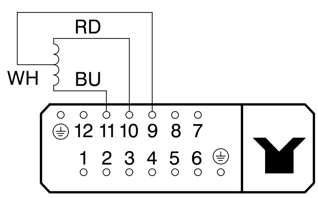
09 765.97_4 Brake control BMK



09 765.97_5 Brake control BGE, BG, BSG



09 765.97_6

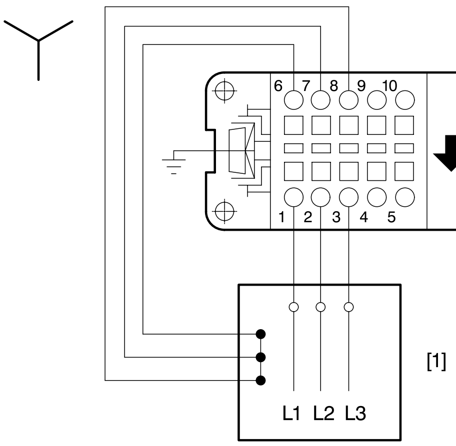


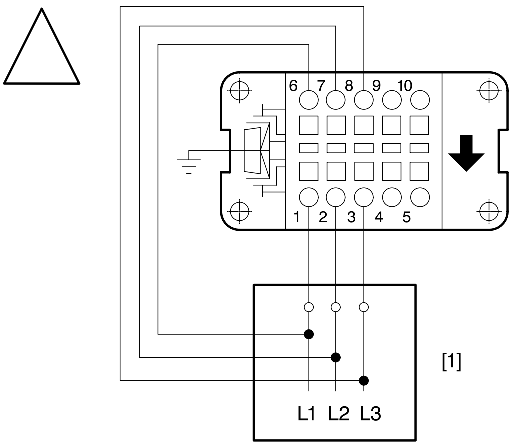
09 768 03 97 AC motor with plug connector ACA1, ACA2, ACD1, ACD2, ASA1, ASAX, ASD1, KSAX, KSDX

One speed

If the ⅄ or △ connection is not implemented in the switch cabinet then the jumpers for the connection must be set on the terminal board in the terminal box.

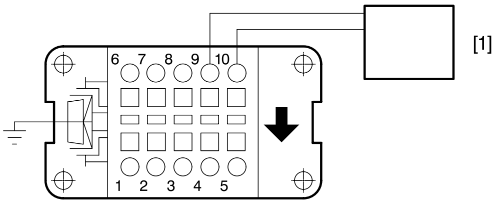
09 768.97_1





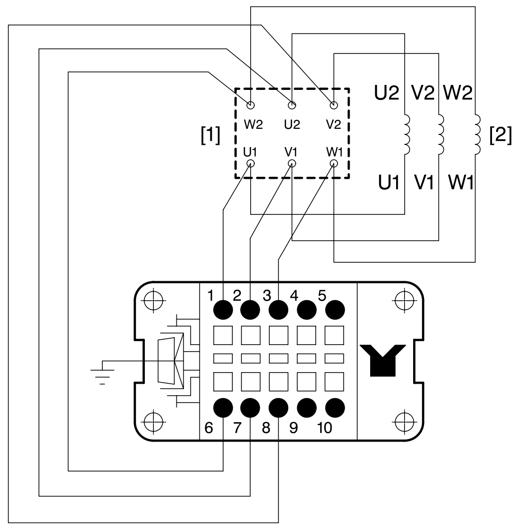
[1] Switch cabinet

09 768.97_2 Motor protection



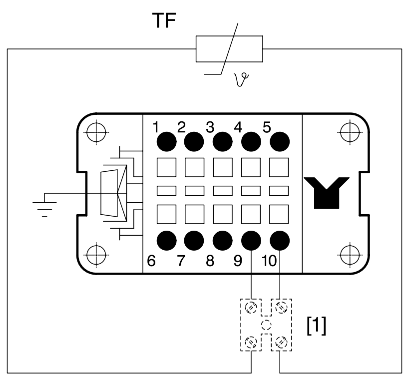
[1] Evaluation

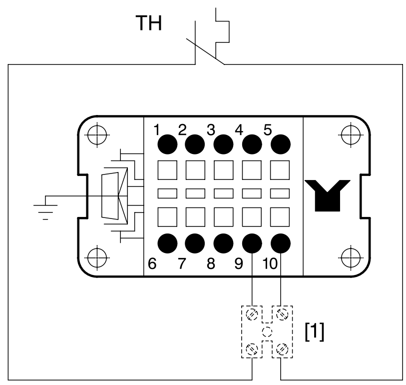
09 768.97_3 ACA1, ACA2, ACD1, ACD2, ASA1, ASAX, ASD1, KSAX, KSDX

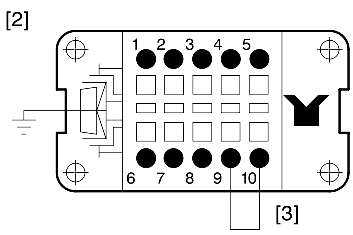


[1] Terminal board
[2] Motor winding

09 768.97_4 Motor protection



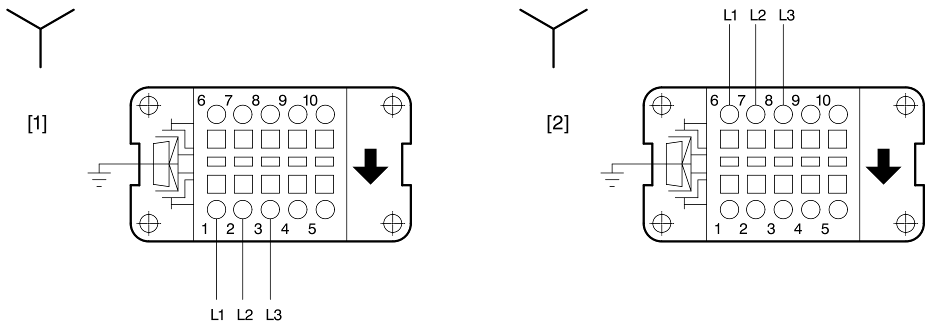




[1] Terminal strip (only with DR63)
[2] Always with jumper if no TF/TH
[3] Monitoring jumper

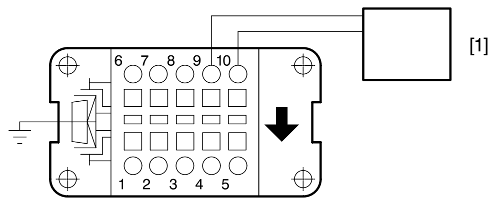
09 769 03 97 AC motor with plug connector ACA1, ACD1, ASA1, ASD1
Pole-changing
2 separate windings

09 769.97_1



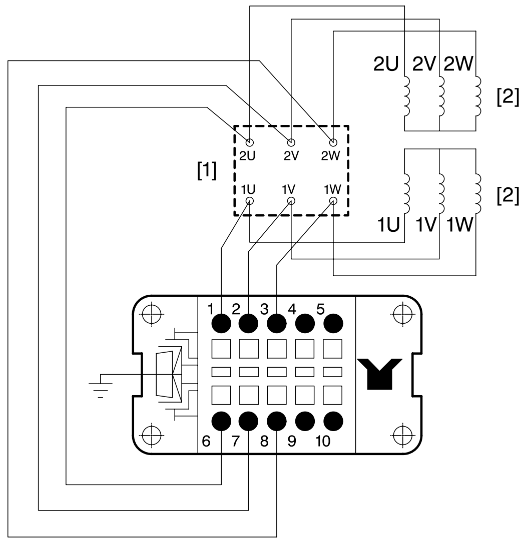
[1] Low speed
[2] High speed

09 769.97_2 Motor protection



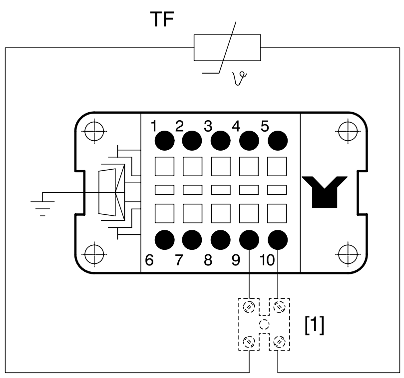
[1] Evaluation

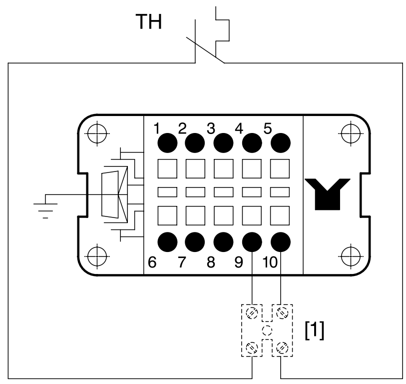
09 769.97_3 ACA1, ACD1, ASA1, ASD1

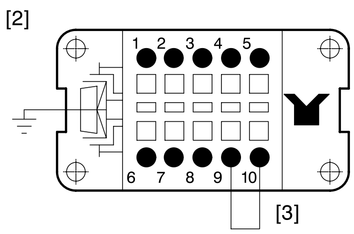


[1] Terminal board
[2] Motor winding, fixed star point

09 769.97_4 Motor protection



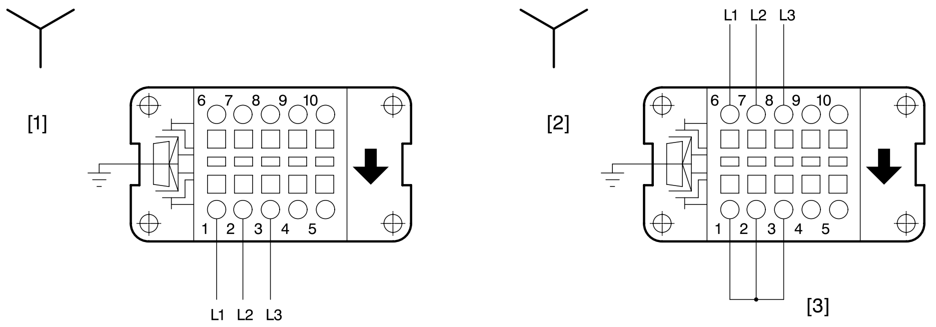




[1] Terminal strip (only with DR63)
[2] Always with jumper if no TF/TH
[3] Monitoring jumper

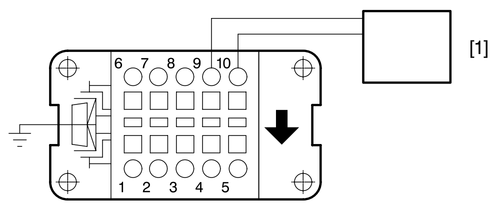
09 770 03 97 AC motor with plug connector ACA1, ACD1, ASA1, ASD1, KSAX
Pole-changing
Tapped wound circuit

09 770.97_1



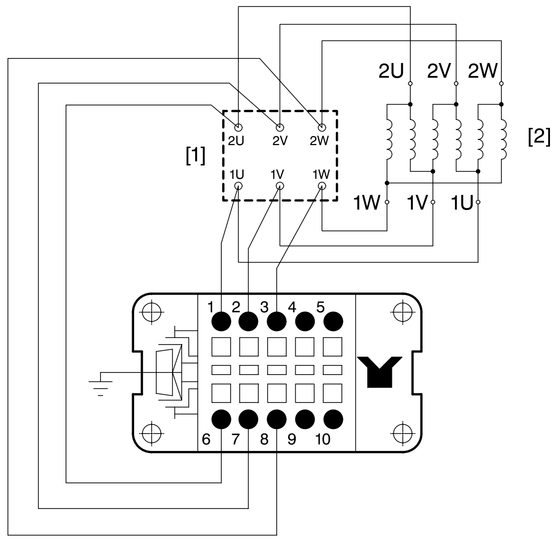
[1] Low speed
[2] High speed
[3] Star point, by customer

09 770.97_2 Motor protection



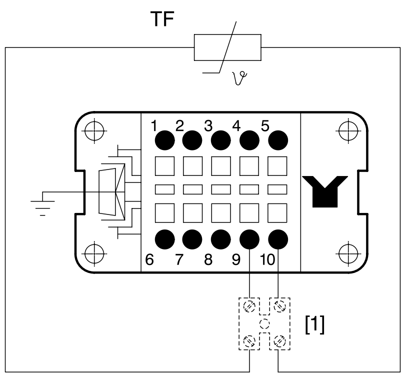
[1] Evaluation

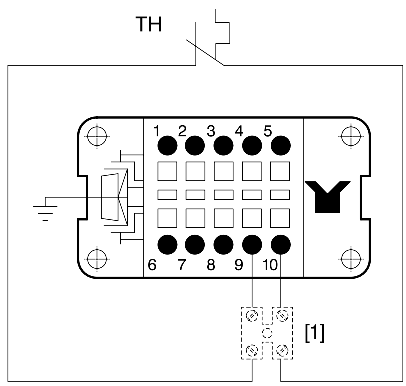
09 770.97_3 ACA1, ACD1, ASA1, ASD1, KSAX

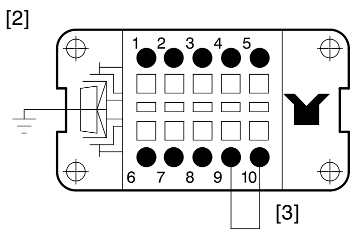


[1] Terminal board
[2] Motor winding

09 770.97_4 Motor protection



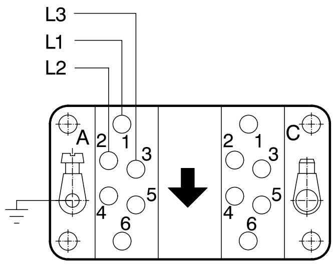




[1] Terminal strip (only with DR63)
[2] Always with jumper if no TF/TH
[3] Monitoring jumper

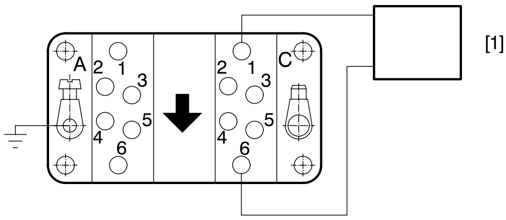
09 771 03 97 AC motor with plug connector AMA1, AMA5, AMAX, AMD1, AMD8, KMAX
One speed

09 771.97_1



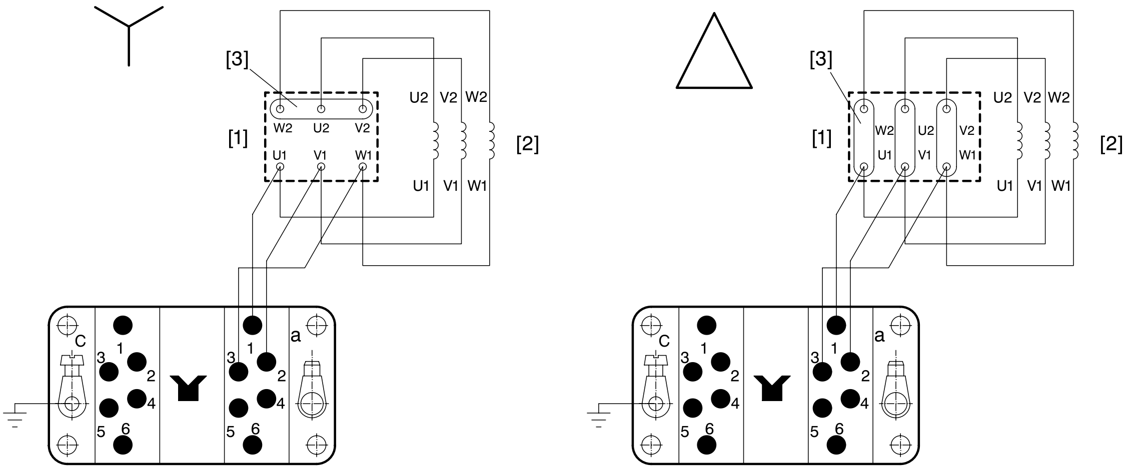
3

09 771.97_2 Motor protection



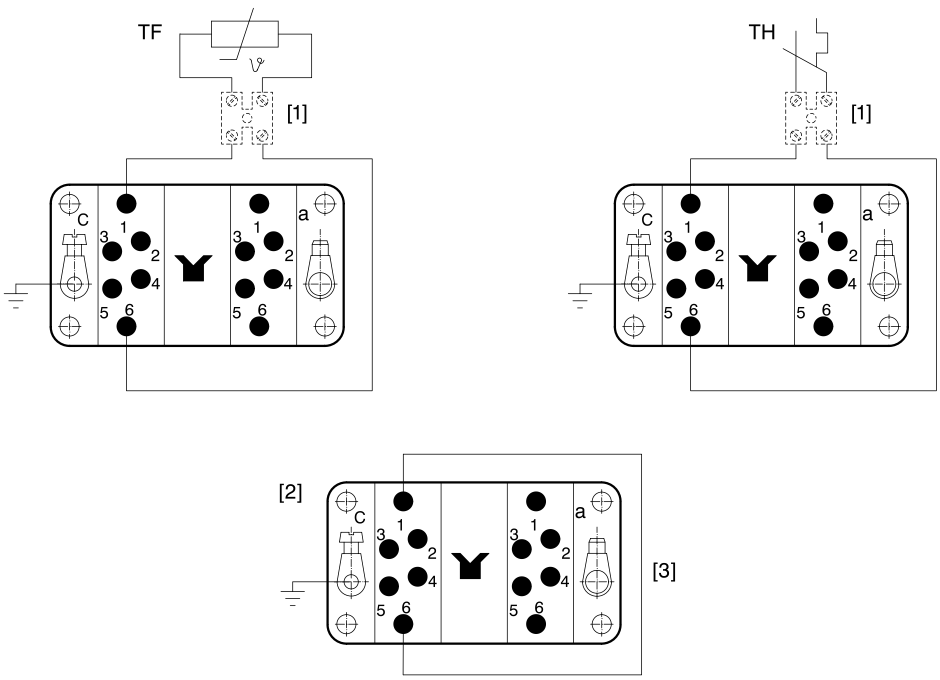
[1] Evaluation

09 771.97_3 AMA1, AMA5, AMAX, AMD1, AMD8, KMAX



[1] Terminal board
[2] Motor winding
[3] Terminal link
[4] Factory connected with AMA1/AMD1

09 771.97_4 Motor protection



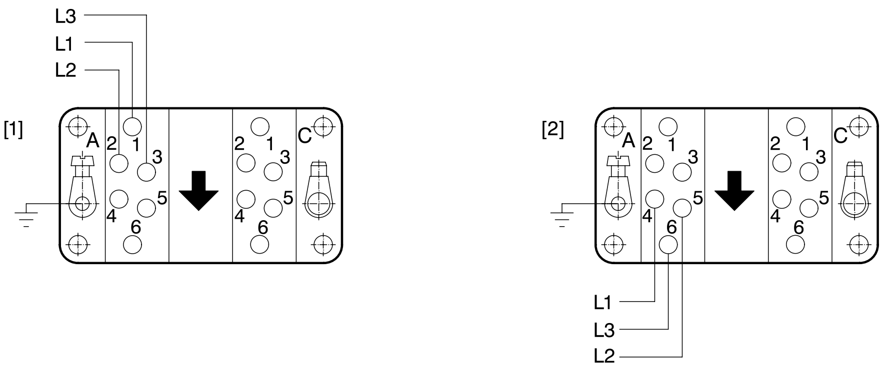
[1] Terminal strip
[2] Always with jumper if no TF/TH
[3] Monitoring jumper

09 772 03 97 AC motor with plug connector AMA1, AMD1, AMD2

Pole-changing

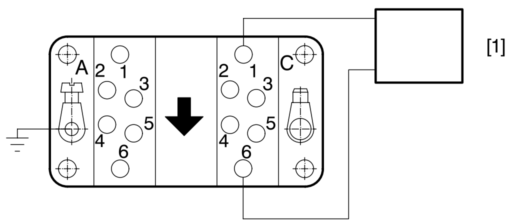
2 separate windings

09 772.97_1



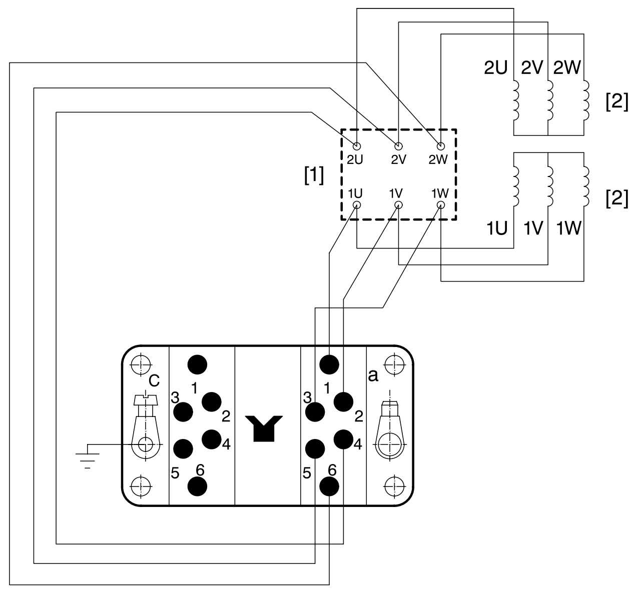
[1] Low speed
[2] High speed

09 772.97_2 Motor protection



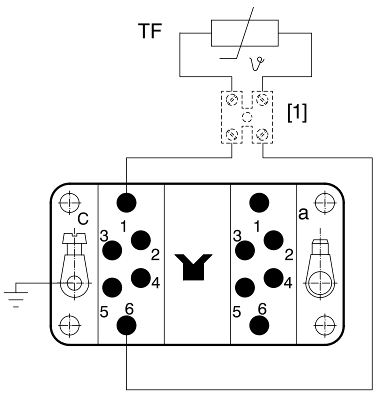
[1] Evaluation

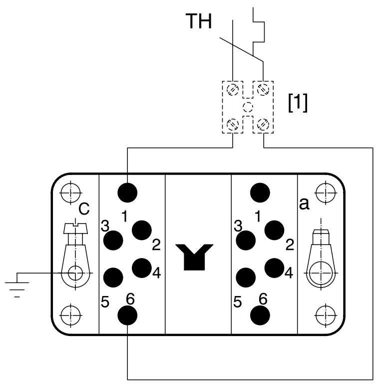
09 772.97_3 AMA1, AMD1, AMD2

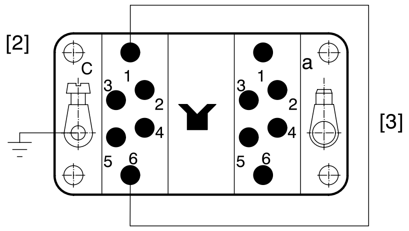


[1] Terminal board
[2] Motor winding, fixed star point

09 772.97_4 Motor protection



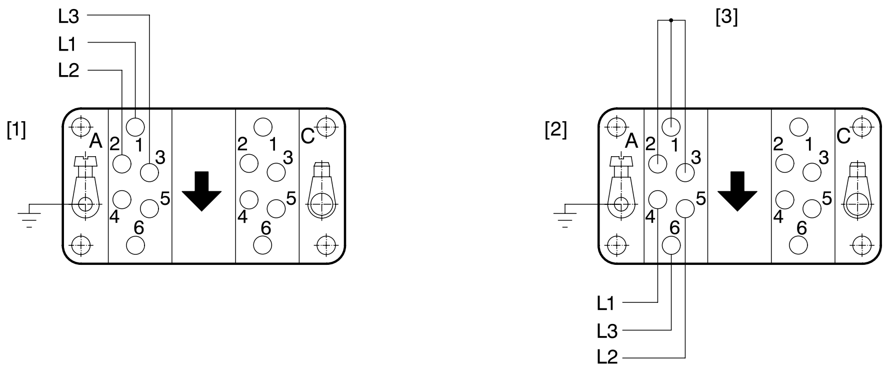




[1] Terminal strip (only with DR63)
[2] Always with jumper if no TF/TH
[3] Monitoring jumper

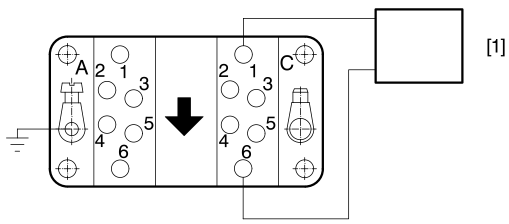
09 773 03 97 AC motor with plug connector AMA1, AMD1, AMD2
Pole-changing
Tapped wound circuit

09 773.97_1



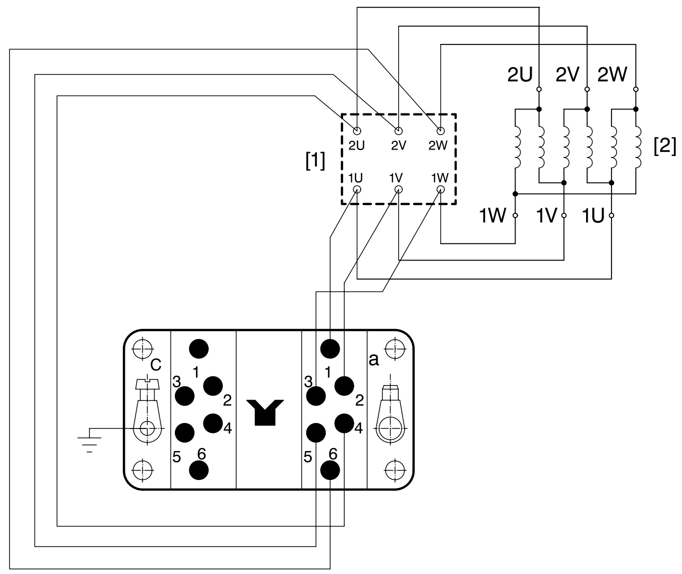
[1] Low speed
[2] High speed
[3] Star point, by customer

09 773.97_2 Motor protection



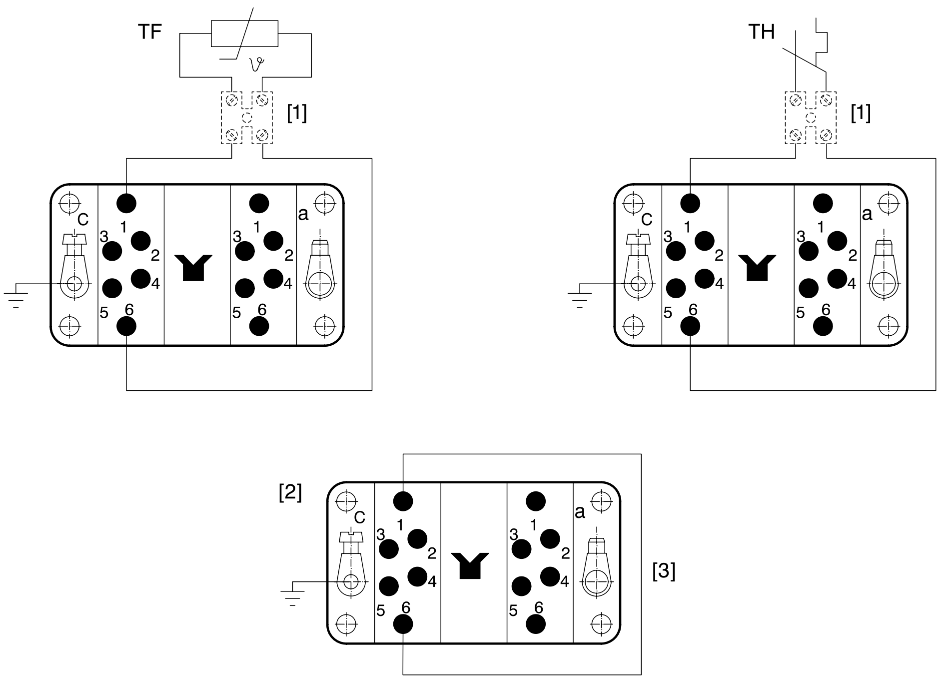
[1] Evaluation

09 773.97_3 AMA1, AMD1, AMD2



[1] Terminal board
[2] Motor winding

09 773.97_4 Motor protection

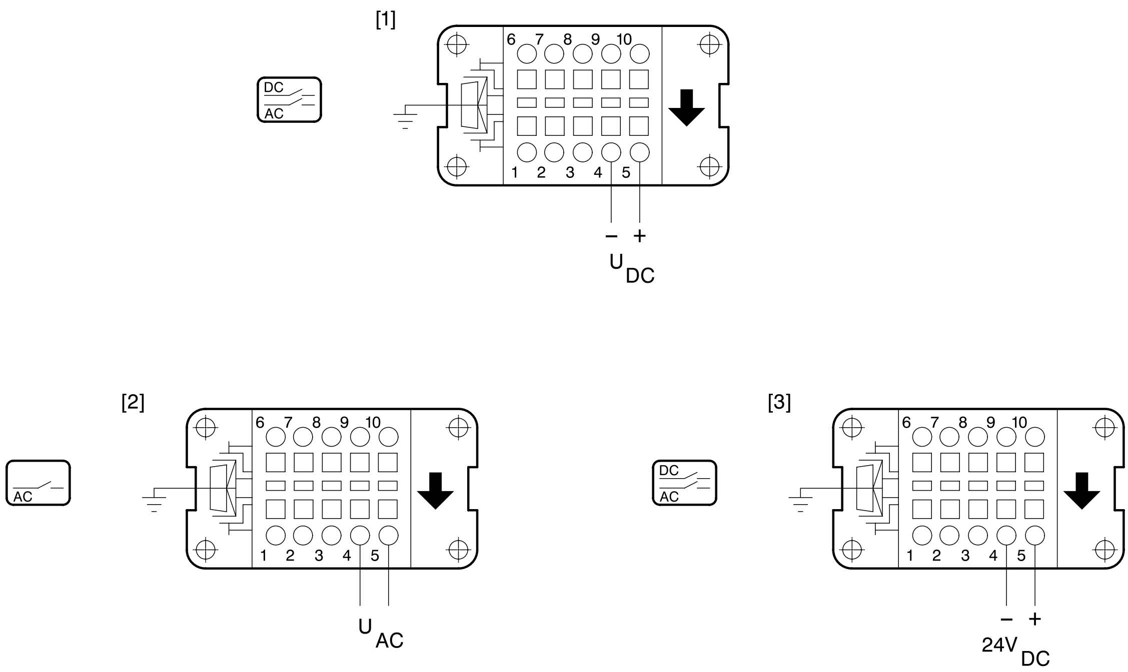


[1] Terminal strip (only with DR63)
[2] Always with jumper if no TF/TH
[3] Monitoring jumper

09 774 02 97 AC brake motor with plug connector ACA1, ACA2, ACB1, ACD1, ACE1, ASA1, ASB1, ASD1, ASE1

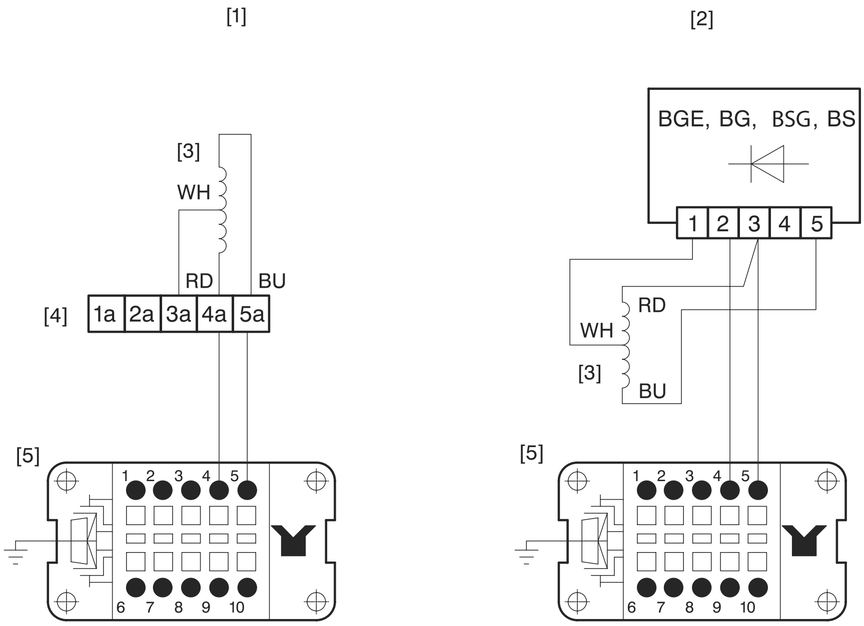
Internal brake control

09 774.97_1



[1] Direct DC voltage supply (DR63-DV100)
[2] Brake control BGE, BG
External voltage supply
[3] Brake control BSG, BS
(not for DR63)

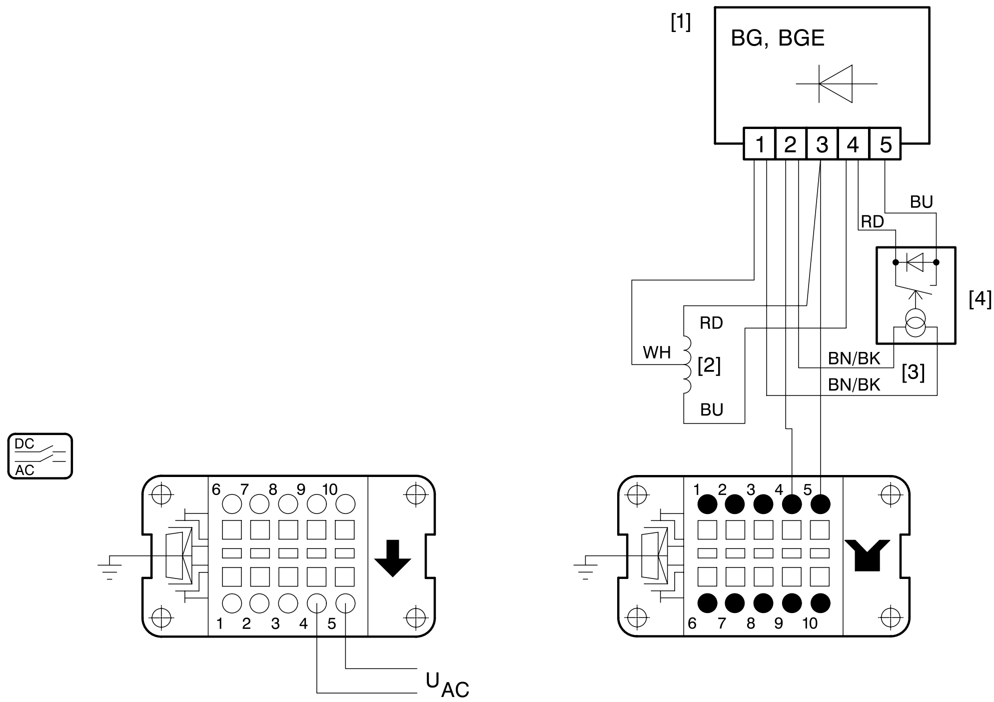
09 774.97_2 ACA1, ACA2, ACB1, ACD1, ACE1, ASA1, ASB1, ASD1, ASE1



[1] Direct DC voltage supply (not for size 112)
[2] Brake control BGE, BG, BGS, BS
[3] Brake coil
[4] Terminal strip
[5] Plug connector

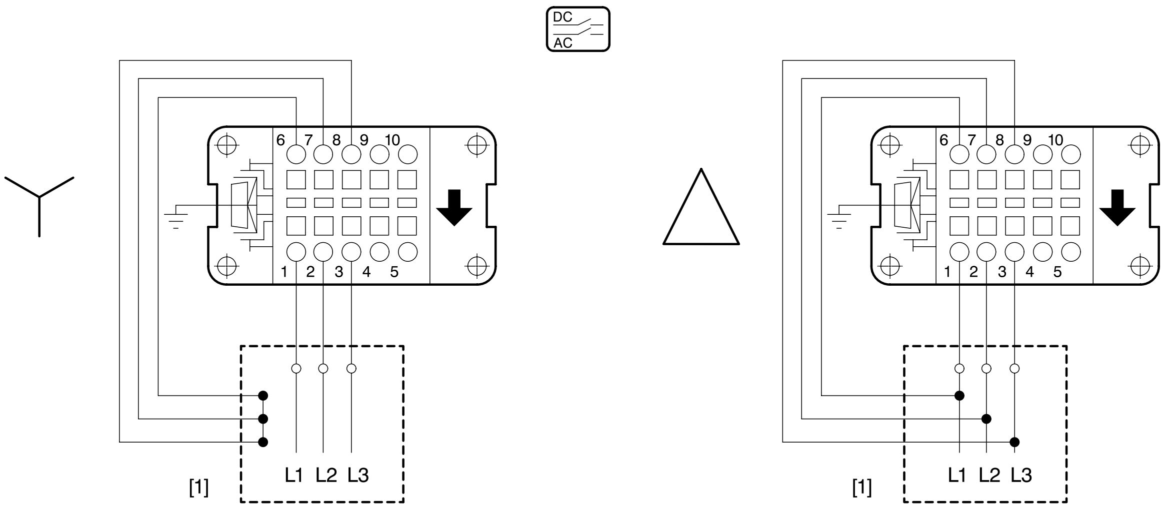
09 775 02 97 AC brake motor 63-132S with plug connector ACA1, ACD1, ASA1, ASD1
Brake control BUR, BSR
Brake voltage = phase voltage

09 775.97_1 Brake control BUR



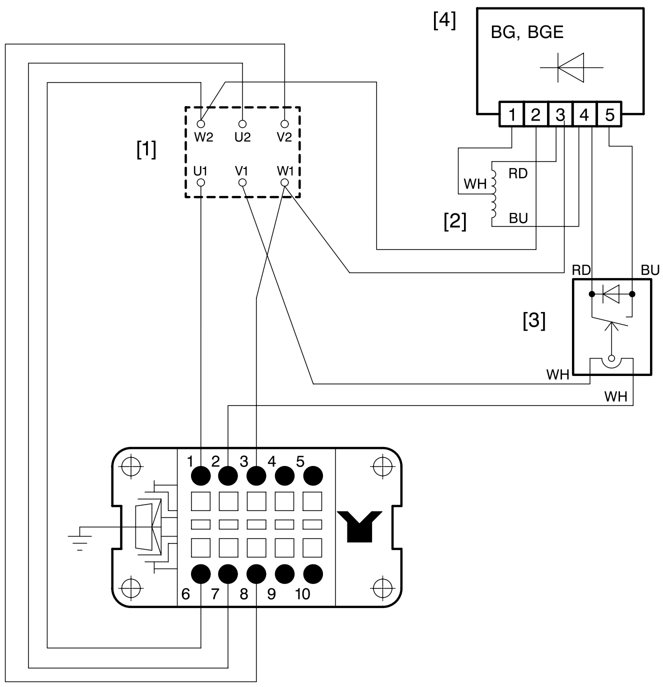
[1] BG only with DR63
[2] Brake coil
[3] UR11 (42-150V = BN)
UR15 (150-500V = BK)
[4] Voltage relay UR11/15

09 775.97_2 Brake control BSR



[1] Switch cabinet

09 775.97_3



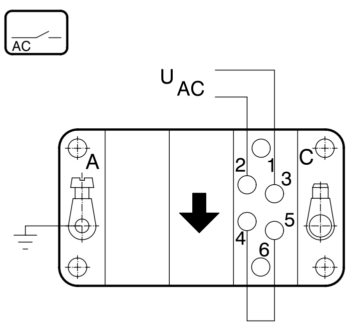
[1] Terminal board
[2] Brake coil
[3] Current relay SR11/15
[4] BG only with DR63

_09 776 02 97_ AC brake motor with plug connector ABB1, ABB7, ABB8, ABC8, ABE7, ABE8, ADB2, ADE2, AMA1, AMB1, AMB2, AMB7, AMB8, AMD1, AMD2, AMD8, AME1, AME2, AME7, AME8

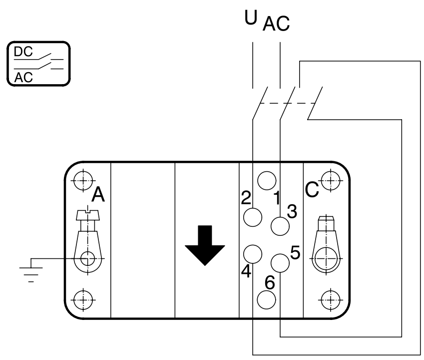
Internal brake control

09 776.97_1 Brake control BGE, BG

External voltage supply



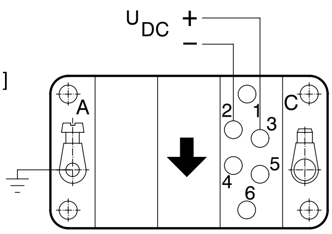
[1]



[1] BG, not for motors size 112 and up

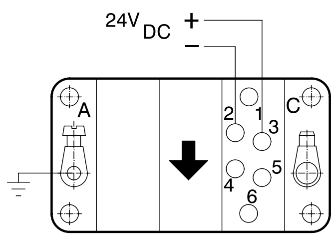
09 776.97_2 Direct DC voltage supply

[1]



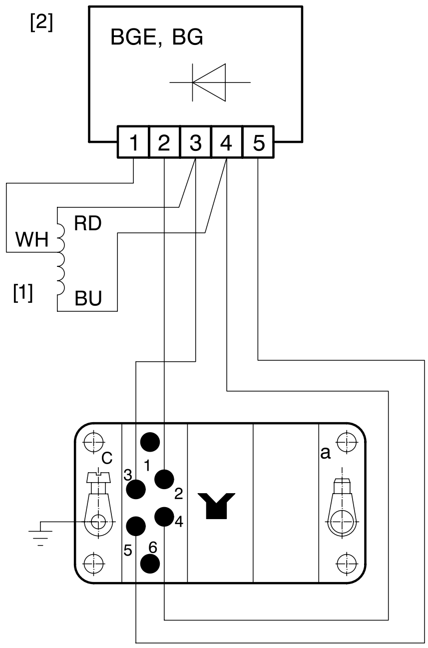
[1] Not for motors size 112 and up

09 776.97_3 Brake control BSG



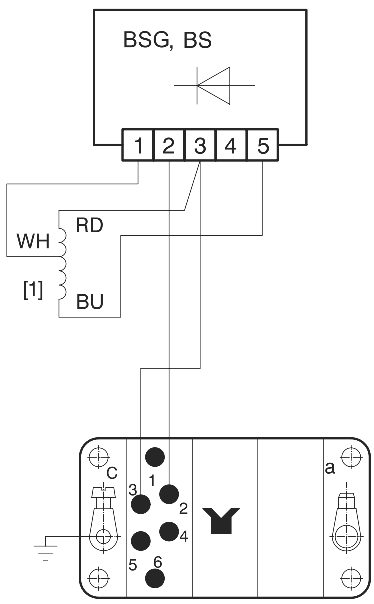
3

09 776.97_4 Brake control BGE, BG



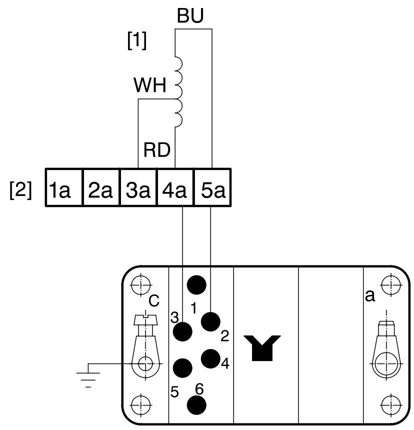
[1] Brake coil
[2] BG, not for motors size 112 and up

09 776.97_5 Brake control BSG, BS



[1] Brake coil

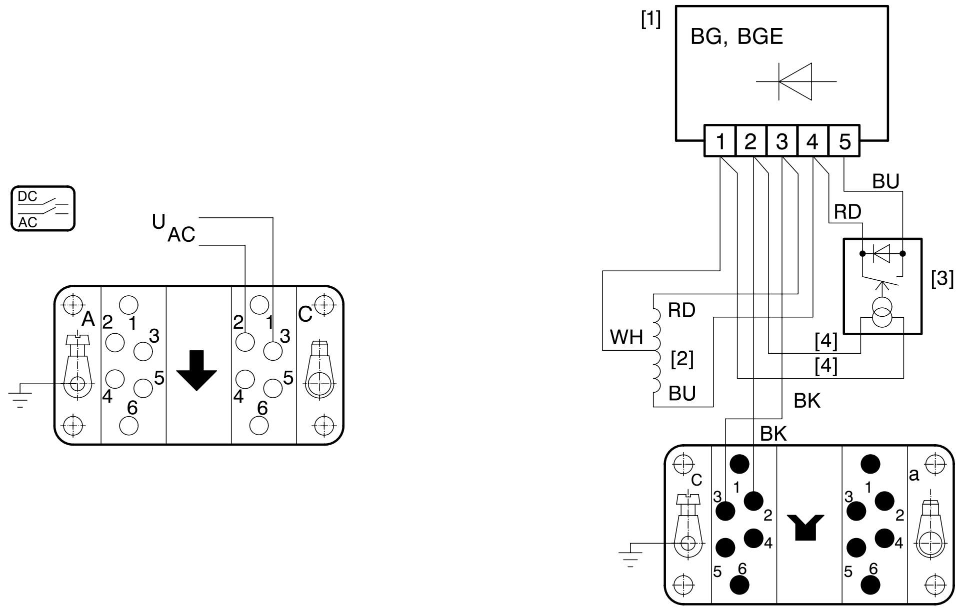
09 776.97_6 Direct DC voltage supply



[1] Brake coil
[2] Terminal strip

09 777 03 97	AC brake motor 63-132S with plug connector AMA1, AMD1, AMA8, AMD8(63) Brake control BUR, BSR Brake voltage = phase voltage

09 777.97_1 Brake control BUR



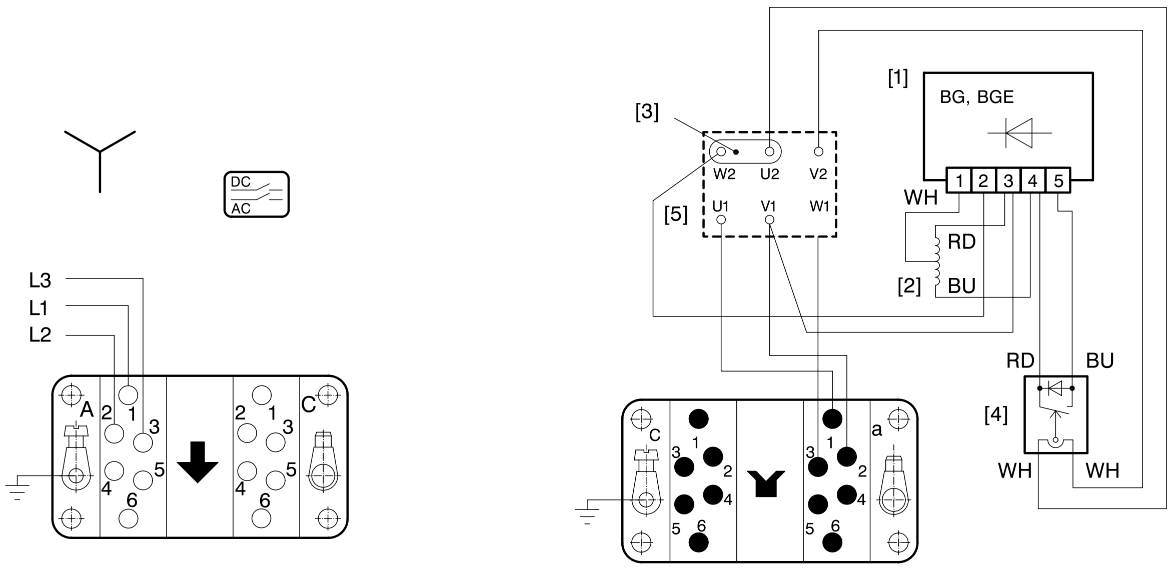
[1] BG, only with DR63
[2] Brake coil
[3] Voltage relay UR11/15
[4] UR11 (42-159 V) = BN
UR15 (150-500 V) = BK

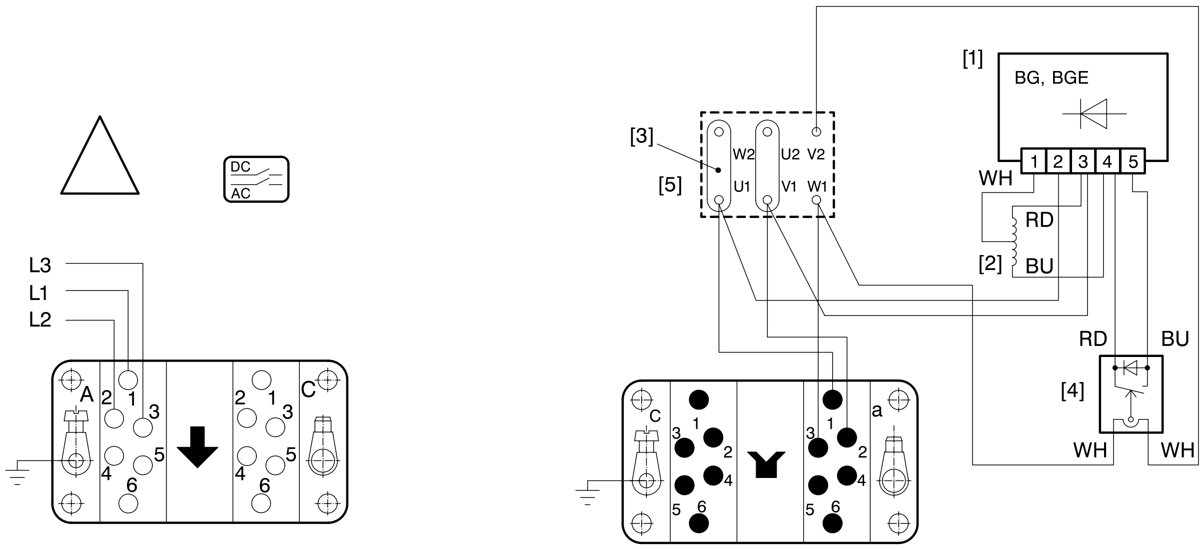
09 777.97_2 Brake control BSR

For example:Motor AM.1: 230 V △ / 400 V ⅄

Motor AM.8: 400 V ⅄

Brake 230 V AC



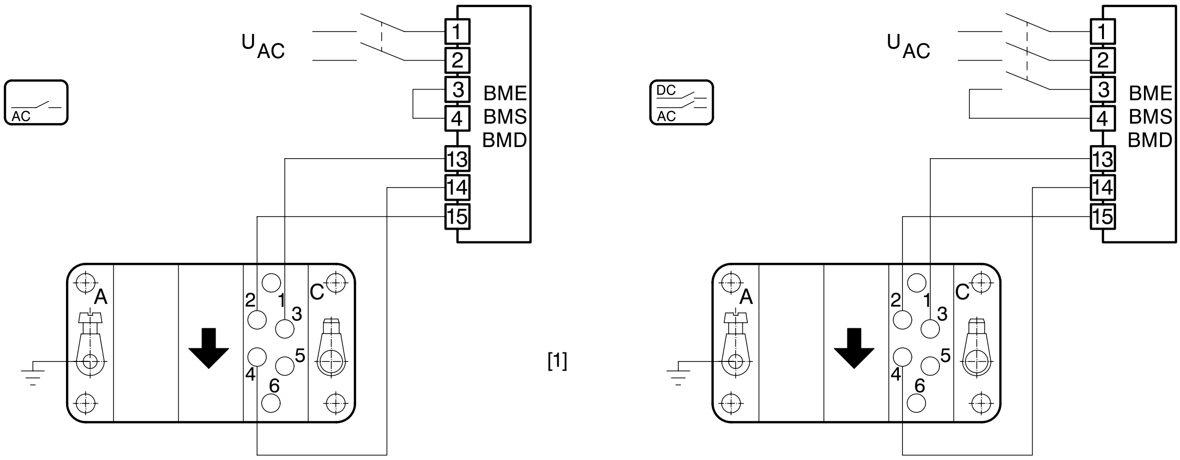


[1] BG, only with DR63
[2] Brake coil
[3] Terminal link
[4] Current relay SR11
[5] Terminal board

09 789 05 98 AC brake motor with plug connector ABB1, ABB7, ABB8, ABC8, ABE7, ABE8, ADB2, ADE2, AMA1, AMB1, AMB2, AMB7, AMB8, AMD1, AMD2, AMD8, AME1, AME2, AME7, AME8

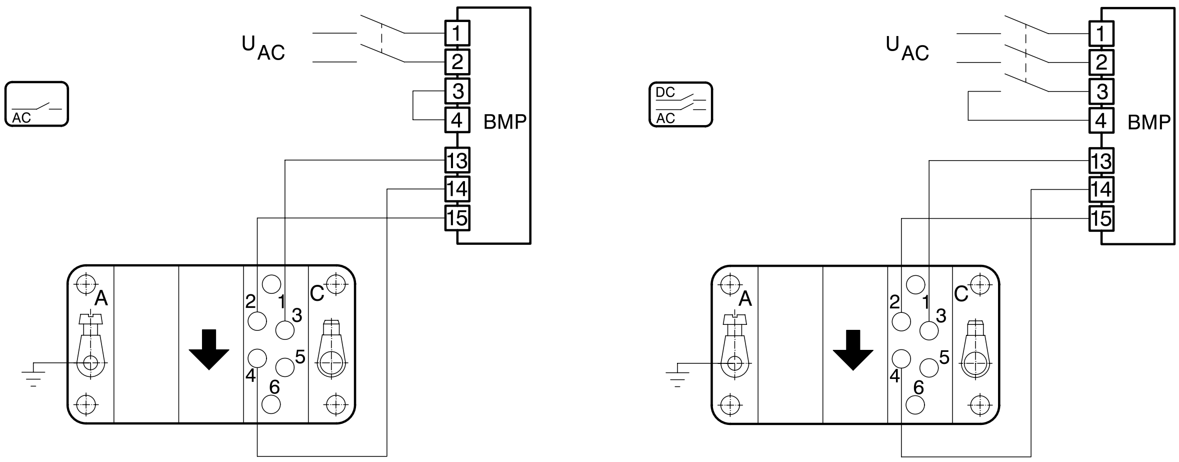
External brake control

09 789.98_1 Brake control BME, BMS, BMD

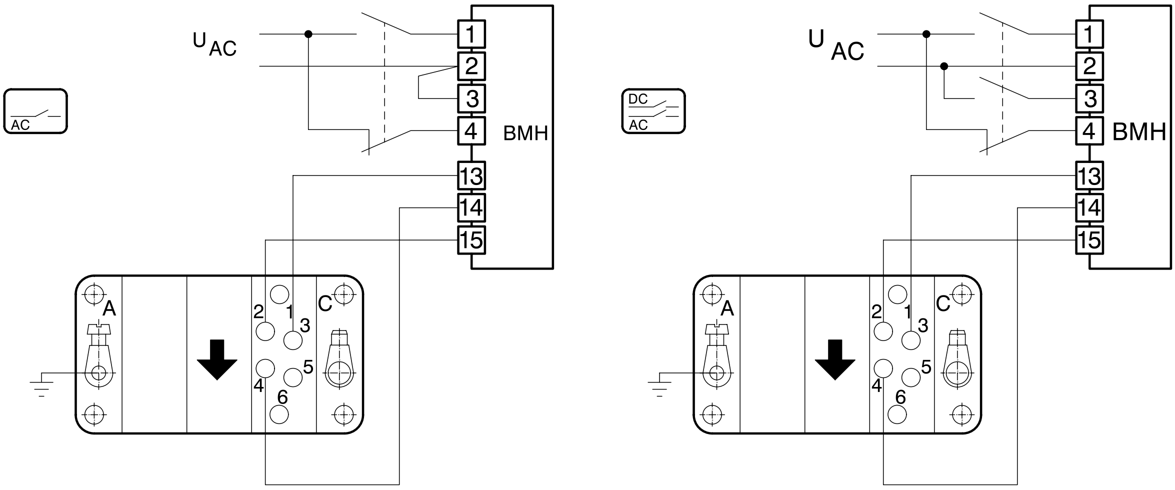


[1] BMS not for motors size 112 and up

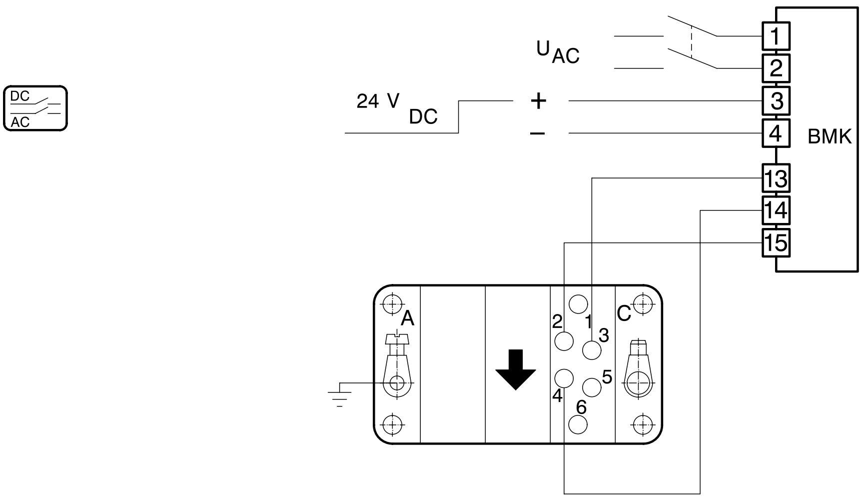
09 789.98_2 Brake control BMP



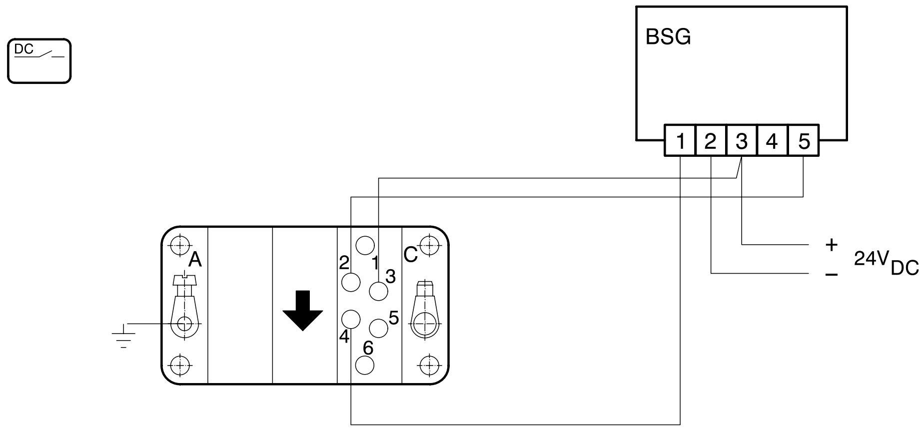
09 789.98_3 Brake control BMH



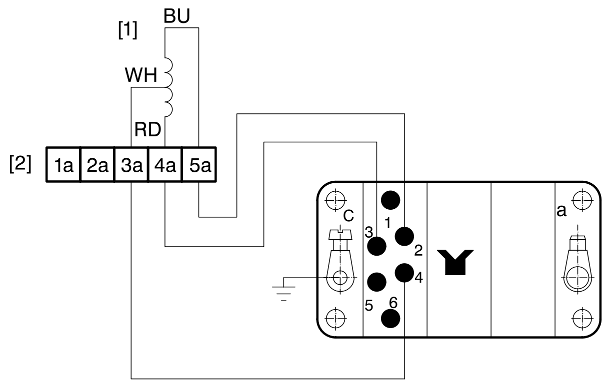
09 789.98_4 Brake control BMK



09 789.98_5 Brake control BSG



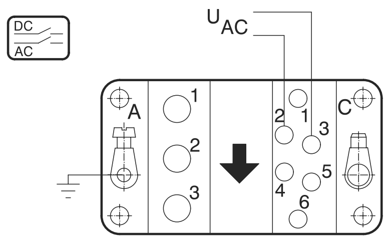
09 789.98_6



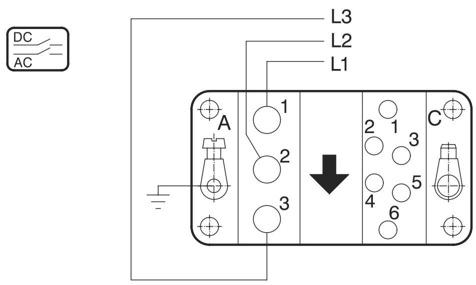
[1] Brake coil
[2] Terminal strip

09 800 03 98 AC brake motor 132M-180 with plug connector ABB8, ABC8 (71-180), ABE8
Brake control BUR, BSR
Brake voltage = phase voltage

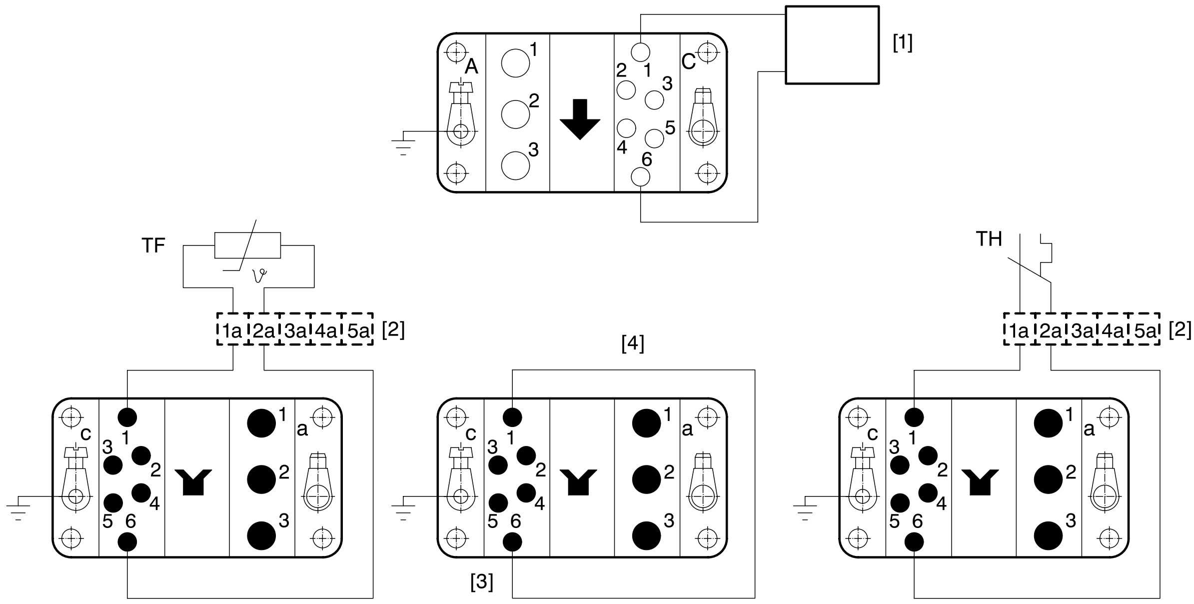
09 800.98_1a Brake control BUR



09 800.98_1b Brake control BSR

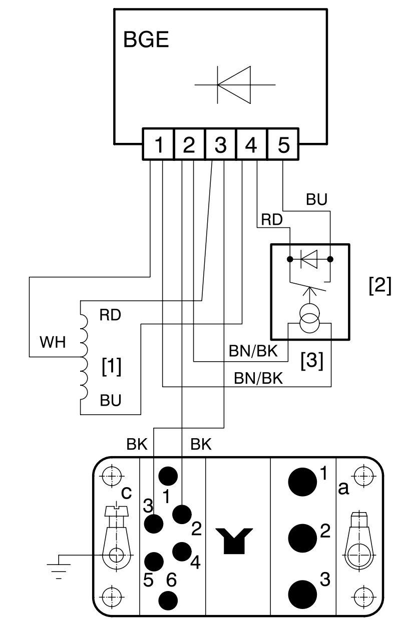


09 800.98_2 Motor protection



[1] Evaluation
[2] Terminal strip (only with ABC8)
[3] Jumper for monitoring
[4] Always with jumper if no TF/TH

09 800.98_3 Brake control BUR

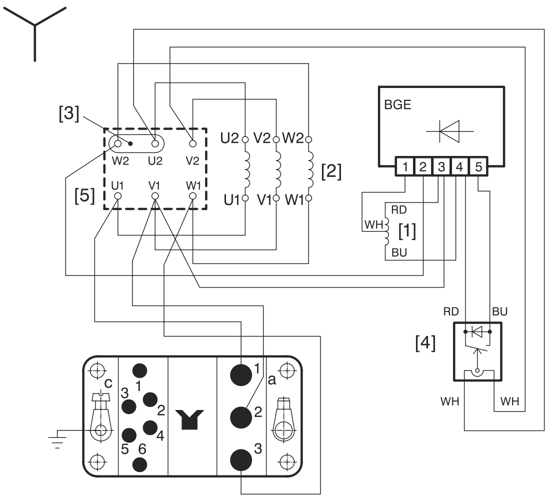


[1] Brake coil
[2] Voltage relay UR 11/15
[3] RU 11 (42-150 V) = BN
UR 15 (150-500 V) = BK

09 800.98_4a Brake control BSR

For example: Motor 400 V ⅄

Brake 230 V AC

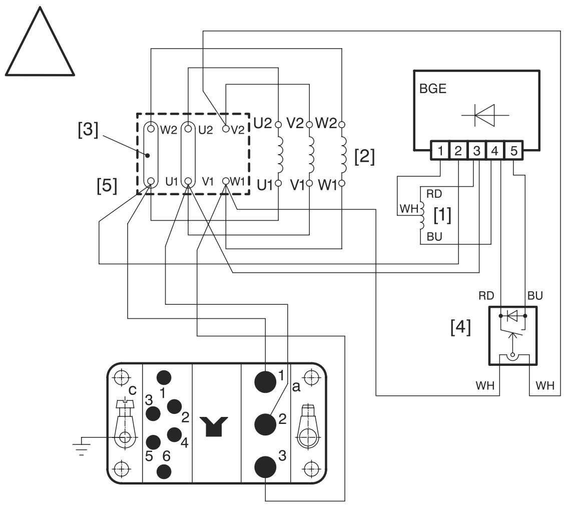


[1] Brake coil
[2] Motor winding
[3] Terminal link
[4] Current relay SR11
[5] Terminal board

09 800.98_4b Brake control BSR

For example: Motor 400 V △

Brake 400 V AC



[1] Brake coil
[2] Motor winding
[3] Terminal link
[4] Current relay SR11
[5] Terminal board

09 807 02 98 AC brake motor with plug connector AMAX, AMD9

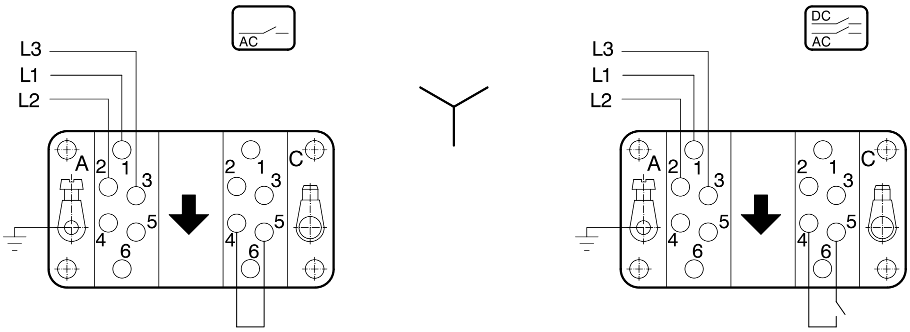
Brake control BGE, BG

Voltage supply from motor

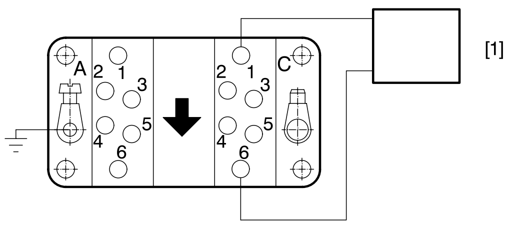
09 807.98_1 Not for multi-speed and controlled motors!

Brake voltage equal to ⅄ voltage

For example: Motor 400 V ⅄
Brake 400 V AC

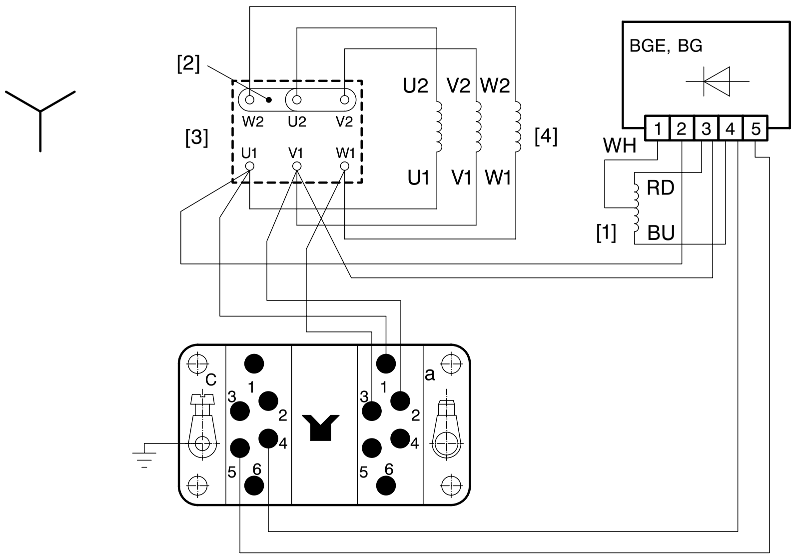


09 807.98_2 Motor protection



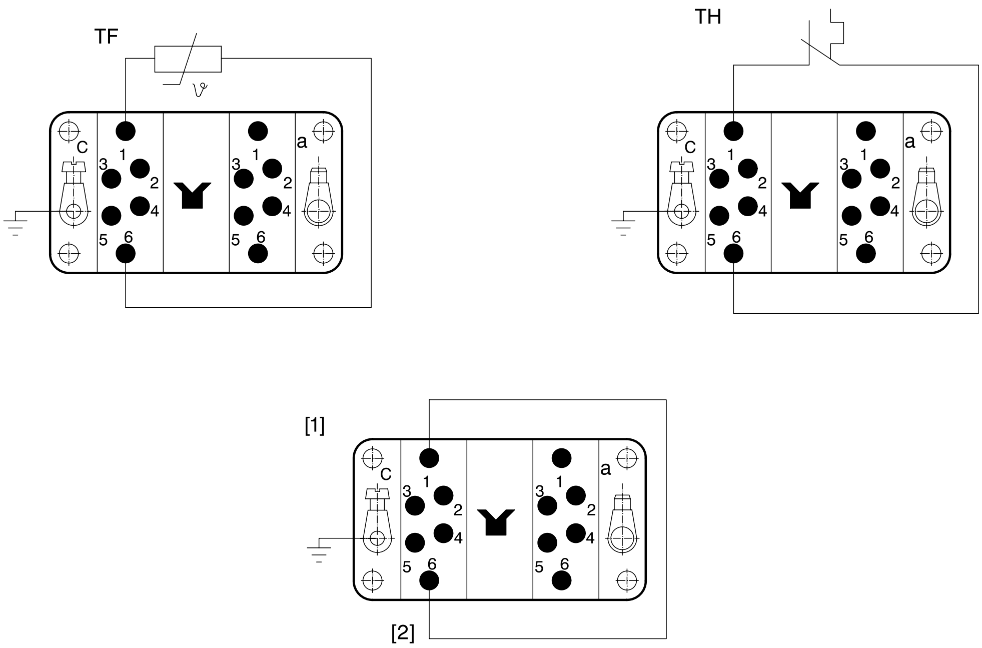
[1] Evaluation

09 807.98_3 AMAX, AMD9



[1] Brake coil
[2] Terminal link
[3] Terminal board
[4] Motor winding

09 807.98_4 Motor protection

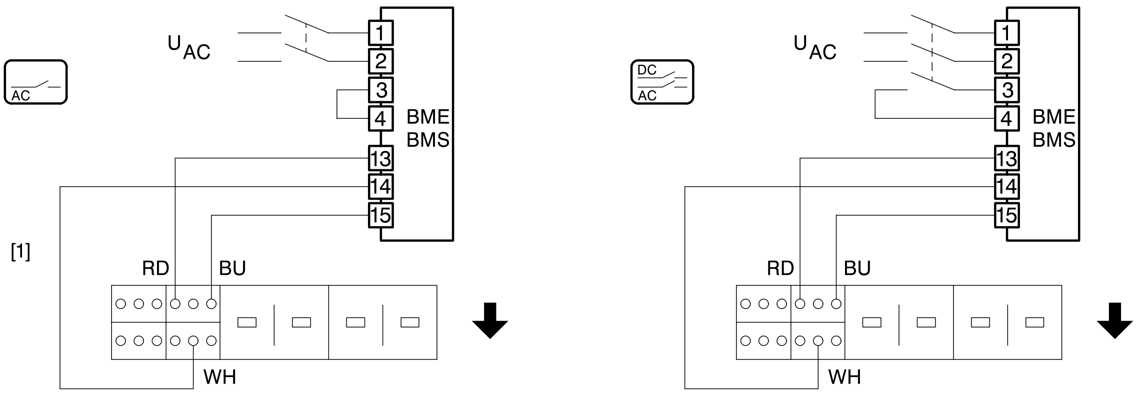


[1] Always with jumper if no TF/TH
[2] Jumper for monitoring

3

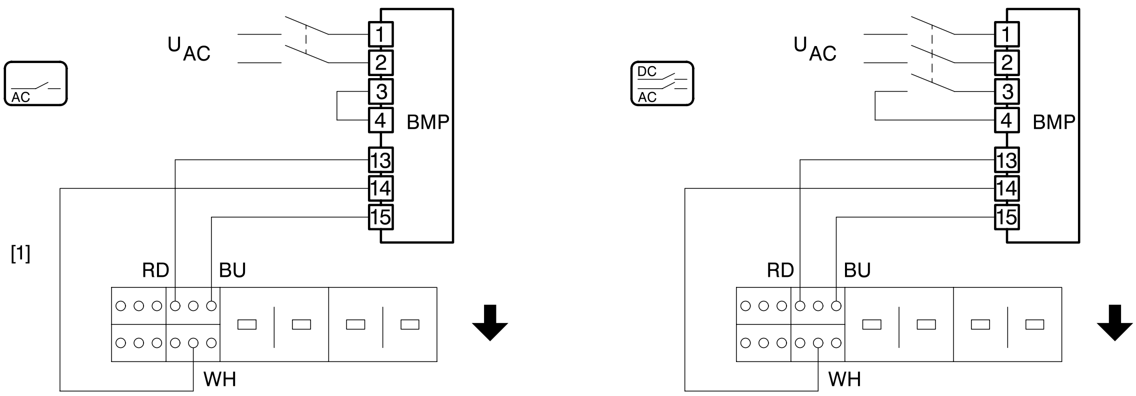
09 809 199 AC brake motor with plug connector APG1
Brake control system in the control cabinet

09 809.99_1 Brake control BME, BMS

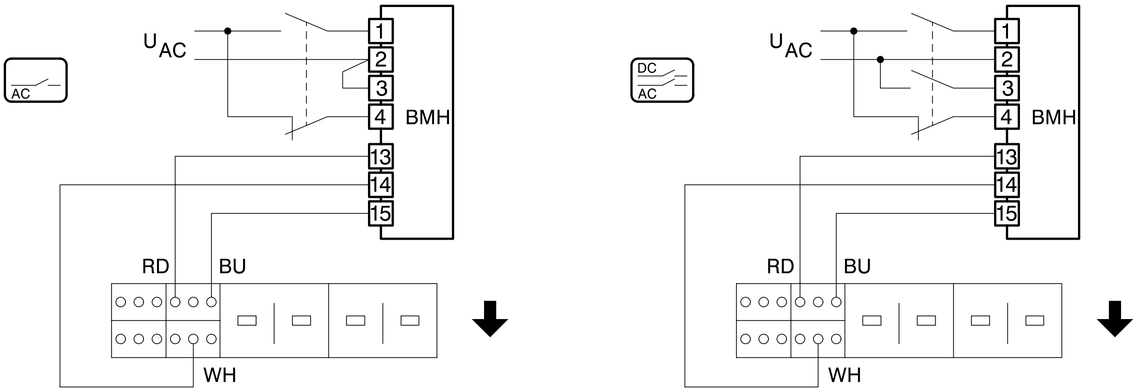


[1] View on terminal end

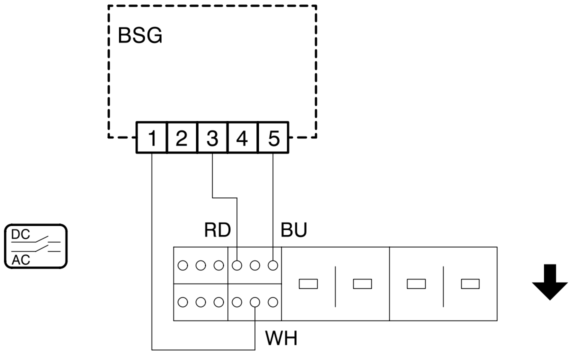
09 809.99_2 Brake control BMP



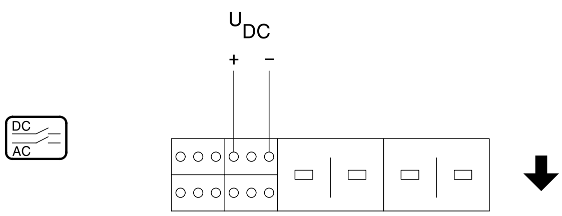
09 809.99_3 Brake control BMH



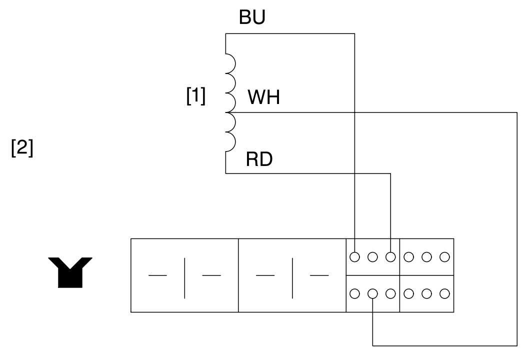
09 809.99_4 Brake control BSG



09 809.99_5 Direct DC voltage supply



09 809.99_6



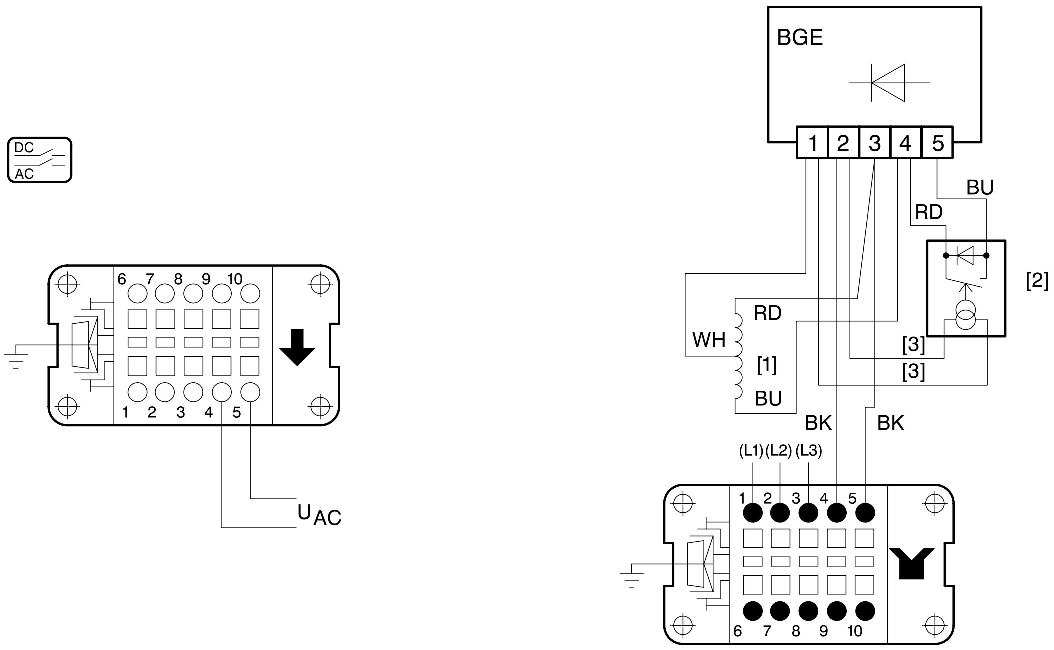
[1] Brake coil
[2] View on terminal end

09 818 01 02 AC brake motor with plug connector ACB1, ACE1, ASB1, ASE1

Brake control BUR, BSR

Brake voltage = phase voltage

09 818.02_1 Brake control BUR

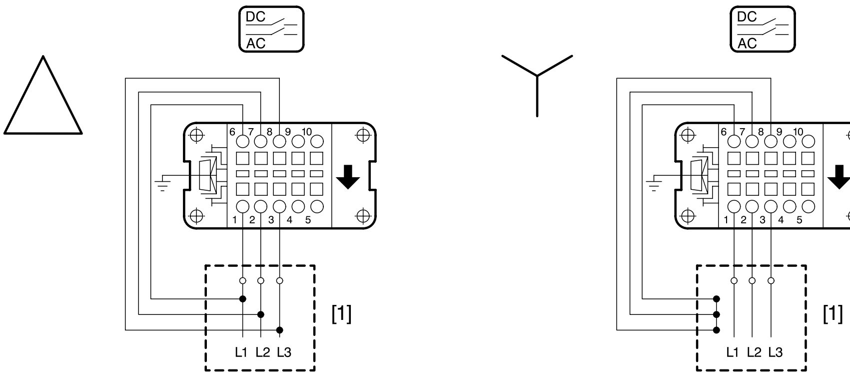


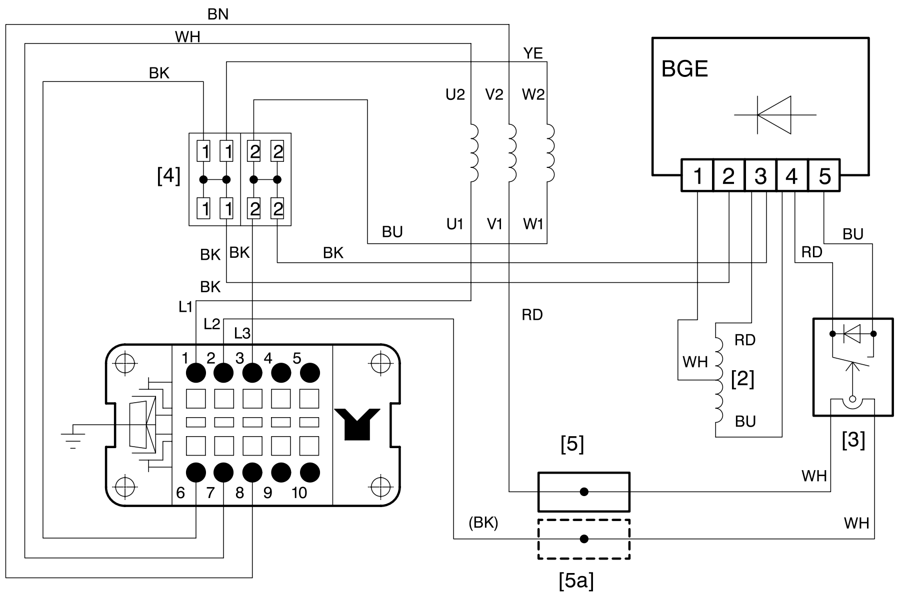
[1] Brake coil
[2] Voltage relay UR11/15
[3] UR11 (42-150 V) = BN
UR15 (150-500 V) = BK

09 818.02_2 Brake control BSR

For example:Motor 230 V △ / 400 V ⅄

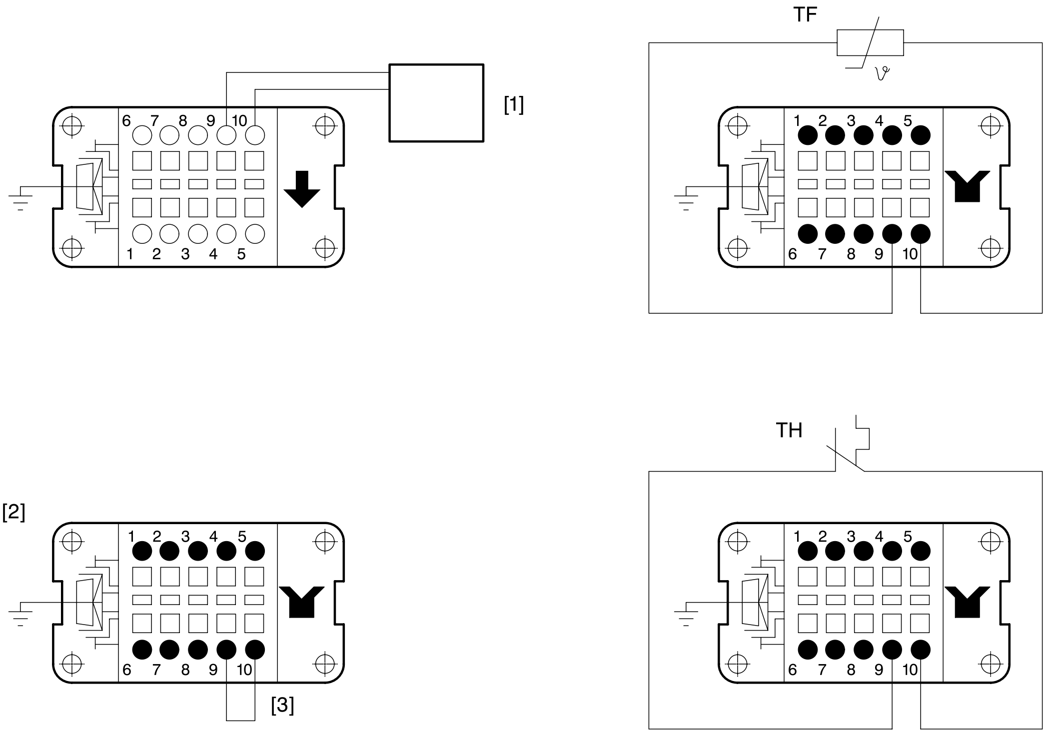
Brake: 230 V / AC





[1] Switch cabinet
[2] Brake coil
[3] Current relay SR11/SR15
[4] Terminal strip
[5] Auxiliary terminal
[5a] Auxiliary terminal (only with SR15)

09 818.02_3 Motor protection



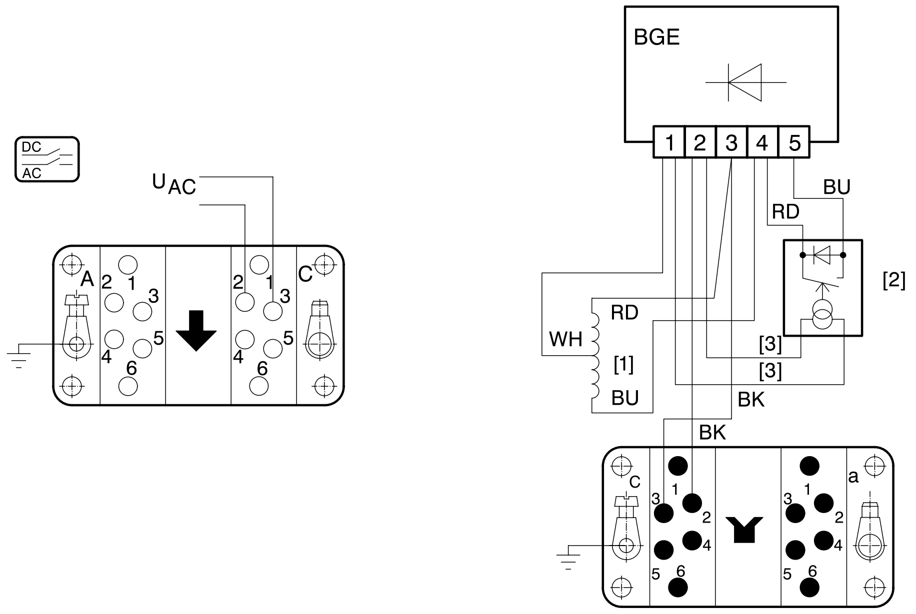
[1] Evaluation
[2] Always with jumper if no TF/TH
[3] Jumper for monitoring

09 819 02 02 AC brake motor 71-132S with plug connector AMB1, AME1, AMB8, AME8

Brake control BUR, BSR

Brake voltage = phase voltage

09 819.02_1 Brake control BUR

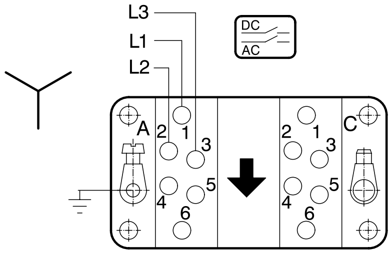


[1] Brake coil
[2] Voltage relay UR11/15
[3] UR11 (42-150 V) = BN
UR15 (150-500 V) = BK

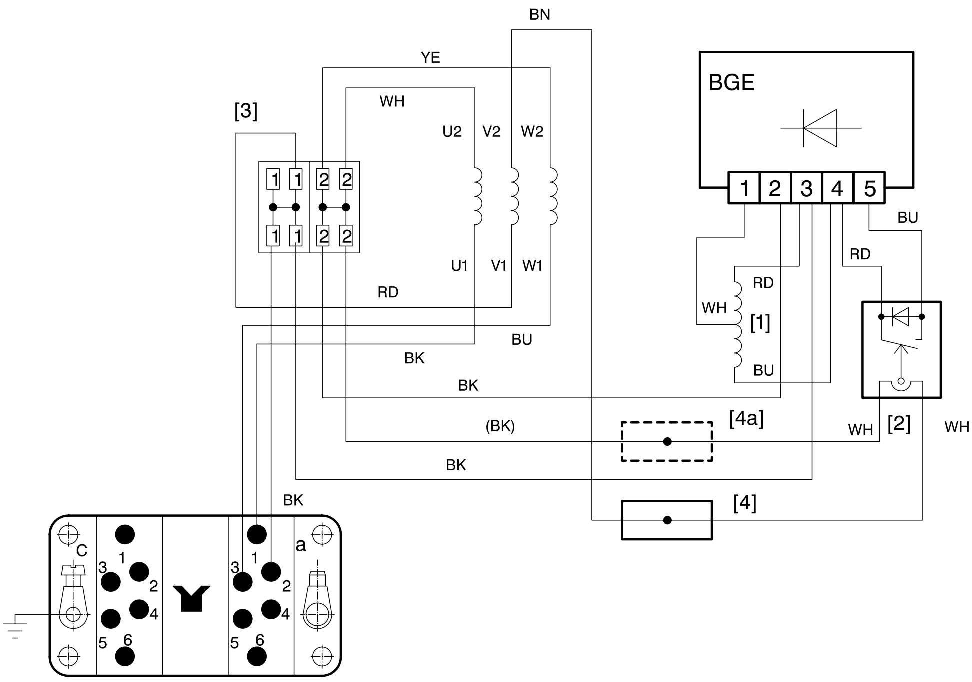
09 819.02_2 Brake control BSR

For example: Motor 400 V ⅄

Brake 230 V AC



09 819.02_3

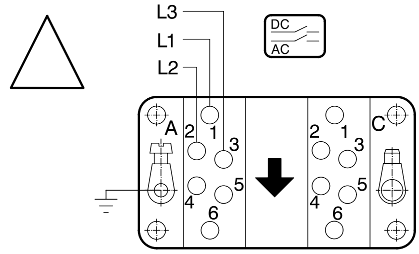


[1] Brake coil
[2] Voltage relay SR11/SR15
[3] Terminal strip
[4] Auxiliary terminal
[4a] Auxiliary terminal (only with SR15)

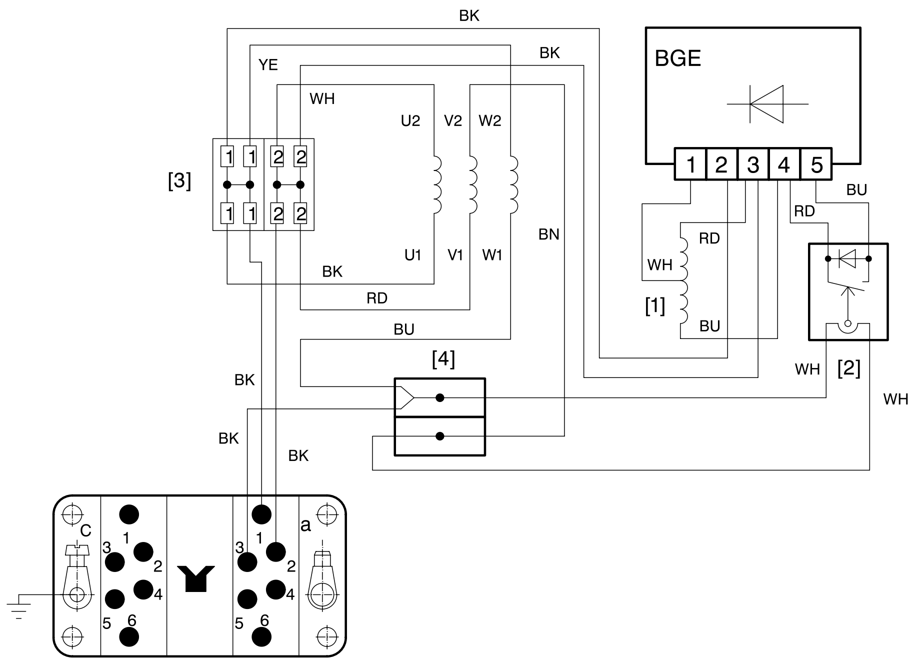
09 819.02_4 Brake control BSR

For example: Motor 400 V △

Brake 400 V AC

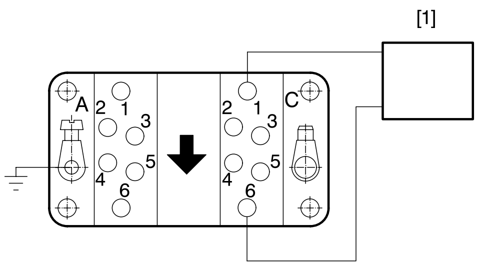


09 819.02_5



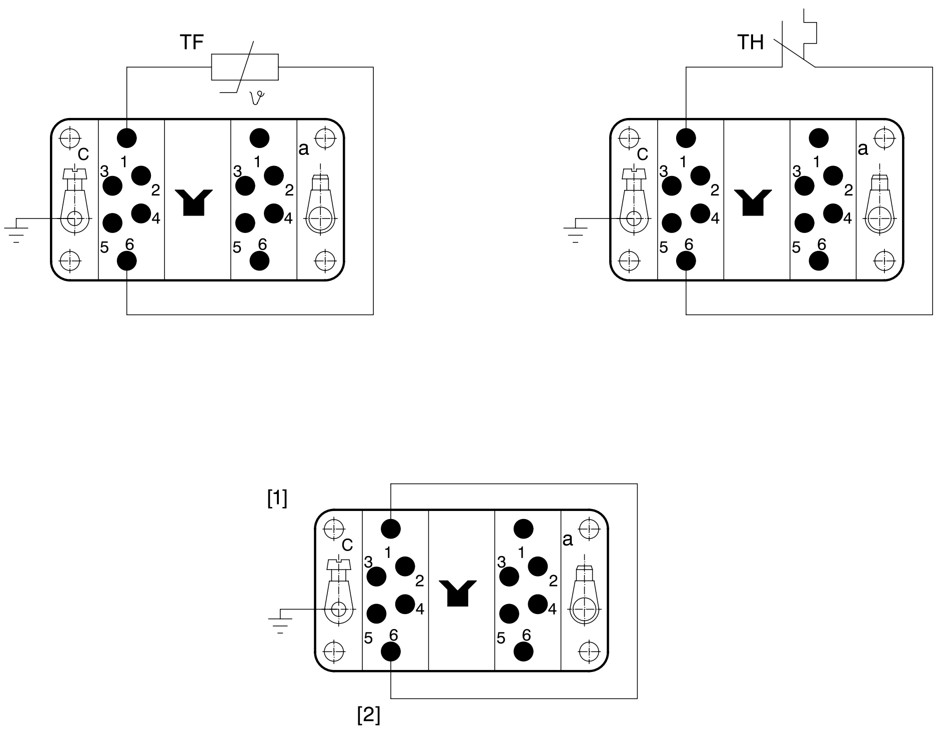
[1] Brake coil
[2] Current relay SR11/SR15
[3] Terminal strip
[4] Auxiliary terminal

09 819.02_6 Motor protection



[1] Evaluation

09 819.02_7



[1] Always with jumper if no TF/TH
[2] Jumper for monitoring

09 821 000 AC brake motor with plug connector AMB9, AME9

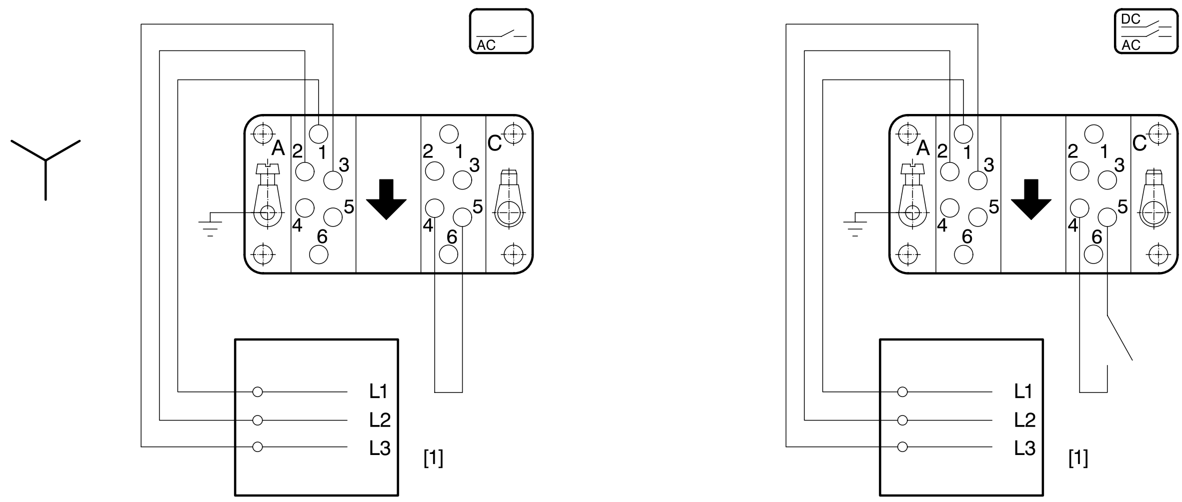
Motor in ⅄ connection

Brake voltage = phase-to-phase voltage

09 821.00_1 Not for multi-speed and controlled motors

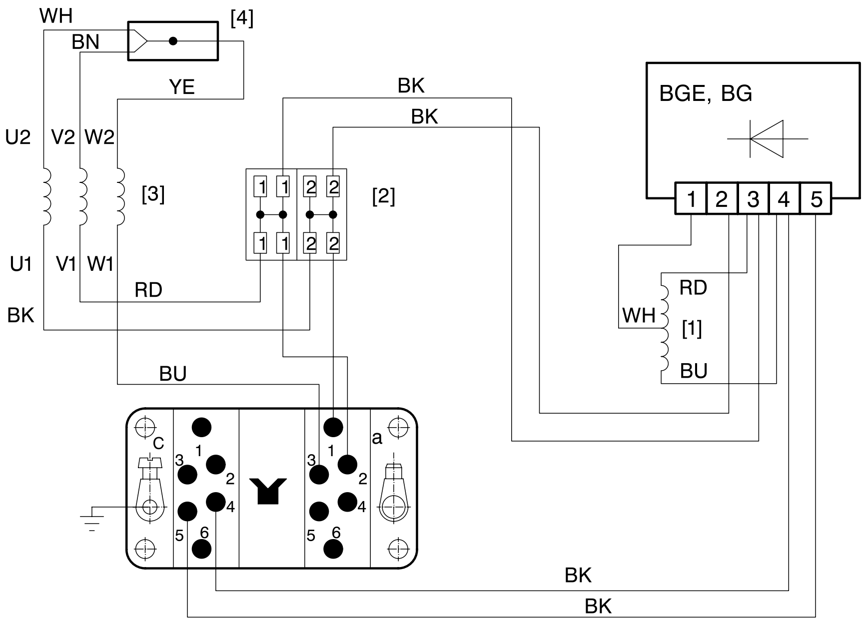
For example: Motor 400 V ⅄

Brake 400 V AC



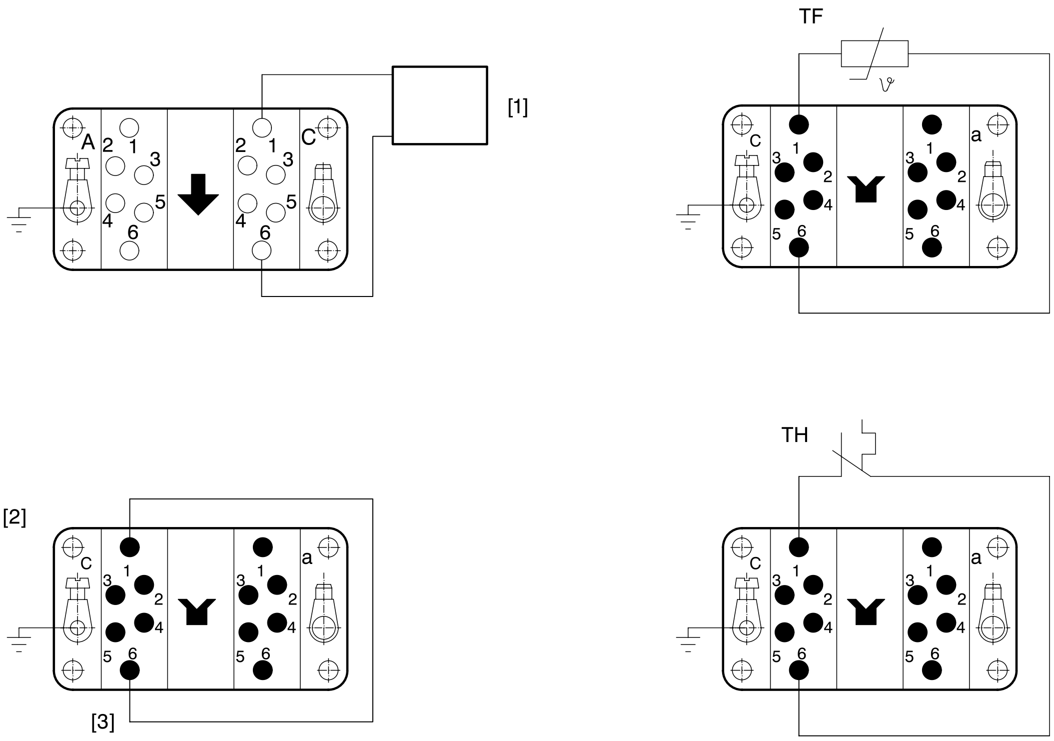
[1] Switch cabinet

09 821.00_2



[1] Brake coil
[2] Terminal strip
[3] Motor winding
[4] Auxiliary terminal

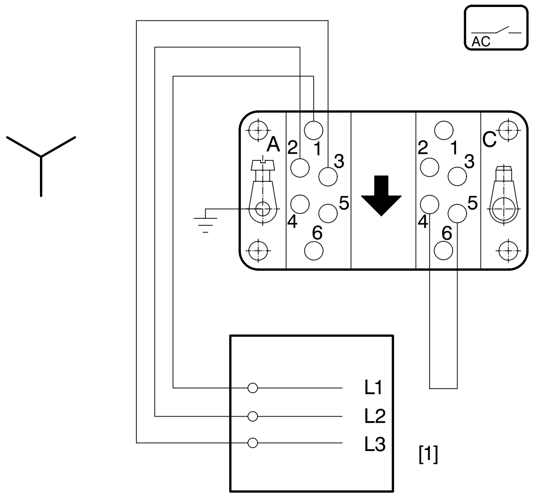
09 821.00_3 Motor protection

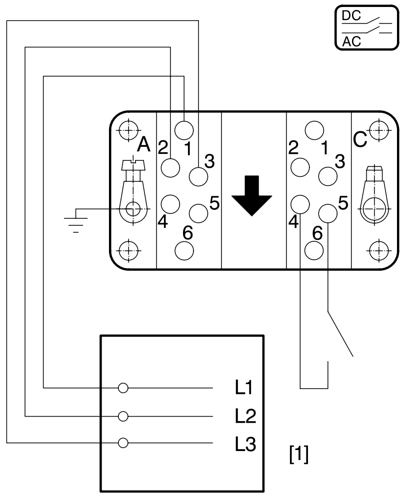


[1] Evaluation
[2] Always with jumper if no TF/TH
[3] Jumper for monitoring

09 822 000 AC brake motor with plug connector AMB9, AME9
Motor in ⅄ connection
Brake voltage = phase voltage

