



Operating Instructions



Contactless Energy Transfer System
MOVITRANS® line Pick-Up with Direct Connection TDM90C



Table of Contents

1	General information	5
1.1	About this documentation	5
1.2	Other applicable documentation	5
1.3	Structure of the safety notes	5
1.3.1	Meaning of signal words	5
1.3.2	Structure of section-related safety notes	5
1.3.3	Meaning of the hazard symbols	6
1.3.4	Structure of embedded safety notes	6
1.4	Decimal separator in numerical values	6
1.5	Rights to claim under limited warranty	6
1.6	Product names and trademarks	6
1.7	Copyright notice	7
2	Safety notes	8
2.1	Preliminary information	8
2.2	Duties of the user	8
2.3	Designated use	9
2.3.1	Restrictions under the European WEEE Directive 2012/19/EU	9
2.3.2	Restrictions of use	9
2.4	Electromagnetic fields	9
2.5	Target group	10
2.6	Functional safety technology	10
2.7	Transport	10
2.8	Installation/assembly	10
2.9	Electrical installation	11
2.9.1	Mobile application	11
2.10	Protective separation	12
2.11	Startup/operation	12
3	Product structure	13
3.1	Type designation	13
3.2	Scope of delivery	13
3.3	Nameplate	14
3.4	Device overview	15
3.5	Accessories	17
3.6	Functional principle	17
4	Mechanical installation	19
4.1	Requirements	19
4.2	Waste heat	19
4.3	Tightening torques	20
4.4	Installation	21
4.4.1	Clearance	23
5	Electrical installation	24
5.1	Installation notes	24
5.2	Cable routing	24

5.3	Preventive measures against electrical hazards.....	24
5.3.1	Overview.....	24
5.3.2	Contactless energy transfer system	25
5.3.3	Cable fuse protection.....	27
5.4	Connections	28
5.5	Electrical connections	29
5.5.1	Representation of connections	29
5.5.2	X2341: DC power output	29
5.5.3	X2319: DC power output	31
5.5.4	X5221: Storage bundle monitoring (galvanically isolated).....	32
5.6	Connect the pick-up with or without MOVI-DPS® storage bundle	34
5.7	Technical diagram (wiring) TDM90C ↔ MOVI-DPS® MOVI-DPS® storage bundle	35
5.7.1	Several pick-ups, each with a storage bundle	35
5.7.2	Several pick-ups with one storage bundle	37
6	Operation	39
6.1	For your safety.....	39
7	Service	40
7.1	Waste disposal.....	40
8	Technical data	41
8.1	Markings	41
8.1.1	CE mark.....	41
8.1.2	UKCA mark.....	41
8.2	TDM90C general pick-up	41
8.3	TDM90C005-D35-B03-0 pick-up	42
8.4	TDM90C005-D06-B03-0 pick-up	44
8.5	Pick-ups TDM90C005-D05-B03-0 and TDM90C005-D05-B03-1	46
8.6	Dimension drawings.....	48
8.6.1	TDM90C pick-up.....	48
9	Address list.....	50
	Index.....	61

1 General information

1.1 About this documentation

The documentation at hand is the original.

This documentation is an integral part of the product. The documentation is intended for all employees who perform work on the product.

Make sure this documentation is accessible and legible. Ensure that persons responsible for the systems and their operation as well as persons who work on the product independently have read through the documentation carefully and understood it. If you are unclear about any of the information in this documentation or if you require further information, contact SEW-EURODRIVE.

1.2 Other applicable documentation

Observe the corresponding documentation for all additional components.

1.3 Structure of the safety notes

1.3.1 Meaning of signal words

The following table shows the graduation and meaning of the signal words in the safety notes.

Signal word	Meaning	Consequences if not observed
▲ DANGER	Imminent danger	Death or severe injuries
▲ WARNING	Possibly dangerous situation	Death or severe injuries
▲ CAUTION	Possibly dangerous situation	Minor injuries
NOTICE	Possible damage to property	Damage to the product or its environment
INFORMATION	Useful information or tip: Simplifies handling of the product.	

1.3.2 Structure of section-related safety notes

Section-related safety notes do not apply to a specific action but to several actions pertaining to one subject. The hazard symbols used either indicate a general hazard or a specific hazard.