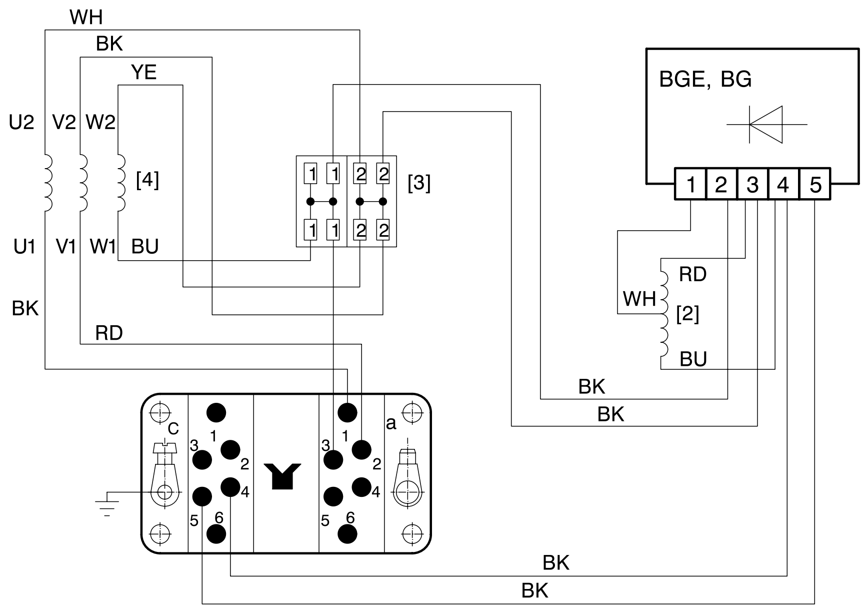
09 822.00_1 Not for multi-speed and controlled motors
For example: Motor 400 V ⅄
Brake 230 V AC





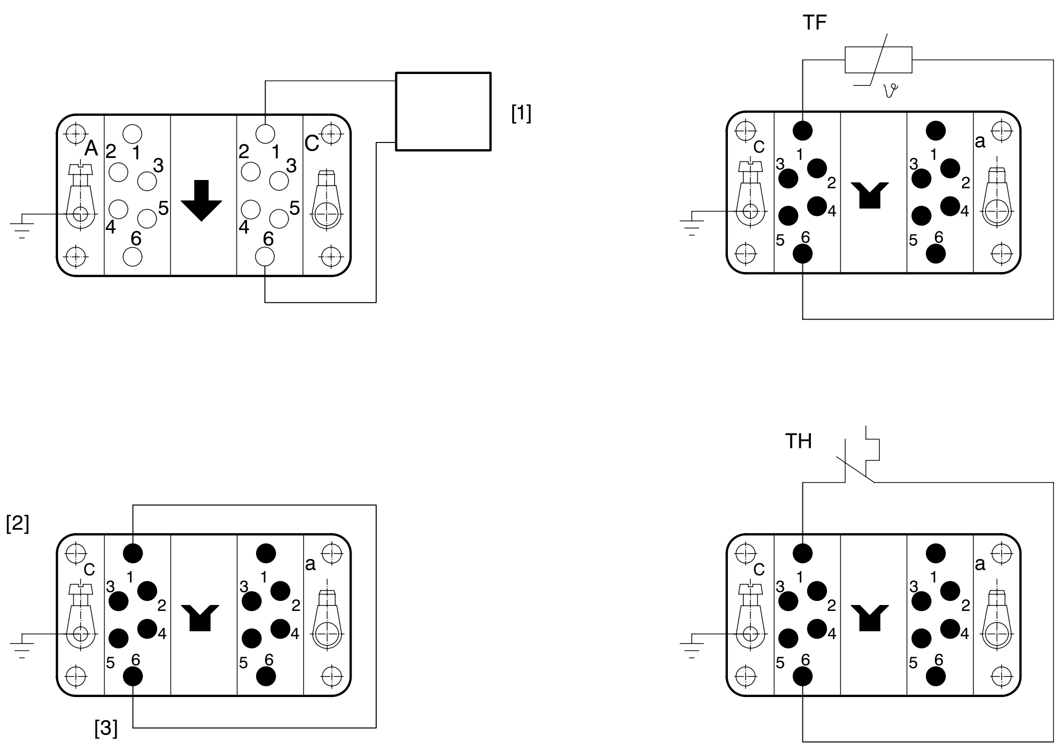
[1] Switch cabinet

09 822.00_2 AMB9, AME9



[1] Brake coil
[2] Terminal strip
[3] Motor winding

09 822.00_3 Motor protection



[1] Evaluation
[2] Always with jumper if no TF/TH
[3] Jumper for monitoring

09 841 002 AC brake motor with plug connector ASB9, ASE9

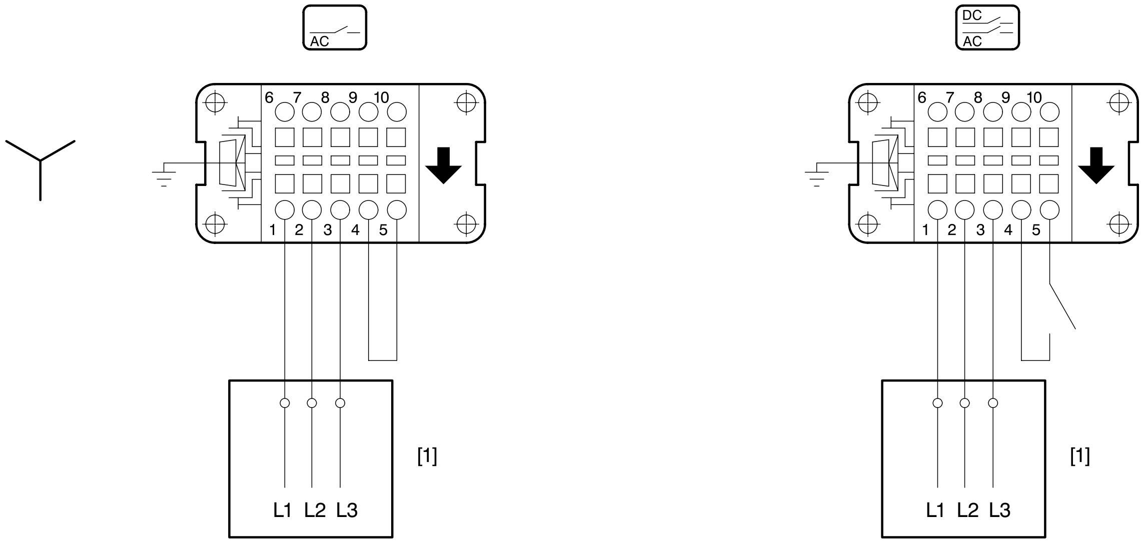
Motor in ⅄ connection

Brake voltage = phase-to-phase voltage

09 841.02_1 Not for multi-speed and controlled motors

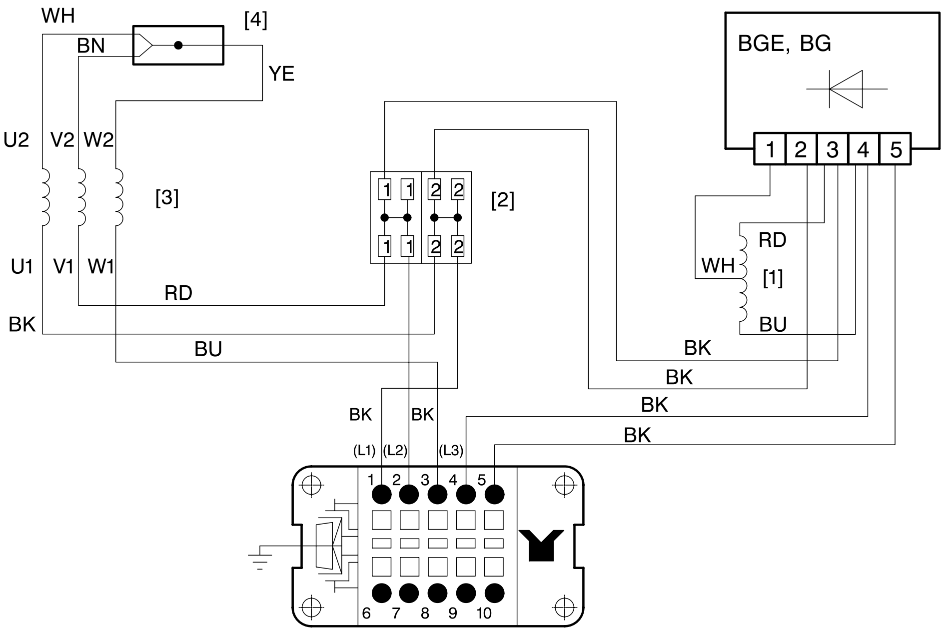
For example: Motor 400 V ⅄

Brake 400 V AC



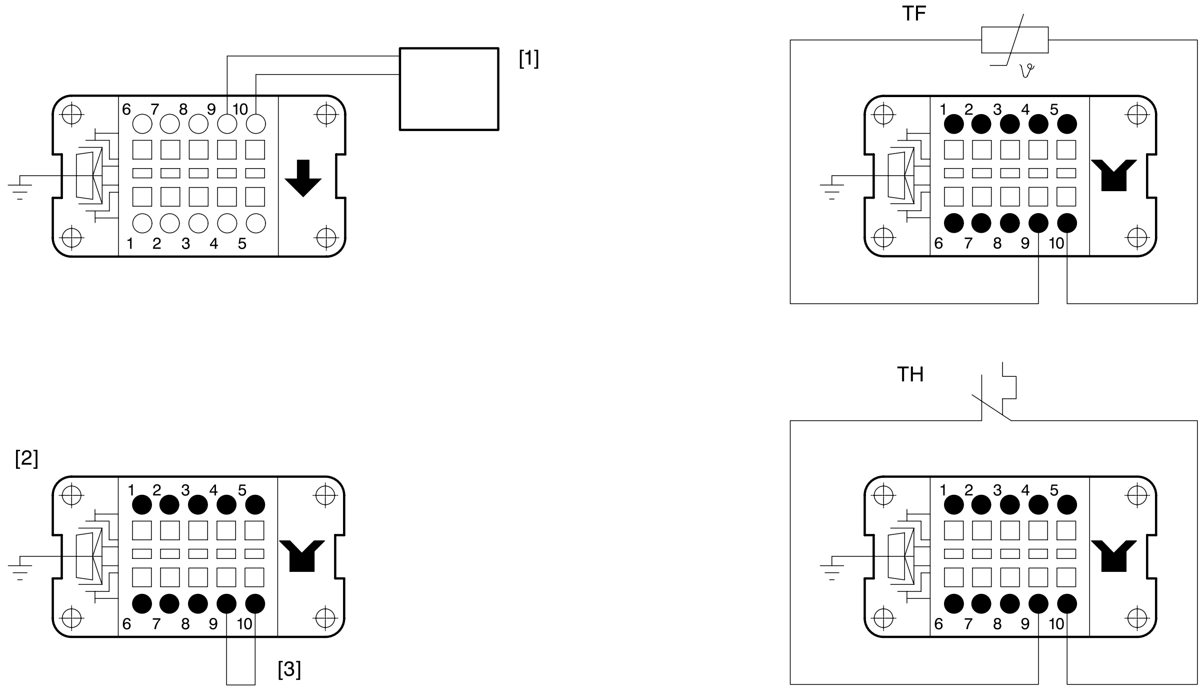
[1] Switch cabinet

09 841.02_2



[1] Brake coil
[2] Terminal strip
[3] Motor winding
[4] Auxiliary terminal

09 841.02_3 Motor protection



[1] Evaluation
[2] Always with jumper if no TF/TH
[3] Jumper for monitoring

09 842 002 AC brake motor with plug connector ASB9, ASE9

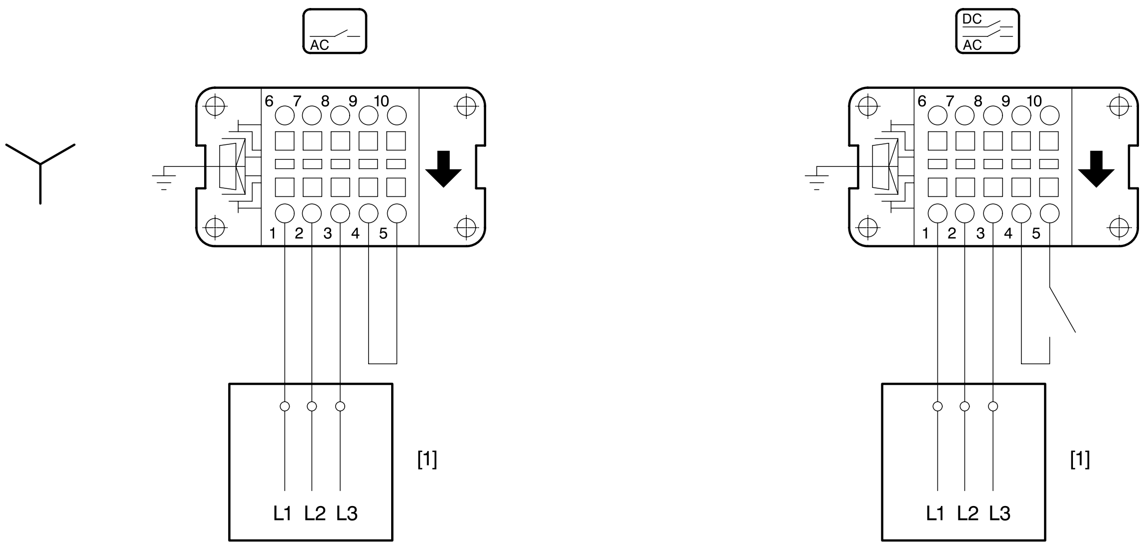
Motor in ⅄ connection

Brake voltage = phase voltage

09 842.02_1 Not for multi-speed and controlled motors

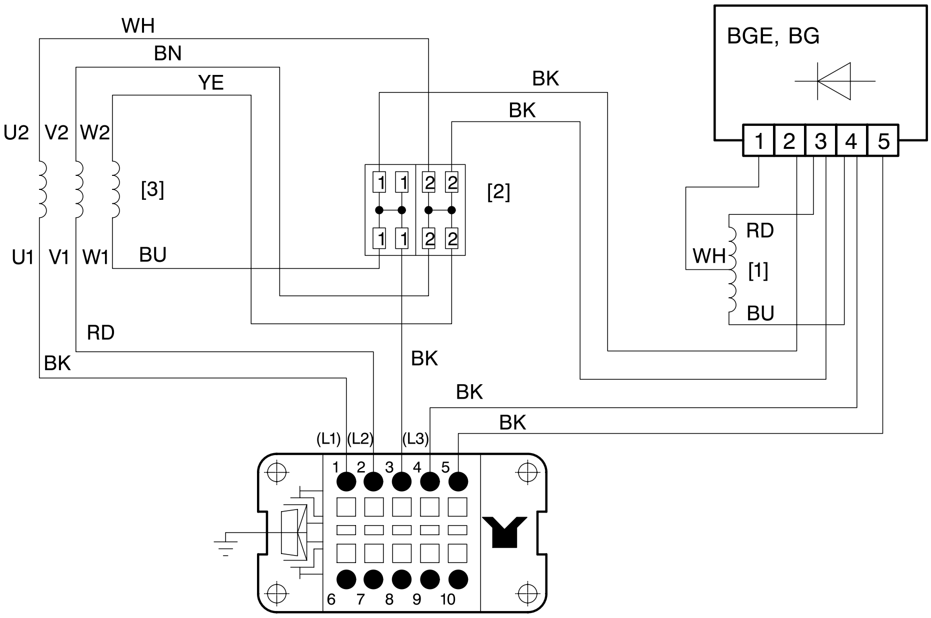
For example: Motor 400 V ⅄

Brake 230 V AC



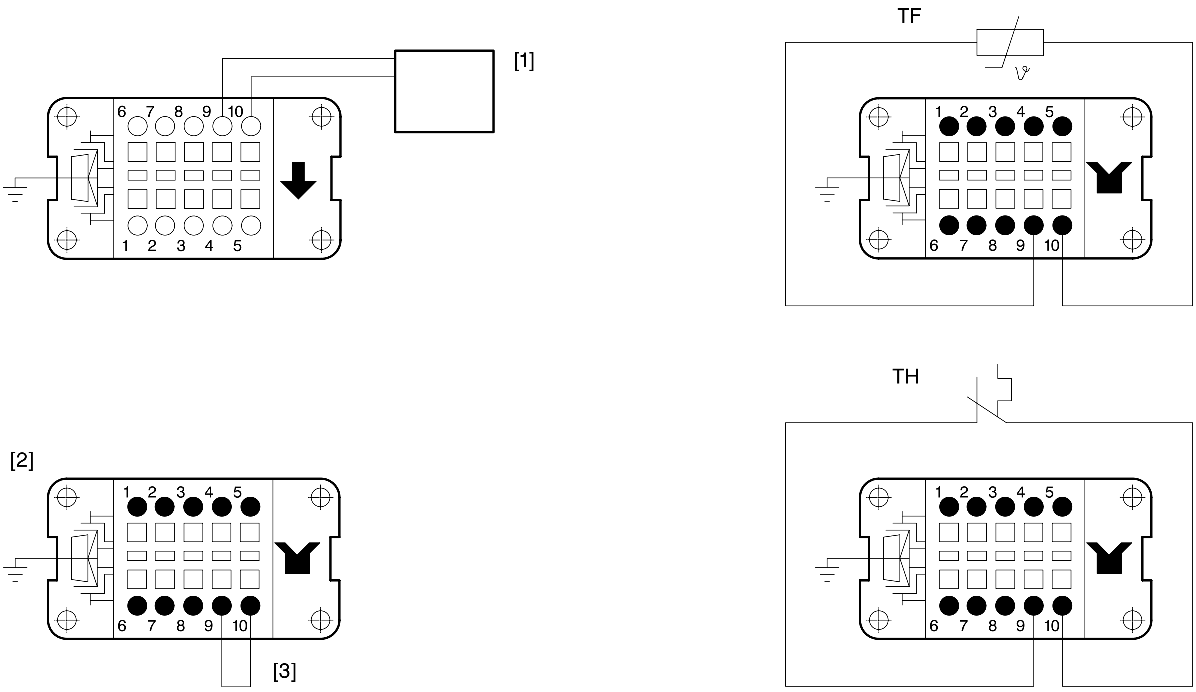
[1] Switch cabinet

09 842.02_2



[1] Brake coil
[2] Terminal strip
[3] Motor winding

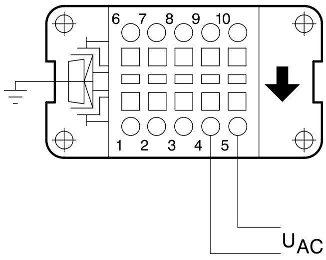
09 842.02_3 Motor protection



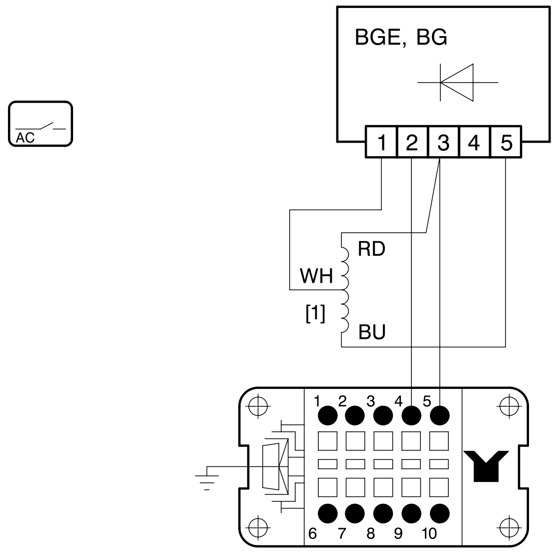
[1] Evaluation
[2] Always with jumper if no TF/TH
[3] Jumper for monitoring

09 844 002 AC brake motor with plug connector ASK1
Brake control BGE, BG, BUR
External voltage supply

09 844.02_1 Brake control BGE, BG
Brake control BUR

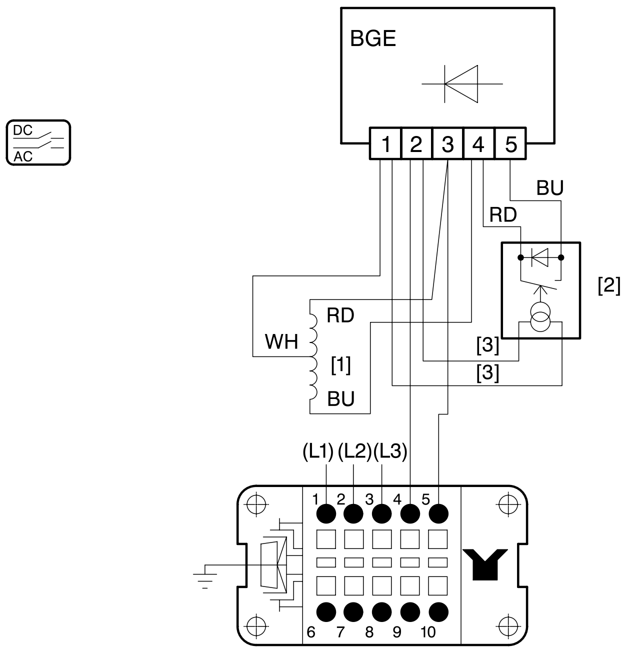


09 844.02_2 Brake control BGE, BG



[1] Brake coil

09 844.02_3 Brake control BUR

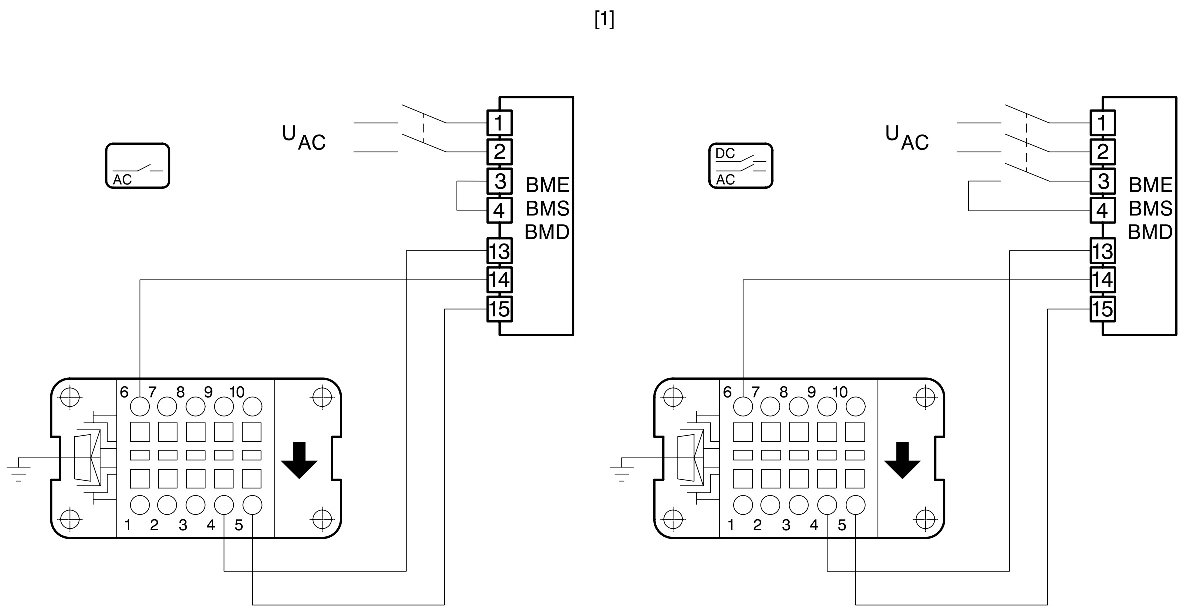


[1] Brake coil
[2] Voltage relay UR11/15
[3] UR11 (42-150 V) = BN
UR15 (150-500 V) = BK

09 848 05 02 AC brake motor with plug connector ACA8, ACB8, ACD8, ACE8, ASA8, ASB7, ASB8, ASD8, ASE7, ASE8

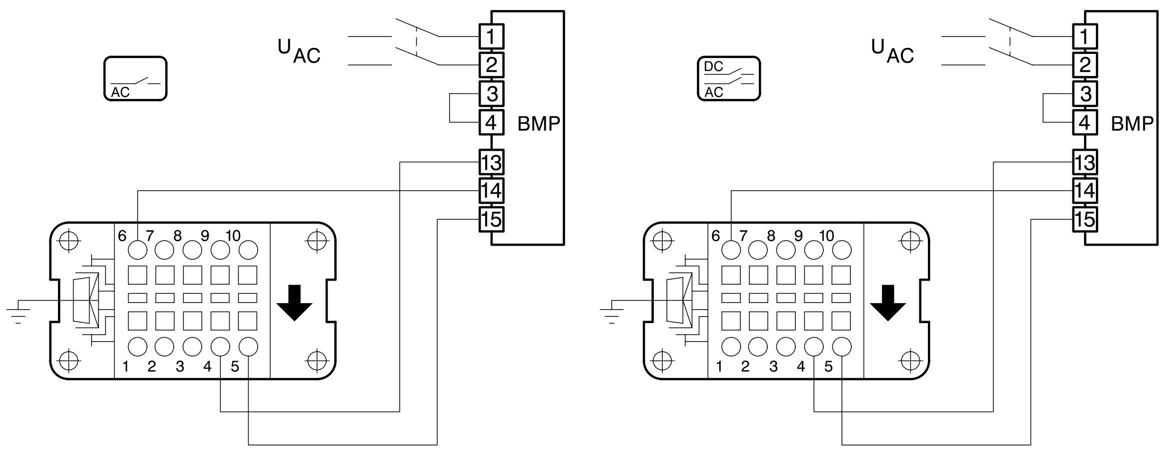
External brake control

09 848.02_1 Brake control BME, BMS, BMD

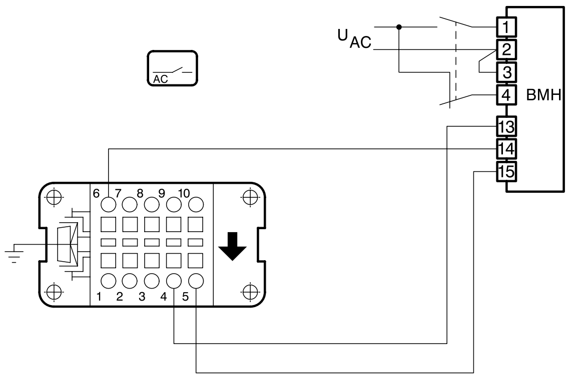


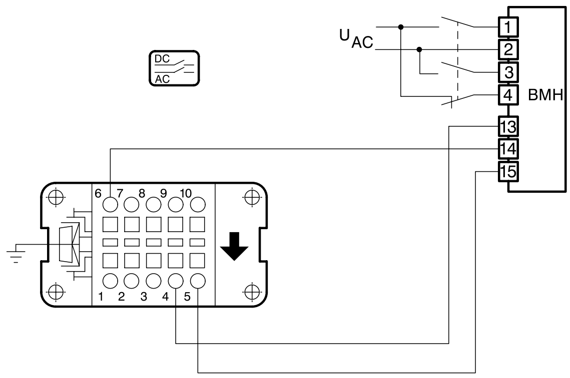
[1] BMS
Not for motors size 112 and up

09 848.02_2 Brake control BMP

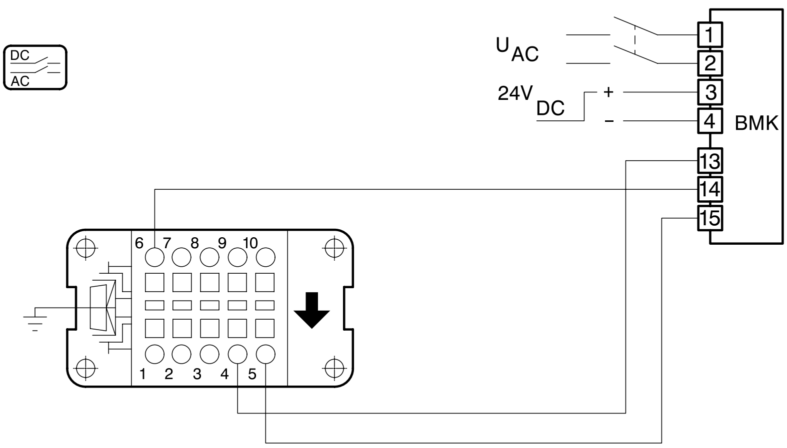


09 848.02_3 Brake control BMH

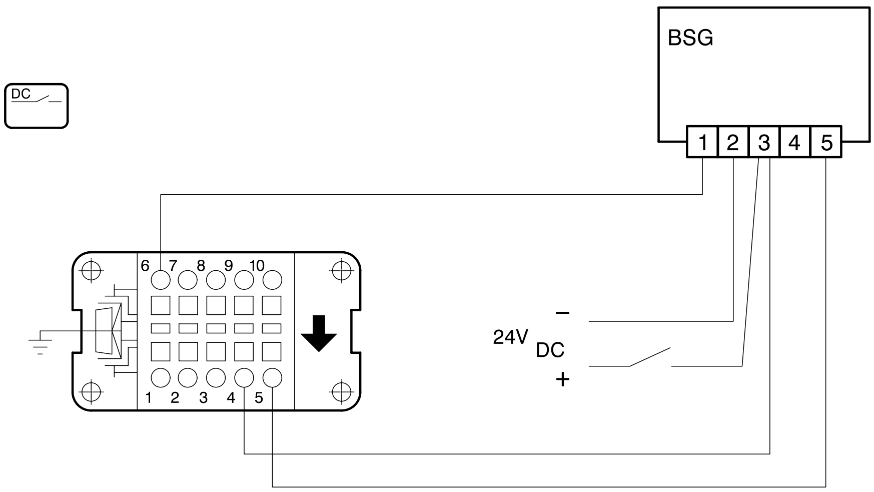




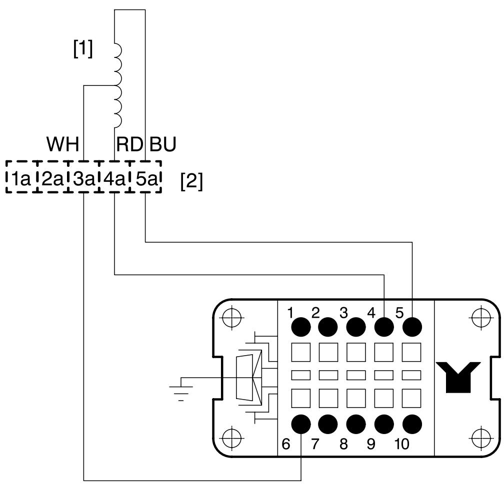
09 848.02_4 Brake control BMK



09 848.02_5 Brake control BSG



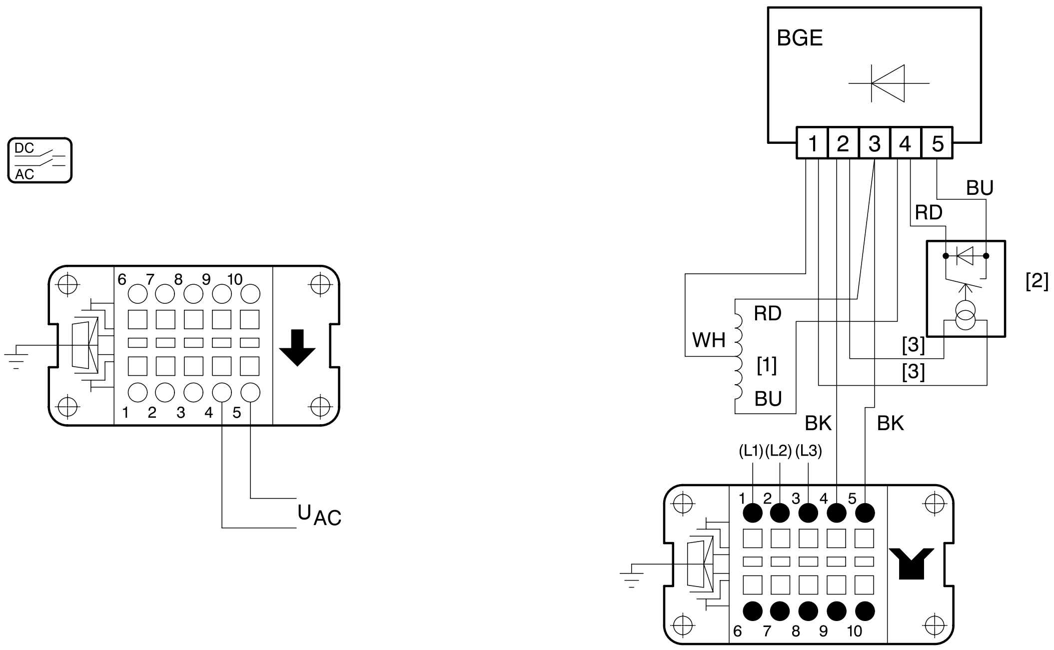
09 848.02_6



[1] Brake coil
[2] Terminal strip (only with AC..)

09 850 02 02 AC brake motor with plug connector ACB8, ACE8, ASB8, ASE8
Brake control BUR, BSR

09 850.02_1 Brake control BUR



[1] Brake coil
[2] Voltage relay UR11/15
[3] UR11 (42-150 V) = BN
UR15 (150-500 V) = BK

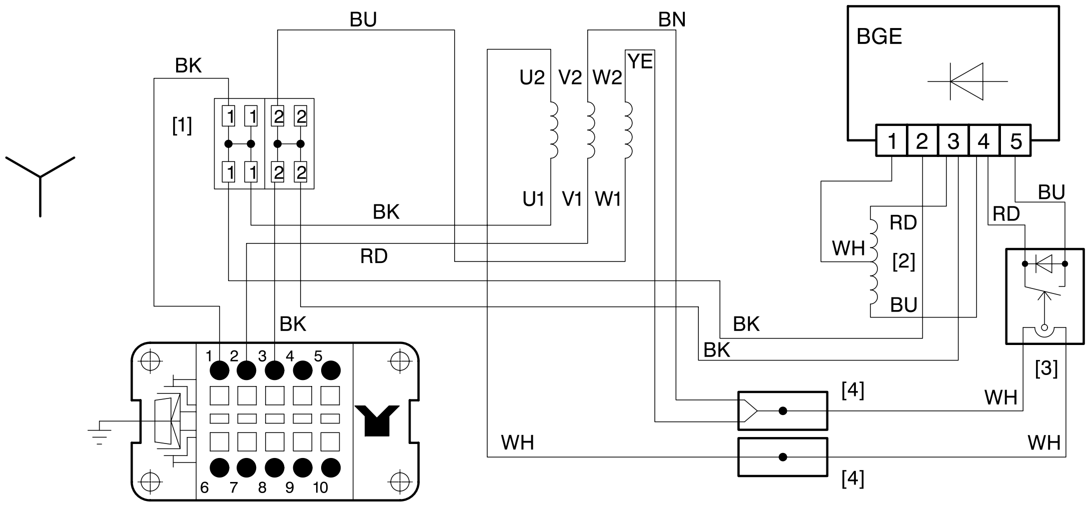
09 850.02_2

Brake control BSR

Brake voltage = phase-to-phase voltage

For example: Motor 400 V ⅄

Brake 400 V AC



[1] Terminal strip
[2] Brake coil
[3] Current relay SR11/15
[4] Auxiliary terminal

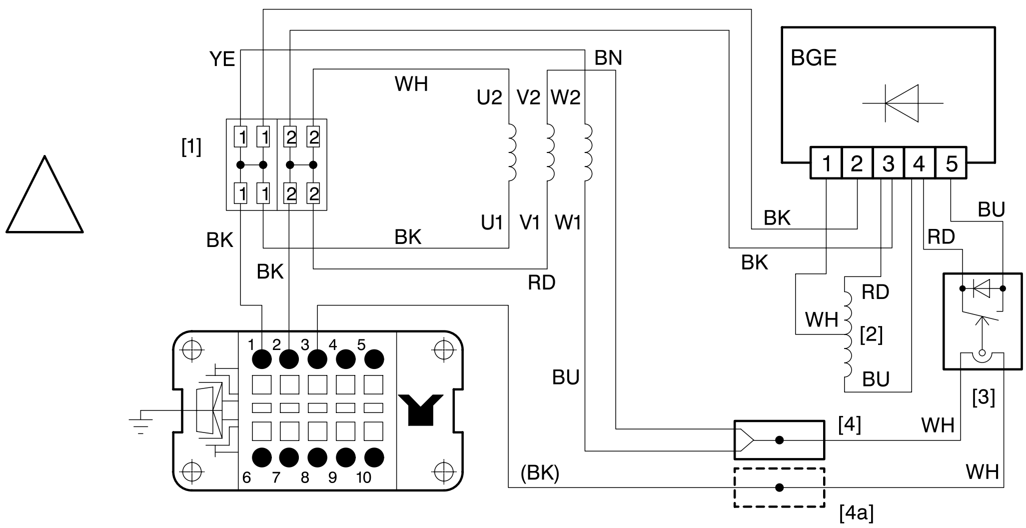
09 850.02_3

Brake control BSR

Brake voltage = phase voltage

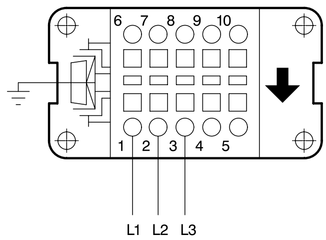
For example: Motor 400 V △

Brake 400 V AC

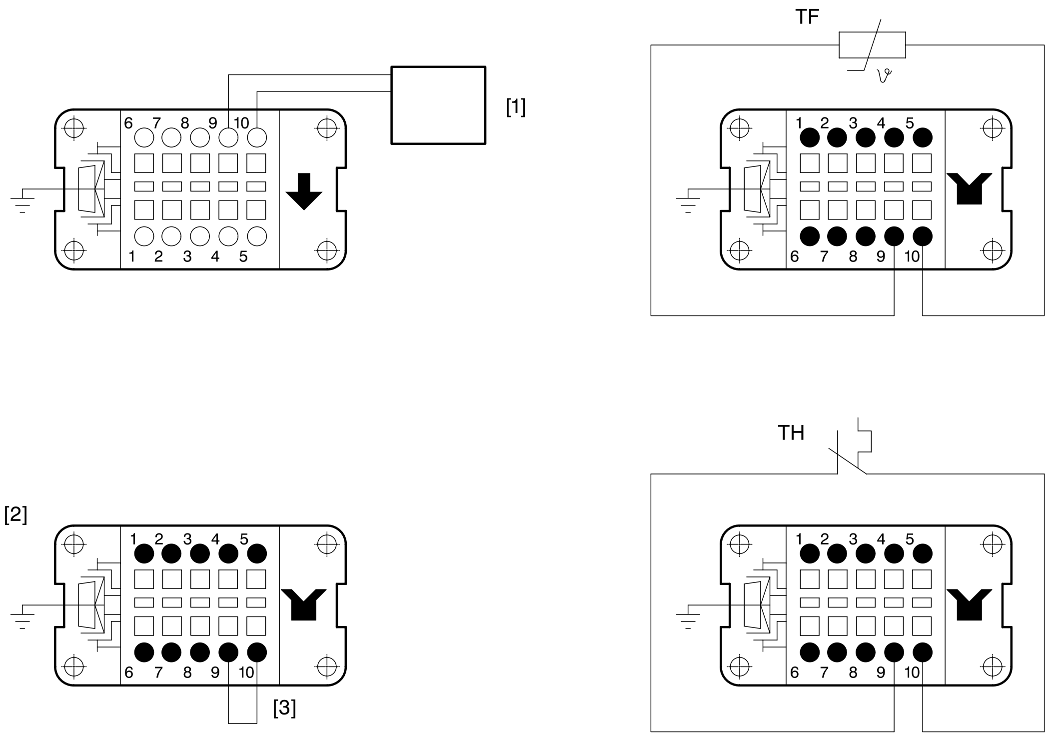


[1] Terminal strip
[2] Brake coil
[3] Current relay SR11/15
[4] Auxiliary terminal
[4a] Auxiliary terminal (only with SR15)

09 850.02_4 Brake control BSR



09 850.02_5 Motor protection



[1] Evaluation
[2] Always with jumper if no TF/TH
[3] Jumper for monitoring

09 851 002

AC brake motor with plug connector ACB9, ASE9

Motor in △ connection

Brake voltage = phase voltage

Apply voltage to release the brake (see nameplate). Contacts operate in parallel to motor protection.

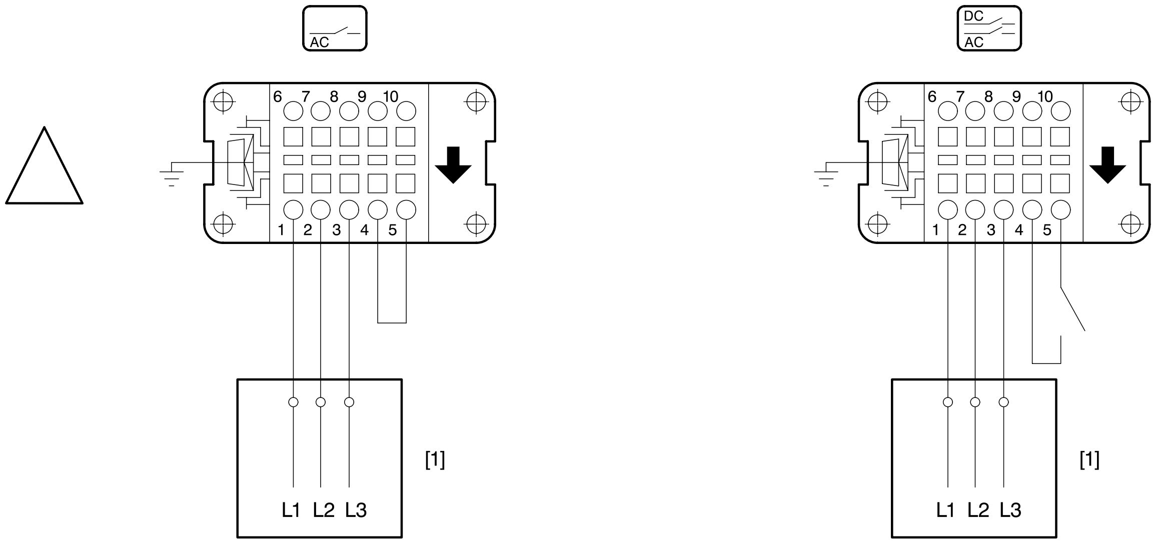
Contact rating of the brake contactors AC3 to EN 60947-4-1

09 851.02_1

Not for multi-speed and controlled motors

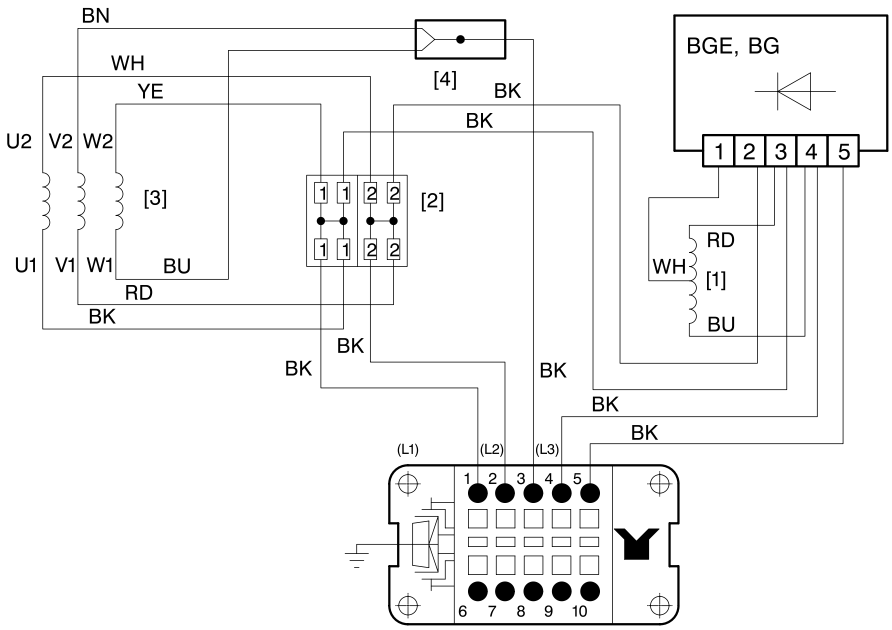
For example: Motors 400 V △

Brake 400 V AC



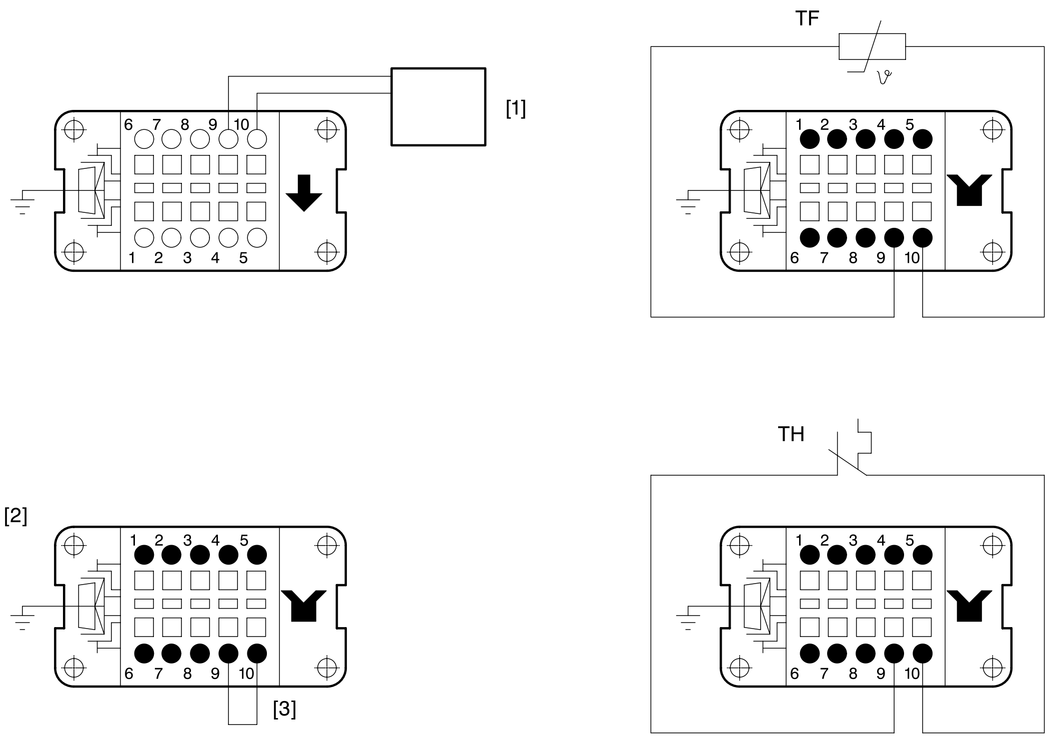
[1] Switch cabinet

09 851.02_2



[1] Brake coil
[2] Terminal strip
[3] Motor winding
[4] Auxiliary terminal

09 851.02_3 Motor protection



[1] Evaluation
[2] Always with jumper if no TF/TH
[3] Jumper for monitoring

09 852 002 AC brake motor with plug connector AMB9, AME9

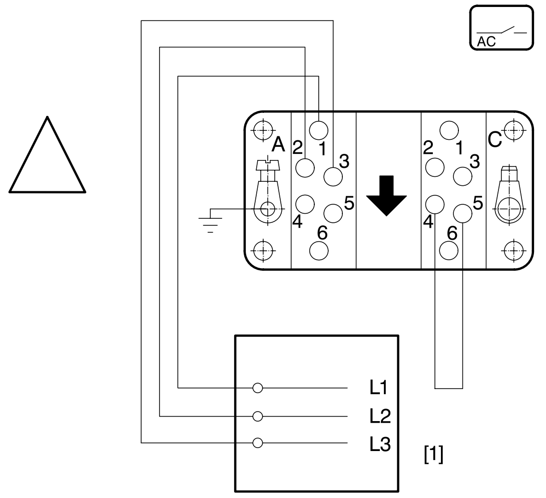
Motor in △ connection

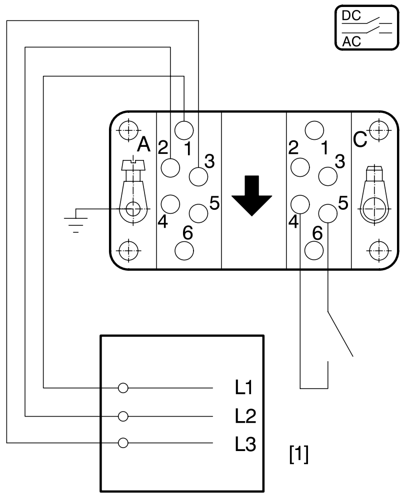
Brake voltage = phase voltage

09 852.02_1 Not for multi-speed and controlled motors

For example: Motor 400 V △

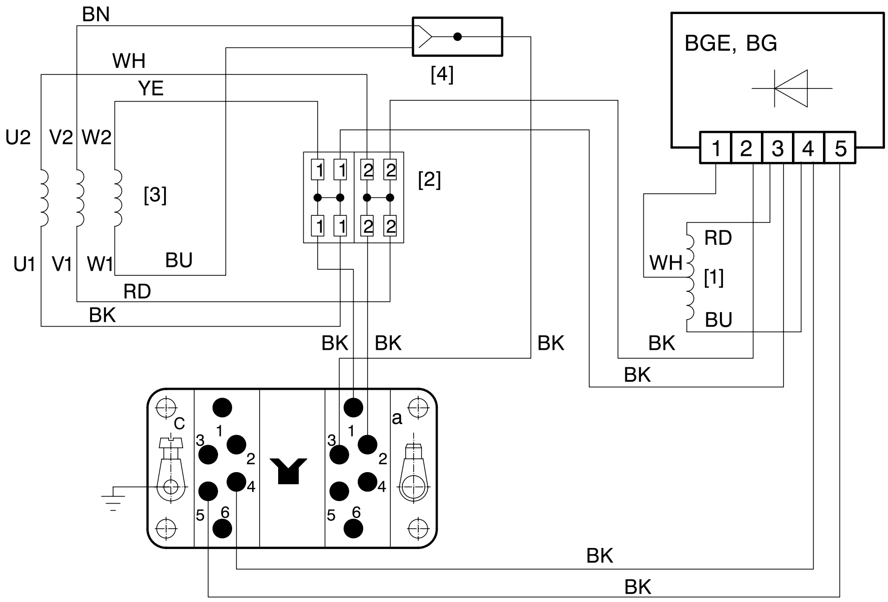
Brake 400 V AC





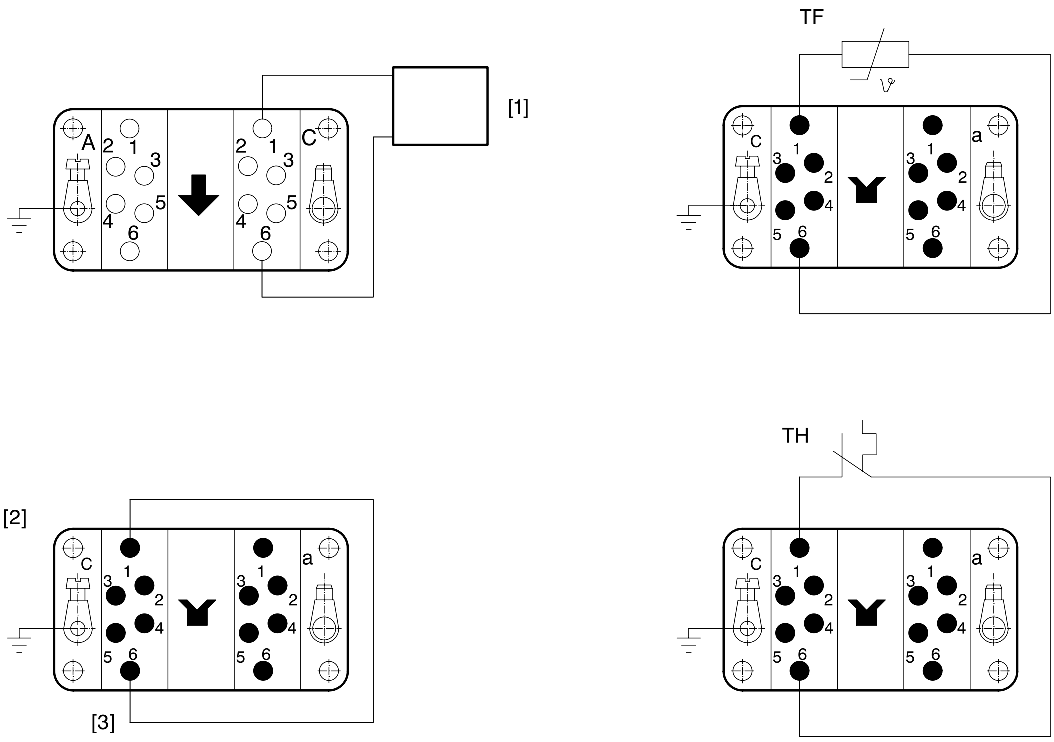
[1] Switch cabinet

09 852.02_2



[1] Brake coil
[2] Terminal strip
[3] Motor winding
[4] Auxiliary terminal

09 852.02_3 Motor protection



[1] Evaluation
[2] Always with jumper if no TF/TH
[3] Jumper for monitoring

09 853 02 02 AC brake motor 71-132S with plug connector AMB1, AME1, AMB8, AME8

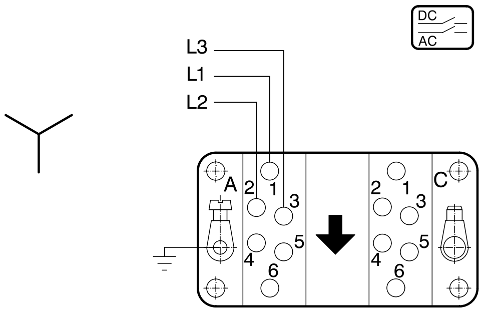
Brake control BSR

Brake voltage = phase-to-phase voltage

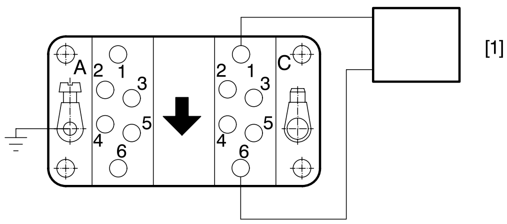
09 853.02_1 Brake control BSR

For example: Motor 400 V ⅄

Brake 400 V AC

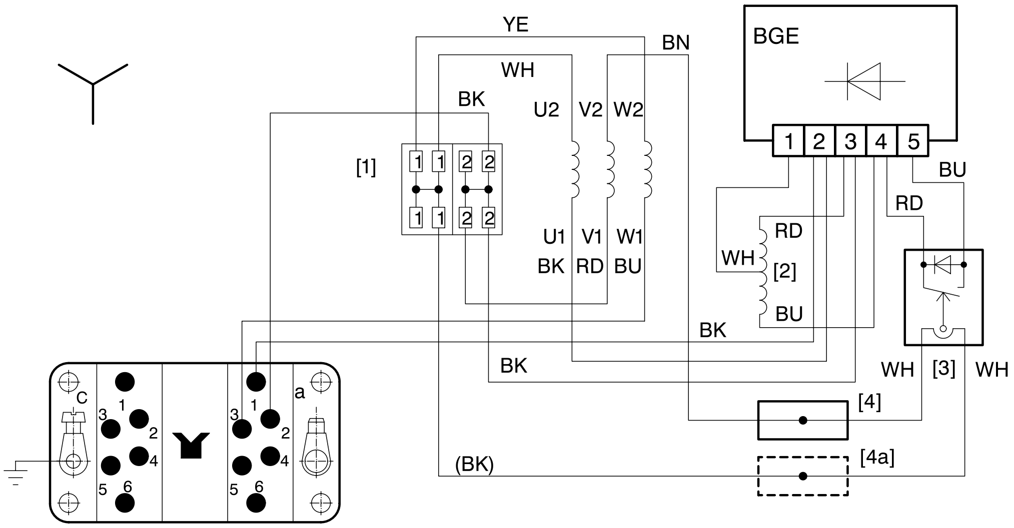


09 853.02_2 Motor protection



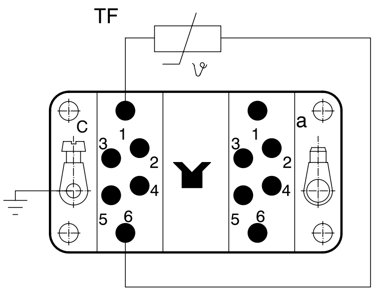
[1] Evaluation

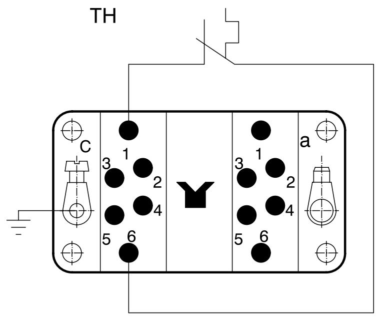
09 853.02_3 AMB1, AME1, AMB8, AME8

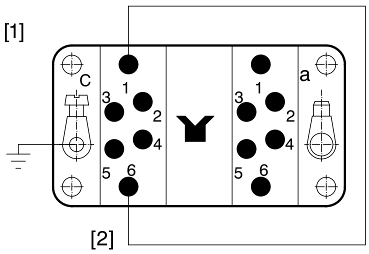


[1] Terminal strip
[2] Brake coil
[3] Current relay SR11/SR15
[4] Auxiliary terminal
[4a] Auxiliary terminal (only with SR15)

09 853.02_4 Motor protection







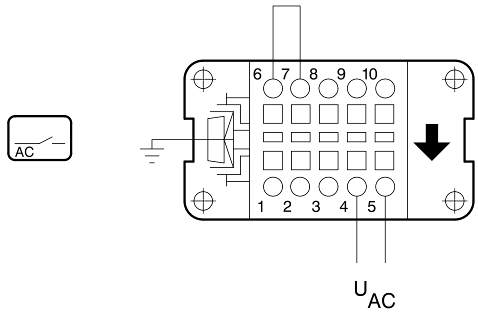
[1] Evaluation
[2] Always with jumper if no TF/TH
[3] Jumper for monitoring

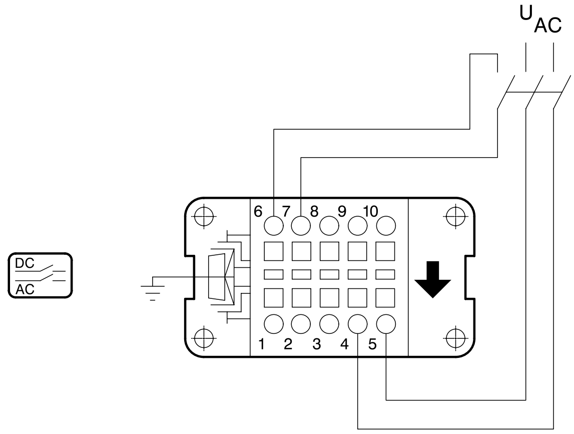
09 857 01 02 AC brake motor with plug connector ACA8, ACB8, ACD8, ACE8, ASA8, ASB7, ASB8, ASD8, ASE7, ASE8

Internal brake control

09 857.02_1 Brake control BGE, BG

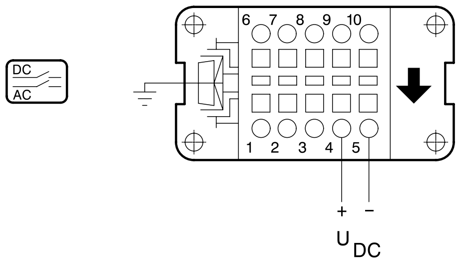
External voltage supply



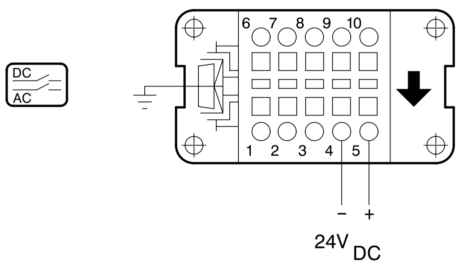


09 857.02_2 Direct DC voltage supply

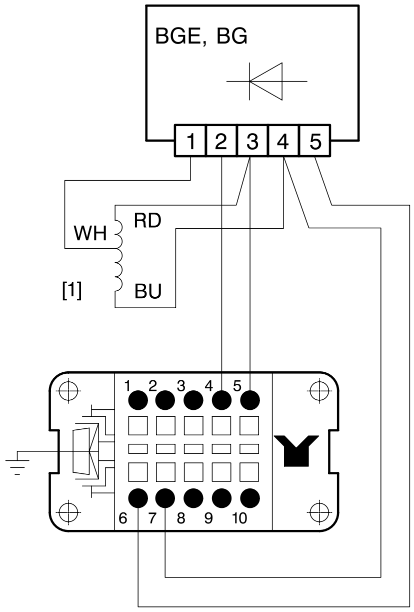
(DR63-DV100)



09 857.02_3 Brake control BSG, BS

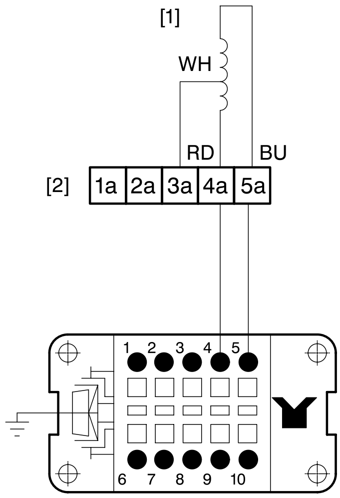


09 857.02_4 Brake control BGE, BG



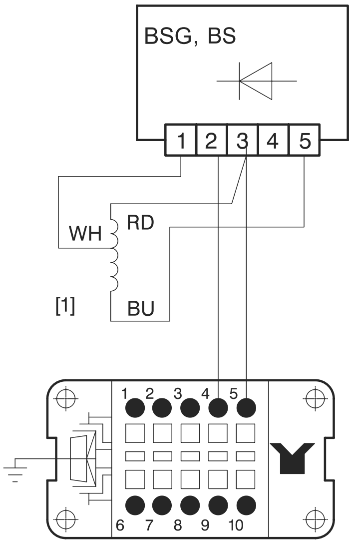
[1] Brake coil

09 857.02_5 Direct DC voltage supply



[1] Brake coil
[2] Terminal strip

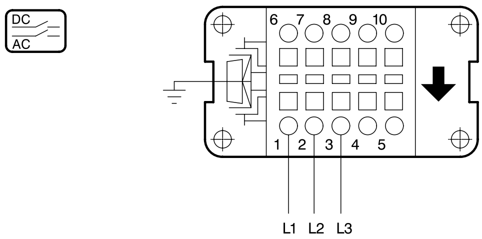
09 857.02_6 Brake control BSG, BS



[1] Brake coil
[2] Terminal strip

09 858 02 02 AC brake motor 63-132S with plug connector ACA8, ACD8, ASA8, ASD8
Brake control BSR

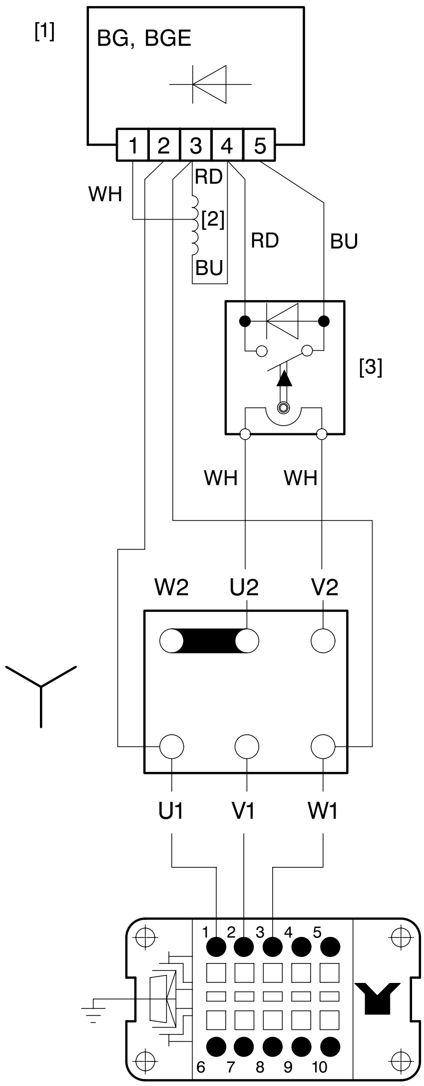
09 858.02_1 Brake control BSR
Brake voltage = motor voltage



09 858.02_2A Brake voltage = phase-to-phase voltage

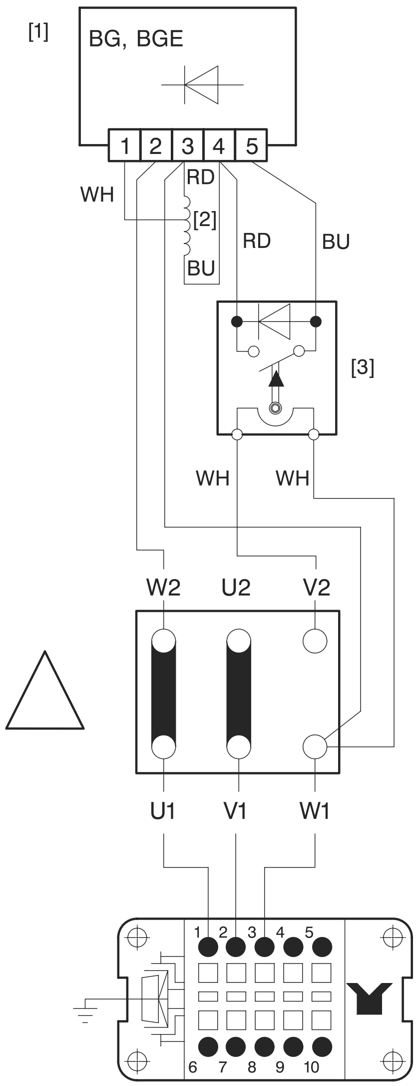
For example: Motor 400 V ⅄

Brake 400 V AC



[1] BG only with DR63
[2] Brake coil
[3] Current relay SR 11/15

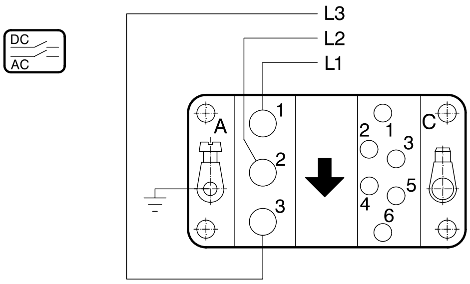
09 858.02_2B Brake voltage = phase voltage
For example: Motor 400 V △
Brake 400 V AC



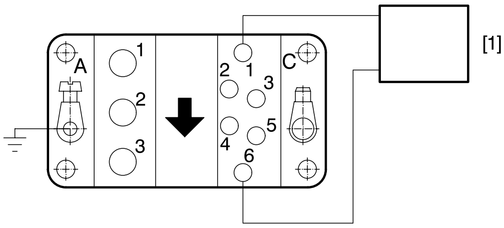
[1] BG only with DR63
[2] Brake coil
[3] Current relay SR 11/15

09 860 02 03 AC brake motor 132M-180 with plug connector ABB8, ABC8 (71-180), ABE8
Brake control BSR
Brake voltage = phase-to-phase voltage

09 860.03_1



09 860.03_2 Motor protection

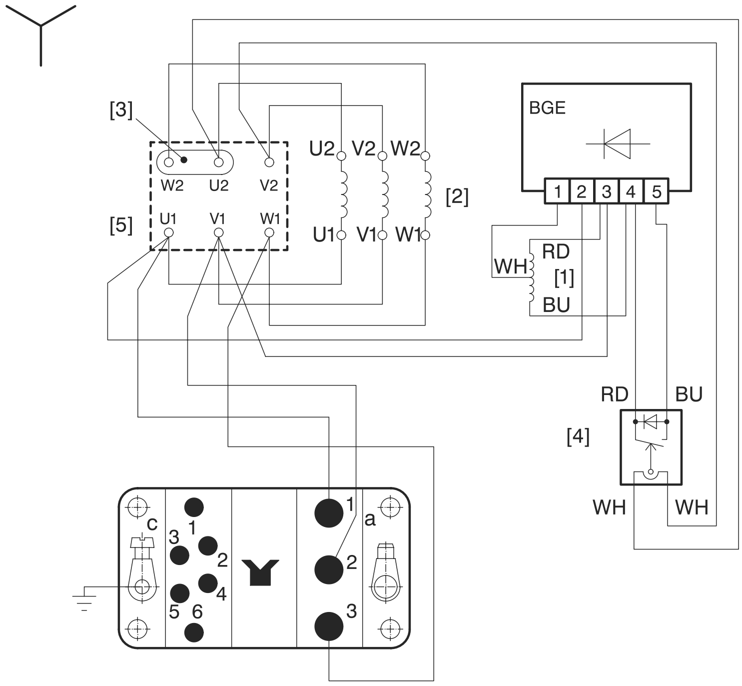


[1] Evaluation

09 860.03_3 Brake control BSR

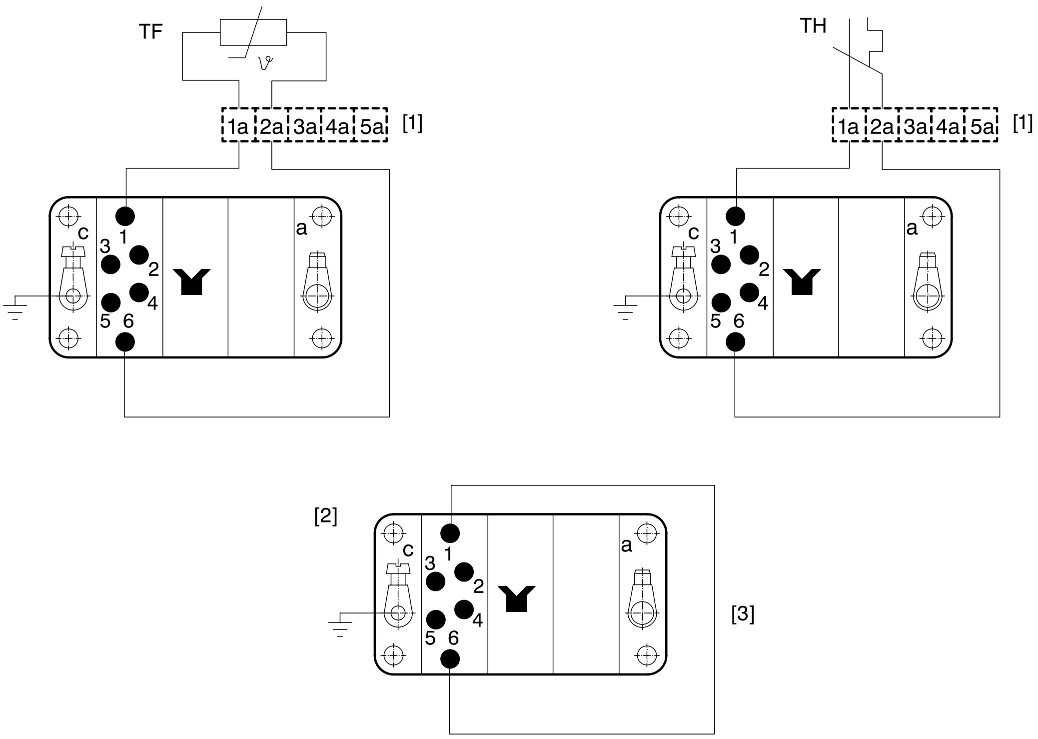
For example: Motor 400 V ⅄

Brake 400 V AC



[1] Brake coil
[2] Motor winding
[3] Terminal link
[4] Current relay SR11
[5] Terminal board

09 860.03_4 Motor protection



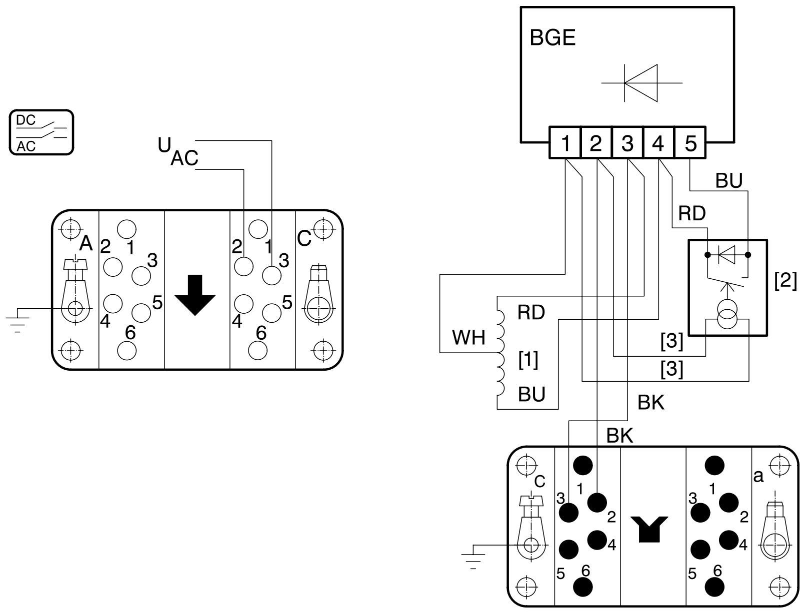
[1] Terminal strip (only with ABC8)
[2] Always with jumper if no TF/TH
[3] Jumper for monitoring

09 870 00 04 AC brake motor 71-132S with plug connector AMB2, AME2

Brake control BUR, BSR

Brake voltage = phase voltage

09 870.04_1 Brake control BUR

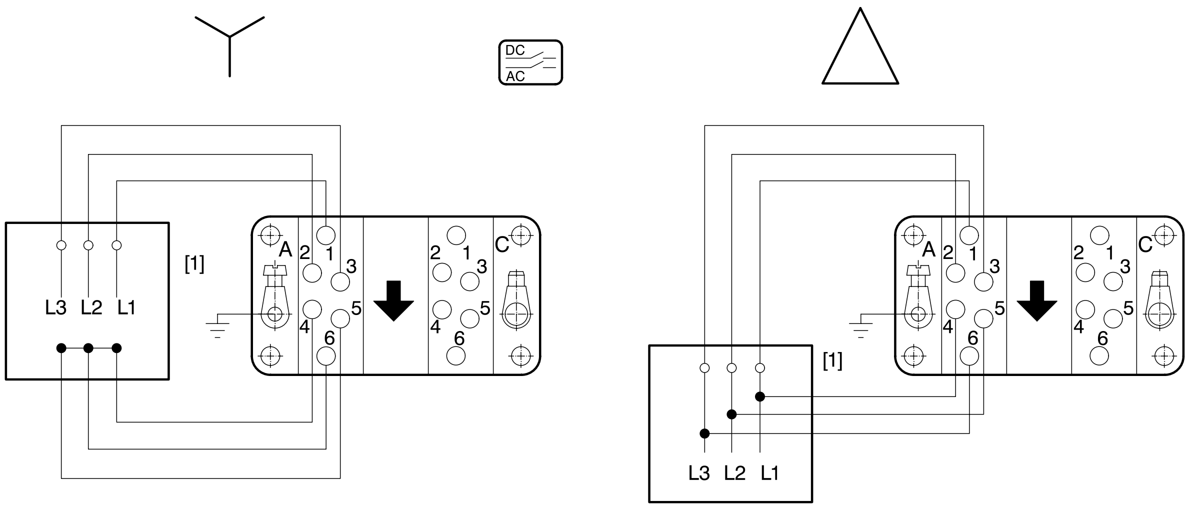


[1] Brake coil
[2] Voltage relay UR15
[3] UR11 (42-150V) = BN
UR15 (150-500V) = BK

09 870.04_2 Brake control BSR

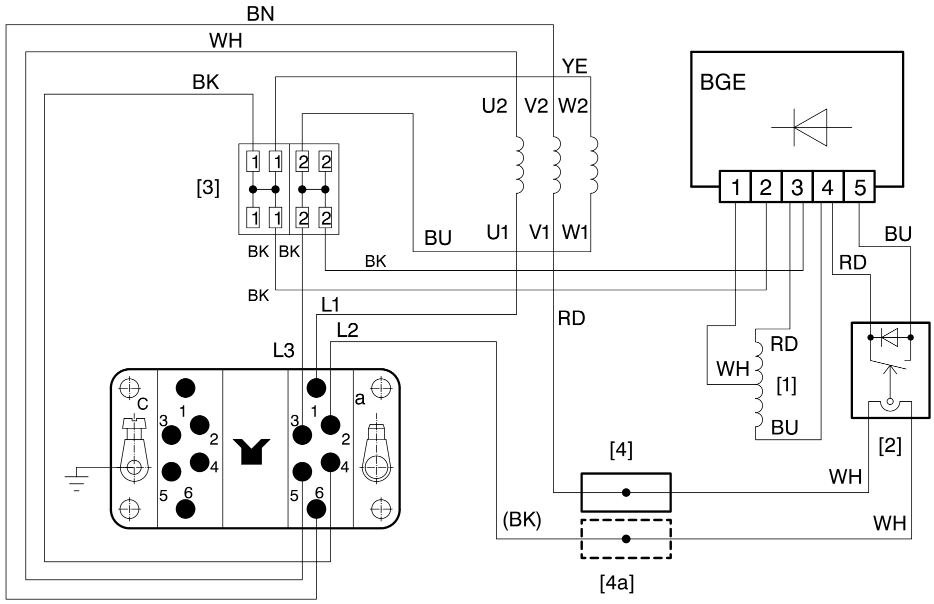
For example: Motor 230 V △ / 400 V ⅄

Brake: 230 V / AC



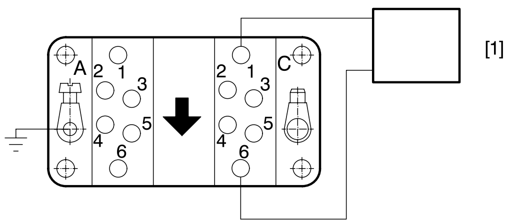
[1] Switch cabinet

09 870.04_3 AMB2, AME2



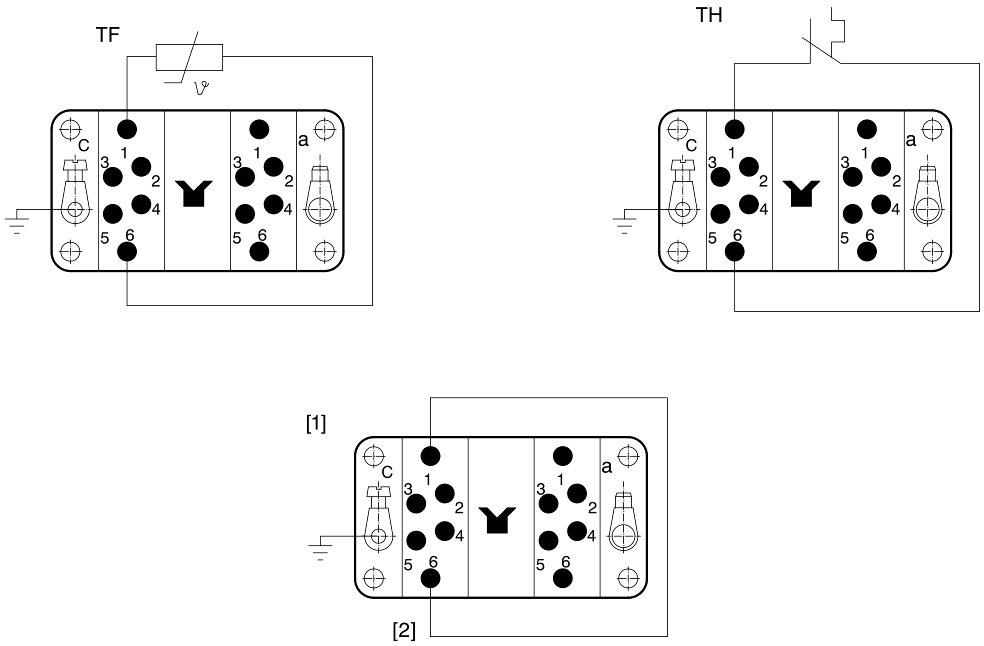
[1] Brake coil
[2] Current relay SR11/15
[3] Terminal strip
[4] Auxiliary terminal
[4a] Auxiliary terminal (only with SR15)

09 870.04_4 Motor protection



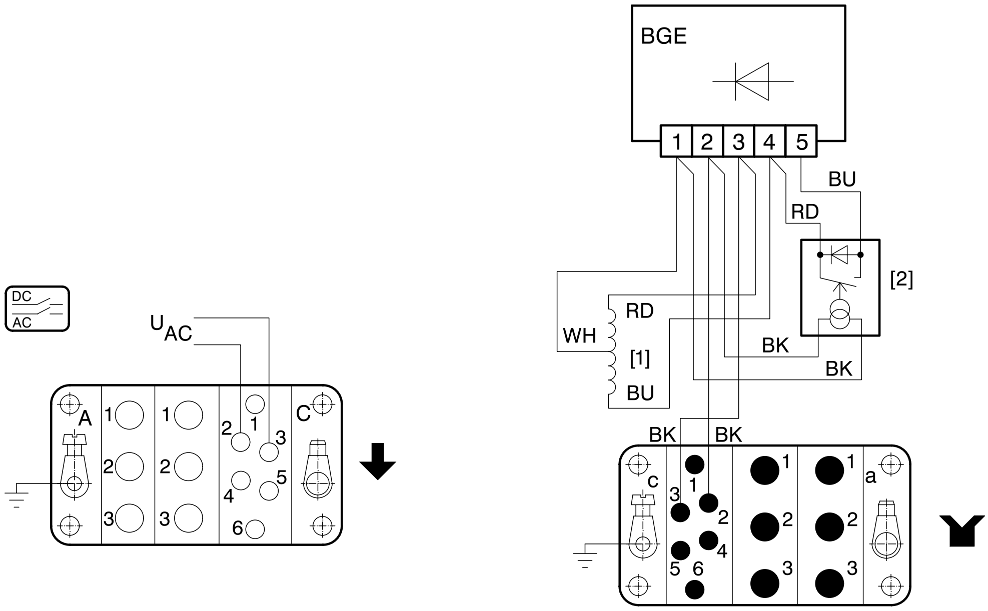
[1] Evaluation

09 870.04_5 AMB2, AME2



[1] Always with jumper if no TF/TH
[2] Jumper for monitoring

09 871 02 04	AC brake motor 132M-180 with plug connector ADB2, ADE2 Brake control BUR, BSR Brake voltage = phase voltage
09 871.04_1	Brake control BUR

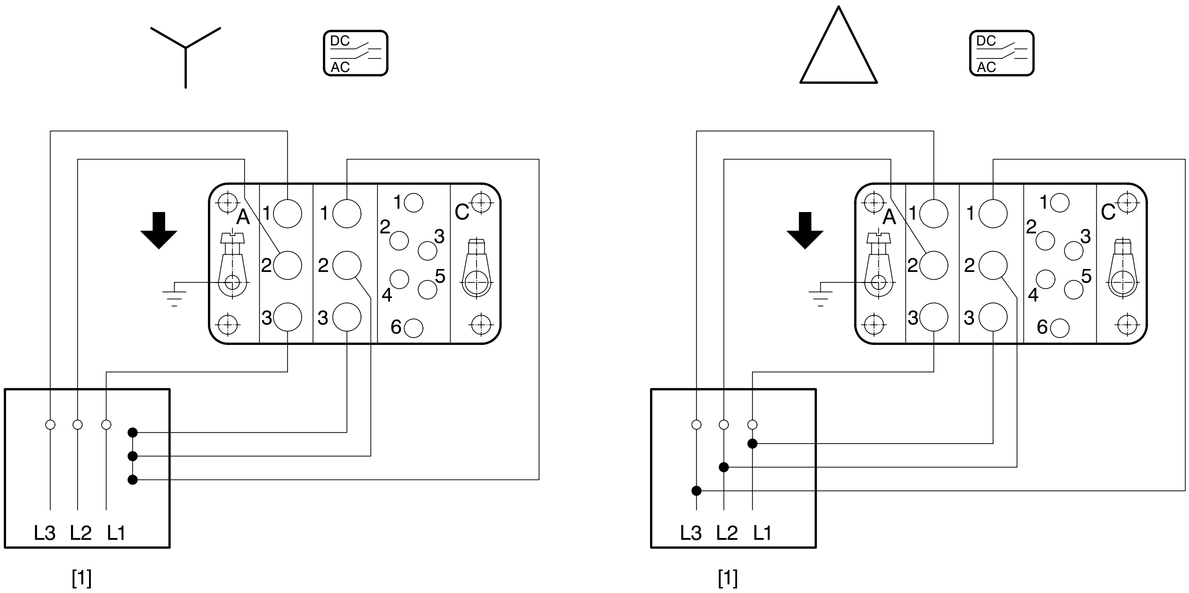


[1] Brake coil
[2] Voltage relay UR15

09 871.04_2 Brake control BSR

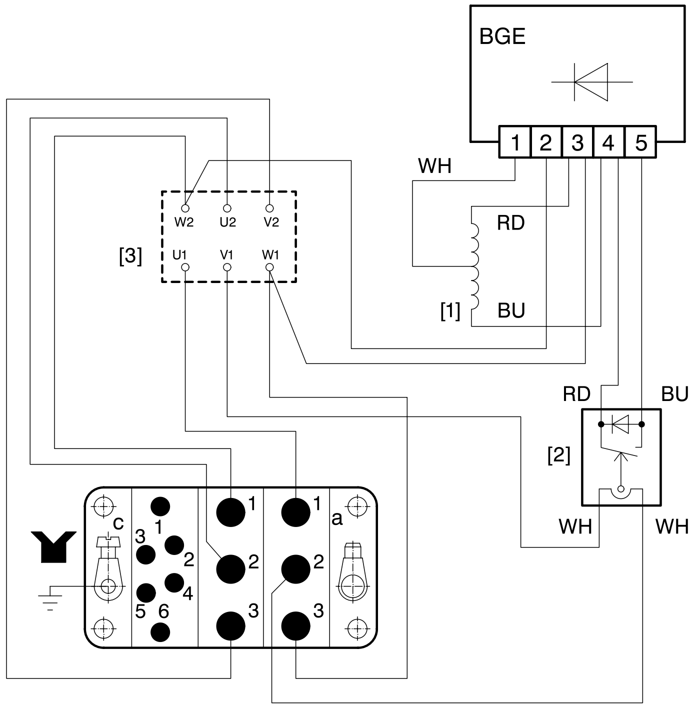
For example: Motor 230 V △ / 400 V ⅄

Brake: 230 V / AC



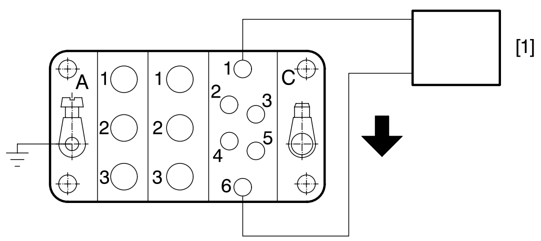
[1] Switch cabinet

09 871.04_3 ADB2, ADE2



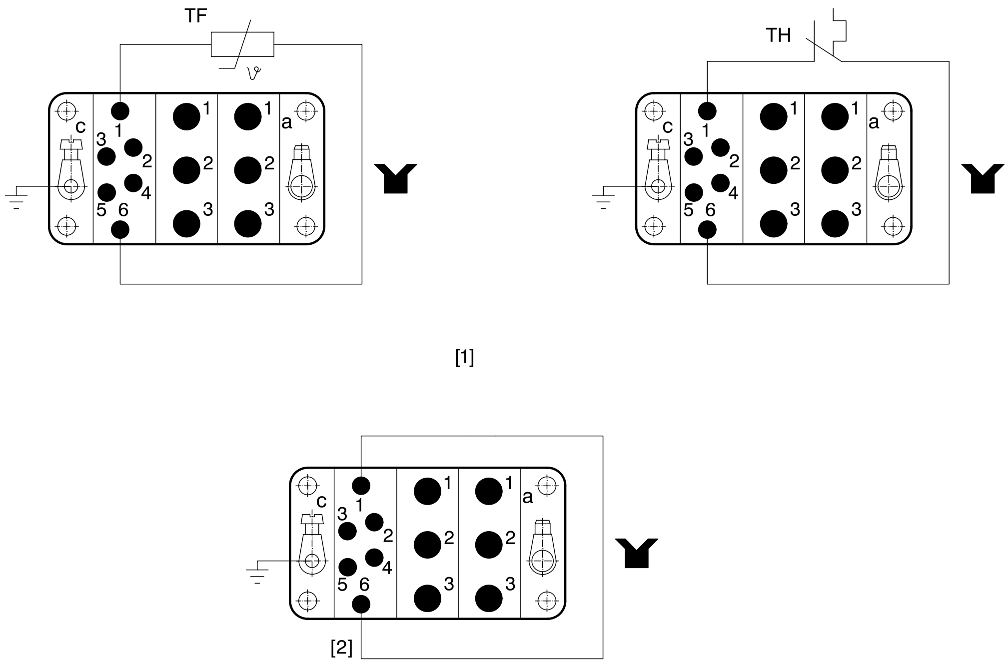
[1] Brake coil
[2] Current relay SR15/19
[3] Terminal board

09 871.04_4 Motor protection



[1] Evaluation

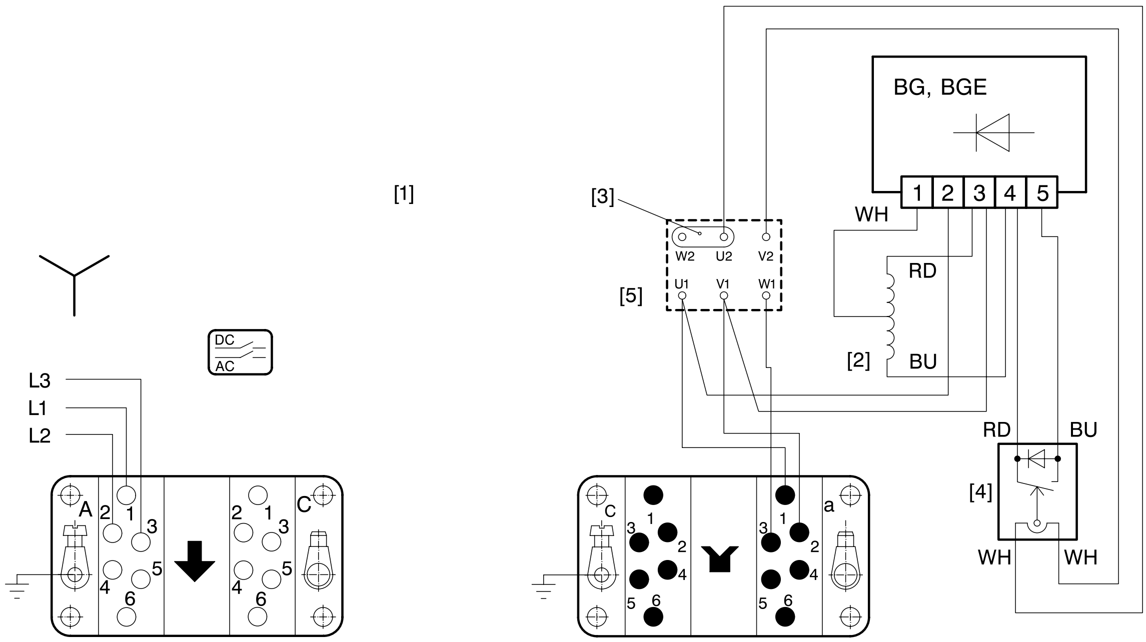
09 871.04_5 ADB2, ADE2



[1] Always with jumper if no TF/TH
[2] Jumper for monitoring

09 874 02 04 AC brake motor 63-132S with plug connector AMA1(71-132S), AMD1
Brake control BSR
Brake voltage = phase-to-phase voltage

09 874.04_1 Brake control BSR
For example: Motor 230 V △ / 400 V ⅄ only for Y
Brake: 400 V / AC



[1] BG only with DR63
[2] Brake coil
[3] Terminal link
[4] Current relay SR11
[5] Terminal board

4 Wiring Diagrams of Cables/Lines for Motors and Frequency Inverters

4.1 Encoder and resolver connection

The following wiring diagrams do not show the view onto the cable end but

- with plugs / sockets: View on motor plugs/sockets
- with unit sockets: View on unit socket

The conductor colors specified in the wiring diagrams are in accordance with IEC 757 and correspond to the conductor colors used in the pre-fabricated cables from SEW.

The "SEW Encoder Systems" manual contains detailed information. This manual can be obtained from SEW-EURODRIVE.

General installation information

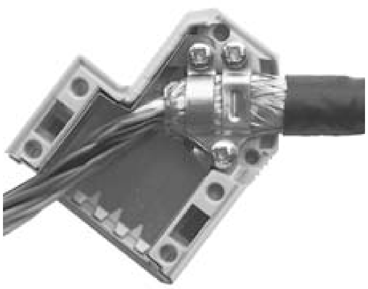
- Max. line length of inverter - encoder/resolver: 100 m (330 ft) with a capacitance per unit length ≤ 120 nF/km (193 nF/mile).
- Core cross section: 0.20 ... 0.5 mm^2 (AWG 24 ... 20)
- If you cut off a core of the encoder/resolver cable, isolate the cut-off end of the core.
- Use shielded cables with twisted pairs of insulated conductors and connect the shield at both ends:
  - to the encoder in the cable gland or in the encoder plug
  - to the inverter in the housing of the sub D plug
- Route the encoder/resolver cable separately from the power cables.

Shielding

Connect the shield of the encoder/resolver cable over a large area.

On the inverter

Connect the shield on the inverter end in the housing of the sub D plug (→ following figure).



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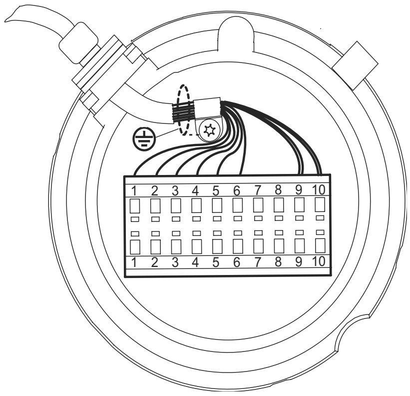
On the encoder/ resolver

Connect the shield on the encoder/resolver end on the respective earthing clamps (→ following figure). If you are using an EMC screwed gland, connect the shield to the cable gland over a large area. For drives with plug connector, connect the shield on the encoder plug.



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Pre-fabricated cables

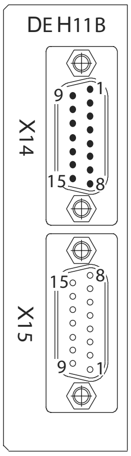
- SEW-EURODRIVE offers pre-fabricated cables for connecting encoders/resolvers. We recommend using these pre-fabricated cables.

4.2 Connection of DEH11B (HIPERFACE®) option

Part number HIPERFACE® encoder card type DEH11B option: 824 310 7

The "HIPERFACE® encoder card type DEH11B" option is only possible in conjunction with MOVIDRIVE® MDX61B, not with MDX60B.

The DEH11B option must be plugged into the encoder slot.

Front view of DEH11B	Description	Terminal	Function
 06198AXX	**X14: Input of external encoder or output of incremental encoder simulation** **Connection → page 200 to page 203** **Pulse count of the incremental encoder simulation:** • **1024 pulses/revolution with HIPERFACE® encoder on X15** • **as on X15: Motor encoder input with sin/cos encoder or TTL sensor on X15**	**X14:1** **X14:2** **X14:3** **X14:4** **X14:5/6** **X14:7** **X14:8** **X14:9** **X14:10** **X14:11** **X14:12** **X14:13/14** **X14:15**	(COS+) signal track A (K1) (SIN+) signal track B (K2) Signal track C (K0) DATA+ Reserved Switchover Reference potential DGND (COS-) signal track A (K1) (SIN-) signal track B (K2) Signal track C (K0) DATA- Reserved +12 V_{DC} (max. load X14:15 **and** X15:15 = 500 mA)
	X15: Motor encoder input	**X15:1** **X15:2** **X15:3** **X15:4** **X15:5** **X15:6** **X15:7** **X15:8** **X15:9** **X15:10** **X15:11** **X15:12** **X15:13** **X15:14** **X15:15**	(COS+) signal track A (K1) (SIN+) signal track B (K2) Signal track C (K0) DATA+ Reserved Reference potential TF/TH/KTY- Reserved Reference potential DGND (COS-) signal track A (K1) (SIN-) signal track B (K2) Signal track C (K0) DATA- Reserved TF/TH/KTY+ connection +12 V_{DC} (max. load X14:15 **and** X15:15 = 500 mA)

Important notes

- The connections on X14 and X15 must not be plugged or removed during operation. De-energize the inverter before plugging or removing the encoder connections. Switch off the supply voltage and the 24 V_{DC} (X10:9).
- If X14 is used as an incremental encoder simulation output, the switchover (X14:7) must be jumpered with DGND (X14:8).
- The 12 V_{DC} supply voltage from X14 and X15 is sufficient to operate SEW encoders with a 24 V_{DC} supply voltage. With all other encoders, check whether they can be connected to the 12 V_{DC} supply voltage.
- Do not connect HTL encoders.

Permitted encoders The following encoders can be connected to the "HIPERFACE® encoder card type DEH11B" option:

- HIPERFACE® encoder type AS1H, ES1H or AV1H
- sin/cos encoder type ES1S, ES2S, EV1S or EH1S
- 5 V TTL encoder 24 V_{DC} voltage supply type ES1R, ES2R, EV1R or EH1R
- 5 V TTL encoder with 5 V_{DC} voltage supply type ES1T, ES2T, EV1T or EH1T via DWI11A option

HIPERFACE® encoder connection

HIPERFACE® encoders AS1H, ES1H and AV1H are recommended for operation with DEH11B. Depending on the motor type and motor configuration, the encoder is connected via plug connector or terminal box.

DT../DV.., DS56, CT../CV.., CM71...112 with plug connector

Connect the HIPERFACE® encoder as follows:

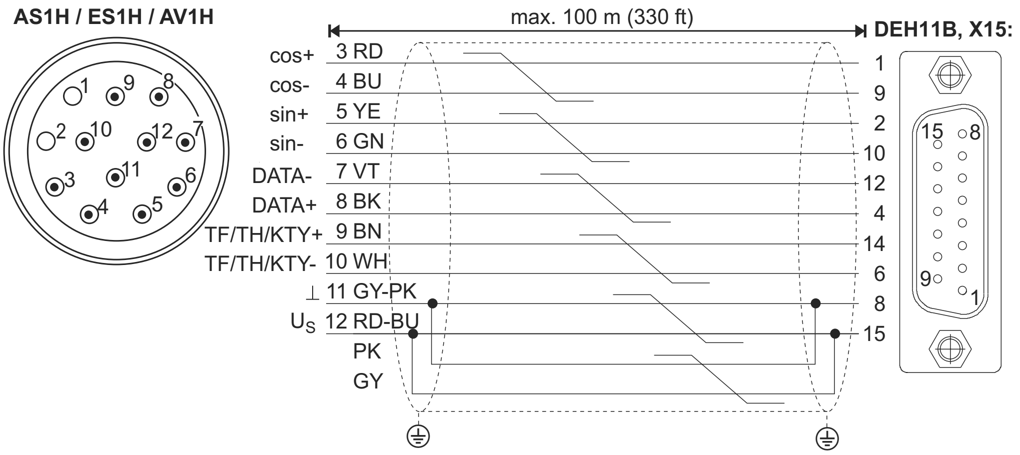


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Figure 11: Connecting HIPERFACE® encoder to DEH11B as a motor encoder

4

STOP

Important for DT/DV or CT/CV motors: TF or TH is **not** connected with the encoder cable but must be connected using an additional 2-core shielded cable.

Part numbers of the pre-fabricated cables:

- For fixed routing: 1332 453 5
- For cable carriers: 1332 455 1

Part numbers of the pre-fabricated extension cables:

- For fixed routing: 199 539 1
- For cable carriers: 199 540 5

CM71...112 with terminal box

Connect the HIPERFACE® encoder as follows:

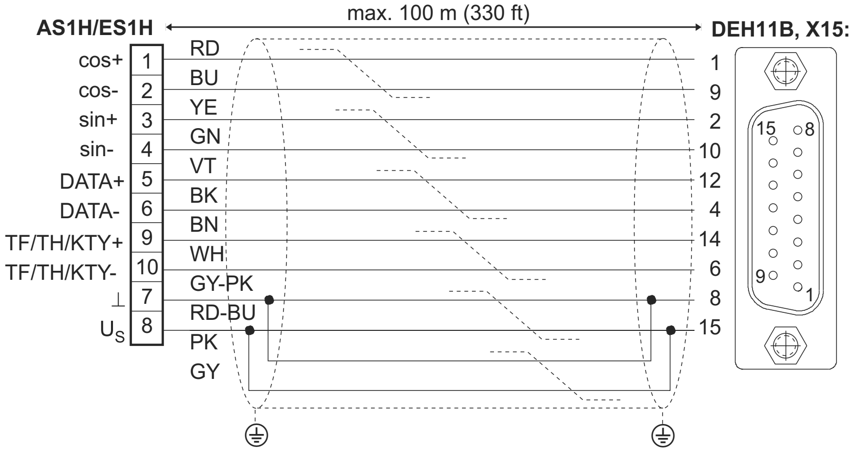

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Figure 12: Connecting HIPERFACE® encoder to DEH11B as a motor encoder

Part numbers of the pre-fabricated cables:

- For fixed routing: 1332 457 8
- For cable carriers: 1332 454 3

Connecting sin/cos encoder to DT../DV.., CT../CV motors

The high resolution sin/cos encoders EH1S, ES1S, ES2S or EV1S can also be connected to DEH11B. Connect the sin/cos encoder as follows:

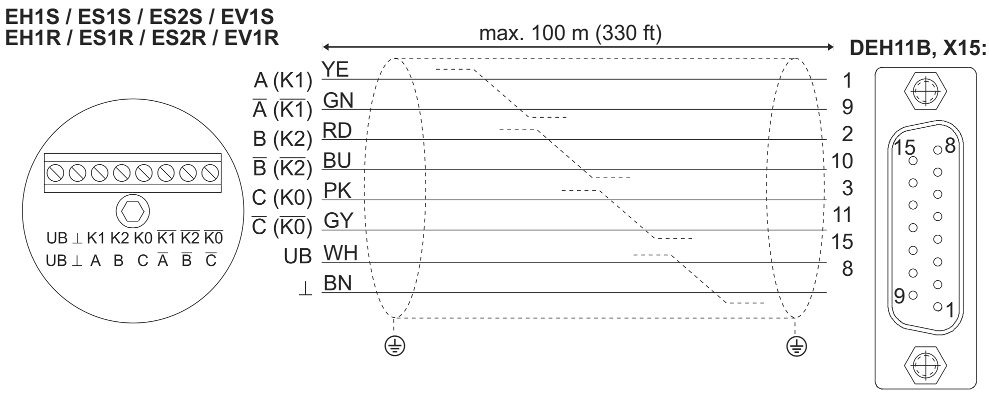

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Figure 13: Connecting the sin/cos encoder to DEH11B as a motor encoder

Part numbers of the pre-fabricated cables:

- For fixed routing: 1332 459 4
- For cable carriers: 1332 458 6

Connecting TTL encoders to DT../ DV.. motors

TTL encoders from SEW-EURODRIVE are available with 24 V_{DC} and 5 V_{DC} voltage supply.

24 V_{DC} voltage supply

Connect the TTL sensors to the 24 V_{DC} voltage supply EH1R, ES1R, ES2R or EV1R in the same way as the high-resolution sin/cos encoders (→ Figure 13).

5 V_{DC} voltage supply

TTL sensors with a 5 V_{DC} voltage supply ES1T, ES2T, EH1T or EV1T must be connected via the "5 V encoder power supply type DWI11A" option (part number 822 759 4). The sensor cable must be connected as well to correct the supply voltage of the encoder. Connect these encoders as follows:

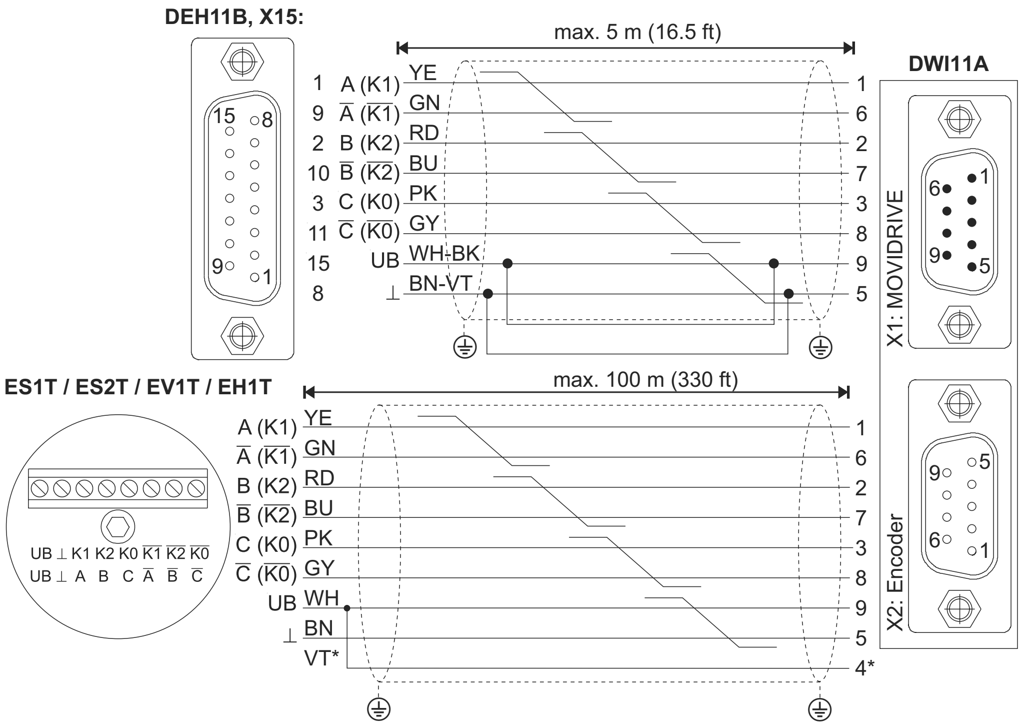


Figure 14: Connecting the TTL sensor via DWI11A to DEH11B as a motor encoder

* Connect the sensor cable (VT) on the encoder to UB, do not jumper on the DWI11A!

Part numbers of the pre-fabricated cables:

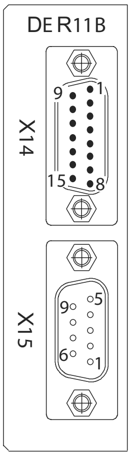
- HIPERFACE® encoder card type DEH11B X15 option: → DWI11A X1: MOVIDRIVE®
  - For fixed routing: 817 957 3
- Encoder ES1T / ES2T / EV1T / EH1T → DWI11A X2: encoder
  - For fixed routing: 198 829 8
  - For cable carriers: 198 828 X

4.3 Connection of DER11B (resolver) option

Part number Resolver card type DER11B option: 824 307 7

The "resolver card type DER11B" option is only possible in conjunction with MOVIDRIVE® MDX61B, not with MDX60B.

The DER11B option must be plugged into the encoder slot.

Front view of DER11B	Description	Terminal	Function
 06199AXX	**X14: Input of external encoder or output of incremental encoder simulation** **Connection → page 200 to page 203** **The pulse count of the incremental encoder simulation is always 1024 pulses per revolution**	**X14:1 X14:2 X14:3 X14:4 X14:5/6 X14:7 X14:8 X14:9 X14:10 X14:11 X14:12 X14:13/14 X14:15**	(cos) signal track A (K1) (sin) signal track B (K2) Signal track C (K0) DATA+ Reserved Switchover Reference potential DGND (cos-) signal track $\overline{A}$ ($\overline{K1}$) (sin-) signal track $\overline{B}$ (K2) Signal track $\overline{C}$ (K0) DATA- Reserved +12 V (max. load 500 mA)
	X15: Resolver input	**X15:1 X15:2 X15:3 X15:4 X15:5 X15:6 X15:7 X15:8 X15:9**	sin+ (S2) cos+ (S1) Ref.+ (R1) Not assigned Reference potential TF/TH/KTY- sin- (S4) cos- (S3) Ref.- (R2) TF/TH/KTY+ connection

Important notes

- The connections on X14 and X15 must not be plugged or removed during operation. De-energize the inverter before plugging or removing the encoder connections. Switch off the supply voltage and the 24 V_{DC} (X10:9).
- If X14 is used as an incremental encoder simulation output, the switchover (X14:7) must be jumpered with DGND (X14:8).
- The 12 V_{DC} supply voltage from X14 is sufficient to operate SEW encoders with a 24 V_{DC} supply voltage. With all other encoders, check whether they can be connected to the 12 V_{DC} supply voltage.
- Do not connect HTL encoders.

Permitted encoders

The following encoders can be connected to the "resolver card type DER11B" option:

On X14: External encoder input:

- HIPERFACE® encoder type AS1H, ES1H or AV1H
- sin/cos encoder type ES1S, ES2S, EV1S or EH1S
- 5 V TTL encoder 24 V_{DC} voltage supply type ES1R, ES2R, EV1R or EH1R
- 5 V TTL encoder with 5 V_{DC} voltage supply type ES1T, ES2T, EV1T or EH1T via DWI11A option

On X15: Resolver input:

- 2-pole resolver, 7 $V_{AC\_r.m.s.}$, 7 kHz

Resolver

SEW-EURODRIVE offers the following pre-fabricated cables for connecting resolvers to DER11B:

For motor type		Part number	
		Fixed routing	Cable carrier installation
DS56 CM71 ... 112	**with plug connector**	199 487 5	199 319 4
	Extension cables	199 542 1	199 541 3
CM71 ... 112	**with terminal box**	199 589 8	199 590 1
DS56	**with terminal box**	1332 817 4	1332 844 1

Terminal/pin assignment

CM motors: The resolver connections are accommodated in a plug connector or on the 10-pin Wago terminal strip.

DS motors: The resolver connections in the terminal box are either accommodated on a 10-pin Phoenix terminal strip or in the plug connector.

Plug connector CM, DS56:Intercontec, type ASTA021NN00 10 000 5 000

Terminal / pin	Description		Core color in prefabricated cable
1	Ref.+	Reference	Pink (PK)
2	Ref.-		Gray (GY)
3	cos +	Cosine signal	Red (RD)
4	cos-		Blue (BU)
5	sin+	Sine signal	Yellow (YE)
6	sin-		Green (GN)
9	TF/TH/KTY+	Motor protection	Brown (BN) / violet (VT)
10	TF/TH/KTY-		White (WH) / black (BK)

The resolver signals have the same numbering on the 10-pin Phoenix terminal strip and in the plug connectors.

Connection

Connect the resolver as follows:

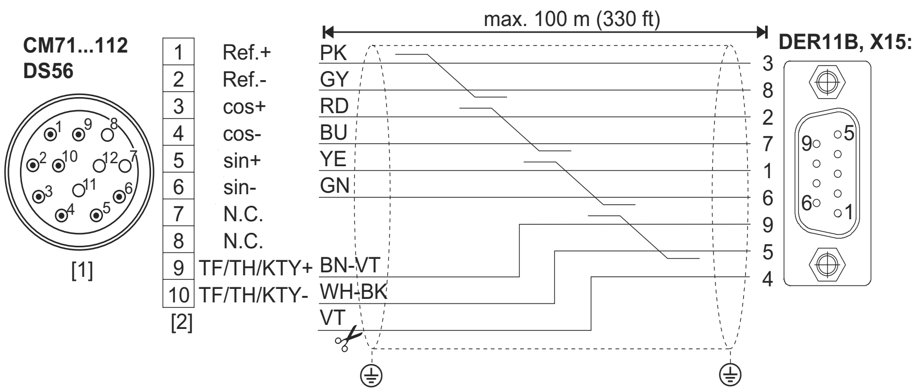


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Figure 15: Connecting the resolver

1) Plug connector

2) Terminal strip

If using the pre-fabricated cable with conductor end sleeves, cut off the violet conductor (VT) of the cable in the motor terminal box.

4.4 External encoder connection

External encoders

The following external encoders can be connected to connector X14 of the DEH11B option and the DER11B option.

- HIPERFACE® encoder AV1H
- High-resolution sin/cos encoders with signal voltage 1 V_{SS}
- 5 V TTL encoder with signal level to RS-422

Voltage supply

SEW encoders with 24 V_{DC} voltage supply (max. 180 mA) are connected directly to X14:. These SEW encoders are then powered by the inverter.

SEW encoders with a 5 V_{DC} voltage supply must be connected via the "5 V encoder power supply type DWI11A" option (part number 822 759 4).

Connecting HIPERFACE® encoder AV1H

Connect the HIPERFACE® encoder AV1H as follows:

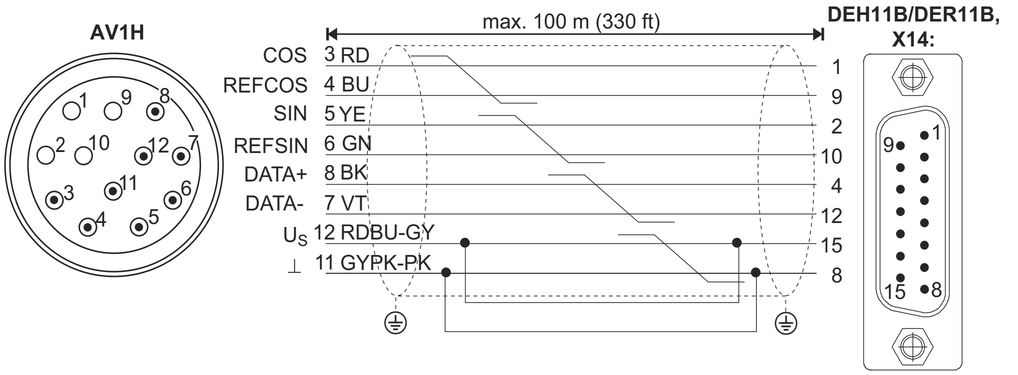

Figure 16: Connecting the HIPERFACE® encoder AV1H to DEH11B/DER11B as external encoder

Part numbers of the pre-fabricated cables:

- For fixed routing: 818 015 6
- For cable carriers: 818 165 9

Part numbers of the pre-fabricated extension cables:

- For fixed routing: 199 539 1
- For cable carriers: 199 540 5

Sin/cos encoder connection

Connect the sin/cos encoder as follows:

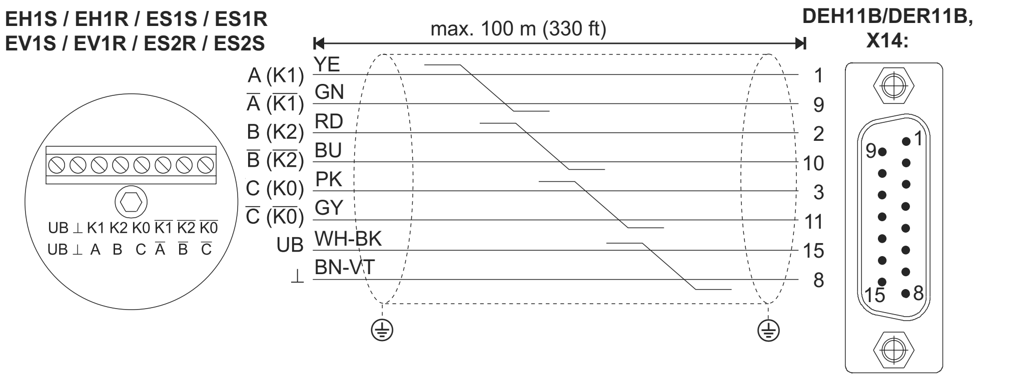

Figure 17: Connecting the sin/cos encoder to DEH11B/DER11B as an external encoder

Part numbers of the pre-fabricated cables:

- For fixed routing: 817 960 3
- For cable carriers: 818 168 3

TTL encoder connection

TTL encoders from SEW-EURODRIVE are available with 24 V_{DC} and 5 V_{DC} voltage supply.

24 V_{DC} voltage supply

Connect the TTL sensors to the 24 V_{DC} voltage supply EV1R in the same way as the high-resolution sin/cos encoders (→ Figure 13).

5 V_{DC} voltage supply

5 V TTL sensors with a 5 V_{DC} voltage supply EV1T, EH1T, ES1T and ES2T must be connected via the "5 V encoder power supply type DWI11A" option (part number 822 759 4). The sensor cable must be connected as well to correct the supply voltage of the encoder. Connect these encoders as follows:

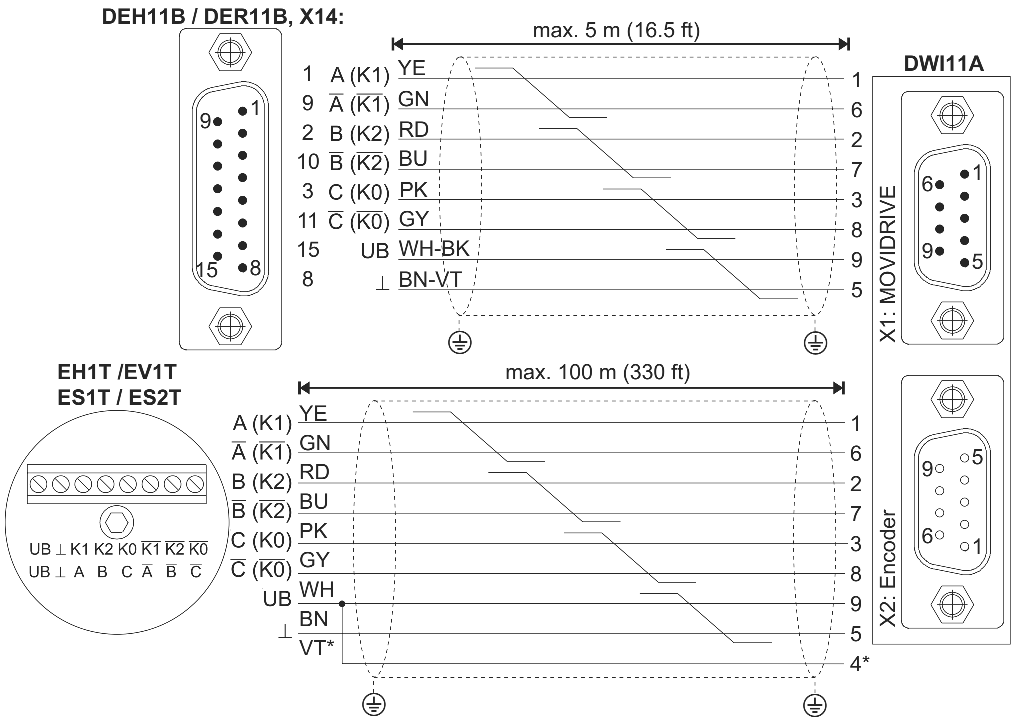

Figure 18: Connecting the TTL sensor EV1T to MDX via DWI11A as an external encoder

* Connect the sensor cable (VT) on the encoder to UB, do not jumper on the DWI11A!

Part numbers of the pre-fabricated cables:

- HIPERFACE® encoder card type DEH11B X14 option: → DWI11A X1: MOVIDRIVE®
  - For fixed routing: 818 164 0
- Encoder EV1T → DWI11A X2: encoder
  - For fixed routing: 198 829 8
  - For cable carriers: 198 828 X

4.5 Connection of incremental encoder simulation

Incremental encoder simulation

Connector X14 of the DEH11B or DER11B option can also be used as incremental encoder simulation output. To do so, you have to jumper "switchover" (X14:7) with DGND (X14:8) and disconnect the connection between X14:15 und U_B. X14 then delivers the incremental encoder signals with a signal level according to RS-422. The number of pulses is as follows:

- With DEH11B as on X15 motor encoder input
- With DER11B 1024 pulses/revolution

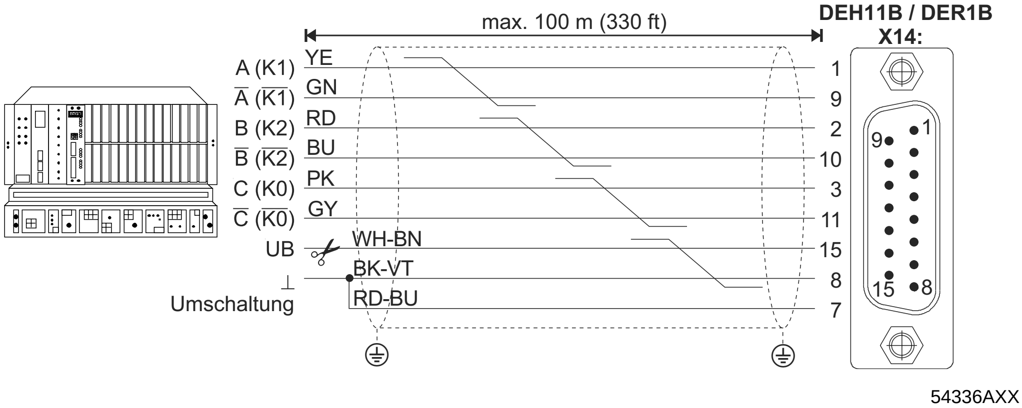

Figure 19: Incremental encoder simulation connection to DEH11B or DER11B

Part number of the pre-fabricated cable:

- Option type DEH/DER11B X14: → Incremental encoder simulation
  - For fixed routing: 817 960 3

4.6 Master/slave connection

Master/slave connection

Connector X14 of the DEH11B or DER11B option can also be used for the "internal synchronous operation" application (master/slave connection of several MOVIDRIVE® units). To do so, you must jumper "switchover" (X14:7) on the master side with DGND (X14:8).

X14-X14 connection (= master/slave connection) of two MOVIDRIVE® units.

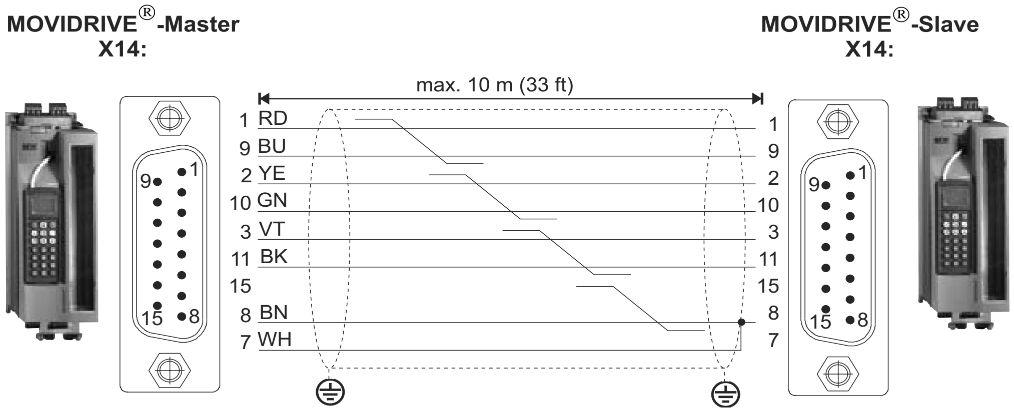

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Figure 20: X14-X14 connection (master/slave connection)

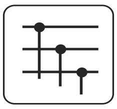
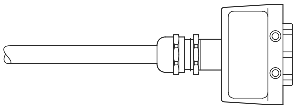
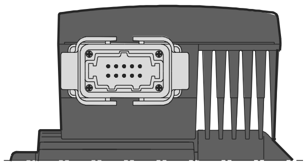
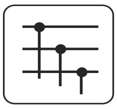
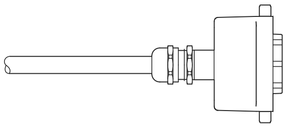
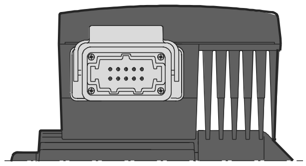
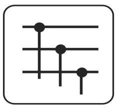
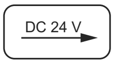
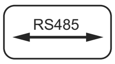
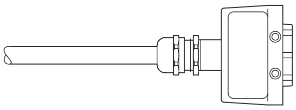
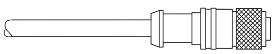
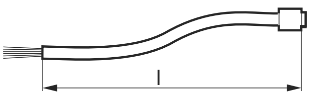
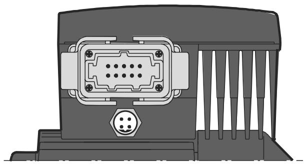
Part number of the pre-fabricated cable:

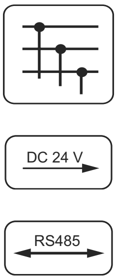
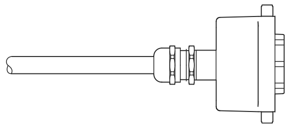
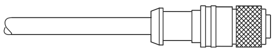
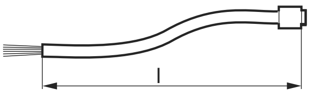
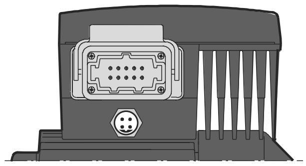
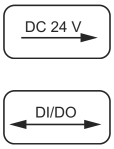
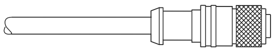
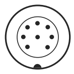
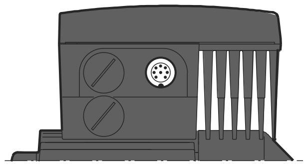
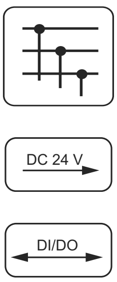
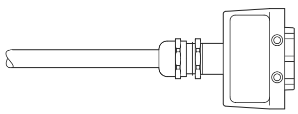
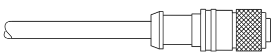
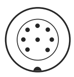
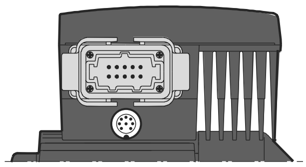
- For fixed routing: 817 958 1

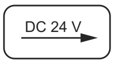
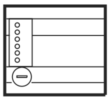
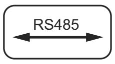
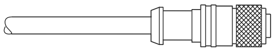
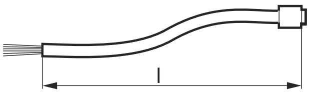
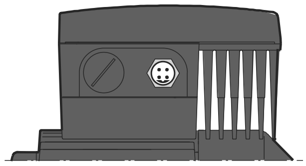
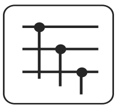
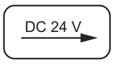
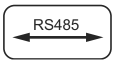
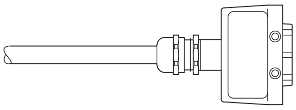
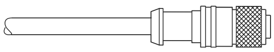
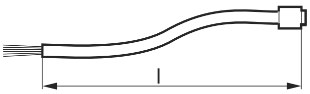
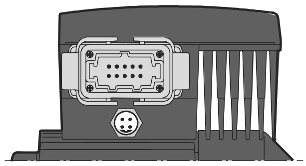
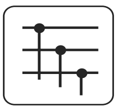
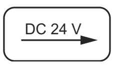
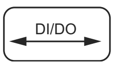
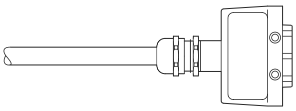
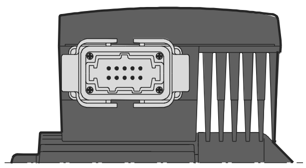
- **Up to 3 slaves** can be connected to the MOVIDRIVE® master.
- Please note: **X14:7 is not allowed to be connected** when connecting the individual **MOVIDRIVE® slaves to one another**. Connections **X14:7 and X14:8 are only allowed to be jumpered between the MOVIDRIVE® master and the first MOVIDRIVE® slave**.

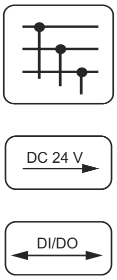
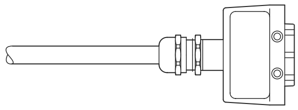
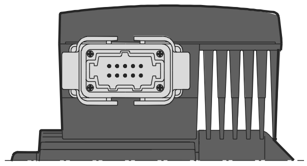
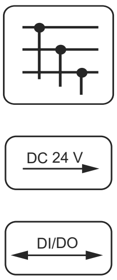
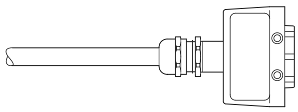
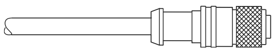
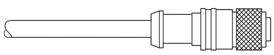
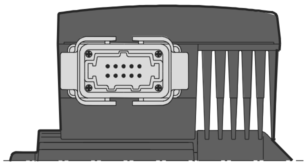
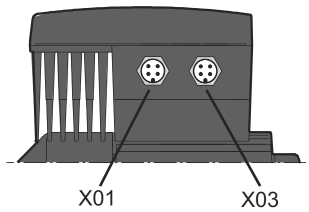
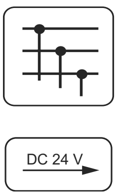
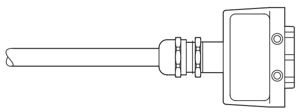
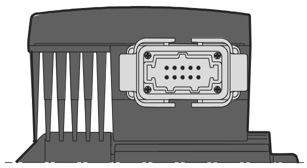
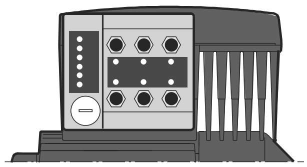
5 Overview of Decentralized Systems

5.1 Plug connector for MOVIMOT® in standard design

Connection customer end	Cable	Plug connector	Drive
	• Power supply 	ASA3	..MM..(/BMG)/ASA3  Diagram 08 873 01 00 on page 279
	• Power supply 	ASD3	..MM..(/BMG)/ASD3  Diagram 08 873 01 00 on page 279
  	• Power supply  • DC 24 V • RS485  Available cable lengths:  l = 5 m : Part number 0 815 592 5 l = 10 m: Part number 0 815 593 3 Wiring diagram See page 377	ASA3/AVT1  male B coding	..MM..(/BMG)/ASA3/AVT1  Diagram 08 765 398 on page 269

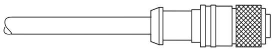
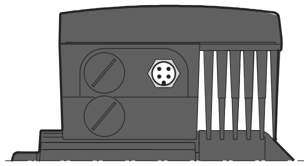
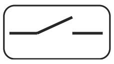
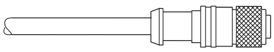
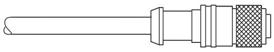
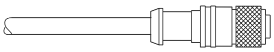
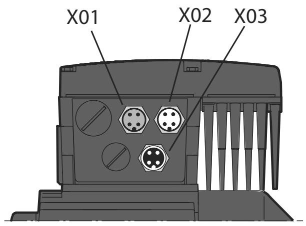
Connection customer end	Cable	Plug connector	Drive
	• Power supply  • DC 24 V • RS485  Available cable lengths:  l = 5 m : Part number 0 815 592 5 l = 10 m: Part number 0 815 593 3 Wiring diagram See page 377	ASD3/AVT1  male B coding	..MM..(/BMG)/ASD3/AVT1  Diagram 08 765 398 on page 269
	• DC24V • Binary control: – Ready for operation K1 – Speed selection f_1/f_2 – CCW/STOP – CW/STOP  You can order the 8-pole M12 socket (female) from Binder, Lumberg or Woodhead.	AVR1  male	..MM..(/BMG)/AVR1  Diagram 80 377 00 03 on page 292
	• Power supply  • Binary control: – Ready for operation K1 – Speed selection f_1/f_2 – CCW/STOP – CW/STOP  You can order the 8-pole M12 socket (female) from Binder, Lumberg or Woodhead.	ASA3/AVR1  male	..MM..(/BMG)/ASA3/AVR1  Diagram 08 889 101 on page 285

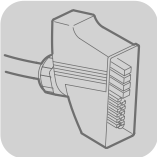
Connection customer end	Cable	Plug connector	Drive
  **Z.1** or 	• DC 24 V • RS485  Available cable lengths:  l = 5 m : Part number 0 815 592 5 l = 10 m: Part number 0 815 593 3 Wiring diagram See page 377	AVT1  male B coding	..MM..(/BMG)/AVT1  Diagram 08 872 000 on page 278
  	• Power supply • External connector monitoring • Connector monitoring via RS485 interface  • DC 24 V • RS485  Available cable lengths:  l = 5 m : Part number 0 815 592 5 l = 10 m: Part number 0 815 593 3 Wiring diagram See page 377	ASAX/AVT1  male B coding	..MM..(/BMG)/ASAX/AVT1 – 08 880 100 – 1  Diagram 08 880 100 on page 281
  	• Power supply • Binary control • Binary connector monitoring • DC 24 V 	ASAX	..MM..(/BMG)/ASAX – 08 875 000 – 1)  Diagram 08 875 000 on page 280

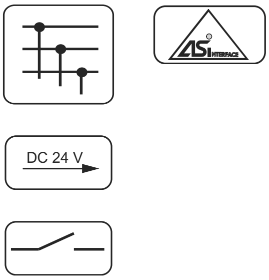
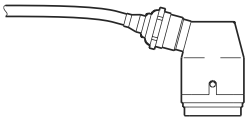
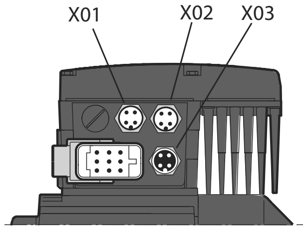
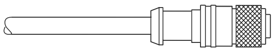
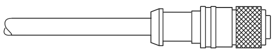
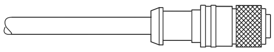
Connection customer end	Cable	Plug connector	Drive
	• Power supply • Binary control • DC 24V 	ASAX	..MM..(/BMG)/ASAX – 08 777 002 – 1)  Diagram 08 777 002 on page 270
	• Power supply • DC 24 V • Evaluation "Ready"  • Speed selection f_1/f_2  • Reverse direction of rotation CW/ CCW: 	ASAX/AVSX X01  male Standard coding X03  male Standard coding	..MM..(/BMG)/ASAX/AVSX – 08 857 10 –1)   Diagram 08 857 200 on page 276
 PROFIBUS INTERBUS DeviceNet CANopen	• Power supply • DC 24 V 	ASAX	..MM..(/BMG)/MF../ASAX – 08 798 298 – 1) (with fieldbus interface)   Diagram 08 798 298 on page 272

1. **Always indicate type designation and wiring diagram numbers when placing orders!**

5.2 Plug connector for MOVIMOT® with integrated AS-interface

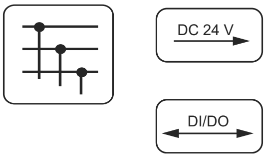
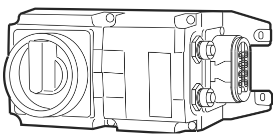
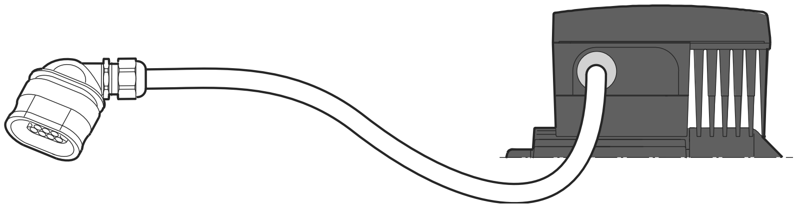
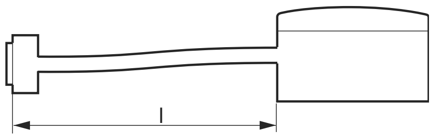
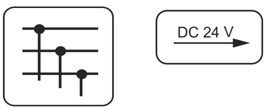
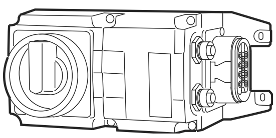
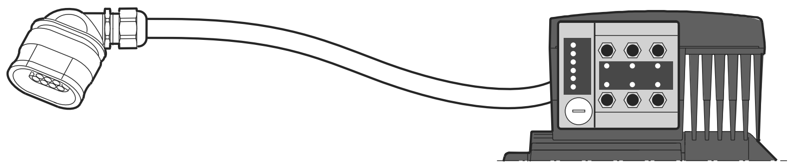
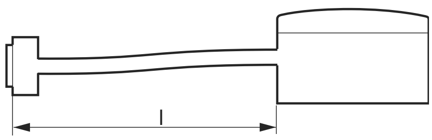
Connection customer end	Cable	Plug connector	Drive
	• AS-interface • 24 V AUX-PWR 	AVSK YE  male Standard coding	..MM..(/BMG)/AVSK  **Basic design** Diagram 80 355 00 03 on page 289
DC 24 V 	• AS-interface • 24 V AUX-PWR  • 24 V AUX-PWR  • Sensor power supply • Input DI2 and DI3 	AZSK X01(YE)  male Standard coding X02  male Standard coding X03  female Standard coding	..MM..(/BMG)/AZSK  **MLK-compatible version** Diagram 80 354 00 03 on page 290

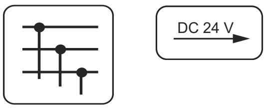
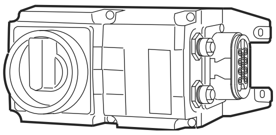
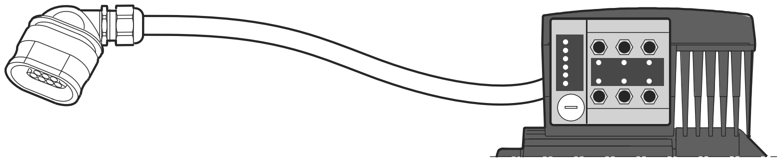
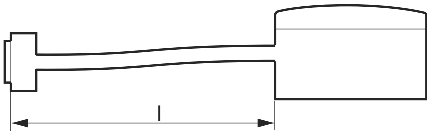


Connection customer end	Cable	Plug connector	Drive
	• Power supply Han Compact® Q8/0[1] 	AND3/AZSK	..MM..(/BMG)/AND3/AZSK  **Completely pluggable design.**
	• AS-interface • 24 V AUX-PWR 	X01 (YE)  male Standard coding	
	• 24 V AUX-PWR 	X02  male Standard coding	
	• Sensor power supply • Inputs DI2 and DI3 	X03  female Standard coding	Diagram 80 354 00 03 on page 291

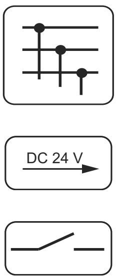
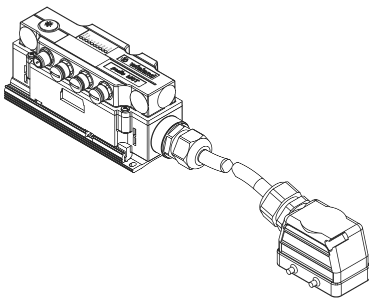
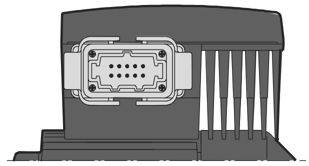
1. Registered trademark of Harting KGaA

5.3 MOVIMOT® on power bus

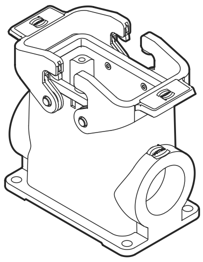
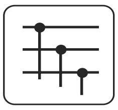
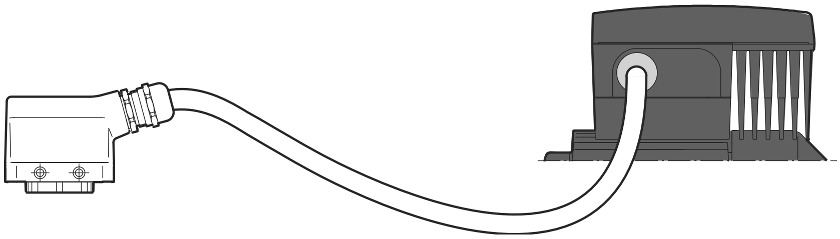
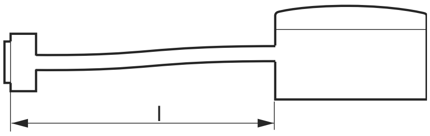
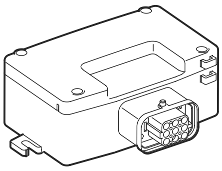
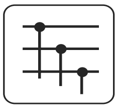
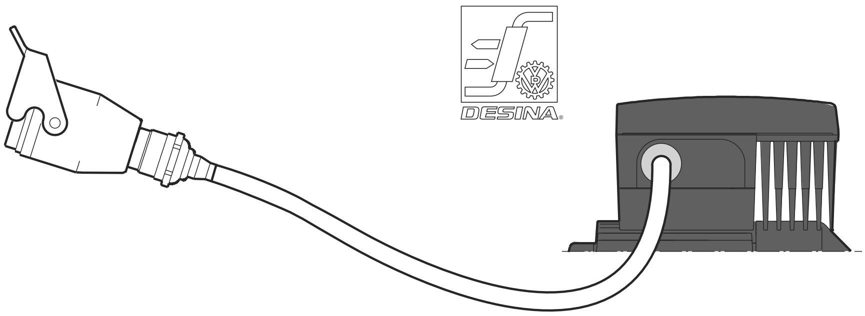
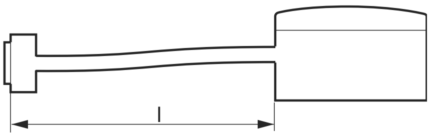
Connection Customer end	Drive with connecting lead	Designation
Wieland System podis®[1]  	**Plug connector revos MOT** • Power supply • DC 24 V • Binary control  Available cable lengths: 1 to 6 m (increments 0.5 m)  Preferred lengths: l = 2.0 m l = 3.0 m	..MM..(/BMG)/KEUX – 08 757 101 – [2] ..MM..(/BMG)/KEUH – 08 757 101 – [2)] Wiring diagram 08 757 101 on page 267
 	**Plug connector revos MOT** • Power supply • DC 24 V • Binary control  Available cable lengths: 1 to 6 m (increments 0.5 m)  Preferred lengths: l = 2.0 m l = 3.0 m	..MM..(/BMG)/MFP../KEUX – 08 758 101 – [2)] ..MM..(/BMG)/MFI../KEUX – 08 758 101 – [2)] Wiring diagram 08 758 101 on page 268

Connection Customer end	Drive with connecting lead	Designation
Wieland System podis®[1)]  	**Plug connector revos MOT** • Power supply • DC 24 V  Available cable lengths: 1 to 6 m (increments 0.5 m)  Preferred lengths: l = 2.0 m l = 3.0 m	..MM..(/BMG)/MFD../KEUX – 08 789 002 –[2)] Wiring diagram 08 789 002 on page 271

1. Component supplier Wieland electric
2. **Always indicate type designation and wiring diagram numbers when placing orders!**

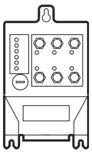
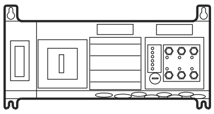
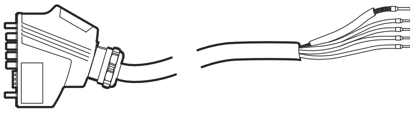
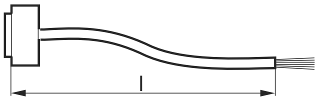
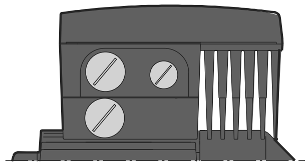
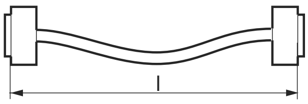
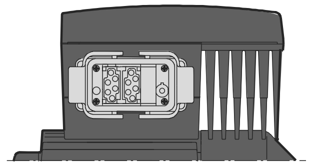
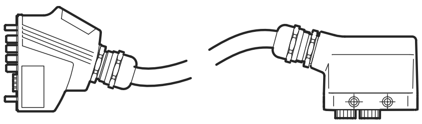
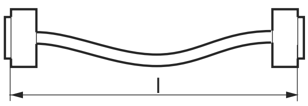
Connection Customer end	Plug connector	Drive
Wieland **System podis MOT FAC®**[1]  Example: 	ASAX	..MM..(/BMG)/ASAX – 08 777 02 –[2]  Wiring diagram 08 777 002 on page 270

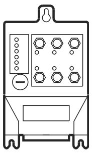
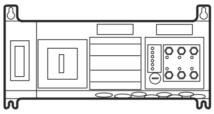
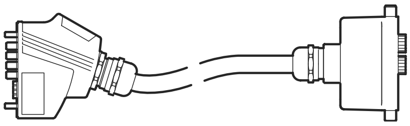
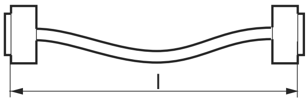
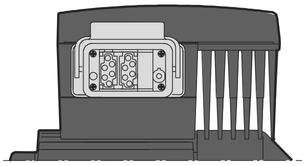
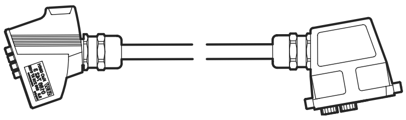
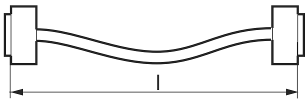
1. Component supplier Wieland electric
2. **Always indicate type designation and wiring diagram numbers when placing orders!**

Connection Customer end	Drive with connecting lead	Designation
Harting Han® 10 B[1] Coupling housing with 10 ES socket insert  	 Available cable lengths: l = 1 m ... 6 m (increments 0.5 m)  Preferred lengths l = 2.0 m l = 3.0 m	..MM..(/BMG)/KSA3 Wiring diagram 08 873 000 on page 279
Harting Han® Power S[1)]  	**Coupling housing HAN Compact® Q8/0[1)]**  Available cable lengths: 1 to 6 m (increments 0.5 m)  Preferred lengths: l = 2.0 m l = 3.0 m	..MM..(/BMG)/KND3 Wiring diagram 80 336 00 03 on page 288

1. Registered trademark of Harting KGaA

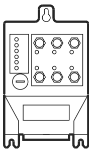
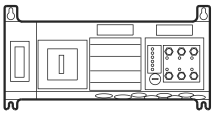
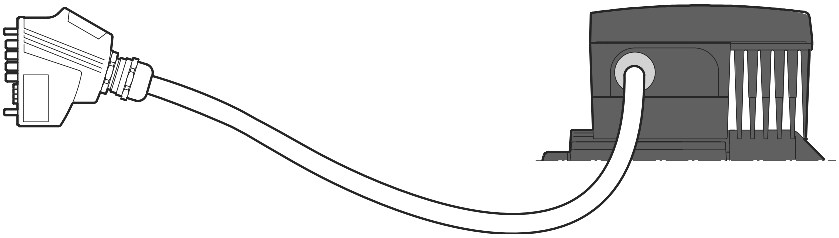
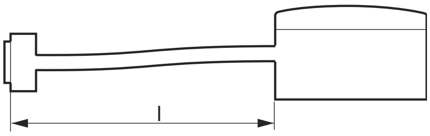
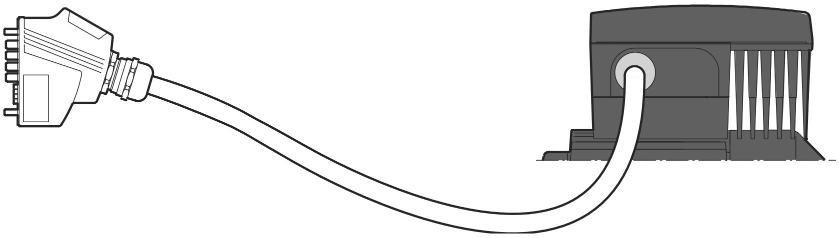
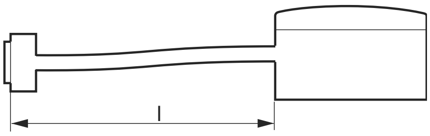
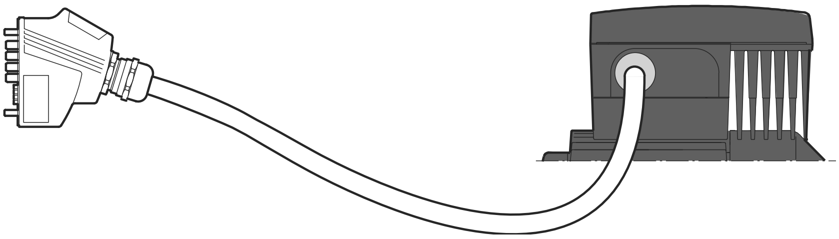
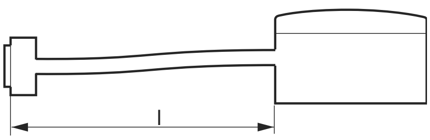
5.4 *MOVIMOT® in combination with Z.3 and Z.6 field distributors*

Field distributor	Cable	Plug connector	Drive
Z.3  **Z.6** 	**Part number: 0 186 725 3**  **Cable type** Ⓑ Available cable lengths:  l = 1 to 9.5 m (increments = 0.5 m) l = 10 to 30 m (increments = 1.0 m) Wiring diagram see page 367	without (terminal box connection)	..MM..(/BMG) 
	Part number: 0 593 516 4  **Cable type** Ⓑ Available cable lengths:  l = 1 to 9.5 m (increments = 0.5 m) l = 10 to 30 m (increments = 1.0 m) Wiring diagram see page 374	AMA6	..MM..(/BMG)/AMA6 
	Part number: 0 816 714 1  **Cable type** Ⓑ Available cable lengths:  l = 1 to 9.5 m (increments = 0.5 m) l = 10 to 30 m (increments = 1.0 m) Wiring diagram see page 383		Diagram 08 883 04 00 on page 282

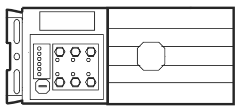
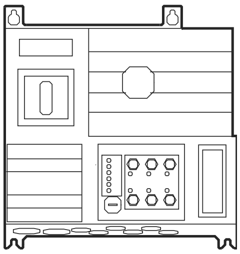
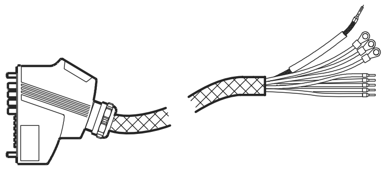
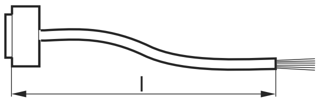
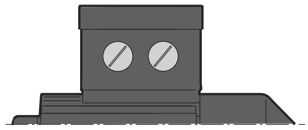
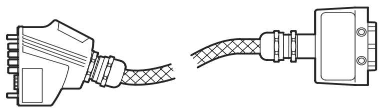
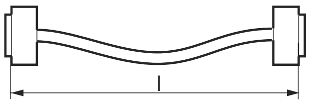
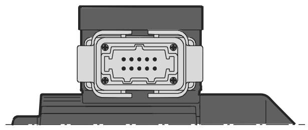
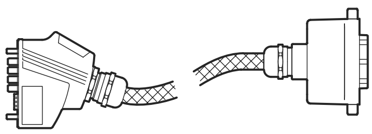
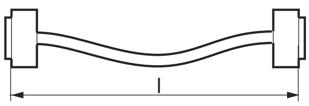
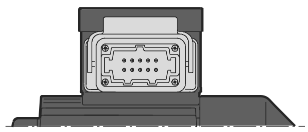
Field distributor	Cable	Plug connector	Drive
Z.3  **Z.6** 	**Part number: 0 817 112 2**  **Cable type** B Available cable lengths:  l = 1 to 9.5 m (increments = 0.5 m) l = 10 to 30 m (increments = 1.0 m) Wiring diagram see page 386	AMD6	..MM..(/BMG)/AMD6  Wiring diagram 08 883 04 00 on page 282
	Part number: 0 817 696 5  **Cable type** B Available cable lengths:  l = 1 to 9.5 m (increments = 0.5 m) l = 10 to 30 m (increments = 1.0 m) Wiring diagram see page 390		

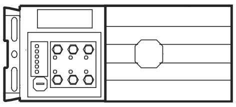
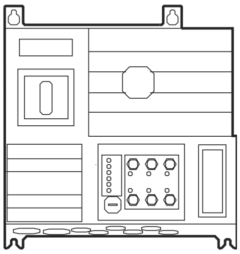
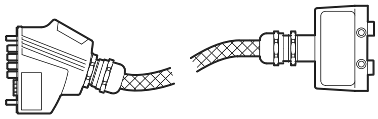
Note: Connection technology of field distributors see page 222

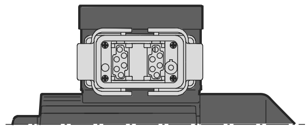
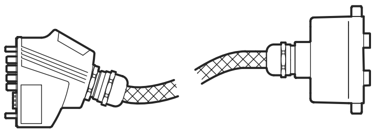
5.5 MOVIMOT® in combination with Z.3 and Z.6 field distributors

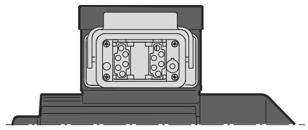
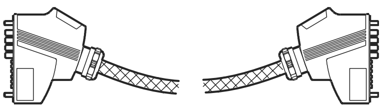
Field distributor	Drive with connecting lead	Designation
Z.3  **Z.6** 	 Available cable length:  l = 1.5 m	..MM..(/BMG)/KPFA Wiring diagram 08 839 000 on page 275
	 Available cable length:  l = 3 m	..MM..(/BMG)/KPFB Wiring diagram 08 839 000 on page 275
	 Available cable length:  Variable length: 1 ... 6 m (increments 0.5 m)	..MM..(/BMG)/KPF6 From 2005 onwards, KPF6 replaces variants KPFA and KPFB Wiring diagram 08 839 000 on page 275

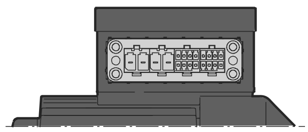
5.6 MOVIMOT® in combination with Z.7 and Z.8 field distributors

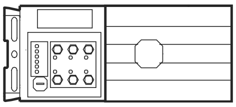
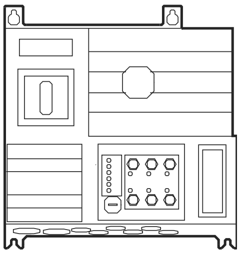
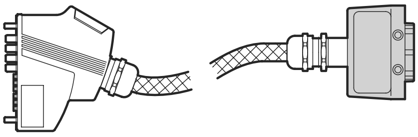
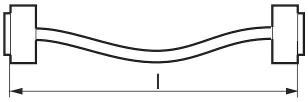
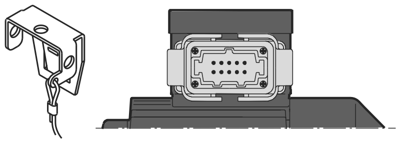
Field distributor	Cable	Plug connector	Drive
Z.7  **Z.8** 	**Part number: 0 186 742 3**  **Cable type** (A) Available cable length:  l = 1 to 9.5 m (increments 0.5 m) l = 10 to 15 m (increments 1.0 m) Wiring diagram see page 369	without (terminal box connection)	DT71 ... DV100(/BMG)/TH  Wiring diagram 08 798 376 page 299
	Part number: 0 593 076 6  **Cable type** (A) Available cable length:  l = 1 to 9.5 m (increments 0.5 m) l = 10 to 15 m (increments 1.0 m) Wiring diagram see page 370	ASB4	DT71 ... DV100(/BMG)/TH/ASB4  Wiring diagram 08 792 04 02 on page 295
	Part number: 0 816 831 8  **Cable type** (A) Available cable length:  l = 1 to 9.5 m (increments 0.5 m) l = 10 to 15 m (increments 1.0 m) Wiring diagram see page 384	ASE4	DT71 ... DV100(/BMG)/TH/ASE4  Wiring diagram 08 792 04 02 on page 295

<table>
<tr><th>Field distributor</th><th>Cable</th><th>Plug connector</th><th>Drive</th></tr>
<tr>
<td rowspan="3">Z.7

Z.8
</td>
<td>Part number: 1 820 455 4
(variable length 1 to 15 m)
Part number: 0 593 517 2
(fixed length 10 m)

Cable type A
Cable on the motor side is also available with output to the side:
Part number: 0 817 818 6
Available cable length


l = 1 to 9.5 m (increments 0.5 m)
l = 10 to 15 m (increments 1.0 m)
Wiring diagram see page 375</td>
<td>AMB4</td>
<td>DT71 ... DV100(/BMG)/TH/AMB4

Wiring diagram 08 793 04 02 page 297</td>
</tr>
<tr>
<td>Part number: 0 816 936 5

Cable type A
Available cable length:

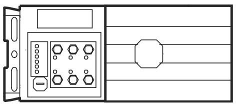
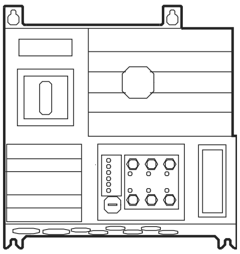
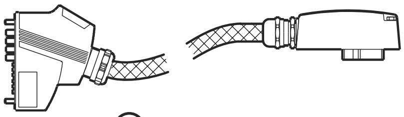
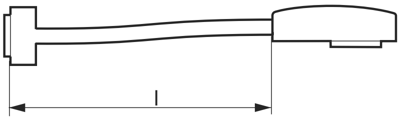
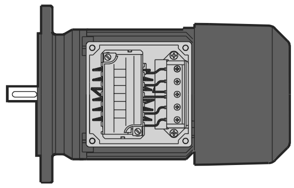
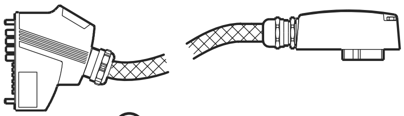
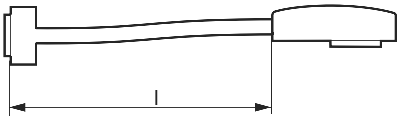
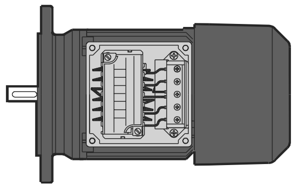

l = 1 to 9.5 m (increments 0.5 m)
l = 10 to 15 m (increments 1.0 m)
Wiring diagram see page 385</td>
<td>AME4</td>
<td>DT71 ... DV100(/BMG)/TH/AME4

Wiring diagram 08 793 04 02 page 297</td>
</tr>
<tr>
<td>Part number: 0 186 741 5

Cable type A
Available cable length:

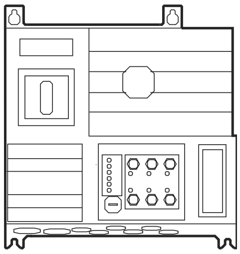
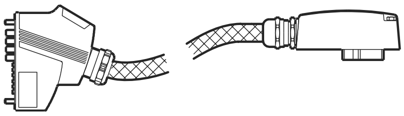
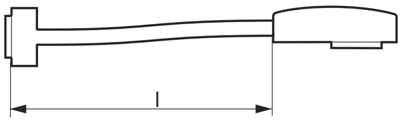
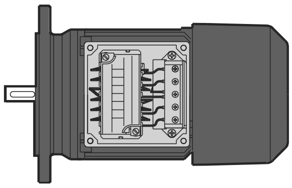

l = 1 to 9.5 m (increments 0.5 m)
l = 10 to 15 m (increments 1.0 m)
Wiring diagram see page 368</td>
<td>APG4</td>
<td>DT71 ... DV100(/BMG)/TH/APG4

Wiring diagram 08 752 02 01 on page 294</td>
</tr>
</table>

Field distributor	Cable	Plug connector	Drive
Z.7  **Z.8** 	**Part number: 0 817 533 0**  **Cable type** Ⓐ Available cable length:  l = 1 to 9.5 m (increments 0.5 m) l = 10 to 15 m (increments 1.0 m) Gold-plated contacts (motor end) Wiring diagram see page 389	ACC4	DT71 ... DV100(/BMG)/TH/ACC4  EMC built-on housing All contacts gold-plated TH contacts shortened Metal locking clip Locking plate closure[1] (see illustration above) Wiring diagram 08 854 00 03 on page 308

1. The locking plate (stainless steel type) is attached to a locking clip to prevent inadvertent removal of plug connector. You need a screwdriver to open the clip.

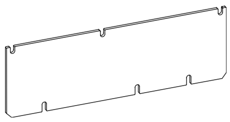
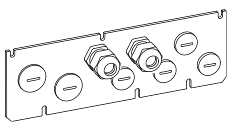
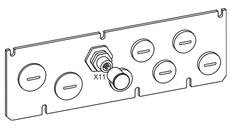
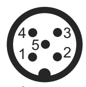
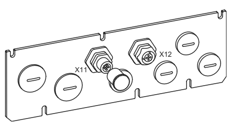
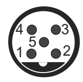
Note: Connection technology of field distributors see page 222

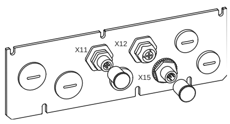
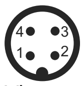
Field distributor	Cable	Plug connector	Drive
Z.7  **Z.8** 	 **Cable type** Ⓐ **Part number: 0 593 278 5** ⅄ (DT13) Wiring diagram see page 373 **Part number: 0 816 325 1** △ (DT13) Wiring diagram see page 380 Available cable lengths:  l = 1.0 to 9.5 m (increments 0.5 m) l = 10 m to 15 m (increments 1.0 m)	ISU4	D(F)R63L4(/BR)/TH/ISU4  Motor with IS lower section (DT13) Wiring diagram 80 422 00 04 on page 312
	 **Cable type** Ⓐ **Part number: 0 593 278 5** ⅄ (DT13) Wiring diagram see page 373 **Part number: 0 816 325 1** △ (DT13) Wiring diagram see page 380 Available cable lengths:  l = 1.0 to 9.5 m (increments 0.5 m) l = 10 m to 15 m (increments 1.0 m)	ISU4	DT71 ... DT90(/BMG)/TH/ISU4  Motor with IS lower section (DT13) Wiring diagram 80 422 00 04 on page 312

Field distributor	Cable	Plug connector	Drive
Z.8 	 **Cable type** (A) **Part number: 0 593 755 8** ⅄ (DT13) Wiring diagram see page 376 **Part number: 0 816 326 X** △ (DT13) Wiring diagram see page 381 Available cable lengths:  l = 1.0 to 9.5 m (increments 0.5 m) l = 10 m to 15 m (increments 1.0 m)	ISU4	DV100(/BMG)/TH/ISU4  Motor with IS lower section (DT13) **Note brake voltage!** Wiring diagram 80 422 00 04 on page 312

Note: Connection technology of field distributors see page 222

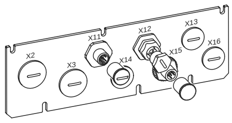
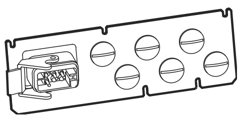
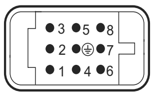
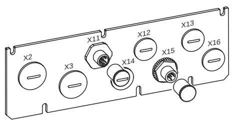
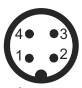
5.7 Connection technology of Z.6 and Z.8 field distributors

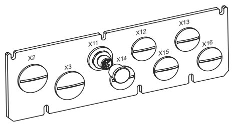
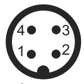
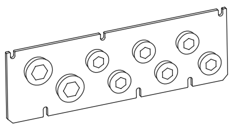
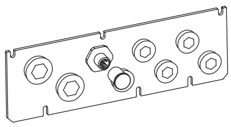
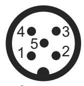
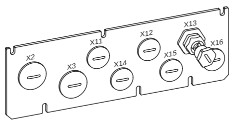
<table>
<tr><th>Connecting flange</th><th>Design</th><th colspan="3">Connector
Pin assignment</th></tr>
<tr><td>/AFX
</td><td>• Empty flange plate</td><td colspan="3">–</td></tr>
<tr><td>/AF0

PROFIBUS or InterBus</td><td>• 2 x M 20 cable entry metric, EMC cable gland
• 4 x M 20 screw plug
• 2 x M 25 screw plug</td><td colspan="3">–</td></tr>
<tr><td colspan="5">In combination with PROFIBUS and InterBus, standard equipment for MF.../Z.6 and MF.../MM../Z.8. field distributors is an AF0 connection flange.</td></tr>
<tr><td rowspan="6">/AF1

CANopen or DeviceNet</td><td rowspan="6">• 1 x M 12 Micro Style connector
• 5 x M 20 screw plug
• 2 x M 25 screw plug</td><td colspan="3">X1: M12 plug</td></tr>
<tr><td rowspan="5">
View on contact end</td><td>PIN 1</td><td>DRAIN</td></tr>
<tr><td>PIN 2</td><td>V+</td></tr>
<tr><td>PIN 3</td><td>V-</td></tr>
<tr><td>PIN 4</td><td>CAN_H</td></tr>
<tr><td>PIN 5</td><td>CAN_L</td></tr>
<tr><td colspan="5">In combination with DeviceNet and CANopen, standard equipment for MF.../Z.6 and MF.../MM../Z.8. field distributors is an AF1 connection flange.</td></tr>
<tr><td rowspan="14">/AF2

for PROFIBUS (optional)</td><td rowspan="14">• 2 x M 12 plug connector
• 4 x M 20 screw plug
• 2 x M 25 screw plug</td><td colspan="3">X11: M12 plug</td></tr>
<tr><td rowspan="6">
View on contact end</td><td>PIN 1</td><td>Not assigned</td></tr>
<tr><td>PIN 2</td><td>A line PROFIBUS (incoming)</td></tr>
<tr><td>PIN 3</td><td>Not assigned</td></tr>
<tr><td>PIN 4</td><td>B line PROFIBUS (incoming)</td></tr>
<tr><td>PIN 5</td><td>Not assigned</td></tr>
<tr><td>Thread</td><td>Shield or protective earth</td></tr>
<tr><td colspan="3">X12: M12 socket</td></tr>
<tr><td rowspan="6">
View on contact end</td><td>PIN 1</td><td>VP supply voltage 5 V for connection resistor</td></tr>
<tr><td>PIN 2</td><td>A line PROFIBUS (outgoing)</td></tr>
<tr><td>PIN 3</td><td>DGND reference potential to VP (PIN 1)</td></tr>
<tr><td>PIN 4</td><td>B line PROFIBUS (outgoing)</td></tr>
<tr><td>PIN 5</td><td>Not assigned</td></tr>
<tr><td>Thread</td><td>Shield or protective earth</td></tr>
<tr><td colspan="5">AF2 connection flange can be combined with the field distributors for PROFIBUS MFZ26 and MFZ28 as an alternative to the standard version AF0. AF2 comes equipped with a M12 connector system for PROFIBUS connection. The unit comes equipped with an X11 connector for the incoming and an X12 socket for the outgoing PROFIBUS. The M12 connectors have a reverse-key coding design also referred to as B or W coding.</td></tr>
</table>

Connecting flange	Design	Connector Pin assignment		
/AF3  for PROFIBUS (optional)	• 3 x M 12 plug connector • 3 x M 20 screw plug • 2 x M 25 screw plug	**X11: M12 plug**		
		 View on contact end	PIN 1	Not assigned
			PIN 2	A line PROFIBUS (incoming)
			PIN 3	Not assigned
			PIN 4	B line PROFIBUS (incoming)
			PIN 5	Not assigned
			Thread	Shield or protective earth
		X12: M12 socket		
		 View on contact end	PIN 1	VP supply voltage 5 V for connection resistor
			PIN 2	A line PROFIBUS (outgoing)
			PIN 3	DGND reference potential to VP (PIN 1)
			PIN 4	B line PROFIBUS (outgoing)
			PIN 5	Not assigned
			Thread	Shield or protective earth
		X15: M12 plug		
		 View on contact end	PIN 1	24 V voltage supply for 24 volt module electronics and sensors
			PIN 2	V2I24 voltage supply for actuators
			PIN 3	GND-0V24 reference potential 24 volt for module electronics and sensors
			PIN 4	GND2-0V24 reference potential 24 volt for actuators

AF3 connection flange can be combined with the field distributors for PROFIBUS MFZ26 and MFZ28 as an alternative to the standard version AF0.
AF3 comes equipped with a M12 connector system for PROFIBUS connection. The unit comes equipped with an X11 connector for the incoming and an X12 socket for the outgoing PROFIBUS. The M12 connectors have a reverse-key coding design also referred to as B or W coding.
In addition, AF3 features an M12 connector plug X15 (4-pole, regular coding) for supplying the 24 V supply voltage(s).

5

Connecting flange	Design	Connector Pin assignment		
/AF3B  for PROFIBUS (optional)	• 3 x M 12 plug connector • 3 x M 20 screw plug • 2 x M 25 screw plug	**X11: M12 plug**		
		 View on contact end	PIN 1	Not assigned
			PIN 2	A line PROFIBUS (incoming)
			PIN 3	Not assigned
			PIN 4	B line PROFIBUS (incoming)
			PIN 5	Not assigned
			Thread	Shield or protective earth
		X12: M12 socket		
		 View on contact end	PIN 1	VP supply voltage 5 V for connection resistor
			PIN 2	A line PROFIBUS (outgoing)
			PIN 3	DGND reference potential to VP (PIN 1)
			PIN 4	B line PROFIBUS (outgoing)
			PIN 5	Not assigned
			Thread	Shield or protective earth
		X15: M12 plug		
		 View on contact end	PIN 1	24 V - 24 volt supply for module electronics and sensors
			PIN 2	
			PIN 3	GND-0V24 reference potential 24 volt for module electronics, sensors and actuators
			PIN 4	
/AF4 	• 1 x connector HAN compact® Q8/0 (Built-on housing: metal design) for power connection • 6 x M 20 screw plug	**X2: Han® connector Q8/0**[1]		
		 View on contact end	PIN 1	-
			PIN 2	Phase L2
			PIN 3	-
			PIN 4	-
			PIN 5	-
			PIN 6	Phase L3
			PIN 7	-
			PIN 8	Phase L1
			⏚	PE
/AF5B  for DeviceNet or CANopen (optional)	• 2 x M 12 plug connector • 4 x M 20 screw plug • 2 x M 25 screw plug	**X11: M12 plug**		
		 View on contact end	PIN 1	DRAIN
			PIN 2	V+
			PIN 3	V-
			PIN 4	CAN_H
			PIN 5	CAN_L
		X15: M12 plug		
		 View on contact end	PIN 1	24 V - 24 volt supply for module electronics and sensors
			PIN 2	
			PIN 3	GND-0V24 reference potential 24 volt for module electronics, sensors and actuators
			PIN 4	

<table>
<tr><th>Connecting flange</th><th>Design</th><th colspan="3">Connector
Pin assignment</th></tr>
<tr><td rowspan="5">/AF6

for AS-interface</td><td rowspan="5">• 1 x M 12 plug connector
• 5 x M 20 screw plug
• 2 x M 25 screw plug</td><td colspan="3">X11: M12 plug</td></tr>
<tr><td rowspan="4">
View on contact end</td><td>PIN 1</td><td>AS-interface + data cable and electronics supply for MFK field distributors</td></tr>
<tr><td>PIN 2</td><td>GND (AUX-PWR)-0V24 reference potential 24 volt for sensors</td></tr>
<tr><td>PIN 3</td><td>AS-interface data cable and electronics supply for MFK field distributors</td></tr>
<tr><td>PIN 4</td><td>24 V (AUX-PWR) voltage supply for sensors</td></tr>
<tr><td colspan="5">In combination with the AS-interface, MF ... /Z.6 and MF ... /MM.. /Z.8 field distributors come equipped with the AF6 connection flange.</td></tr>
<tr><td>/AFA
</td><td>• 6 x screw plug NPT 1/2[2]
• 2 x screw plug NPT 3/4</td><td colspan="3">--</td></tr>
<tr><td rowspan="6">/AFB

for DeviceNet and CANopen (optional)</td><td rowspan="6">• 1 x M 12 plug connector
• 5 x screw plug NPT 1/2[2)]
• 2 x screw plug NPT 3/4</td><td colspan="3">X11: M12 plug</td></tr>
<tr><td rowspan="5">
View on contact end</td><td>PIN 1</td><td>DRAIN</td></tr>
<tr><td>PIN 2</td><td>V+</td></tr>
<tr><td>PIN 3</td><td>V-</td></tr>
<tr><td>PIN 4</td><td>CAN_H</td></tr>
<tr><td>PIN 5</td><td>CAN_L</td></tr>
<tr><td rowspan="6">/AFX1

for MFZ58 (optional)</td><td rowspan="6">• 1 x M 12 plug connector
• 5 x M 20 screw plug
• 2 x M 25 screw plug</td><td colspan="3">X13: M12 socket</td></tr>
<tr><td rowspan="5">
View on contact end</td><td>PIN 1</td><td>+24 V</td></tr>
<tr><td>PIN 2</td><td>RS485-</td></tr>
<tr><td>PIN 3</td><td>GND</td></tr>
<tr><td>PIN 4</td><td>RS485+</td></tr>
<tr><td colspan="2">Shield on union nut</td></tr>
</table>

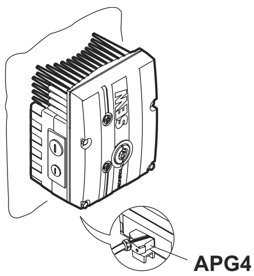
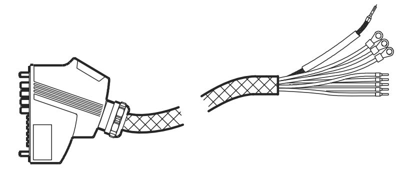
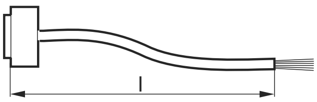
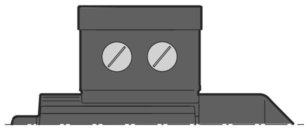
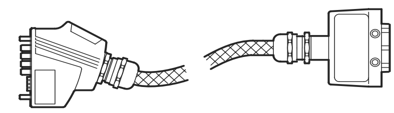
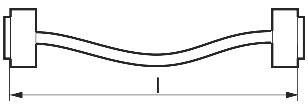
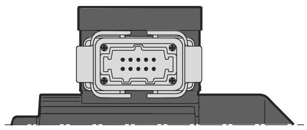
1. Registered trademark of Harting KGaA
2. See appendix for NPT dimensions

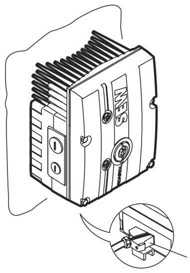
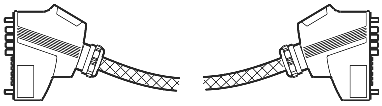
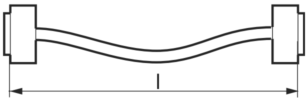
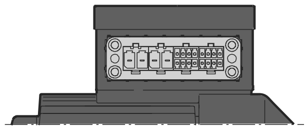
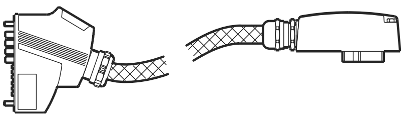
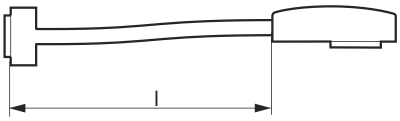
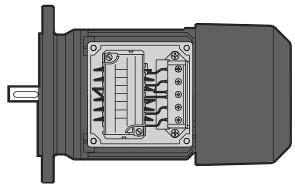
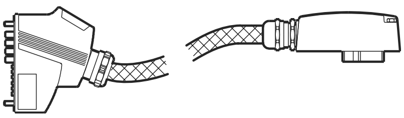
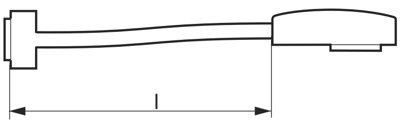
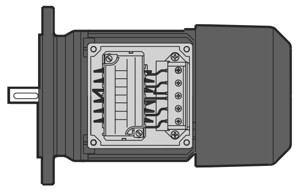
5

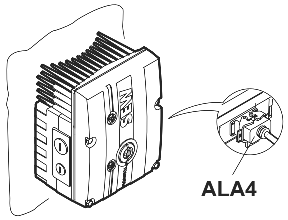
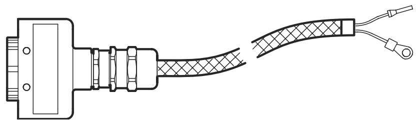
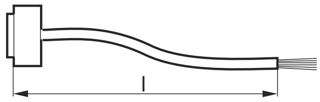
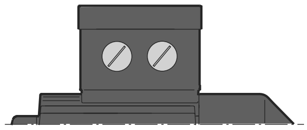
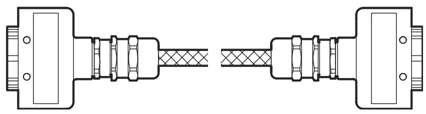
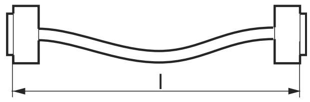
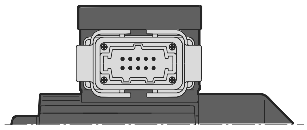
5.8 *MOVIMOT® in (offset) mounting close to the motor*

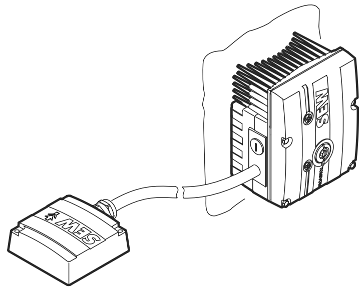
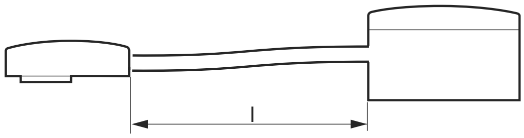
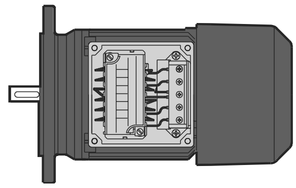
Project planning note "MOVIMOT® with brake control BGM, BSM option"

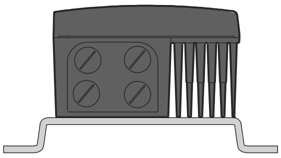
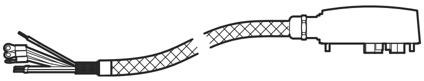
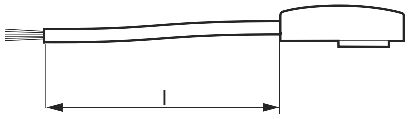
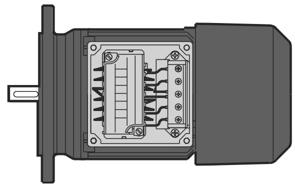
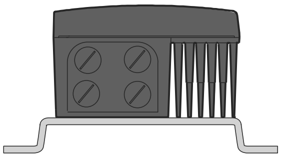
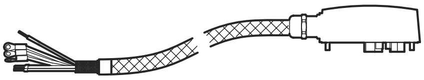
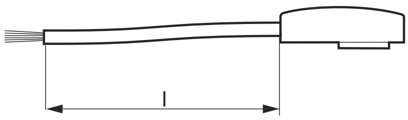
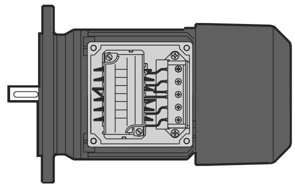
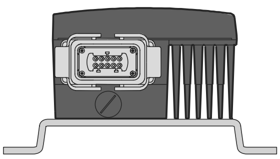
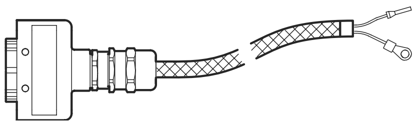
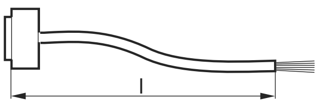
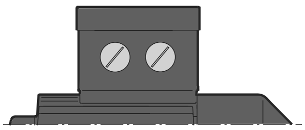
- Note the rated voltage of the brake coil!
- In motors for mounting the MOVIMOT® with plug connector options A..4, K..4 or IS.4 near the motor, the rated voltage is defined as 230 V (BG1) or 110 V (BG2) according to the MOVIMOT® size.
- In MOVIMOT® unit variants with brake control BGM, the rated voltage of the brake must be selected according to the BGM supply voltage (as a rule, BGM supply voltage = phase-to-phase voltage) for motor orders. This selection is only possible in plug connector options /A..8, /K..8 or /IS.., e.g. DT..(BMG)/TH/APG8. In addition, the motor connection variant "external brake control" must be specified when ordering the motor.
- In MOVIMOT® unit variants with brake control BSM, the rated voltage of the brake must be 24 V DC.

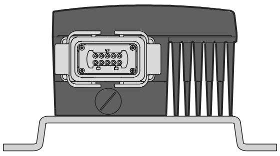
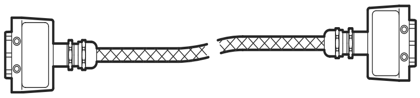
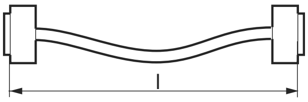
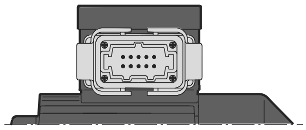
MOVIMOT® inverter	Cable	Plug connector	Drive
MM../P2.A/RO.A/APG4 ***with BGM, BSM or URM:*** **MM../P21A/RO1B/APG4** **MM../P22A/RO2A/APG4**  **Plug connector on supply system end:** without (terminal connection) **Plug connector on motor end:** /APG4 (MOVIMOT® connection to motor)	**Part number: 0 186 742 3**  **Cable type** Ⓐ Available cable length:  l = 1 to 9.5 m (increments 0.5 m) l = 10 to 15 m (increments 1 m) Wiring diagram see page 369	without (terminal box connection)	DT71 ... DV100(/BMG)/TH  Wiring diagram 08 798 376 page 299
	Part number: 0 593 076 6  **Cable type** Ⓐ Available cable length:  l = 1 to 9.5 m (increments 0.5 m) l = 10 to 15 m (increments 1.0 m) Wiring diagram see page 370	ASB4	DT71 ... DV100(/BMG)/TH/ASB4  Wiring diagram 08 792 04 02 on page 295

MOVIMOT® inverter	Cable	Plug connector	Drive
MM../P2.A/RO.A/APG4 ***with BGM, BSM or URM:*** **MM../P21A/RO1B/APG4** **MM../P22A/RO2A/APG4**  **APG4** **Plug connector on supply system end:** without (terminal connection) **Plug connector on motor end:** /APG4 (MOVIMOT® connection to motor)	**Part number: 0 186 741 5**  **Cable type** Ⓐ Available cable length:  l = 1 to 9.5 m (increments 0.5 m) l = 10 to 15 m (increments 1 m) Wiring diagram see page 368	APG4	DT71 ... DV100(/BMG)/TH/APG4  Diagram 08 752 02 01 on page 294
	 **Cable type** Ⓐ **Part number: 0 593 278 5** ⅄ (DT13) Wiring diagram see page 373 **Part number: 0 816 325 1** △ (DT13) Wiring diagram see page 380 Available cable lengths:  l = 1.0 to 9.5 m (increments 0.5 m) l = 10 m to 15 m (increments 1.0 m)	ISU4	DT71 ... DT90(/BMG)/TH/ISU4  Motor with IS lower section (DT13) Wiring diagram 80 422 00 04 on page 312
	 **Cable type** Ⓐ **Part number: 0 593 755 8** ⅄ (DT13) Wiring diagram see page 376 **Part number: 0 816 326 X** △ (DT13) Wiring diagram see page 381 Available cable lengths:  l = 1.0 to 9.5 m (increments 0.5 m) l = 10 m to 15 m (increments 1.0 m)	ISU4	DV100(/BMG)/TH/ISU4  Motor with IS lower section (DT13) Wiring diagram 80 422 00 04 on page 312

MOVIMOT® inverter	Cable	Plug connector	Drive
MM../P2.A/RE.A/ALA4 ***with BGM, BSM or URM:*** **MM../P21A/RF1B/ALA4** **MM../P22A/RE2A/ALA4**  **Plug connector on supply system end:** without (terminal connection) **Plug connector on motor end:** /ALA4 (MOVIMOT® connection to motor)	**Part number: 0 817 948 4**  **Cable type** A Wiring diagram see page 396 Available cable lengths:  l = 1 to 9.5 m (increments 0.5 m) l = 10 to 15 m (increments 1.0 m)	without (terminal box connection)	DT71 ... DV100(/BMG)/TH  When ordering a motor, always specify operating mode "MOVIMOT® mounted close to the motor" Wiring diagram 08 798 376 page 299
	Part number: 0 816 208 5  **Cable type** A Wiring diagram see page 379 Available cable lengths:  l = 1 to 9.5 m (increments 0.5 m) l = 10 to 15 m (increments 1 m)	ASB4 (ASA4)	DT71 ... DV100(/BMG)/TH/ASB4  Wiring diagram 08 792 04 02 on page 295

MOVIMOT® inverter	Cable	Plug connector	Drive
MM../P22A/RB2A/KIS4  [1] Standard delivery in ⅄ connection Available cable lengths: 1 to 5 m (increments 0.5 m)  Preferred lengths: l = 2.0 m l = 3.0 m		ISU4	DV100(/BMG)/TH/ISU4  Motor with IS lower section (DT13) Diagram (⅄) 0 817 812 7 on page 391 Diagram (△) 0 817 817 8 on page 400

Mounting bracket	Cable	Plug connector	Drive
MM../P11A 	**Part number: 0 816 166 6** ⅄ (DT13) IS plug connector with free end  **Cable type** (A) Available cable length:  l = 1 to 5 m (increments 0.5 m) Wiring diagram see page 378	ISU4	D(F)R63L4(/BR)/TH/ISU4 DT71 ... DT90(/BMG)/TH/ISU4  Motor with IS lower section (DT13) Note connection type ⅄/△ Wiring diagram 80 422 00 04 on page 312
MM../P12A 	**Part number: 0 817 812 7** ⅄ (DT13) Wiring diagram see page 391 **Part number: 0 817 817 8** △ (DT13) Wiring diagram see page 400 IS plug connector with free end  **Cable type** (A) Available cable length:  l = 1 to 5 m (increments 0.5 m)	ISU4	DV100(/BMG)/TH/ISU4  Motor with IS lower section (DT13) Note connection type ⅄/△ Wiring diagram 80 422 00 04 on page 312
MM../P1.A/ALA4 	**Part number: 0 817 948 4**  **Cable type** (A) Available cable length:  l = 1 to 9.5 m (increments 0.5 m) l = 10 to 15 m (increments 1.0 m) Wiring diagram see page 396	without (terminal box connection)	DT71 ... DV100(/BMG)/TH  When ordering a motor, always specify operating mode "MOVIMOT® mounted close to the motor". Note the rated voltage of the brake. Wiring diagram 08 803 002 on page 273

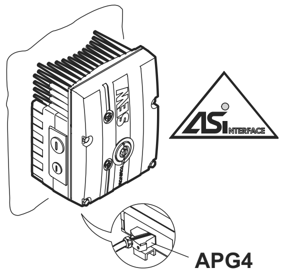
Mounting bracket	Cable	Plug connector	Drive
MM../P1.A/ALA4 	**Part number: 0 816 208 5**  **Cable type** Ⓐ Available cable length:  l = 1 to 9.5 m (increments 0.5 m) l = 10 to 15 m (increments 1.0 m) Wiring diagram see page 379	ASB4	DT71 ... DV100(/BMG)/TH/ASB4  Wiring diagram 08 792 04 02 on page 295

5.9 MOVIMOT® with integrated AS-interface, in (offset) mounting close to the motor

STOP

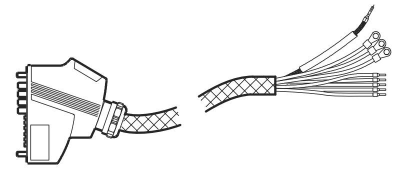
Project planning note "MOVIMOT® with brake control URM option"

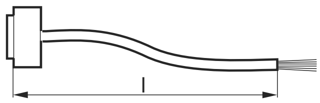
- Note the rated voltage of the brake coil!
- In motors for mounting the MOVIMOT® with motor-end plug connector options A..4, K..4 or IS.4 near the motor, the rated voltage of the brake is defined as 230 V (BG1) or 110 V (BG2) according to the MOVIMOT® size.

<table>
<tr><th>MOVIMOT® inverter</th><th>Cable</th><th>Plug connector</th><th>Drive</th></tr>
<tr>
<td rowspan="2">MM../P2.A/R.../APG4/A.SK
MM../P2.A/R.../APG4/AND3/AZSK

Plug connector on supply system end:
Communication /A.SK
Power: Terminal connection

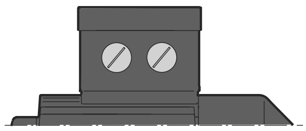
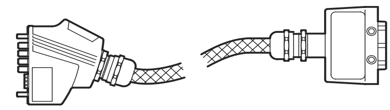
or

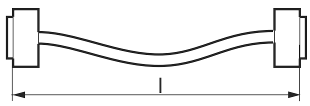
Communication /A.SK
Power /AND3

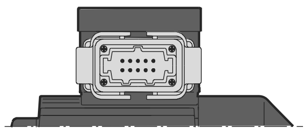
Plug connector on motor end:
/APG4
(MOVIMOT® connection to motor)</td>
<td>Part number: 0 186 742 3

Cable type (A)

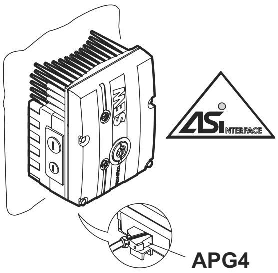
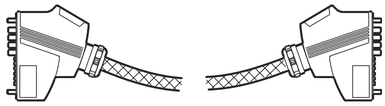
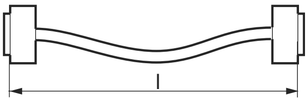
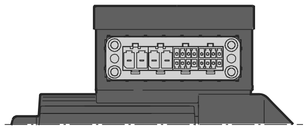
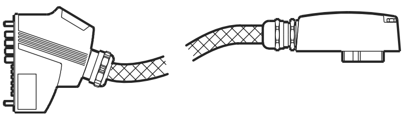
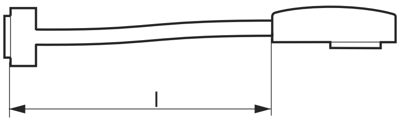
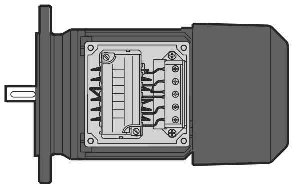
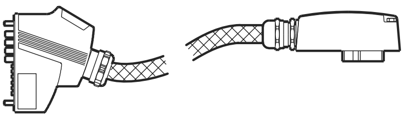
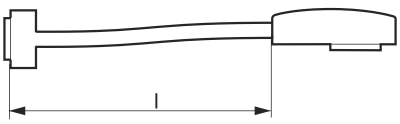
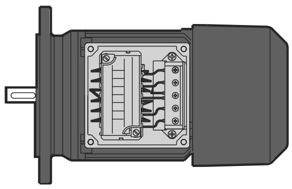
Available cable length:

l = 1 to 9.5 m (increments 0.5 m)
l = 10 to 15 m (increments 1 m)

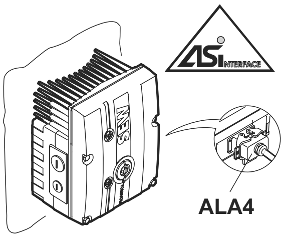
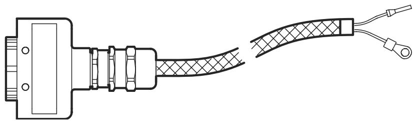
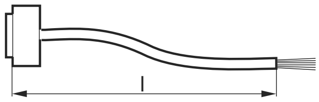
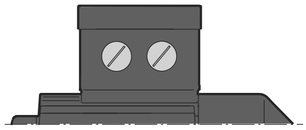
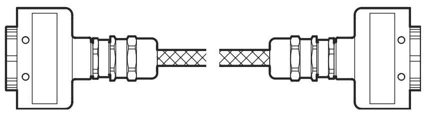
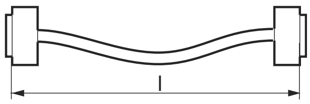
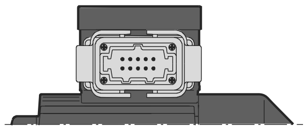
Wiring diagram see page 369</td>
<td>without

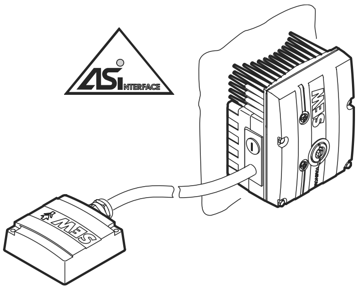
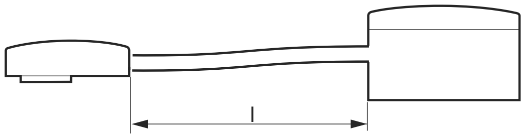
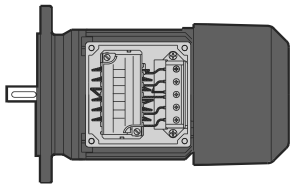
(terminal box connection)</td>
<td>DT71 ... DV100(/BMG)/TH

Wiring diagram 08 798 376 page 299</td>
</tr>
<tr>
<td>Part number: 0 593 076 6

Cable type (A)

Available cable length:

l = 1 to 9.5 m (increments 0.5 m)
l = 10 to 15 m (increments 1.0 m)

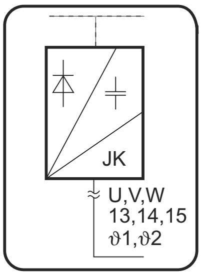
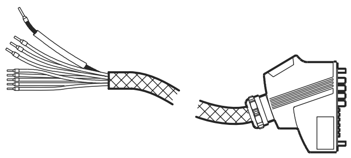
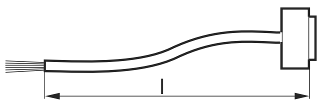
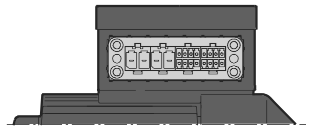
Wiring diagram see page 370</td>
<td>ASB4</td>
<td>DT71 ... DV100(/BMG)/TH/ASB4

Wiring diagram 08 792 04 02 on page 295</td>
</tr>
</table>

MOVIMOT® inverter	Cable	Plug connector	Drive
MM../P2.A/R.../APG4/A.SK **MM../P2.A/R.../APG4/AND3/AZSK**  **Plug connector on supply system end:** Communication /A.SK Power: Terminal connection or Communication /A.SK Power /AND3 **Plug connector on motor end:** /APG4 (MOVIMOT® connection to motor)	**Part number: 0 186 741 5**  **Cable type** Ⓐ Available cable length:  l = 1 to 9.5 m (increments 0.5 m) l = 10 to 15 m (increments 1 m) Wiring diagram see page 368	APG4	DT71 ... DV100(/BMG)/TH/APG4  Diagram 08 752 02 01 on page 294
	 **Cable type** Ⓐ **Part number: 0 593 278 5** ⅄ (DT13) Wiring diagram see page 373 **Part number: 0 816 325 1** △ (DT13) Wiring diagram see page 380 Available cable lengths:  l = 1.0 to 9.5 m (increments 0.5 m) l = 10 m to 15 m (increments 1.0 m)	ISU4	DT71 ... DT90(/BMG)/TH/ISU4  Motor with IS lower section (DT13) Wiring diagram 80 422 00 04 on page 312
	 **Cable type** Ⓐ **Part number: 0 593 755 8** ⅄ (DT13) Wiring diagram see page 376 **Part number: 0 816 326 X** △ (DT13) Wiring diagram see page 381 Available cable lengths:  l = 1.0 to 9.5 m (increments 0.5 m) l = 10 m to 15 m (increments 1.0 m)	ISU4	DV100(/BMG)/TH/ISU4  Motor with IS lower section (DT13) Wiring diagram 80 422 00 04 on page 312

MOVIMOT® inverter	Cable	Plug connector	Drive
MM../P2.A/R.../ALA4/A.SK **MM../P2.A/R.../ALA4/AND3/AZSK**  **Plug connector on supply system end:** Communication /A.SK Power: Terminal connection or Communication /A.SK Power /AND3 **Plug connector on motor end:** /ALA4 (MOVIMOT® connection to motor)	**Part number: 0 817 948 4**  **Cable type** Ⓐ Wiring diagram see page 396 Available cable lengths:  l = 1 to 9.5 m (increments 0.5 m) l = 10 to 15 m (increments 1.0 m)	without (terminal box connection)	DT71 ... DV100(/BMG)/TH  When ordering a motor, always specify operating mode "MOVIMOT® mounted close to the motor" Wiring diagram 08 798 376 page 299
	Part number: 0 816 208 5  **Cable type** Ⓐ Wiring diagram see page 379 Available cable lengths:  l = 1 to 9.5 m (increments 0.5 m) l = 10 to 15 m (increments 1 m)	ASB4 (ASA4)	DT71 ... DV100(/BMG)/TH/ASB4  Wiring diagram 08 792 04 02 on page 295

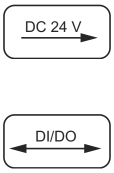
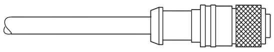
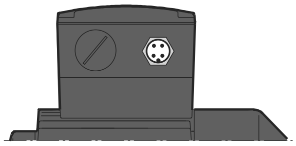
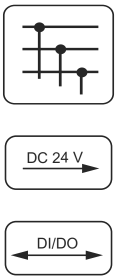
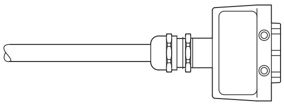
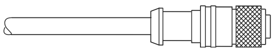
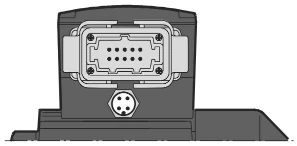
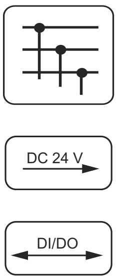
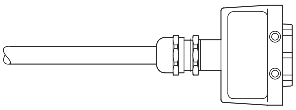
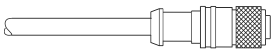
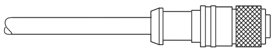
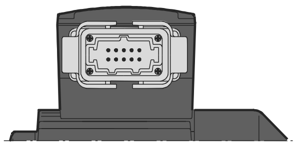
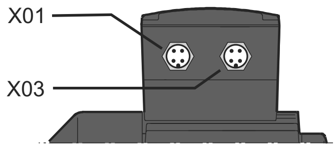
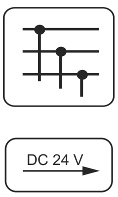
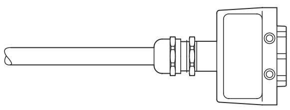
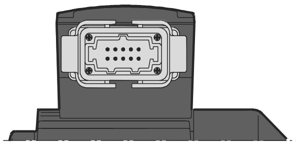
MOVIMOT® inverter	**Cable**	**Plug connector**	**Drive**
MM../P22A/RB2A/KIS4/A.SK  [1] [1] Standard delivery in ⅄ connection Available cable lengths: 1 to 5 m (increments 0.5 m)  Preferred lengths: l = 2.0 m l = 3.0 m		ISU4	DV100(/BMG)/TH/ISU4  Motor with IS lower section (DT13) Diagram (⅄) 0 817 812 7 on page 391 Diagram (△) 0 817 817 8 on page 400

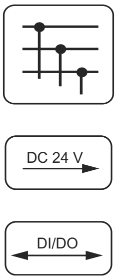
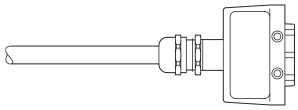
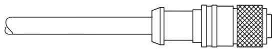
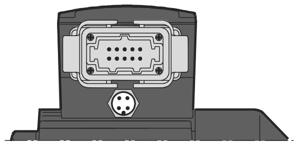
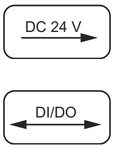
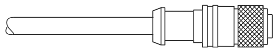
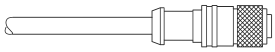
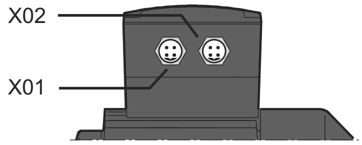
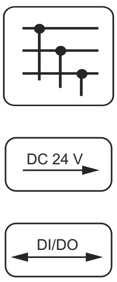
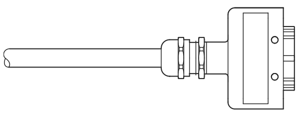
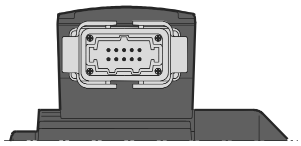
5.10 Non-SEW control units with SEW-EURODRIVE drive

Control unit	Cable	Plug connector	Drive
Drive Shuttle Phoenix Contact  	Plug connector: Phoenix Pluscon VARIOCON VC **Part number: 0 593 231 9**  **Cable type** Ⓐ Available cable length:  l = 1 to 5 m (increments 0.5 m) Wiring diagram see page 371	APG8 APG4	DT71 ... DV100/TH(/BMG)/APG8 DT71 ... DV100/TF(/BMG)/APG8 DT71 ... DV100/TH(/BMG)/APG4 DT71 ... DV100/TF(/BMG)/APG4  Brake voltage /APG8:variable Brake voltage /APG4:110 V, 230 V Wiring diagram 08 752 02 01 on page 294

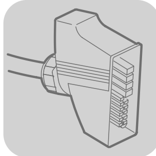
5.11 MOVI-SWITCH® connector and cable combinations

MOVI-SWITCH® 1E

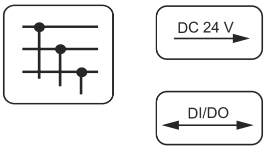
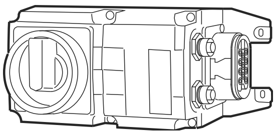
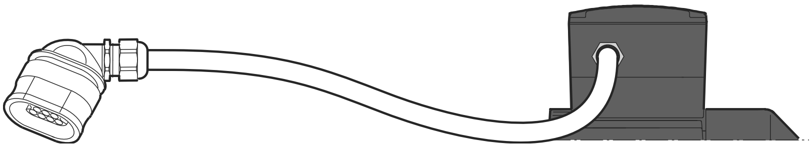
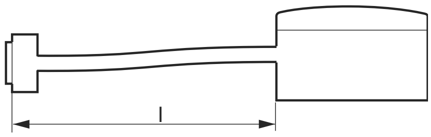
Connection customer end	Cable	Plug connector	Drive
	• DC 24 V • Binary control 	AVS1  male Standard coding	..MSW(/BMG)/TF/AVS1  Wiring diagram **without** brake 08 802 298 on page 328 Wiring diagram **with** brake 09 805 198 on page 329
	• Power supply  • DC 24 V • Binary signals RUN, OK 	ASA3/ AVS1  male Standard coding	..MSW(/BMG)/TF/ASA3/AVS1  Wiring diagram **without** brake 08 767 398 on page 325 Wiring diagram **with** brake 09 811 299 on page 331 Wiring diagram **NEMA** 80 335 00 03 page 344
	• Power supply  • Binary control – DI: RUN, ⊥, n.c., n.c.  – DO: OK, DC 24 V, ⊥, n.c. 	ASA3/ AVSX X01  male Standard coding X03  male Standard coding	..MSW(/BMG)/TF/ASA3/AVSX – 08 829 0299 – [1)] ..MSW(/BMG)/TF/ASA3/AVSX – 09 813 0399 – [1)]   Wiring diagram **without** brake 08 829 02 99 on page 340 Wiring diagram **with** brake 09 813 03 99 on page 336
	• Power supply • Brake control • Binary control 	ASAX	..MSW/BMG/TF/BMG/ASAX – 08 755 101 – [1]  Brake connection voltage = Phase-to-phase voltage Wiring diagram 08 755 101 on page 316

Connection customer end	Cable	Plug connector	Drive
	• Power supply • Travel distance monitoring  • Binary control, DC 24 V 	ASAX/ AVS1  male Standard coding	..MSW(/BMG)/TF/BMG/ASAX/AVS1 – 08 881 100 –[1]  Brake connection voltage = phase voltage Wiring diagram 08 881 100 on page 341
	• Interbus Loop-DI/DO RUN, ⊥ , n.c., n.c.  • DC 24 V, ok, n.c., n.c. 	AVSX X01  male Standard coding X03  male Standard coding	..MSW(/BMG)/TF/AVSX – 08 821 399 – [1] ..MSW(/BMG)/TF/AVSX – 09 812 399 – [1]  Wiring diagram **without** brake 08 821 399 on page 339 Wiring diagram **with** brake 09 812 399 page 334
	• Power supply • Binary control • DC 24 V 	ASAX	..MSW(/BMG)/TF/BMG/ASAX – 08 778 002 – [1]  Wiring diagram 08 778 002 page 326

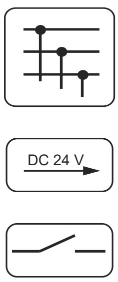
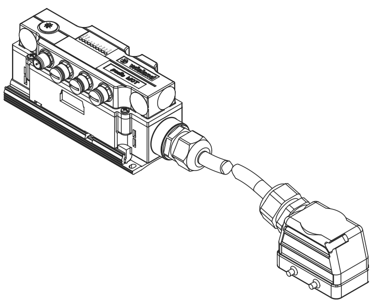
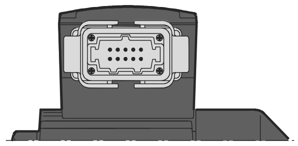
1. **Always indicate type designation and wiring diagram numbers when placing orders!**



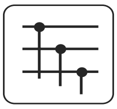
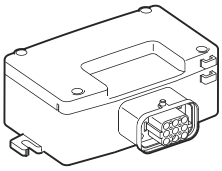
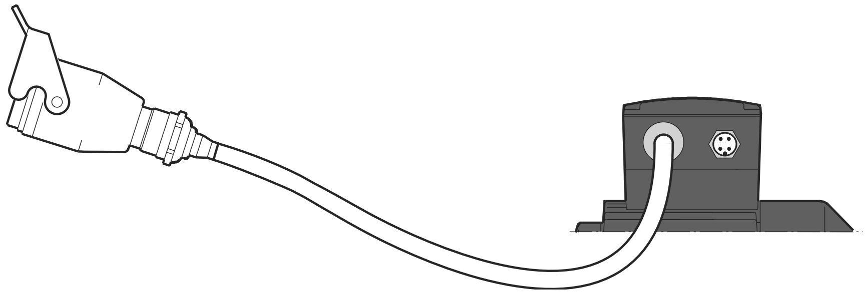
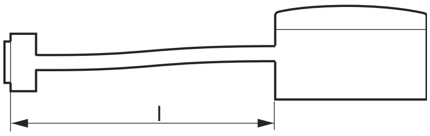
MOVI-SWITCH® 1E on power bus

Connection	Drive with connecting lead	Designation
Wieland podis® MOT[1]  	**Plug connector revos MOT** • Power supply • DC 24 V • Binary control  **Available cable lengths: 1 to 6 m (increment 0.5 m)**  Preferred lengths: l = 2.0 m l = 3.0 m Wiring diagram 08 759 101 on page 322	..MSW(/BMG)/TF/KEUX – 08 759 101 – [2] ..MSW(/BMG)/TF/KEUH – 08 759 101 – [2)]

1. Registered trademark of Wieland
2. **Always indicate type designation and wiring diagram numbers when placing orders!**

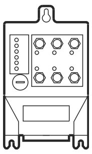
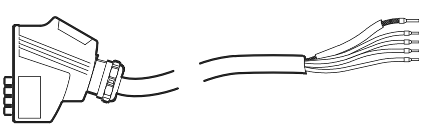
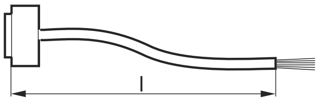
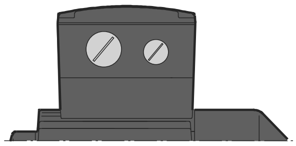
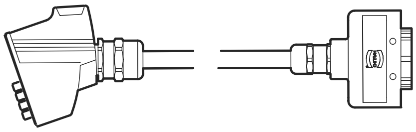
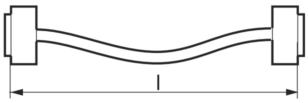
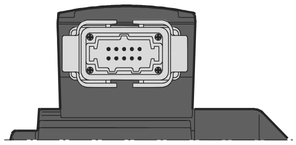
Connection Customer end	Plug connector	Drive
Wieland **System podis MOT FAC®**[1]  Example: 	ASAX	..MSW(/BMG)/TF/BMG/ASAX – 08 778 002 – [2]  Wiring diagram 08 778 002 page 326

1. Component supplier Wieland electric
2. **Always indicate type designation and wiring diagram numbers when placing orders!**

Connection	Drive with connecting lead	Designation
Harting Han® Power S[1]  	**Coupling housing HAN Compact Q8/0**[1)]  **Available cable lengths: 1 to 6 m**  Preferred lengths: l = 2.0 m l = 3.0 m Wiring diagram 80 337 00 03 page 346	..MSW(/BMG)/TF/KND3/AVS1

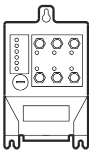
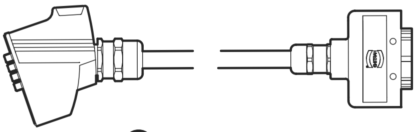
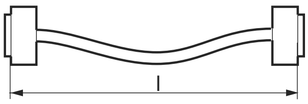
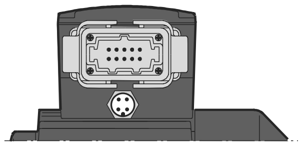
1. Registered trademark of Harting KGaA

MOVI-SWITCH® 1E with Z.3W field distributor (power distribution and control via field distributor)

Field distributor	Cable	Designation	Drive
Z.3W 	**Part number: 0 818 705 3**  **Cable type** (B) Available cable lengths:  l = 1 to 9.5 m (increments 0.5 m) [1] l = 10 to 30 m (increments 1.0 m) [1)] Wiring diagram see page 398	without (terminal box connection)	..MSW(/BMG)/TF  Wiring diagram 08 802 298 on page 328 (the M12 plug connector shown in the wiring diagram remains unassigned)
	Part number: 0 818 368 6  **Cable type** (B) Available cable lengths:  l = 1 to 9.5 m (increments 0.5 m) [1)] l = 10 to 15 m (increments 1.0 m) [1)] Wiring diagram see page 397	ASAW	..MSW(/BMG)/TF/ASAW  Diagram 08 755 02 01 on page 319

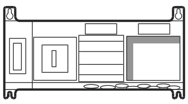
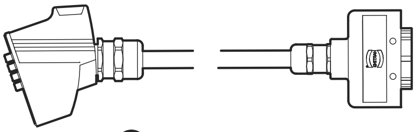
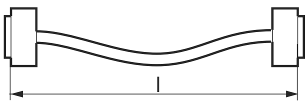
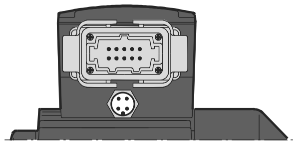
1. Note line protection when reducing cross section of power supply to hybrid cable (1.5 mm^2)!