This is the formal structure of a safety note for a specific section:



SIGNAL WORD

Type and source of hazard.

Possible consequence(s) if disregarded.

- Measure(s) to prevent the hazard.

1.3.3 Meaning of the hazard symbols

The hazard symbols in the safety notes have the following meaning:

Hazard symbol	Meaning
	General hazard
	Warning of dangerous electrical voltage
	Warning of hot surfaces
	Warning about suspended load

1.3.4 Structure of embedded safety notes

Embedded safety notes are directly integrated into the instructions just before the description of the dangerous step.

This is the formal structure of an embedded safety note:

⚠ SIGNAL WORD! Type and source of danger. Possible consequence(s) if disregarded. Measure(s) to prevent danger.

1.4 Decimal separator in numerical values

In this document, a period is used to indicate the decimal separator.

Example: 30.5 kg

1.5 Rights to claim under limited warranty

Read the information in this documentation. This is essential for fault-free operation and fulfillment of any rights to claim under limited warranty. Read the documentation before you start working with the product.

1.6 Product names and trademarks

The product names mentioned in this documentation are trademarks or registered trademarks of the respective titleholders.

1.7 Copyright notice

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2 Safety notes

2.1 Preliminary information

The following general safety notes serve the purpose of preventing injury to persons and damage to property. They primarily apply to the use of products described in this documentation. If you use additional components, also observe the relevant warning and safety notes.

2.2 Duties of the user

As the user, you must ensure that the basic safety notes are observed and complied with. Make sure that persons responsible for the machinery and its operation as well as persons who work on the device independently have read through the documentation carefully and understood it.

As the user, you must ensure that all of the work listed in the following is carried out only by qualified specialists:

- Setup and installation
- Installation and connection
- Startup
- Maintenance and repairs
- Shutdown
- Disassembly

Ensure that the persons who work on the product pay attention to the following regulations, conditions, documentation, and information:

- The national and regional regulations governing safety and the prevention of accidents
- Product safety label on the product
- All other associated project planning documents, installation and startup instructions, as well as wiring diagrams
- Do not assemble, install or operate damaged products
- All system-specific specifications and regulations

Ensure that systems in which the product is installed are equipped with additional monitoring and protection devices. Observe the applicable safety regulations and legislation governing technical work equipment and accident prevention regulations.

2.3 Designated use

The product is intended for installation in electrical systems or machines.

The product is intended for mobile use in industrial and commercial systems with contactless energy transfer systems.

In case of installation in electrical systems or machines, startup of the product is prohibited until it is determined that the machine meets the requirements stipulated in the local laws and directives. For Europe, Machinery Directive 2006/42/EC as well as the EMC Directive 2014/30/EU apply. Observe EN 60204-1 (Safety of machinery - electrical equipment of machines). The product meets the requirements stipulated in the Low Voltage Directive 2014/35/EU.

The standards given in the declaration of conformity apply to the product.

Technical data and information on the connection conditions are provided on the nameplate and in chapter "Technical data" in the documentation. Always comply with the data and conditions.

Unintended or improper use of the product may result in severe injury to persons and damage to property.

Only operate the pick-up with direct connection with the designated and suitable consumers, and in combination with the relevant cooling components designated for the system or machine.

2.3.1 Restrictions under the European WEEE Directive 2012/19/EU

Options and accessories from SEW-EURODRIVE may only be used in combination with products from SEW-EURODRIVE.

2.3.2 Restrictions of use

The following applications are prohibited unless the device is explicitly designed for such use:

- Use in potentially explosive areas.
- Use in areas exposed to harmful oils, acids, gases, vapors, dust, and radiation.
- Operation in applications with impermissibly high mechanical vibration and shock loads in excess of the regulations stipulated in EN 60068-2-6 and/or EN 60068-2-27.
- Operation at an elevation of more than 2000 m above sea level
- Operation in outdoor areas

2.4 Electromagnetic fields

Observe ICNIRP 2010 and IEEE C95.1-2019 or the national installation regulations, for example DGUV regulation 15 - "Electromagnetic fields", when installing, starting up and operating systems with a contactless energy transfer system based on the inductive principle in the vicinity of workplaces. For more information on electromagnetic fields, refer to the manual "MOVITRANS® Protective Measures and Planning Information for Systems".