MOVI-SWITCH® 1E with Z.3 field distributor (control signals via M12 signal cables, power distribution via field distributor)

Field distributor	Cable	Designation	Drive
Z.3 	**Part number: 0 816 593 9**  **Cable type** (B) Available cable lengths:  l = 1 to 9.5 m (increments 0.5 m) [1] l = 1 to 9.5 m (increments 1.0 m) [1] Wiring diagram see page 382	ASA3/AVS1	..MSW(/BMG)/TF/ASA3/AVS1  Diagram **without** brake 08 767 398 on page 325 Diagram **with** brake 09 811 299 on page 331

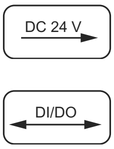
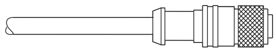
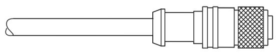
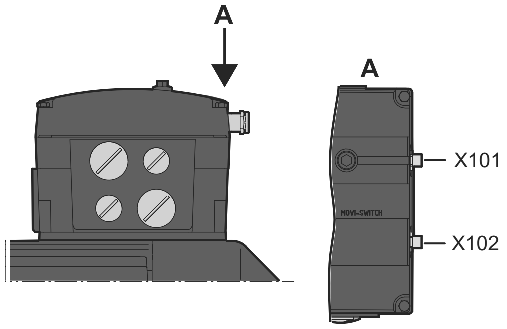
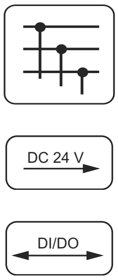
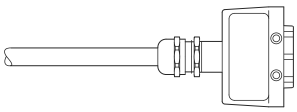
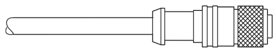
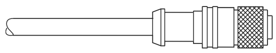
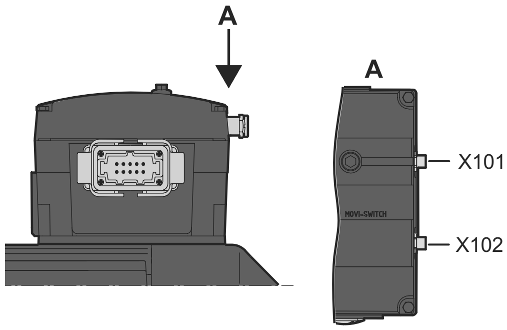
1. Note line protection when reducing cross section of power supply to hybrid cable (1.5 mm²)!

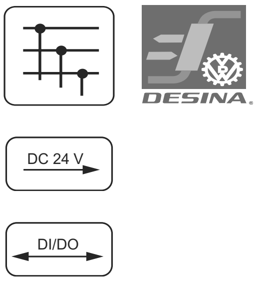
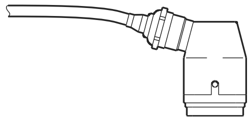
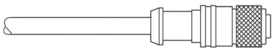
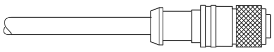
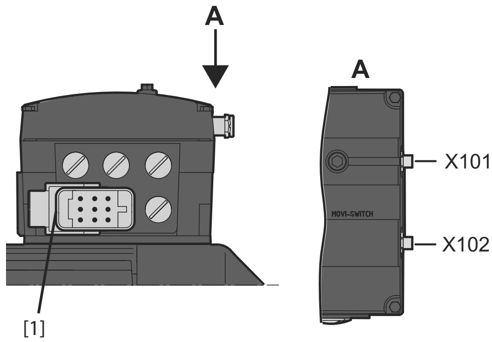
MOVI-SWITCH® 1E with Z.6 field distributor (control signals via M12 signal cables, power distribution via field distributor)

Field distributor	Cable	Designation	Drive
Z.6[1] 	**Part number: 0 816 593 9**  **Cable type** (B) Available cable lengths:  l = 1 to 9.5 m (increments 0.5 m) l = 10 to 30 m (increments 1.0 m) Wiring diagram see page 382	ASA3/AVS1	..MSW(/BMG)/TF/ASA3/AVS1  Diagram **without** brake 08 767 398 on page 325 Diagram **with** brake 09 811 299 on page 331

1. Overload protection for line branch integrated in switch

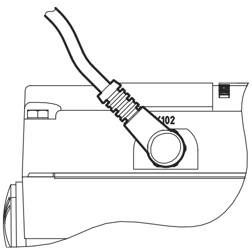
MOVI-SWITCH® 2S with binary control

Connection	**Cable**	**Plug connector**	**Drive**
	• 24 V, R, L  • 24 V, R, OK 	X102[1]  male Standard coding X101[1)]  male Standard coding	..MSW/CB0/RA2A  Wiring diagram 80 340 00 03 on page 352
	• Mains connection  • 24 V, R, L  • 24 V, R, OK 	ASA3 X102[1)]  male Standard coding X101[1)]  male Standard coding	..MSW/CB0/RE2A/ASA3  Wiring diagram 80 386 00 04 on page 359

Connection	Cable	Plug connector	Drive
	• Power supply HAN compact® Q8/0  • 24 V, R, L  • 24V, R, OK 	AND3 X102 1)  male Standard coding X101 1)  male Standard coding	..MSW/CB0/RJ2A/AND3  [1] HAN Q8/0 built-on housing made of metal Wiring diagram 80 388 00 04 on page 361

1. integrated in terminal box cover

Please note that angled M12 plug connectors can only be connected to a 270° outgoing line.



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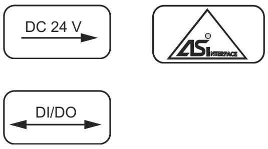
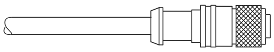
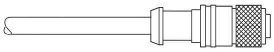
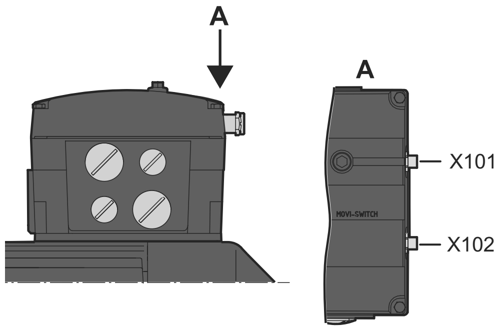
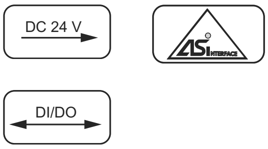
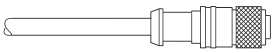
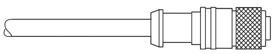
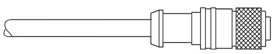
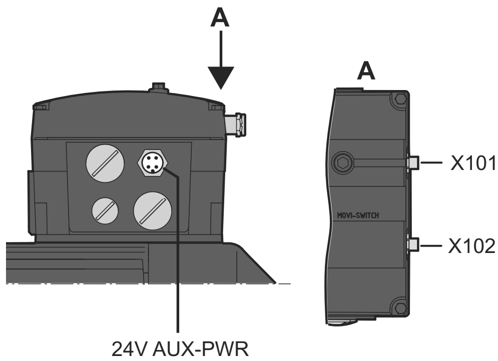
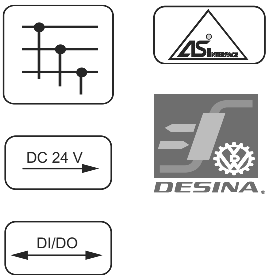
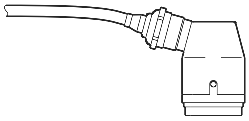
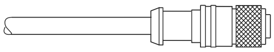
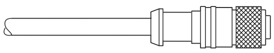
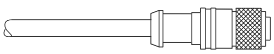
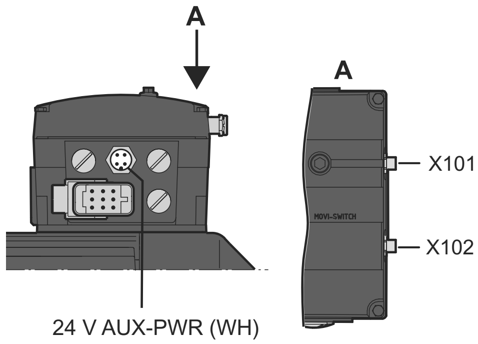
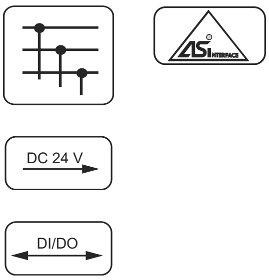
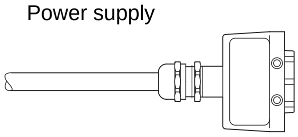
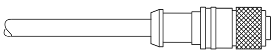
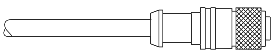
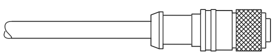
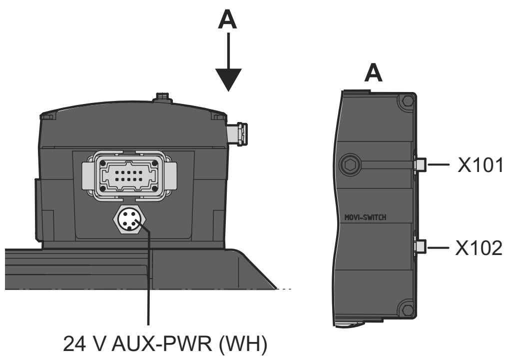
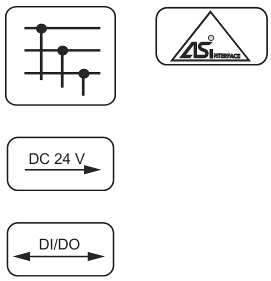
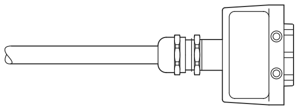
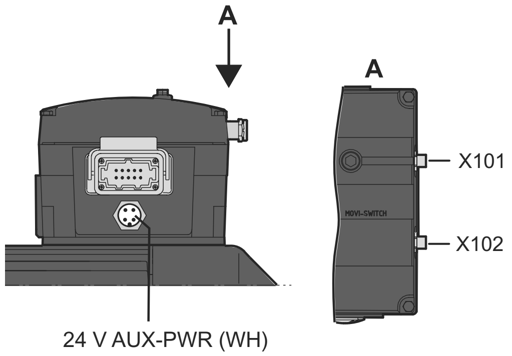
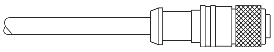
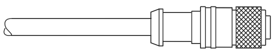
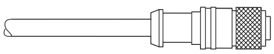
MOVI-SWITCH® 2S with integrated AS-interface

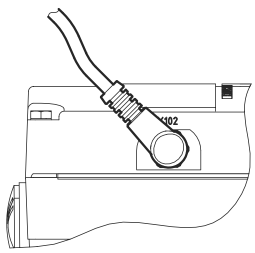
Connection	Cable	Plug connector	Drive
	• AS-interface, 24 V AUX-PWR  • 24 V, DI2, DI3 Sensors 	X102 1  male Standard coding X101 1)  female Standard coding	..MSW/CK0/RA2A  Wiring diagram 80 339 01 03 page 348
	• AS-interface, 24 V AUX-PWR  • 24 V, DI2, DI3 Sensors  • 24 V AUX-PWR 	AVS0 X102 1)  male Standard coding X101 1)  female Standard coding 2)  male Standard coding	..MSW/CK0/RA2A/AVS0  Wiring diagram 80 387 00 04 page 350

Connection	Cable	Plug connector	Drive
	• Power supply HAN compact® Q8/0  • AS-interface, 24 V AUX-PWR  • 24 V, DI2, DI3 Sensors  • 24 V AUX-PWR 	AND3/ AVS0 X102 1)  male Standard coding X101 1)  female Standard coding 2)  male Standard coding	..MSW/CK0/RJ2A/AND3/AVS0  Wiring diagram 80 384 00 04 page 357
	• Power supply  • AS-interface, 24 V AUX-PWR  • 24 V, DI2, DI3 Sensors  • 24 V AUX-PWR 	ASA3/ AVS0 X102 1)  male Standard coding X101 1)  female Standard coding 2)  male Standard coding	..MSW/CK0/RE2A/ASA3/AVS0  Wiring diagram 80 382 00 04 page 355

Connection	Cable	Plug connector	Drive
	• Power supply 	ASA3/ AVS0	..MSW/CK0/RE2A/ASD3/AVS0 
	• AS-interface, 24 V AUX-PWR 	X102 1)  male Standard coding	
	• 24 V, DI2, DI3 Sensors 	X101 1)  female Standard coding	
	• 24 V AUX-PWR 	2)  male Standard coding	Wiring diagram 80 382 00 04 page 355

1. integrated in terminal box cover
2. integrated in terminal box

Please note that angled M12 plug connectors can only be connected to a 270° outgoing line.



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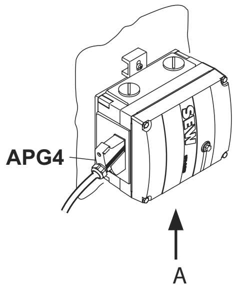
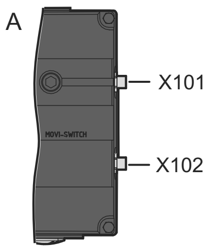
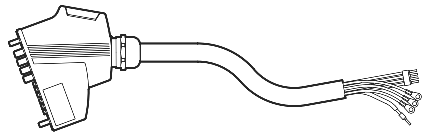
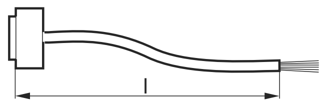
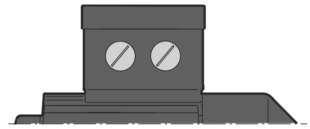
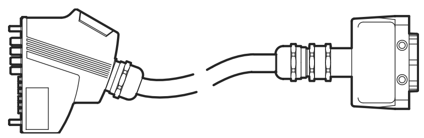
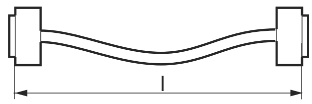
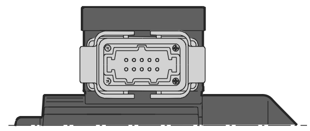
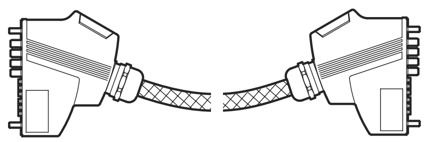
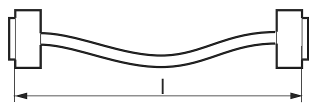
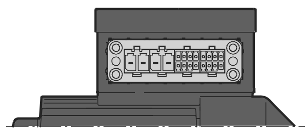
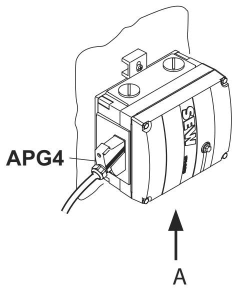
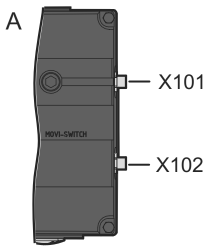
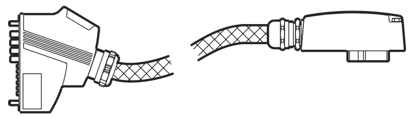
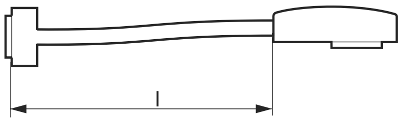
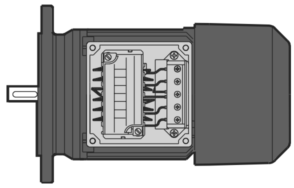
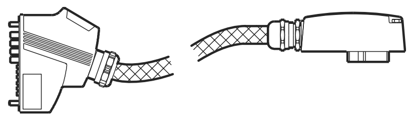
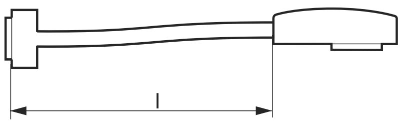
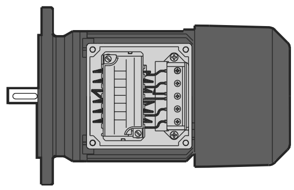
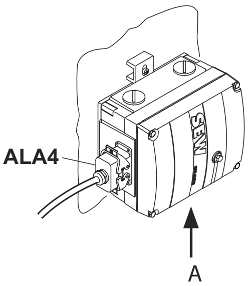
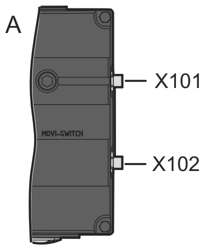
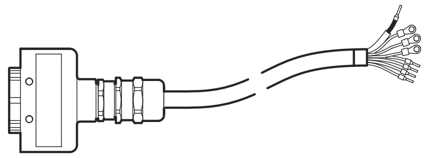
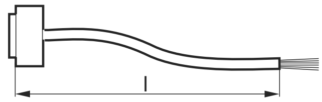
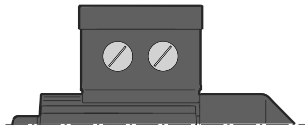
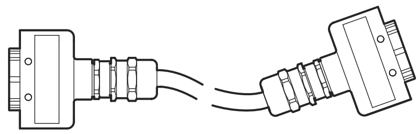
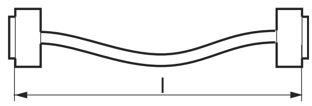
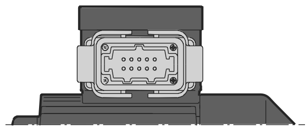
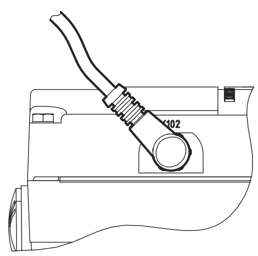
MOVI-SWITCH® 2S in (offset) mounting close to the motor

MOVI-SWITCH®	Cable	Plug connector	Drive
MSW-2S../CB0/P22A/RI2A/APG4 **MSW-2S../CB0/CC15/P22A/RI2A/APG4**   **Note overload protection for line branch! Optional protection of branch with "/CC15" option.**	**Part number: 0 817 887 9**  **Cable type** Ⓒ Available cable length:  l = 1 to 9.5 m (increments = 0.5 m) l = 10 to 15 m (increment = 1 m) Wiring diagram see page 393	without (terminal box connection)	DT71 ... DV100(/BMG)/TF  **Note brake voltage!** Wiring diagram 08 798 376 on page 299
	Part number: 0 817 889 5  **Cable type** Ⓒ Available cable length:  l = 1 to 9.5 m (increments = 0.5 m) l = 9.5 to 15 m (increments = 1.0 m) Wiring diagram see page 395	ASB4	DT71 ... DV100(/BMG)/TF/ASB4  **When ordering, specify operating mode "mounted close to the motor"!** Wiring diagram 08 792 04 02 on page 295
	Part number: 0 186 741 5  **Cable type** Ⓐ Available cable length:  l = 1 to 9.5 m (increments = 0.5 m) l = 10 to 15 m (increments = 1.0 m) Wiring diagram see page 368	APG4 APG1	DT71 ... DV100(/BMG)/TF/APG4 DT71 ... DT90/TF/APG1  **When ordering, specify operating mode "mounted close to the motor"!** Wiring diagram 08 752 02 01 on page 294

<table>
<tr><th>MOVI-SWITCH®</th><th>Cable</th><th>Plug connector</th><th>Drive</th></tr>
<tr>
<td rowspan="2">MSW-2S../CB0/P22A/RI2A/APG4
MSW-2S../CB0/CC15/P22A/RI2A/APG4


Note overload protection for line branch! Optional protection of branch with "/CC15" option.</td>
<td>Part number: 0 593 278 5 ⅄ (DT13)

Cable type Ⓐ
Available cable lengths:

l = 1.0 to 9.5 m (increments 0.5 m)
l = 10 m to 15 m (increments 1.0 m)
Wiring diagram see page 373</td>
<td>ISU4</td>
<td>DT71 ... DT90(/BMG)/TF/ISU

Motor with IS lower section (DT13)
When ordering,
specify operating mode "mounted close to the motor"!
Wiring diagram 80 422 00 04 on page 312</td>
</tr>
<tr>
<td>Part number: 0 593 755 8 ⅄ (DT13)

Cable type Ⓐ
Available cable lengths:

l = 1.0 to 9.5 m (increments 0.5 m)
l = 10 m to 15 m (increments 1.0 m)
Wiring diagram see page 376</td>
<td>ISU4</td>
<td>DV100(/BMG)/TF/ISU

Motor with IS lower section (DT13)
When ordering,
specify operating mode "mounted close to the motor"!
Wiring diagram 80 422 00 04 on page 312</td>
</tr>
</table>

MOVI-SWITCH®	Cable	Plug connector	Drive
MSW-2S../CB0/P22A/RI2A/ALA4 **MSW-2S../CB0/CC15/P22A/RI2A/ALA4**   **Note overload protection for line branch! Optional protection of branch with "/CC15" option.**	**Part number: 0 817 886 0**  **Cable type** C Available cable length:  l = 1 to 9.5 m (increments = 0.5 m) l = 10 to 15 m (increments = 1 m) Wiring diagram see page 392	without (terminal box connection)	DT71 ... DV100(/BMG)/TF  **Note brake voltage!** Wiring diagram 08 798 376 on page 299
	Part number: 0 817 888 7  **Cable type** C Available cable length:  l = 1 to 9.5 m (increments = 0.5 m) l = 10 to 15 m (increments = 1.0 m) Wiring diagram see page 394	ASB4	DT71 ... DV100(/BMG)/TF/ASB4  **When ordering, specify operating mode "mounted close to the motor"!** Wiring diagram 08 792 04 02 on page 295

Please note that angled M12 plug connectors can only be connected to a 270° outgoing line.



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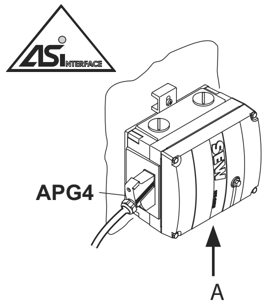
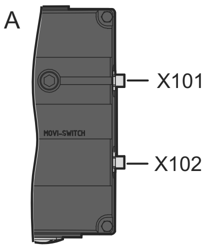
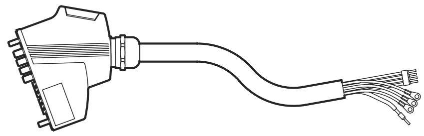
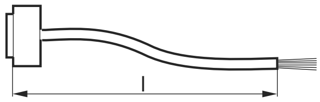
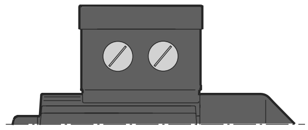
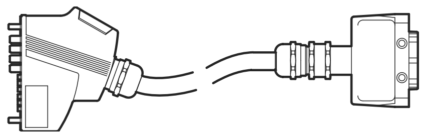
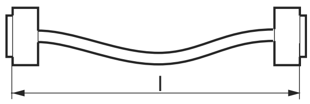
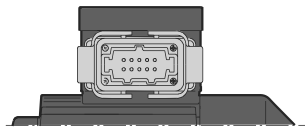
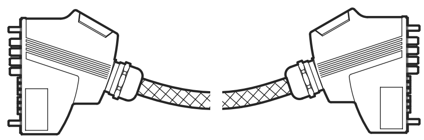
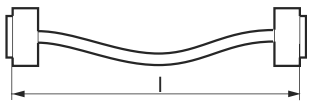
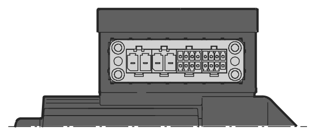
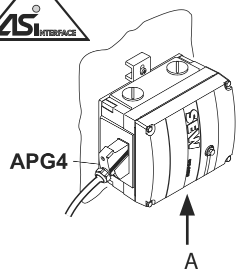
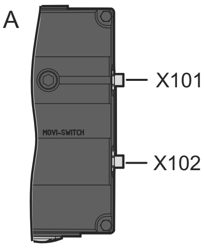
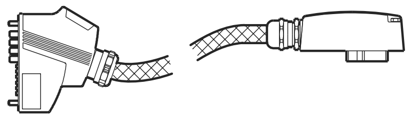
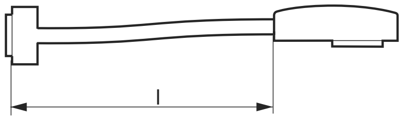
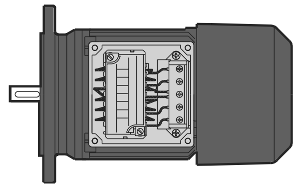
MOVI-SWITCH® 2S with integrated AS-interface and installed close to motor

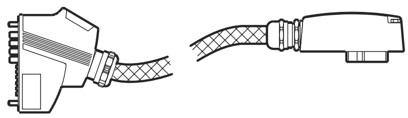
MOVI-SWITCH®	Cable	Plug connector	Drive
MSW-2S../CK0/P22A/RI2A/APG4 **MSW-2S../CK0/CC15/P22A/RI2A/APG4**   **Note overload protection for line branch! Optional protection of branch with "/CC15" option.**	**Part number: 0 817 887 9**  **Cable type** Ⓒ Available cable length:  l = 1 to 9.5 m (increments = 0.5 m) l = 10 to 15 m (increment = 1 m) Wiring diagram see page 393	without (terminal box connection)	DT71 ... DV100(/BMG)/TF  **Note brake voltage!** Wiring diagram 08 798 376 on page 299
	Part number: 0 817 889 5  **Cable type** Ⓒ Available cable length:  l = 1 to 9.5 m (increments = 0.5 m) l = 9.5 to 15 m (increments = 1.0 m) Wiring diagram see page 395	ASB4	DT71 ... DV100(/BMG)/TF/ASB4  **When ordering, specify operating mode "mounted close to the motor"!** Wiring diagram 08 792 04 02 on page 295
	Part number: 0 186 741 5  **Cable type** Ⓐ Available cable length:  l = 1 to 9.5 m (increments = 0.5 m) l = 10 to 15 m (increments = 1.0 m) Wiring diagram see page 368	APG4 APG1	DT71 ... DV100(/BMG)/TF/APG4 DT71 ... DT90/TF/APG1  **When ordering, specify operating mode "mounted close to the motor"!** Wiring diagram 08 752 02 01 on page 294

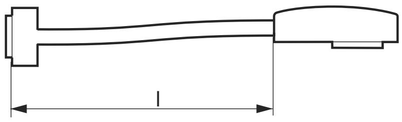
<table>
<tr><th>MOVI-SWITCH®</th><th>Cable</th><th>Plug connector</th><th>Drive</th></tr>
<tr>
<td rowspan="2">MSW-2S../CK0/P22A/RI2A/APG4
MSW-2S../CK0/CC15/P22A/ RI2A/APG4


Note overload protection for line branch! Optional protection of branch with "/CC15" option.</td>
<td>Part number: 0 593 278 5 ⅄ (DT13)

Cable type (A)

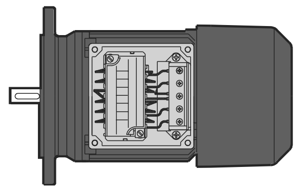
Available cable lengths:

l = 1.0 to 9.5 m (increments 0.5 m)
l = 10 m to 15 m (increments 1.0 m)

Wiring diagram see page 373</td>
<td>ISU4</td>
<td>DT71 ... DT90(/BMG)/TF/ISU

Motor with IS lower section (DT13)

When ordering,
specify operating mode "mounted close to the motor"!

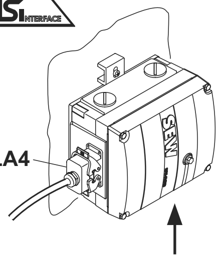
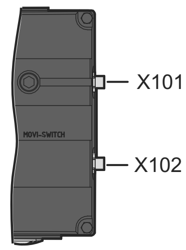
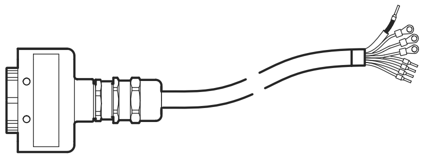
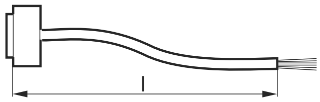
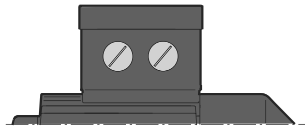
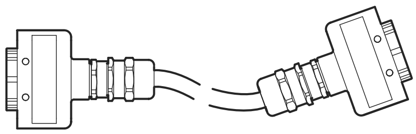
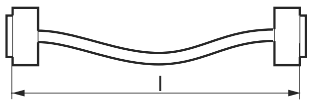
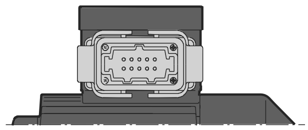
Wiring diagram 80 422 00 04 on page 312</td>
</tr>
<tr>
<td>Part number: 0 593 755 8 ⅄ (DT13)

Cable type (A)

Available cable lengths:

l = 1.0 to 9.5 m (increments 0.5 m)
l = 10 m to 15 m (increments 1.0 m)

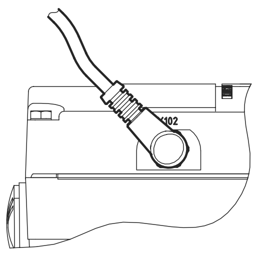
Wiring diagram see page 376</td>
<td>ISU4</td>
<td>DV100(/BMG)/TF/ISU

Motor with IS lower section (DT13)

When ordering,
specify operating mode "mounted close to the motor"!

Wiring diagram 80 422 00 04 on page 312</td>
</tr>
</table>

MOVI-SWITCH®	Cable	Plug connector	Drive
MSW-2S../CK0/P22A/RI2A/ALA4 **MSW-2S../CK0/CC15/P22A/RI2A/ALA4**   **Note overload protection for line branch! Optional protection of branch with "/CC15" option.**	**Part number: 0 817 886 0**  **Cable type** Ⓒ Available cable length:  l = 1 to 9.5 m (increments = 0.5 m) l = 10 to 15 m (increments = 1 m) Wiring diagram see page 392	without (terminal box connection)	DT71 ... DV100(/BMG)/TF  **Note brake voltage!** Wiring diagram 08 798 376 on page 299
	Part number: 0 817 888 7  **Cable type** Ⓒ Available cable length:  l = 1 to 9.5 m (increments = 0.5 m) l = 10 to 15 m (increments = 1.0 m) Wiring diagram see page 394	ASB4	DT71 ... DV100(/BMG)/TF/ASB4  **When ordering, specify operating mode "mounted close to the motor"!** Wiring diagram 08 792 04 02 on page 295

Please note that angled M12 plug connectors can only be connected to a 270° outgoing line.



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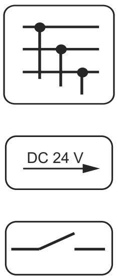
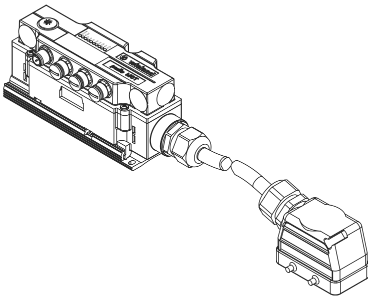
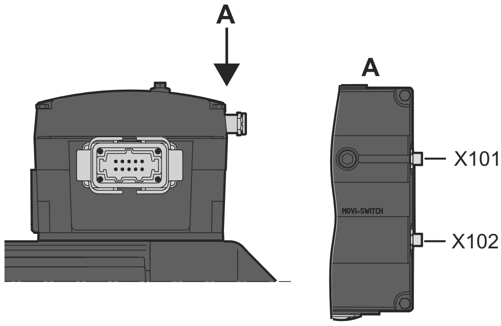
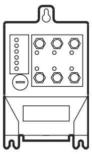
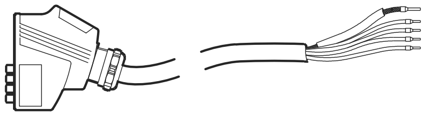
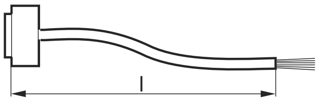
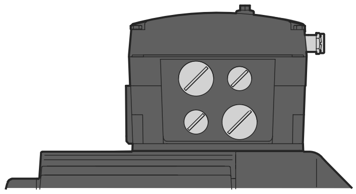
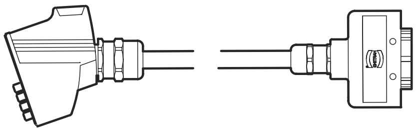
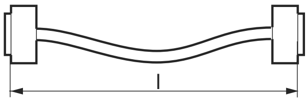
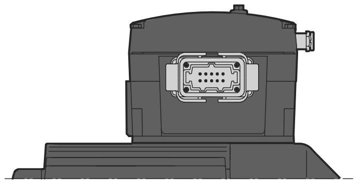
MOVI-SWITCH® 2S on power bus

Connection Customer end	Plug connector	Drive
Wieland **System podis MOT FAC®[1]** Example:  	ASAX	..MSW/CB0/RE2A/ASAX – 80 405 0004 – [2]  Wiring diagram 80 405 00 04 page 363

1. Component supplier Wieland electric
2. **Always indicate type designation and wiring diagram numbers when placing orders!**

MOVI-SWITCH® 2S with Z.3W field distributor

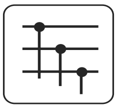
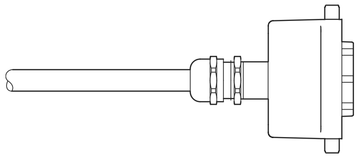
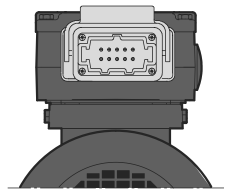
Field distributor	Cable	Designation	Drive
Z.3W 	**Part number: 0 818 708 8**  **Cable type** B Available cable lengths:  l = 1 to 9.5 m (increments 0.5 m)[1)] l = 10 to 15 m (increments 1.0 m)[1)] Wiring diagram page 399	without (terminal box connection)	..MSW/CB0/RA2A  Wiring diagram 80 340 00 03 on page 352
	Part number: 0 818 368 6  **Cable type** B Available cable lengths:  l = 1 to 9.5 m (increments 0.5 m)[1)] l = 10 to 30 m (increments 1.0 m)[1)] Wiring diagram page 397	ASAW	..MSW/CB0/RE2A/ASAW  Wiring diagram 08 378 00 03 page 354

1. Note line protection when reducing cross section of power supply to hybrid cable (1.5 mm^2)!

5

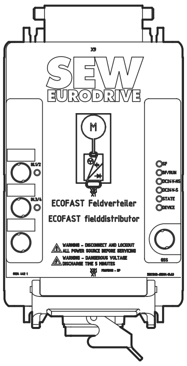
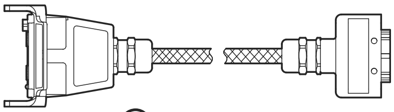
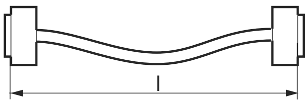
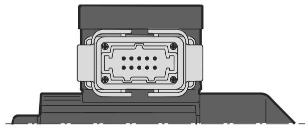
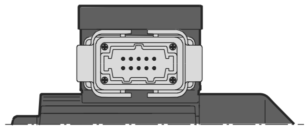
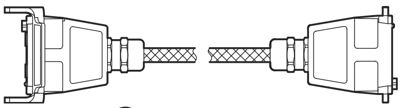
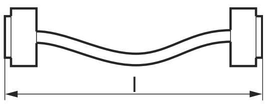
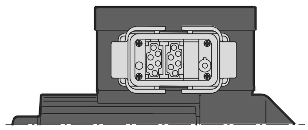
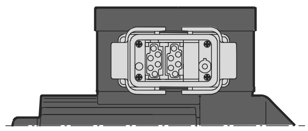
5.12 ECOFAST®-compliant motors and field distributor segments

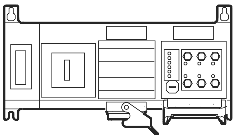
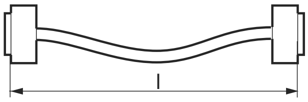
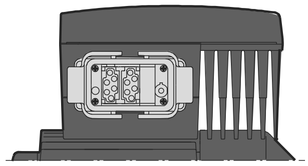
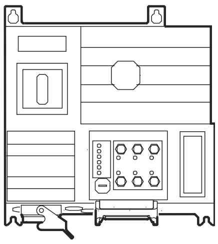
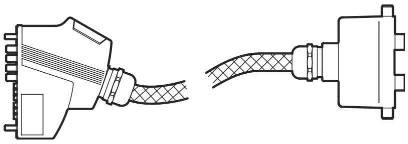
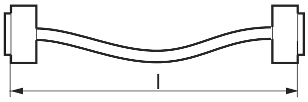
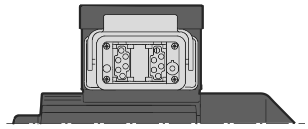
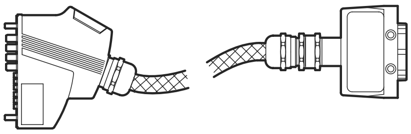
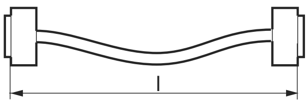
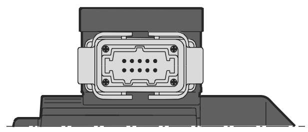
ECOFAST®-compliant motor

Connection	Cable	Plug connector	Drive
 ECOFAST certified	• Mains connection 	ASK1	DT71 - DV132S/.../ASK1[1] DT71 - DV132S/BMG/.../ASK1[1]  Wiring diagram **without** brake 08 849 002 on page 306 Wiring diagram **with** brake 09 844 002 on page 304

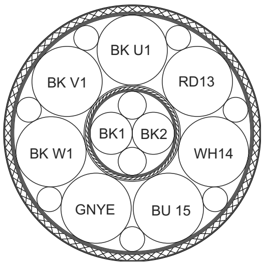
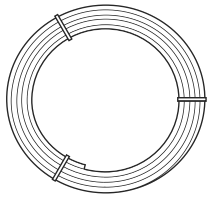
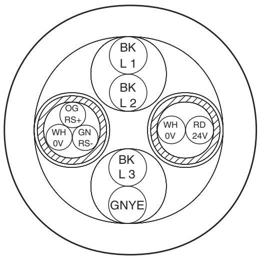
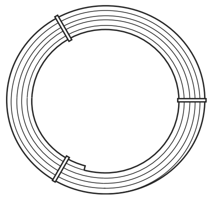
1. Plug connector position 3 = Standard

Field distributor segments

Field distributor segment	Cable	Plug connector	Drive
Compact MOVIMOT® MME 	**Part number: 0 817 156 4**  **Cable type** Ⓐ Available cable length:  l = 1 to 5 m (increments 0.5 m) Wiring diagram see page 388	BW1/ASB4	<u>Without brake:</u> DT71...90/**TF**/BW1/ASB4 DT71...90/**TH**/BW1/ASB4  Wiring diagram 08 872 02 03 page 302
		ASB4	<u>With brake:</u> DT71...90/BMG/**TF**/ASB4 DT71...90/BMG/**TH**/ASB4  Wiring diagram 08 792 04 02 page 295
	Part number: 0 817 155 6  **Cable type** Ⓐ Available cable length:  l = 1 to 5 m (increments 0.5 m) Wiring diagram see page 387	BW1/AME4	DT71...90/**TF**/BW1/AME4 DT71...90/**TH**/BW1/AME4  Wiring diagram 08 873 00 03 on page 310
		AME4	DT71...90/BMG/**TF**/AME4 DT71...90/BMG/**TH**/AME4  Wiring diagram 08 793 04 02 on page 297

Field distributor segment	Cable	Plug connector	Drive
Z26 	**Part number: 0 593 516 4**  **Cable type** Ⓑ Available cable length:  l = 1 to 9.5 m (increments 0.5 m) l = 10 to 30 m (increments 1.0 m) Wiring diagram see page 374	AMA6	..MM..(/BMG)/AMA6  Wiring diagram 08 883 04 00 on page 282
Z28 	**Part number: 0 816 936 5**  **Cable type** Ⓐ Available cable length:  l = 1 to 9.5 m (increments 0.5 m) l = 10 to 15 m (increments 1.0 m) Wiring diagram see page 385	AME4	DT71 ... DV100(/BMG)/TH/AME4  Wiring diagram 08 793 04 02 page 297
	Part number: 0 593 076 6  **Cable type** Ⓐ Available cable length:  l = 1 to 9.5 m (increments 0.5 m) l = 10 to 15 m (increments 1.0 m) Wiring diagram see page 370	ASB4	DT71 ... DV100(/BMG)/TH/ASB4  Wiring diagram 08 792 04 02 on page 295

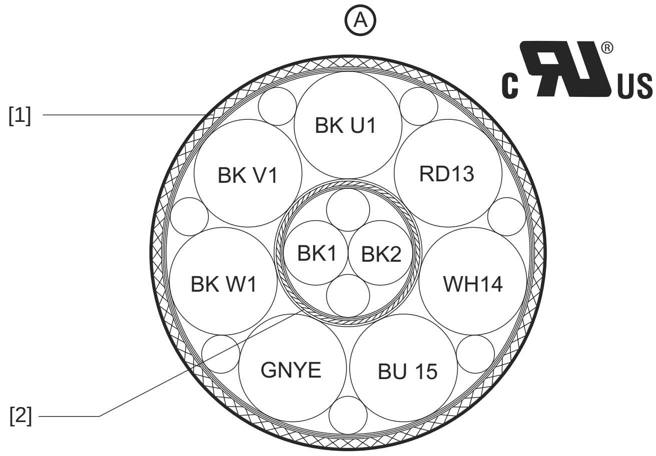
5.13 Hybrid cable drums

Connection customer end	Cable	Cable drums
MOVIMOT® motor output **Cable type** Ⓐ	• Cable with shielding  MOVIMOT® output, such as connection between Z.7 or Z.8 field distributor or MOVIMOT® with field mounting platform and standard motors.	**Part number:** 30 m: 0818 736 3 100 m: 0818 739 8  **Available containers:** l = 30 m length ∅ = 500 mm m ~ 8 kg l = 100 m length ∅ = 500 mm m ~ 25 kg
MOVIMOT® power supply **Cable type** Ⓑ	• Cable without shielding  MOVIMOT® input, such as connection between field distributor Z.3 or Z.6 and MOVIMOT®.	**Part number:** 30 m: 0818 735 5 100 m: 0593 714 0  **Available containers:** l = 30 m length ∅ = 500 mm m ~ 8 kg l = 100 m length ∅ = 500 mm m ~ 25 kg

See Technical data page 260.

5.14 Technical data on cable type A

Mechanical design



55292AXX

Cable type (A) Connection between Z.7 or Z.8 field distributors and AC motors
Connection between MOVIMOT® or MOVI-SWITCH® 2S with AC motors
(when mounted in close proximity to the motor)

[1] Overall shield
[2] Shield

- SEW Works Standard W3251 (817 953 0)
- Supply cores: 7 x 1.5 mm^2
- Control core pair: 2 x 0.75 mm^2
- Insulation: TPE-U (polyurethane)
- Conductor: Bare E-Cu strand, extra fine wires with individual wire ≤ 0.1 mm
- Shield: Tinned E-Cu wire.
- Overall diameter: 13.2 ... 15.9 mm
- Color of outer cable sheath: Black

Electrical properties

- Line resistance for 1.5 mm^2 (20 °C): max. 13 Ω/km
- Line resistance for 0.75 mm^2 (20 °C): max. 26 Ω/km
- Operating voltage for 1.5 mm^2 core: max. 750 V (cULus 600 V)
- Operating voltage for 0.75 mm^2 core: max. 350 V (cULus 600 V)
- Insulation resistance at 20 °C: min. 20 MΩ x km

Mechanical properties

- Suitable for cable tracks
  - Bending cycles > 2.5 million
  - Traveling velocity ≤ 3 m/s
- Bending radius in cable track: 10 x diameter
  in fixed installation: 5 x diameter
- Torsional strength (e.g. rotary table applications)
  - Torsion ±180° over a cable length > 1 m
  - Torsional cycles > 100.000

You will have to check the mechanical marginal conditions if you encounter reversed bending and high torsional load for a length of < 3 m. Please contact SEW-EURODRIVE in such cases.

Thermal properties

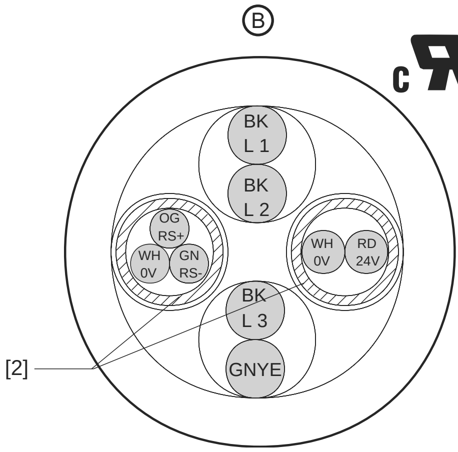
- Processing and operation: -30 °C to +90 °C (cRUus: -30 °C to +80 °C)
- Transportation and storage: -40 °C to +90 °C (cRUus: -30 °C to +80 °C)
- Flame-inhibiting according to UL1581 Vertical Wiring Flame Test (VW1)
- Flame-inhibiting according to CSA C22.2 Vertical Flame Test

Chemical properties

- Oil-resistant according to VDE 0472 part 803 method B
- General fuel resistance (such as diesel, gasoline) according to ISO 6722 parts 1 and 2
- General resistance against acids, alkalis, cleaning agents
- General resistance against dusts (such as bauxite, magnesite)
- Insulation and cable jacket material is halogen free according to VDE 0472 part 815 as well as silicone free
- Free from substances interfering with wetting agents within the specified temperature range

5.15 Technical data on cable type B

Mechanical design



55295AXX

Cable type (B) Connection between Z.3 or Z.6 field distributor and MOVIMOT® or Z.3W field distributor and MOVI-SWITCH®

[1] Overall shield
[2] Shield

- SEW Works Standard W3251 (814 517 2)
- Supply cores: 4 x 1.5 mm^2
- Control core pair: 2 x 0.75 mm^2
- Control core group: 3 x 0.75 mm^2
  - Insulation: TPE-E (polyester)
  - Conductor: Bare E-Cu strand, extra fine wires with individual wire ≤ 0.1 mm
  - Shield: Tinned E-Cu wire.
- Overall diameter: 13.2 ... 13.8 mm
- Color of outer cable sheath: Black

Electrical properties

- Line resistance for 1.5 mm^2 (20 °C): max. 13 Ω/km
- Line resistance for 0.75 mm^2 (20 °C): max. 26 Ω/km
- Operating voltage for 1.5 mm^2 core: max. 750 V (cULus 600 V)
- Operating voltage for 0.75 mm^2 core: max. 350 V (cULus 600 V)
- Insulation resistance at 20 °C: min. 20 MΩ x km

Mechanical properties

- Suitable for cable tracks
  - Bending cycles > 2.5 million
  - Traveling velocity ≤ 3 m/s
- Bending radius in cable track: 10 x diameter
  in fixed installation: 5 x diameter
- Torsional strength (e.g. rotary table applications)
  - Torsion max. ±180° over a cable length > 1 m
  - Torsional cycles > 100.000

You will have to check the mechanical marginal conditions if you encounter reversed bending and high torsional load for a length of < 3 m. Please contact SEW-EURODRIVE in such cases.

Thermal properties

- Processing and operation: -30 °C to +90 °C (cULus: -30 °C to +90 °C)[1)]
- Transport and storage: -40 °C to +90 °C (cULus: -40 °C to +90 °C)[1)]
- Flame-inhibiting according to UL1581 Vertical Wiring Flame Test (VW1)
- Flame-inhibiting according to CSA C22.2 Vertical Flame Test

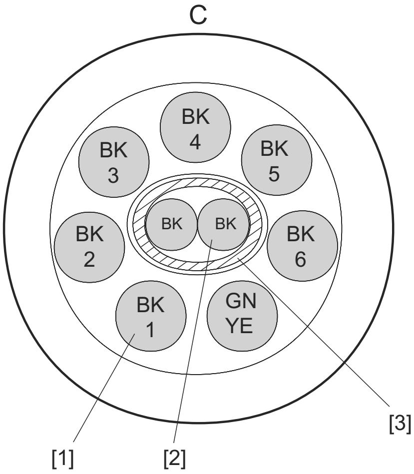
Chemical properties

- Oil-resistant according to VDE 0472 part 803 method B
- General fuel resistance (such as diesel, gasoline) according to ISO 6722 parts 1 and 2
- General resistance against acids, alkalis, cleaning agents
- General resistance against dusts (such as bauxite, magnesite)
- Insulation and cable jacket material is halogen free according to VDE 0472 part 815 as well as silicone free
- Free from substances interfering with wetting agents within the specified temperature range

1. Cable is certified according to UL style 2066990C 600 V and CSA AWM II A/B 90C 600 V

5.16 Technical data on cable type C

Mechanical design



52790AXX

Cable type (C) Connection between MOVI-SWITCH® 2S with AC motors (for mounting close to motor with option P2.A)

[1] Cores 2.5 mm^2
[2] Cores 0.75 mm^2
[3] Shield

- SEW Works Standard W3251 (015 207 2)
- Supply cores: 7 x 2.5 mm^2
- Control cores: 2 x 0.75 mm^2
- Insulation: PVC / special PVC
- Conductor: Fine wires to VDE class 5, copper strand conductor
- Shield: Braided tinned copper shield
- Overall diameter: 15.2 mm

Electrical properties

- Line resistance for 2.5 mm^2: 8.5 Ω/km
- Line resistance for 0.75 mm^2: 26 Ω/km
- Operating voltage for cores 2.5 mm^2: 600 V/1000 V
- Operating voltage for cores 0.75 mm^2: 48 V_{AC}
- Insulation resistance: 20 MΩ x km

Mechanical properties

- Bending radius in cable track: 20 x diameter
  in fixed installation: 6 x diameter

Thermal properties

- Processing and operation
  - Flexible routing: - 5 °C to +70 °C
  - Fixed routing: -30 °C to +80 °C
- Transportation and storage: -30 °C to +80 °C

6 Wiring Diagrams of Decentralized Systems

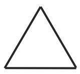
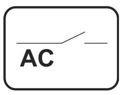
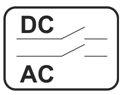
6.1 General information

The following applies to all wiring diagrams:

- Colors according to SEW-EURODRIVE table:

Color code	Color
BK	Black
BKWH	Black/white
BN	Brown
BU	Blue
GN	Green
GNYE	Green/yellow
GY	Gray
GYPK	Gray/pink
OG	Orange
PK	Pink
RD	Red
RDBU	Red/blue
RDWH	Red/white
VT	Violet
WH	White
YE	Yellow

Symbols used

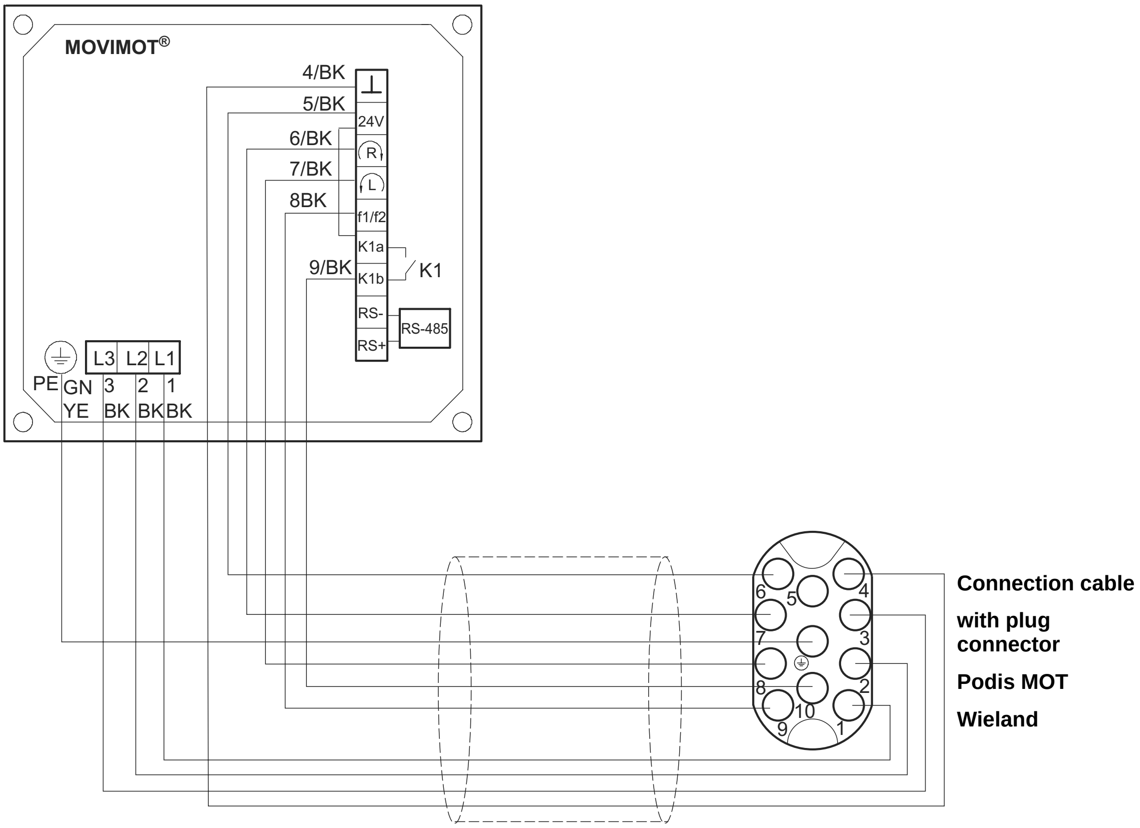
	Plug connector (to be connected by the customer)
	Plug connector (connected in factory)
	Star connection
	Delta connection
	Cut-off in the AC circuit (standard application of the brake)
	Cut-off in the DC and AC circuits (rapid application of the brake)

6.2 MOVIMOT® wiring diagrams

Overview

MOVIMOT® with KEUX connection cable (08 751 101)

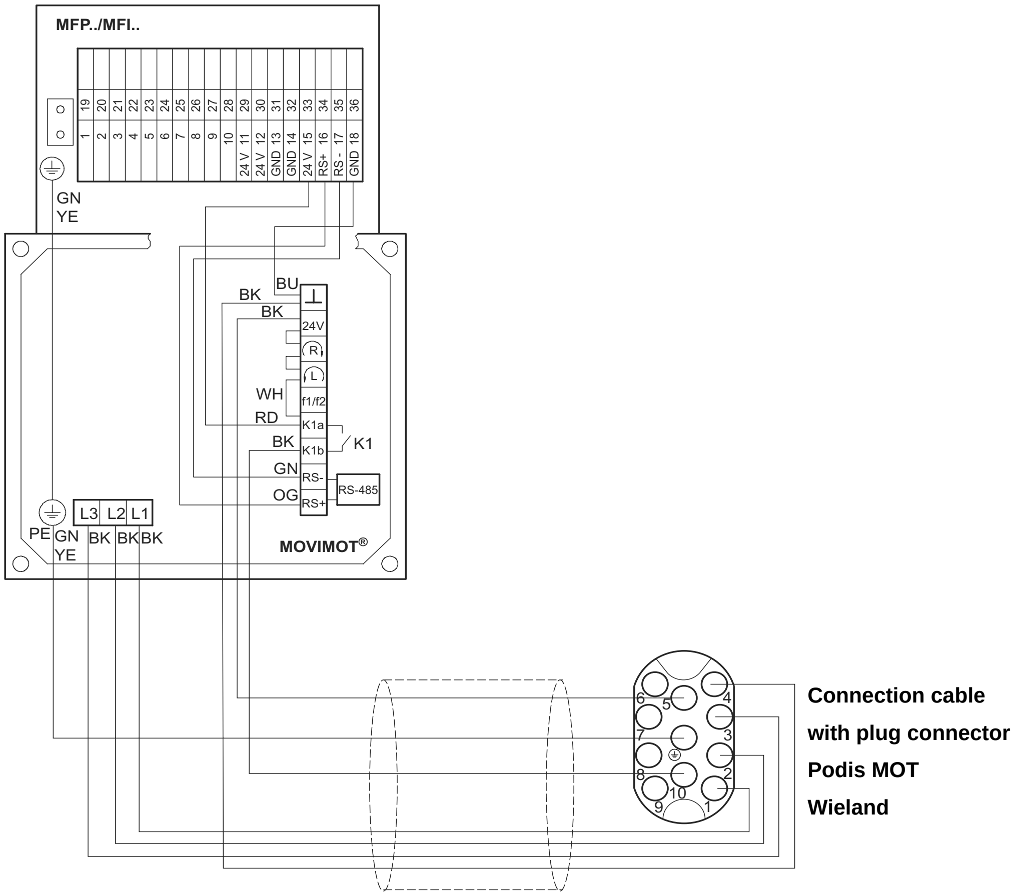
08 757 101



51877AXX

MOVIMOT® with KEUX connection cable (08 758 101) and MFP../MFI.. fieldbus interface

08 758 101



51706AXX

MOVIMOT® with ASA3/AVT1 plug connector

08 765 398

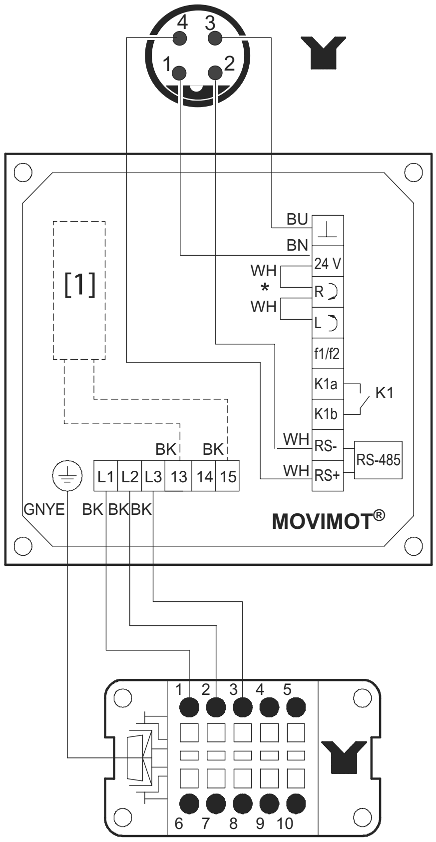
SEW-EURODRIVE connection

AVT1 plug connector

male

B coding

View on contact end



SEW-EURODRIVE connection

ASA3 plug connector

male

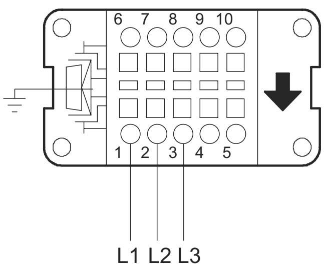
View of connection end

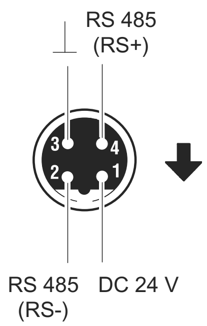
Connection at customer site

HAN10E plug connector

female

View of connection end





Connection at customer site

M12 plug connector

female

B coding

View on contact end

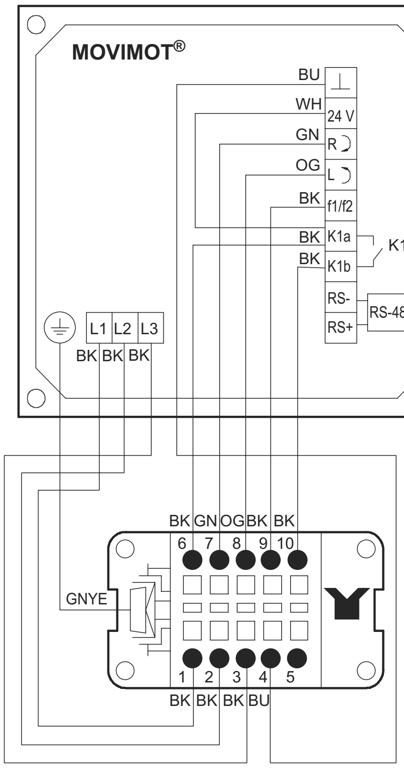
53082AXX

[1] Braking resistor for motors without brake only

* Both jumpers installed at factory; with one direction of rotation connect appropriate jumper only

MOVIMOT® with ASAX plug connector (08 777 002)

08 777 002

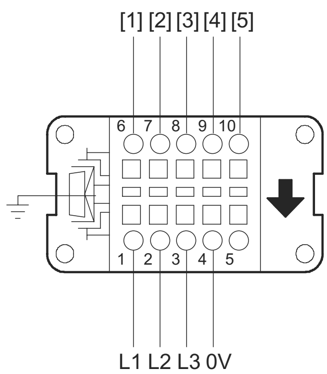


SEW-EURODRIVE connection

ASAX plug connector

male

View on contact end



Connection at customer site

HAN10E plug connector

female

View of connection end

52959AXX

[1] 24 V
[2] CW/stop input
[3] CCW/stop input
[4] Setpoint f1/f2 input
[5] Ready for operation output

MOVIMOT® with KEUX connection cable and MFD fieldbus interface

08 789 002

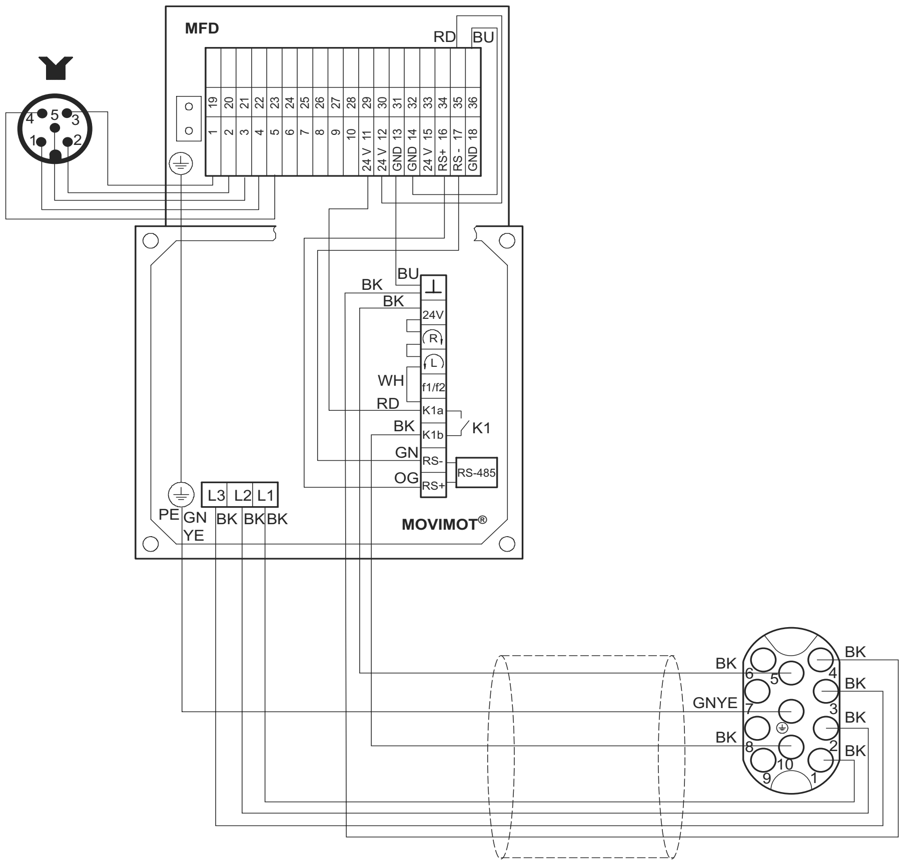
SEW-EURODRIVE connection

M12 plug connector

male

Standard coding

View on contact end



Connection cable

with plug connector

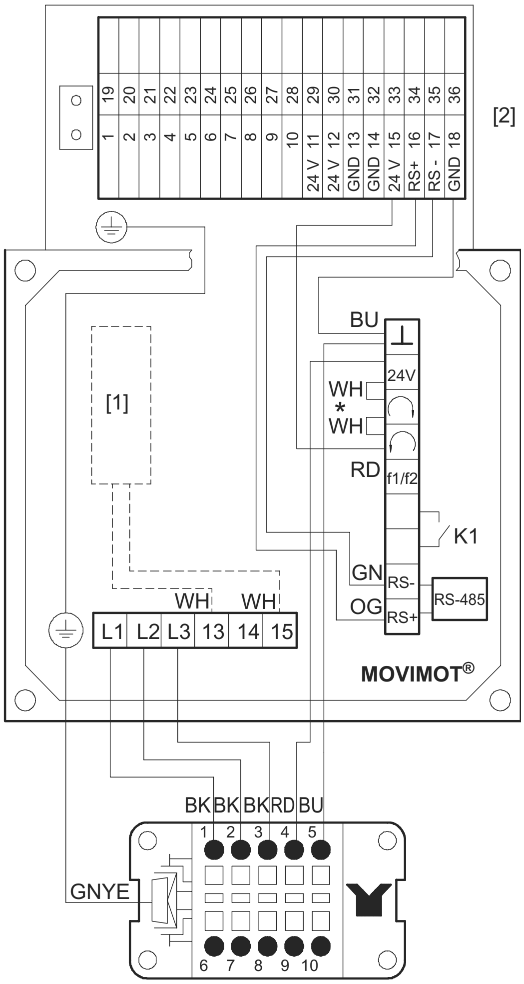
Podis MOT

Wieland

51878AXX

MOVIMOT® with fieldbus interface and ASAX plug connector (08 798 298)

08 798 298



SEW-EURODRIVE connection

ASAX plug connector

male

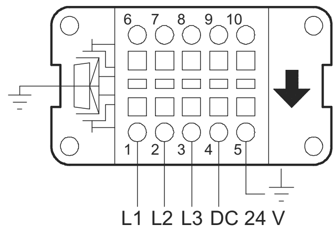
View of connection end

Connection at customer site

HAN10E plug connector

female

View of connection end



51606AXX

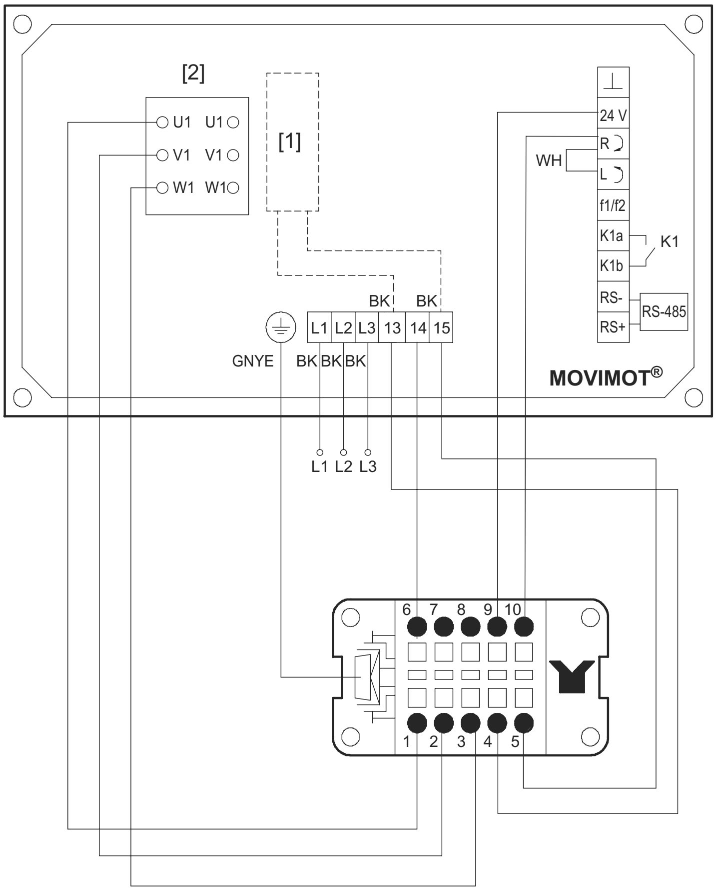
[1] Braking resistor for motors without brake only

[2] Fieldbus interface

* Both jumpers installed at factory; with one direction of rotation connect appropriate jumper only

MOVIMOT® with ALA4 plug connector

08 803 002



SEW-EURODRIVE connection

ALA4 plug connector

female

View on contact end

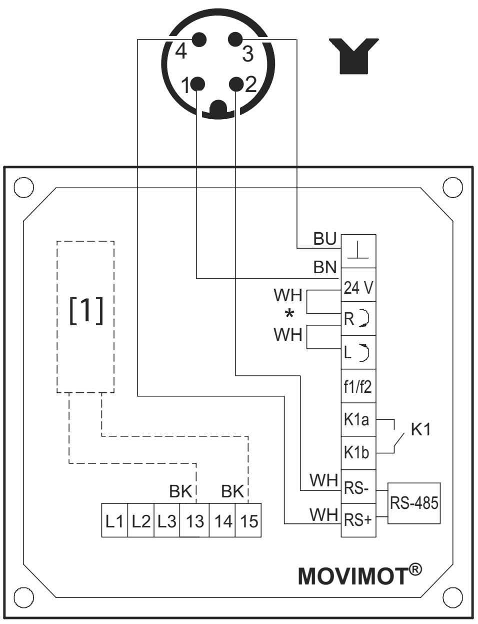
52601AXX

[1] Braking resistor for motors without brake only

[2] Terminal board

MOVIMOT® with AVSX plug connector (08 809 399)

08 809 399



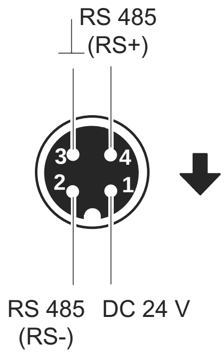
SEW-EURODRIVE connection

AVSX plug connector

male

Standard coding

View on contact end



Connection at customer site

M12 plug connector

female

Standard coding

View on contact end

51622AXX

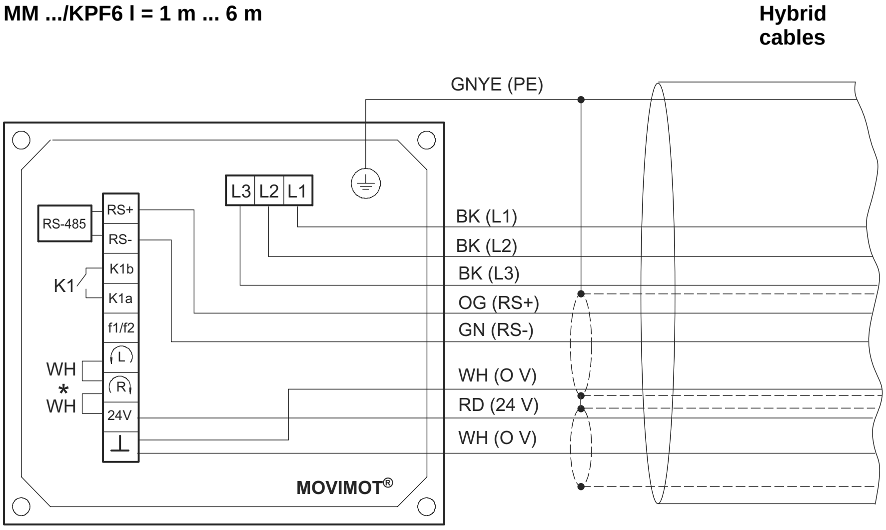
[1] Braking resistor for motors without brake only

* Both jumpers installed at factory; with one direction of rotation connect appropriate jumper only

MOVIMOT® with KPF connection cable.

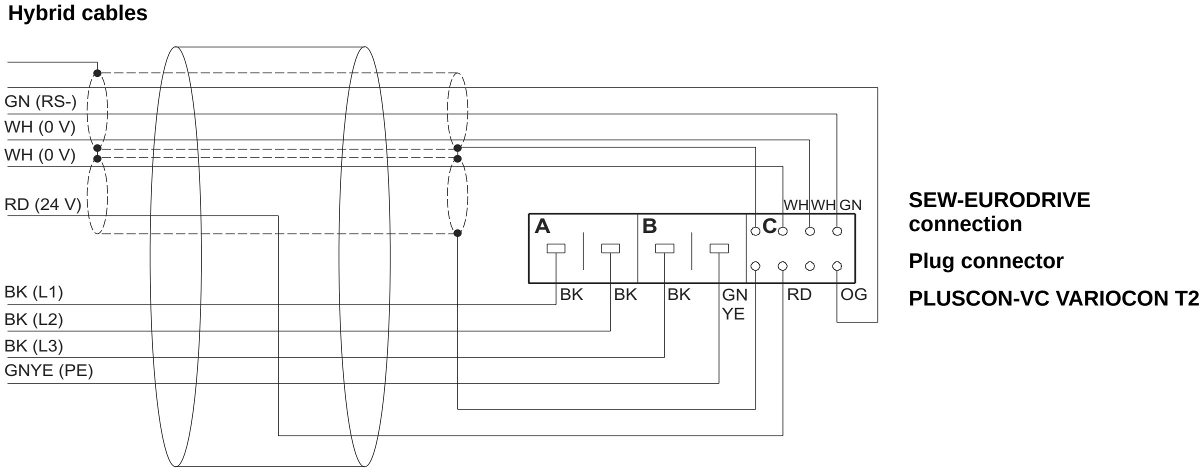
08 839 000

MM .../KPFA l = 1.5 m
MM .../KPFB l = 3.0 m
MM .../KPF6 l = 1 m ... 6 m



51717AXX

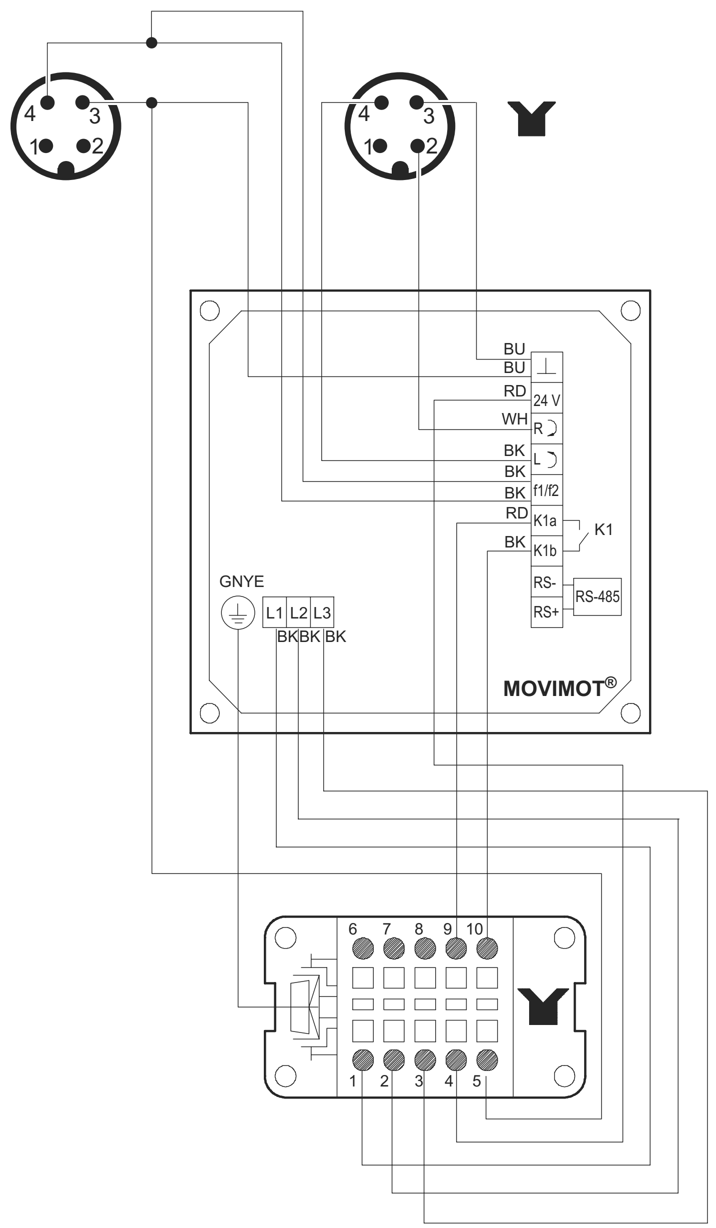
* Both jumpers installed at factory. With one direction of rotation connect appropriate jumper only.



51725AXX

MOVIMOT® with ASAX/AVSX plug connector (08 857 200)

08 857 200



SEW-EURODRIVE connection

AVSX plug connector

male

Standard coding

View on contact end

SEW-EURODRIVE connection

ASAX plug connector

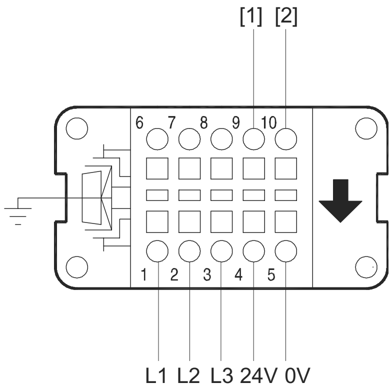
male

View on contact end

51838AXX

Continuation of 08 857 200

Speed control



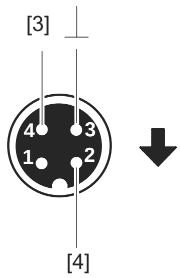
Connection at customer site

HAN10E plug connector

female

View of connection end

X03 connection



Connection at customer site

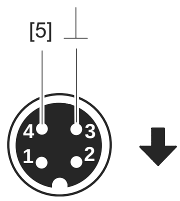
M12 plug connector

female

Standard coding

View on terminal end

X01 connection



Connection at customer site

M12 plug connector

female

Standard coding

View on terminal end

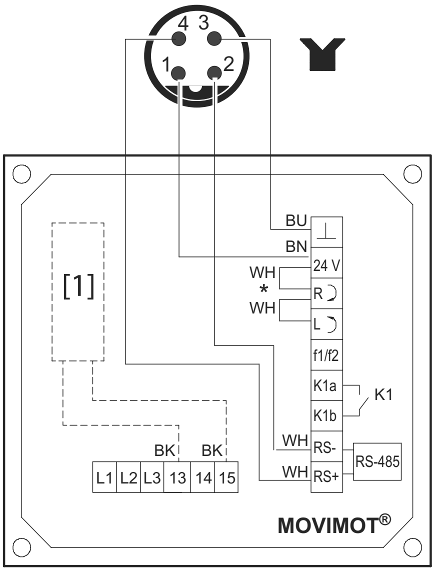
51854AXX

[1], [2] Evaluation
[3] CCW signal
[4] CW signal
[5] Speed setpoint

6

MOVIMOT® with AVT1 plug connector

08 872 000



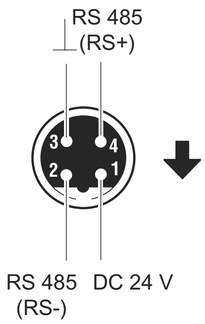
SEW-EURODRIVE connection

AVT1 plug connector

male

B coding

View on contact end



Connection at customer site

M12 plug connector

female

B coding

View on contact end

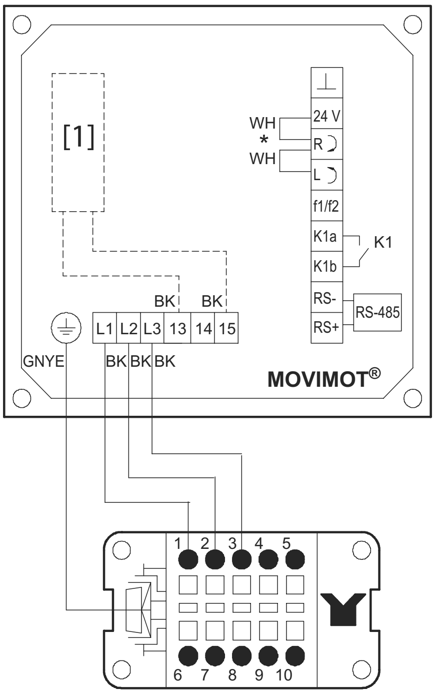
51622AXX

[1] Braking resistor for motors without brake only

* Both jumpers installed at factory; with one direction of rotation connect appropriate jumper only

MOVIMOT® with ASA3 or ASD3 plug connector
MOVIMOT® with KSA3 connection cable

08 873 01 00



SEW-EURODRIVE connection

Plug connector ASA3 or ASD3

male

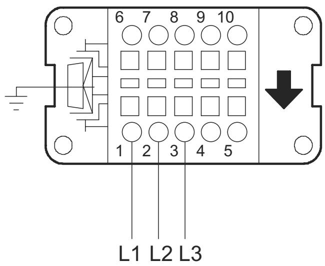
View on terminal end

Connection at customer site

HAN10E plug connector

female

View on terminal end



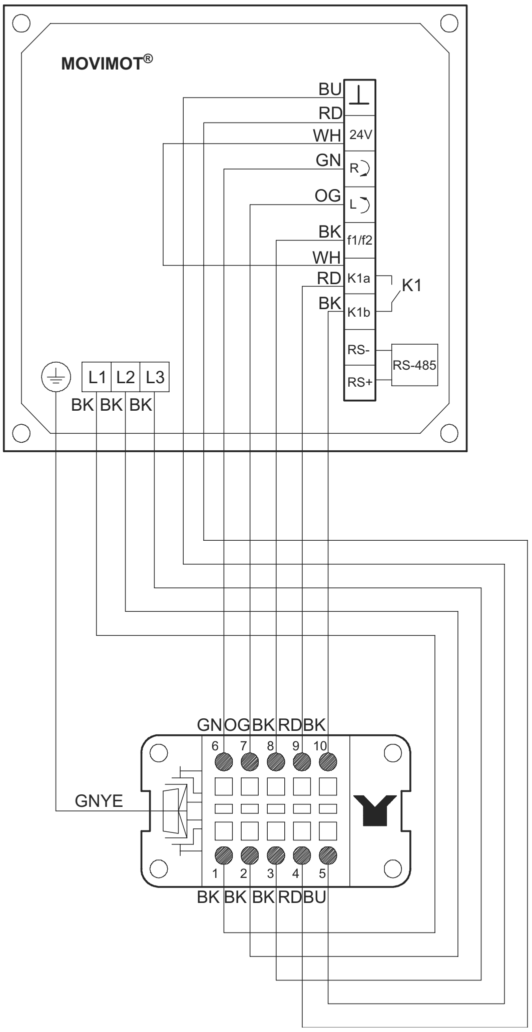
51621AXX

[1] Braking resistor for motors without brake only

* Both jumpers installed at factory; with one direction of rotation connect appropriate jumper only

MOVIMOT® with ASAX plug connector (08 875 000)

08 875 000



SEW connection

ASAX plug connector

male

View on contact end

51652AXX

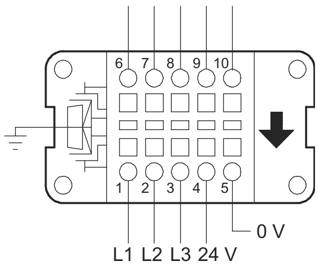
Connection at customer site

HAN10E plug connector

female

View of connection end

PIN assignment:



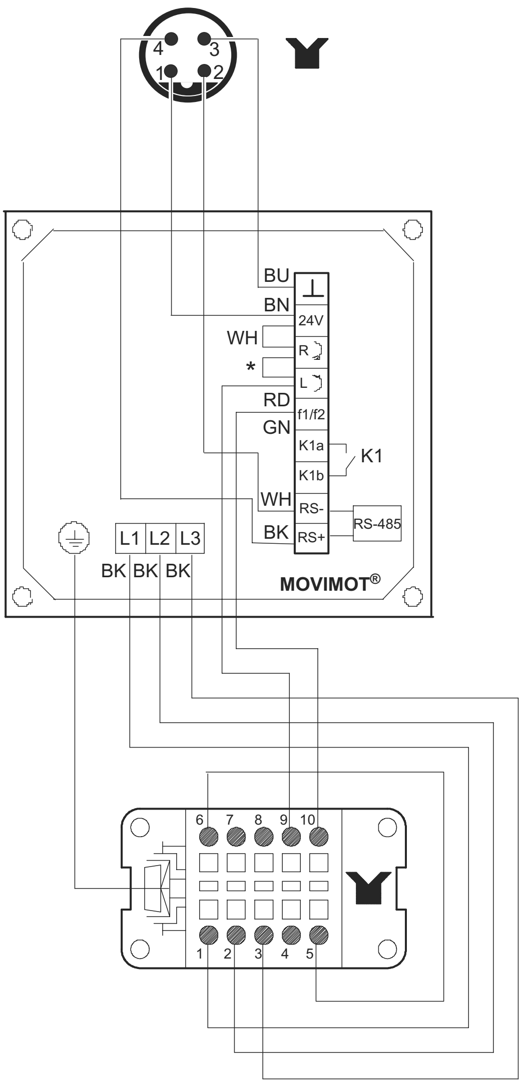
51651AXX

1 L1 supply system
2 L2 supply system
3 L3 supply system
4 24 V control voltage
5 0 V control voltage
6 CW/stop input
7 CCW/stop input
8 Setpoint f1/f2 input
9 Plug connector output connected
10 Ready for operation output

MOVIMOT® with ASAX/AVT1 plug connector (08 880 100)

08 880 100

SEW connection
AVT1 plug connector
male
B coding
View on contact end

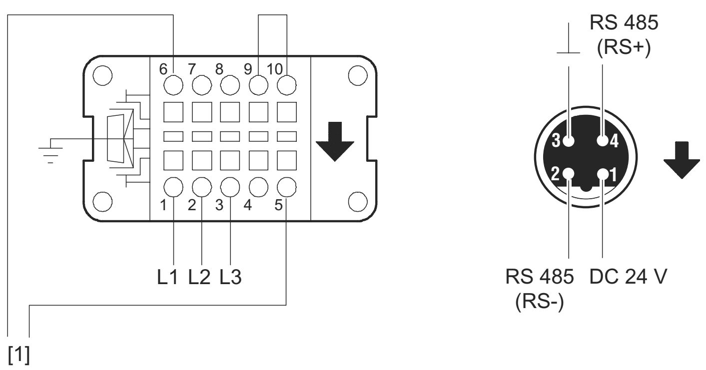


SEW connection
ASAX plug connector
male
View on contact end

51616AXX

Connection at customer site

HAN10E plug connector
female
View of connection end



Connection at customer site
M12 plug connector
female
B coding
View on contact end

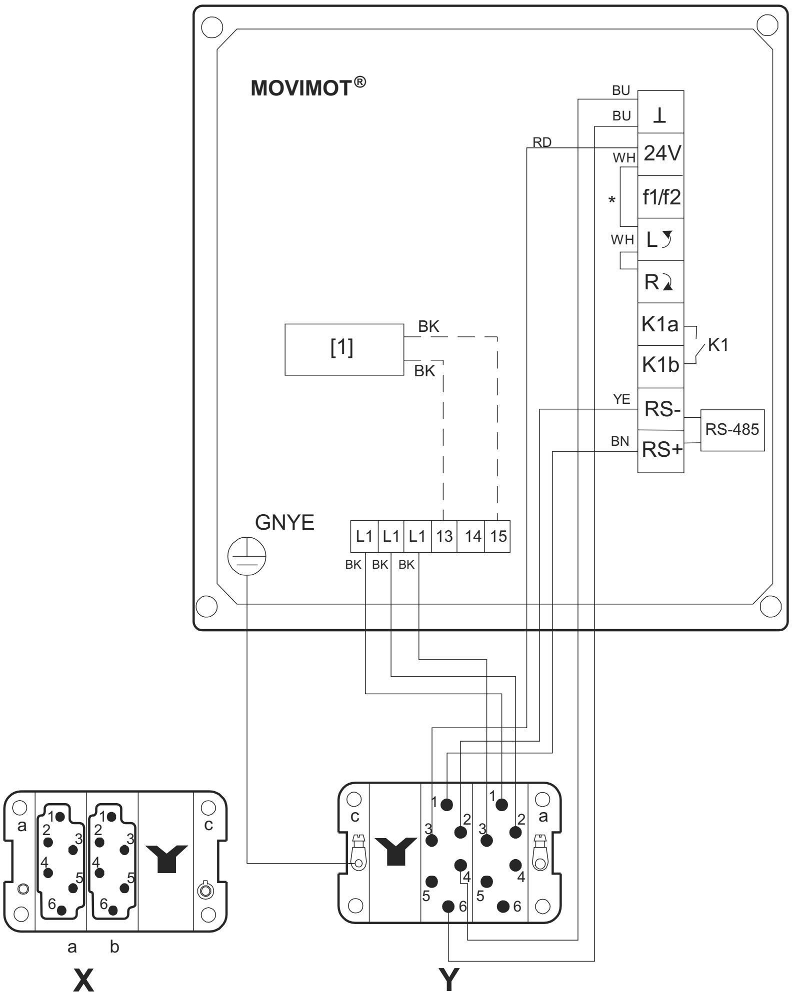
51618AXX

[1] External connector monitoring
* Remove corresponding jumper with only one direction of rotation!

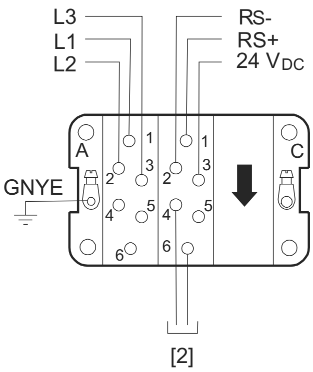
MOVIMOT® with AMA6 or AMD6 plug connector

08 883 04 00

SEW connection
AM.6 plug connector
male
X: View on contact end
Y: View of connection end



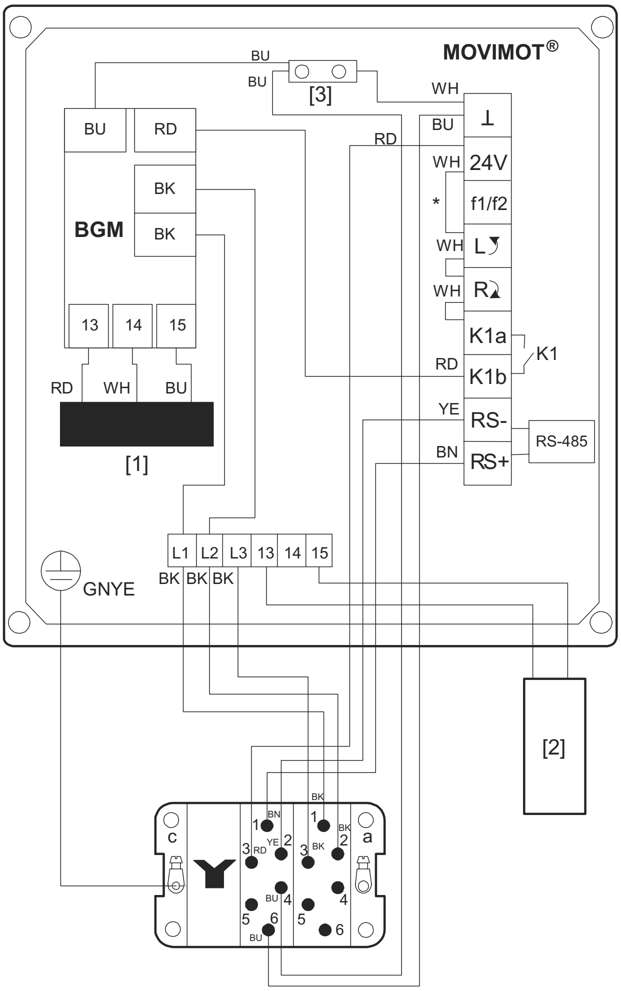
Connection at customer site
Plug connector
HAN modular 10B
female
View of connection end



54377AXX

[1] Braking resistor for motors without brake only
[2] Feedback plug connector connected
* Both jumpers installed at factory; with one direction of rotation connect appropriate jumper only

Continuation of 08 883 04 00



SEW-EURODRIVE connection

AM.6 plug connector

male

View of connection end

54378AXX

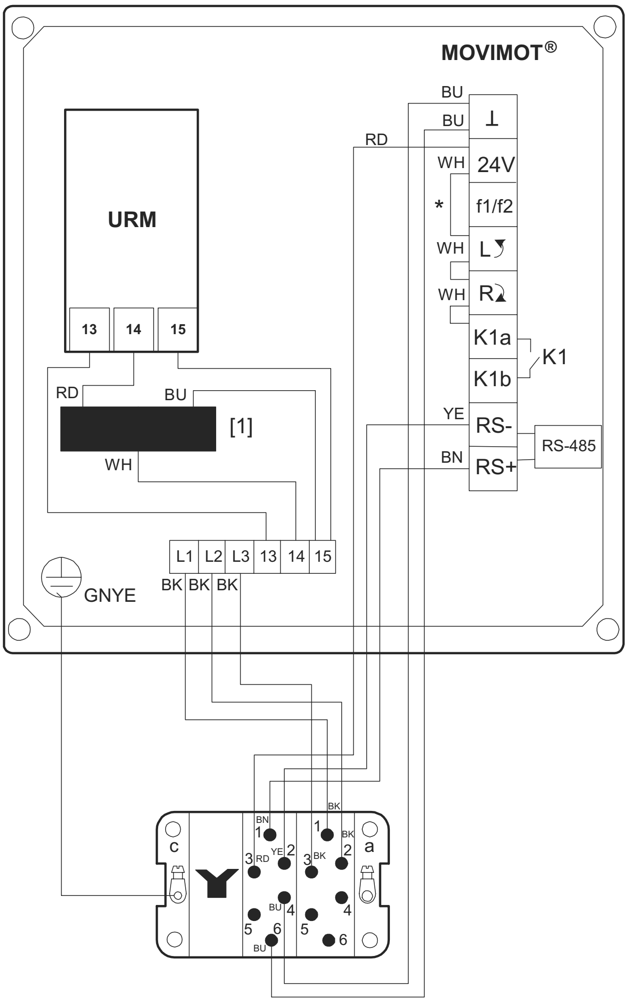
[1] Brake coil

[2] External braking resistor

[3] Terminal clip

* Both jumpers installed at factory; with one direction of rotation connect appropriate jumper only

Continuation of 08 883 04 00



SEW-EURODRIVE connection

AM.6 plug connector

male

View of connection end

54379AXX

[1] Brake coil

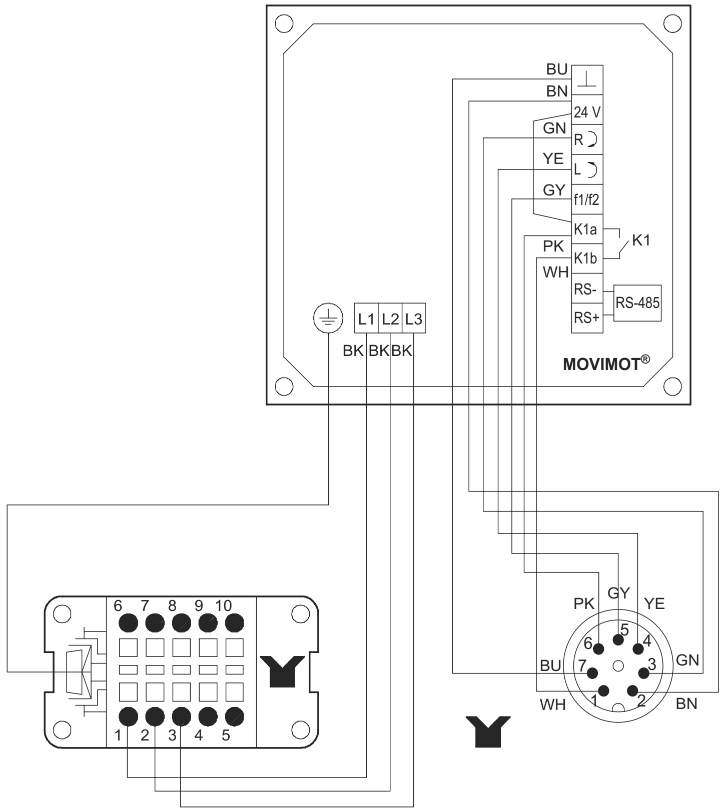
[2] External braking resistor

[3] Terminal clip

* Both jumpers installed at factory; with one direction of rotation connect appropriate jumper only

MOVIMOT® with ASA3/AVR1 plug connector

08 889 101



SEW-EURODRIVE connection

ASA3 plug connector

male

View on contact end

SEW-EURODRIVE connection

AVR1 plug connector

male

View on contact end

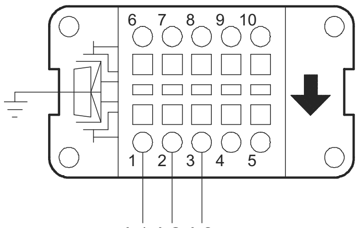
51619AXX

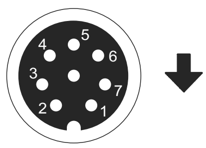
Connection at customer site

HAN10E plug connector

female

View of connection end





Connection at customer site

M12 plug connector

female

View on contact end

51620AXX

PIN assignment:

1 Ready for operation output

2 DC 24 V

3 CW/stop input

4 CCW/stop input

5 Setpoint f1/f2 input

6 Ready input

7 0 V

8 N.C.

MOVIMOT® with ASAX/AVS1 plug connector (08 894 101)

08 894 101

SEW-EURODRIVE connection

AVS1 plug connector

male

Standard coding

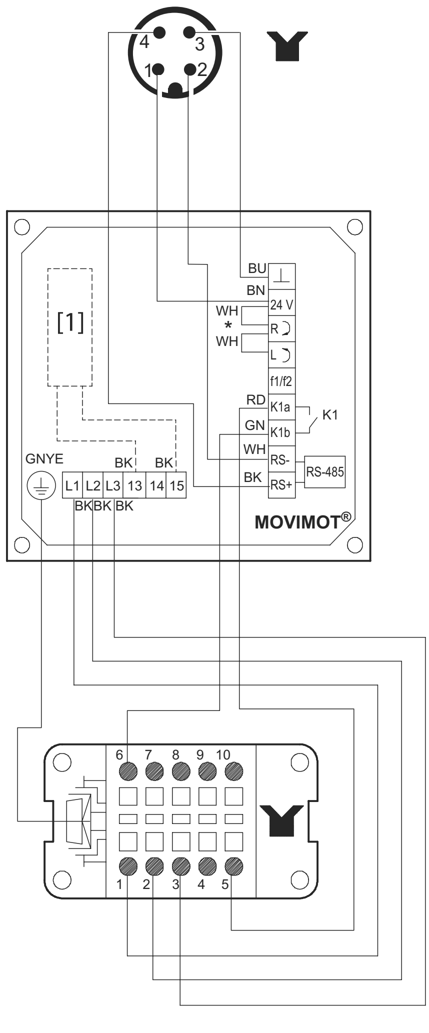
View on contact end

SEW-EURODRIVE connection

ASAX plug connector

male

View on contact end

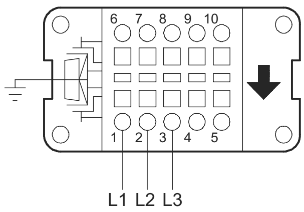


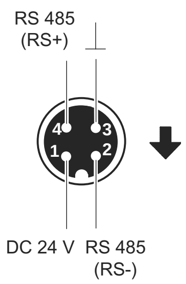
Connection at customer site

HAN10E plug connector

female

View of connection end





Connection at customer site

M12 plug connector

female

Standard coding

View of connection end

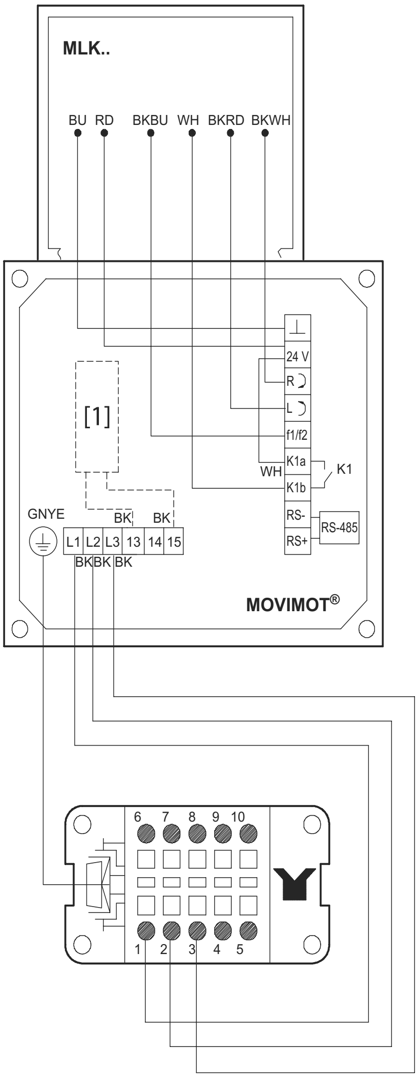
51807AXX

[1] Braking resistor for motors without brake only

* Both jumpers installed at factory; with one direction of rotation remove appropriate jumper!

MOVIMOT® with ASA3 plug connector with MLK option (AS-interface)

08 897 001

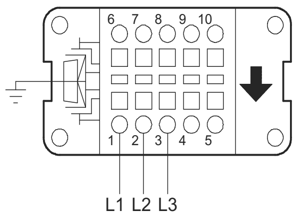


SEW-EURODRIVE connection

ASA3 plug connector

male

View on contact end



Connection at customer site

HAN10E plug connector

female

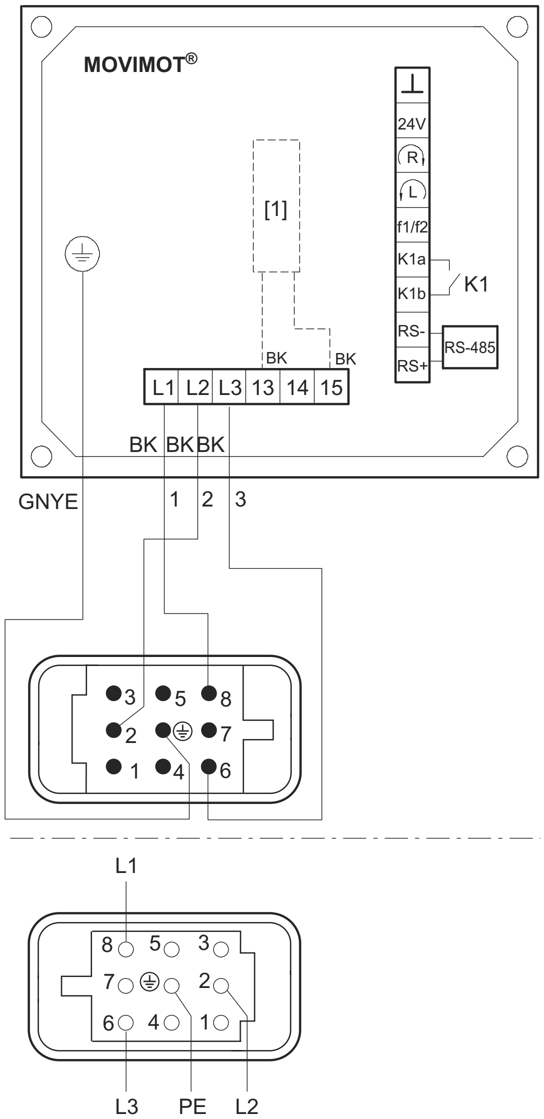
View of connection end

51835AXX

[1] Braking resistor for motors without brake only

MOVIMOT® with KND3 connection cable

80 336 00 03



SEW-EURODRIVE connection

Connection cable KND3

male

View on contact end

Connection at customer site

HANQ8 plug connector

female

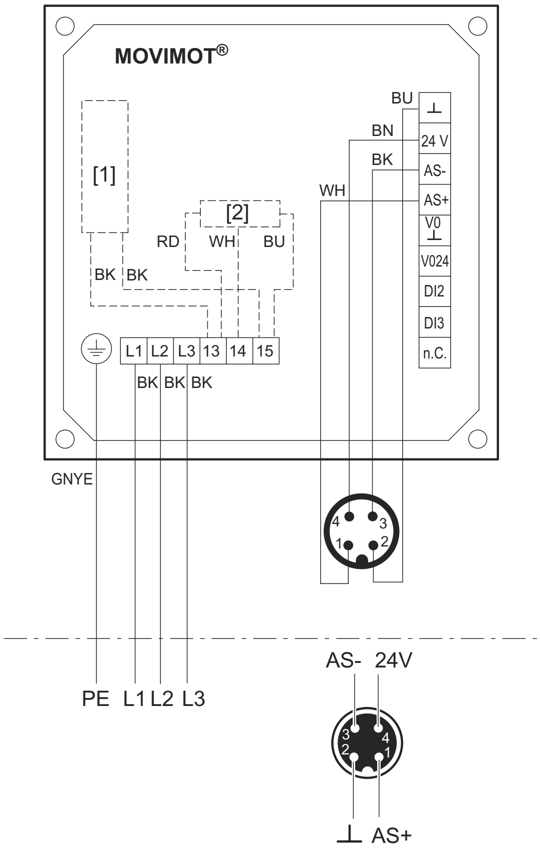
View on contact end

52988AXX

[1] Braking resistor for motors without brake only

MOVIMOT® with integrated AS-interface and AVSK plug connector

80 355 00 03



SEW-EURODRIVE connection
AVSK plug connector
male
Standard coding
View on contact end

Connection at customer site
M12 plug connector
female
Standard coding
View on contact end

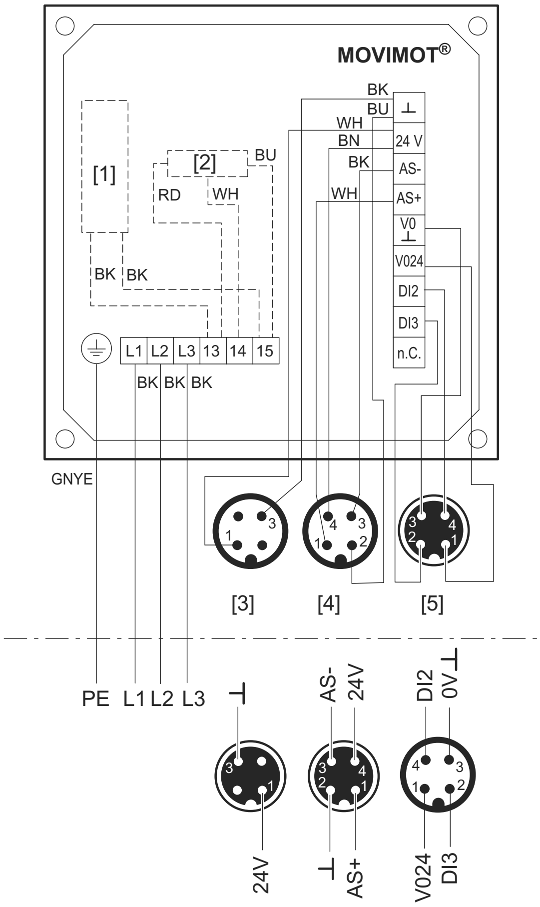
52960AXX

AS+	AS-interface +
AS-	AS-interface -
[1]	Braking resistor (for motors without brake only)
[2]	Brake coil (with brake motors only)

6

MOVIMOT® with integrated AS-interface and AZSK plug connector

80 354 00 03



SEW-EURODRIVE connection
AZSK plug connector
Standard coding
View on contact end

Connection at customer site
M12 plug connector
Standard coding
View of connection end

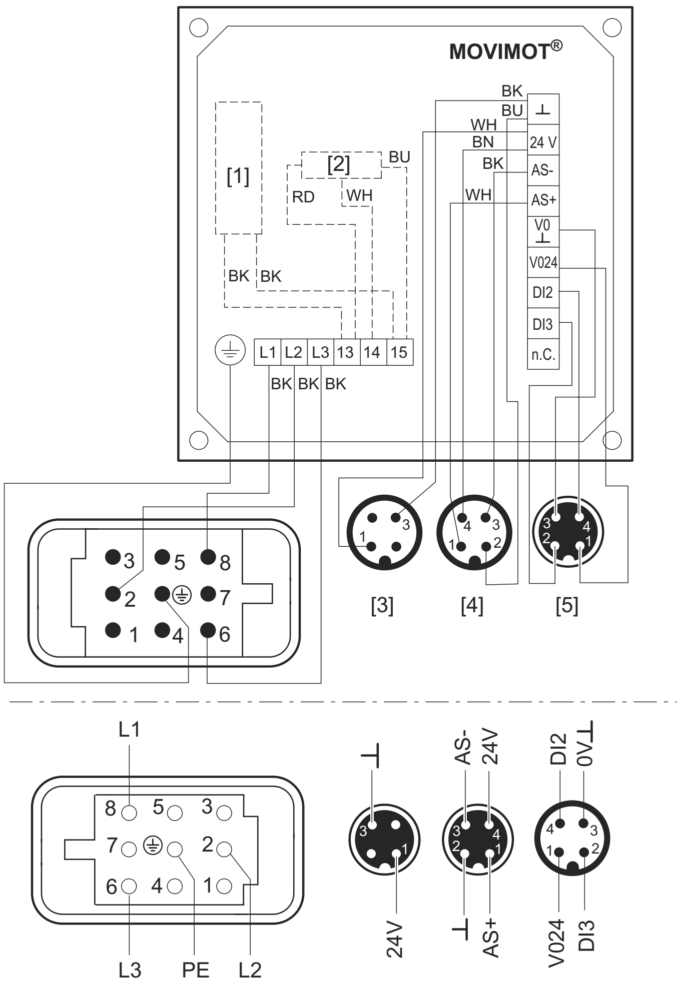
52961AXX

AS+	AS-interface +
AS-	AS-interface -
[1]	Braking resistor (for motors without brake only)
[2]	Brake coil (with brake motors only)
[3]	male (BK)
[4]	male (BK)
[5]	female (YE)

MOVIMOT® with integrated AS-interface and AZSK/AND3 plug connector

80 354 00 03

SEW-EURODRIVE connection
AND3 plug connector
male
View on contact end



SEW-EURODRIVE connection
AZSK plug connector
Standard coding
View on contact end

Connection at customer site
HANQ8 plug connector
female
View on contact end

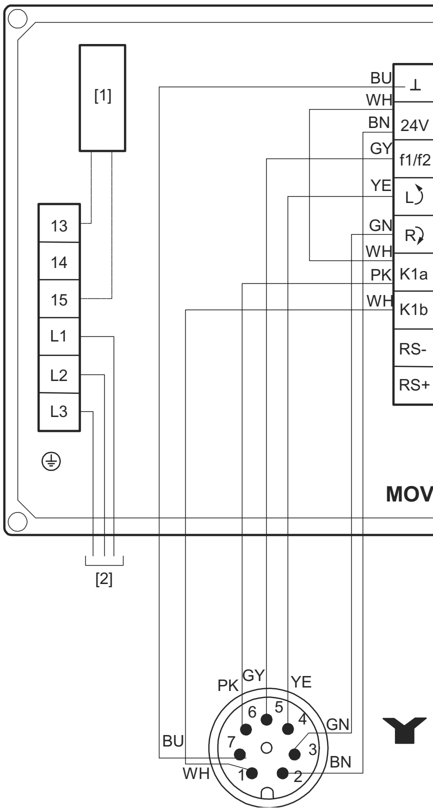
Connection at customer site
M12 plug connector
Standard coding
View on contact end

52976AXX

AS+	AS-interface +
AS-	AS-interface -
[1]	Braking resistor (for motors without brake only)
[2]	Brake coil (with brake motors only)
[3]	male (BK)
[4]	male (BK)
[5]	female (YE)

MOVIMOT® with AVR1 plug connector

80 377 00 03



SEW-EURODRIVE connection

AVR1 plug connector

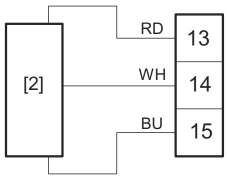
male

View on contact end

54442AXX

Brake connection

(SEW-EURODRIVE)

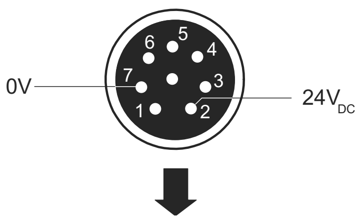


Connection at customer site

M12 plug connector

female

View on contact end



PIN assignment:

1 Ready for operation output

2 24 V_{DC}

3 CW/stop input

4 CCW/stop input

5 Setpoint f1/f2 input

6 Ready for operation input

7 0V

[2] Brake coil (when operating motor with brake)

54479AXX

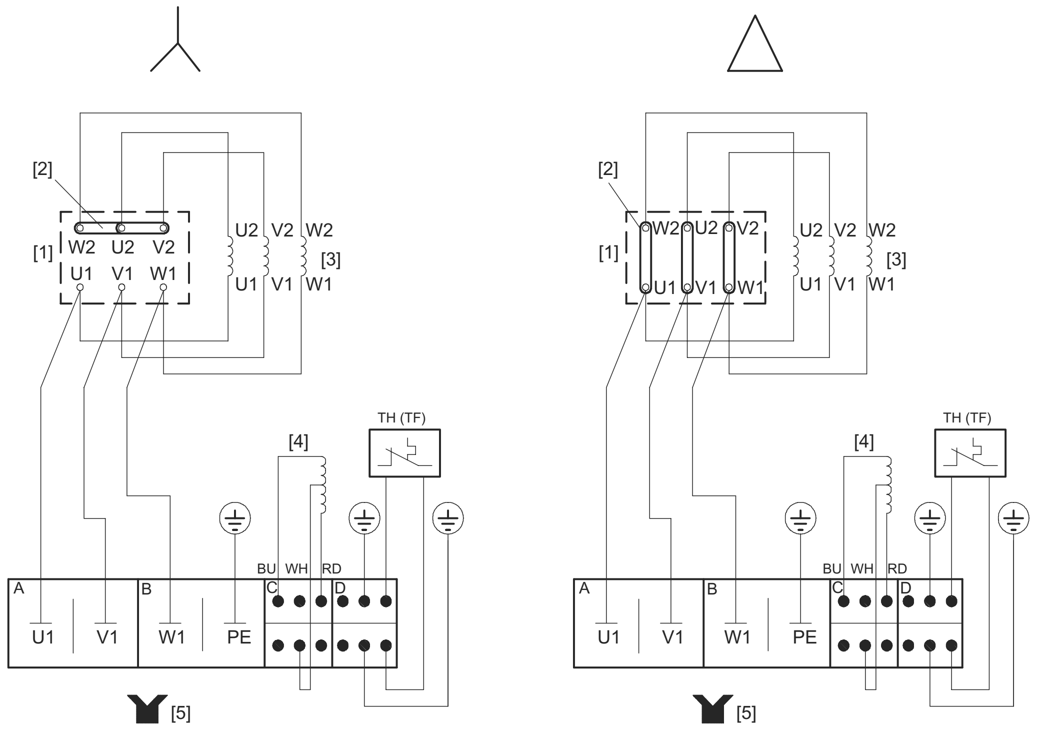
6.3 Motor wiring diagrams

Overview

Wiring diagram number	Title	Page
08 752 02 01	Drive with APG4 plug connector	page 294
08 792 04 02	Drive with ASB4 or ASE 4 plug connector	page 295
08 793 04 02	Drive with AMB4 or AME4 plug connectors	page 297
08 798 376	Drive with one speed (terminal box connection)	page 299
08 834 100	Drive with IS plug connector (DT79)	page 300
08 872 02 03	Drive with ASB4 plug connector and BW1 braking resistor	page 302
09 844 002	Drive with ECOFAST®-compliant ASK1 plug connector	page 304
08 849 002	Drive with ECOFAST®-compliant ASK1 plug connector	page 306
08 854 00 03	Drive with ACC4 plug connector	page 308
08 873 00 03	Drive with AME4 plug connector and BW1 (in conjunction with compact MOVIMOT® MME)	page 310
80 422 00 04	Drive with IS plug connector	page 312

Drive with APG4 plug connector

08 752 02 01



SEW-EURODRIVE connection

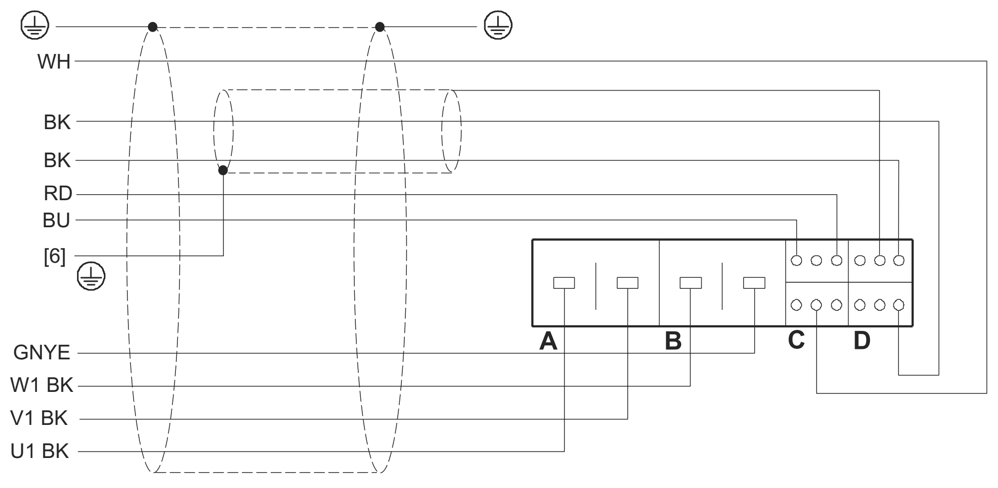
Plug connector

APG4

male

51704AXX

Connection hybrid cable



Plug connector

PLUSCON-VC VARIOCON T3

female

55474AXX

[1] Terminal board

[2] Terminal link

[3] Motor winding

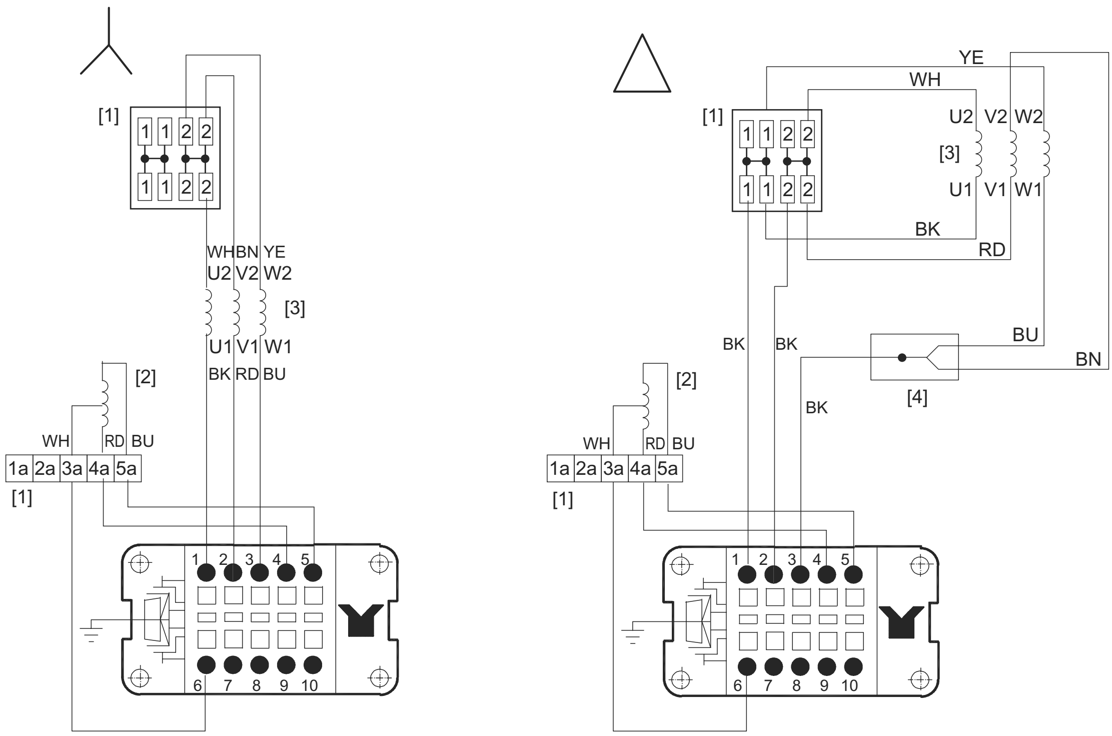
[4] Brake coil

[5] APG4 plug connector

[6] Shield

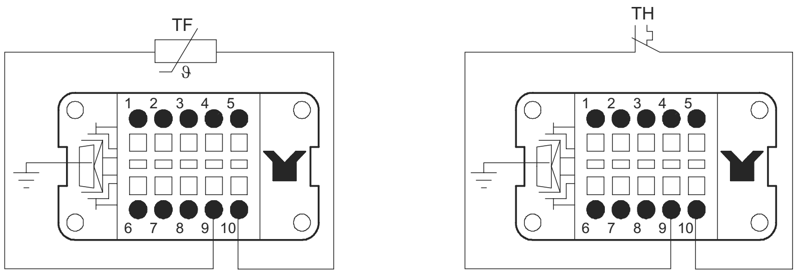
Drive with ASB4 or ASE 4 plug connectors

08 792 04 02



SEW-EURODRIVE connection	SEW-EURODRIVE connection
Plug connector ASB4 or ASE4	**Plug connector ASB4 or ASE4**
male	male
View of connection end	View of connection end

54563AXX



Motor protection connection	Motor protection connection
(SEW-EURODRIVE)	**(SEW-EURODRIVE)**
ASB4 or ASE4 plug connector	**ASB4 or ASE4 plug connector**
male	male
View on connection end	View on connection end

54564AXX

Always with jumper if no TF/TH

[1] Terminal strip

[2] Brake coil

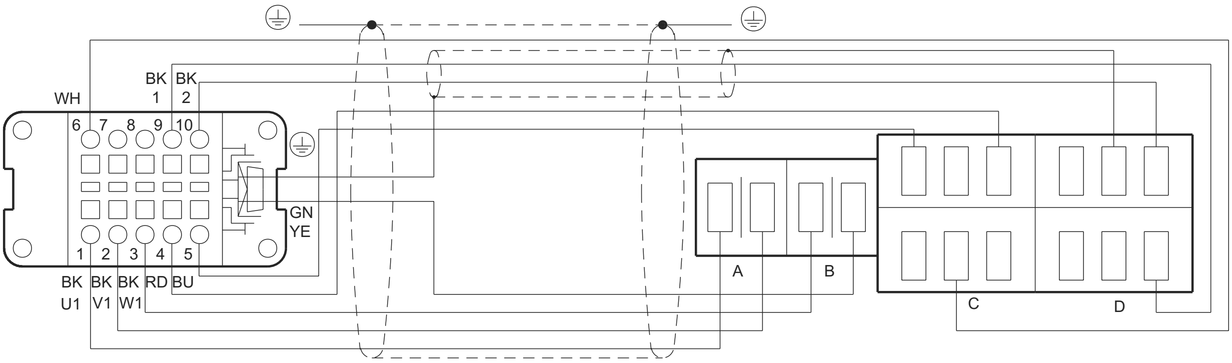
[3] Motor winding

[4] Auxiliary terminal

[5] Monitoring jumper

Continuation of
08 792 04 02

Hybrid cable connection



HAN10 plug connector

female

View of connection end

PLUSCON-VC VARIOCON T3 plug connector

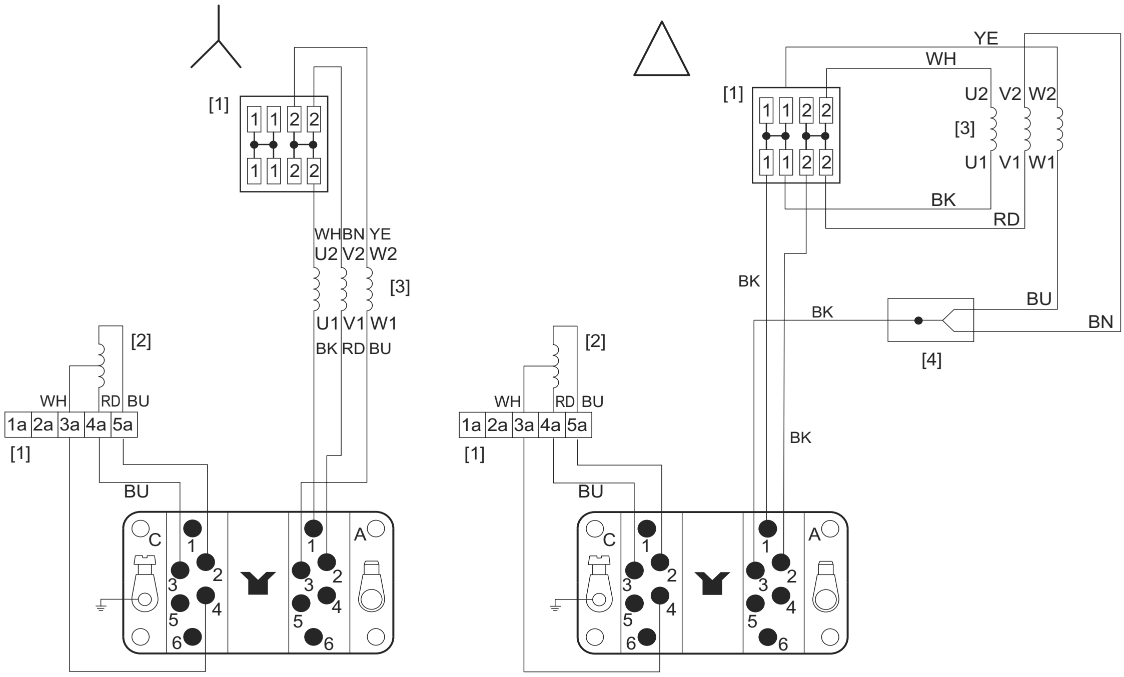
female

View of connection end

54469AXX

Drive with AMB4 or AME4 plug connectors

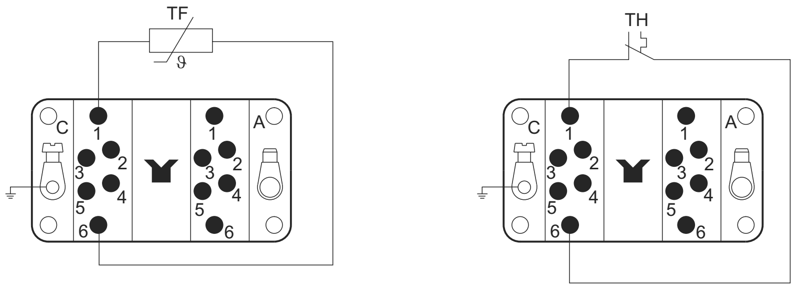
08 793 04 02



SEW-EURODRIVE connection
AMB4 or AME4 plug connector
male
View of connection end

SEW-EURODRIVE connection
AMB4 or AME4 plug connector
male
View of connection end

54566AXX



Motor protection connection
(SEW-EURODRIVE)
AMB4 or AME4 plug connector
male
View on connection end

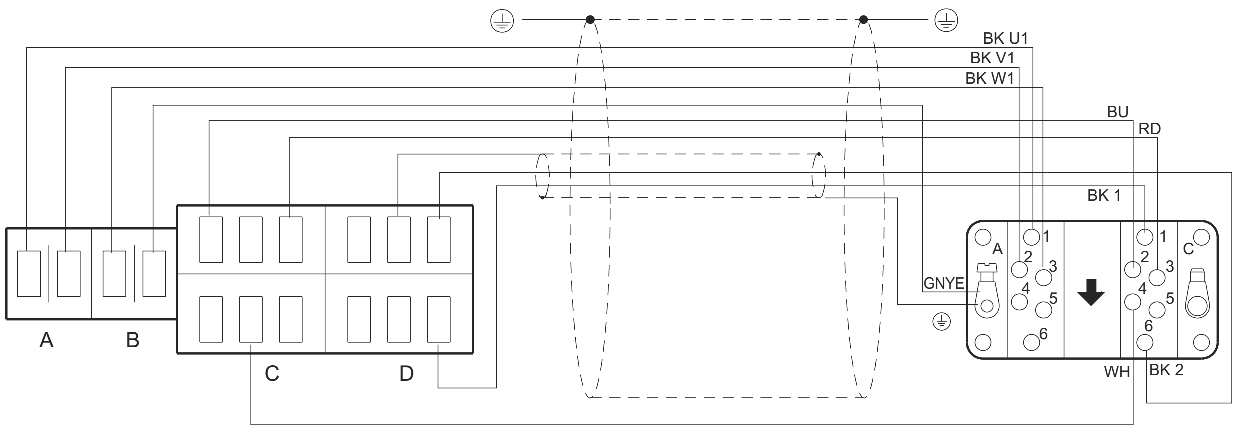
Motor protection connection
(SEW-EURODRIVE)
AMB4 or AME4 plug connector
male
View on connection end

54567AXX

Always with jumper if no TF/TH
[1] Terminal strip
[2] Brake coil
[3] Motor winding
[4] Auxiliary terminal
[5] Monitoring jumper

Continuation of 08 793 04 02

Hybrid cable connection



PLUSCON-VC VARIOCON T3 plug connector

female

View of connection end

HAN modular plug connector

female

View of connection end

54565AXX

Drive with one speed (terminal box connection)

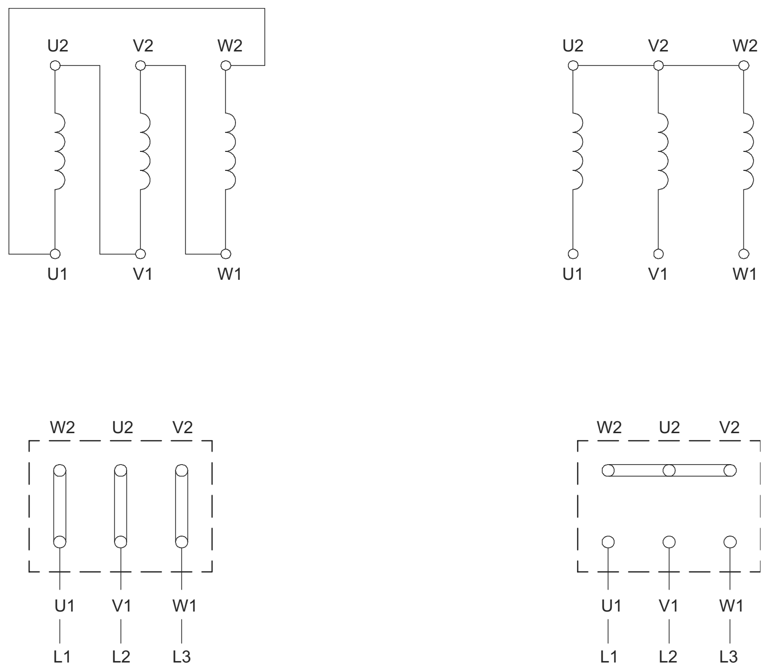
08 798 376

Delta connection △, low voltage

Star connection ⅄, high voltage

Motor winding

Motor terminal board



51879AXX

Incoming cables

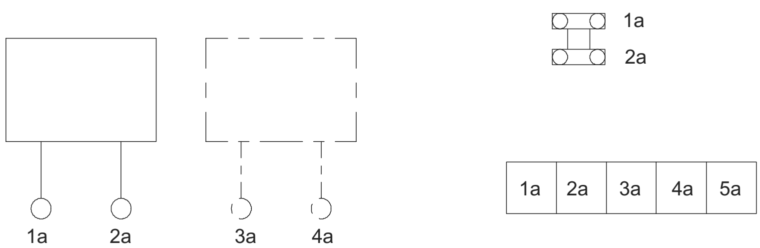
Incoming cables

Change in direction of rotation: Replacing two incoming cables L1 - L2

Motor protection with TF positive temperature coefficient (PTC) thermistor
Motor protection with thermostat (bimetallic switch) TH

Cut-off

Warning



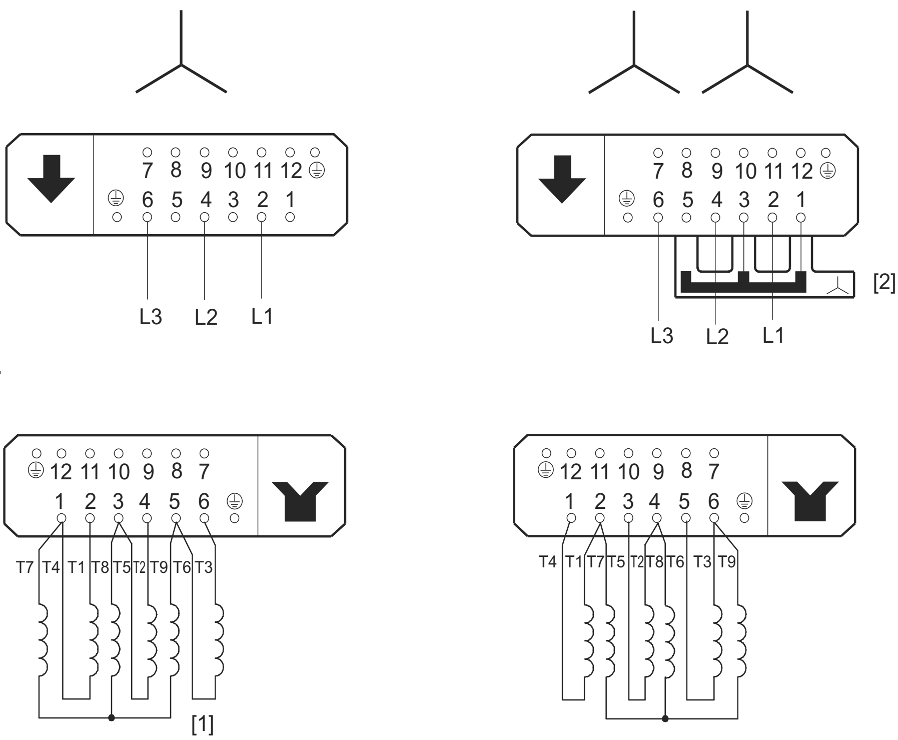
51880AXX

For connection to trip switch (TF max. DC 2.5 V / TH max. AC 250 V)
a two-pole terminal strip or a five-pole terminal strip is available.

Drive with IS plug connector (DT79)

08 834 100

	Star connection ⅄, high voltage	**Double start connection ⅄ ⅄, low voltage**
	Star connection ⅄ set at factory	**Reverse terminal connections of outgoing stator cables** **T7, T8 and T9 required**
Connection at customer site **IS plug connector** Top part		
SEW-EURODRIVE connection **IS plug connector** Bottom part		



51895AXX

[1] Star point connected in motor

[2] Variable terminal link

Important: Possible motor damage!

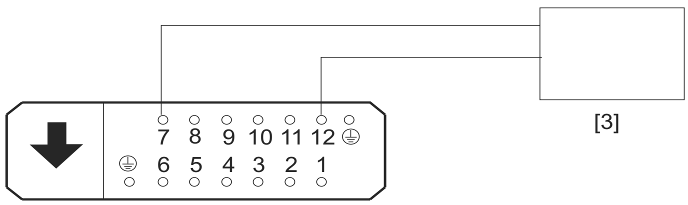
Changing switching type always involves changing the variable terminal link and the wiring on the motor end.

Continuation of 08 834 100

Motor protection connection (customer)

IS plug connector

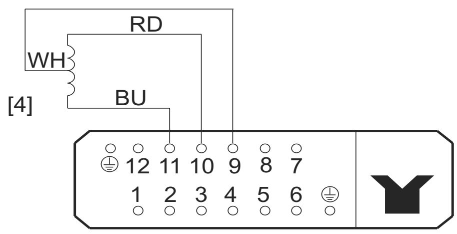
Top part



Brake coil connection (SEW-EURODRIVE)

IS plug connector

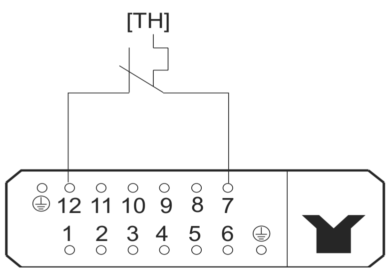
Bottom part

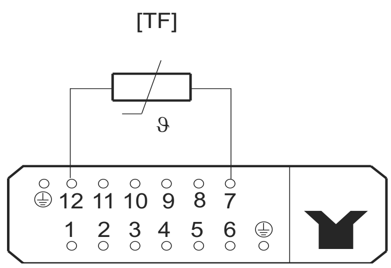


Motor protection connection (SEW-EURODRIVE)

IS plug connector

Bottom part





51897AXX

[TH] Thermostat (bimetallic switch)

[TF] temperature sensor

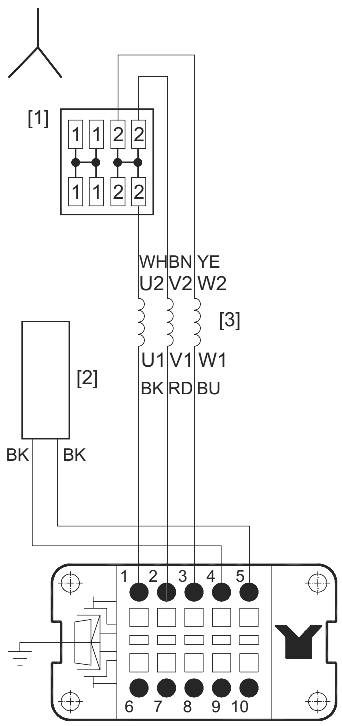
[3] Evaluation

[4] Brake coil

6

Drive with ASB4 plug connector and BW1 braking resistor

08 872 02 03

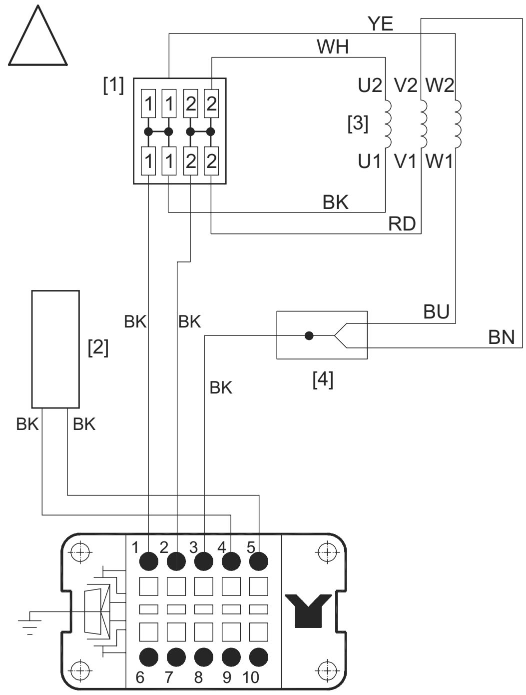


SEW-EURODRIVE connection

BW1/ASB4 plug connector

male

View of connection end



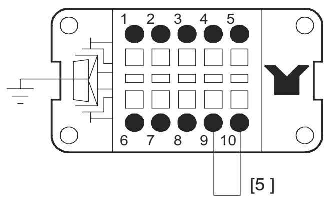
SEW-EURODRIVE connection

BW1/ASB4 plug connector

male

View of connection end

54470AXX



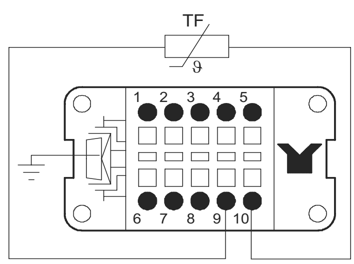
Motor protection connection

(SEW-EURODRIVE)

Plug connector BW1/ASB4

male

View on connection end



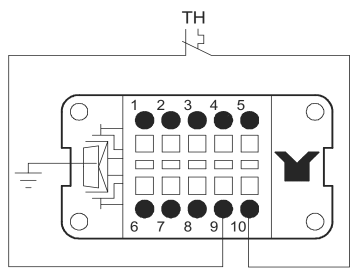
Motor protection connection

(SEW-EURODRIVE)

Plug connector BW1/ASB4

male

View on connection end



Motor protection connection

(SEW-EURODRIVE)

Plug connector BW1/ASB4

male

View on connection end

54471AXX

Always with jumper if no TF/TH

[1] Terminal strip

[2] Brake coil

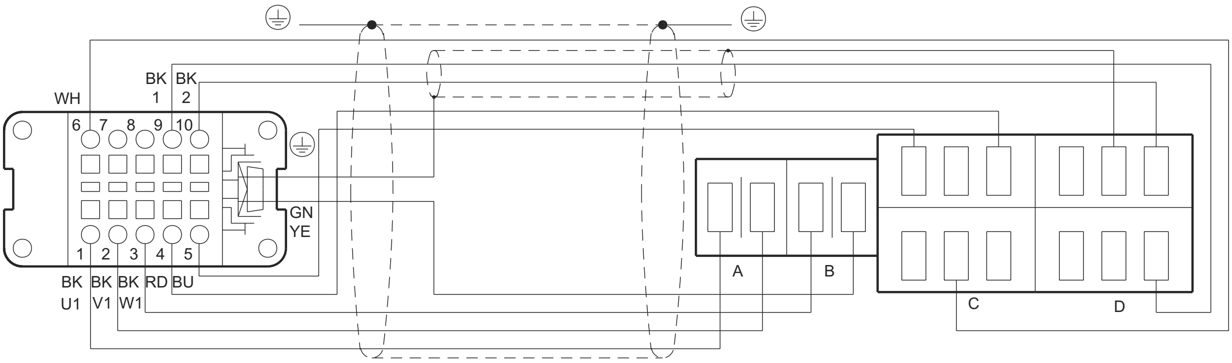
[3] Motor winding

[4] Auxiliary terminal

[5] Monitoring jumper

Continuation of 08 872 02 03

Hybrid cable connection



HAN10 plug connector

female

View of connection end

PLUSCON-VC VARIOCON T3 plug connector

female

View of connection end

54469AXX

Drive with ECOFAST®-compliant ASK1 plug connector

09 844 002

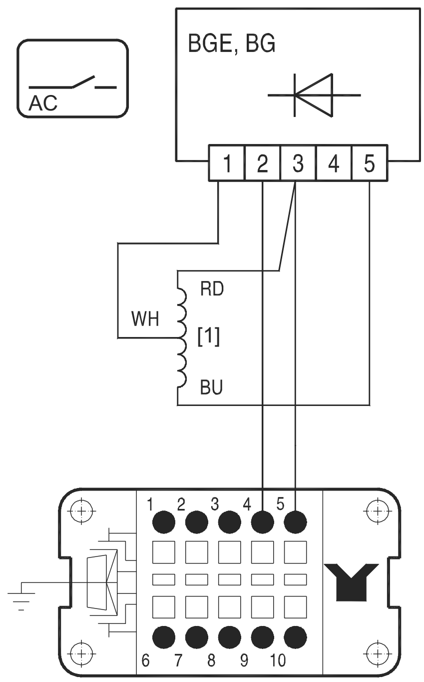
Brake control BGE, BG

SEW-EURODRIVE connection

Plug connector ASK1

male

View of connection end



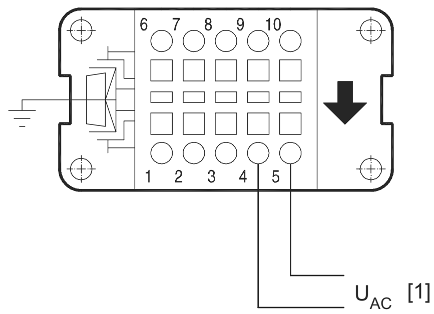
51758AXX

Connection at customer site

HAN10E plug connector

female

View of connection end



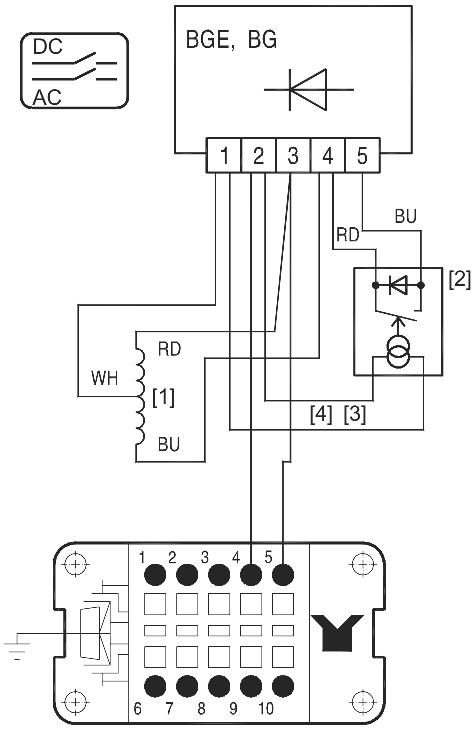
51757AXX

Note: You reverse the direction of rotation by reversing two incoming cables.

[1] Brake voltage input

Continuation of
09 844 002

Brake control BUR



SEW-EURODRIVE connection
Plug connector ASK1
male
View of connection end

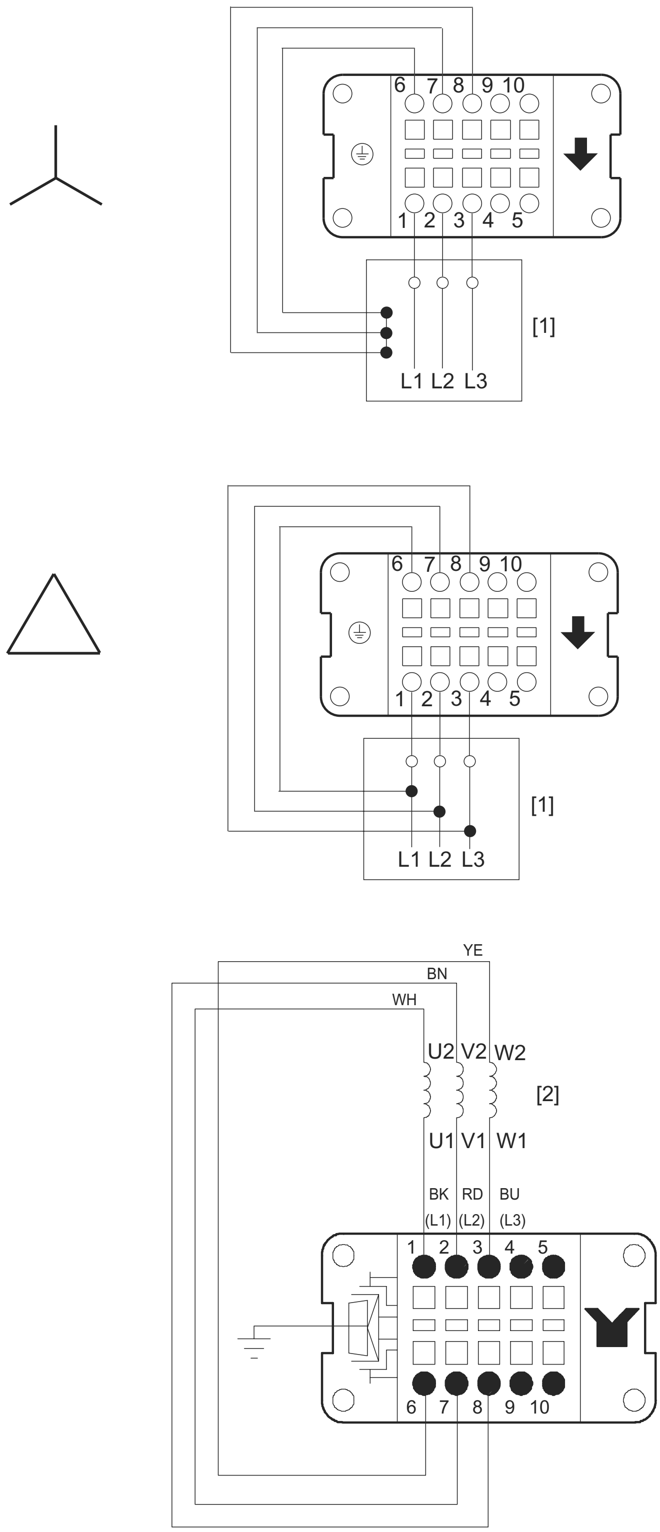
51759AXX

[1] Brake coil
[2] Voltage relay UR 11, UR 15
[3] UR 11 (42 - 150 V) = BN
[4] UR 15 (150 - 500 V) = BK

You reverse the direction of rotation by reversing two incoming cables

Drive with ECOFAST®-compliant ASK1 plug connector

08 849 002



Connection at customer site

HAN10E plug connector

female

View of connection end

Connection at customer site

HAN10E plug connector

female

View of connection end

SEW-EURODRIVE connection

Plug connector ASK1

male

View of connection end

52234AXX

Note: You reverse the direction of rotation by reversing two incoming cables

[1] Control cabinet

[2] Motor winding

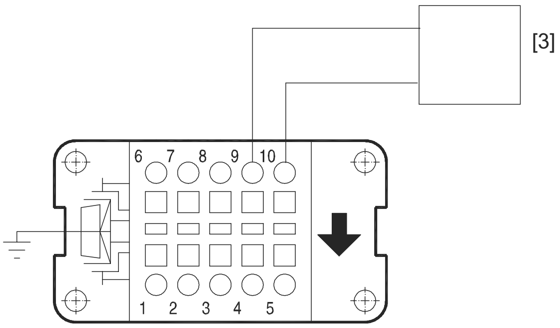
Continuation of 08 849 002

Motor protection connection (customer)

HAN10E plug connector

female

View of connection end

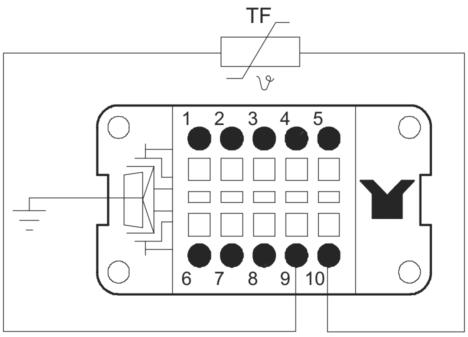


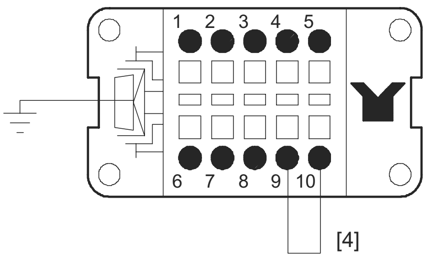
Motor protection connection (SEW-EURODRIVE)

Plug connector ASK1

male

View of connection end



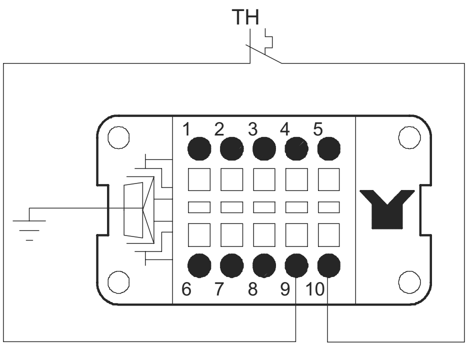


Motor protection connection (SEW-EURODRIVE)

Plug connector ASK1

male

View of connection end



Motor protection connection (SEW-EURODRIVE)

Plug connector ASK1

male

View of connection end

52235AXX

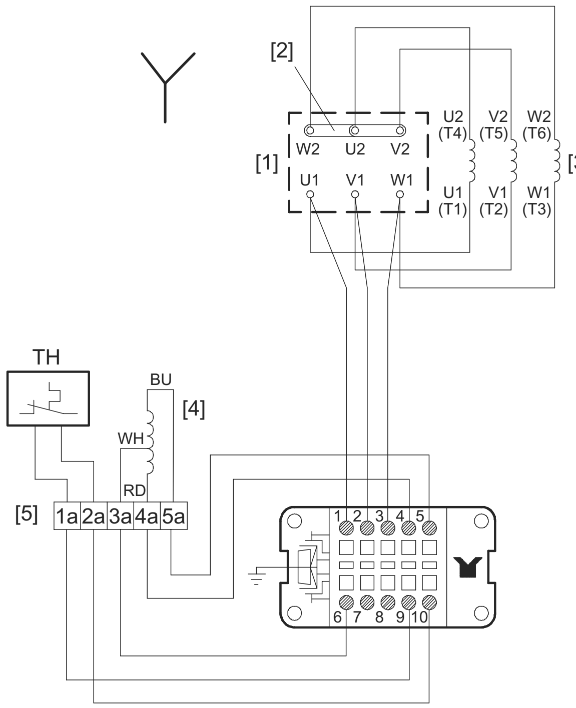
Always connect with jumper if no TF/TH is used.

[3] Evaluation

[4] Monitoring jumper

Drive with ACC4 plug connector

08 854 00 03

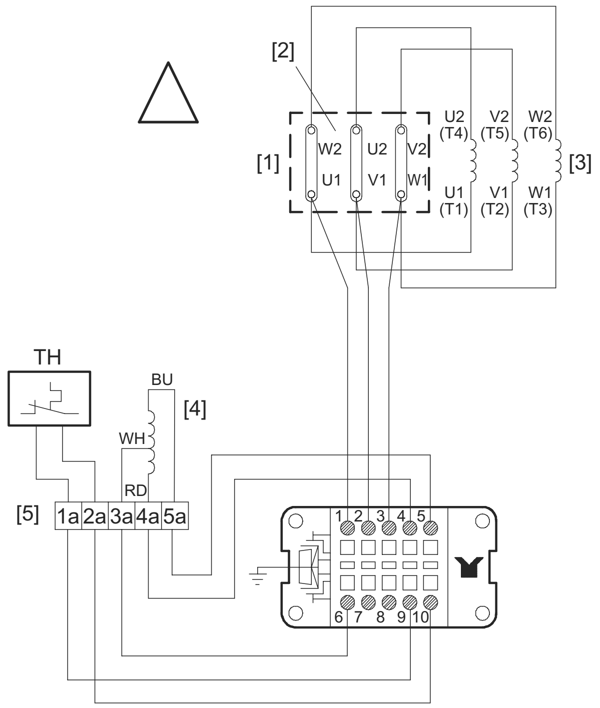


SEW-EURODRIVE connection

Plug connector ACC4

male

View of connection end



SEW-EURODRIVE connection

Plug connector ACC4

male

View of connection end

55216AXX

[1] Terminal board

[2] Terminal link

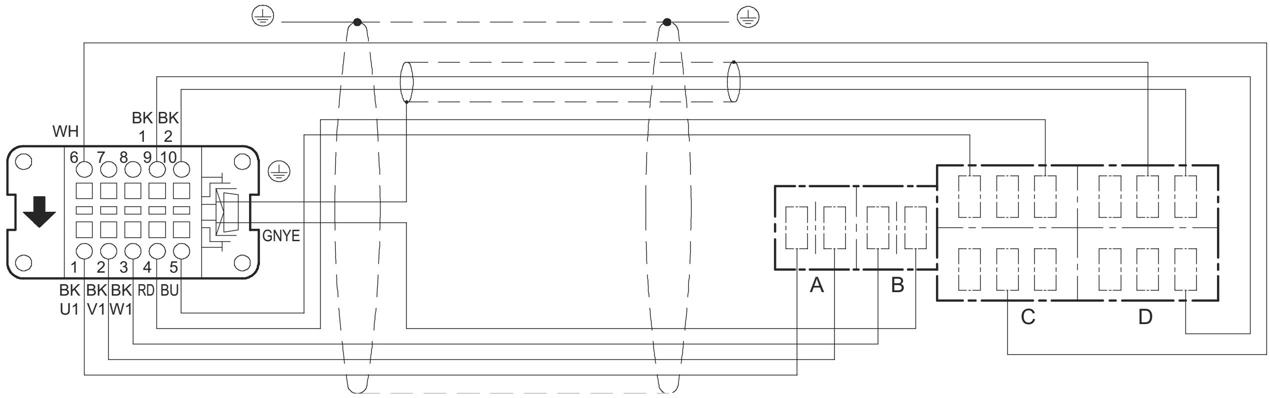
[3] Motor winding

[4] Brake coil

[5] Terminal strip

Continuation of 08 854 00 03

Hybrid cable connection



HAN10E plug connector

female

View of connection end

PLUSCON-VC VARIOCON T3 plug connector

female

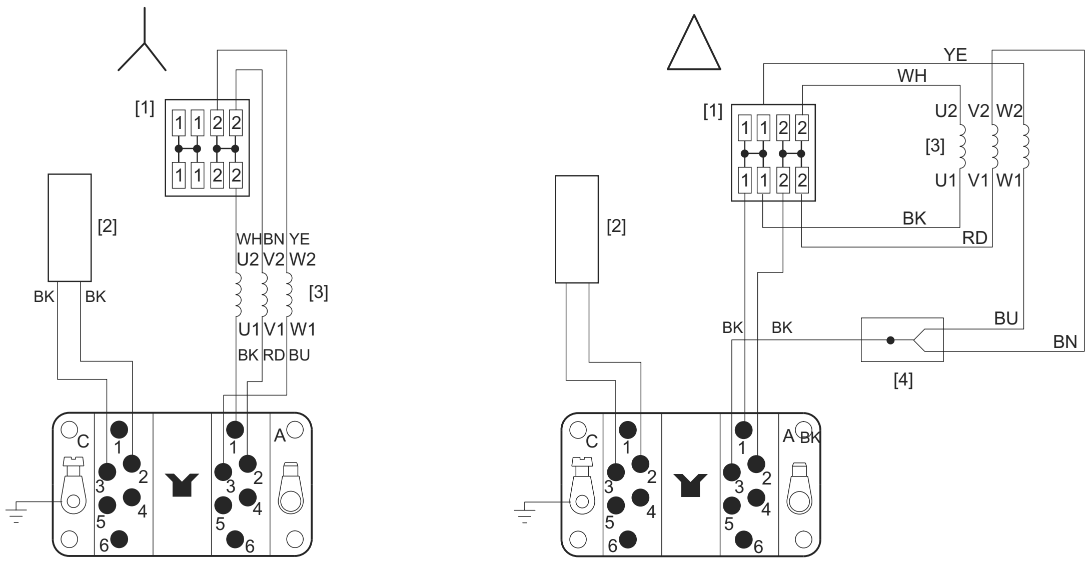
View of connection end

55217AXX

AME4 and BW1 drive plug connector (in conjunction with Compact MOVIMOT® MME)

08 873 00 03

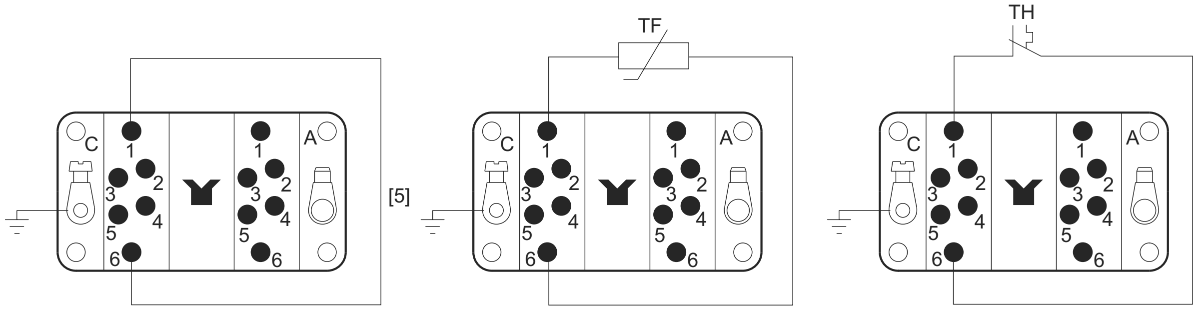
Motor with star connection ⅄ | **Motor with delta connection** △



52599AXX

SEW-EURODRIVE connection
AME4 plug connector
male
View of connection end

SEW-EURODRIVE connection
AME4 plug connector
male
View of connection end



52600AXX

Motor protection connection
(SEW-EURODRIVE)
AME4 plug connector
male
View on connection end

Motor protection connection
(SEW-EURODRIVE)
AME4 plug connector
male
View on connection end

Motor protection connection
(SEW-EURODRIVE)
AME4 plug connector
male
View on connection end

[1] Terminal board
[2] Terminal link
[3] Motor winding
[4] Brake coil
[5] Jumper for monitoring, always with jumper if no TF/TH

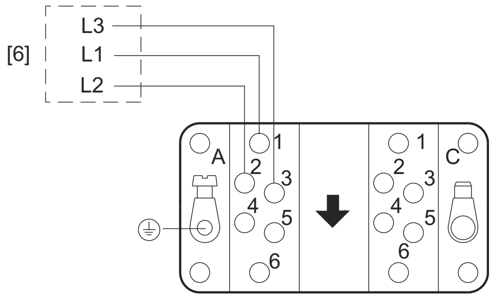
Continuation of 08 873 00 03

Connection at customer site

HAN modular 10B plug connector

female

View of connection end



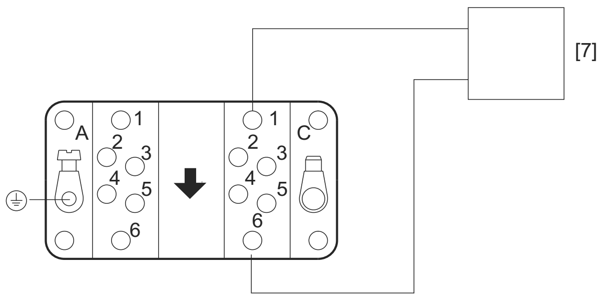
52597AXX

Motor protection connection (customer)

HAN modular 10B plug connector

female

View of connection end



52598AXX

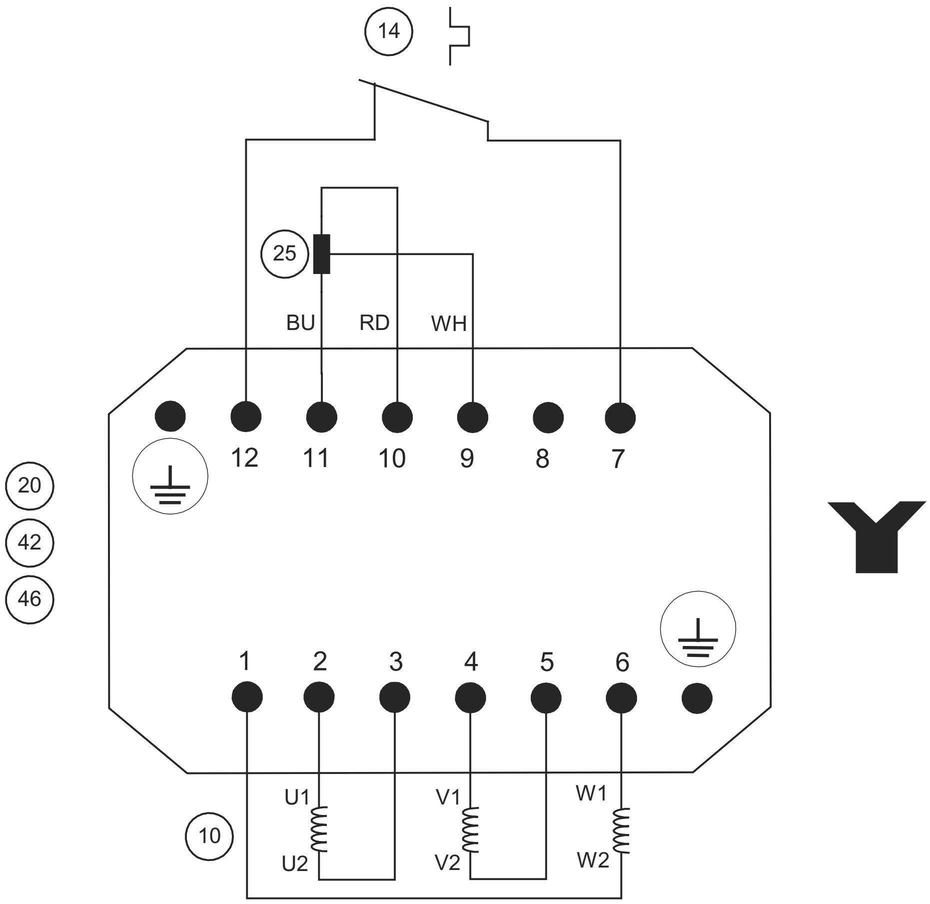
[6] Switch cabinet

[7] Evaluation

Drive with IS plug connector

80 422 00 04

Motor connection (connection at factory)

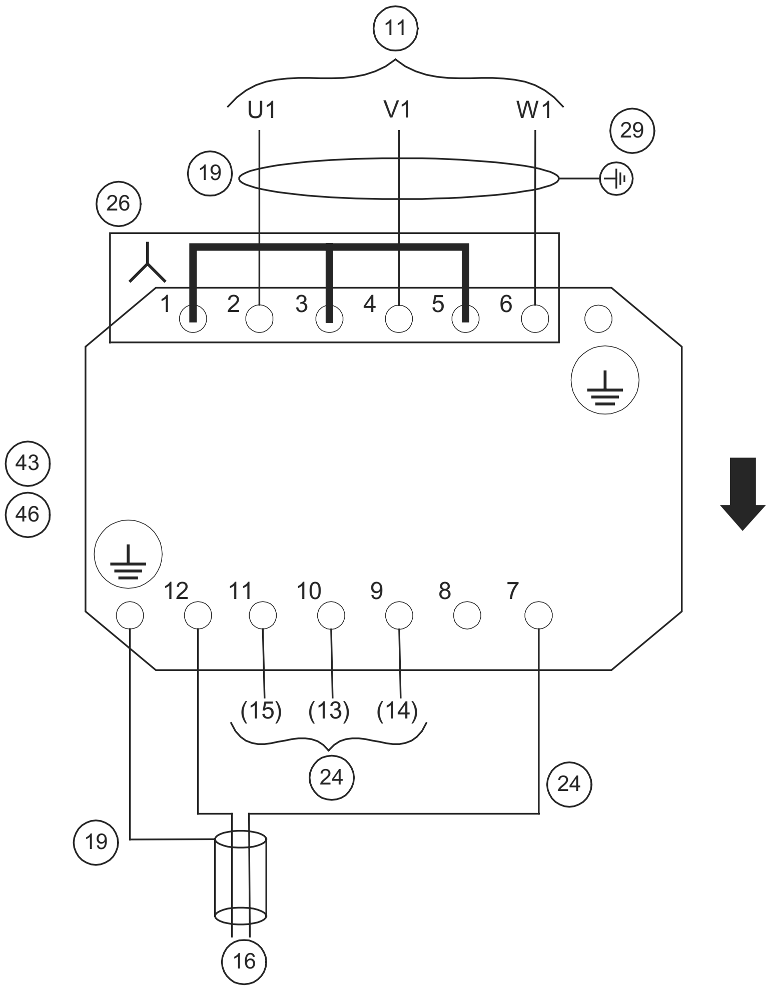


54699AXX

[10] Motor winding
[11] Motor connection MOVIMOT®
[14] TH, temperature switch, motor monitoring
[16] For motor protection, the TH has to be evaluated from external control or motor protection is accomplished by deactivating the direction of rotation or by disconnecting the 24 V supply voltage.
[19] Shield
[20] IS connector bottom part in terminal box
[24] Brake connection MOVIMOT® or brake control unit
[25] Brake coil
[26] Variable terminal link
[29] Contacting via EMC cable gland
[42] Pin contact
[43] Socket contact
[46] Connection end = contact end

Continuation of 80 422 00 04

Customer connection, star connection

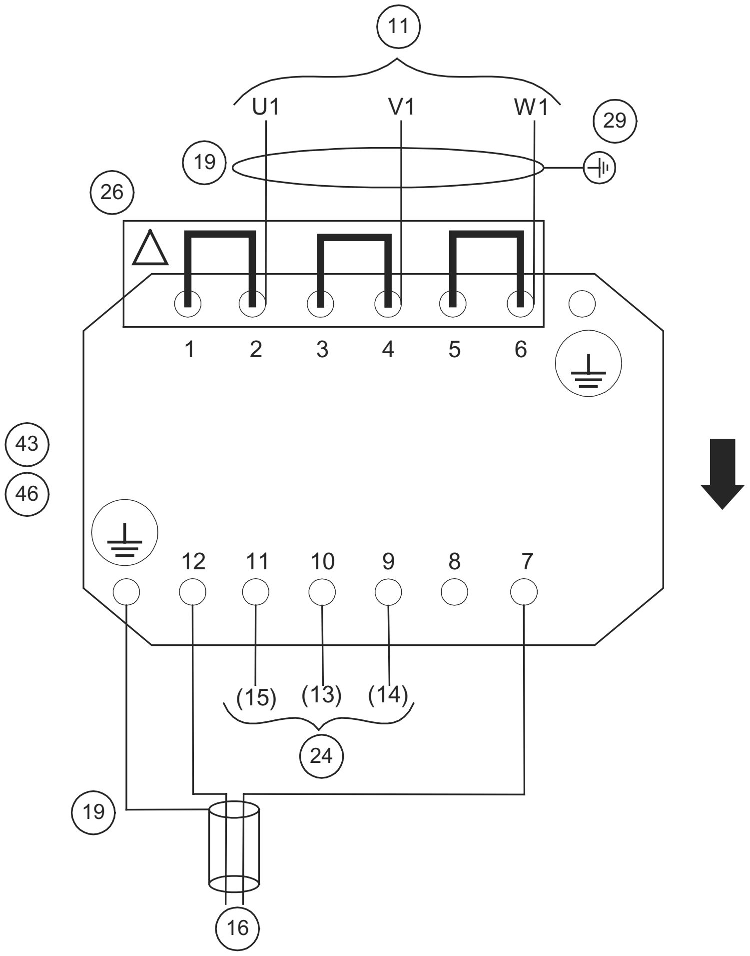


54700AXX

[10] Motor winding
[11] Motor connection MOVIMOT®
[14] TH, temperature switch, motor monitoring
[16] For motor protection, the TH has to be evaluated from external control or motor protection is accomplished by deactivating the direction of rotation or by disconnecting the 24 V supply voltage.
[19] Shield
[20] IS connector bottom part in terminal box
[24] Brake connection MOVIMOT® or brake control unit
[25] Brake coil
[26] Variable terminal link
[29] Contacting via EMC cable gland
[42] Pin contact
[43] Socket contact
[46] Connection end = contact end

Continuation of
80 422 00 04

Customer connection, delta connection



54702AXX

[10] Motor winding
[11] Motor connection MOVIMOT®
[14] TH, temperature switch, motor monitoring
[16] For motor protection, the TH has to be evaluated from external control or motor protection is accomplished by deactivating the direction of rotation or by disconnecting the 24 V supply voltage.
[19] Shield
[20] IS connector bottom part in terminal box
[24] Brake connection MOVIMOT® or brake control unit
[25] Brake coil
[26] Variable terminal link
[29] Contacting via EMC cable gland
[42] Pin contact
[43] Socket contact
[46] Connection end = contact end

6.4 MOVI-SWITCH® wiring diagrams

Overview

6

MOVI-SWITCH® 1E with ASAX plug connector (08 755 101)

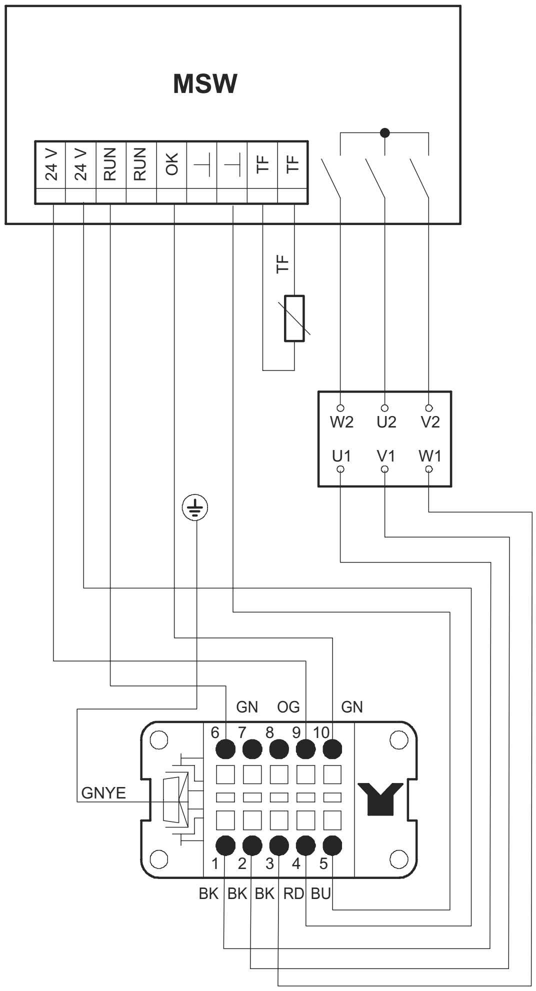
08 755 101

SEW-EURODRIVE connection

ASAX plug connector

male

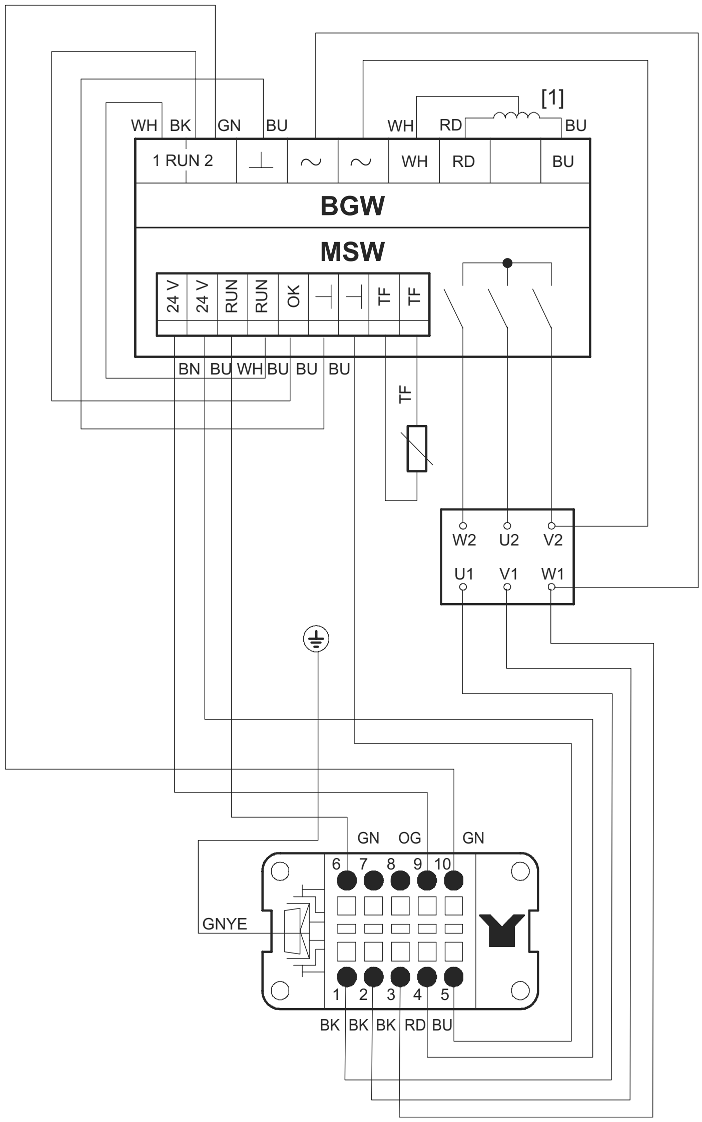
View on contact end



51801AXX

Continuation of 08 755 101

Brake connection voltage corresponds to phase voltage of motor,
e.g. motor △ 230 V / ⅄ 400 V, brake AC 230 V.



SEW-EURODRIVE connection

ASAX plug connector

male

View on contact end

51803AXX

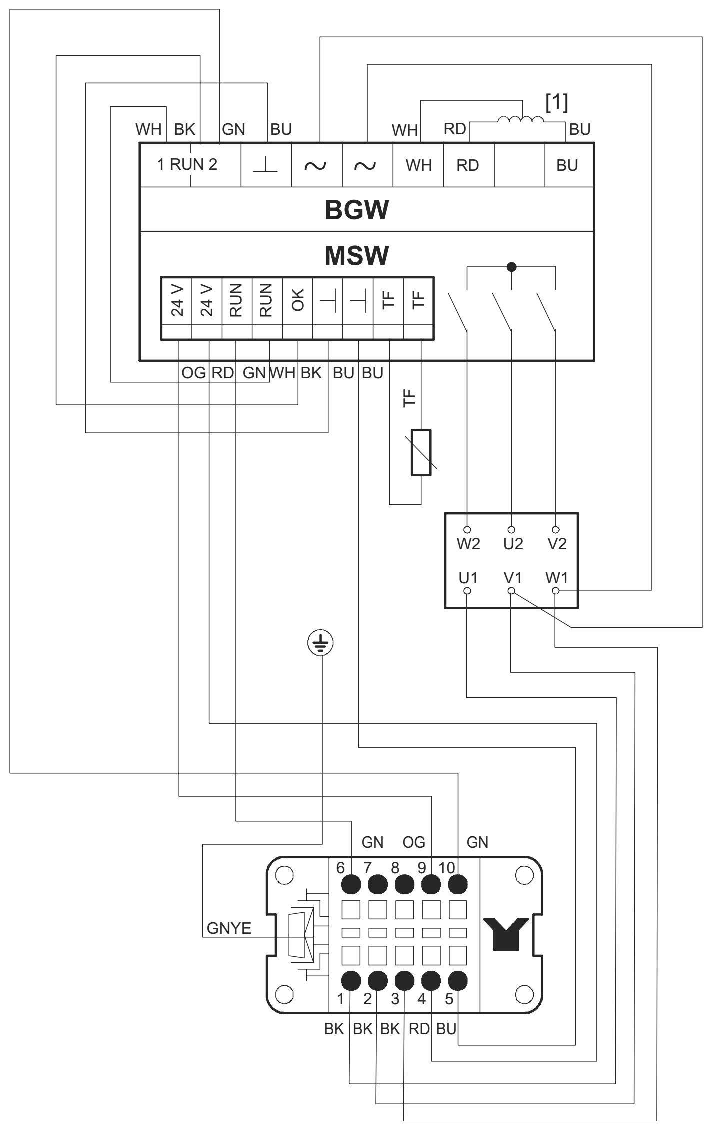
[1] Brake coil

6

Continuation of 08 755 101

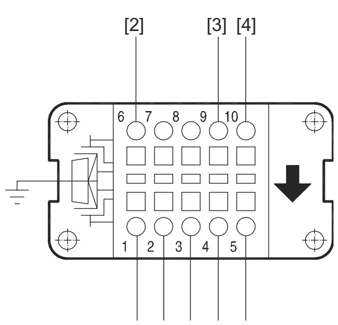
Brake connection voltage corresponds to phase-to-phase voltage of motor, e.g. motor △ 230 V / ⅄ 400 V, brake AC 400 V.

SEW-EURODRIVE connection
ASAX plug connector
male
View on contact end



51804AXX

Connection at customer site
HAN10E plug connector
female
View of connection end

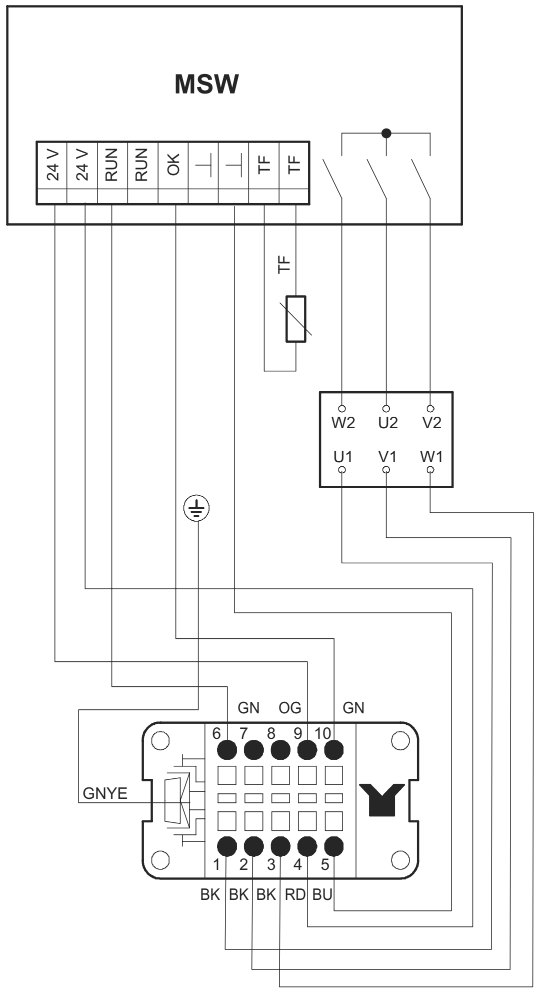


51802AXX

[1] Brake coil
[2] CW/stop (RUN) input
[3] Plug connector output connected
[4] Ready for operation output (OK)

MOVI-SWITCH® 1E with ASAW plug connector

08 755 02 01



SEW-EURODRIVE connection

ASAW plug connector

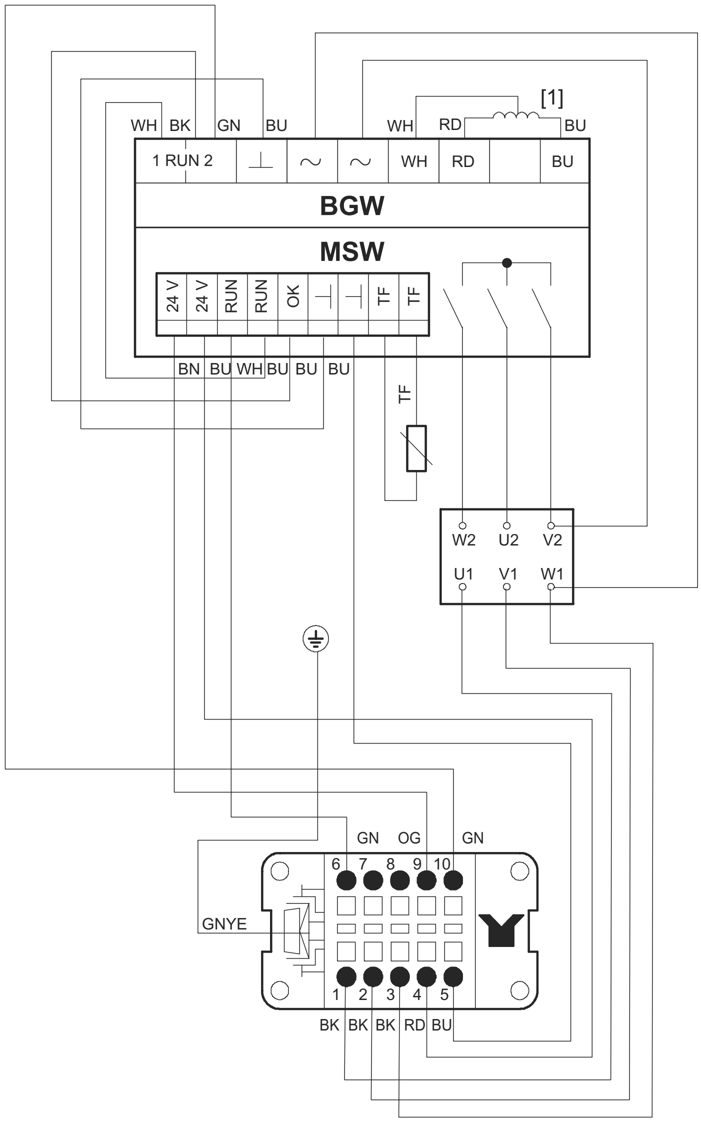
male

View on contact end

54594AXX

Continuation of 08 755 02 01

Brake connection voltage corresponds to phase voltage of motor,
e. g. motor △ 230 V / ⅄ 400 V, brake AC 230 V.



SEW-EURODRIVE connection

ASAW plug connector

male

View on contact end

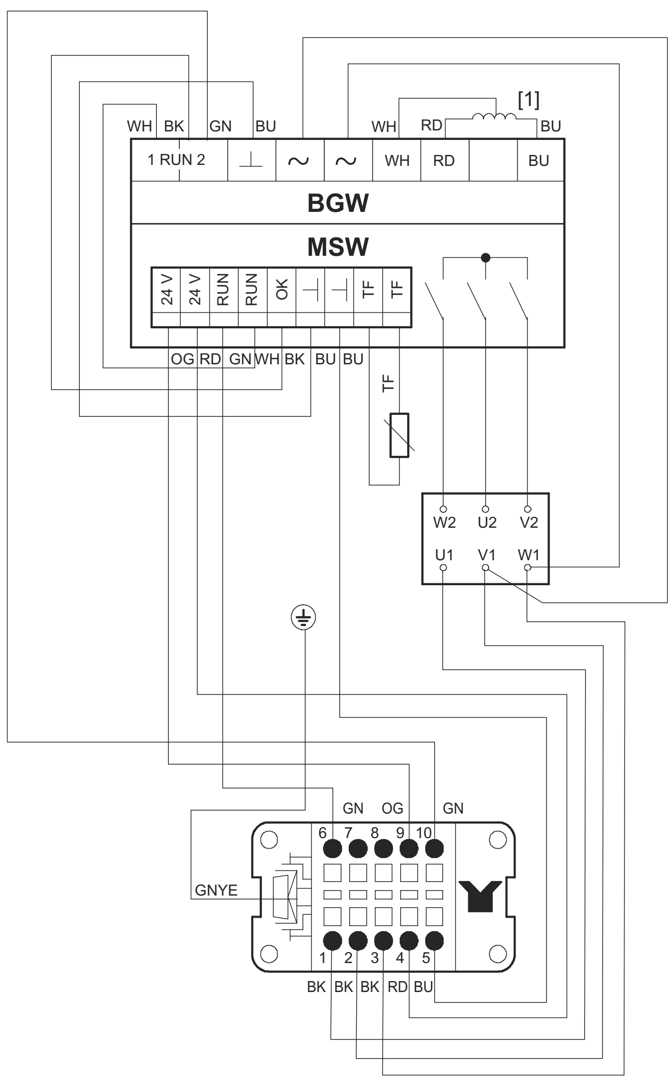
54595AXX

[1] Brake coil

Continuation of 08 755 02 01

Brake connection voltage corresponds to phase-to-phase voltage of motor,

e. g. motor △ 230 V / ⅄ 400 V, brake AC 400 V.



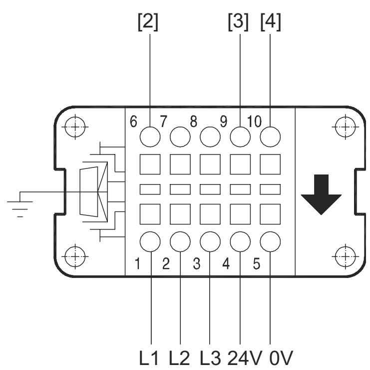
SEW-EURODRIVE connection

ASAW plug connector

male

View on contact end

54596AXX



Connection at customer site

HAN10E plug connector

female

View of connection end

[1] Brake coil

[2] CW/stop (RUN) input

[3] Plug connector output connected

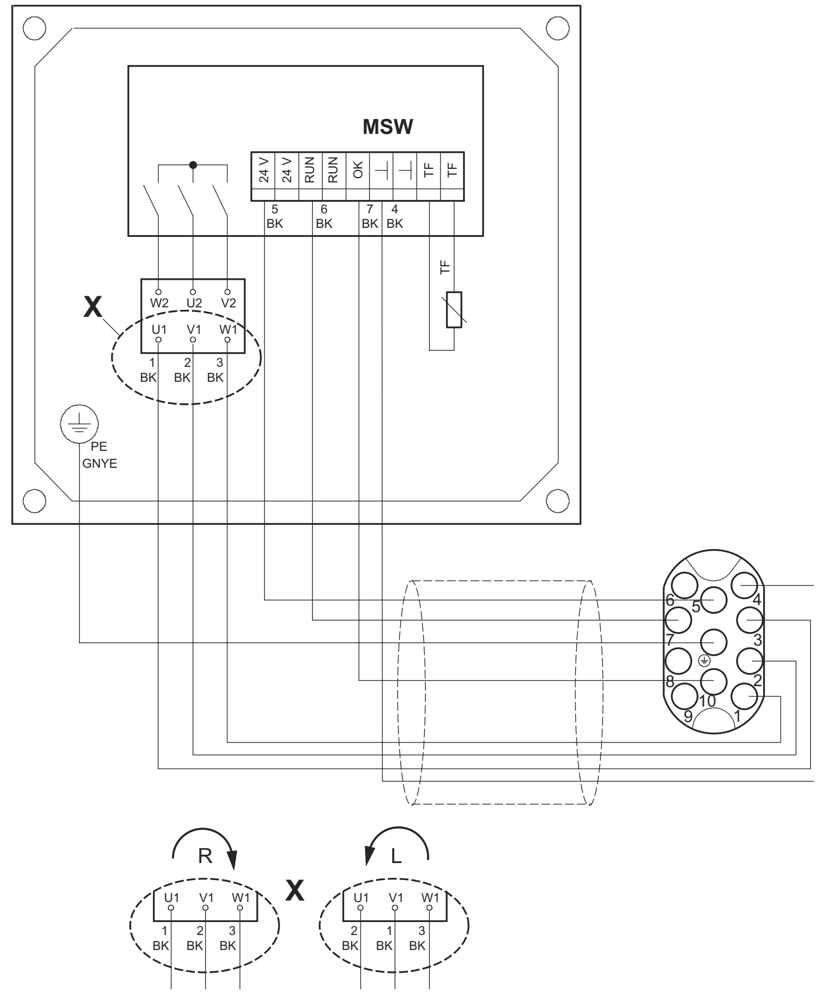
[4] Ready for operation output (OK)

54593AXX

MOVI-SWITCH® 1E with KEUX connection cable (08 759 101)

08 759 101

MOVI-SWITCH®



Connection cable with plug connector Podis MOT Wieland

51708AXX

Detail X: Cabling for CW and CCW operation

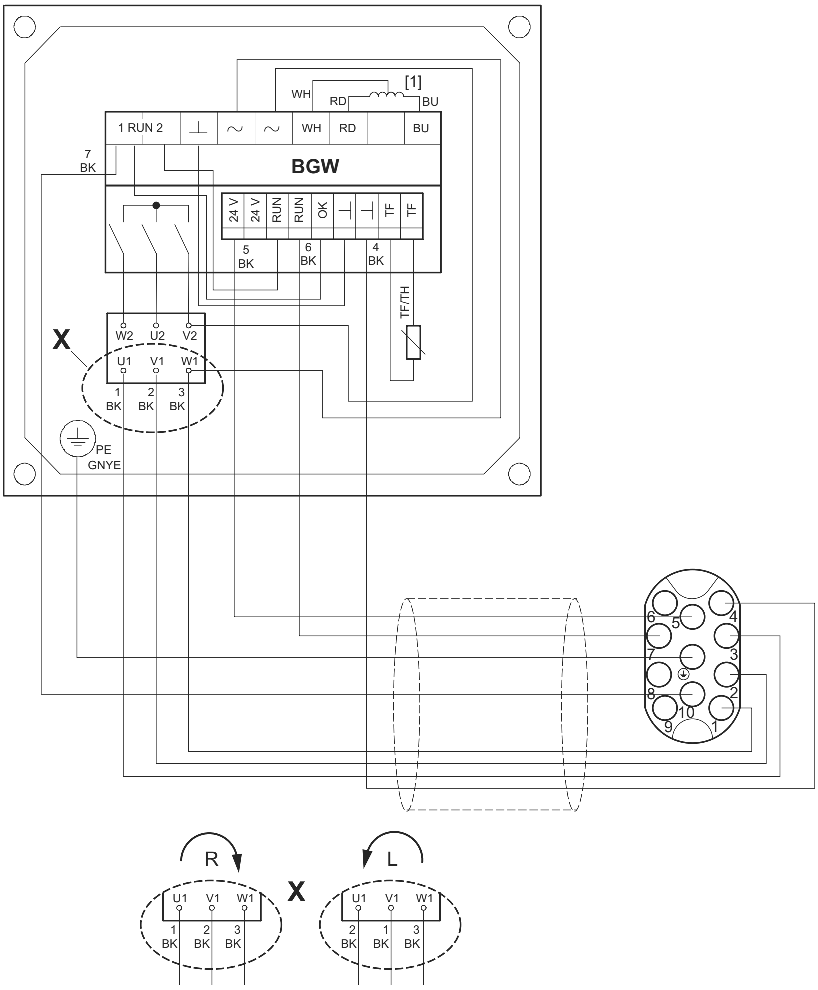
Continuation of
08 759 101

MOVI-SWITCH® with

Brake voltage =

Power system voltage √3

(phase–star point)



Connection cable with plug connector Podis MOT Wieland

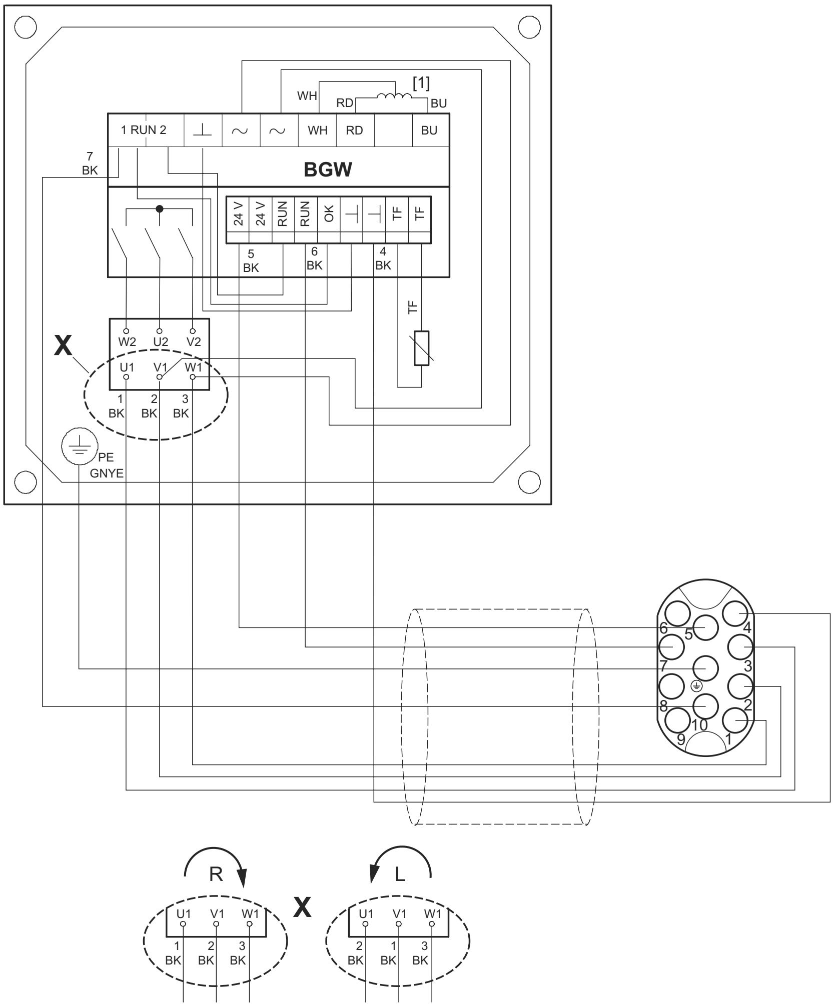
51709AXX

[1] Brake coil

Detail X: Cabling for CW and CCW operation

Continuation of 08 759 101

MOVI-SWITCH® brake voltage = Supply voltage (phase–phase)



Connection cable with plug connector Podis MOT Wieland

51710AXX

[1] Brake coil

Detail X: Cabling for CW and CCW operation

MOVI-SWITCH® 1E with ASA3/AVS1 plug connector

08 767 398

SEW-EURODRIVE connection

AVS1 plug connector

male

Standard coding

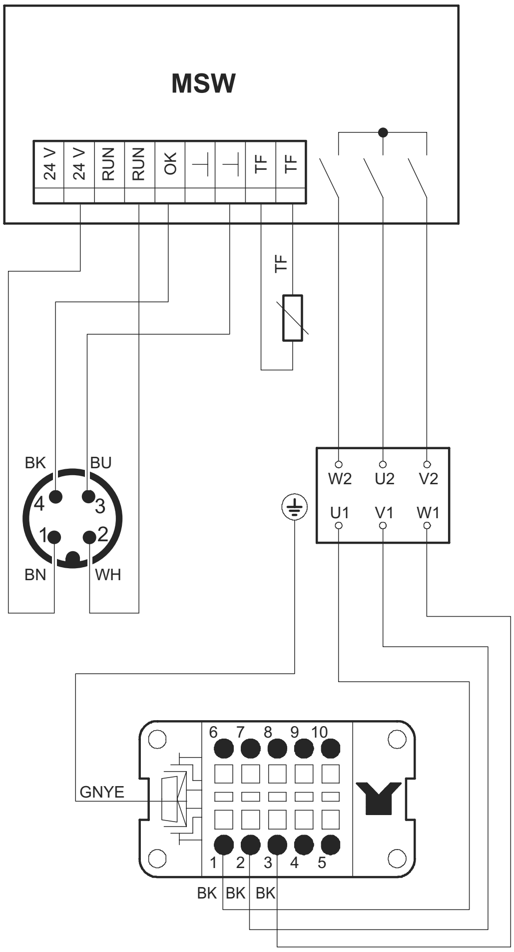
View on contact end

SEW-EURODRIVE connection

ASA3 plug connector

male

View on contact end



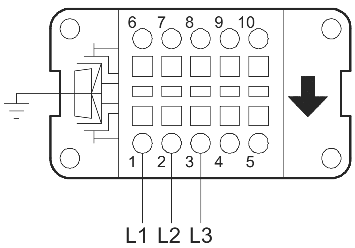
51780AXX

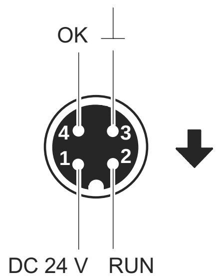
Connection at customer site

HAN10E plug connector

female

View of connection end





Connection at customer site

M12 plug connector

female

Standard coding

View of connection end

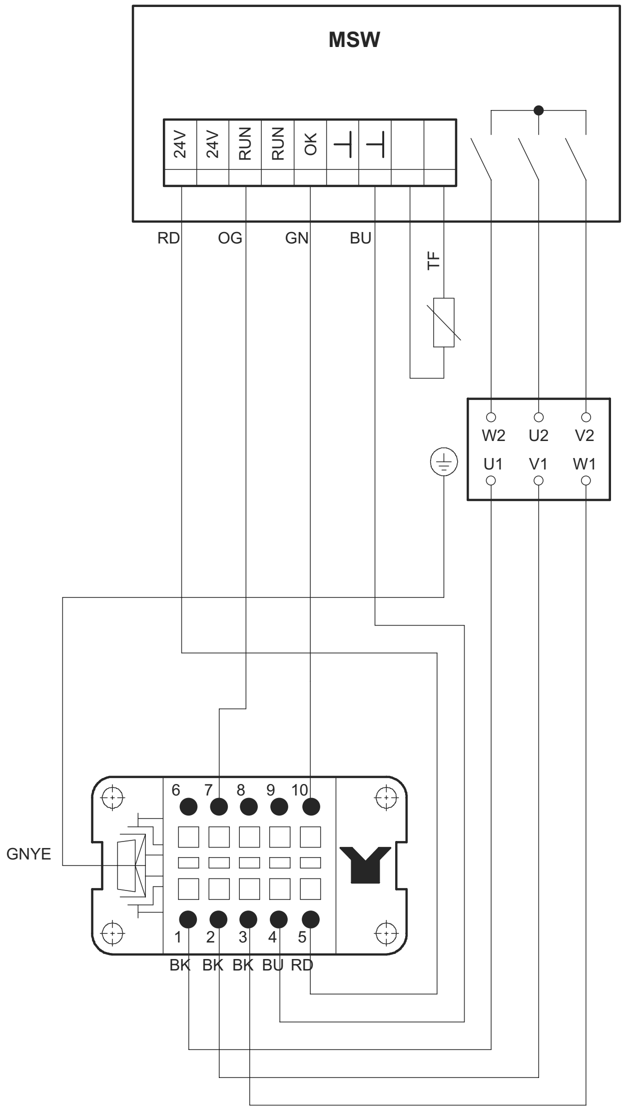
RUN Ready

RUN Motor start signal

51782AXX

MOVI-SWITCH® 1E with ASAX plug connector (08 778 002)

08 778 002



SEW-EURODRIVE connection

ASAX plug connector

male

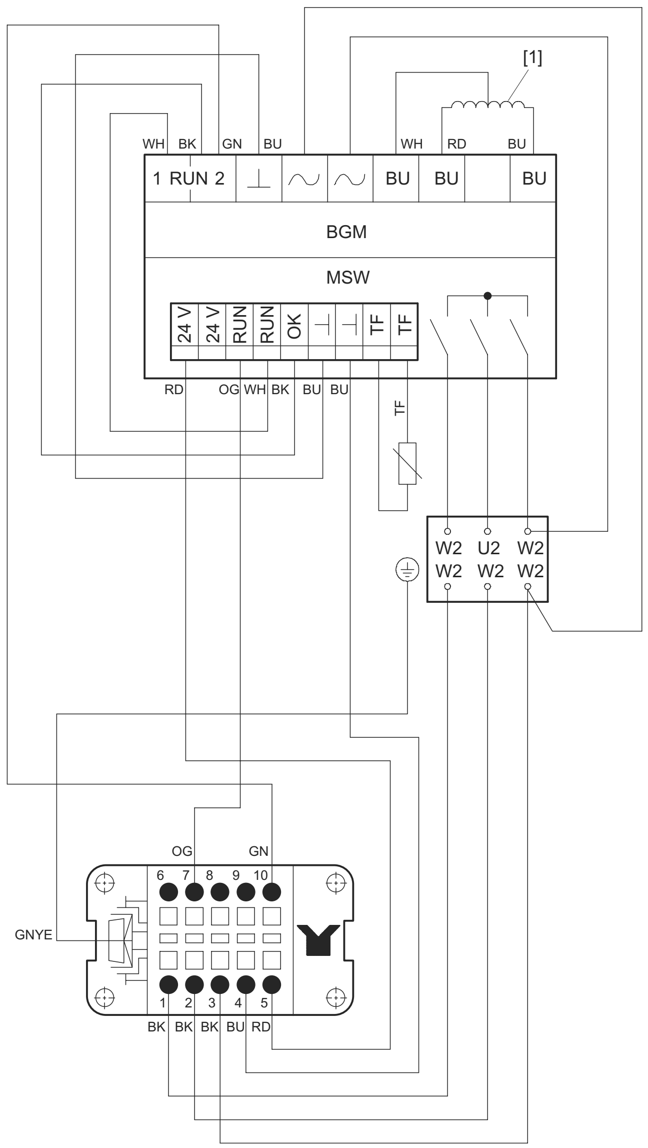
View on contact end

54459AXX

Brake connection voltage corresponds to phase voltage of motor,
e.g. motor △ 230 V / ⅄ 400 V, brake AC 230 V.