2.5 Target group

Specialist for mechanical work

Any mechanical work may be performed only by adequately qualified specialists. Specialists in the context of this documentation are persons who are familiar with the design, mechanical installation, troubleshooting, and maintenance of the product, and who possess the following qualifications:

- Qualifications in the field of mechanics in accordance with the national regulations
- Familiarity with this documentation

Specialist for electrotechnical work

Any electrotechnical work may be performed only by electrically skilled persons with a suitable education. Electrically skilled persons in the context of this documentation are persons who are familiar with electrical installation, startup, troubleshooting, and maintenance of the product, and who possess the following qualifications:

- Qualifications in the field of electrical engineering in accordance with the national regulations
- Familiarity with this documentation

Additional qualifications

In addition to that, these persons must be familiar with the valid safety regulations and laws, as well as with the requirements of the standards, directives, and laws specified in this documentation.

The persons must have the express authorization of the company to operate, program, parameterize, label, and ground devices, systems, and circuits in accordance with the standards of safety technology.

Instructed persons

All work in the areas of transport, storage, installation, operation and waste disposal may only be carried out by persons who are trained and instructed appropriately. These instructions must enable the persons to carry out the required activities and work steps safely and in accordance with regulations.

2.6 Functional safety technology

The product must not perform any safety functions without a higher-level safety system unless explicitly allowed by the documentation.

2.7 Transport

Inspect the shipment for damage as soon as you receive the delivery. Inform the shipping company immediately about any damage. If the product or the packaging is damaged, do not assemble, install, connect, or start up the product. If the packaging is damaged, the product itself may also be damaged.

Observe the following notes when transporting the device:

- Ensure that the product is not subject to mechanical impact.

If necessary, use suitable, sufficiently dimensioned handling equipment.

Observe the information on climatic conditions in chapter "Technical data" (→ 41) of the documentation.

2.8 Installation/assembly

Ensure that the product is installed and cooled in accordance with the regulations in the documentation.

Protect the product from excessive mechanical strain. The product and its mounted components must not protrude into the path of persons or vehicles. Ensure that no components are deformed or no insulation spaces are modified, particularly during transportation. Electrical components must not be mechanically damaged or destroyed.

Observe the notes in chapter "Mechanical installation" (→  19) in the documentation.

2.9 Electrical installation

Ensure that all of the required covers are correctly attached after the electrical installation.

Make sure that preventive measures and protection devices comply with the applicable regulations (e.g. EN 60204-1 or EN 61800-5-1).

2.9.1 Mobile application

Preventive measures that are required for the product according to IEC 61140 are:

- Protection through protective separation
- Discharge measures against electrostatic discharge (ESD) and capacitive coupling

2.10 Protective separation

The product meets all requirements for protective separation of power and electronics connections in accordance with IEC 61800-5-1. The connected signal circuits must meet requirements according to SELV (**S**afety **E**xtra **L**ow **V**oltage) or PELV (**P**rotective **E**xtra **L**ow **V**oltage) to ensure protective separation. The installation must meet the requirements for protective separation.

In order to avoid exceeding the permitted contact voltages in SELV or PELV power circuits in the event of a fault, continuous equipotential bonding is required in the vicinity of these power circuits. If this is not possible, other preventive measures must be taken. These preventive measures are described in IEC 61800-5-1.

2.11 Startup/operation

Observe the safety notes in the chapters "Startup" and "Operation" in the associated product manual.

Make sure that any existing transport protection is removed.

Do not deactivate monitoring and protection devices of the machine or system, even for a test run.

Depending on the degree of protection, products may have live, uninsulated, and sometimes moving or rotating parts as well as hot surfaces during operation.

When the device is switched on, dangerous voltages are present at all power connections as well as at any connected cables and terminals. This is also the case even if the product is inhibited.

Do not separate the connection to the product during operation. This may result in dangerous electric arcs damaging the product.

If you disconnect the product from the voltage supply, do not touch any live components or power connections because energy storage devices might still be charged.