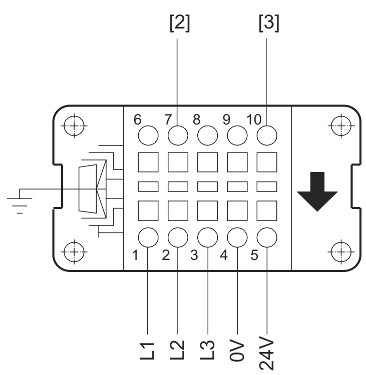
Continuation of 08 778 002

SEW-EURODRIVE connection
ASAX plug connector
male
View on contact end



54461AXX

Connection at customer site
HAN10E plug connector
female
View of connection end

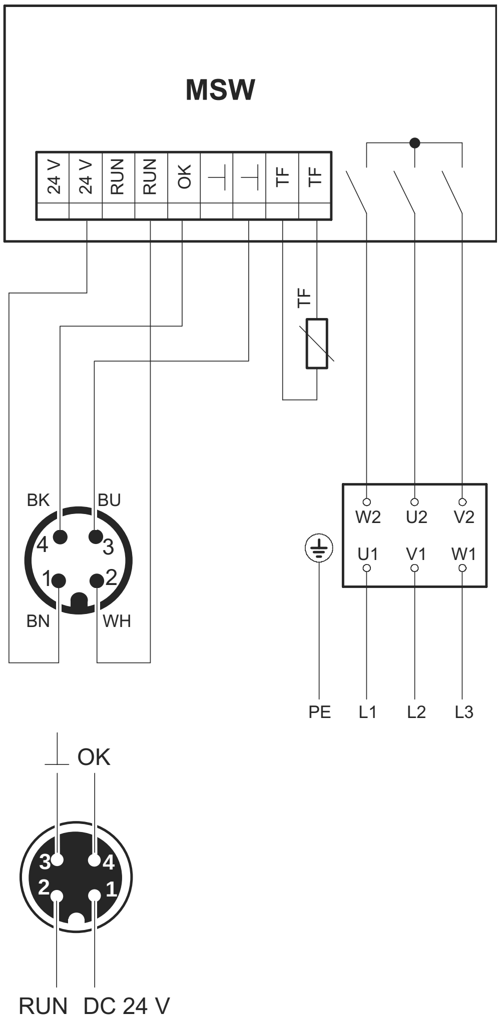


54458AXX

[1] Brake coil
[2] CW/stop (RUN) input
[3] Ready for operation output (OK)

MOVI-SWITCH® 1E with AVS1 plug connector

08 802 298



SEW-EURODRIVE connection

AVS1 plug connector

male

Standard coding

View on contact end

Connection at customer site

M12 plug connector

female

Standard coding

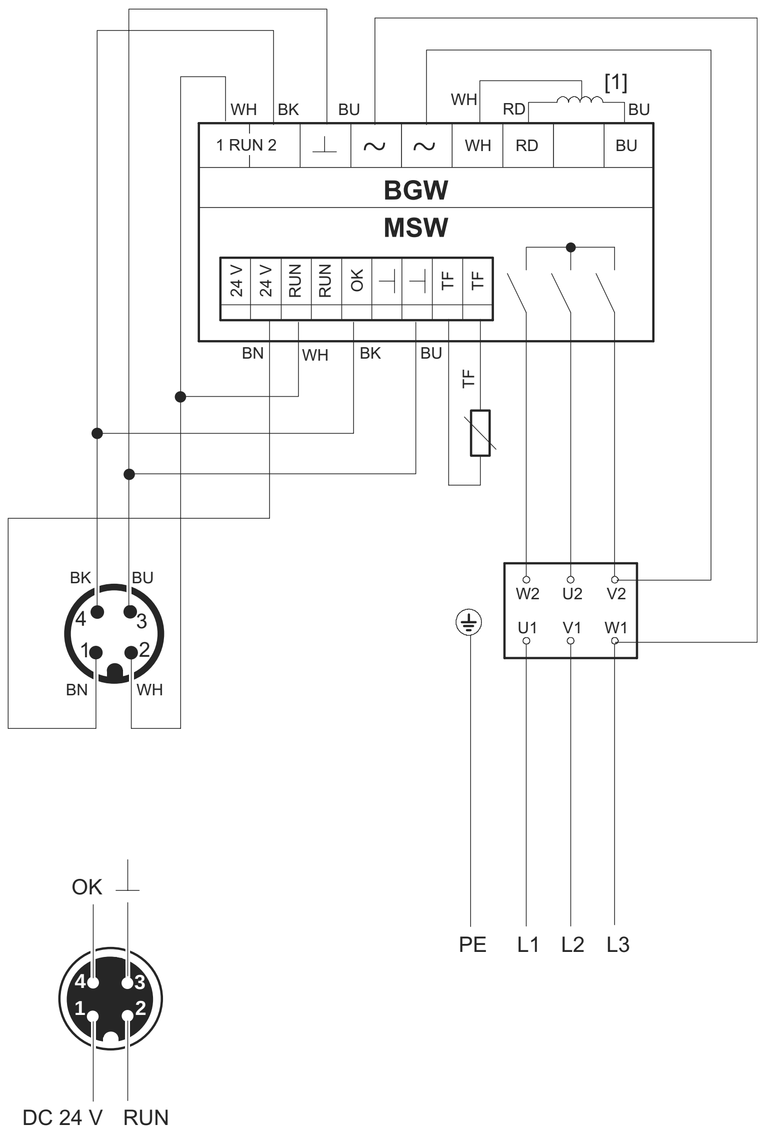
View on contact end

51702AXX

MOVI-SWITCH® 1E brake motor with AVS1 plug connector

09 805 198

Brake connection voltage corresponds to phase voltage of motor,
e. g. motor △ 230 V / ⅄ 400 V, brake AC 230 V



SEW-EURODRIVE connection

AVS1 plug connector

male

Standard coding

View on contact end

Connection at customer site

M12 plug connector

female

Standard coding

View of connection end

OK: Ready

RUN: Motor start signal

51799AXX

[1] Brake coil

Continuation of
09 805 198

Brake connection voltage corresponds to phase-to-phase voltage of motor,
e. g. motor △ 230 V / ⅄ 400 V, brake AC 400 V

SEW-EURODRIVE connection

AVS1 plug connector

male

Standard coding

View on contact end

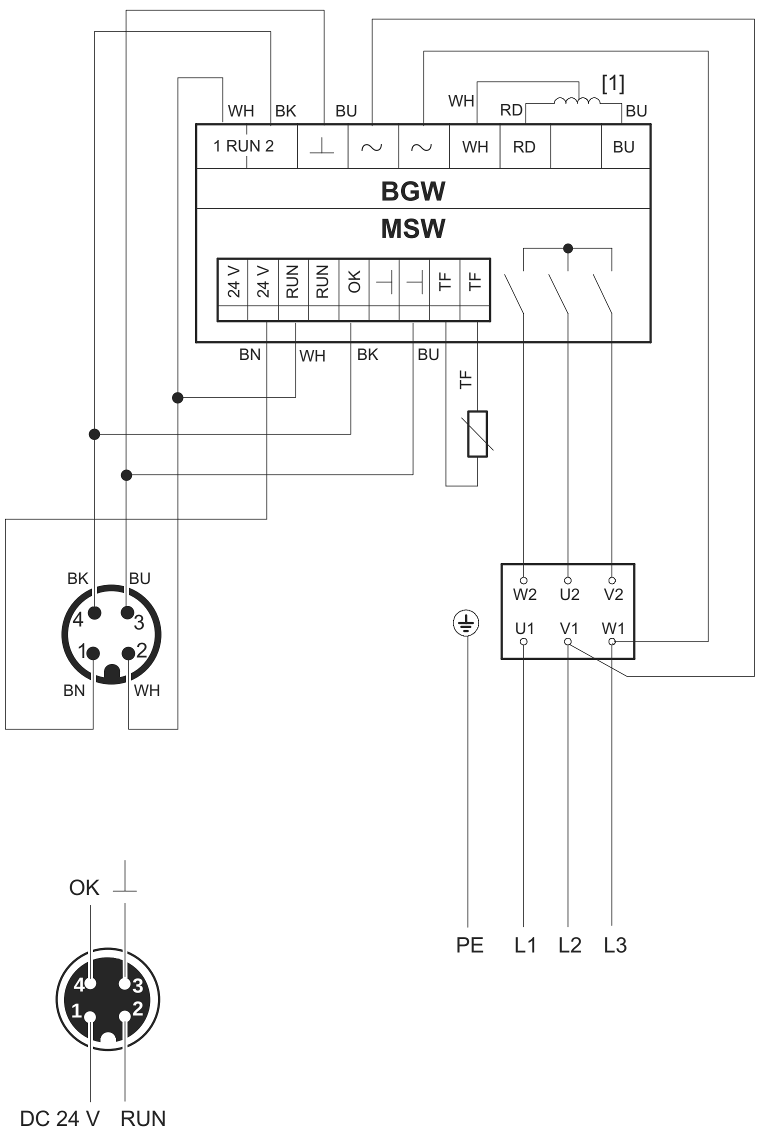
Connection at customer site

M12 plug connector

female

Standard coding

View of connection end



OK: Ready

RUN: Motor start signal

51800AXX

[1] Brake coil

MOVI-SWITCH® 1E with ASA3/AVS1 plug connector

09 811 299

Brake connection voltage corresponds to phase voltage of motor,
e.g. motor △ 230 V / ⅄ 400 V, brake AC 230 V

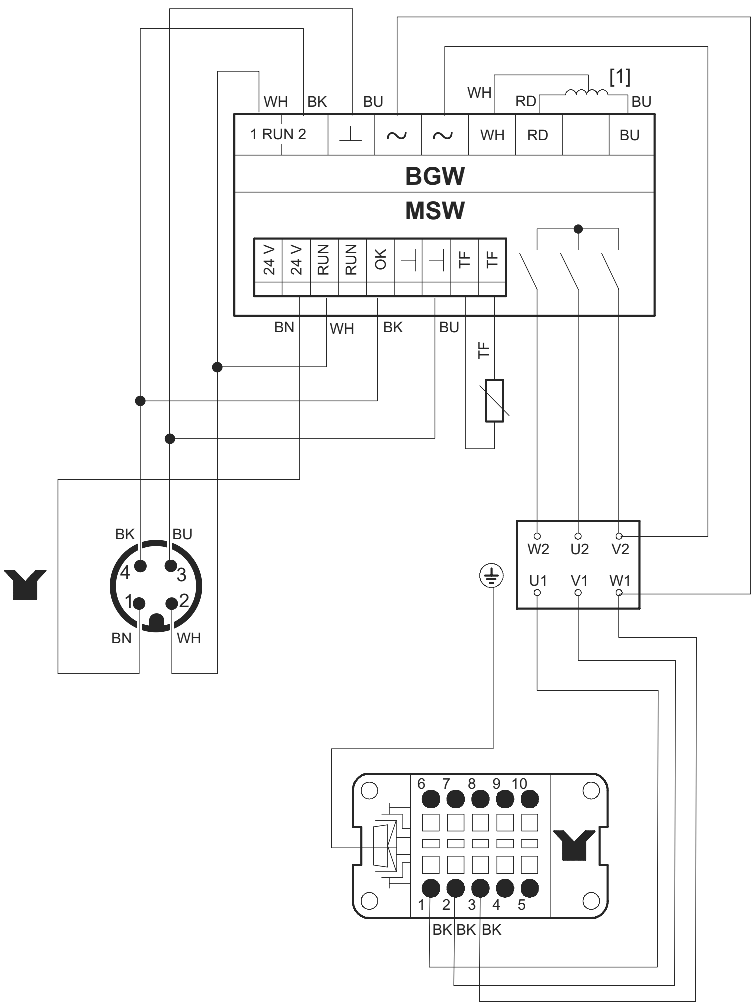
SEW-EURODRIVE connection

AVS1 plug connector

male

Standard coding

View on contact end



SEW-EURODRIVE connection

ASA3 plug connector

male

View on contact end

51904AXX

[1] Brake coil

Continuation of 09 811 299

Brake connection voltage corresponds to phase-to-phase voltage of motor,
e. g. motor △ 230 V / ⅄ 400 V, brake AC 400 V

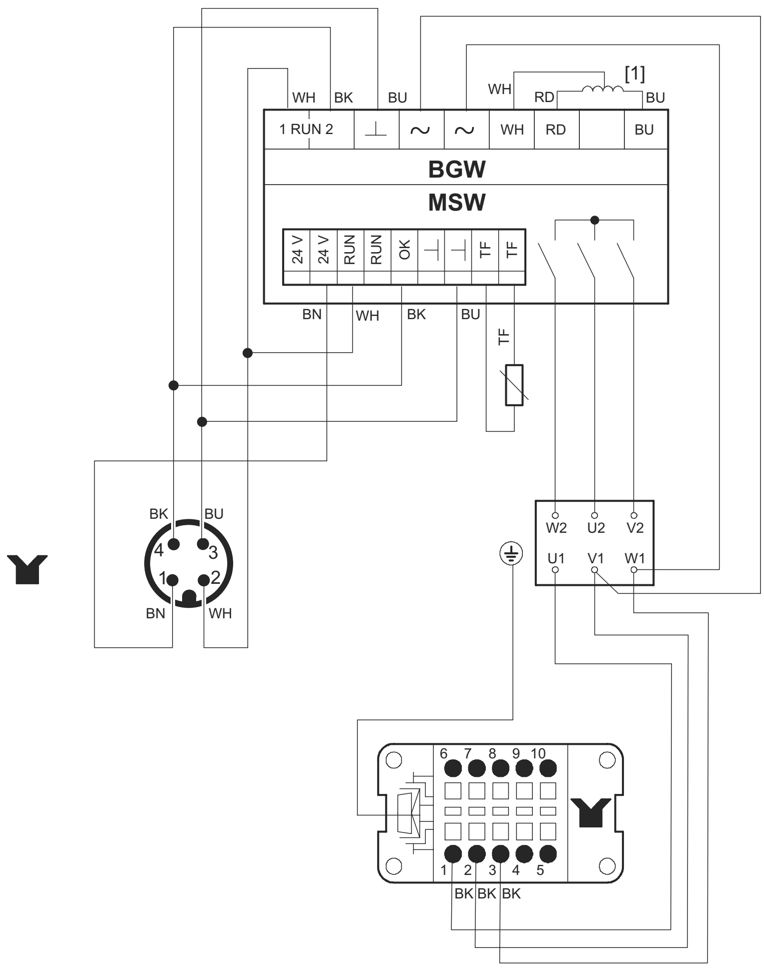
SEW-EURODRIVE connection

AVS1 plug connector

male

Standard coding

View on contact end



SEW-EURODRIVE connection

ASA3 plug connector

male

View on contact end

51905AXX

[1] Brake coil

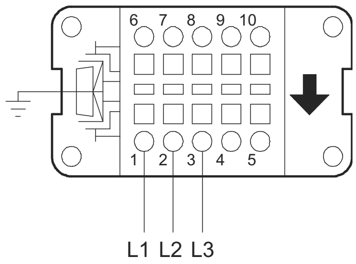
Continuation of 09 811 299

Connection at customer site

HAN10E plug connector

female

View of connection end



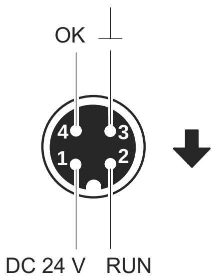
Connection at customer site

M12 plug connector

female

Standard coding

View of connection end



OK: Ready

RUN: Motor start signal

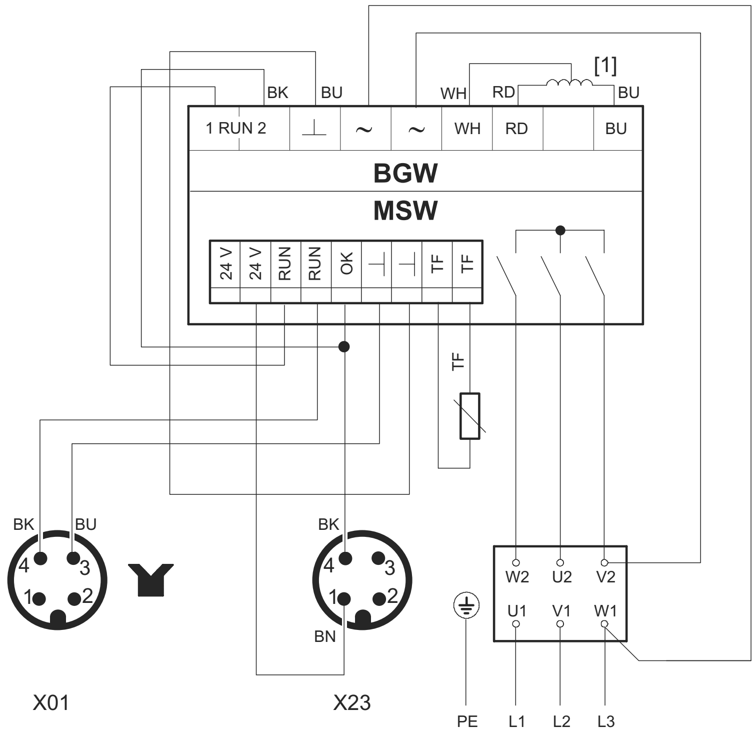
51906AXX

MOVI-SWITCH® 1E with AVSX plug connector (09 812 399)

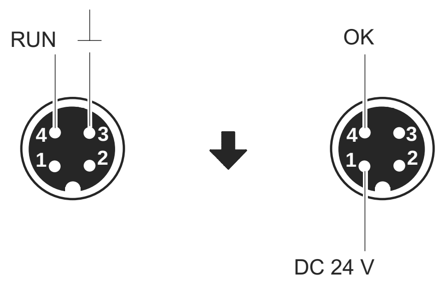
09 812 399

Brake connection voltage corresponds to phase voltage of motor,
e. g. motor △ 230 V / ⅄ 400 V, brake AC 230 V.

SEW-EURODRIVE connection
AVSX plug connector
male
Standard coding
View on contact end



Connection at customer site
M12 plug connector
female
Standard coding
View of connection end



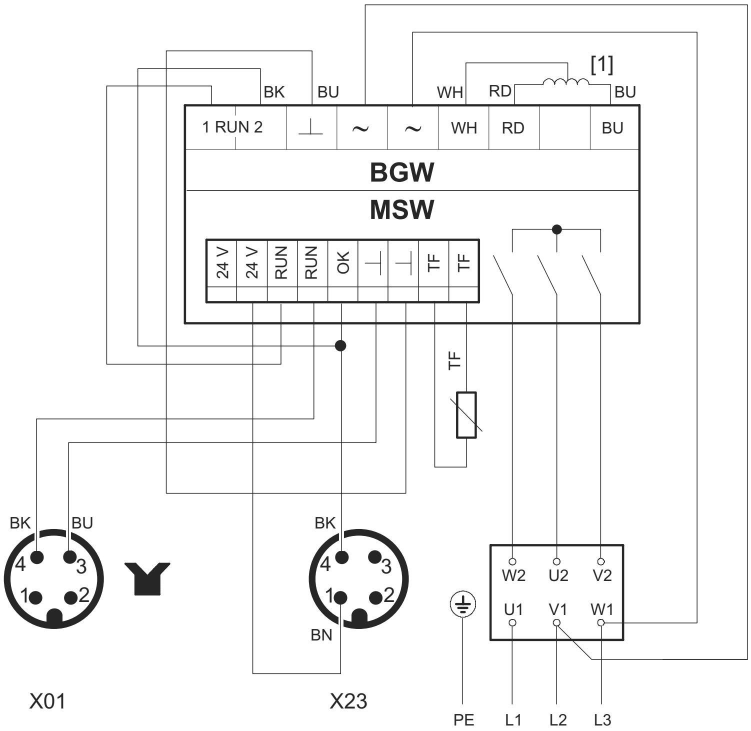
54550AXX

[1] Brake coil

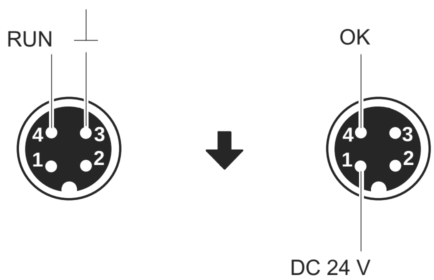
Continuation of 09 812 399

Brake connection voltage corresponds to phase-to-phase voltage of motor,
e. g. motor △ 230 V / ⅄ 400 V, brake AC 400 V.

SEW-EURODRIVE connection
AVSX plug connector
male
Standard coding
View on contact end



Connection at customer site
M12 plug connector
female
Standard coding
View of connection end



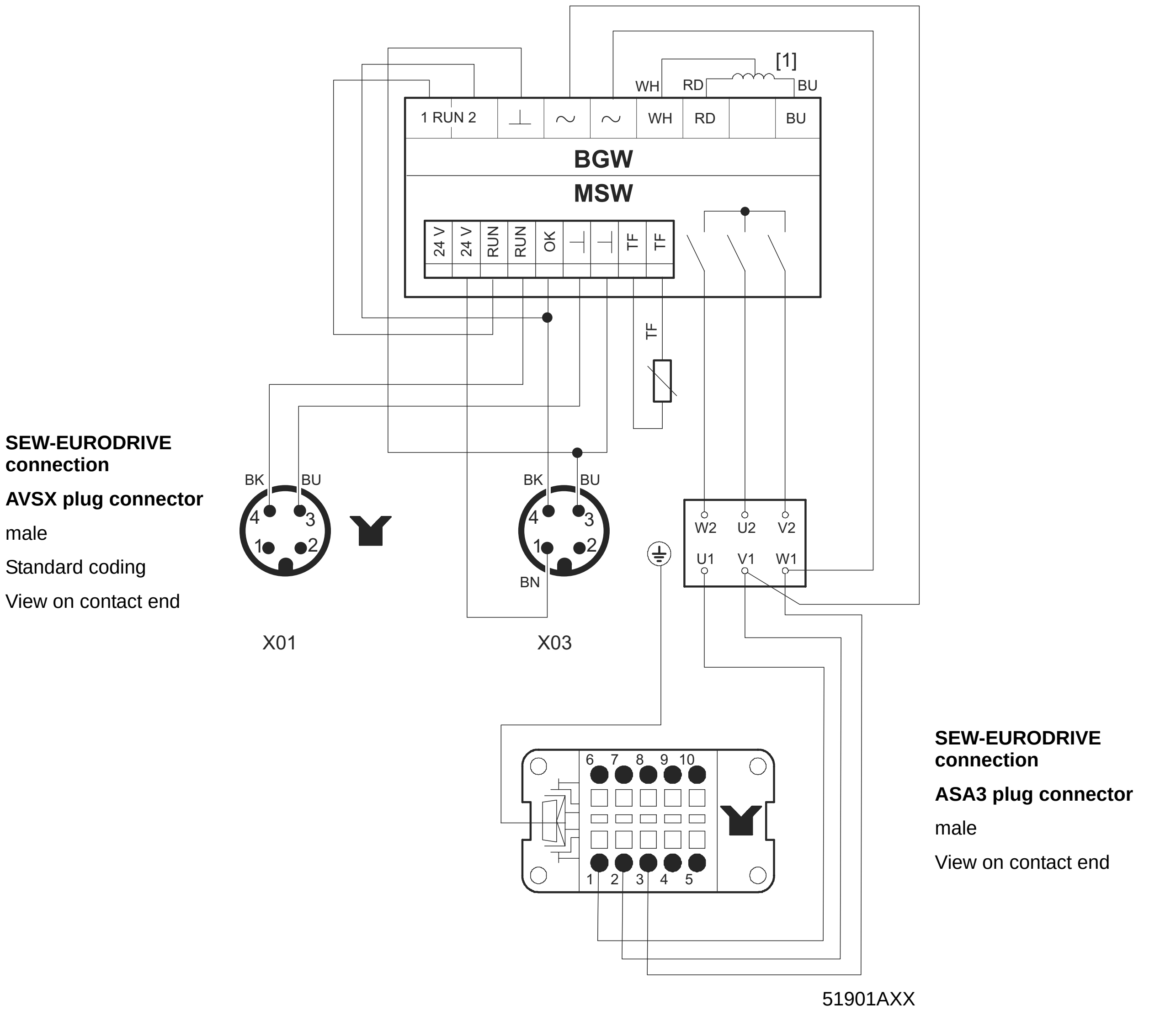
54551AXX

[1] Brake coil

MOVI-SWITCH® 1E with ASA3/AVSX plug connector (09 813 03 99)

09 813 03 99

Brake connection voltage corresponds to phase-to-phase voltage of motor, e.g. motor △ 230 V / ⅄ 400 V, brake AC 400 V



[1] Brake coil

Continuation of 09 813 03 99

Brake connection voltage corresponds to phase voltage of motor,
e. g. motor △ 230 V / ⅄ 400 V, brake AC 230 V

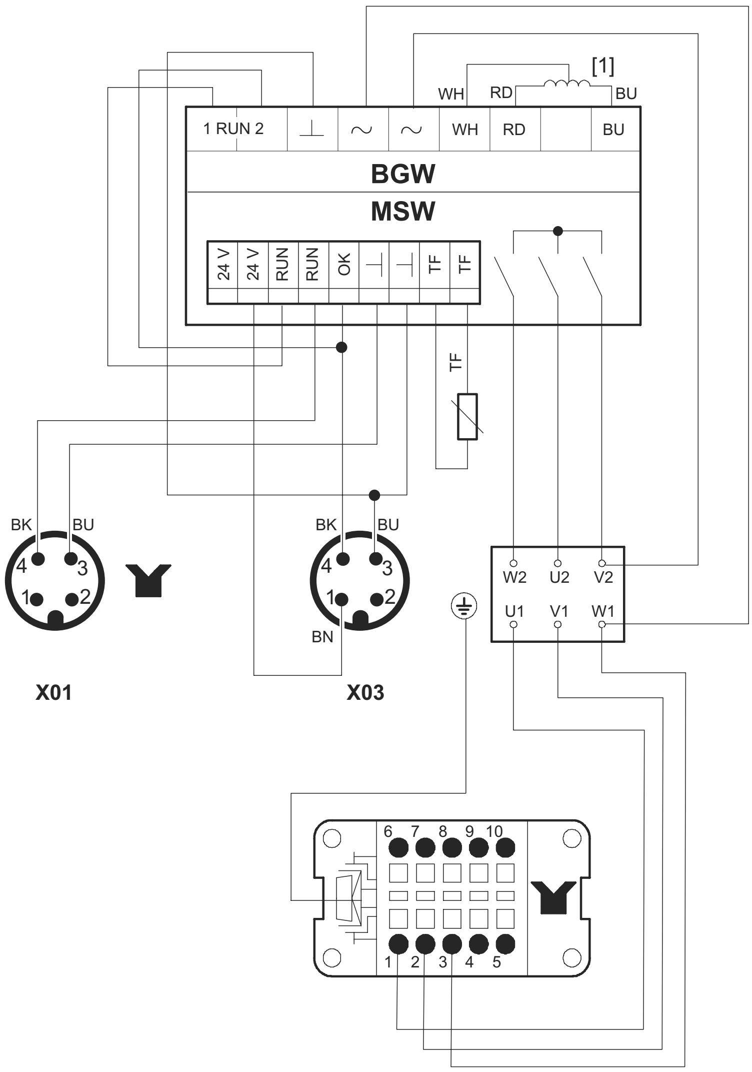
SEW-EURODRIVE connection

AVSX plug connector

male

Standard coding

View on contact end



SEW-EURODRIVE connection

ASA3 plug connector

male

View on contact end

51902AXX

[1] Brake coil

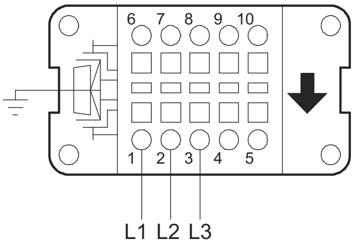
Continuation of 09 813 03 99

Connection at customer site

HAN10E plug connector

female

View of connection end



Connection at customer site

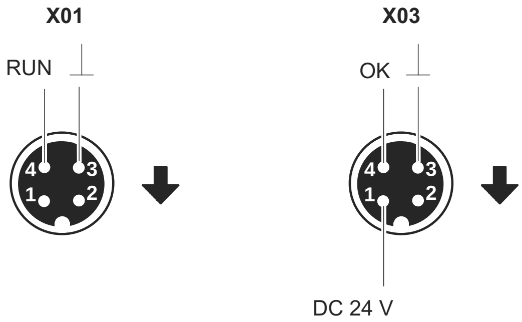
M12 plug connector

female

View of connection end

OK: Ready

RUN: Motor start signal



51900AXX

MOVI-SWITCH® 1E with 2 x AVSX plug connectors (Interbus LOOP DI/DO connection)

08 821 399

X01 connection **X03 connection**

Connection at customer site

M12 plug connector

female

Standard coding

View on contact end

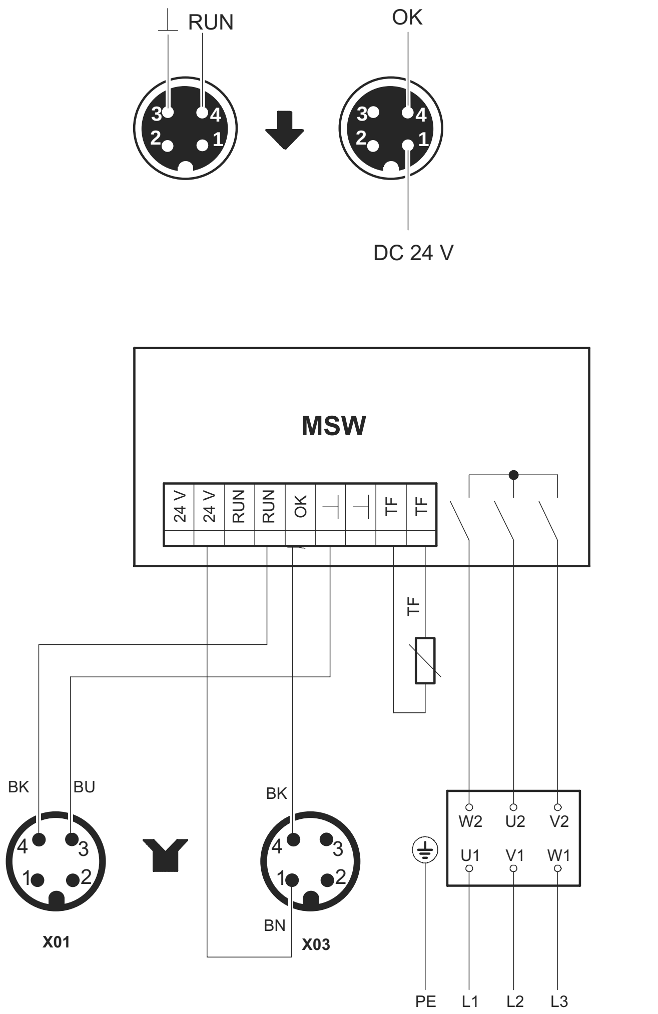
SEW-EURODRIVE connection

M12 plug connector

male

Standard coding

View on contact end

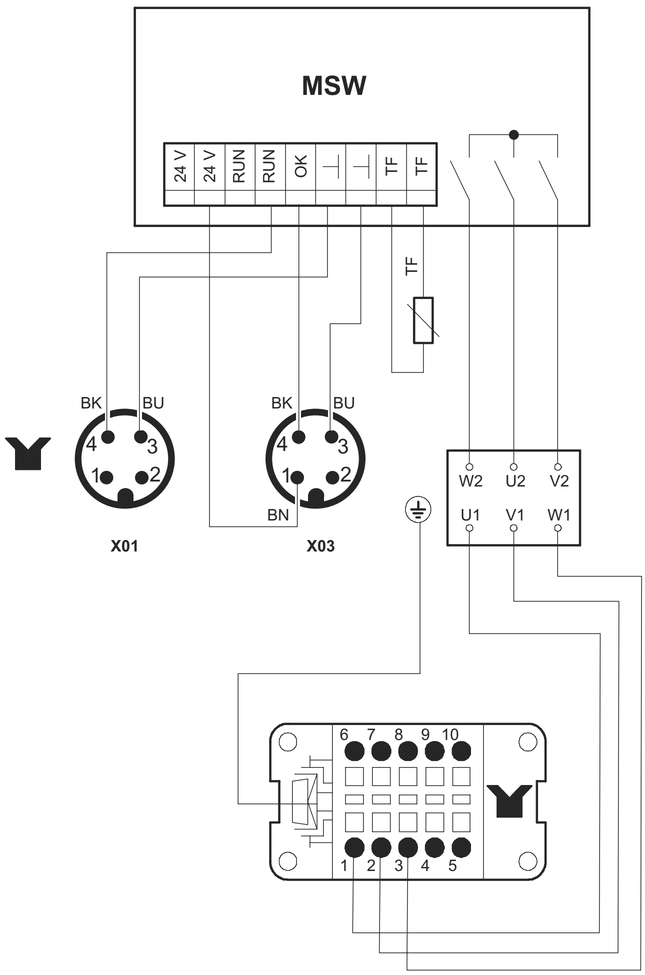


51699AXX

Note: Wiring diagram with brake see also 09 122 .99

MOVI-SWITCH® 1E with ASA3/AVSX plug connector (08 829 199)

08 829 299



SEW-EURODRIVE connection

AVSX plug connector

male

Standard coding

View on contact end

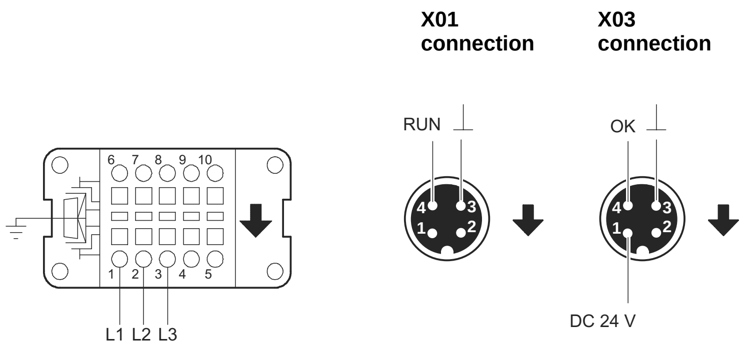
SEW-EURODRIVE connection

ASA3 plug connector

male

View on contact end

51899AXX



Connection at customer site

HAN10E plug connector

female

View of connection end

Connection at customer site

M12 plug connector

female

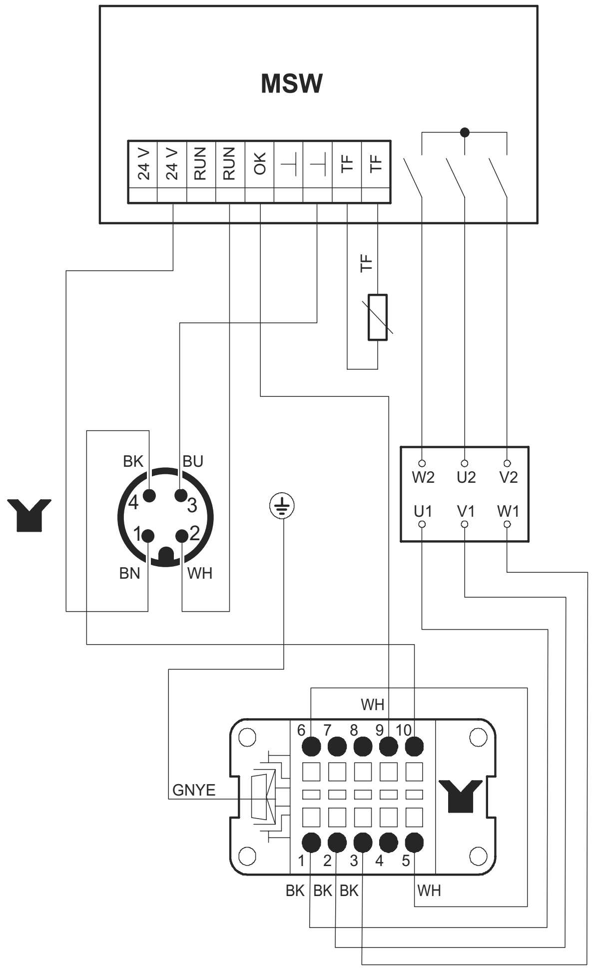
Standard coding

View of connection end

51898AXX

MOVI-SWITCH® 1E with ASAX/AVS1 plug connector (08 881 100)

08 881 100



SEW-EURODRIVE connection

AVS1 plug connector

male

Standard coding

View on contact end

SEW-EURODRIVE connection

ASA3 plug connector

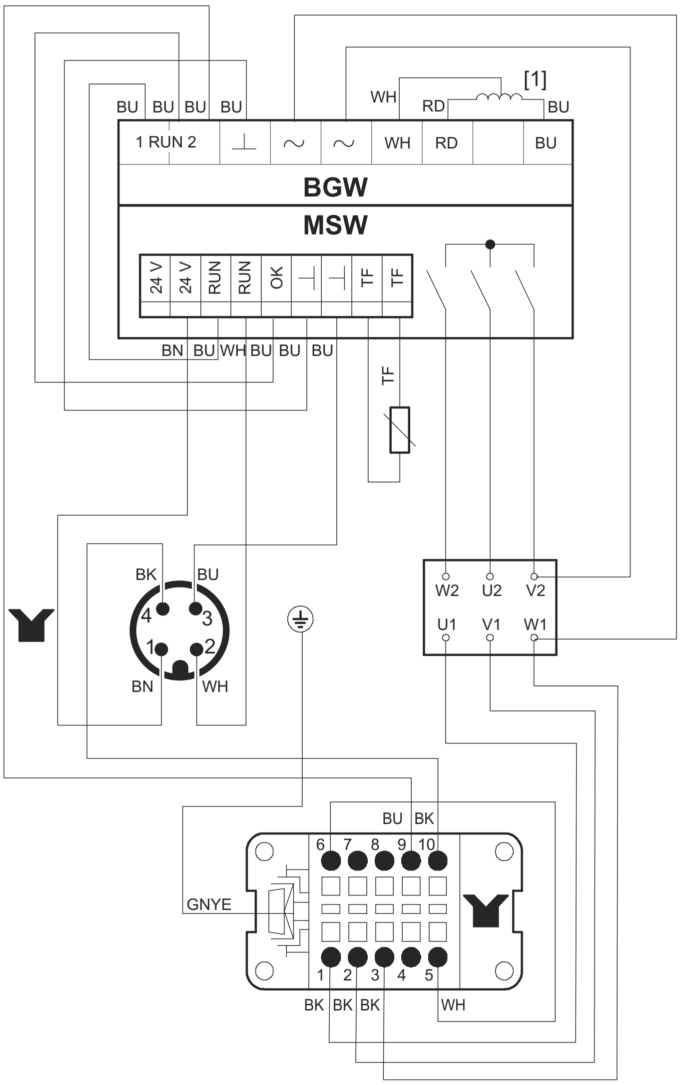
male

View on contact end

51785AXX

Brake connection voltage corresponds to phase voltage of motor,
e. g. motor △ 230 V / ⅄ 400 V, brake AC 230 V.

Continuation of 08 881 100



SEW-EURODRIVE connection

AVS1 plug connector

male

Standard coding

View on contact end

SEW-EURODRIVE connection

ASAX plug connector

male

View on contact end

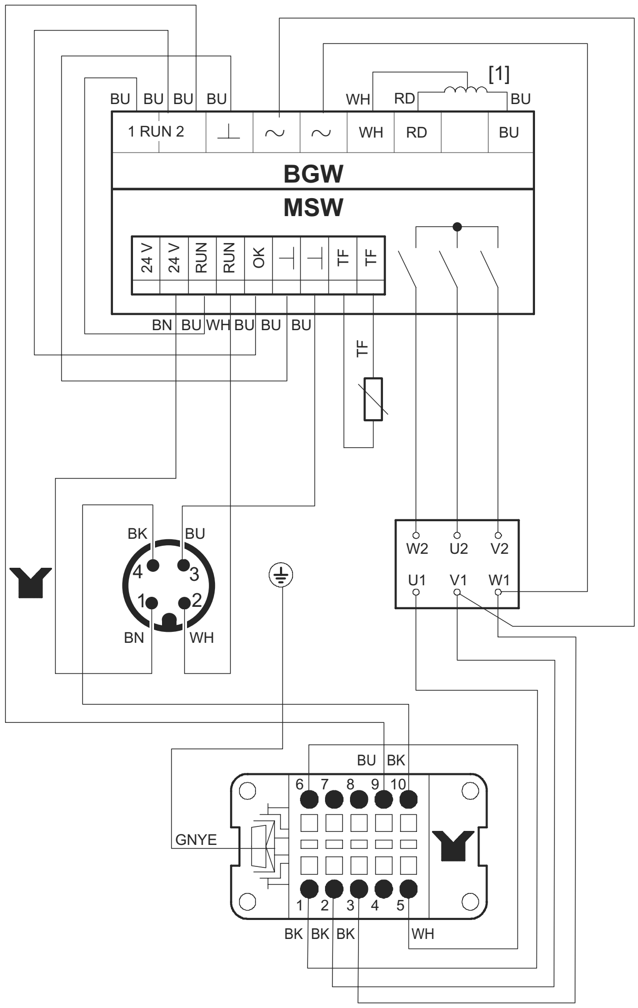
51786AXX

[1] Brake coil

Brake connection voltage corresponds to phase-to-phase voltage of motor,
e.g. motor △ 230 V / ⅄ 400 V, brake AC 400 V.

Continuation of 08 881 100

MOVI-SWITCH®
With brake

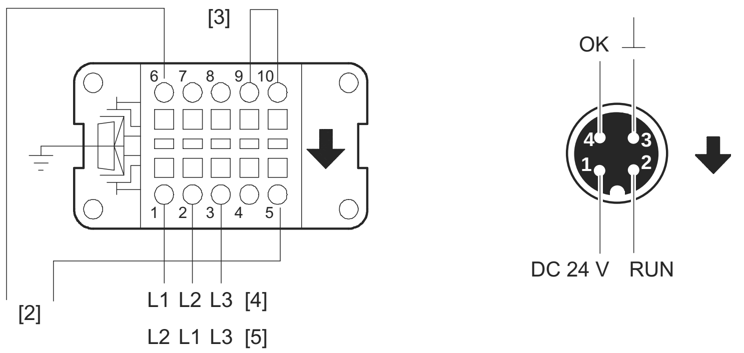


SEW connection
AVS1 plug connector
Standard coding
male
View on contact end

SEW connection
ASAX plug connector
male
View on contact end

51797AXX

Customer connection
HAN10E plug connector
female
View of connection end



Customer connection
M12 plug connector
female
Standard coding
View of connection end

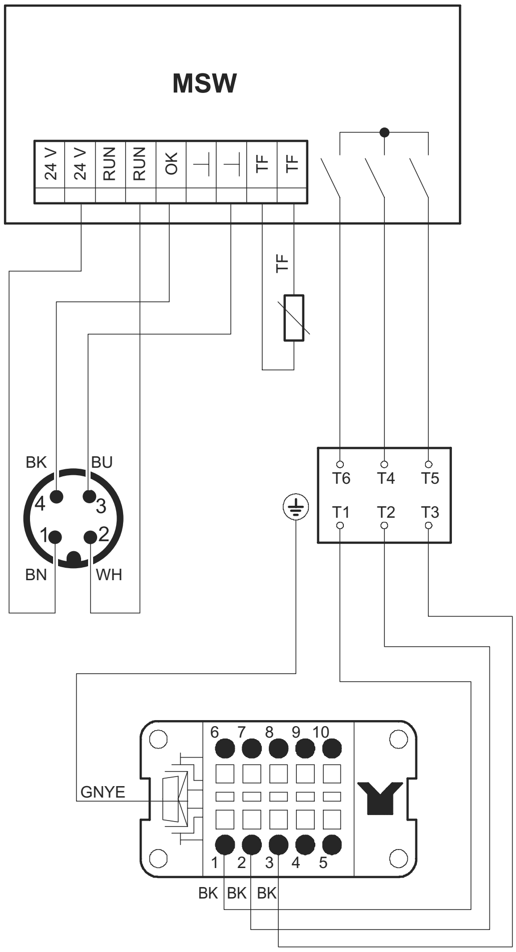
51798AXX

[1] Brake coil
[2] External connector control
[3] Plug-in jumper for monitoring of OK output
[4] CW operation
[5] CCW operation

MOVI-SWITCH® 1E with ASA3/AVS1 plug connector (NEMA version)

80 335 00 03

SEW-EURODRIVE connection
AVS1 plug connector
male
Standard coding
View on contact end



SEW-EURODRIVE connection
ASA3 plug connector
male
View on contact end

55471AXX

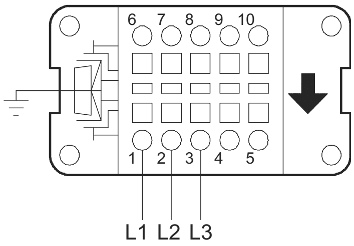
Continuation of
80 335 00 03

Connection at customer site

HAN10E plug connector

female

View of connection end



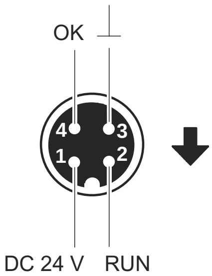
Connection at customer site

M12 plug connector

female

View of connection end

Standard coding



OK: Ready

RUN: Motor start signal

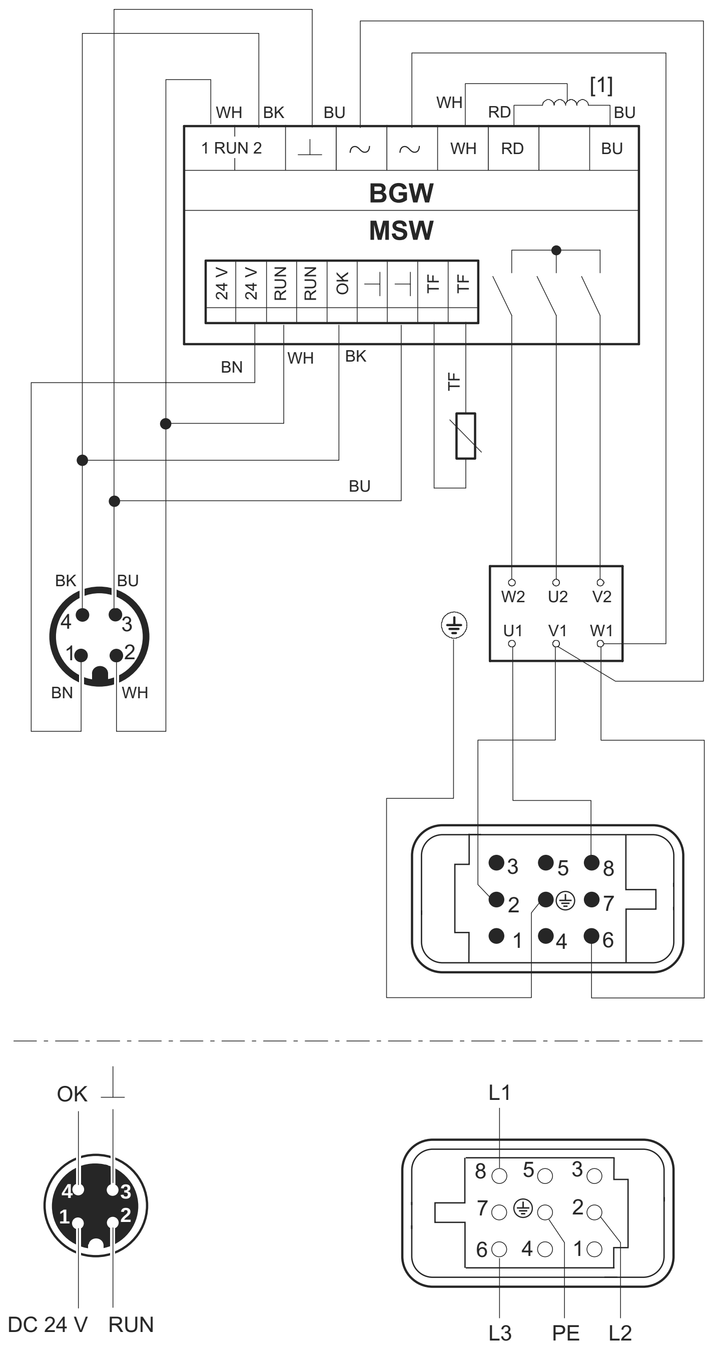
55472AXX

6

MOVI-SWITCH® 1E with KND3/AVS1 plug connector

80 337 00 03

Brake connection voltage corresponds to mains voltage of the motor
(e.g. 400 V ⅄ , brake 400 V AC)



SEW-EURODRIVE connection

AVS1 plug connector

male

Standard coding

View on contact end

SEW-EURODRIVE connection

Connection cable KND3

male

View on contact end

Connection at customer site

M12 plug connector

female

View of connection end

Standard coding

Connection at customer site

HANQ8 plug connector

female

View on contact end

OK: Ready

RUN: Motor start signal

[1] Brake coil

55483AXX

Continuation of
80 337 00 03

Brake connection voltage corresponds to mains voltage/$\sqrt{3}$ of the motor
(e.g. brake 230 V AC)

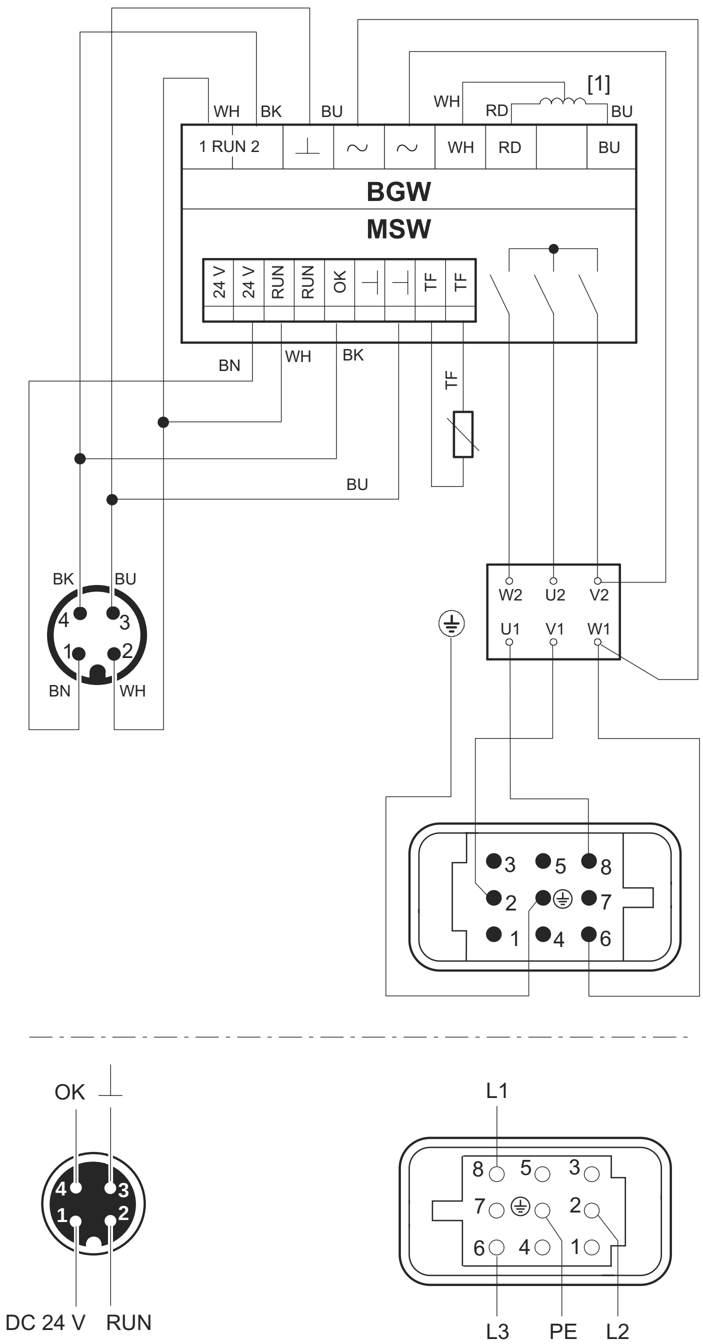
SEW-EURODRIVE connection

AVS1 plug connector

male

Standard coding

View on contact end



SEW-EURODRIVE connection

Connection cable KND3

male

View on contact end

Connection at customer site

M12 plug connector

female

View of connection end

Standard coding

Connection at customer site

HANQ8 plug connector

female

View on contact end

OK: Ready

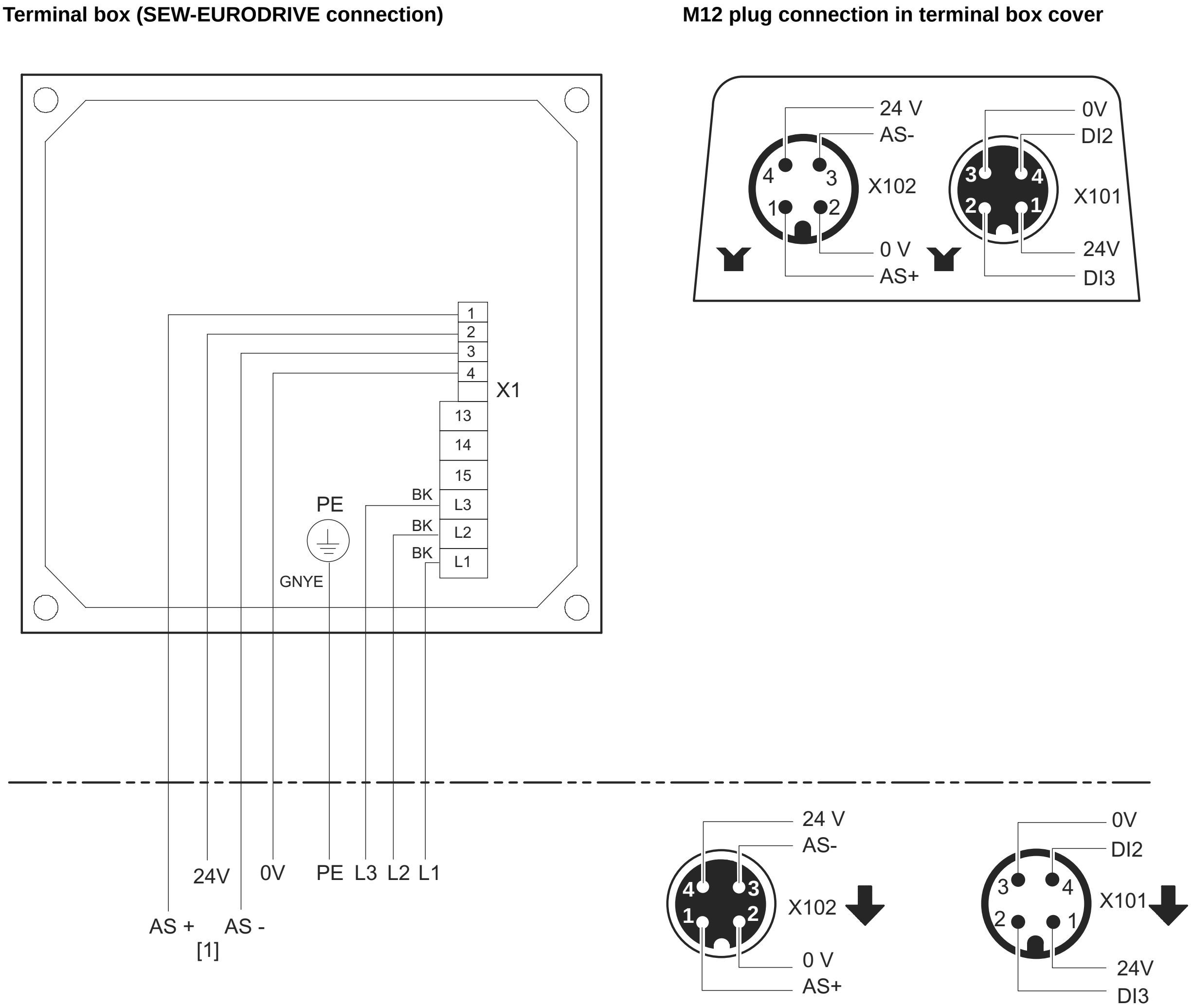
RUN: Motor start signal

[1] Brake coil

55484AXX

MOVI-SWITCH® 2S (CK0)

80 339 01 03

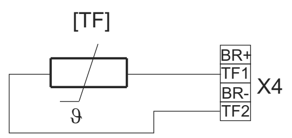


Connection at customer site	**Connection at customer site**	**Connection at customer site**
	M12 plug connector	**M12 plug connector**
	female	male
	Standard coding	Standard coding
	View of connection end	View of connection end

54561AXX

Continuation of 80 339 01 03

Motor protection

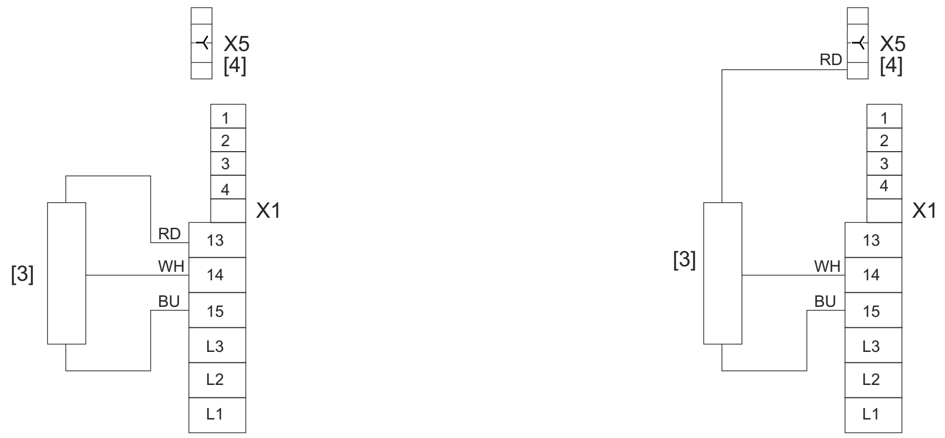


54554AXX

Brake connection

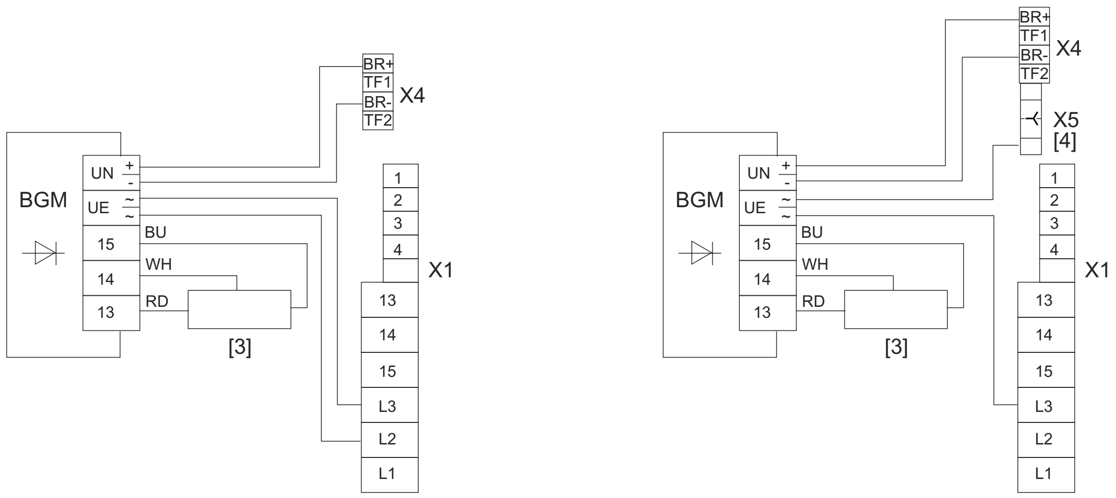
Brake voltage = Phase-to-phase voltage

Brake voltage = Phase voltage



54555AXX

BGM brake rectifier



54661AXX

[3] Brake coil

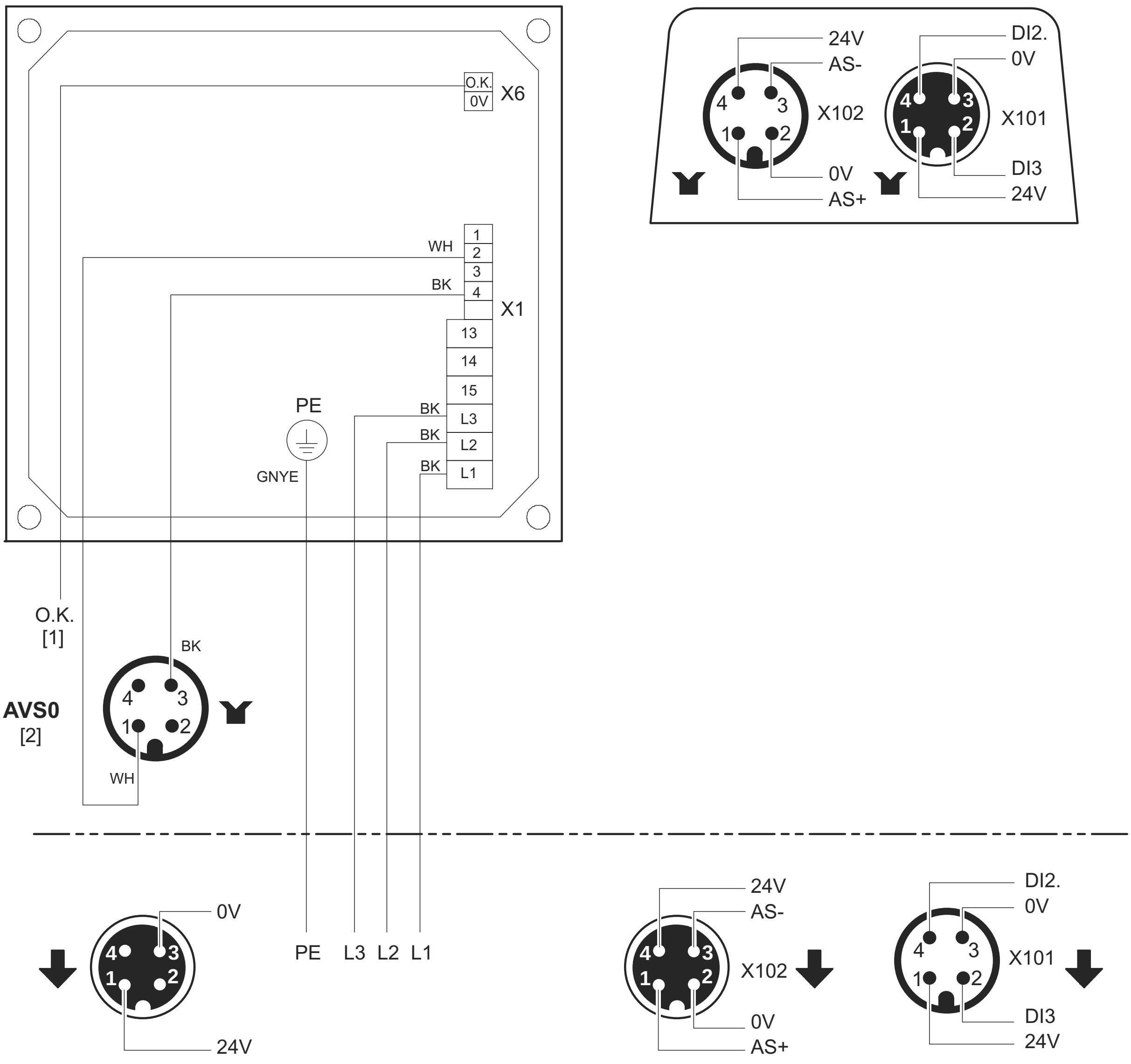
[4] Star point

MOVI-SWITCH® 2S (CB0) and AVS0 plug connector

80 387 00 04

Terminal box (SEW-EURODRIVE connection)

M12 plug connection in terminal box cover



Connection at customer site

M12 plug connector

female

Standard coding

View of connection end

Connection at customer site

M12 plug connector

female

Standard coding

View of connection end

Connection at customer site

M12 plug connector

male

Standard coding

View on contact end

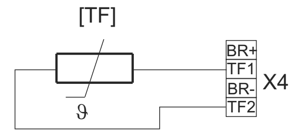
55436AXX

[1] optional

[2] SEW-EURODRIVE connection
AVS0 plug connector
male
Standard coding
View on contact end

Continuation of 80 387 00 04

Motor protection



54554AXX

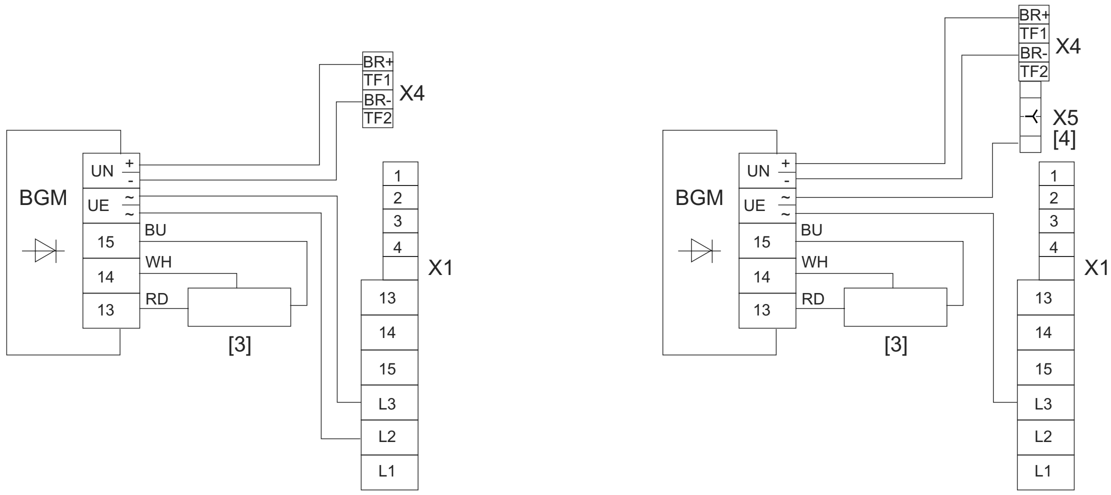
Brake connection

Brake voltage = Phase-to-phase voltage

Brake voltage = Phase voltage

54555AXX

BGM brake rectifier



54661AXX

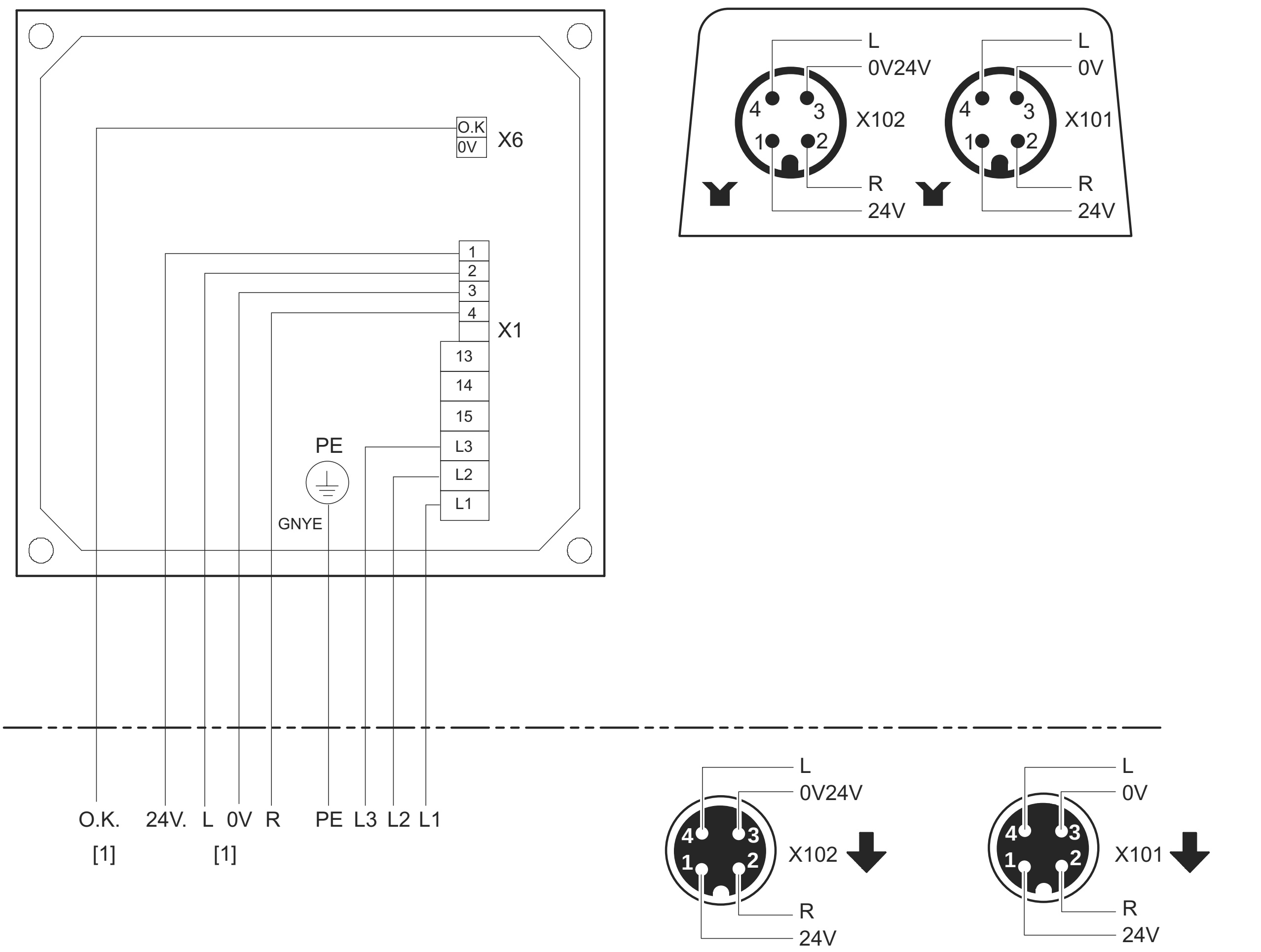
[3] Brake coil

[4] Star point

MOVI-SWITCH® 2S (CB0)

80 340 00 03

Terminal box (SEW-EURODRIVE connection) **M12 plug connection in terminal box cover**



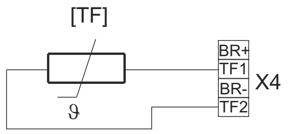
Connection at customer site	**Connection at customer site**	**Connection at customer site**
	M12 plug connector	**M12 plug connector**
	female	female
	Standard coding	Standard coding
	View of connection end	View of connection end

54552AXX

[1] optional

Continuation of 80 340 00 03

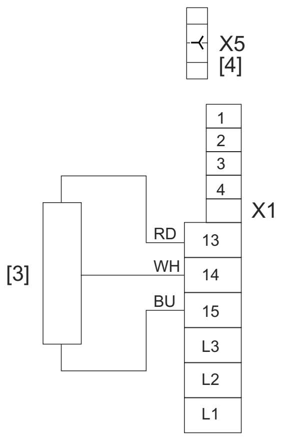
Motor protection



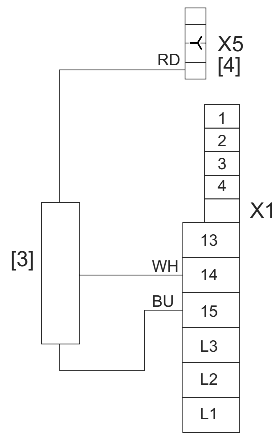
54554AXX

Brake connection

Brake voltage = Phase-to-phase voltage

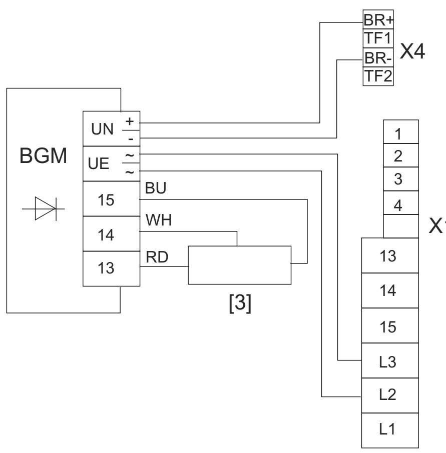


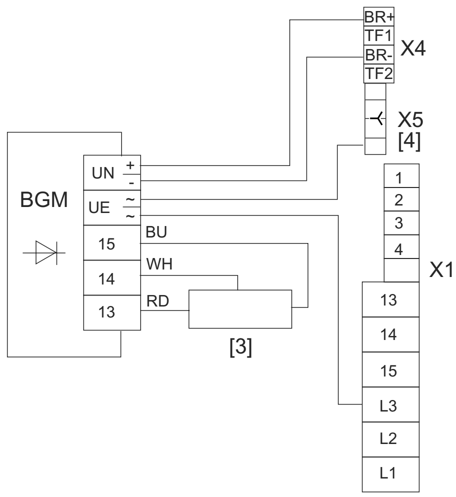
Brake voltage = Phase voltage



54555AXX

BGM brake rectifier





54661AXX

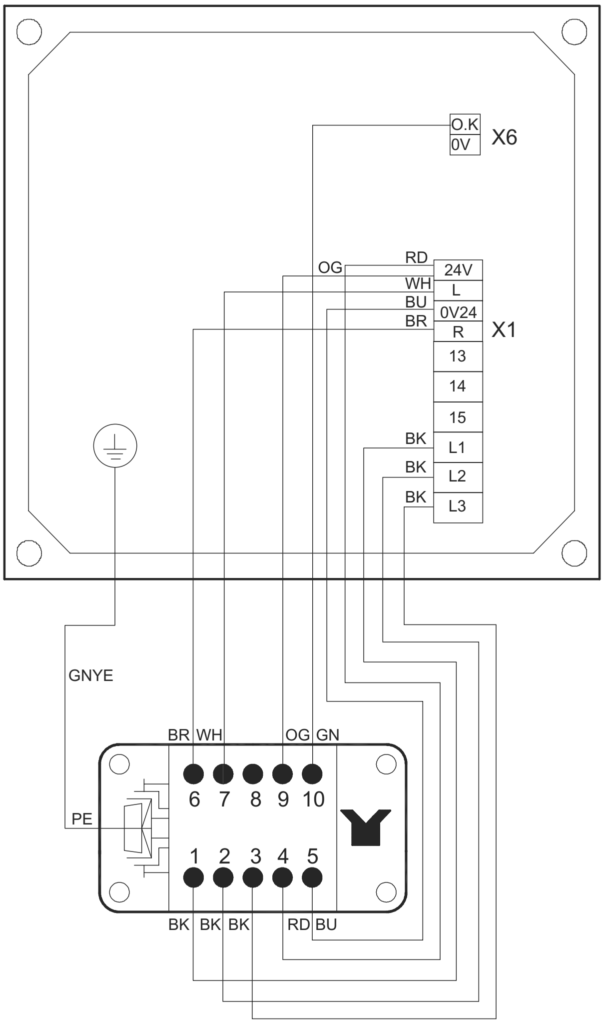
[3] Brake coil

[4] Star point

MOVI-SWITCH® 2S (CB0) with ASAW plug connector

80 378 00 03

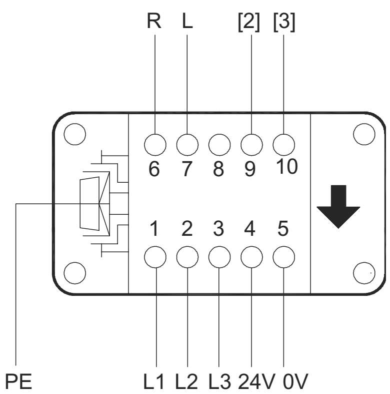
SEW-EURODRIVE connection
ASAW plug connector
male
View on contact end



54577AXX

Connection at customer site
HAN10E plug connector
female
View of connection end

[1] Brake coil
[3] Plug connector output connected
[4] Ready for operation output (OK)



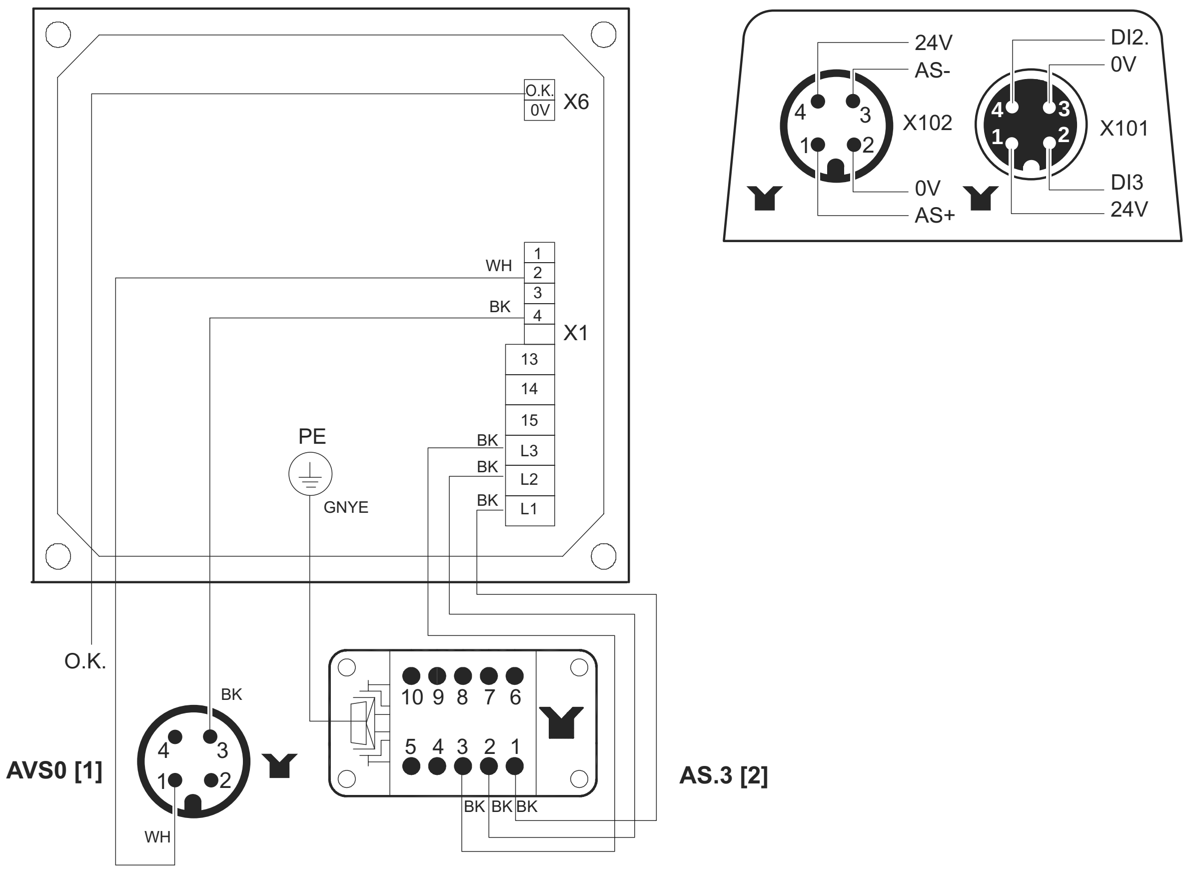
54576AXX

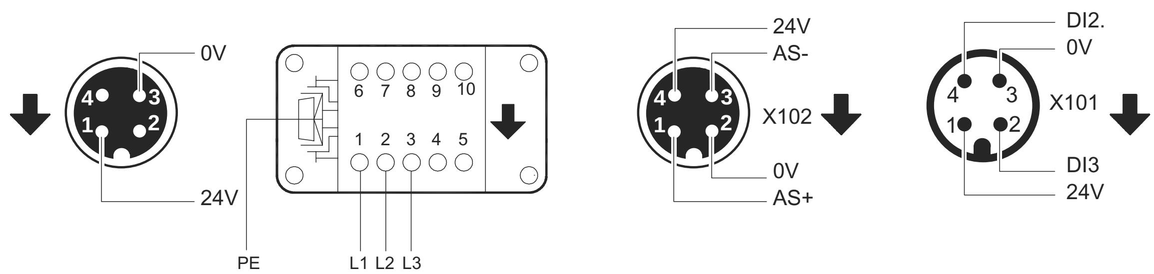
MOVI-SWITCH® 2S (CK0) with AS.3/AVS0 plug connector

80 382 00 04

Terminal box (SEW-EURODRIVE connection)

M12 plug connection in terminal box cover





Connection at customer site	**Connection at customer site**	**Connection at customer site**	**Connection at customer site**
M12 plug connector	**HAN10E plug connector**	**M12 plug connector**	**M12 plug connector**
female	female	female	male
Standard coding	View of connection end	Standard coding	Standard coding
View of connection end		View of connection end	View on contact end

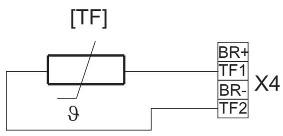
55247XX

[1] SEW-EURODRIVE connection
AVS0 plug connector
male
Standard coding
View on contact end

[2] SEW-EURODRIVE connection
AS.3 plug connector
male
View of connection end

Continuation of 80 382 00 04

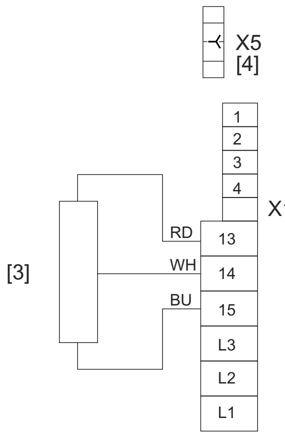
Motor protection



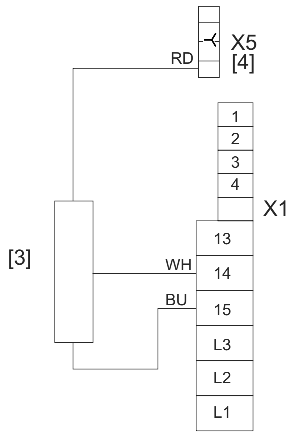
55249AXX

Brake connection

Brake voltage = Phase-to-phase voltage

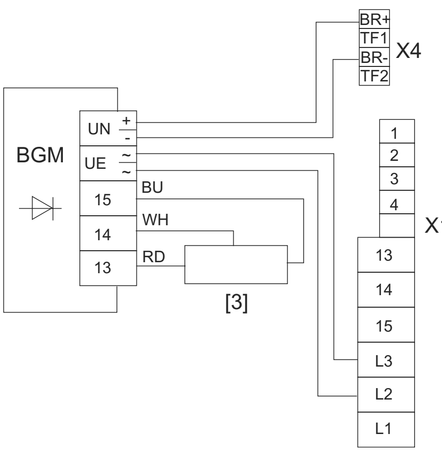


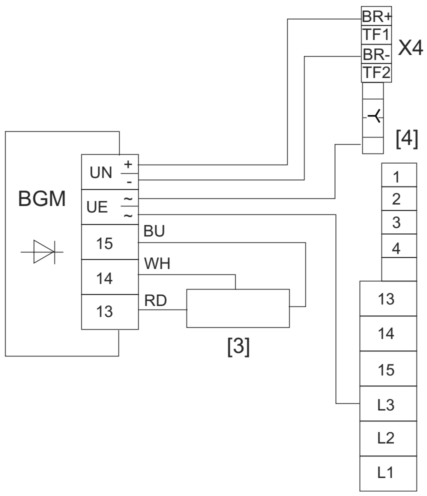
Brake voltage = Phase voltage



55250AXX

BGM brake rectifier





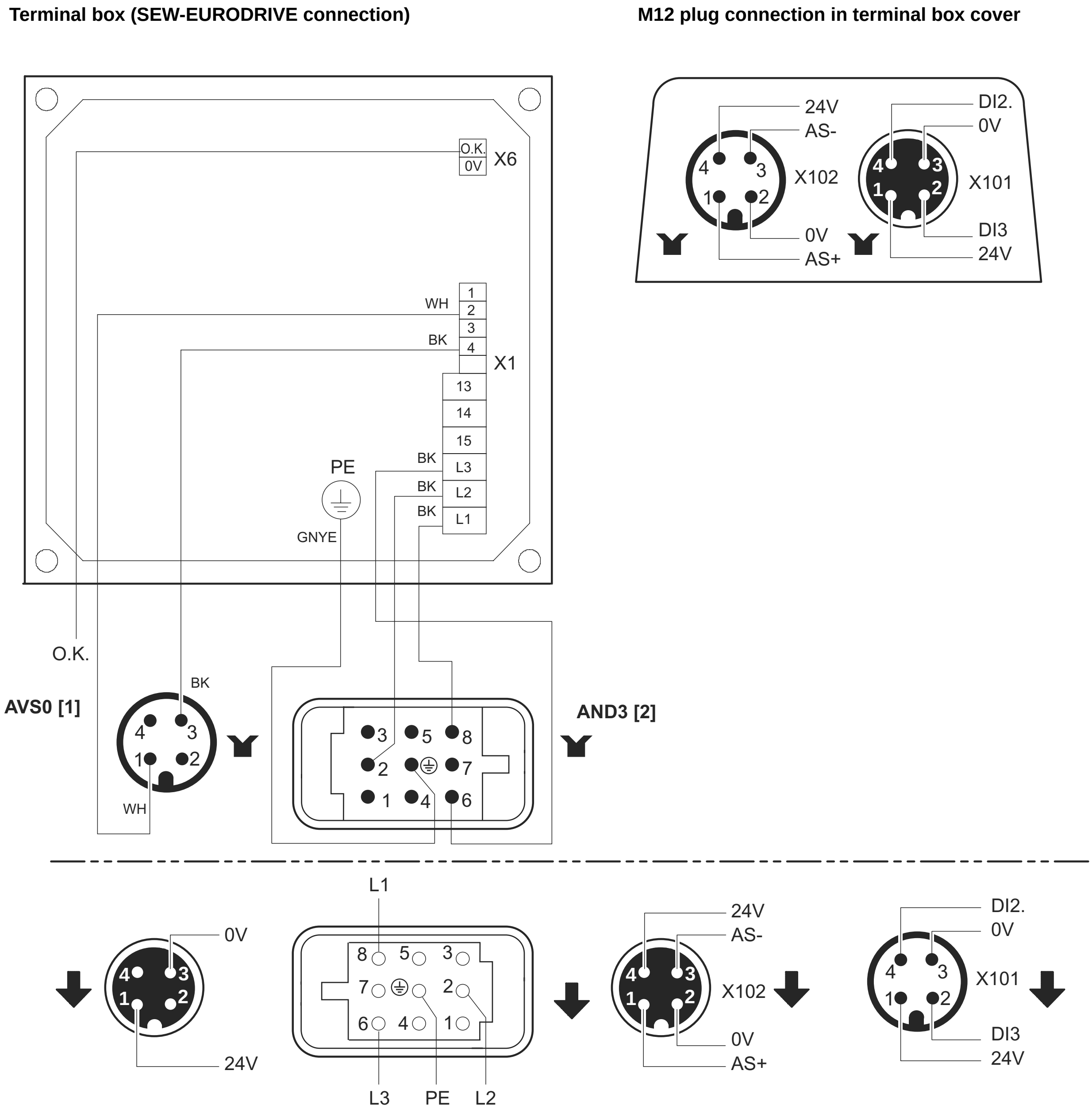
55251AXX

[3] Brake coil

[4] Star point

MOVI-SWITCH® 2S (CK0) with plug connector AND3/AVS0

80 384 00 04



Connection at customer site	**Connection at customer site**	**Connection at customer site**	**Connection at customer site**
M12 plug connector	**HANQ8 plug connector**	**M12 plug connector**	**M12 plug connector**
female	female	female	male
Standard coding	View on contact end	Standard coding	Standard coding
View of connection end		View of connection end	View on contact end

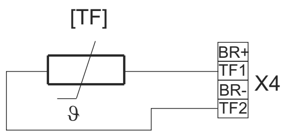
55242AXX

[1] SEW-EURODRIVE connection
AVS0 plug connector
male
View on contact end

[2] SEW-EURODRIVE connection
AND3 plug connector
male
View on contact end

Continuation of
80 384 00 04

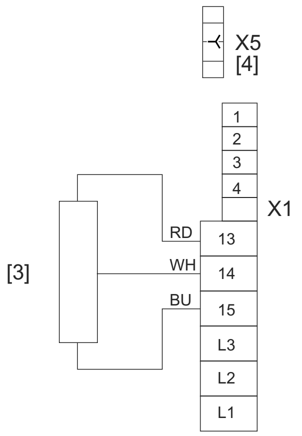
Motor protection



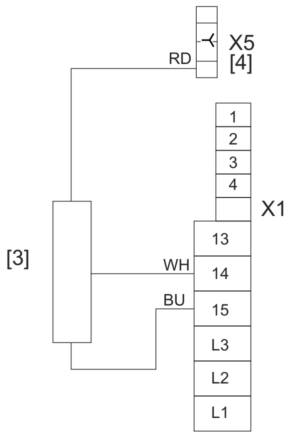
55244AXX

Brake connection

Brake voltage = Phase-to-phase voltage

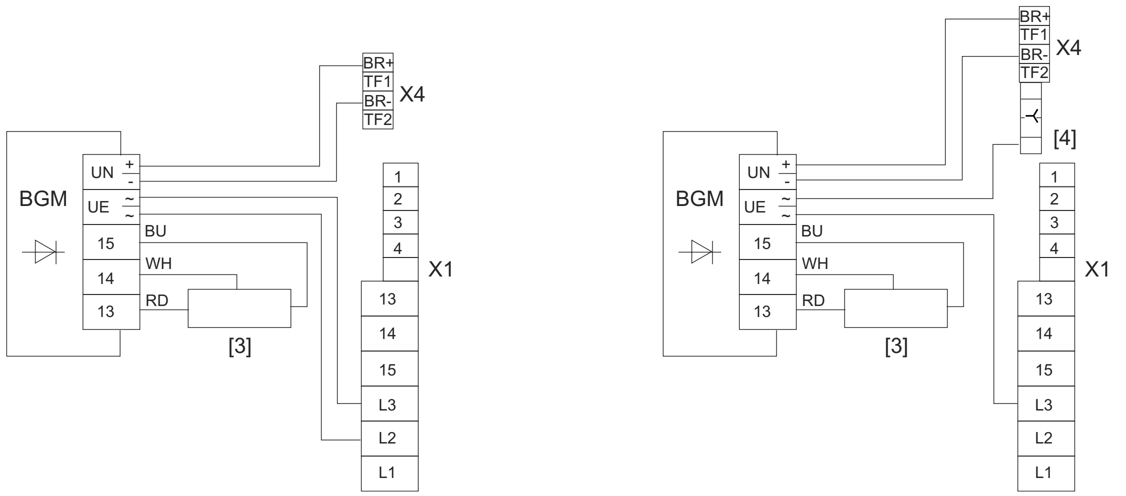


Brake voltage = Phase voltage



55245AXX

BGM brake rectifier



55246AXX

[3] Brake coil

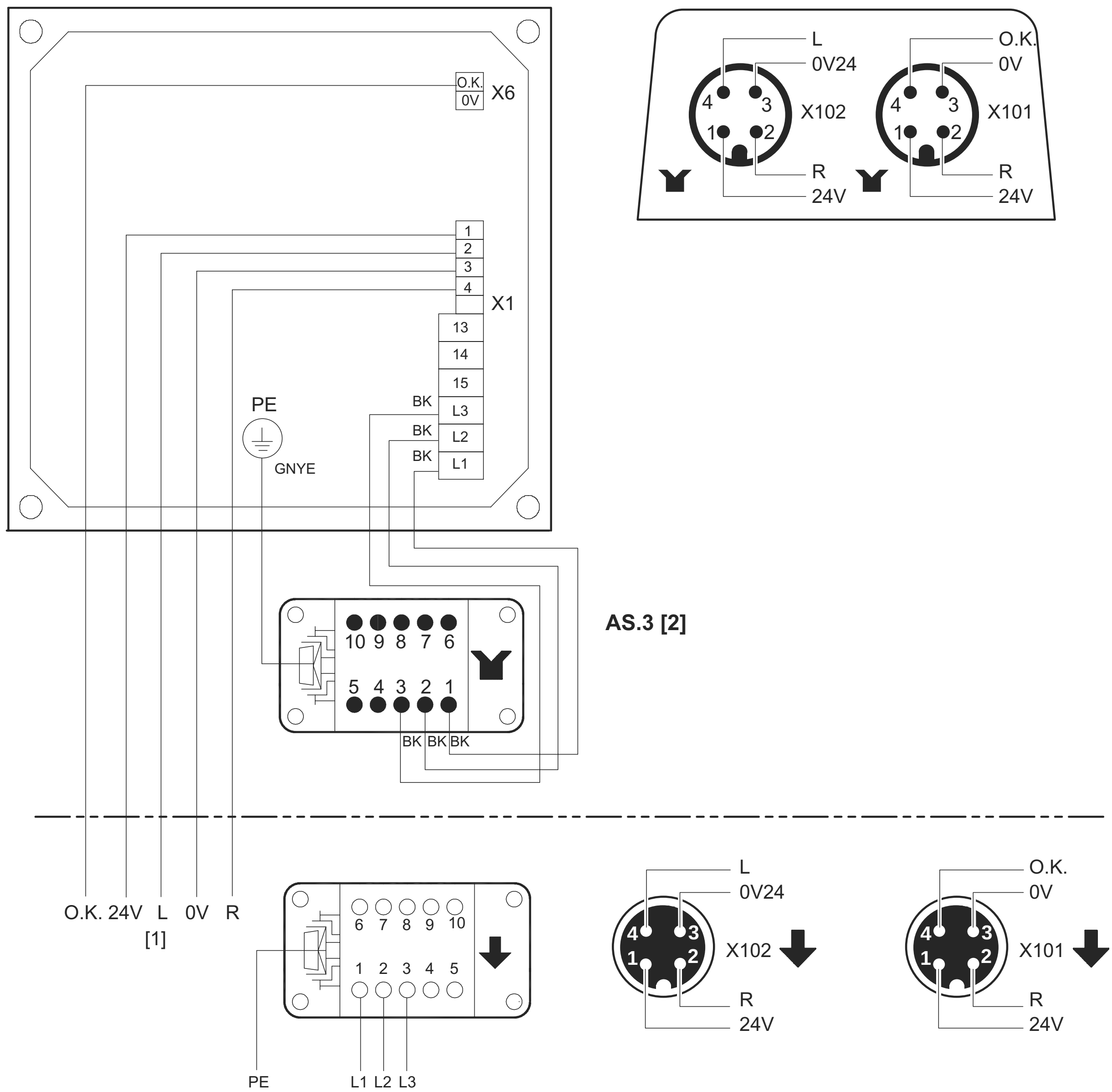
[4] Star point

MOVI-SWITCH® 2S (CB0) with AS.3 plug connector

80 386 00 04

Terminal box (SEW-EURODRIVE connection)

M12 plug connection in terminal box cover



Customer connection	**Customer connection**	**Customer connection**
HAN10E plug connector	**M12 plug connector**	**M12 plug connector**
female	female	female
View of connection end	Standard coding	Standard coding
	View of connection end	View of connection end

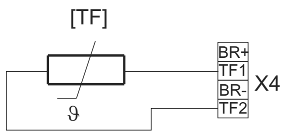
55236AXX

[1] optional

[2] SEW-EURODRIVE connection
AS.3 plug connector
male
View of connection end

Continuation of 80 386 00 04

Motor protection

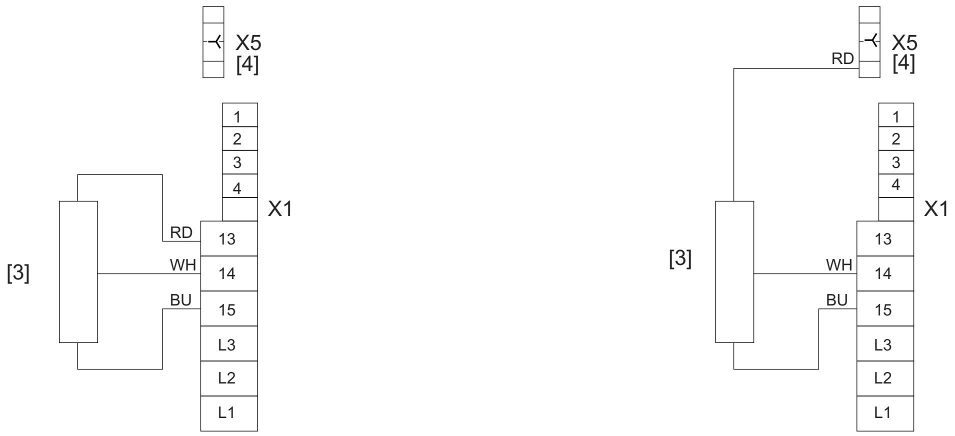


55239AXX

Brake connection

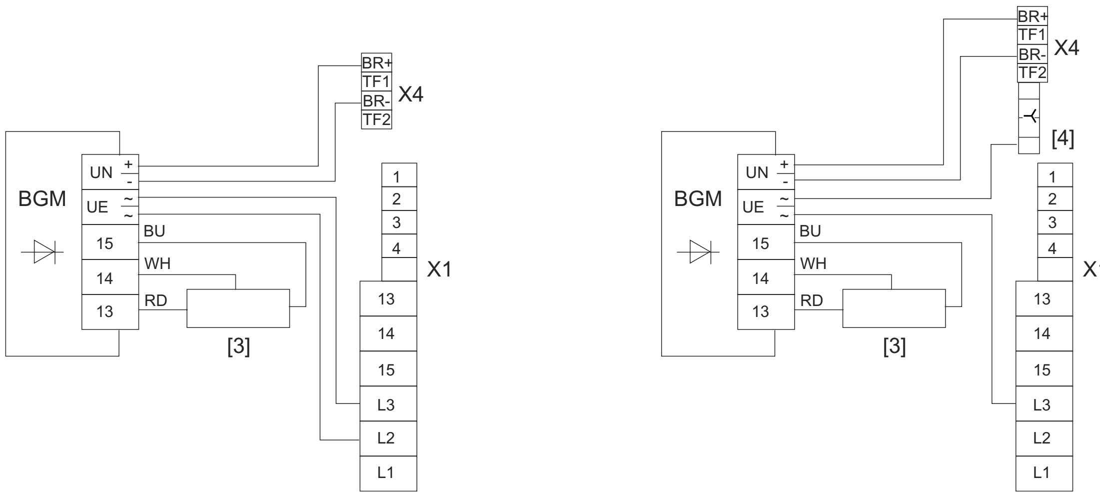
Brake voltage = Phase-to-phase voltage

Brake voltage = Phase voltage



55240AXX

BGM brake rectifier



55241AXX

[3] Brake coil

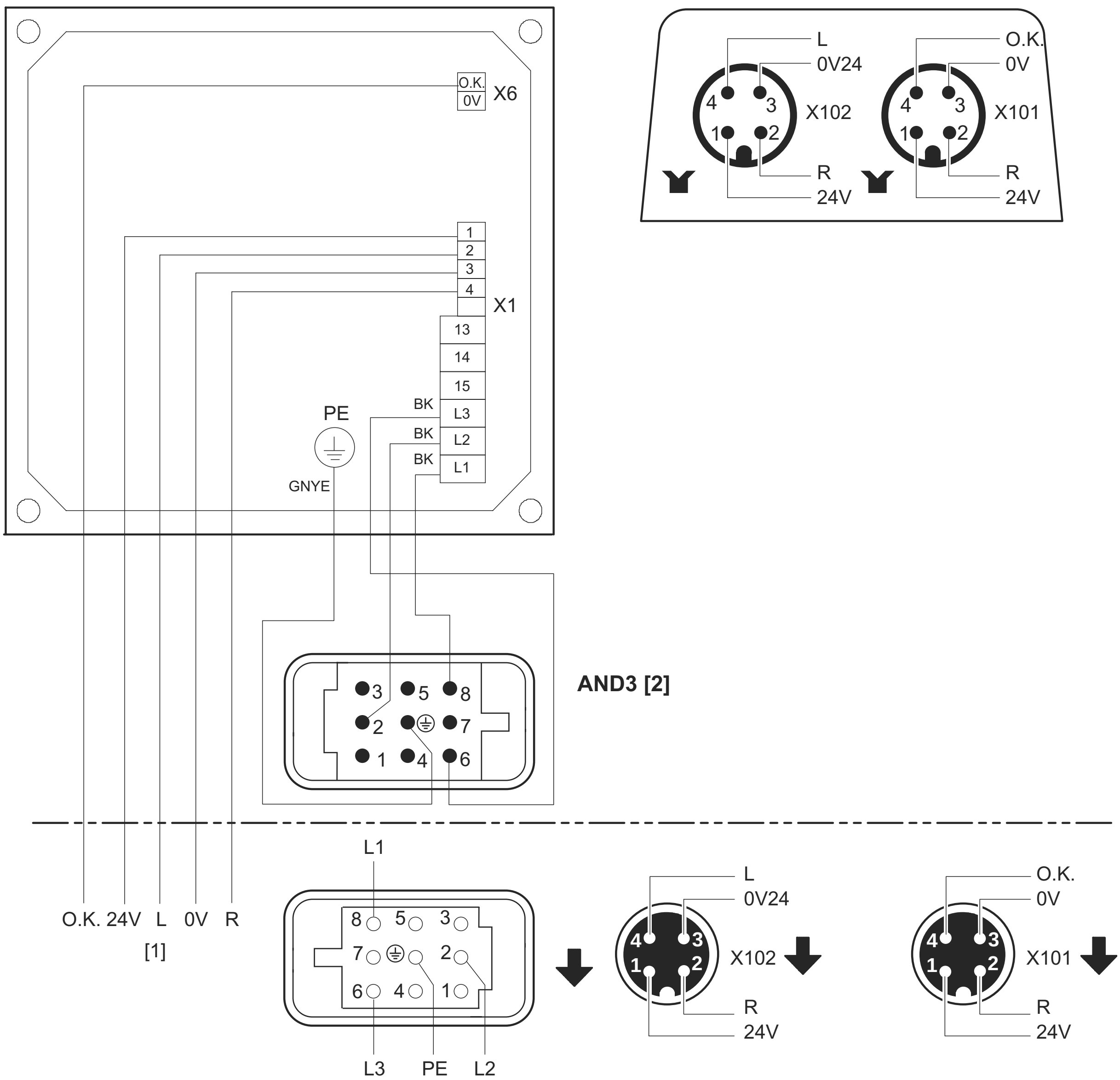
[4] Star point

MOVI-SWITCH® 2S (CB0) with AND3 plug connector

80 388 00 04

Terminal box (SEW-EURODRIVE connection)

M12 plug connection in terminal box cover



Connection at customer site	**Connection at customer site**	**Connection at customer site**
HANQ8/0 plug connector	**M12 plug connector**	**M12 plug connector**
female	female	female
View on contact end	Standard coding	Standard coding
	View of connection end	View of connection end

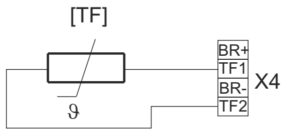
55230AXX

[1] optional

[2] SEW-EURODRIVE connection
AND3 plug connector
male
View on contact end

Continuation of 80 388 00 04

Motor protection

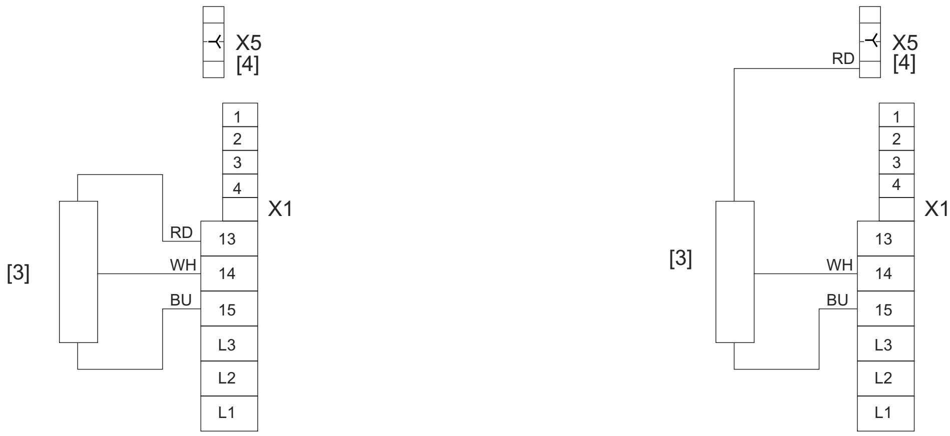


55233AXX

Brake connection

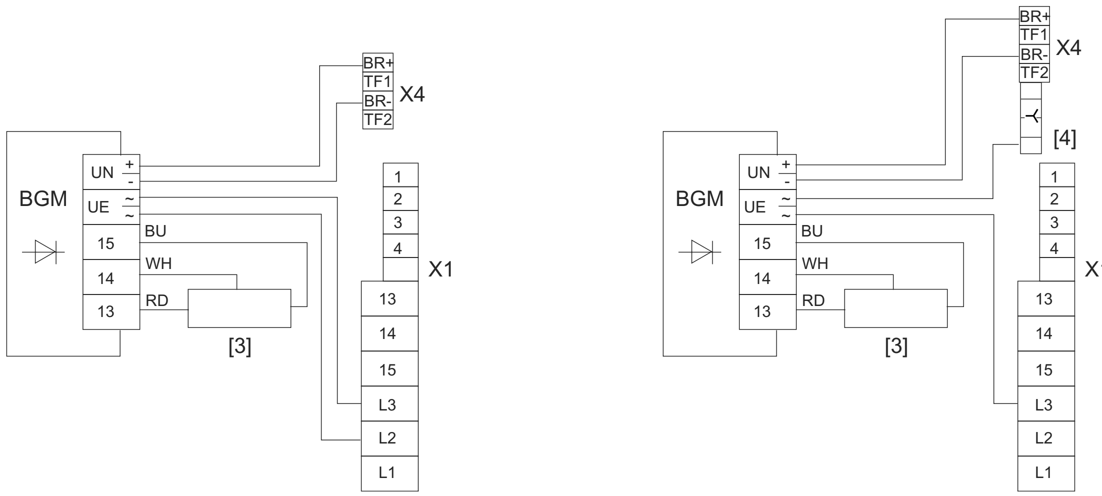
Brake voltage = Phase-to-phase voltage

Brake voltage = Phase voltage



55234AXX

BGM brake rectifier



55235AXX

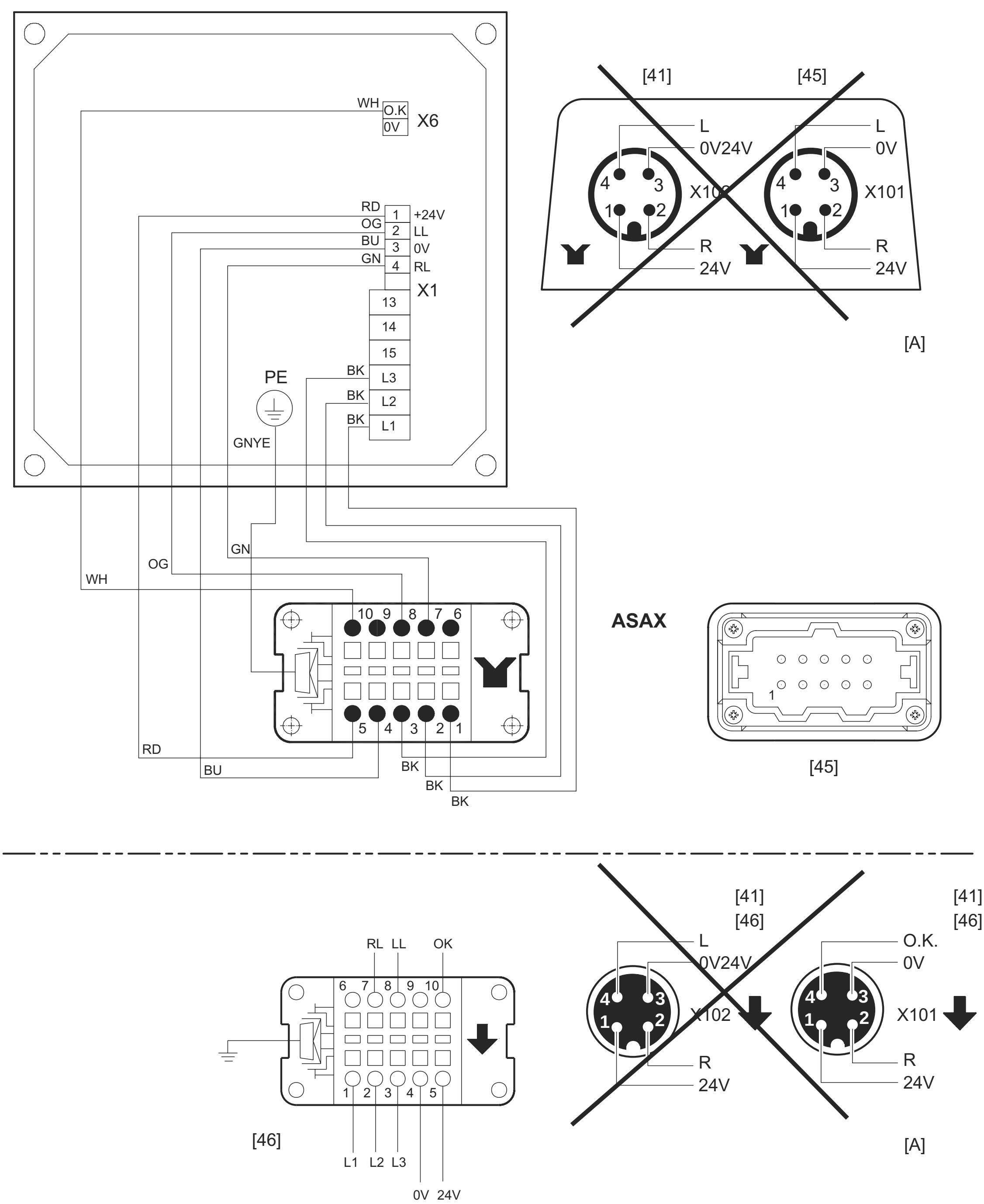
[3] Brake coil

[4] Star point

MOVI-SWITCH® 2S (CB0) with ASAX plug connector (80 405 00 04)

80 405 00 04

Terminal box (SEW-EURODRIVE connection)



54578AXX

[A] If control via ASAX and 24 V supply voltage, M12 inputs may not be used.

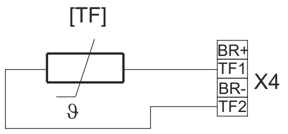
[41] M12 plug

[45] Contact end

[46] Connection end

Continuation of
80 405 00 04

Motor protection

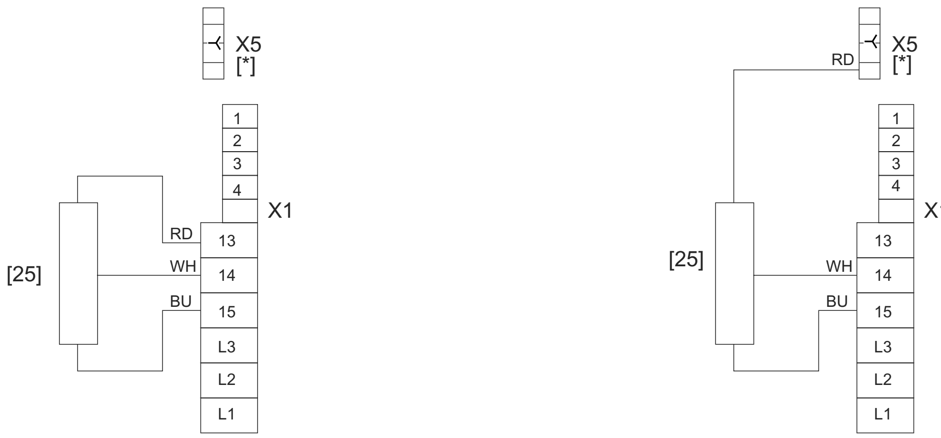


54554AXX

Brake connection

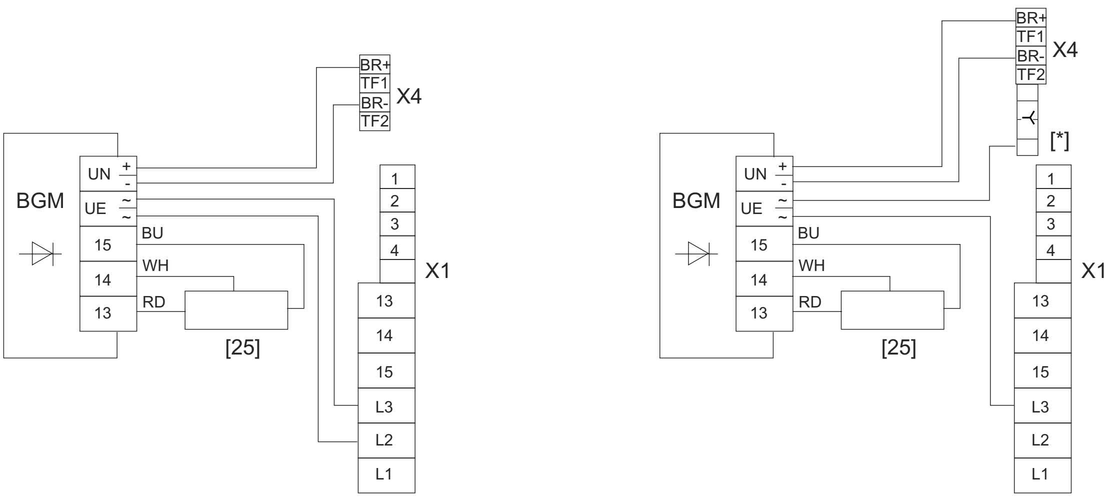
Brake voltage = Phase-to-phase voltage

Brake voltage = Phase voltage



54581AXX

BGM brake rectifier



54667AXX

[25] Brake coil
[*] Star point

7 Wiring Diagrams of Cables for Decentralized Systems

7.1 General information

The following applies to all cable wiring diagrams:

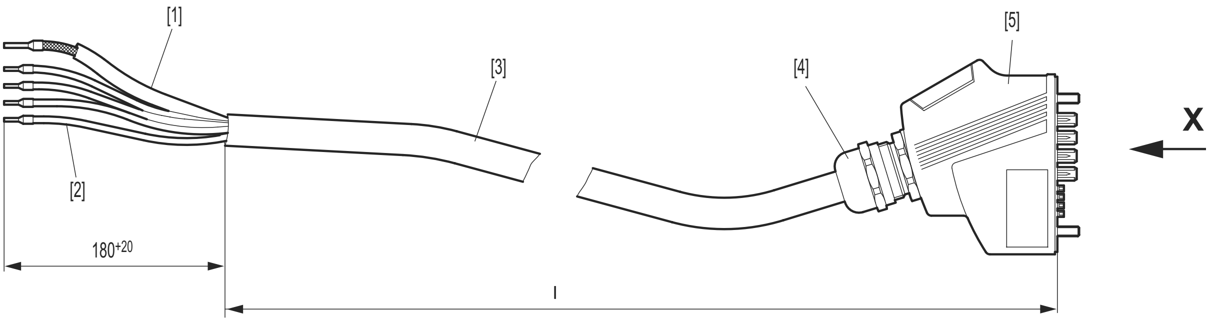
- Colors according to SEW-EURODRIVE table:

Color code	Color
BK	Black
BKWH	Black/white
BN	Brown
BU	Blue
GN	Green
GNYE	Green/yellow
GY	Gray
GYPK	Gray/pink
OG	Orange
PK	Pink
RD	Red
RDBU	Red/blue
RDWH	Red/white
VT	Violet
WH	White
YE	Yellow

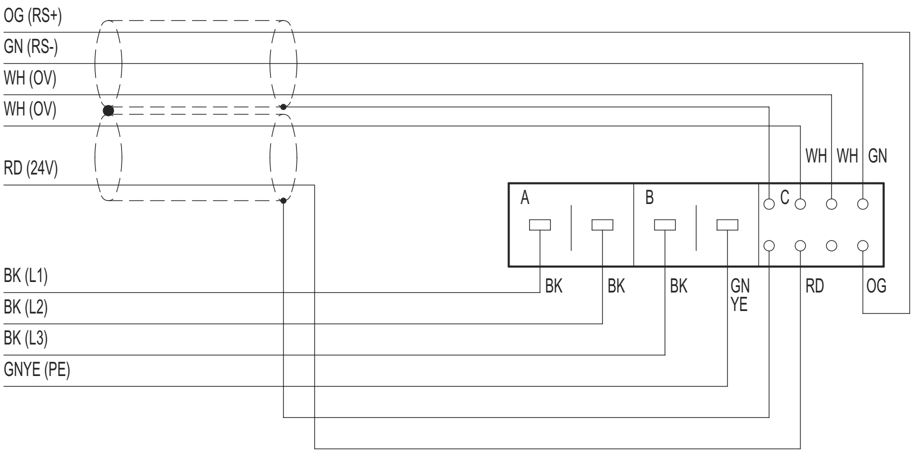
Overview

Part number 0 186 725 3

0 186 725 3

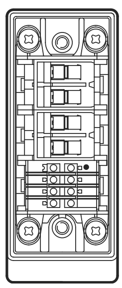


52369AXX



52370AXX

View X:



52353AXX

[1] Shield control core group 2 x 0.75 mm^2

[2] Conductor end sleeve

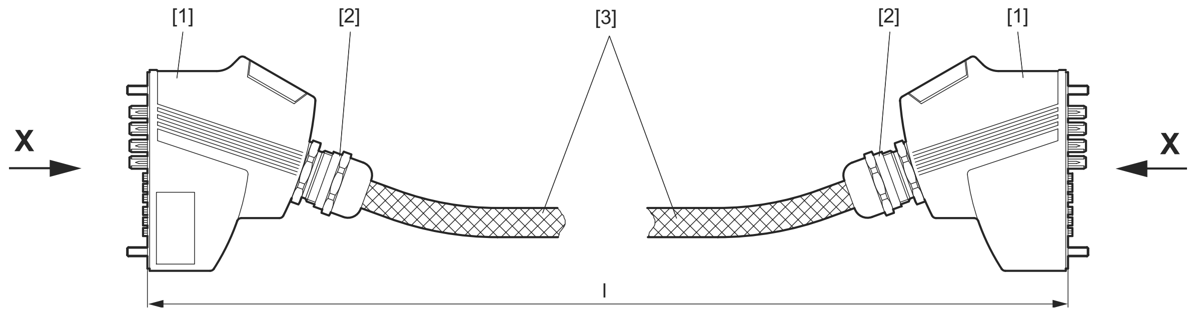
[3] Hybrid cable

[4] M25 cable gland

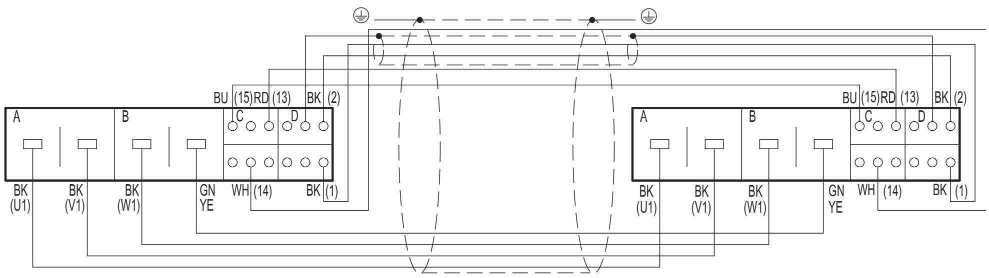
[5] PLUSCON-VC VARIOCON T2 plug connector, female

Part number 0 186 741 5

0 186 741 5

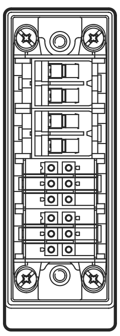


52362AXX



52363AXX

View X:



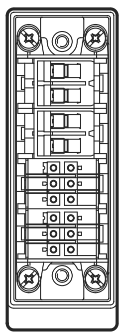
51577AXX

[1] PLUSCON-VC VARIOCON T3 plug connector, female

[2] EMC cable gland

[3] Hybrid cable

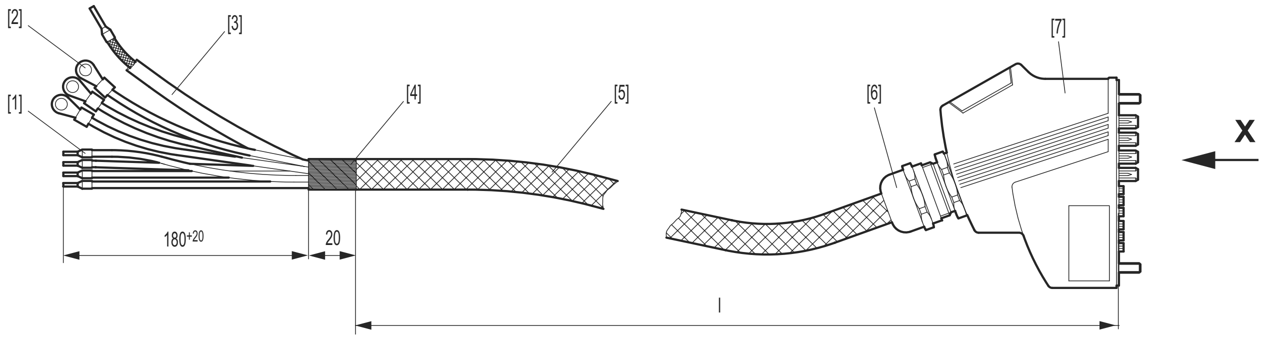
View X:



51577AXX

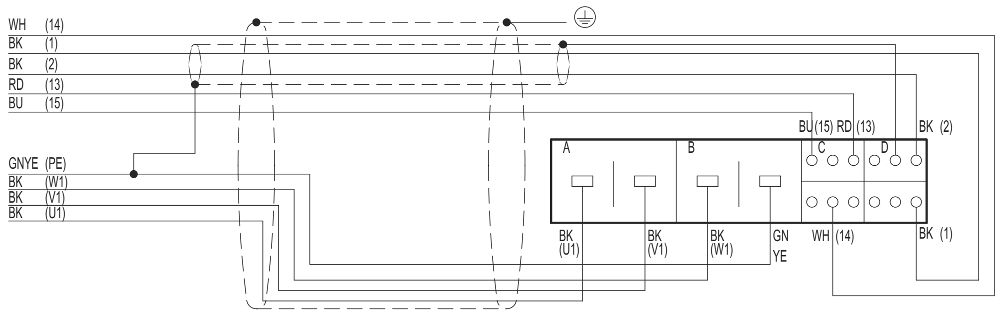
Part number 0 186 742 3

0 186 742 3



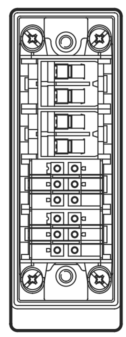
52390AXX

Insulate the brake wires (WH, BU, RD) in motors without brake!



52391AXX

View X:



51577AXX

[1] Conductor end sleeve

[2] Ring cable lug

[3] Shield control core group 2x0.75 mm^2

[4] Stripped braided screen

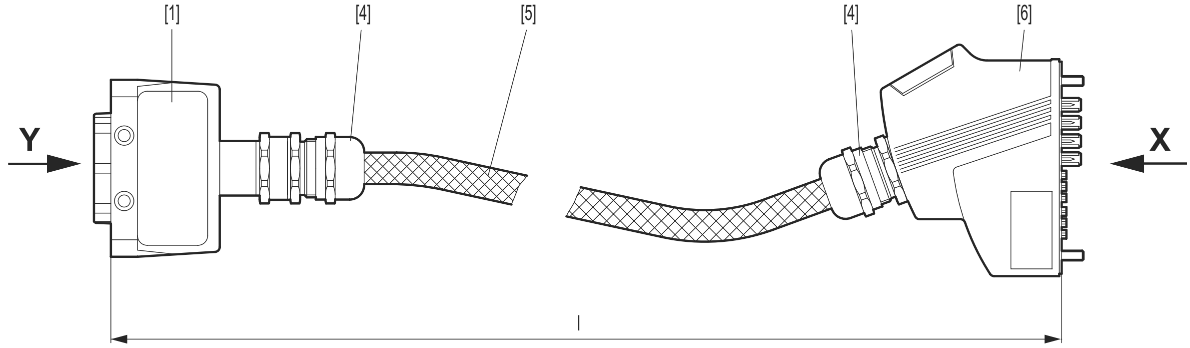
[5] Hybrid cable

[6] EMC cable gland M25

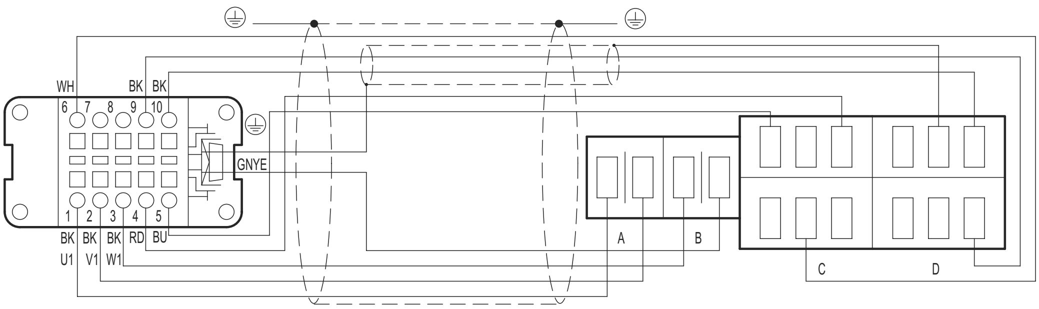
[7] PLUSCON-VC VARIOCON T3 plug connector, female

Part number 0 593 076 6

0 593 076 6

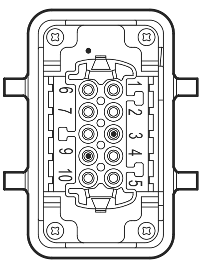


52348AXX



52350AXX

View X:



52349AXX

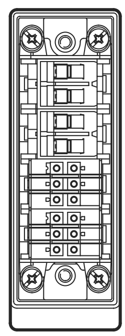
[1] HAN10E plug connector, female

[4] EMC cable gland

[5] Hybrid cable

[6] PLUSCON-VC VARIOCON T3 plug connector, female

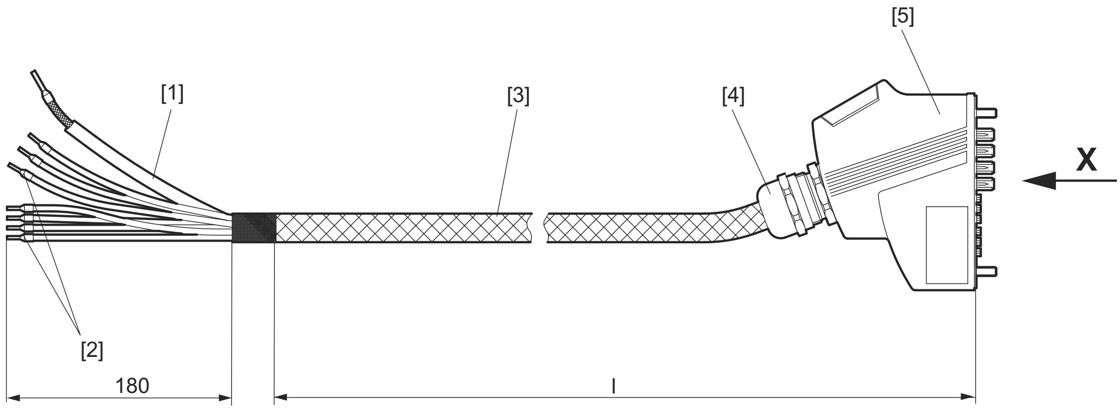
View X:



51577AXX

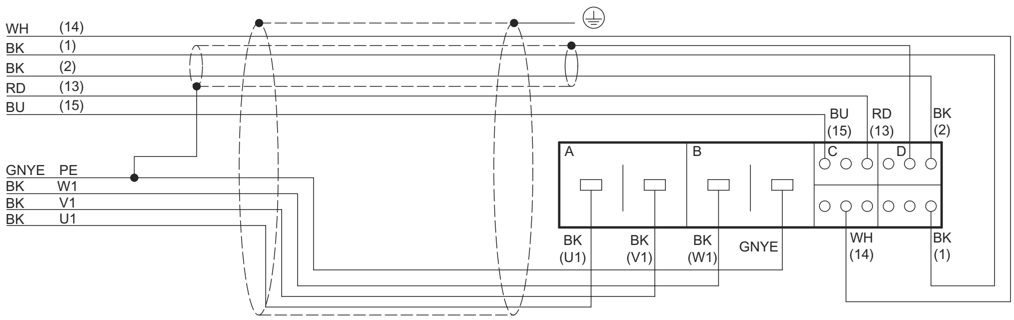
Part number 0 593 231 9

0 593 231 9



51575AXX

Insulate the brake wires (WH, BU, RD) in motors without brake!



51702AXX

[1] Shield control core group 2 x 0.75 mm2

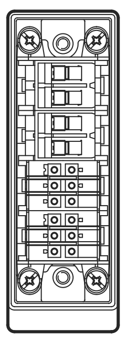
[2] Conductor end sleeve

[3] Hybrid cable

[4] EMC cable gland M25

[5] Phoenix - PLUSCON-VC VARIOCON T3 plug connector, female

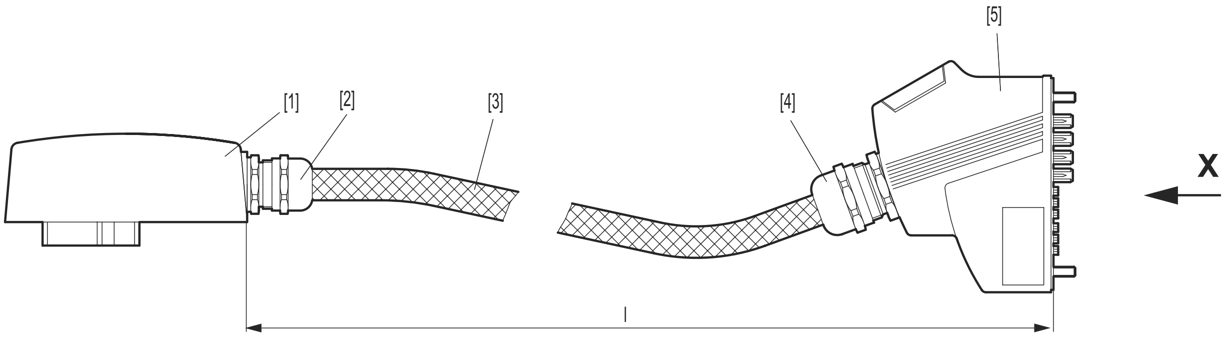
View X:



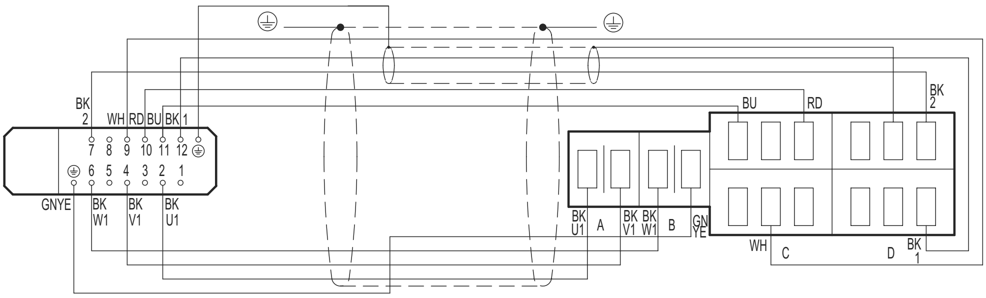
51577AXX

Part number 0 593 267 X

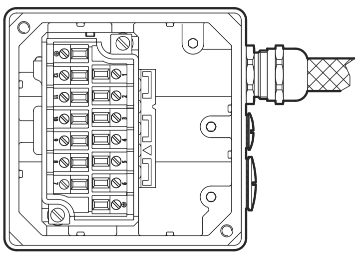
0 593 267 X



52393AXX



52533AXX



[1] IS upper section

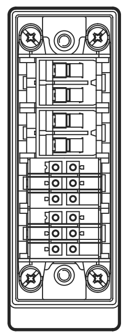
[2] EMC cable gland

[3] Hybrid cable

[4] EMC cable gland

[5] Phoenix - PLUSCON-VC VARIOCON T3 plug connector, female

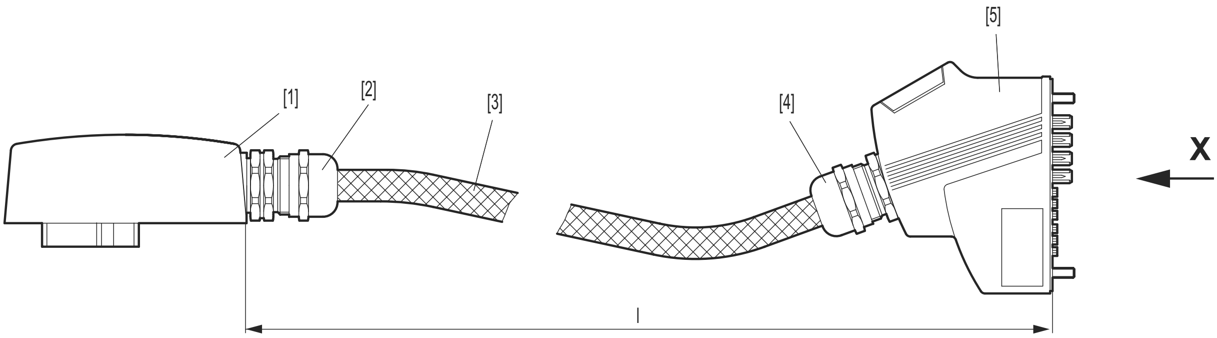
View X:



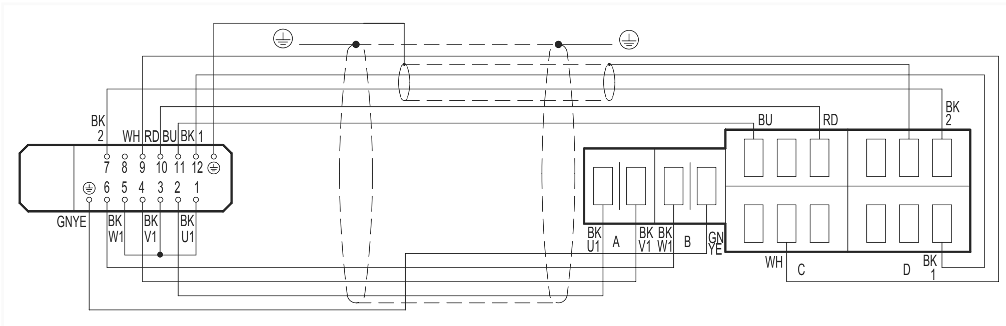
51577AXX

Part number 0 593 278 5

0 593 278 5

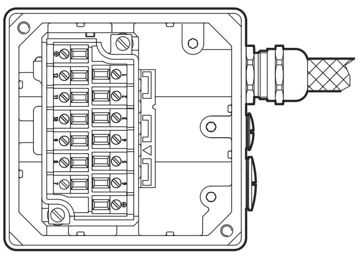


52396AXX



52397AXX

View X:



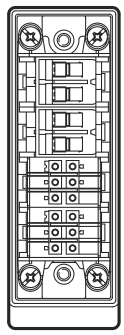
[1] IS upper section

[2] EMC cable gland

[3] Hybrid cable

[4] EMC cable gland

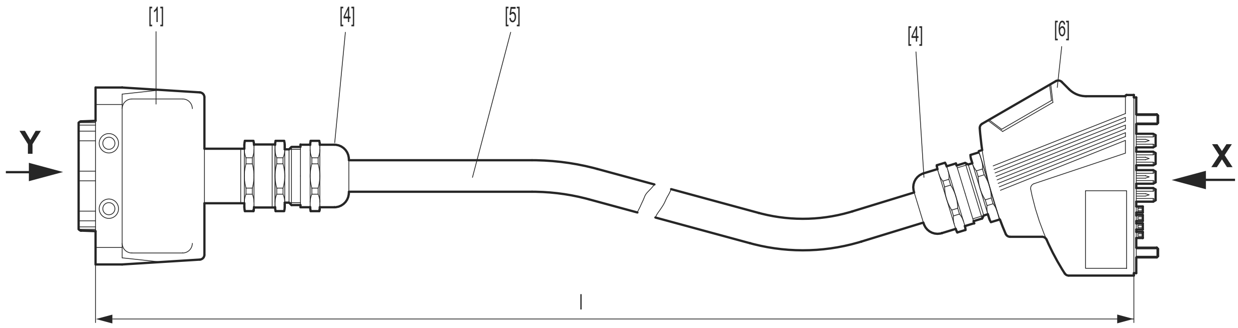
[5] Phoenix - PLUSCON-VC VARIOCON T3 plug connector, female



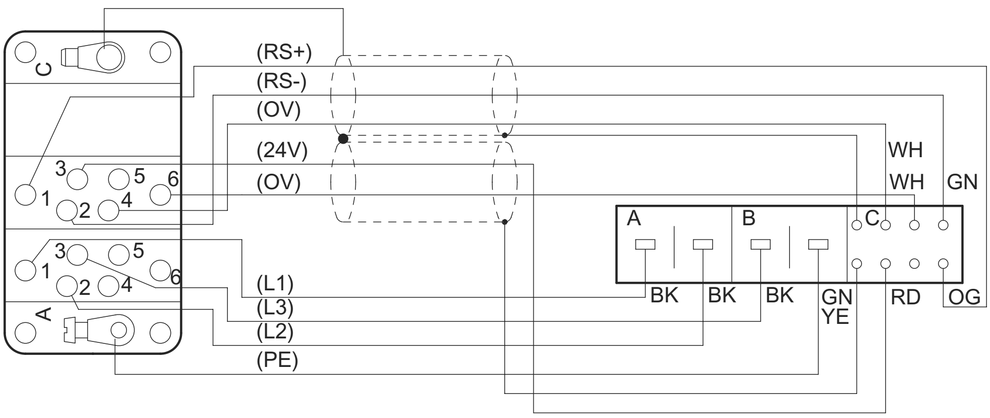
51577AXX

Part number 0 593 516 4

0 593 516 4



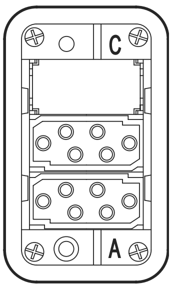
52351AXX



54394AXX

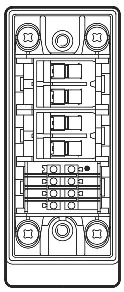
View Y:

View X:



52239AXX

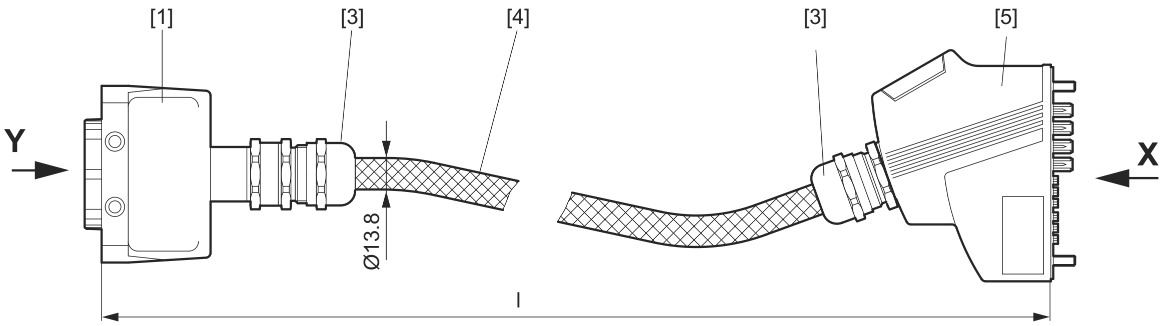
[1] HAN 10 modular plug connector, female
[4] M25 metal cable gland
[5] Shielded hybrid cable
[6] Phoenix - PLUSCON-VC VARIOCON T2 plug connector, female



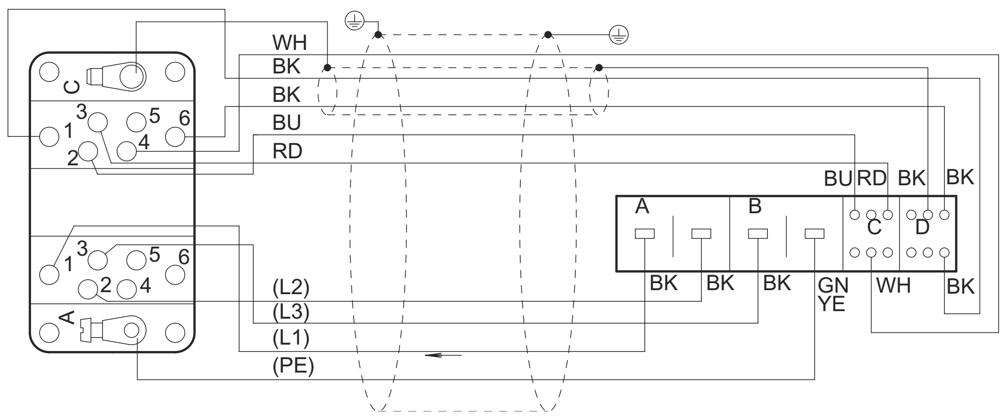
52353AXX

Part number 0 593 517 2

0 593 517 2

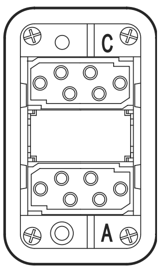


52466AXX



54395AXX

View Y:



52467AXX

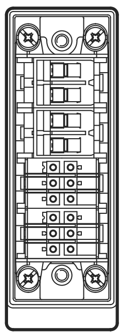
[1] HAN10 modular plug connector, female

[3] EMC cable gland

[4] Hybrid cable

[5] Phoenix - PLUSCON-VC VARIOCON T3 plug connector, female

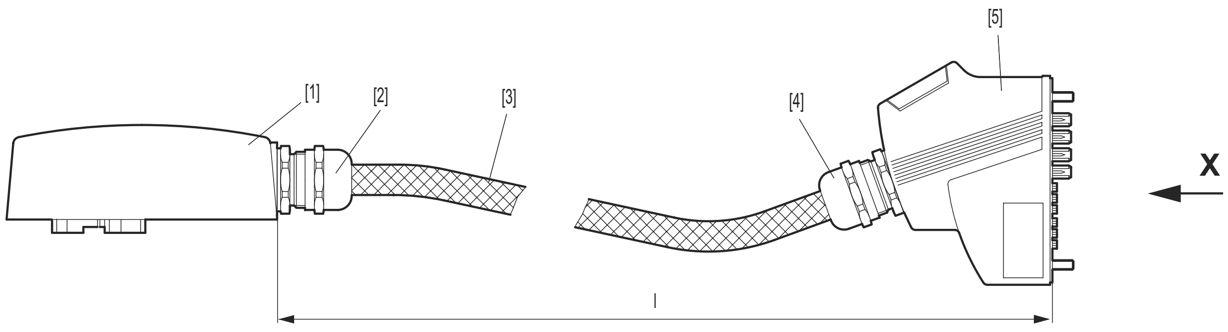
View X:



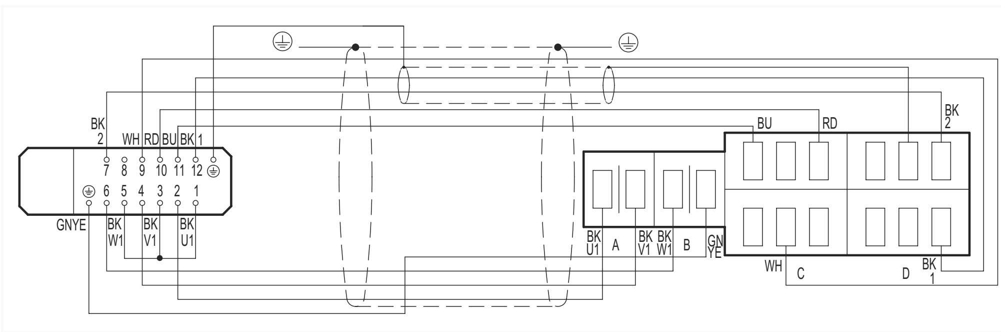
51577AXX

Part number 0 593 755 8

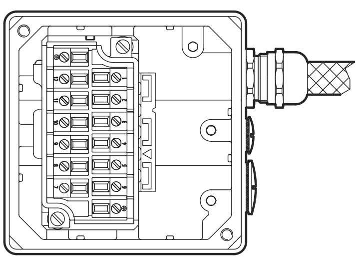
0 593 755 8



52395AXX

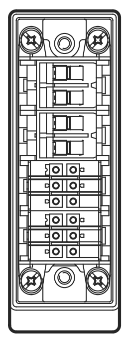


52397AXX



[1] IS upper part
[2] EMC cable gland
[3] Hybrid cable
[4] EMC cable gland
[5] Phoenix - PLUSCON-VC VARIOCON T3 plug connector, female

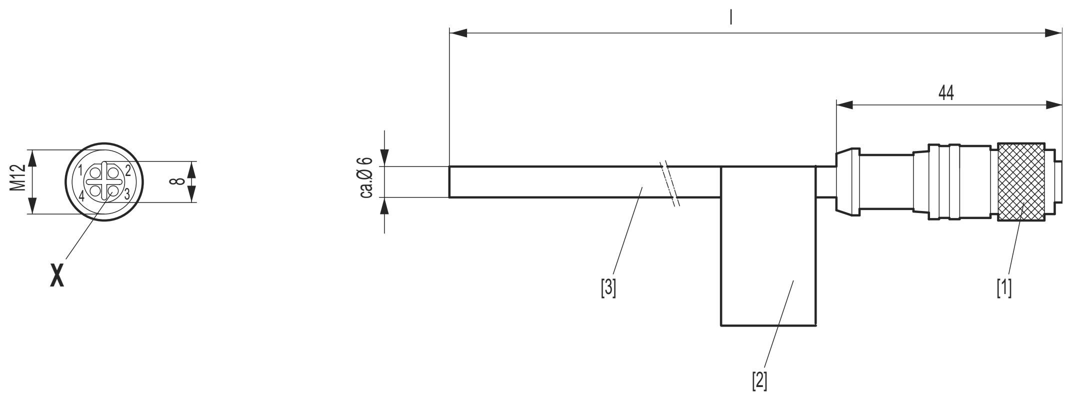
View X:



51577AXX

Part numbers 0 815 592 5 and 0 815 593 3

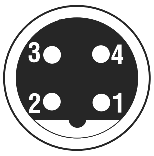
0 815 593 3
0 815 592 5



52344AXX

Detail X:

M12 plug connector
female
B coding
View of contact end



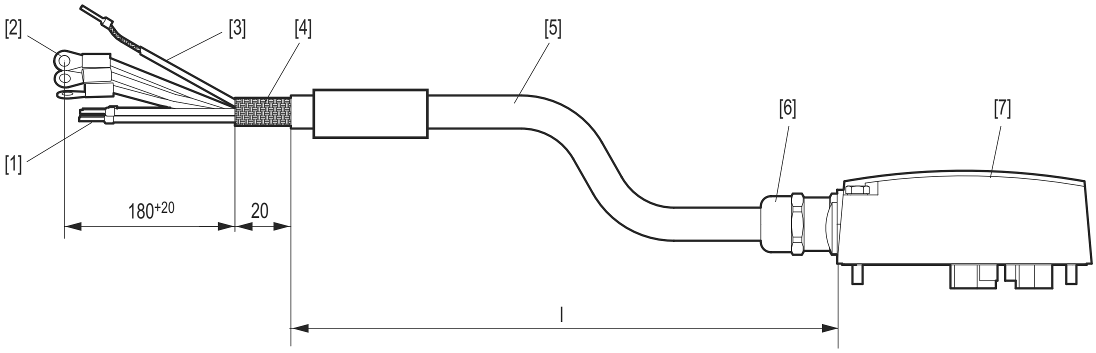
54558AXX

1	brown	(BN)
2	yellow	(YE)
3	white	(WH)
4	green	(GN)

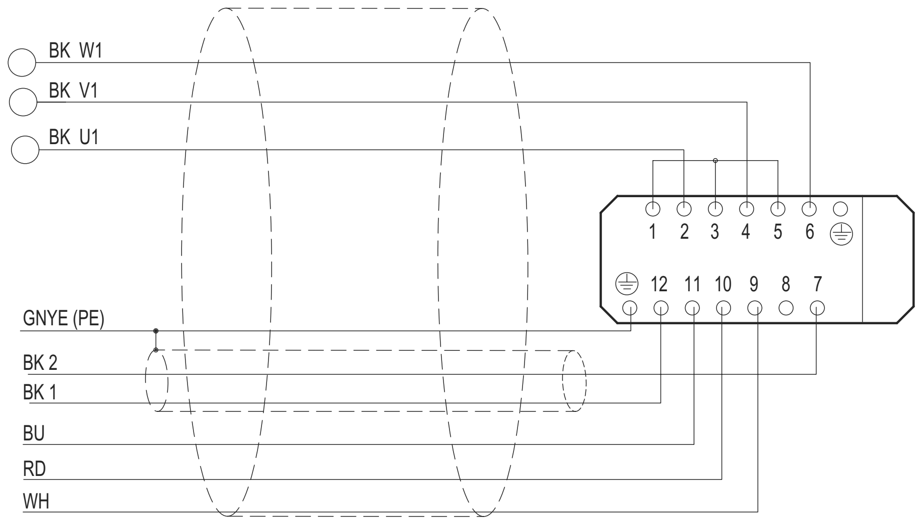
[1] Cable shield via shield sleeve with retaining screw
[2] SEW nameplate
[3] Line

Part number 0 816 166 6

0 816 166 6



52399AXX



52400AXX

[1] Conductor end sleeve

[2] Ring cable lug

[3] Shield of control core group 2 x 0.75 mm^2

[4] Stripped braided screen

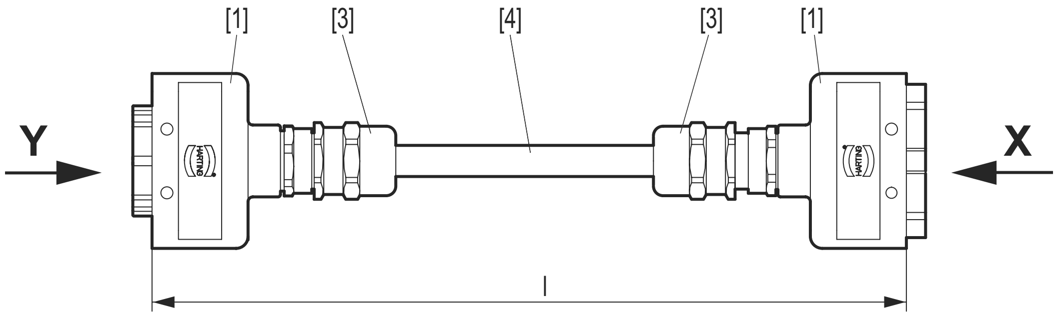
[5] Hybrid cable

[6] EMC cable gland

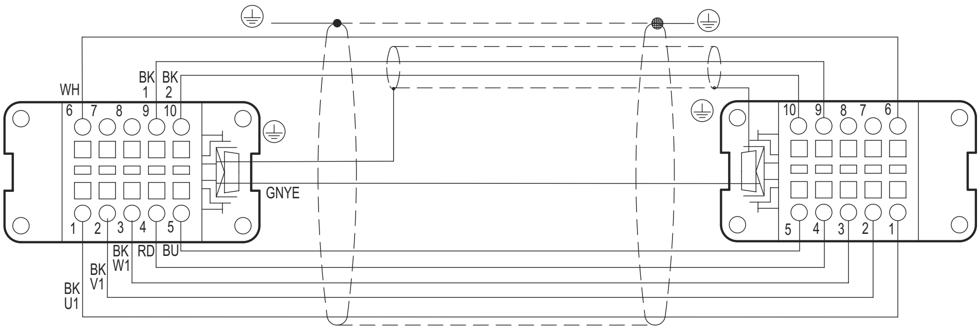
[7] IS upper section

Part number 0 816 208 5

0 816 208 5



52406AXX



52409AXX

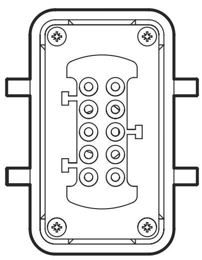
View Y:

View X:

[1] HAN10E plug connector

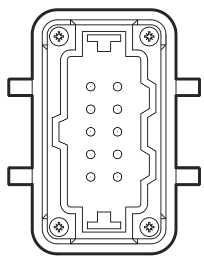
[3] EMC cable gland

[4] Hybrid cable



female

52407AXX

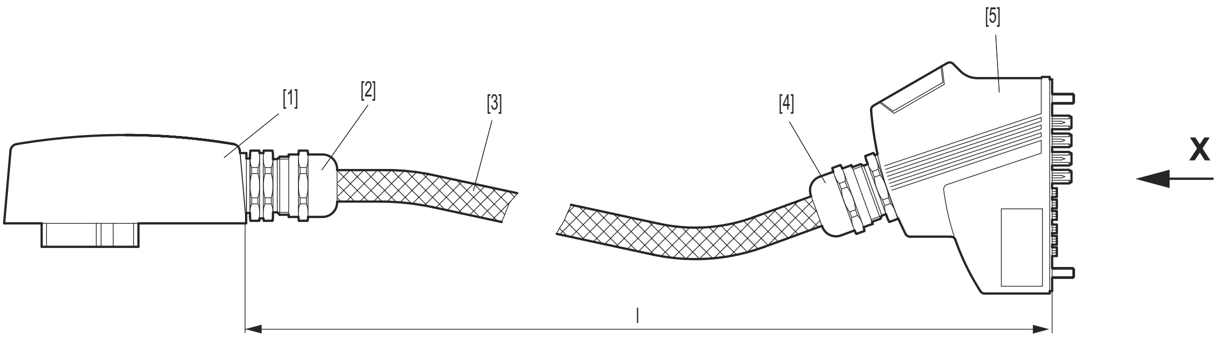


male

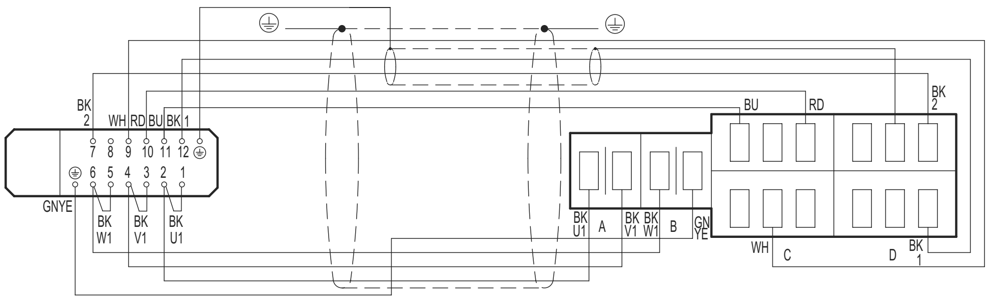
52408AXX

Part number 0 816 325 1 (motor size DR63 ... DT90)

0 816 325 1

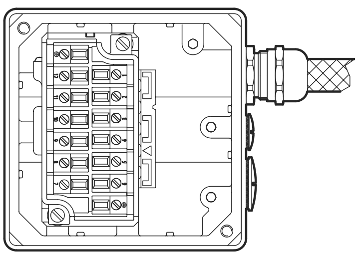


52396AXX

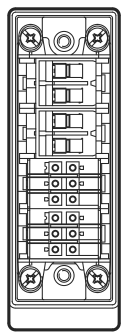


52394AXX

View X:



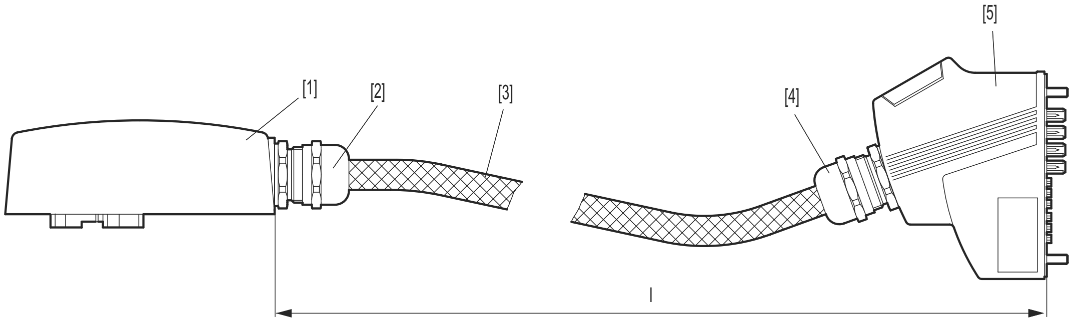
[1] IS plug connector upper section (motor size DR63 ... DT90)
[2] EMC cable gland
[3] Hybrid cable
[4] EMC cable gland
[5] Phoenix - PLUSCON-VC VARIOCON T3 plug connector, female



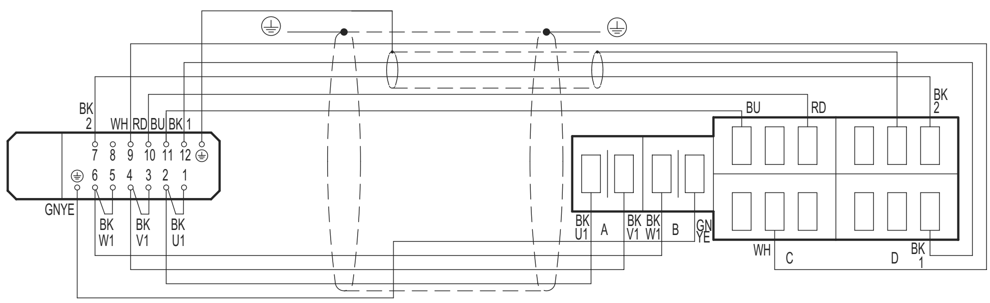
51577AXX

Part number 0 816 326 X (motor size DV100 ... DV132S)

0 816 326 X

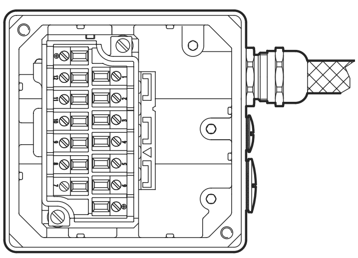


52395AXX

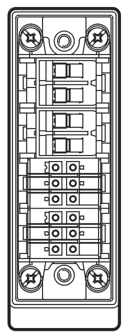


52394AXX

View X:



[1] IS plug connector upper section (motor size DV100 ... DV132S)
[2] EMC cable gland
[3] Hybrid cable
[4] EMC cable gland
[5] Phoenix - PLUSCON-VC VARIOCON T3 plug connector, female

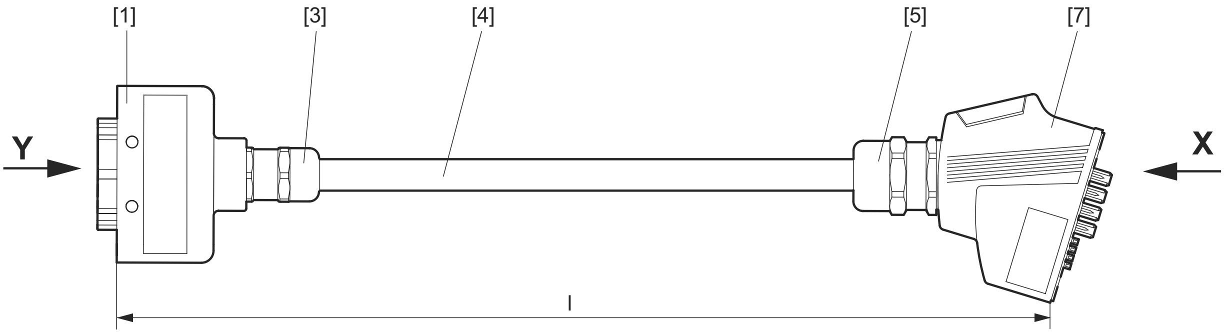


51577AXX

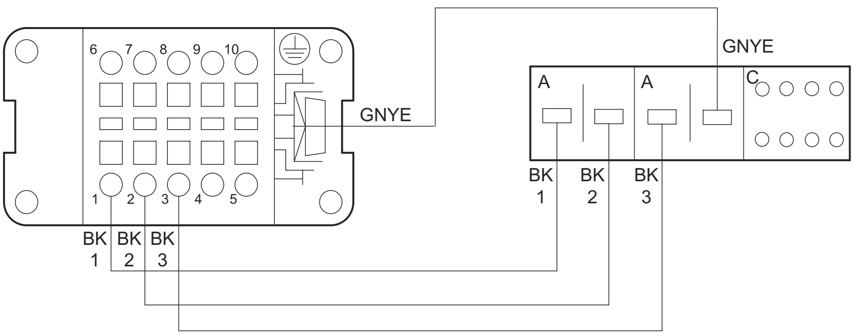
7

Part number 0 816 593 9

0 816 593 9

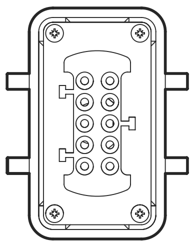


52479AXX



52481AXX

View Y:



52407AXX

[1] HAN10E plug connector, female

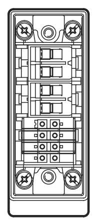
[3] Cable gland

[4] Cable

[5] Cable gland

[7] Phoenix - PLUSCON-VC VARIOCON T2 plug connector, female

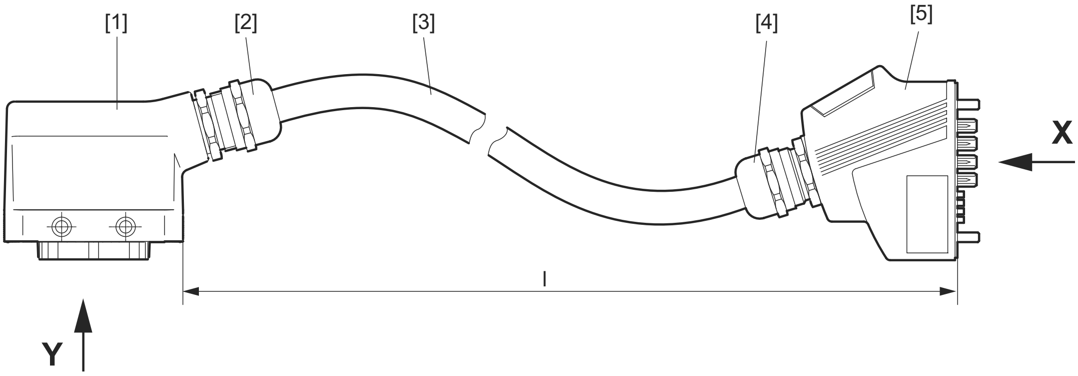
View X:



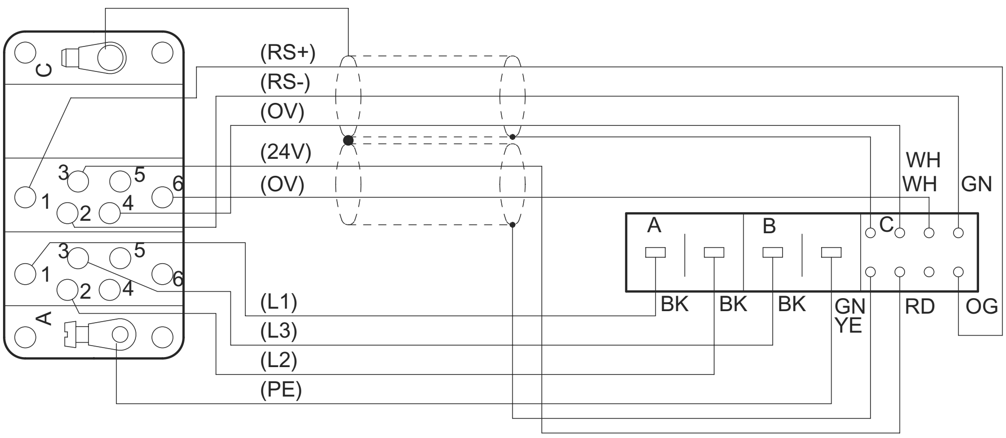
52463AXX

Part number 0 816 714 1

0 816 714 1

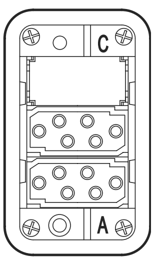


52500AXX



54396AXX

View Y:



52464AXX

[1] HAN10E modular plug connector, female

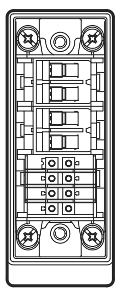
[2] Cable gland

[3] Hybrid cable

[4] Cable gland

[5] Phoenix - PLUSCON-VC VARIOCON T2 plug connector, female

View X:

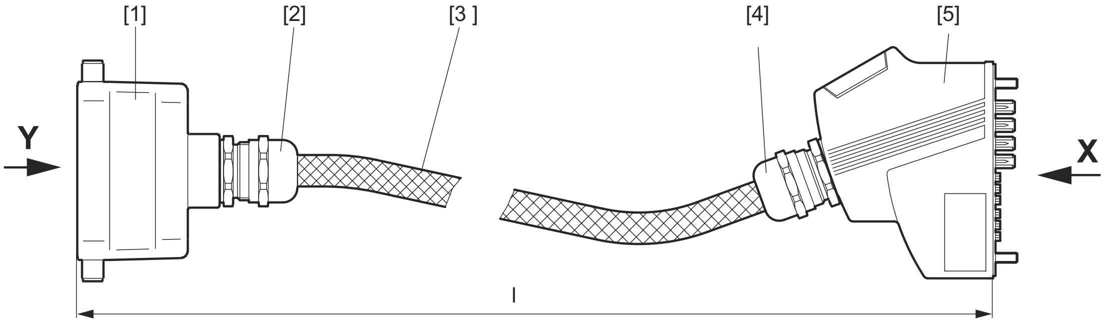


52463AXX

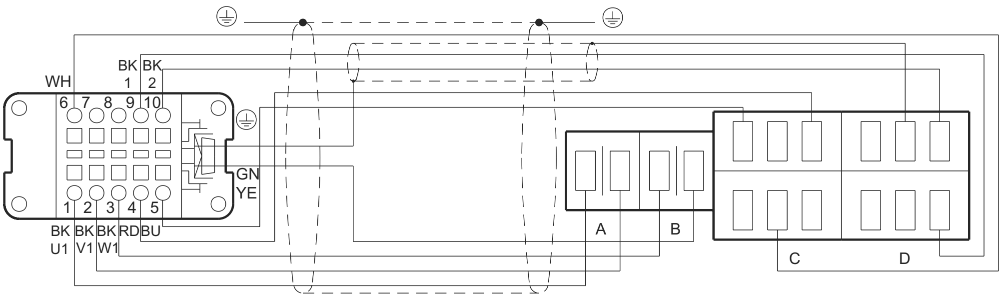
7

Part number 0 816 831 8

0 816 831 8

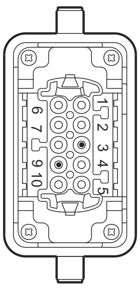


52482AXX



52489AXX

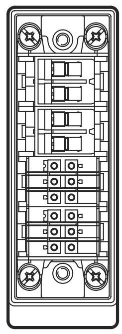
View Y:



52488AXX

- [1] HAN10E plug connector, female
- [2] EMC cable gland
- [3] Hybrid cable
- [4] EMC cable gland
- [5] Phoenix - PLUSCON-VC VARIOCON T3 plug connector, female

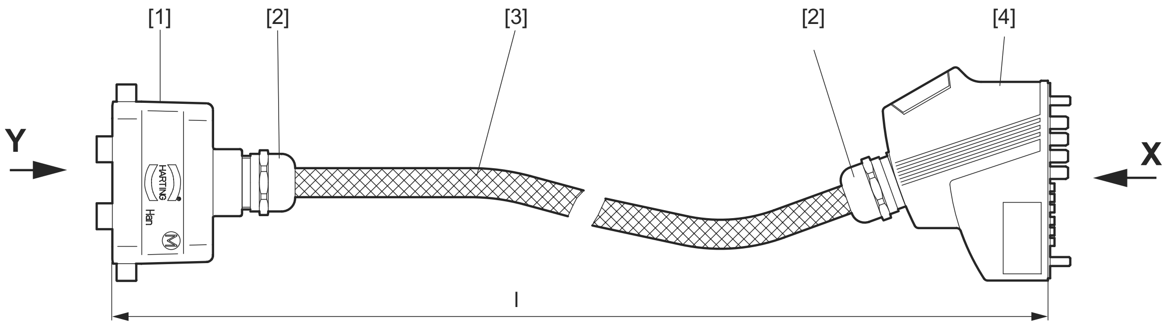
View X:



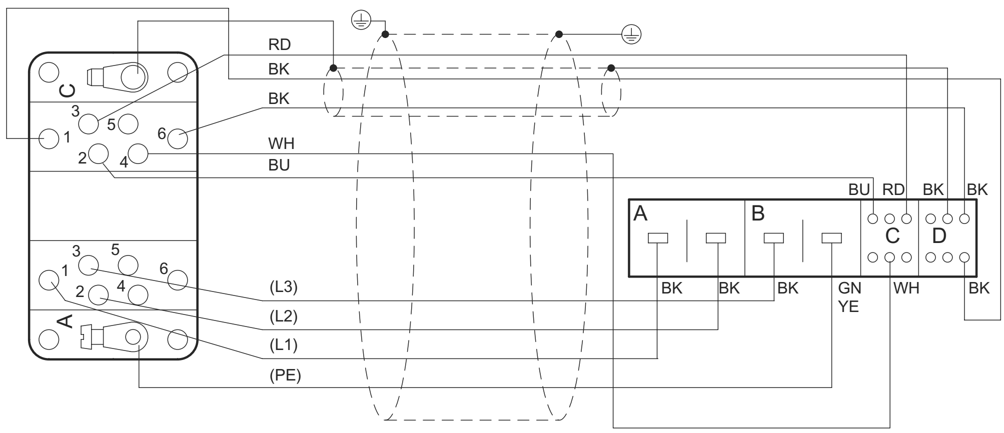
51577AXX

Part number 0 816 936 5

0 816 936 5

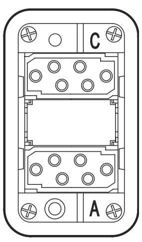


52515AXX



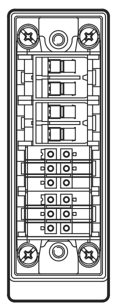
54399AXX

View Y:



52517AXX

View X:



51577AXX

[1] HAN10E modular plug connector, female

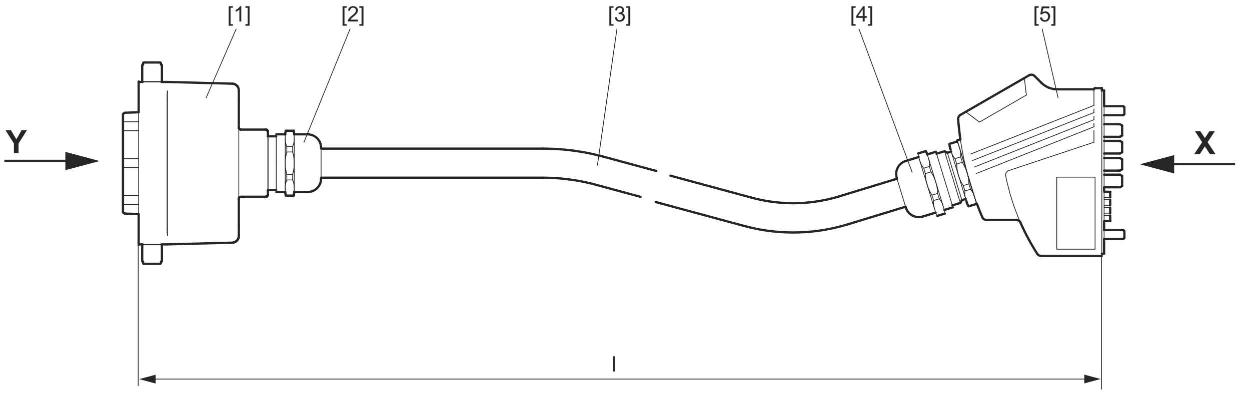
[2] EMC cable gland

[3] Hybrid cable

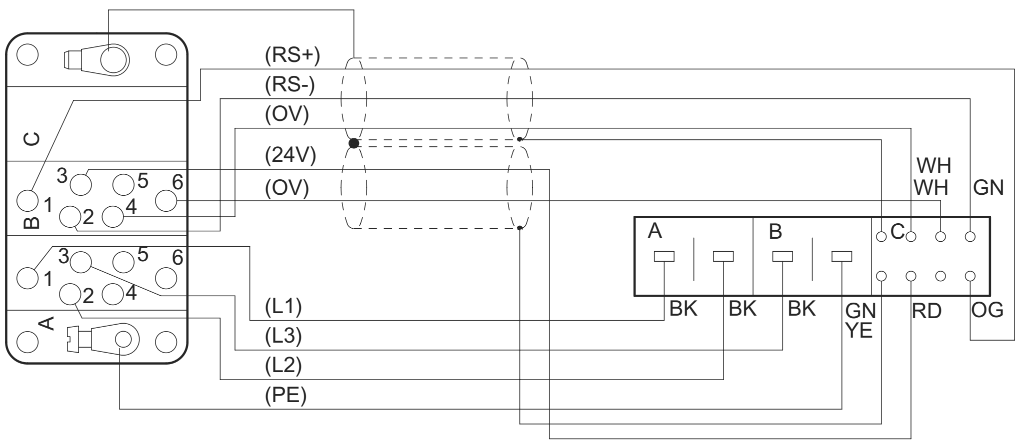
[4] Phoenix - PLUSCON-VC VARIOCON T3 plug connector, female

Part number 0 817 112 2

0 817 112 2

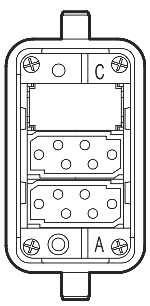


52236AXX



54403AXX

View Y:



52239AXX

[1] HAN10B modular plug connector, female

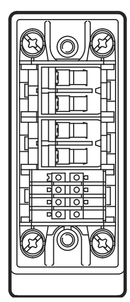
[2] Cable gland

[3] Hybrid cable

[4] Cable gland

[5] Phoenix - PLUSCON-VC VARIOCON T2 plug connector, female

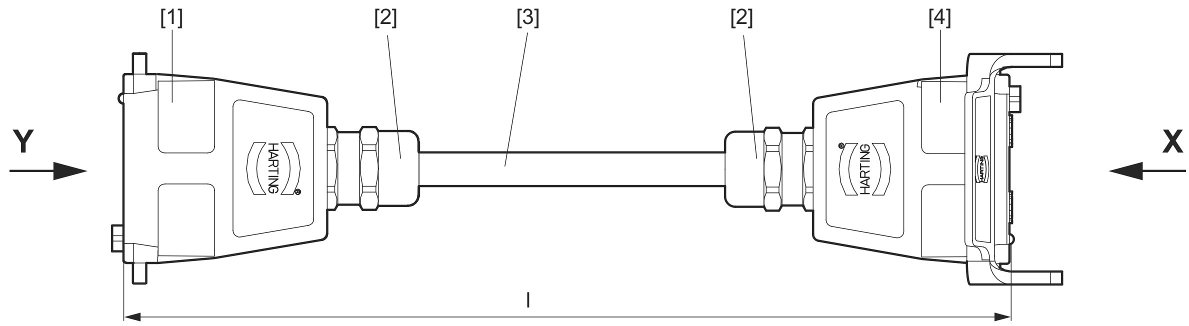
View X:



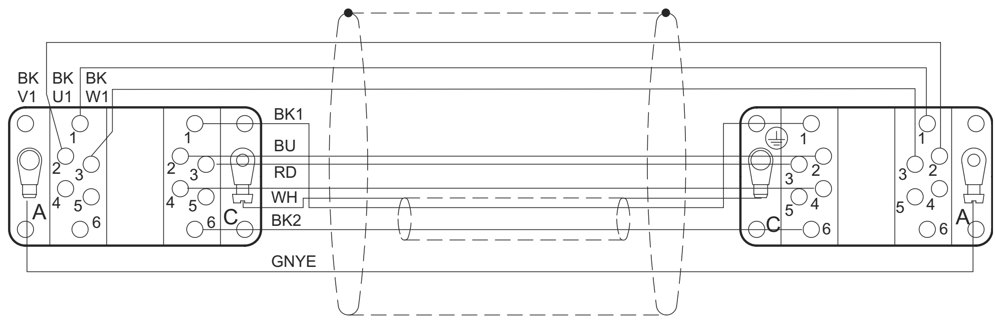
52240AXX

Part number 0 817 155 6

0 817 155 6



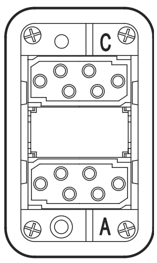
52518AXX



52519AXX

View Y:

View X:

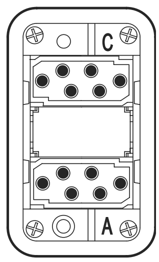


[1] HAN10E modular plug connector, female

[2] EMC cable gland

[3] Hybrid cable

[4] HAN10E modular coupler plug, male

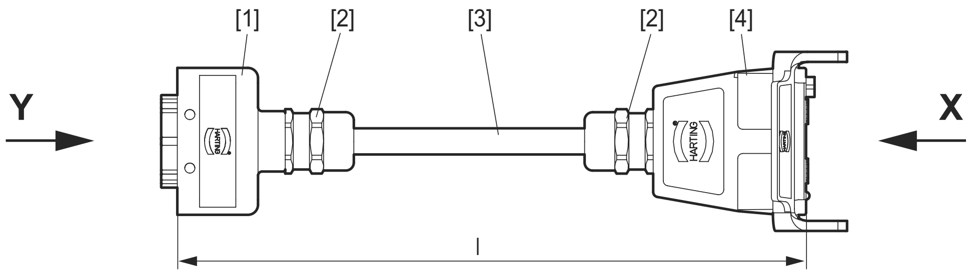


female

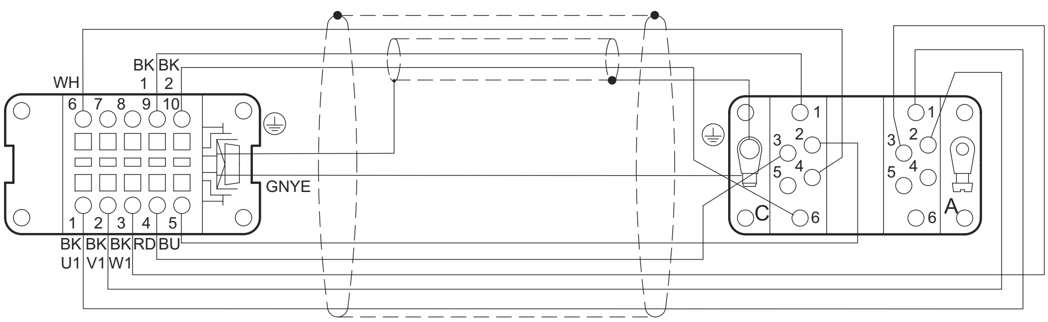
male

Part number 0 817 156 4

0 817 156 4



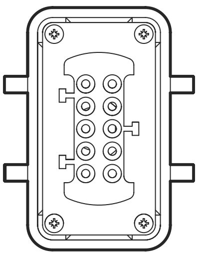
52505AXX



52513AXX

View Y:

View X:



female

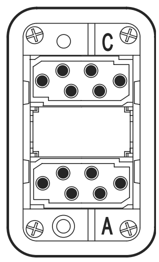
52407AXX

[1] HAN10E modular plug connector, female

[2] EMC cable gland

[3] Hybrid cable

[4] HAN10E modular coupler plug, male

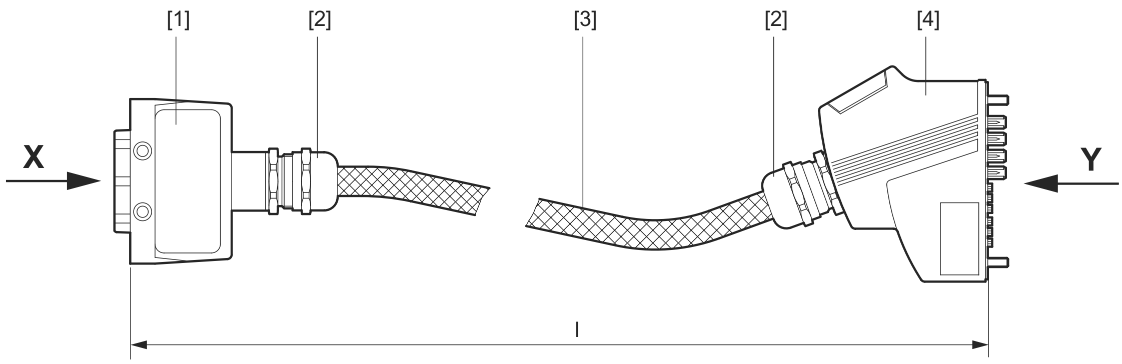


male

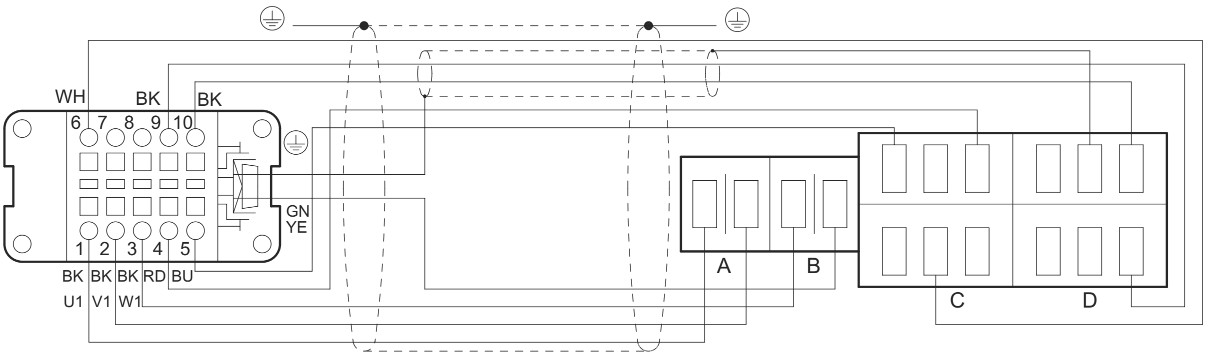
52517AXX

Part number 0 817 533 0

0 817 533 0

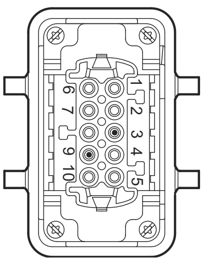


54387AXX



54392AXX

View X:



54388AXX

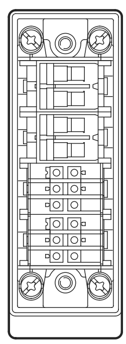
[1] HAN 10 plug connector, female

[2] EMC cable gland

[3] Hybrid cable

[4] Phoenix - PLUSCON-VC VARIOCON T3 plug connector, female

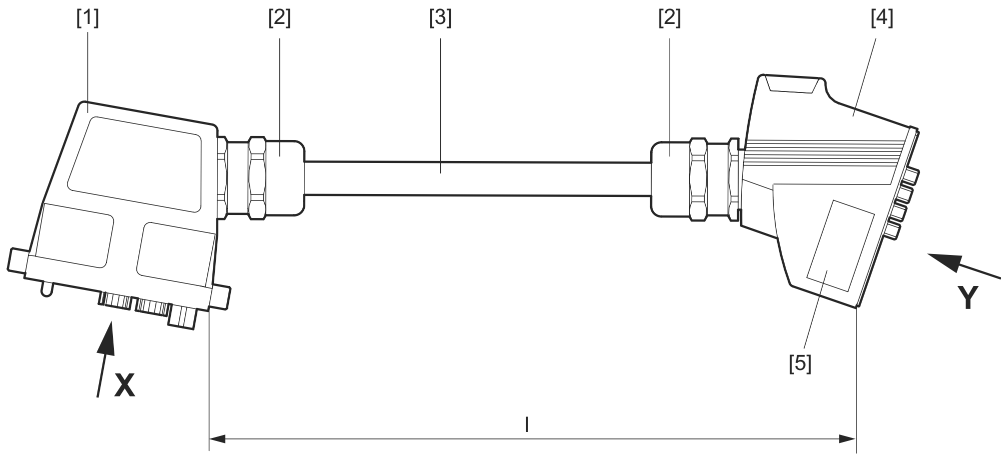
View Y:



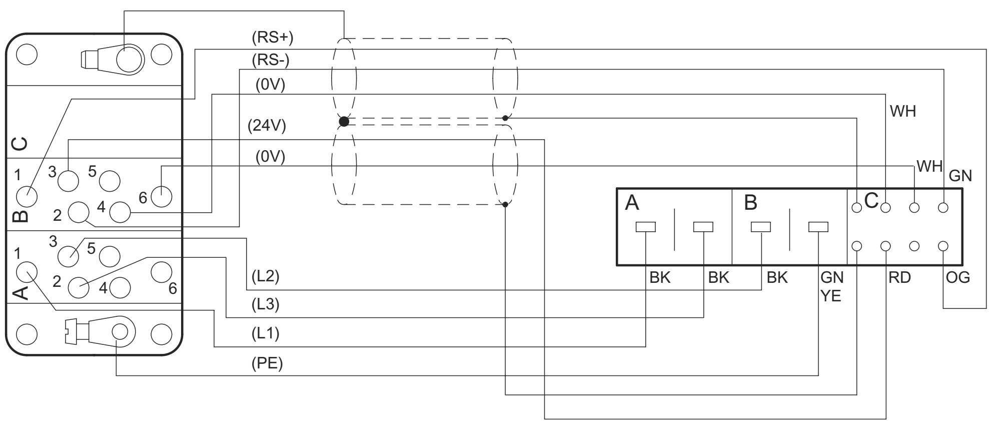
54391AXX

Part number 0 817 696 5

0 817 696 5

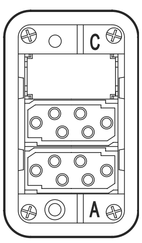


52977AXX



52978AXX

View Y:



[1] HAN 10 modular plug connector, female

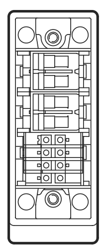
[2] Cable gland

[3] Hybrid cable

[4] Phoenix - PLUSCON-VC VARIOCON T2 plug connector, female

52980AXX

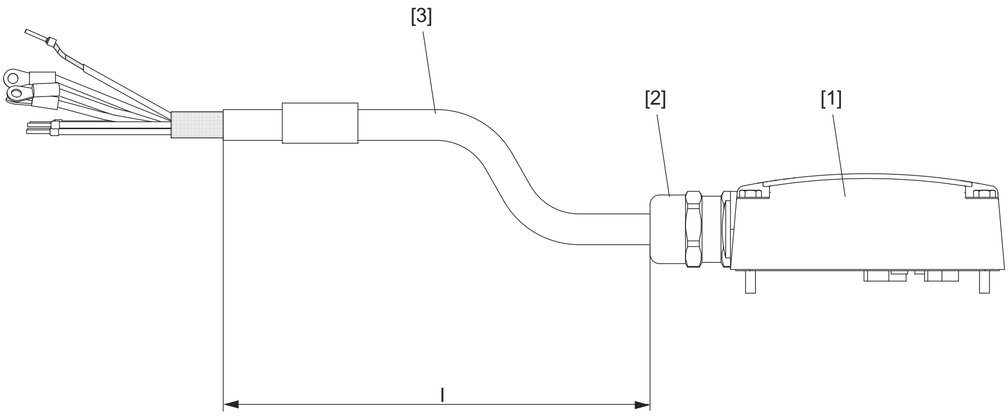
View X:



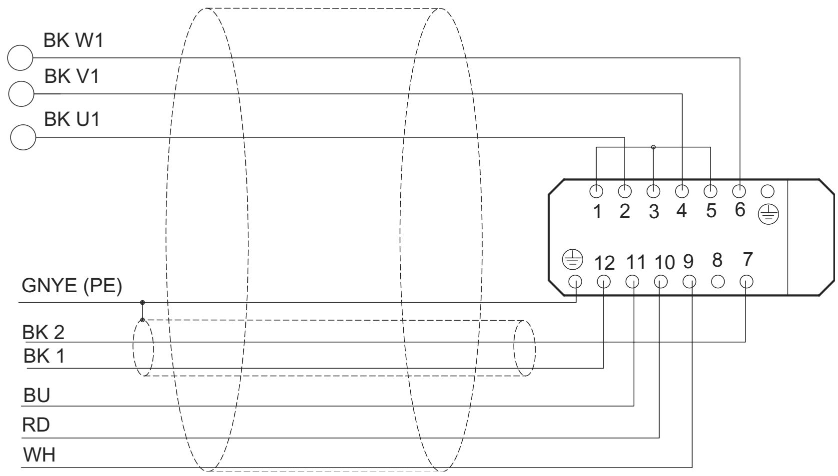
52979AXX

Part number 0 817 812 7

0 817 812 7



54480AXX



54481AXX

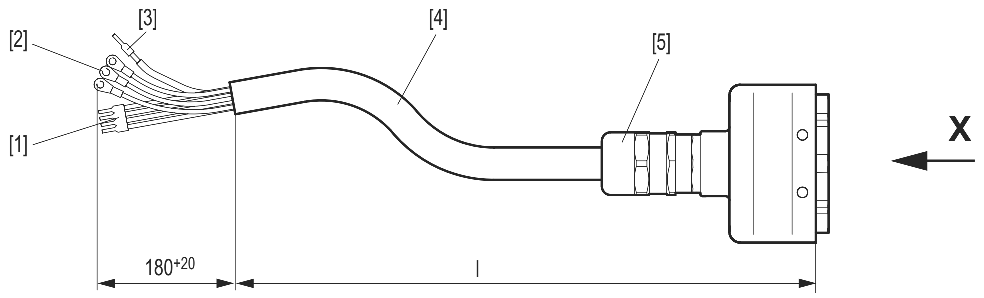
[1] IS upper section

[2] EMC cable gland

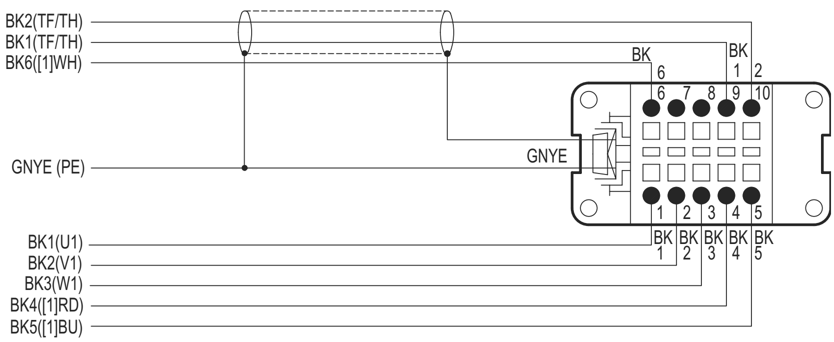
[3] Hybrid cable

Part number 0 817 886 0

0 817 886 0



52605AXX



52611AXX

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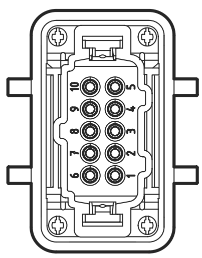


52610AXX

HAN10E plug connector, male

[1] Conductor end sleeve

[2] Ring cable lug M4

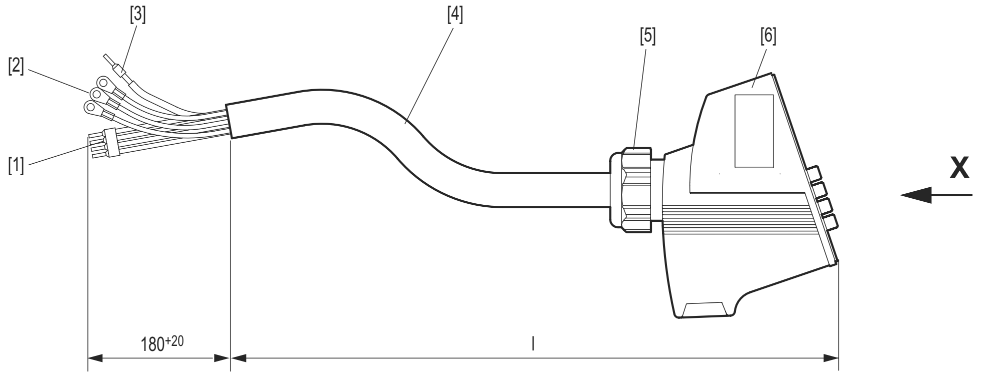
[3] Shield of control core group 2 x 0.75 mm^2

[4] Hybrid cable

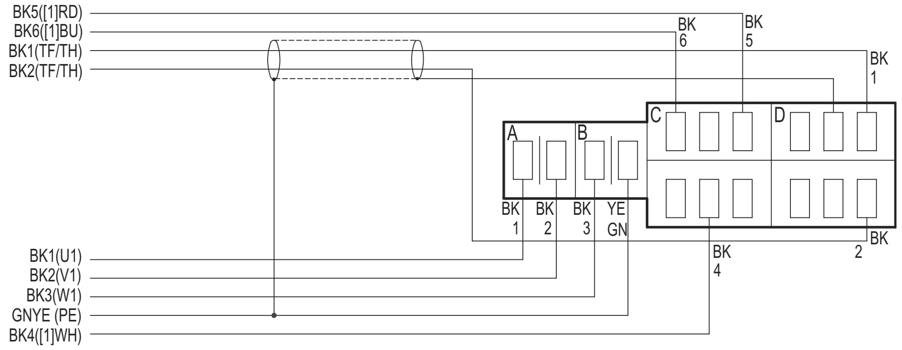
[5] EMC cable gland

Part number 0 817 887 9

0 817 887 9



52606AXX



52616AXX

[1] Conductor end sleeve

[2] Ring cable lug M4

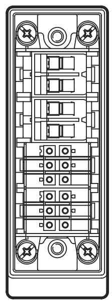
[3] Shield of control core group 2 x 0.75 mm^2

[4] Hybrid cable

[5] Cable gland

[6] Phoenix - PLUSCON-VC VARIOCON T3 plug connector, female

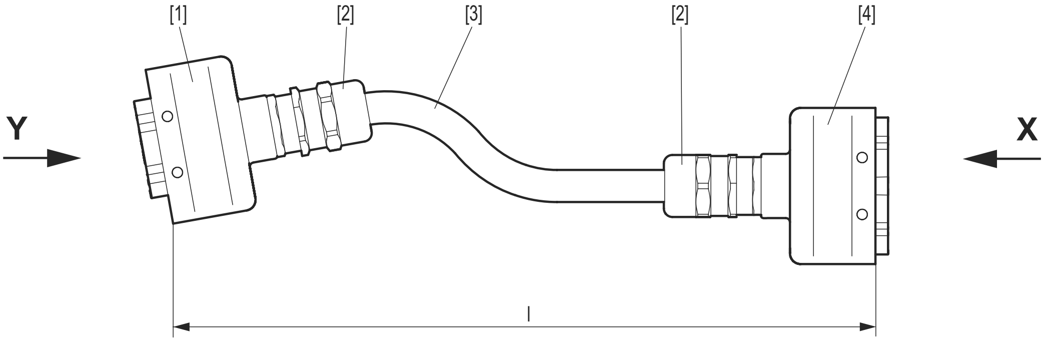
View X:



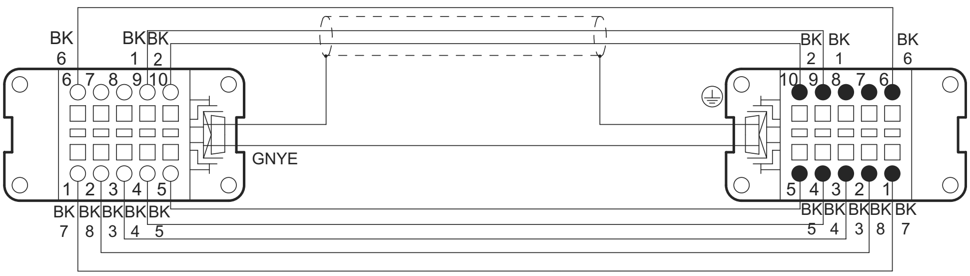
51577AXX

Part number 0 817 888 7

0 817 888 7

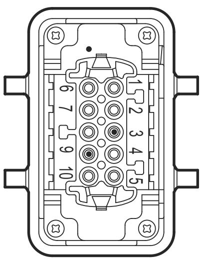


52608AXX



54404AXX

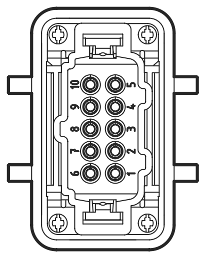
View Y:



52349AXX

[1] HAN 10 plug connector, female
[2] Cable gland
[3] Hybrid cable
[4] HAN 10 plug connector, male

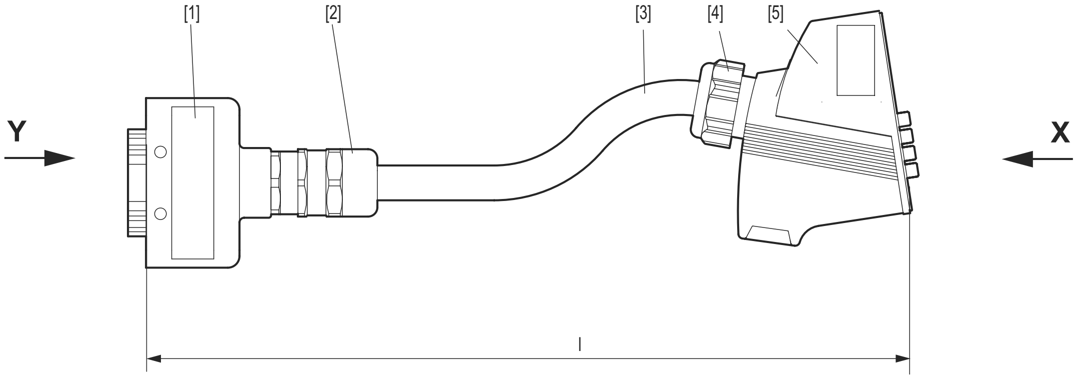
View X:



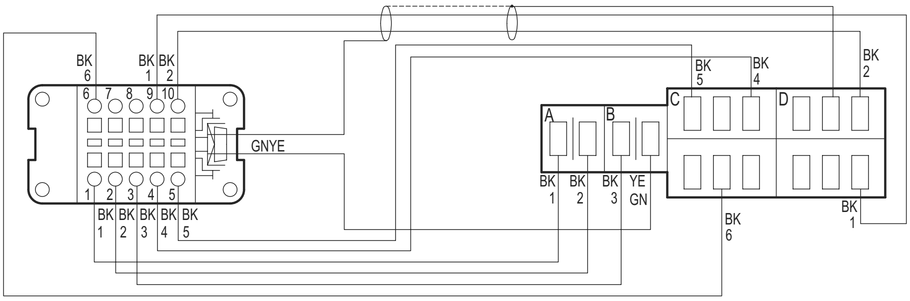
52610AXX

Part number 0 817 889 5

0 817 889 5

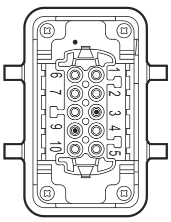


52607AXX



52618AXX

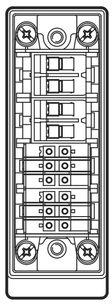
View Y:



52349AXX

[1] HAN 10 plug connector, female
[2] Cable gland
[3] Hybrid cable
[4] Cable gland
[5] Phoenix - PLUSCON-VC VARIOCON T3 plug connector, female

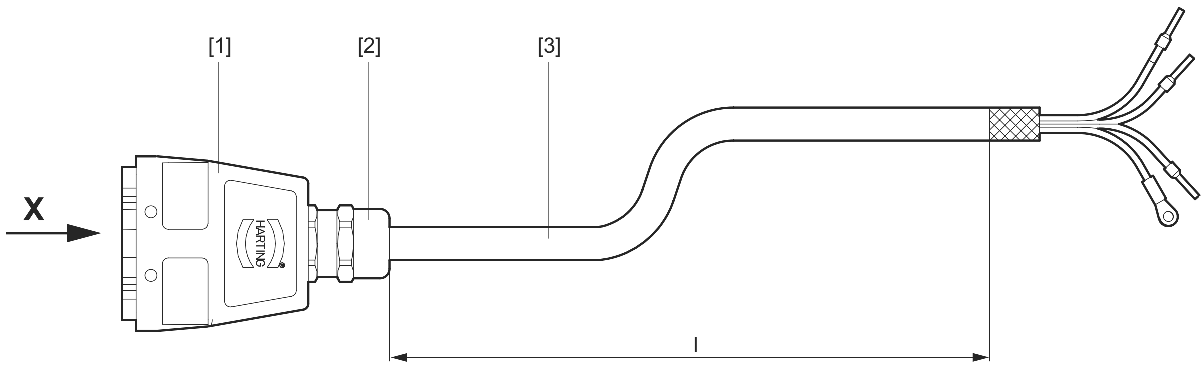
View X:



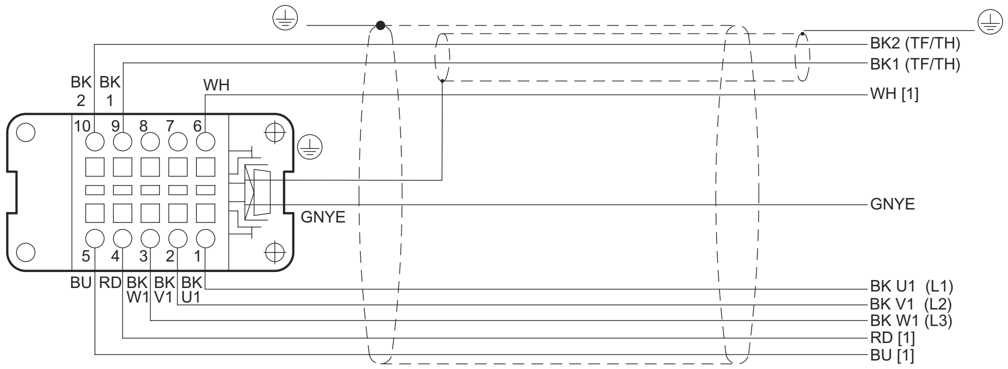
51577AXX

Part number 0 817 948 4

0 817 948 4

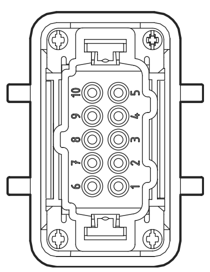


54393AXX



54410AXX

View X:



54407AXX

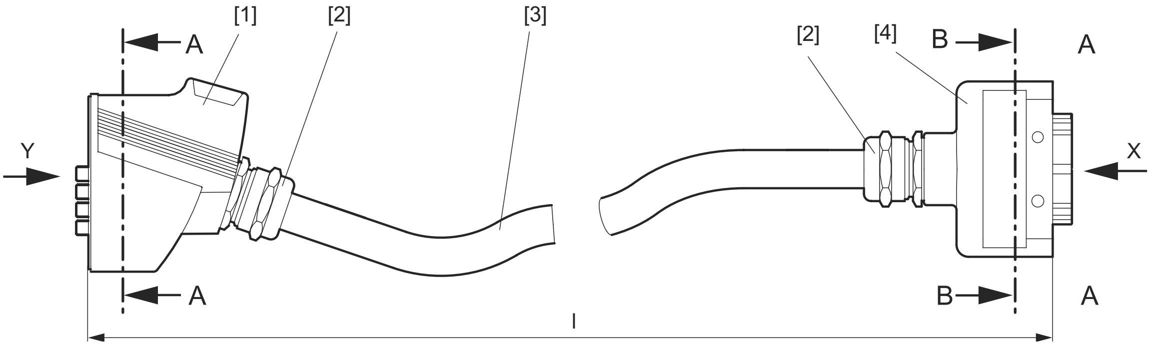
[1] HAN10 plug connector, male

[2] EMC cable gland

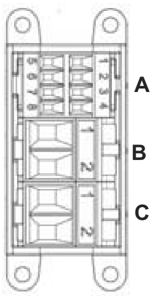
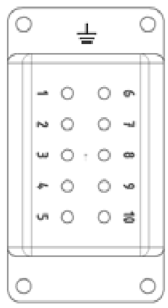
[3] Hybrid cable

Part number 0 818 368 6

0 818 368 6

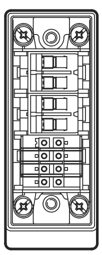


54568AXX

A-A Field distributor	Wiring diagram field distributor MFZ.3W / Plug contact	Connection diagram: Cable core designation	Signal	Wiring diagram 80 378nn03 08 755nn01 / Plug contact	B-B Terminal box
					
	B2	BK U1	L1	1	
	C1	BK V1	L2	2	
	C2	BK W1	L3	3	
	A7	RD	24V	4	
	A3	WH	0V	5	
	A5	OG	R	6	
	A1	GN	L	7	
			n.c.	8	
			n.c.	9	
	A6	WH	O.K.	10	
	A8				
	A4	Shield	⏚	PE	
	B1	GNYE		PE	

54571AEN

View Y:



54570AXX

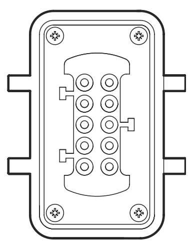
[1] Phoenix - PLUSCON-VC VARIOCON T2 plug connector, female

[2] Cable gland

[3] Hybrid cable

[4] HAN10 plug connector, female

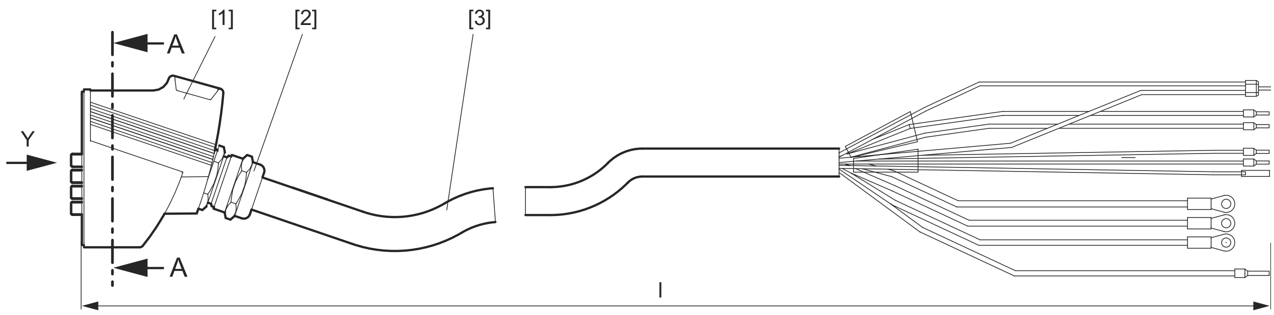
View X:



54569AXX

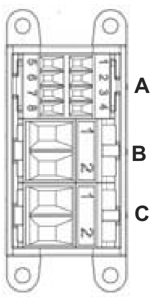
Part number 0 818 705 3

0 818 705 3



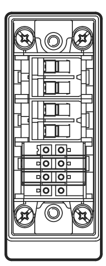
54572AXX

A-A Field distributor	Connection diagram		Terminal box MSW1E
Wiring diagram field distributor MFZ.3W — Plug contact	Cable core designation	Signal	Connection wiring diagram — Contact
B2	BK\L1	L1	KS4
C1	BK\L2	L2	KS4
C2	BK\L3	L3	KS4
A7	RD\24V	24V	AE
A3	WH\0V	0V	AE
A5	OG\RS+	R	AE
A1	GN\RS-		insulated
A6	WH\0V	O.K.	AE
A8			
A4	Shield	⏚	AE
B1	GNYE		AE



54573AEN

View Y:



54570AXX

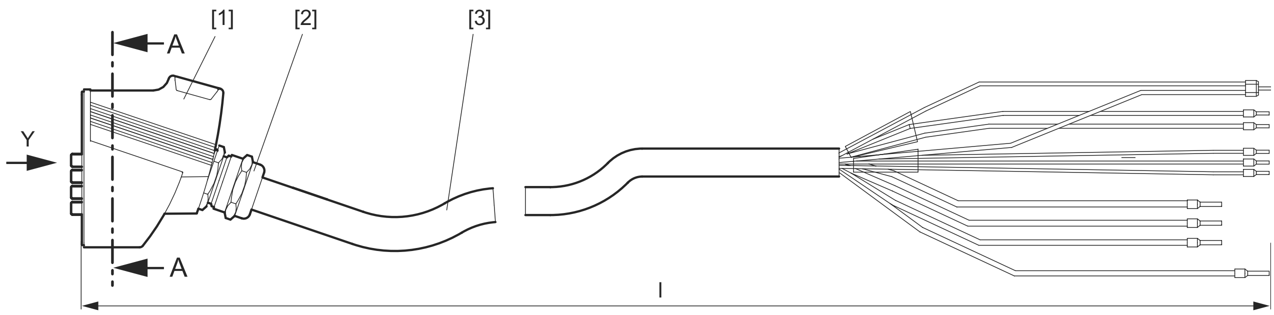
[1] Phoenix - PLUSCON-VC VARIOCON T2 plug connector, female

[2] Cable gland

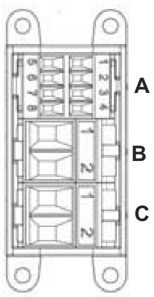
[3] Hybrid cable

Part number 0 818 708 8

0 818 708 8

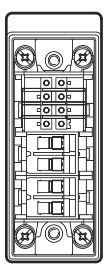


54574AXX

A-A Field distributor	Wiring diagram field distributor MFZ.3W / Plug contact	Connection diagram: Cable core designation	Signal	Terminal box MSW2S: Connection wiring diagram / Contact
	B2	BK\L1	L1	AE
	C1	BK\L2	L2	AE
	C2	BK\L3	L3	AE
	A7	RD\24V	24V	AE
	A3	WH\0V	0V	AE
	A5	OG\RS+	R	AE
	A1	GN\RS-	L	AE
	A6	WH\0V	O.K.	AE
	A8			
	A4	Shield	⏚	AE
	B1	GNYE		AE

54611AEN

View Y:



54612AXX

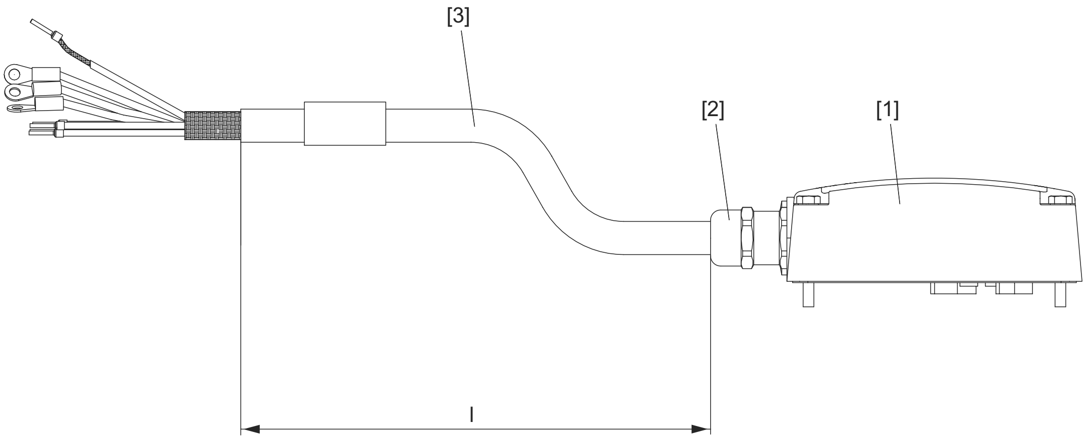
[1] Phoenix - PLUSCON-VC VARIOCON T2 plug connector, female

[2] Cable gland

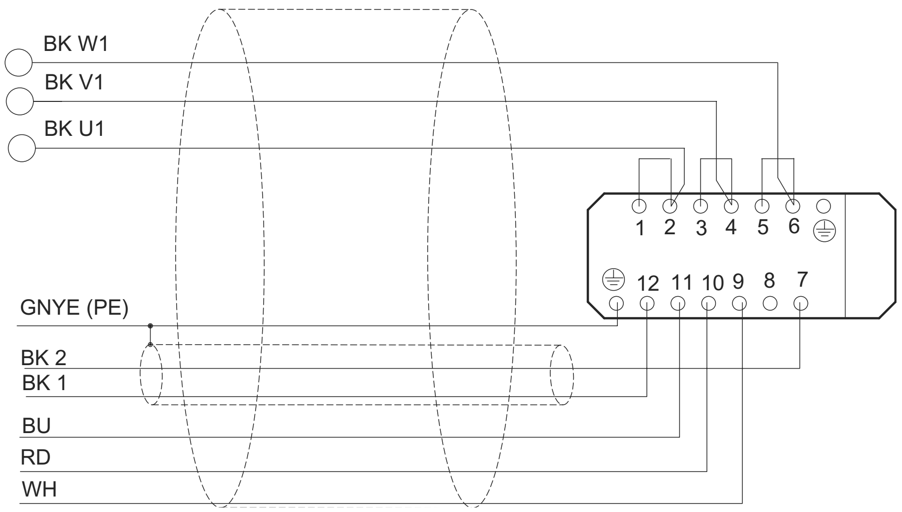
[3] Hybrid cable

Part number 0 817 817 8

0 817 817 8



54519AXX



54520AXX

[1] IS upper section

[2] EMC cable gland

[3] Hybrid cable

8 Appendix

8.1 Type code for SEW-EURODRIVE plug connectors – options

1st position – Plug connector mounting position
2nd position – Plug connector type / Manufacturer
3rd position – Mechanical design
4th position – Electrical interface / Contact assignment
Differentiation bet. plug connectors / Signal plug connector

A	S	B	1

4th position:

- 0 *M12 signal plug connector: DC 24 V supply e.g. AVS0*
- 1 Motor/brake motor: Standard wiring diagram 6 motor winding ends connected by customer
  M12 signal plug connector: Standard wiring diagram e.g. for MOVIMOT® or MOVI-SWITCH®
- 2 Han-Modular®: Motor/brake motor: 6 motor winding ends connected by customer
  M12 signal plug connector: Data cable e.g. PROFIBUS DP
- 3 Power supply input wiring diagram for MOVIMOT® or MOVI-SWITCH®
- 4 Hybrid: Motor/brake motor wiring diagram for mounting in close proximity for MOVIMOT® or MOVI-SWITCH® (incl. MOVIMOT®/MOVI-SWITCH® with field mounting platform or MOVIMOT® field distributor Z.7/Z.8)
- 5 Reserved
- 6 Hybrid: MOVIMOT® power supply input and communication (e.g. Field distributor Z.3/Z.6, field control unit)
- 7 Wiring diagram for CT/CV motor connected in star/delta connection at the factory
- 8 Choice of star or delta connected at factory, 3 ends connected by customers
- 9 Choice of star/delta connected at factory, 3 ends connected by customers
  Internal voltage supply to the brake
- A - G Reserved
- H Hybrid: Power supply input, control signals and/or 24 V DC e.g. MOVIMOT®, MOVI-SWITCH® with field control
- K *Signal plug connector (-combination) M12: AS-Interface*
- S *Signal plug connector (-combination) M12: SENSOR I/O*
- W Hybrid: Power supply input and control signals for MOVI-SWITCH® on field distributor Z.3
- X Customer-specific contact assignment

3rd position:

- A Standard housing (not EMC), two-clamp closure
- B EMC housing, two-clamp closure
- C EMC housing, two-clamp and locking plate closure, contacts gold-plated
- D Standard housing (not EMC), one-clamp closure
- E EMC housing, one-clamp closure
- F Standard housing (not EMC), screw connection
- G EMC housing, screw connection
- K ECOFAST® EMC B housing, one-clamp closure
- L EMC housing, 7/8", 1 3/8" screw conneciton, pin (male)
- N EMC housing, two-clamp closure, articulated frame C...A, negated modular frame
- R *M12 7-pole + PE*
- S *M12 Standard coding (A coding)*
- T *M12 B coding*
- U Click-stop connection
- X Customer-specific, mechanical design / type of closure

2nd position:

- B Han-Modular® (1C and 1E module), pin (male)
- C Han® 10 E, Crimp pre-fabrication, leading switch contacts (e.g. TH) pin (male)
- D Han-Modular® (2C and 1E module), pin (male)
- E Wieland revos® MOT
- F Brad Power™ 1Rxxx /CRxxx Serie, pin (male)
- G Han® Q4/2 socket (female)
- H Han® Q4/2 pin (male)
- I Reserved
- J Han® 6 HsB
- K Han-Modular® 1C module axial screw contacts for clamping area to 10 mm² (AWG8) and 1E module, pin (male)
- L Han® 10 E, socket (female)
- M Han-Modular® (2E module) pin (male)
- N Han® Q8/0 pin (male)
- O Han® Q8/0 socket (female)
- P Phoenix PLUSCON VARIOCON VC (male)
- R Han® 6 E, pin (male)
- S Han® 10 E, pin (male)
- T Han® 16 E, pin (male)
- U Wieland podis® CON flalt cable output, pin (male)
- V *M12 plug connector (male)*
- W *M12 socket (female)*
- Z *M12 combination AS-Interface, 24 V and sensor I/O (e.g. MOVIMOT® with integrated AS-interface)*
- X Customer-specific plug connector type/combination

1st position:

- A Installed plug connector
- K Cable end with plug connector

/IS, ISU, IS4, ISU4 = Integrated plug connector from SEW-EURODRIVE
/KIS, KIS4, = Pre-fabricated cable with IS plug connector as top part

Han®, Han-Modular® are registered trade marks of Harting KGaA
Wieland revos® is a registered trademark of Wieland Electric GmbH
Brad Power™ is a registered trademark of Woodhead L.P.

55461AEN

Figure 21: Type code for SEW plug connectors

Conversion old and new designation

SEW offers comprehensive plug connector options for AC motors:

- Integrated plug connectors (IS), in-house development SEW-EURODRIVE
- Type Han® 10 E plug connector, Harting
- Type Han-Modular® plug connector, Harting

There are two types of terminal box housings for plug connectors on motors DT71 to DV100:

- Mounted plug connector without EMC frame
- Integral (cast-on) plug connector and EMC frame

In the long run, the terminal box without EMC frame will be completely replaced by the one with EMC frame.

Conversion list

Overview old / new designation of connectors / wiring diagrams for motor sizes 71 – 132 S					
Old designation		New designation		or alternative designation	
Connector	**Diagram**	**Connector**	**Diagram**	**Connector**	**Diagram**
ABB1	DT 125	ABB8	DT 125		
ABC8	DT 96	ABC8	DT 96		
ABE1	DT 125	ABE8	DT 125		
ACA2	DT 84	ACB1	DT 106		
ACA8	08 898 001	ACB8	DT 122		
ACB8	DT 122	ACB8	DT 122		
ACC4	DT 130	ACC4	DT 130		
ACD8	08 898 001	ACE8	DT 122		
AMA1	DT 87	AMB8	DT 109		
AMA1	DT 89	AMB2	DT 111		
AMA1	DT 88	AMB2	DT 110		
AMA4	DT 117	AMB4	DT 121		
AMA5	DT 87	Invalid, can be replaced with AMB8 (DT 109).			
AMB1	DT 109	AMB8	DT 109		
AMB1	DT 110	AMB2	DT 110		
AMB1	DT 111	AMB2	DT 111		
AMB4	DT 121	AMB4	DT 121		
AMB7	DT 125	AMB7	DT 109	ABB7	DT 125
AMD1	DT 87	AME8	DT 109		
AMD1	DT 89	AME2	DT 111		
AMD1	DT 88	AME2	DT 110		
AME1	DT 109	AME8	DT 109		
AME1	DT 110	AME2	DT 110		
AME1	DT 111	AME2	DT 111		
AME4	DT 121	AME4	DT 121		
AME7	DT 125	AMB7	DT 109	ABE7	DT 125
APG1	DT 98	APG1	DT 98		
ASA1	DT 84	ASB1	DT 106		
ASA1	DT 85	ASB1	DT 107		
ASA1	DT 86	ASB1	DT 108		

Overview old / new designation of connectors / wiring diagrams for motor sizes 71 – 132 S					
Old designation		New designation		or alternative designation	
Connector	**Diagram**	**Connector**	**Diagram**	**Connector**	**Diagram**
ASA3	DT 115	ASA3	DT 115	Applies to all options!	
ASA4	DT 116	ASB4	DT 120		
APG4	DT 119	APG4	DT 119		
ASA5	DT 113	Invalid, can be replaced with ASB8 (DT 122).			
ASB1	DT 106	ASB1	DT 106		
ASB1	DT 107	ASB1	DT 107		
ASB1	DT 108	ASB1	DT 108		
ASB4	DT 120	ASB4	DT 120		
ASB7	DT 124	ASB7	DT 122		
ASB8	DT 122	ASB8	DT 122		
ASD1	DT 84	ASE1	DT 106		
ASD1	DT 85	ASE1	DT 107		
ASD1	DT 86	ASE1	DT 108		
ASD2	DT 84	ACE1	DT 106		
ASD3	DT 115	ASD3	DT 115	Applies to all options!	
ASD4	DT 116	ASE4	DT 120		
ASE1	DT 106	ASE1	DT 106		
ASE1	DT 107	ASE1	DT 107		
ASE1	DT 108	ASE1	DT 108		
ASE4	DT 120	ASE4	DT 120		
ASE7	DT 124	ASE7	DT 122		
ASE8	DT 122	ASE8	DT 122		
ASK1	DT 106	ASK1	DT 106		
IS / ISU	DT 81 / 82 / 83	IS / ISU	DT 81 / 82 / 83		

8.2 Mounting positions of plug connectors

For all gearmotors

The following order information is required in addition to the mounting position for an accurate configuration of the drive.

Position of the motor terminal box and the cable entry – standard motors

To date, the positions of the terminal box have been specified as 0°, 90°, 180° or 270° as viewed onto the fan guard = B-end (→ Figure 22). A change in the product standard EN 60034 specifies that the following designations for terminal box positions will have to be used in future:

- As viewed onto the output shaft = A-end
- Designation as R (right), B (bottom), L (left) and T (top)

This new designation applies to foot-mounted motors without a gear unit in mounting position B3 (= M1). The previous designation is retained for gearmotors. Figure 22 shows both designations. Where the mounting position of the motor changes, R, B, L and T are rotated accordingly. In motor mounting position B8 (= M3), T is at the bottom.

The position of the cable entry can be selected as well. The possibilities are "X" (= normal position), "1", "2" or "3" (→ Figure 22).

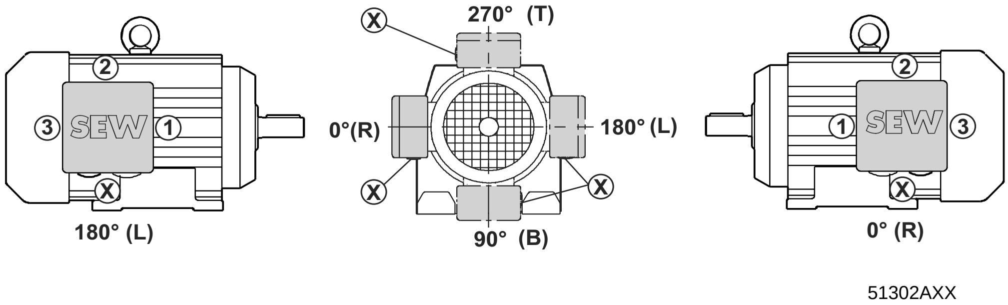


Figure 22: Position of terminal box and cable entry

Unless other information is given regarding the terminal box, the 0° type (R) with "X" cable entry will be supplied. We recommend selecting cable entry "2" with mounting position M3.

- **When the terminal box is in the 90° (B) position**, check to see if the gearmotor has to be supported.
- **Only** cable entries **"X"** and **"2"** are possible with **DT56 and DR63** motors. **Exception: Cable entry "3"** is also possible for DR63 **with IS plug connector**.
- The following cable entries are possible in the **DT71..BMG** motor with gear unit flange diameters 160 mm and 200 mm:

Terminal box position	**0° (R)**	**90° (B)**	**180° (L)**	**270° (T)**
Possible cable entries	"X", "3"	"X", "1", "3"	"1", "2"	"X", "1", "3"

Possible plug connector positions for MOVIMOT® in standard design

The following positions are possible for plug connectors:

Plug connector (examples)	Possible positions
AVT1	X (standard)
	2
RE.A/ASA3	X (standard)
	2
RE.A/ASA3/AVT1	ASA3 = X (standard) + AVT1 = X (standard)
	ASA3 = 2 + AVT1 = 2
	ASA3 = X + AVT1 = 2
	ASA3 = 2 + AVT1 = X
RE.A/AMA6 **RE.A/AMD6**	X (standard)
	2

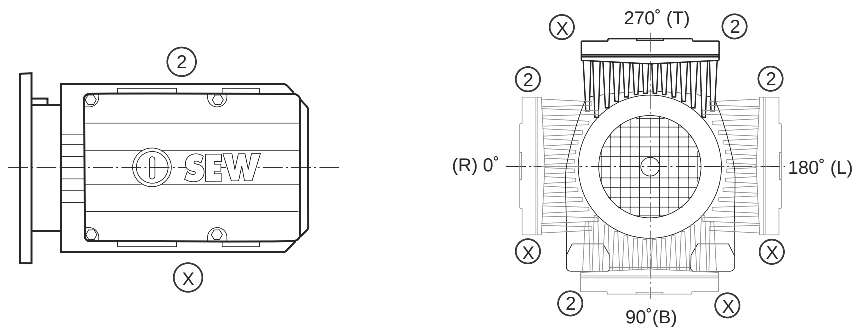


Figure 23: Possible plug connector positions for MOVIMOT® in standard design

Possible plug connector positions for MOVIMOT® with integrated AS-interface

Positions "X" or "2" are possible for plug connectors. The plug connectors are always located on one connection side. Combined plug connector positions are not possible.

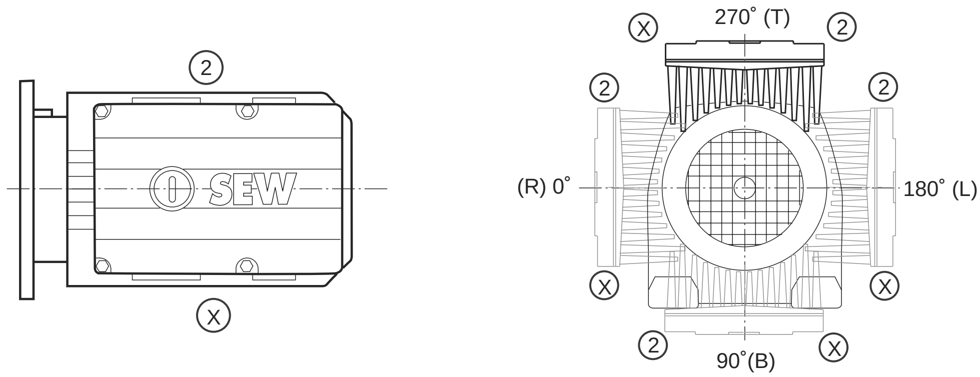


Figure 24: Possible plug connector positions for MOVIMOT® with integrated AS-interface

8

Possible plug connector positions for MOVI-SWITCH®-1E

The following positions are possible for plug connectors:

Plug connector (examples)	Possible positions
AVS1	X (standard)
	2
	3
ASA3	X (standard)
	2
	3
AVS1/ASA3	ASA3 = X (standard) + AVS1 = X (standard)
	ASA3 = 2 + AVS1 = 2
	ASA3 = 3 + AVS1 = 3
	ASA3 = X (standard) + AVS1 = 2
	ASA3 = 2 + AVS1 = X (standard)

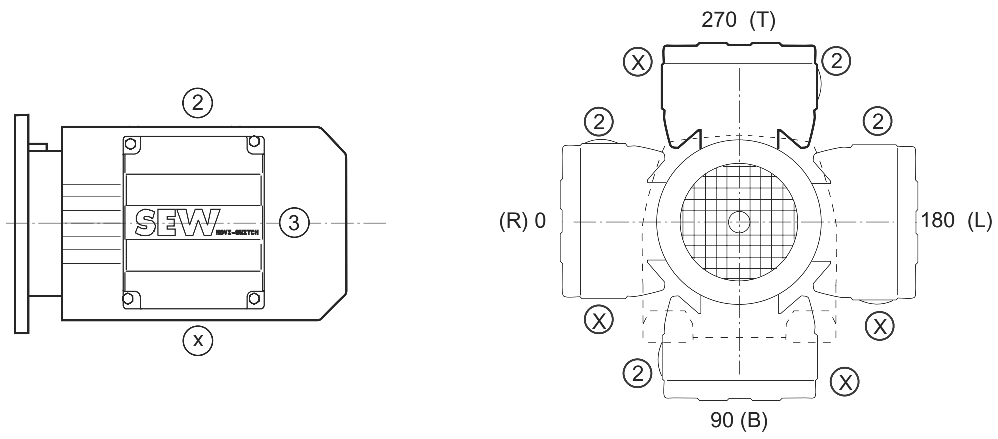


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Figure 25: Possible plug connector positions for MOVI-SWITCH®-1E

Possible plug connector positions for MOVI-SWITCH®-2S

The positions shown in the following figure are possible for plug connectors. Some positions might not be possible for certain gear unit types and mounting positions (contact SEW-EURODRIVE).

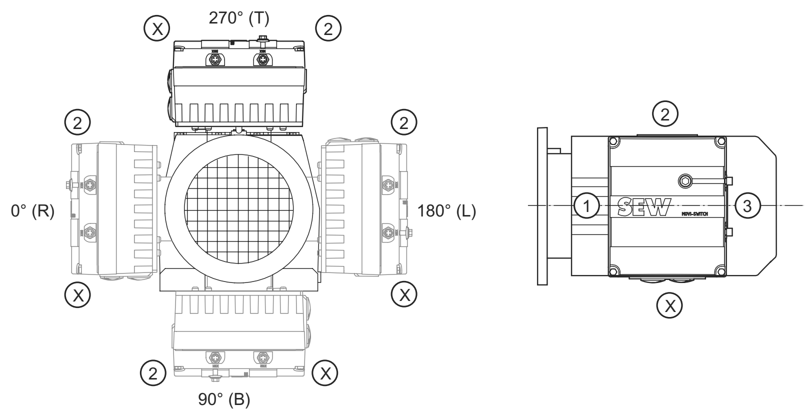

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Figure 26: Possible plug connector positions for MOVI-SWITCH®-2S

Possible positions of ASK1 plug connector for ECOFAST®-compliant motors

ECOFAST®-compliant motors are delivered with ASK1 plug connector for terminal box position 270°/3 as standard.

Please contact SEW-EURODRIVE in case of deviating positions.

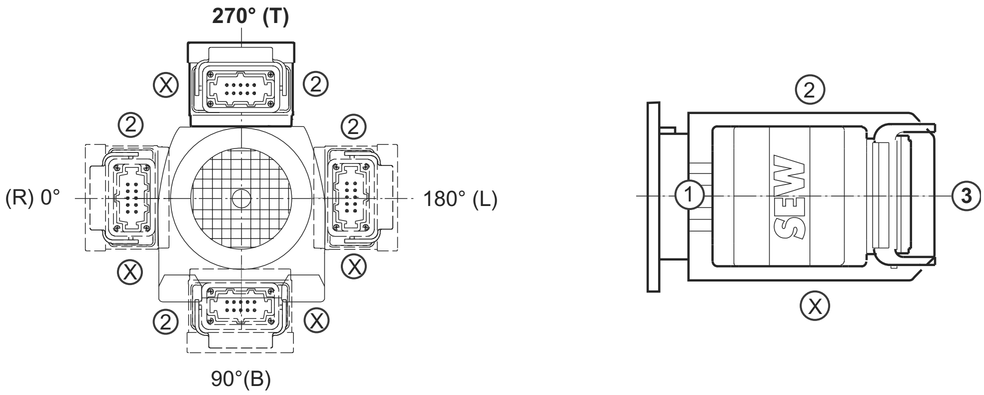


Figure 27: Position of terminal box and cable entry, ECOFAST®-compliant ASK1 plug connectors, options

The 270°/3 mounting position ensures a collison-free installation. All other positions may possibly result in collisions during installation.

8.3 Cable lengths

The length reference of the connection cable/hybrid cable is represented by the corresponding length icon in the overviews.

The following tolerances must be observed for the length data:

- Tolerance for lengths < 5 m: + 0.2 m
- Tolerance for lengths > 5 m: + 3 %

This definition applies to delivery status 01/2005. Deviating data will be noted separately.

The cable lengths specified for pre-fabricated cables (hybrid cables) in this publication refer to the maximum lengths that can be ordered.

If necessary, the interdependencies between an overcurrent protective device on the input side, power bus system and motor cable must be tested.

This test must be performed on the basis of the relevant national provisions (UL, CSA, etc.). SEW-EURODRIVE can assist you in these project planning issues.

8.4 Conversion of cable cross sections AWG to mm²

AWG[1]	mm² [exact value]	mm² [next standard value]
24	0.205	0.2
23	0.258	0.25
22	0.326	0.34
20	0.518	0.50
18	0.823	0.75
17	1.04	1.0
16	1.31	1.5
15	1.65	-
14	2.08	2.5
13	2.62	-
12	3.31	4
11	4.17	-
10	5.26	6
9	6.63	-
8	8.37	10
7	10.50	-
6	13.30	16
5	16.80	-
4	21.20	25
3	26.70	-
2	33.60	35
1	42.40	-
1/0 (or 0)	53.50	50
2/0 (or 00)	67.40	70
3/0	85	-
4/0	107	95

1. **AWG...A**merican **W**ire **G**auge

The diameters of the largest solid and stranded conductors are based on IEC 60228A and IEC 60344 as well as, in the case of AWG conductors, on ASTMB172-71 [4].

The relationship between the connection rating and the diameter of conductors is presented in EN 60999-1:200.

8.5 Assignment cable type/fitting

Assignment table

Assignment table cable diameter – fitting				
Core		Outer cable diameter ∅	Fitting	
Cross section	Quantity	[mm]	Metric	PG
0.5 mm² (AWG 20)	2	5.0 – 6.5	M16	11
	3	5.3 – 7.0	M16 / M20	11
	4	6.1 – 7.2	M16 / M20	11
	5	6.9 – 7.5	M16 / M20	11
	6	7.0 – 7.5	M16 / M20	11
	7	7.0 – 7.5	M16 / M20	11
	8	8.0 – 8.8	M16 / M20	13.5 / 16
	10	9.3 – 10.5	M20	13.5 / 16
0.75 mm² (AWG 18)	2	5.4 – 6.2	M16 / M20	11
	3	5.5 – 7.0	M16 / M20	11
	4	6.2 – 7.5	M16 / M20	11
	5	7.0 – 8.5	M16 / M20	11 / 13.5
	6	8.0 – 9.0	M16 / M20	11 / 13.5
	7	7.5 – 9.0	M16 / M20	11 / 13.5
	8	8.5 – 9.5	M16 / M20	11 / 13.5
	10	10.0 – 11.5	M20 / M25	13.5
1 mm² (AWG 17)	2	5.5 – 6.5	M16 / M20	11
	3	6.0 – 7.0	M16 / M20	11
	4	6.5 – 7.5	M16 / M20	11
	5	7.3 – 8.3	M16 / M20	11
	6	8.0 – 9.0	M16 / M20	11 / 13.5
	7	8.0 – 9.0	M16 / M20	11 / 13.5
	8	9.2 – 10.5	M20	11 / 13.5
	10	10.8 – 11.8	M20	13.5
1.5 mm² (AWG 16)	2	6.5 – 7.5	M16 / M20	11
	3	6.8 – 8.0	M16 / M20	11
	4	7.5 – 8.5	M16 / M20	11
	5	8.5 – 10.0	M20	11 / 13.5
	7	9.5 – 10.5	M20	11 / 13.5
	8	10.0 – 12.5	M20 / M25	13.5
	10	12.5 – 13.5	M20 / M25	13.5 / 16

Outer diameter

Outer diameter of typical installation cables						
Number of conductors	Outer diameter[1] ≈					
Cross section	NYM[2]	NYY[3]	H 05 RR-F[4]	H 07 RN-F[5]	NYCY[6]	OelflexClassic[7]
[mm²]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
2 × 1.5	10	11	9	10	12	9.6
3 × 1.5	10	12	9	10	13	10.1
4 × 1.5	11	13	9	11	13	10.8
5 × 1.5	11	14	11	14	15	11.7
7 × 1.5	--	15	--	--	--	12.6
2 × 2.5	11	13	13	11	14	--
3 × 2.5	11	13	10	12	14	11.9
4 × 2.5	12	14	11	13	15	12.2
5 × 2.5	13	15	13	17	17	13.3
3 × 4	13	17	--	14	15	--
4 × 4	14	16	--	15	16	13.8
5 × 4	15	17	--	19	18	15.1
3 × 6	15	18	--	16	16	--
4 × 6	16	19	--	17	18	15.1
5 × 6	17	19	--	21	20	16.8
3 × 10	18	20	--	23	18	--
4 × 10	18	23	--	23	21	18.7
5 × 10	20	21	--	26	--	20.7
3 × 16	20	22	--	25	22	--
5 × 16	25	23	--	30	--	23.6

1. The outer diameters are average values of different brands.
2. NYM ... Light plastic-sheathed cable
3. NYY ... Cable with plastic sheath
4. H 05 RR-F ... Light rubber flexible sheathed cable
5. H 05 RR-F ... Heavy rubber flexible sheathed cable
6. NYCY ... Cable with concentric conductor and plastic sheathing
7. Oelflex Classic ... Black 110 CY 0,6 / 1kV, Lapp Kabel

Tightening torques

Tightening torque fittings[1] in Nm		
Rated quantity	**Plastic**	**Metal**
M12 x 1.5	1.5	8
M16 x 1.5	3.0	10
M20 x 1.5	6.0	12
M25 x 1.5	8.0	12
M32 x 1.5	10.0	18
M40 x 1.5	13.0	18
M50 x 1.5	15.0	20
M63 x 1.5	16.0	20

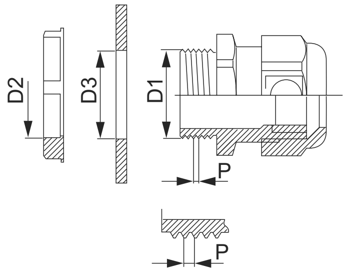
1. Table of recommended tightening torques for typical metric designs for maximum enclosure and strain relief of category A to DIN EN 50262 for IP 68 / 5 bar.

Comparison table

Comparison table PG and metric values								
Thread	**Terminal range[1] ∅ [mm]**	**Bore diameter [mm]**	**Wrench size [mm]**	**Thread**	**Terminal range ∅ [mm]**	**Bore diameter [mm]**	**Wrench size [2] [mm]**	**maximum Width across corners[3] [mm]**
PG 9	6 – 8	16	18	M16 x 1.5	5 – 10	16.5	17, 21	23
PG 13.5	6 – 12	21	22, 24	M20 x 1.5	6 – 12	20.5	25	28
PG 16	9 – 14	23	24, 27					
PG 21	13 – 18	29	30, 33	M25 x 1.5	9 – 18	25.5	30	33
PG 29	18 – 25	37.5	38, 40, 42	M32 x 1.5	15 – 25	32.5	34 , 37	41
PG 36	22 – 32	47.5	50, 53	M40 x 1.5	22 – 32	40.5	44 , 46	51

1. The terminal range may differ slightly from manufacturer to manufacturer.
2. Deviations to lower value may be possible.
3. The width across corners may not be more than the value recommended by ZVEI when nesting several cable glands, such as may be the case with housings and flanges.

Thread dimensions for cable glands



D1 Outer ∅
D2 Core ∅ internal thread
D3 Bore ∅
P Lead

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Metric threads to EN 60423 (for fittings to EN 50 262)

Rated quantity	∅ D1	P	∅ D2	Bore ∅ D3
M12 x 1.5	12	1.5	10.6	12.3 – 0.2
M16 x 1.5	16	1.5	14.6	16.3 – 0.2
M20 x 1.5	20	1.5	18.6	20.3 – 0.2
M25 x 1.5	25	1.5	23.6	25.3 – 0.2
M32 x 1.5	32	1.5	30.6	32.3 – 0.2
M40 x 1.5	40	1.5	38.6	40.4 – 0.3
M50 x 1.5	50	1.5	48.6	50.4 – 0.3
M63 x 1.5	63	1.5	61.6	63.4 – 0.3

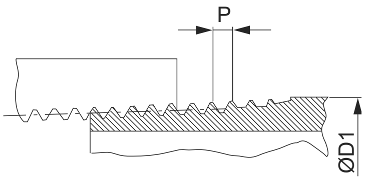
Metric threads to DIN 13 part 6 and part 7 (for fittings to DIN 89 280)

Rated quantity	∅ D1	P	∅ D2	Bore ∅ D3
M18 x 1.5	18	1.5	16.4	18.3 – 0.2
M24 x 1.5	24	1.5	22.4	24.3 – 0.2
M30 x 2	30	2	27.8	30.3 – 0.2
M36 x 2	36	2	33.8	36.3 – 0.2
M45 x 2	45	2	42.8	45.4 – 0.3
M56 x 2	56	2	53.8	56.4 – 0.3
M72 x 2	72	2	69.8	72.5 – 0.4
M80 x 2	80	2	87.8	80.5 – 0.4
M105 x 2	105	2	102.8	105.5 – 0.4

PG thread to DIN 40430

Rated quantity	∅ D1	P	∅ D2	Bore ∅ D3
PG 7	12.5	1.27	11.3	13.0 ± 0.2
PG 9	15.2	1.41	13.9	15.7 ± 0.2
PG 11	18.6	1.41	17.3	19.0 ± 0.2
PG 13.5	20.4	1.41	19.1	21.0 ± 0.2
PG 16	22.5	1.41	21.2	23.0 ± 0.2
PG 21	28.3	1.558	26.8	28.8 ± 0.2
PG 29	37.0	1.558	35.5	37.5 ± 0.3
PG 36	47.0	1.558	45.5	47.5 ± 0.3
PG 42	54.0	1.558	52.5	54.5 ± 0.3
PG 48	59.3	1.558	57.8	59.8 ± 0.3

NPT thread to ASA B2.1 – 1945



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D1 Outer ∅
P Lead

Rated quantity	**∅ D1**	**P**	**Bore ∅ D3**
NPT 1/4"	13.7	1.41	14.1 – 0.2
NPT 3/8"	17.1	1.41	17.4 – 0.2
NPT 1/2"	21.3	1.81	21.6 – 0.2
NPT 3/4"	26.7	1.81	27.0 – 0.2
NPT 1"	33.4	2.21	33.7 – 0.2
NPT 1 1/4"	42.2	2.21	42.5 – 0.2
NPT 1 1/2"	48.3	2.21	48.7 – 0.2
NPT 2"	60.3	2.21	60.7 – 0.2

The NPT thread is a U.S. conical pipe thread that specifies thread sizes according to the pipe diameter. (NPT: National Pipe Taper Thread.) The ratio between the taper lead and thread length is 16:1.

This thread requires an additional sealing agent, e.g. Teflon tape!

8.6 Cable designations

Type codes for cables to DIN VDE 0265, 0271, 0276-603 and 0276-620

X X X X X X - X X x X X X

1 code letters
- N VDE standard
- X With reference to VDE

2 Conductor material
- Copper (no sign)
- A Aluminum

3 Insulating material
- V PVC

4 Electrical shield
- C Concentrc Cu conductor
- CW Concentrc Cu conductor, Undulating
- S Copper shield
- H Conductive layer
- SE Cu shield and conductive layer

5 Sheathing
- F Flat wire, tin coated
- R Round wire, tin coated
- G Anti-twist tape, steel

6 Sheathing material
- Y PVC (polyvinyl chloride)
- 2Y PE (polyethylene)

7 Grounding conductor
- J With grounding conductor (PE)
- O Without grounding conductor (PE)

8 Number of cores
- .... Number of cores

9 Conductor cross section
- ... in mm²

10 Conductor type
- r .. Round conductor
- s .. Sector conductor
- o.. Oval conductor
- ..e Solid conductor
- ..m Stranded conductor
- ..h Hollow conductor
- ./V Compacted conductor

11 Rated voltage
- 0.6/1.0 kV
- 3.5/6.0 kV
- 5.8/10.0 kV

For example: NYCY 4 x 2.5 re 0.6/1.0

Cable with plastic-insulated copper conductor, concentric shield and PVC sheathing, rated voltage 0.6/1.0 kV, cross section 2.5 mm^2.

Type codes for harmonized conductors to DIN VDE 0292

X X X X X X X X X

1 Basic type
- H Harmonized type
- A National type

2 Rated voltage
- 01 100/000 volt
- 03 300/300 volt
- 05 300/500 volt
- 07 450/750 volt

3 Insulating material
- V PVC
- V2 PVC + 90 °C
- V3 PVC low-temperature flexibility
- B Ethylene propylene rubber
- E PE (polyethylene)
- X XPE, cross-linked PE
- R Rubber
- S Silicone rubber

4 Sheathing material
- V PVC
- V2 PVC + 90 °C
- V3 PVC low-temperature flexibility
- B Ethylene propylene rubber
- E PE (polyethylene)
- X XPE, cross-linked PE
- R Rubber
- N Polychloroprene rubber
- J Glass-filament braid
- T Textile braid

5 Special features
- C4 Copper wire braiding
- H Ribbon cable, separable
- H2 Ribbon cable, not separable
- H6 Ribbon cable, not separable, for Elevators
- H8 Helical conductor/spiral cable

6 Type of conductor
- - U Solid, round
- - R Stranded, round
- - K Finely stranded, fixed installation
- - F Finely stranded, flexible
- - H Extra finely stranded
- - Y Tinsel conductor
- - D Finely stranded conductor for Welding cables
- - E Extra finely stranded conductor for Welding cables

7 Number of cores
- ... Number of cores

8 Grounding conductor
- X Without grounding conductor (PE)
- G With grounding conductor (PE)

9 Conductor cross section
- ... in mm²

For example: H05 VV-F 5G2,5

Medium PVC flexible sheathed cable, 5 core, with green-yellow grounding conductor, cross section 2.5 mm^2.

8.7 IP code enclosure

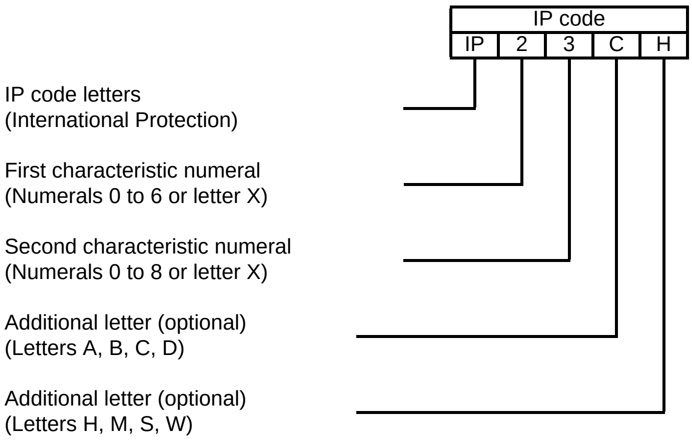
Depending on the ambient conditions – high humidity levels, aggressive substances, splash or jet water, amount of dust, etc. – connectors, connector housings and other electrical apparatus will be delivered in enclosures IP54, IP55, IP56 and IP65 to EN 60034 part 5 and EN 60529.

The classification of enclosures for housings of electrical apparatus with rated voltages up to 72.5 kV is defined in DIN VDE 0470 and DIN EN 60529.

The enclosures refer to:

- protection of persons against access to dangerous parts within the housing
- protection of the apparatus within the housing against ingress of solid contaminants
- protection of the apparatus within the housing against dangerous effects through ingress of water

Structure of the IP code



IP	1st characteristic numeral Protection against foreign objects	2nd characteristic numeral Protection against water
0	No protection	No protection
1	Protection against solid foreign objects ∅ 50 mm and larger	Protection against dripping water
2	Protection against solid foreign objects ∅ 12 mm and larger	Protection against dripping water if the housing is tilted by up to 15°
3	Protection against solid foreign objects ∅ 2.5 mm and larger	Protection against spraying water
4	Protection against solid foreign objects ∅ 1 mm and larger	Protection against splashing water
5	Protection against dust	Protection against water jets
6	Dust-proof	Protection against powerful water jets
7	-	Protection against temporary immersion in water
8	-	Protection against permanent immersion in water
9K	-	Protection against high pressure/steam jet cleaning

Additional letter: Degree of protection against access to dangerous parts		
Letter	**Brief description**	**Definition**
A	Protection against access with back of the hand	The access probe, ball 50 mm diameter, must be at a sufficient distance to dangerous parts
B	Protection against access with fingers	The divided test finger, 12 mm diameter, 80 mm long, must be at a sufficient distance to dangerous parts
C	Protection against access with tools	The access probe, 2.5 mm diameter, must be at a sufficient distance to dangerous parts
D	Protection against access with wires	The access probe, 10 mm diameter, must be at a sufficient distance to dangerous parts

Complementary letter	
Letter	**Meaning**
H	High voltage equipment
M	Tested for damaging effects through ingress of water if moving parts of equipment are in operation, such as rotor in rotating machine.
S	Tested for damaging effects through ingress of water if moving parts of equipment are in standstill, such as rotor in rotating machine.
W	Suitable for operation under specified weather conditions and equipped with additional protective measures or processes.

Depending on the ambient conditions – high humidity levels, aggressive substances, splash or jet water, amount of dust, etc. – connectors, connector housings and other electrical apparatus will be delivered in enclosures IP54, IP55, IP56, IP65, IP66 and IP67 for electronic components.

Increased corrosion protection for metal parts and additional winding impregnation (protection against humidity and acids) are just as possible as delivery of explosion-proof motors and brake motors to ATEX 100a.

Plug connectors for explosion-proof motors are not available.

Special situation of letter "K" in IP code

The complementary letter "K" represents a special situation within the IP code. This special situation is specified and commented in a standard. The complementary letter "K" indicates the special provisions for dust protection (characteristic numerals 5 and 6) and for water protection (characteristic numerals 4, 6 and 9) within the standard.

Housing of enclosure IP69K offers increased safety in case of permanent submersion and for cleaning with steam jet equipment (interpretation: approx. 100 bar pressure at the nozzle at approx. 80 °C).

Enclosure to NEMA

In the United States, the enclosures are not divided into IP classes but according to the NEMA Scheme.

The following table will allow you to convert the NEMA Scheme into respective IP protection classes. You cannot convert the IP protection classes into the NEMA scheme!

Comparison NEMA and IEC enclosures – classification	
NEMA enclosure [type number]	**IEC enclosure [classification]**
1	IP 10
2	IP 11
3	IP 54
3 R	IP 14
3 S	IP 54
4 and 4 X	IP 56
5	IP 52
6 and 6 P	IP 67
12 and 12 K	IP 52
13	IP 54

8.8 Overview of standards

The following overview of standards is merely a guideline and does not claim to be complete.

DIN (German Industrial Standard):

- DIN 41650-1, Sectional specification for connectors; connectors for printed boards.
- DIN 41650-11, Sectional specification for connectors; connectors for printed boards; presentation of detailed specifications.
- DIN 42925 *Draft*, Terminal box cable entries for three-phase a.c. motors with rated voltage from 400 V up to 690 V.
- DIN 44081, Thermistors; PTC for thermal machine protection, climate category HFF.
- DIN 44082, Thermistors; three-way PTC for thermal machine protection, climate category HFF.

DIN EN:

- DIN EN 50262, Metric cable glands for electrical installations.
- DIN EN 50265-1, Common test methods for cables under fire conditions – Test for resistance to vertical flame propagation for a singular insulated conductor or cable – Part 1: Apparatus.
- DIN EN 60034-5, Rotating electrical machines – Part 5: Degrees of protection provided by the integral design of rotating electrical machines (IP code).
- DIN EN 60034-7, Rotating electrical machines – Part 7: Classification for types of construction, mounting arrangements and terminal box position.
- DIN EN 60068-2-6, Environmental testing – Part 2: Tests, Fc: Vibration, sinusoidal.
- DIN EN 60204-1, Electrical equipment of machines.
- DIN EN 60352-2, Solderless connections – Crimp connections.
- DIN EN 60352-3, Solderless connections – Insulation displacement connections.
- DIN EN 60352-4, Solderless connections – Insulation displacement connections.
- DIN EN 60352-5, Solderless connections – Press-in connections.
- DIN EN 60512-1, Connectors for electronic equipment – Tests and measurements.
- DIN EN 60529, Degrees of protection provided by housings (IP code).
- DIN EN 60715, Dimensions of low-voltage switchgear and control gear – Standardized mounting on rails for mechanical support of electrical devices in switchgear and controlgear installations.
- DIN EN 60999-1, Connecting devices – Electrical copper conductors; Safety requirements for screw-type and screwless-type clamping units – Part 1: General requirements and particular requirements for clamping units for conductors from 0.2 mm² to 35 mm² (included).
- DIN EN 61293, Marking of electrical equipment with ratings related to electrical supply – Safety requirements.
- DIN EN 61302, Insulating electrical materials – Method to evalaute the resistance to tracking and erosion of insulating materials for outdoor use – Rotating wheel dip test.
- DIN EN 61984, Connectors – Safety requirements and tests.
- DIN EN 175301-801, Detail Specification – High density rectangular connectors with round removable crimp contacts.
- DIN EN 175101-802, Detail Specification – Indirect connectors for printed circuits with high density, grid 2.54 mm in design with 3 or 4 rows.

DIN IEC:

- DIN IEC 60512, part 2, 5, 7, 8 and 9, Electromechanical components for electronic equipment; Tests and measurements.
- DIN IEC 60512 *Draft* to parts 10, 11, 12, 13 and 14, Connectors for electronic equipment – Tests and measurments.
- DIN IEC 60512-23 *Draft*, Electromechanical components for electronic equipment; Tests and measurements.
- DIN IEC 60512-25 *Draft*, Connectors for electronic equipment – Tests and measurements.
- DIN IEC 60587, Test method for evaluating resistance to tracking and erosion of electrical insulating materials used under severe ambient conditions.
- DIN IEC 62319-1 *Draft*, Polymeric thermistors – Directly heated positive step function temperature coefficient – Part 1 Detail specification.

DIN VDE:

- DIN VDE 0100-410, Erection of power installations with nominal voltages up to 1000 V.
- DIN VDE 0110-1, Insulation co-ordination for equipment within low-voltage systems – part 1; fundamental requirements and tests.
- DIN VDE 0265, Cables with plastic insulation and lead sheath for power installation.
- DIN VDE 0271 *Draft*, Power cables from 0.6/1 kV upwards for special applications.
- DIN VDE 0276-603, Power cables – part 603: Distribution cables of nominal voltages U_0/U 0.6/1 kV.
- DIN VDE 0276-620 *Draft*, Power cables – part 620: Distribution cables with extruded insulation for nominal voltages 3.6/6 (7.2) kV up to 20.8/36 (42) kV.
- DIN VDE 0292, System for type designation codes of insulated cords.
- DIN VDE 0303-1, Method for determining the comparative and the proof tracking indices of solid insulating materials under moist conditions.
- DIN VDE 0472-1, Testing of cables, wires and flexible cords; general
- DIN VDE 0628, Connectors for rated voltages up to AC 380 V a.c. and a rated current of 16 A
- DIN VDE 0870 part 1, Electromagnetic interference.

9 Definitions of Terminology

AC 3-current for contactors	The AC 3-current for contactors is the rated operating current for switching off AC motors when they are running.
Terminating resistor	Every bus line that connects the individual units together must be terminated with a resistor at the start and finish. This prevents line reflections.
Built-on housing	Lower section of housing, installation in control cabinets and machines, fixed housing part
Output end	End of plug connector at which cables will be connected.
Connection technology	Type of connection between conductor and connection part of contact.
ATEX product guideline	This guideline establishes basic health and safety requirements for electrical and non-electrical equipment intended for operation in explosive areas.
Ejection tool	Special tool for ejection of contacts from contact inserts, particularly crimp contacts
Output, straight	Position of cable opening in housings
Output, lateral	Position of cable opening in housings
Axial screw fitting	Special connection terminal for flexible conductors
Bayonet lock	Connection that locks by turning a toggle clamp by 90° and is not equipped with a thread as any regular screw.
Modular principle	Individual components are designed so that a number of combinations is available through different configurations.
Rated voltage	Value of a voltage indicated by the manufacturer for a component, device or equipment and refers to the operating and performance characteristics.
Rated current	Current value set by manufacturer that the plug connector can carry permanently (without interruption), preferably at an ambient temperature of 40 °C. The current is to flow through all contacts that are connected to the largest conductor without exceeding the upper temperature limit.
Insertion	Arrangement of contacts within a plug connector.
Pocket cap	Closing cap of a cable opening that can be removed if necessary.
Dummy connection piece	Connection piece on housing that can be bored through if necessary.
Socket insert	Insulating element to hold and position the contact sockets in the plug connector
Clip closure	A positive element that is activated by a lever in the shape of a clip, locking both two halves of a plug connector pair. The clip will assume its final position once both halves have been completely assembled.
CAN bus system	Serial bus system for the automotive industry and industrial control devices. The bus medium is a twisted conductor pair with excellent transmission characteristics in the short-distance range of less than 40 m.
CANopen bus system	CANopen bus system is an extension of the CAN bus system. It is easier to implement the CANopen bus system and it is less expensive because the unit profiles have been added to the communication profile 4 of the CAL; these profiles standardize commercial application areas.
Coding elements	Coding elements used for the correct assignment of the plug connector halves.
Coding	System used to prevent unintentional use of identical plug connectors by having different layout.
Crimp connection	The connection area of a contact is deformed symmetrically with the help of a crimping tool to ensure a permanent connection with the bared conductor.
Crimp sleeve	A conductor barrel that accommodates one or several conductors and can be crimped by using a crimping tool.
Crimp sleeve, pre-insulated	A crimp sleeve with a permanent external insulation. The crimping takes place not only on the bare conductor but also partly on the insulation of the conductor.
Crimp contact	Contact with a connection area suitable for crimping.
CTI value	Comparative tracking index (CTI) for insulating material.

DESINA	DESINA describes the standardization of the electrical, hydraulic and pneumatic installation of automated machine tools and production systems.
DeviceNet	DeviceNet is a simple CAN based communication system for linking industrial automation equipment (such as limit indicators, photo sensors, motor starters, frequency-controlled drives, operator terminals, sensors/ actuators) with primary control equipment. The transmission medium are two twisted-pair, shielded conductors within one cable. One cable is used for communication with transmission rates of 125 kbit/s, 250 kbit/s or 500 kbit/s at cable lengths of 500 m, 250 m or 100 m. The other cable ensures the power supply of the connected equipment with max. 8 A at DC 24 V.
Wire protection	Protects the conductor from damages between conductor and terminal.
Intrinsically safe system	Systems in explosive areas, such as mining
Press insertion pin	A metal pin with an area for press insertion into a metallic bore in a printed-circuit board without subsequent soldering. A distinction is made between solid and elastic pins.
Electrical equipment	– Components used for the transmission of electrical energy – Electrical consumers, components that are operated electrically such as motors, magnets, heaters, etc.
ECOFAST®	(**E**nergy and **Co**mmunication **F**ield Inst**a**llation **S**ystem. A system for largely decentralizing and modularizing installation and for extensive diagnosis on the component level.
ECOFAST®-certified	Demonstrates the conformity of different manufacturers' equipment with the ECOFAST® specification.
ECOFAST®-integrated	As well as Siemens components, it is also possible to integrate equipment from these manufacturers into this protect planning tool. Their integration and conformity is certified by the ECOFAST®-integrated certificate.
EMC-compliant housing	EMC-compliant housings form a shield against electrical, magnetic or electromagnetic fields. These interference fields are generated by electrostatic discharges occurring during switching sequences, during rapid current or voltage changes, during operation of motors or high-frequency generators and similar situations. These EMC-compliant housings are usually equipped with an EMC cable gland.
EMC cable gland	Seal of cable entry with option to apply a cable shield or contacting.
Ground fault currents	Currents that can flow through the grounding conductor (PE) in case of a ground fault.
Spring insert	Insulating element to hold and position the spring contacts in the plug connector.
Socket connector	Plug connector with spring contacts in linear arrangement.
Field distributor	Combination of plug connector and terminal block with the option to identify the clamping point by a designation plate.
FELV circuit	An FELV circuit is an ELV circuit in which the ELV exists for functional reasons but that does not meet the requirements for SELV and PELV.
Guide sleeve	An angular insertion is prevented in connection with a guide pin. The guide sleeve has a coding function.
Guide pin	An angular insertion is prevented in connection with a guide sleeve. The guide pin has a coding function.
Industrial atmosphere	An atmosphere filled with industrial waste gases, such as sulphur compounds, chlorine compounds, nitrogen oxides.
Interbus	A bus system with technical properties that have been particularly designed for use in industrial sensor/actuator applications and offers a continuous linking from the control level all the way to the final limit switch.
IP code	A coding system to indicate the degrees of protection offered by a housing against access to dangerous parts, ingress of solid foreign objects and the ingress of water.
Insulation resistance	Insulating property of a material to separate two neighboring contacts or one grounded contact at a relatively high resistance value.
Insulating materials	Insulation in plug connectors is ensured by using thermoplastics and thermosetting plastic. The selected material depends on the required thermal and mechanical properties.

Cables	Contrary to a line, a cable is suited for fixed installation. Cables can be routed inside, in the open, in the ground or submersed in water. Depending on their intended use, such as installation in the ground or in rough industrial areas, these cables come equipped with stronger insulation and sheathing materials. Cables always come equipped with an additional metal sheath.
Spring cage connection	Bared conductor will be connected to a contact element with a spring, terminal without screw.
Terminal box	Connection space for electrical lines, e.g. at the motor.
Clamping point	Site for connection of an electrical conductor.
Contact design	Contacts are differentiated by their design into pin, socket, tuning-fork, hermaphroditic contacts, etc.
Contact density	Number of contacts in a certain area.
Contact material	The selected material, mostly copper or copper alloys, depends on the characteristics required for the plug connector. Critical characteristics are volume resistance, insertion and withdrawal forces, insertion frequency, upper temperature limit and environmental conditions.
Contact surface	Surface coatings to accomplish a constant and relatively low contact resistance. Offers protection against environmental conditions.
Contact end	Side of the plug connector that serves as receptacle for the mating connector (see also Mating end).
Creeping distance	The creeping distance is the shortest distance between live parts on the surface of insulating bodies. Any elevations and recesses in the insulating body will be taken into consideration. The distances ensure protection against arcing.
Creeping current	Creeping current is the current that flows on the surface of an insulating material between metal parts under voltage; the current will flow even more so when the insulating material is contaminated by conductive deposits, such as dust and humidity.
Conductor cross section	Cross section of a conductor indicated in mm².
Line	Lines can consist of one or more cores, come equipped with insulating sleeves, shields and a sheath for the protection of structural elements. Lines connected to plug connectors are mainly flexible lines, flat lines, sheathed lines, shielded lines and coaxial lines. For a clear separation see the definition of "Cable".
Stranded conductor	Conductor consists of individual cores for better flexibility.
Solid conductor	Conductor with one core.
Mechanical service life	Is indicated in connection cycles. One cycle = 1 x inserting and removing plug connector.
Mixed components	Contacts for power transmission, electronic control pulses and light pulses in one contact insert.
Module locking	Mechanical locking of the individual modules.
PELV circuit	The PELV circuit is an ELV circuit equipped with protective separation from other circuits; it may be grounded for functional reasons and/or its conductive parts that can be touched may be grounded.
PROFIBUS	**PRO**cess **FI**eld **BUS**, European process bus and fieldbus standard defined in the PROFIBUS standard (EN 50170, volume 2, PROFIBUS). It prescribes functional, electrical and mechanical properties for a one-bit-serial fieldbus system. PROFIBUS is a bus system that networks PROFIBUS compatible automation systems and field devices on the cell and field level. PROFIBUS is available with the following protocols: DP (= Decentralized Periphery), FMS (= Fieldbus Message Specification), PA (Process Automation) or TF (= Technological Functions). PROFIBUS address
Rectangular plug connector	Plug connector with face in predominantly rectangular shape.
Round plug connector	Plug connector in predominantly cylindrical shape with round connector face.
Braid shield	Metal braiding to shield against interference fields in lines and cables.
Mold clamping pressure	Pressure applied to molds in diecasting process.
Insulation displacement connection	Solder-free electrical connection established by pressing individual wires into precisely shaped terminal slots with the slots displacing the insulation, reshaping the conductor and creating a connection for ribbon cables.

Leading PE contact	The PE contact of a plug connector will establish the contact first or will be separated last.
Protective insulation	The electrically conductive parts of a totally insulated consumer are protected against contact by a base insulation (insulation of lines) and an additional protective insulation (such as a plastic housing).
SELV	SELV is a voltage that does not exceed an AC voltage $\leq$ 50 volts or an harmonics-free DC voltage $\leq$ 120 volts between the conductors and the ground. The power sources must be independent or safely separated from higher voltages or FELV circuits.
SELV circuit	An SELV circuit is an ELV circuit with protective separation from other circuits that does not have connections for grounding of the circuit or other conductive parts that could be touched.
Base housing	Closed bottom part of housing for mounting.
Coding pin	For coding and to avoid incorrect connection in case of several plug connectors that are identical and installed next to each other.
Mating end	Side of the plug connector that serves as receptacle for the mating connector (see also Contact end).
Plug connector	A plug connector is a component for the connection of electrical conductors that uses a mating part to create separable electrical connections. A plug connector consists of housings and contact elements.
Plug-in connection	An electrical plug-in connection consisting of two plug connectors. Do not install and/or remove live parts.
Plug-and-socket device	Contrary to a plug-in connection, a plug-and-socket device may be installed and removed when energized. The PE contact must be leading during installation and lagging when removed.
Installation cycles	Mechanical operation of plug connectors and plug-and-socket devices by inserting and pulling. An installation cycles consists of an insertion and pulling step.
Pin insert	Insulating element to hold and position the contact pins in the plug connector.
Connection, floating	Both housing sides are not mounted. The function is similar to an extension cord.
Load feeder (VA)	A load feeder is a spur from the main circuit to the load with the functions of "switching" and "protecting". Its functions include: • protecting the line from the load feeder to the load (line protection) and • protecting the load against overload (load protection).
Leading	The timed closing of individual contacts of a plug connector.
Prefabrication	Connection of conductors prior to installation of plug connectors.
Wrap termination	The wire end is wrapped on a sharp-edged pin by a spindle. Suitable for solid conductors only.

Numerics

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	Dornbirn	SEW-EURODRIVE Ges.m.b.H. Lustenauerstraße 27/1 A-6850 Dornbirn	Tel. +43 5572 3725 99-0 Fax +43 5572 3725 99-20 tb-dornbirn@sew-eurodrive.at

Bangladesh			
	Dhaka	Triangle Trade International Bldg-5, Road-2, Sec-3, Uttara Model Town Dhaka-1230 Bangladesh	Tel. +880 2 8912246 Fax +880 2 8913344

Belgium			
Assembly **Sales** **Service**	**Brüssel**	SEW Caron-Vector S.A. Avenue Eiffel 5 B-1300 Wavre	Tel. +32 10 231-311 Fax +32 10 231-336 http://www.caron-vector.be info@caron-vector.be
Technical Office	**Vlaanderen**	SEW Caron-Vector S.A. Industrieweg 112-114 B-9032 Gent (Wondelgem)	Tel. +32 92 273-452 Fax +32 92 274-155

Bolivia			
	La Paz	GRUPO LARCOS LTDA. Av. Jose Carrasco Not. 1398 Entre Hugo Estrada Y Av. Busch La Paz	Tel. +591 2 221808 Fax +591 2 220085 larcos@ceibo.entelnet.bo

Brazil			
Production **Sales** **Service**	**Sao Paulo**	SEW-EURODRIVE Brasil Ltda. Avenida Amâncio Gaiolli, 50 Caixa Postal: 201-07111-970 Guarulhos/SP - Cep.: 07251-250	Tel. +55 11 6489-9133 Fax +55 11 6480-3328 http://www.sew.com.br sew@sew.com.br
	Additional addresses for service in Brazil provided on request!		

Bulgaria			
Sales	**Sofia**	BEVER-DRIVE GmbH Bogdanovetz Str.1 BG-1606 Sofia	Tel. +359 2 9532565 Fax +359 2 9549345 bever@fastbg.net

Cameroon			
Sales	**Douala**	Electro-Services Rue Drouot Akwa B.P. 2024 Douala	Tel. +237 4322-99 Fax +237 4277-03

Canada			
Assembly **Sales** **Service**	**Toronto**	SEW-EURODRIVE CO. OF CANADA LTD. 210 Walker Drive Bramalea, Ontario L6T3W1	Tel. +1 905 791-1553 Fax +1 905 791-2999 http://www.sew-eurodrive.ca l.reynolds@sew-eurodrive.ca
	Vancouver	SEW-EURODRIVE CO. OF CANADA LTD. 7188 Honeyman Street Delta. B.C. V4G 1 E2	Tel. +1 604 946-5535 Fax +1 604 946-2513 b.wake@sew-eurodrive.ca
	Montreal	SEW-EURODRIVE CO. OF CANADA LTD. 2555 Rue Leger Street LaSalle, Quebec H8N 2V9	Tel. +1 514 367-1124 Fax +1 514 367-3677 a.peluso@sew-eurodrive.ca

Canada			
	Additional addresses for service in Canada provided on request!		

Chile			
Assembly **Sales** **Service**	**Santiago de Chile**	SEW-EURODRIVE CHILE LTDA. Las Encinas 1295 Parque Industrial Valle Grande LAMPA RCH-Santiago de Chile P.O. Box Casilla 23 Correo Quilicura - Santiago - Chile	Tel. +56 2 75770-00 Fax +56 2 75770-01 ventas@sew-eurodrive.cl

China			
Production **Assembly** **Sales** **Service**	**Tianjin**	SEW-EURODRIVE (Tianjin) Co., Ltd. No. 46, 7th Avenue, TEDA Tianjin 300457	Tel. +86 22 25322612 Fax +86 22 25322611 gm-tianjin@sew-eurodrive.cn http://www.sew.com.cn
Assembly **Sales** **Service**	**Suzhou**	SEW-EURODRIVE (Suzhou) Co., Ltd. 333, Suhong Middle Road Suzhou Industrial Park Jiangsu Province, 215021 P. R. China	Tel. +86 512 62581781 Fax +86 512 62581783 suzhou@sew.com.cn
	Guangzhou	SEW-EURODRIVE (Guangzhou) Co., Ltd. No. 9, JunDa Road East Section of GETDD Guangzhou 510530 P. R. China	Tel. +86 20 82267890 Fax +86 20 82267891 sewguangzhou@sew.com.cn

China			
Technical Offices	**Beijing**	SEW-EURODRIVE (Tianjin) Co., LTD Room 1205/1206, Golden Corner Building, No. 129 Xuanwumen Xidajie, Xicheng District Beijing 100031	Tel. +86 10 66412026 Fax +86 10 66411017 beijing@sew.com.cn
	Chengdu	SEW-Eurodrive (Tianjin) Co. Ltd. Room 715, Sichuan International Building No. 206, Shun Cheng Avenue Chengdu 610015	Tel. +86 28 6521560 Fax +86 28 6521563 chengdu@sew.com.cn
	Fuzhou	SEW-Eurodrive (Tianjin) Co. Ltd. Unit D, 15/F, Oriental Hotel Fujian Fuzhou 350001	Tel. +86 591 7507596 Fax +86 591 7507285 fuzhou@sew.com.cn
	Jinan	SEW-Eurodrive (Tianjin) Co.Ltd. Room 2008-2009, Liang You Fu Lin Hotel No. 5, Luo Yuan Avenue Jinan 250063	Tel. +86 531 6412622 Fax +86 531 6412430 jinan@sew.com.cn
	Kunming	SEW-EURODRIVE (Tianjin) Co., Ltd Room 1401 Dong Yuan Business Building No. 464 Tuodong Road, Kunming Yunnan Province 650011	Tel. +86 871 3113677 Fax +86 871 3154454 kunming@sew.com.cn
	Nanjing	SEW-Eurodrive (Tianjing) Co.Ltd. Room 710, Jianda Plaza No. 223, North Zhongshan Road Nanjing 210009	Tel. +86 25 3346768 Fax +86 25 3346871 nanjing@sew.com.cn
	Shanghai	SEW-EURODRIVE (TIANJIN) CO., Ltd 16/F, E Block, Jinxuan Building No. 238 South Dandong Road Xuhui District Shanghai 200030	Tel. +86 21 64693534 Fax +86 21 64695532 shanghai@sew.com.cn
	Shenyang	SEW-EURODRIVE (Tianjin) Co., Ltd Shenyang OfficeRoom 0605 Koh Brother Building No. 21 Beijing Street Shenhe District Shenyang City, 110013	Tel. +86 24 22521596 Fax +86 24 22521579 shenyang@sew.com.cn
	Wuhan	SEW-Eurodrive (Tianjin) Co.Ltd. Room 911, Tai He Plaza Wusheng Road Wuhan 430033	Tel. +86 27 85712293 Fax +86 27 85712282 wuhan@sew.com.cn
	Xian	SEW-EURODRIVE (TIANJIN) Co., Ltd Rm 611, Fan Mei Building No. 1 Nan Guan Main Street Xian 710068, Shanxi Province	Tel. +86 29 7811327 Fax +86 29 7811327 xian@sew.com.cn

Colombia			
Assembly **Sales** **Service**	**Bogotá**	SEW-EURODRIVE COLOMBIA LTDA. Calle 22 No. 132-60 Bodega 6, Manzana B Santafé de Bogotá	Tel. +57 1 54750-50 Fax +57 1 54750-44 sewcol@sew-eurodrive.com.co

Croatia			
Sales **Service**	**Zagreb**	KOMPEKS d. o. o. PIT Erdödy 4 II HR 10 000 Zagreb	Tel. +385 1 4613-158 Fax +385 1 4613-158 kompeks@net.hr

Czech Republic			
Sales	**Praha**	SEW-EURODRIVE CZ S.R.O. Business Centrum Praha Luná 591 CZ-16000 Praha 6 - Vokovice	Tel. +420 a220121236 Fax +420 220121237 http://www.sew-eurodrive.cz sew@sew-eurodrive.cz

Czech Republic			
Technical Offices	**Brno**	SEW-EURODRIVE CZ S.R.O. Krenova 52 CZ -60200 Brno	Tel. +420 543256151 + 543256163 Fax +420 543256845
	Hradec Kralove	SEW-EURODRIVE CZ S.R.O. Technicka Kancelar - vychodni Cechy Svermova CZ-53374 Horni Jeleni	Tel. +420 466673711 Fax +420 466673634
	Klatovy	SEW-EURODRIVE CZ S.R.O. Technical Office Klatovy Kollarova 528 CZ-33901 Klatovy 3	Tel. +420 376310729 Fax +420 376310725
Denmark			
Assembly **Sales** **Service**	**Kopenhagen**	SEW-EURODRIVEA/S Geminivej 28-30, P.O. Box 100 DK-2670 Greve	Tel. +45 43 9585-00 Fax +45 43 9585-09 http://www.sew-eurodrive.dk sew@sew-eurodrive.dk
Technical Offices	**Aarhus**	SEW-EURODRIVEA/S Birkenhaven 45 DK-8520 Lystrup	Tel. +45 86 2283-44 Fax +45 86 2284-90
	Helsingør	SEW-EURODRIVEA/S Rømøvej 2 DK-3140 Ålsgårde	Tel. +45 49 7557-00 Fax +45 49 7558-00
	Odense	SEW-EURODRIVEA/S Lindelyvei 29, Nr. Søby DK-5792 Arslev	Tel. +45 65 9020-70 Fax +45 65 9023-09
Egypt			
Sales **Service**	**Cairo**	Copam Egypt for Engineering & Agencies 33 El Hegaz ST, Heliopolis, Cairo	Tel. +20 2 2566-299 + 1 23143088 Fax +20 2 2594-757 copam@datum.com.eg
Estonia			
Sales	**Tallin**	ALAS-KUUL AS Paldiski mnt.125 EE 0006 Tallin	Tel. +372 6593230 Fax +372 6593231 veiko.soots@alas-kuul.ee
Finland			
Assembly **Sales** **Service**	**Lahti**	SEW-EURODRIVE OY Vesimäentie 4 FIN-15860 Hollola 2	Tel. +358 201 589-300 Fax +358 3 780-6211 http://www.sew-eurodrive.fi sew@sew.fi
Technical Offices	**Helsinki**	SEW-EURODRIVE OY Luutnantinaukio 5C LT2 FIN-00410 Helsinki	Tel. +358 201 589-300 Fax + 358 9 5666-311
	Vaasa	SEW-EURODRIVE OY Kauppapuistikko 11 E FIN-65100 Vaasa	Tel. +358 3 589-300 Fax +358 6 3127-470
Gabon			
Sales	**Libreville**	Electro-Services B.P. 1889 Libreville	Tel. +241 7340-11 Fax +241 7340-12
Great Britain			
Assembly **Sales** **Service**	**Normanton**	SEW-EURODRIVE Ltd. Beckbridge Industrial Estate P.O. Box No.1 GB-Normanton, West- Yorkshire WF6 1QR	Tel. +44 1924 893-855 Fax +44 1924 893-702 http://www.sew-eurodrive.co.uk info@sew-eurodrive.co.uk

Great Britain			
Technical Offices	**London**	SEW-EURODRIVE Ltd. 764 Finchely Road, Temple Fortune GB-London N.W.11 7TH	Tel. +44 20 8458-8949 Fax +44 20 8458-7417
	Midlands	SEW-EURODRIVE Ltd. 5 Sugar Brook court, Aston Road, Bromsgrove, Worcs B60 3EX	Tel. +44 1527 877-319 Fax +44 1527 575-245
	Scotland	SEW-EURODRIVE Ltd. Scottish Office No 37 Enterprise House Springkerse Business Park GB-Stirling FK7 7UF Scotland	Tel. +44 17 8647-8730 Fax +44 17 8645-0223

Greece			
Sales **Service**	**Athen**	Christ. Boznos & Son S.A. 12, Mavromichali Street P.O. Box 80136, GR-18545 Piraeus	Tel. +30 2 1042 251-34 Fax +30 2 1042 251-59 http://www.boznos.gr info@boznos.gr
Technical Office	**Thessaloniki**	Christ. Boznos & Son S.A. Maiandrou 15 562 24 Evosmos, Thessaloniki	Tel. +30 2 310 7054-00 Fax +30 2 310 7055-15 info@boznos.gr

Hong Kong			
Assembly **Sales** **Service**	**Hong Kong**	SEW-EURODRIVE LTD. Unit No. 801-806, 8th Floor Hong Leong Industrial Complex No. 4, Wang Kwong Road Kowloon, Hong Kong	Tel. +852 2 7960477 + 79604654 Fax +852 2 7959129 sew@sewhk.com

Hungary			
Sales **Service**	**Budapest**	SEW-EURODRIVE Kft. H-1037 Budapest Kunigunda u. 18	Tel. +36 1 437 06-58 Fax +36 1 437 06-50 office@sew-eurodrive.hu

Iceland			
	Hafnarfirdi	VARMAVERK ehf Dalshrauni 5 IS - 220 Hafnarfirdi	Tel. +354 5 6517-50 Fax +354 5 6519-51 varmaverk@varmaverk.is

India			
Assembly **Sales** **Service**	**Baroda**	SEW-EURODRIVE India Pvt. Ltd. Plot No. 4, Gidc Por Ramangamdi · Baroda - 391 243 Gujarat	Tel. +91 265 2831086 Fax +91 265 2831087 mdoffice@seweurodriveindia.com

India			
Technical Offices	**Bangalore**	SEW-EURODRIVE India Private Limited 308, Prestige Centre Point 7, Edward Road Bangalore	Tel. +91 80 22266565 Fax +91 80 22266569 salesbang@seweurodriveinindia.com
	Calcutta	SEW EURODRIVE INDIA PVT. LTD. Juthika Apartment, Flat No. B1 11/1, Sunny Park Calcutta - 700 019	Tel. +91 33 24615820 Fax +91 33 24615826 sewcal@cal.vsnl.net.in
	Chennai	SEW-EURODRIVE India Private Limited F2, 1st Floor, Sarvamangala Indira New No. 67, Bazullah Road Chennai - 600 017	Tel. +91 44 28144461 Fax +91 44 28144463 saleschen@seweurodriveindia.com
	Hyderabad	SEW-EURODRIVE India Pvt. Limited 408, 4th Floor, Meridian Place Green Park Road Amerpeet Hyderabad	Tel. +91 40 23414698 Fax +91 40 23413884 saleshyd@seweurodriveindia.com
	Mumbai	SEW-EURODRIVE India Private Limited 312 A, 3rd Floor, Acme Plaza Andheri Kurla Road, Andheri (E) Mumbai	Tel. +91 22 28348440 Fax +91 22 28217858 salesmumbai@seweurodriveindia.com
	New Delhi	SEW-EURODRIVE India Private Limited 303 Kirti Deep, 2-Nangal Raya Business Centre New Delhi 110 046	Tel. +91 11 28521566 Fax +91 11 28521577 salesdelhi@seweurodriveindia.com
	Pune	SEW-EURODRIVE India Private Limited 206, Metro House 7 Mangaldas Road Pune 411001, Maharashtra	Tel. +91 20 26111054 Fax +91 20 26132337 salespune@seweurodriveindia.com

Indonesia			
Technical Office	**Jakarta**	SEW-EURODRIVE Pte Ltd. Jakarta Liaison Office, Menara Graha Kencana Jl. Perjuangan No. 88, LT 3 B, Kebun Jeruk, Jakarta 11530	Tel. +62 21 5359066 Fax +62 21 5363686

Ireland			
Sales **Service**	**Dublin**	Alperton Engineering Ltd. 48 Moyle Road Dublin Industrial Estate Glasnevin, Dublin 11	Tel. +353 1 830-6277 Fax +353 1 830-6458

Israel			
Sales	**Tel-Aviv**	Liraz Handasa Ltd. Ahofer Str 34B / 228 58858 Holon	Tel. +972 3 5599511 Fax +972 3 5599512 lirazhandasa@barak-online.net

Italy			
Assembly **Sales** **Service**	**Milano**	SEW-EURODRIVE di R. Blickle & Co.s.a.s. Via Bernini,14 I-20020 Solaro (Milano)	Tel. +39 02 96 9801 Fax +39 02 96 799781 sewit@sew-eurodrive.it

Italy			
Technical Offices	**Bologna**	SEW-EURODRIVE di R. Blickle & Co.s.a.s. Via Emilia,172 I-40064 Ozzano dell'Emilia (Bo)	Tel. +39 051 796-660 Fax +39 051 796-595
	Caserta	SEW-EURODRIVE di R. Blickle & Co.s.a.s. Viale Carlo III Km. 23,300 I-81020 S. Nicola la Strada (Caserta)	Tel. +39 0823 450611 Fax +39 0823 421414
	Firenze	RIMA Via Einstein, 14 I-50013 Campi Bisenzio (Firenze)	Tel. +39 055 898 58-21 Fax +39 055 898 58-30
	Pescara	SEW-EURODRIVE di R. Blickle & Co.s.a.s. Via Emilia,172 I-40064 Ozzano dell'Emilia (Bo)	Tel. +39 051 796-660 Fax +39 051 796-595
	Torino	SEW-EURODRIVE di R. Blickle & Co.s.a.s. Filiale Torino c.so Unione Sovietica 612/15 - int. C I-11035 Torino	Tel. +39 011 3473780 Fax +39 011 3473783
	Verona	SEW-EURODRIVE di R. Blickle & Co.s.a.s. Via P. Sgulmero, 27/A I-37132 Verona	Tel. +39 045 97-7722 Fax +39 045 97-6079

Ivory Coast			
Sales	**Abidjan**	SICA Ste industrielle et commerciale pour l'Afrique 165, Bld de Marseille B.P. 2323, Abidjan 08	Tel. +225 2579-44 Fax +225 2584-36

Japan			
Assembly **Sales** **Service**	**Toyoda-cho**	SEW-EURODRIVE JAPAN CO., LTD 250-1, Shimoman-no, Iwata Shizuoka 438-0818	Tel. +81 538 373811 Fax +81 538 373814 sewjapan@sew-eurodrive.co.jp
Technical Offices	**Fukuoka**	SEW-EURODRIVE JAPAN CO., LTD. C-go, 5th-floor, Yakuin-Hiruzu-Bldg. 1-5-11, Yakuin, Chuo-ku Fukuoka, 810-0022	Tel. +81 92 713-6955 Fax +81 92 713-6860 sewkyushu@jasmine.ocn.ne.jp
	Osaka	SEW-EURODRIVE JAPAN CO., LTD. B-Space EIRAI Bldg., 3rd Floor 1-6-9 Kyoumachibori, Nishi-ku, Osaka, 550-0003	Tel. +81 6 6444--8330 Fax +81 6 6444--8338 sewosaka@crocus.ocn.ne.jp
	Tokyo	SEW-EURODRIVE JAPAN CO., LTD. Izumi-Bldg. 5 F 3-2-15 Misaki-cho Chiyoda-ku, Tokyo 101-0061	Tel. +81 3 3239-0469 Fax +81 3 3239-0943 sewtokyo@basil.ocn.ne.jp

Korea			
Assembly **Sales** **Service**	**Ansan-City**	SEW-EURODRIVE KOREA CO., LTD. B 601-4, Banweol Industrial Estate Unit 1048-4, Shingil-Dong Ansan 425-120	Tel. +82 31 492-8051 Fax +82 31 492-8056 master@sew-korea.co.kr
	Busan	SEW-EURODRIVE KOREA Co., Ltd. No. 1720 - 11, Songjeong - dong Gangseo-ku Busan 618-270	Tel. +82 51 832-0204 Fax +82 51 832-0230 master@sew-korea.co.kr

Korea			
Technical Offices	**Daegu**	SEW-EURODRIVE KOREA Co., Ltd. No.1108 Sungan officete I 87-36, Duryu 2-dong, Dalseo-ku Daegu 704-712	Tel. +82 53 650-7111 Fax +82 53 650-7112 sewdaegu@netsgo.com
	DaeJeon	SEW-EURODRIVE KOREA Co., Ltd. No. 2017, Hongin offictel 536-9, Bongmyung-dong, Yusung-ku Daejeon 305-301	Tel. +82 42 828-6461 Fax +82 42 828-6463 sewdaejeon@netsgo.com
	Kwangju	SEW-EURODRIVE KOREA Co., Ltd. 4fl., Shinhyun B/D 96-16 Unam-dong, Buk-ku Kwangju 500-170	Tel. +82 62 511-9172 Fax +82 62 511-9174 sewkwangju@netsgo.com
	Seoul	SEW-EURODRIVE KOREA Co., Ltd. No.1104 Sunkyung officetel 106-4 Kuro 6-dong, Kuro-ku Seoul 152-054	Tel. +82 2 862-8051 Fax +82 2 862-8199 sewseoul@netsgo.com

Latvia			
Sales	**Riga**	SIA Alas-Kuul Katlakalna 11C LV-1073 Riga	Tel. +371 7139386 Fax +371 7139386 info@alas-kuul.ee

Lebanon			
Sales	**Beirut**	Gabriel Acar & Fils sarl B. P. 80484 Bourj Hammoud, Beirut	Tel. +961 1 4947-86 +961 1 4982-72 +961 3 2745-39 Fax +961 1 4949-71 gacar@beirut.com

Lithuania			
Sales	**Alytus**	UAB Irseva Merkines g. 2A LT-62252 Alytus	Tel. +370 315 79204 Fax +370 315 56175 info@irseva.lt www.sew-eurodrive.lt

Luxembourg			
Assembly **Sales** **Service**	**Brüssel**	CARON-VECTOR S.A. Avenue Eiffel 5 B-1300 Wavre	Tel. +32 10 231-311 Fax +32 10 231-336 http://www.caron-vector.be info@caron-vector.be

Malaysia			
Assembly **Sales** **Service**	**Johore**	SEW-EURODRIVE SDN BHD No. 95, Jalan Seroja 39, Taman Johor Jaya 81000 Johor Bahru, Johor West Malaysia	Tel. +60 7 3549409 Fax +60 7 3541404 kchtan@pd.jaring.my
Technical Offices	**Kota Kinabalu**	SEW-EURODRIVE Sdn Bhd (Kota Kinabalu Branch) Lot No. 2,1st Floor, Inanam Baru Phase III, Miles 5.1 /2, Jalan Tuaran, Inanam 89350 Kota Kinabalu Sabah, Malaysia	Tel. +60 88 424792 Fax +60 88 424807
	Kuala Lumpur	SEW-EURODRIVE Sdn. Bhd. No. 2, Jalan Anggerik Mokara 31/46 Kota Kemuning Seksyen 31 40460 Shah Alam Selangor Darul Ehsan	Tel. +60 3 5229633 Fax +60 3 5229622 sewpjy@po.jaring.my
	Kuching	SEW-EURODRIVE Sdn. Bhd. Lot 268, Section 9 KTLD Lorong 9, Jalan Satok 93400 Kuching, Sarawak East Malaysia	Tel. +60 82 232380 Fax +60 82 242380
	Penang	SEW-EURODRIVE Sdn. Bhd. No. 38, Jalan Bawal Kimsar Garden 13700 Prai, Penang	Tel. +60 4 3999349 Fax +60 4 3999348 seweurodrive@po.jaring.my

Mexico			
Assembly **Sales** **Service**	**Queretaro**	SEW-EURODRIVE, Sales and Distribution, S. A. de C. V. Privada Tequisquiapan No. 102 Parque Ind. Queretaro C. P. 76220 Queretaro, Mexico	Tel. +52 442 1030-300 Fax +52 442 1030-301 scmexico@seweurodrive.com.mx

Morocco			
Sales	**Casablanca**	S. R. M. Société de Réalisations Mécaniques 5, rue Emir Abdelkader 05 Casablanca	Tel. +212 2 6186-69 + 6186-70 + 6186-71 Fax +212 2 6215-88 srm@marocnet.net.ma

Netherlands			
Assembly **Sales** **Service**	**Rotterdam**	VECTOR Aandrijftechniek B.V. Industrieweg 175 NL-3044 AS Rotterdam Postbus 10085 NL-3004 AB Rotterdam	Tel. +31 10 4463-700 Fax +31 10 4155-552 http://www.vector.nu info@vector.nu

New Zealand			
Assembly **Sales** **Service**	**Auckland**	SEW-EURODRIVE NEW ZEALAND LTD. P.O. Box 58-428 82 Greenmount drive East Tamaki Auckland	Tel. +64 9 2745627 Fax +64 9 2740165 sales@sew-eurodrive.co.nz
	Christchurch	SEW-EURODRIVE NEW ZEALAND LTD. 10 Settlers Crescent, Ferrymead Christchurch	Tel. +64 3 384-6251 Fax +64 3 384-6455 sales@sew-eurodrive.co.nz
Technical Office	**Palmerston North**	SEW-EURODRIVE NEW ZEALAND LTD. C/-Grant Shearman, RD 5, Aronui Road Palmerston North	Tel. +64 6 355-2165 Fax +64 6 355-2316 sales@sew-eurodrive.co.nz

Norway			
Assembly **Sales** **Service**	**Moss**	SEW-EURODRIVE A/S Solgaard skog 71 N-1599 Moss	Tel. +47 69 241-020 Fax +47 69 241-040 sew@sew-eurodrive.no

Pakistan			
Technical Office	**Karachi**	SEW-EURODRIVE Pte. Ltd. Karachi Liaison Office A/3, 1st Floor, Central Commercial Area Sultan Ahmed Shah Road Block 7/8, K.C.H.S. Union Ltd., Karachi	Tel. +92 21 4529369 Fax +92 21 4547365 seweurodrive@cyber.net.pk

Peru			
Assembly **Sales** **Service**	**Lima**	SEW DEL PERU MOTORES REDUCTORES S.A.C. Los Calderos, 120-124 Urbanizacion Industrial Vulcano, ATE, Lima	Tel. +51 1 3495280 Fax +51 1 3493002 sewperu@sew-eurodrive.com.pe

Philippines			
Technical Office	**Manila**	SEW-EURODRIVE Pte Ltd Manila Liaison Office Suite 110, Ground Floor Comfoods Building Senator Gil Puyat Avenue 1200 Makati City	Tel. +63 2 894275254 Fax +63 2 8942744 sewmla@i-next.net

Poland			
Assembly **Sales** **Service**	**Lodz**	SEW-EURODRIVE Polska Sp.z.o.o. ul. Techniczna 5 PL-92-518 Lodz	Tel. +48 42 67710-90 Fax +48 42 67710-99 http://www.sew-eurodrive.pl sew@sew-eurodrive.pl

Poland			
Technical Office	**Katowice**	SEW-EURODRIVE Polska Sp.z.o.o. ul. Nad Jeziorem 87 PL-43-100 Tychy	Tel. +48 32 2175026 + 32 2175027 Fax +48 32 2277910
	Bydgoszcz	SEW-EURODRIVE Polska Sp.z.o.o. ul. Fordonska 246 PL-85-959 Bydgoszcz	Tel. +48 52 3606590 Fax +48 52 3606591
	Szczecinek	SEW-EURODRIVE Polska Sp.z.o.o. ul. Mickiewicza 2 pok. 36 PL-78-400 Szczecinek	Tel. +48 94 3728820 Fax +48 94 3728821

Portugal			
Assembly **Sales** **Service**	**Coimbra**	SEW-EURODRIVE, LDA. Apartado 15 P-3050-901 Mealhada	Tel. +351 231 20 9670 Fax +351 231 20 3685 http://www.sew-eurodrive.pt infosew@sew-eurodrive.pt
Technical Offices	**Lisboa**	Tertir Edifício Lisboa Gabinete 119 P-2615 Alverca do Ribatejo	Tel. +351 21 958-0198 Fax +351 21 958-0245 esc.lisboa@sew-eurodrive.pt
	Porto	Av. D. Afonso Henriques, 1196 - 1° - sala 102 Edifício ACIA P- 4450-016 Matosinhos	Tel. +351 229 350 383 Fax +351 229 350 384 MobilTel. +351 9 332559110 esc.porto@sew-eurodrive.pt

Romania			
Sales **Service**	**Bucuresti**	Sialco Trading SRL str. Madrid nr.4 011785 Bucuresti	Tel. +40 21 230-1328 Fax +40 21 230-7170 sialco@sialco.ro

Russia			
Sales	**St. Petersburg**	ZAO SEW-EURODRIVE P.O. Box 263 RUS-195220 St. Petersburg	Tel. +7 812 5357142 +812 5350430 Fax +7 812 5352287 http://www.sew-eurodrive.ru sew@sew-eurodrive.ru
Technical Office	**Moskau**	ZAO SEW-EURODRIVE RUS-119180 Moskau	Tel. +7 095 9337090 Fax +7 095 9337094 mso@sew-eurodrive.ru
	Novosibirsk	ZAO SEW-EURODRIVE pr. K Marksa, d.30 RUS-630087 Novosibirsk	Tel. +7 3832 350200 Fax +7 3832 462544 nso@sew-eurodrive.ru

Senegal			
Sales	**Dakar**	SENEMECA Mécanique Générale Km 8, Route de Rufisque B.P. 3251, Dakar	Tel. +221 849 47-70 Fax +221 849 47-71 senemeca@sentoo.sn

Serbia and Montenegro			
Sales	**Beograd**	DIPAR d.o.o. Kajmakcalanska 54 SCG-11000 Beograd	Tel. +381 11 3088677 / +381 11 3088678 Fax +381 11 3809380 dipar@yubc.net

Singapore			
Assembly **Sales** **Service**	**Singapore**	SEW-EURODRIVE PTE. LTD. No 9, Tuas Drive 2 Jurong Industrial Estate Singapore 638644	Tel. +65 68621701 Fax +65 68612827 sewsingapore@sew-eurodrive.com

Slovakia			
Sales	**Sered**	SEW-Eurodrive SK s.r.o. Trnavska 920 SK-926 01 Sered	Tel. +421 31 7891311 Fax +421 31 7891312 sew@sew-eurodrive.sk

Slovenia			
Sales **Service**	**Celje**	Pakman - Pogonska Tehnika d.o.o. Ul. XIV. divizije 14 SLO – 3000 Celje	Tel. +386 3 490 83-20 Fax +386 3 490 83-21 pakman@siol.net

South Africa			
Assembly **Sales** **Service**	**Johannesburg**	SEW-EURODRIVE (PROPRIETARY) LIMITED Eurodrive House Cnr. Adcock Ingram and Aerodrome Roads Aeroton Ext. 2 Johannesburg 2013 P.O.Box 90004 Bertsham 2013	Tel. +27 11 248-7000 Fax +27 11 494-3104 dross@sew.co.za
	Capetown	SEW-EURODRIVE (PROPRIETARY) LIMITED Rainbow Park Cnr. Racecourse & Omuramba Road Montague Gardens Cape Town P.O.Box 36556 Chempet 7442 Cape Town	Tel. +27 21 552-9820 Fax +27 21 552-9830 Telex 576 062 dswanepoel@sew.co.za
	Durban	SEW-EURODRIVE (PROPRIETARY) LIMITED 2 Monaceo Place Pinetown Durban P.O. Box 10433, Ashwood 3605	Tel. +27 31 700-3451 Fax +27 31 700-3847 dtait@sew.co.za
	Nelspruit	SEW-EURODRIVE (PTY) LTD. 7 Christie Crescent Vintonia P.O.Box 1942 Nelspruit 1200	Tel. +27 13 752-8007 Fax +27 13 752-8008 robermeyer@sew.co.za
Technical Offices	**Port Elizabeth**	SEW-EURODRIVE PTY LTD. 5 b Linsay Road Neave Township 6000 Port Elizabeth	Tel. +27 41 453-0303 Fax +27 41 453-0305 dswanepoel@sew.co.za
	Richards Bay	SEW-EURODRIVE PTY LTD. 25 Eagle Industrial Park Alton Richards Bay P.O. Box 458 Richards Bay 3900	Tel. +27 35 797-3805 Fax +27 35 797-3819 dtait@sew.co.za

Spain			
Assembly **Sales** **Service**	**Bilbao**	SEW-EURODRIVE ESPAÑA, S.L. Parque Tecnológico, Edificio, 302 E-48170 Zamudio (Vizcaya)	Tel. +34 9 4431 84-70 Fax +34 9 4431 84-71 sew.spain@sew-eurodrive.es
Technical Offices	**Barcelona**	Delegación Barcelona Avenida Francesc Maciá 40-44 Oficina 3.1 E-08206 Sabadell (Barcelona)	Tel. +34 9 37 162200 Fax +34 9 37 233007
	Lugo	Delegación Noroeste Apartado, 1003 E-27080 Lugo	Tel. +34 6 3940 3348 Fax +34 9 8220 2934
	Madrid	Delegación Madrid Gran Via. 48-2° A-D E-28220 Majadahonda (Madrid)	Tel. +34 9 1634 2250 Fax +34 9 1634 0899

Sri Lanka			
	Colombo 4	SM International (Pte) Ltd 254, Galle Raod Colombo 4, Sri Lanka	Tel. +94 1 2584887 Fax +94 1 2582981

Sweden			
Assembly **Sales** **Service**	**Jönköping**	SEW-EURODRIVE AB Gnejsvägen 6-8 S-55303 Jönköping Box 3100 S-55003 Jönköping	Tel. +46 36 3442-00 Fax +46 36 3442-80 http://www.sew-eurodrive.se info@sew-eurodrive.se

Sweden			
Technical Offices	**Göteborg**	SEW-EURODRIVE AB Gustaf Werners gata 8 S-42131 Västra Frölunda	Tel. +46 31 70968-80 Fax +46 31 70968-93
	Malmö	SEW-EURODRIVE AB Borrgatan 5 S-21124 Malmö	Tel. +46 40 68064-80 Fax +46 40 68064-93
	Stockholm	SEW-EURODRIVE AB Björkholmsvägen 10 S-14125 Huddinge	Tel. +46 8 44986-80 Fax +46 8 44986-93
	Skellefteå	SEW-EURODRIVE AB Trädgårdsgatan 8 S-93131 Skellefteå	Tel. +46 910 7153-80 Fax +46 910 7153-93

Switzerland			
Assembly **Sales** **Service**	**Basel**	Alfred lmhof A.G. Jurastrasse 10 CH-4142 Münchenstein bei Basel	Tel. +41 61 41717-17 Fax +41 61 41717-00 http://www.imhof-sew.ch info@imhof-sew.ch
Technical Offices	**Suisse romande**	André Gerber Es Perreyres 1436 Chamblon	Tel. +41 2 444538-50 Fax +41 2 444548-87
	Bern	Rudolf Bühler Allerheiligenstraße 97d 2540 Grenchen	Tel. +41 3 265223-39 Fax +41 3 265223-31
	Luzern	Beat Lütolf Baumacher 11 6244 Nebikon	Tel. +41 6 275647-80 Fax +41 6 275647-86
	Zürich	René Rothenbühler Nörgelbach 7 8493 Saland	Tel. +41 5 238631-50 Fax +41 5 238632-13

Taiwan (R.O.C.)			
	Nan Tou	Ting Shou Trading Co., Ltd. No. 55 Kung Yeh N. Road Industrial District Nan Tou 540	Tel. +886 49 255353 Fax +886 49 257878
	Taipei	Ting Shou Trading Co., Ltd. 6F-3, No. 267, Sec. 2 Tung Hwa South Road, Taipei	Tel. +886 2 27383535 Fax +886 2 27368268 Telex 27 245 sewtwn@ms63.hinet.net

Thailand			
Assembly **Sales** **Service**	**Chon Buri**	SEW-EURODRIVE (Thailand) Ltd. Bangpakong Industrial Park 2 700/456, Moo.7, Tambol Donhuaroh Muang District Chon Buri 20000	Tel. +66 38 454281 Fax +66 38 454288 sewthailand@sew-eurodrive.co.th
Technical Offices	**Bangkok**	SEW-EURODRIVE PTE LTD Bangkok Liaison Office 6th floor, TPS Building 1023, Phattanakarn Road Klongtan, Phrakanong, Bangkok,10110	Tel. +66 2 7178149 Fax +66 2 7178152 sewthailand@sew-eurodrive.co.th
	Hadyai	SEW-EURODRIVE (Thailand) Ltd. Hadyai Country Home Condominium 59/101 Soi.17/1 Rachas-Utid Road. Hadyai, Songkhla 90110	Tel. +66 74 359441 Fax +66 74 359442 sewhdy@ksc.th.com
	Khonkaen	SEW-EURODRIVE (Thailand) Ltd. 4th Floor, Kaow-U-HA MOTOR Bldg, 359/2, Mitraphab Road. Muang District Khonkaen 40000	Tel. +66 43 225745 Fax +66 43 324871 sewkk@cscoms.com
	Lampang	SEW-EURODRIVE (Thailand) Ltd. 264 Chatchai Road, sob-tuy, Muang, Lampang 52100	Tel. +66 54 310241 Fax +66 54 310242 sewthailand@sew-eurodrive.co.th

Tunisia			
Sales	**Tunis**	T. M.S. Technic Marketing Service 7, rue Ibn El Heithem Z.I. SMMT 2014 Mégrine Erriadh	Tel. +216 1 4340-64 + 1 4320-29 Fax +216 1 4329-76

Turkey			
Assembly **Sales** **Service**	**Istanbul**	SEW-EURODRIVE Hareket Sistemleri Sirketi Bagdat Cad. Koruma Cikmazi No. 3 TR-34846 Maltepe ISTANBUL	Tel. +90 216 4419163 + 216 4419164 + 216 3838014 Fax +90 216 3055867 sew@sew-eurodrive.com.tr
Technical Offices	**Ankara**	SEW-EURODRIVE Hareket Sistemleri Ticaret Ltd. Sirketi Özcelik Is Merkezi, 14. Sok, No. 4/42 TR-06370 Ostim/Ankara	Tel. +90 312 2868014 Fax +90 312 2868015
	Bursa	SEW-EURODRIVE Hareket Sistemleri San. ve Tic. Ltd. Sti. Besevler Küçük Sanayi Parkoop Parçacilar Sitesi 48. Sokak No. 47 TR Nilüfer/Bursa	Tel. +90 224 443 4559 Fax +90 224 443 4558
	Izmir	SEW-EURODRIVE Hareket Sistemleri Ticaret Ltd. Sirketi 1203/11 Sok. No. 4/613 Hasan Atli Is Merkezi TR-35110 Yenisehir-Izmir	Tel. +90 232 4696264 Fax +90 232 4336105

Ukraine			
Sales **Service**	**Dnepropetrovsk**	SEW-EURODRIVE Str. Rabochaja 23-B, Office 409 49008 Dnepropetrovsk	Tel. +380 56 370 3211 Fax +380 56 372 2078 m.piatnitsa@sew-eurodrive.de

Uruguay			
	Montevideo	SEW-EURODRIVE Argentina S. A. Sucursal Uruguay German Barbato 1526 CP 11200 Montevideo	Tel. +598 2 90181-89 Fax +598 2 90181-88 sewuy@sew-eurodrive.com.uy

USA			
Production **Assembly** **Sales** **Service**	**Greenville**	SEW-EURODRIVE INC. 1295 Old Spartanburg Highway P.O. Box 518 Lyman, S.C. 29365	Tel. +1 864 439-7537 Fax Sales +1 864 439-7830 Fax Manuf. +1 864 439-9948 Fax Ass. +1 864 439-0566 Telex 805 550 http://www.seweurodrive.com cslyman@seweurodrive.com
Assembly **Sales** **Service**	**San Francisco**	SEW-EURODRIVE INC. 30599 San Antonio St. Hayward, California 94544-7101	Tel. +1 510 487-3560 Fax +1 510 487-6381 cshayward@seweurodrive.com
	Philadelphia/PA	SEW-EURODRIVE INC. Pureland Ind. Complex 2107 High Hill Road, P.O. Box 481 Bridgeport, New Jersey 08014	Tel. +1 856 467-2277 Fax +1 856 845-3179 csbridgeport@seweurodrive.com
	Dayton	SEW-EURODRIVE INC. 2001 West Main Street Troy, Ohio 45373	Tel. +1 937 335-0036 Fax +1 937 440-3799 cstroy@seweurodrive.com
	Dallas	SEW-EURODRIVE INC. 3950 Platinum Way Dallas, Texas 75237	Tel. +1 214 330-4824 Fax +1 214 330-4724 csdallas@seweurodrive.com
	Additional addresses for service in the USA provided on request!		

Venezuela			
Assembly **Sales** **Service**	**Valencia**	SEW-EURODRIVE Venezuela S.A. Av. Norte Sur No. 3, Galpon 84-319 Zona Industrial Municipal Norte Valencia, Estado Carabobo	Tel. +58 241 832-9804 Fax +58 241 838-6275 sewventas@cantv.net sewfinanzas@cantv.net

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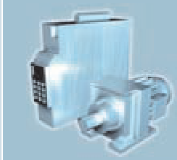

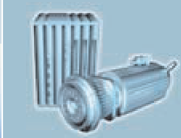

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