3 Product structure

3.1 Type designation

TDM90C	MOVITRANS® mobile pick-up with controlled voltage output	
005	Nominal power: 500 W	
–		
D	DC	
..	Nominal output voltage:	
	05	48 V
	06	55 V
	35	352 V
–		
B	Operating frequency: 50 kHz	
03	Nominal current line cable: 30 A	
–		
.	Design:	
	0	Standard
	1	Customer-specific

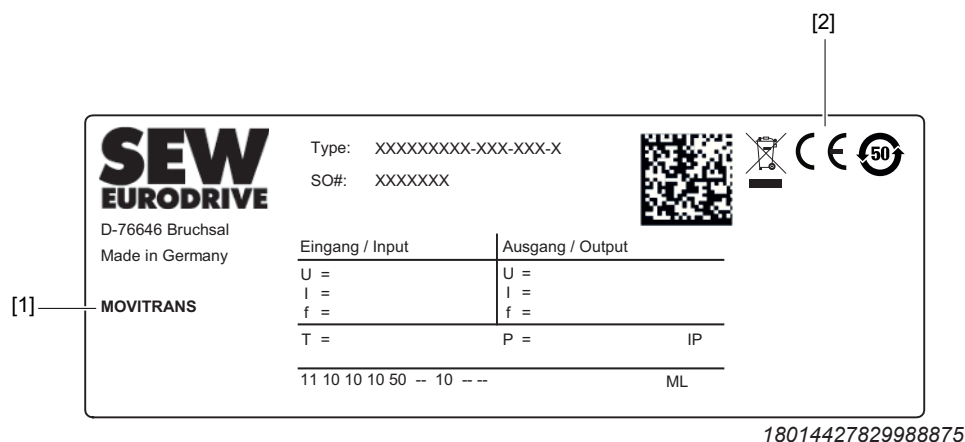
3.2 Scope of delivery

The scope of delivery includes the following components:

Component
MOVITRANS® pick-up with direct connection TDM90C005-D35-B03-0 (352 V, 500 W)
or
MOVITRANS® pick-up with direct connection TDM90C005-D06-B03-0 (55 V, 500 W)
or
MOVITRANS® pick-up with direct connection TDM90C005-D05-B03-0 (48 V, 500 W)
or
MOVITRANS® pick-up with direct connection TDM90C005-D05-B03-1 (48 V, 500 W)

3.3 Nameplate

The nameplate lists information about the product type. The following figure shows an example of a nameplate:

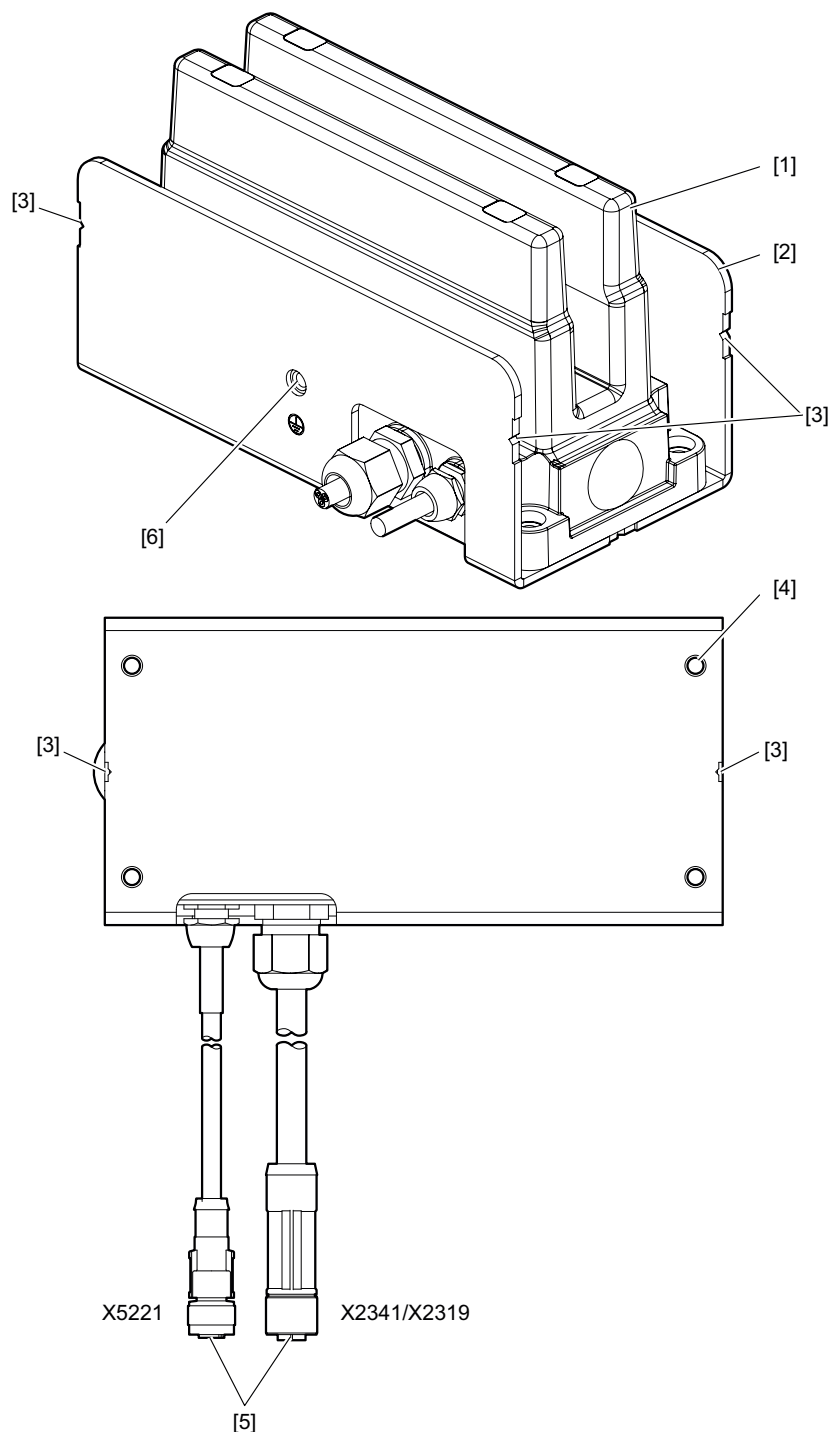


- [1] Product name
[2] Approval identification

Depending on the product design, the following information is listed on the nameplate:

Value	Specification
Type	Type designation
SO#	Serial number
U	Voltage
I	Current
f	Frequency
T	Ambient temperature
P	Nominal output power
IP	Degree of protection

3.4 Device overview



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- [1] Pick-up
- [2] U-shaped shield plate
The shield plate also functions as a cooling plate.
- [3] Setting aids for center alignment and height adjustment of the pick-up
- [4] Mounting bores with M6 female thread for fastening
- [5] Connections
The connections are routed out of the device on cables.
- [6] M6 connection for equipotential bonding

**INFORMATION**

Depending on the type of pick-up, the power output differs in terms of designation and design:

TDM90C (352 V): X2341

TDM90C (55 V/48 V): X2319

3.5 Accessories

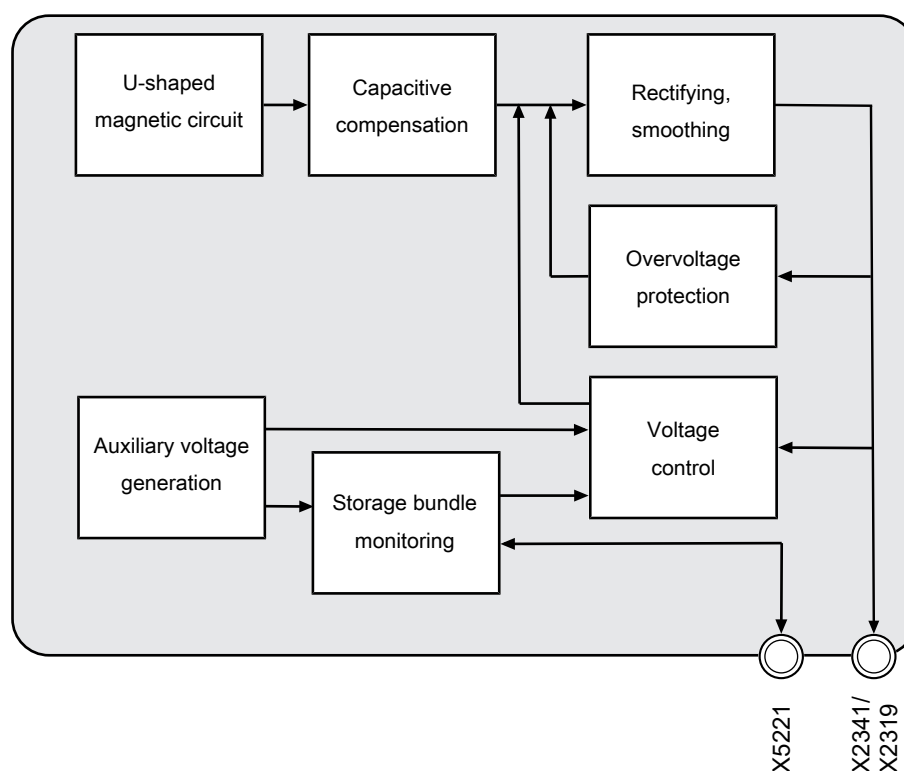
INFORMATION



The scope of delivery does not include accessories, such as installation and mounting material or connection cables.

3.6 Functional principle

The block diagram shows the basic structure of the product:



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X2341 or X2319

When the line cable is energized, the pick-up acts as a constant current source. The current is available at the power output (X2341 oder X2319). The constant current is used to charge the capacitive energy storage unit connected at the power output (e. g. a MOVI-DPS® storage bundle (EKV)). The capacitive energy storage unit supports the load (the charging system or drive system).

The pick-up controls the voltage at the power output. The output voltage remains constant if the current taken from the energy storage unit is below the constant current that the pick-up can supply.

In case of overvoltage at the power output, the pick-up permanently interrupts the charging process of the energy storage unit. Restart is only possible when interlocking has been reset. The inhibit in the event of an overvoltage fault is reset by switching off the TES decentralized supply unit.

In the event of overtemperature in the pick-up, the pick-up interrupts the charging process of the energy storage unit. After the pick-up has cooled down, the charging process restarts automatically.

X5221

If the pick-up is operated without MOVI-DPS® EKV storage bundle, the X5221 connection must be connected with a jumper plug or an external floating interface. Refer to chapter "Electrical installation" (→ 24) for further information.

If the pick-up is operated with MOVI-DPS® EKV storage bundle, the following applies:

When the output voltage at the power output has reached a minimum value, the pick-up generates a DC voltage at output X5221 that supplies the monitoring assembly in the MOVI-DPS® storage bundle. The minimum value depends on the type of pick-up:

- TDM90C (352 V), power output X2341: 60 V
- TDM90C (55 V/48 V), power output X2319: 10 V

The monitoring assembly reports back the following values to the pick-up:

- The temperature as analog signal
- Pending errors in the form of digital signals

In case of overtemperature, overvoltage, or a fault in the storage bundle, the pick-up interrupts the charging process of the storage bundle. If there are no more error signals present at output X5221, the charging process continues automatically.

All signals at X5221 are safely separated from the power output.

4 Mechanical installation

4.1 Requirements

NOTICE

Risk of collision.

Damage to plant and device components.

- Always position the device so that it will not collide with other components, design elements or persons along the travel path.

Comply with the following prerequisites:

- Trained specialists perform the installation.
- The information provided in the technical data and the permitted conditions for the operating location of the device are observed.
- The device is only mounted using the intended mounting options.
- The selection and dimensioning of the mounting and locking elements are in line with the applicable standards, the technical data of the devices and the local requirements.
- The bore dimensions are calculated in line with the respective type of fixture. For further information, refer to chapter "Technical data" (→ 41).
- The mounting and locking elements fit into the existing bores, threads and counter-sinks.

4.2 Waste heat

Make sure that

- The waste heat can also be dissipated during standstill.
- The device is not located in the immediate vicinity of other heat sources.

The pick-up is supplied with a U-shaped shield plate that also functions as a cooling plate. The cooling plate dissipates the waste heat from the metallic back of the transformer.

- During installation, make sure that the cooling plate is clean and positioned flush with the aluminum cover of the pick-up without air gap.
- Install the customer holding fixture so that this assembly (pick-up with attached cooling plate) is optimally connected. Ideally, the customer holding fixture is designed in such a way that additional heat is dissipated through it.

INFORMATION



Adhere to the tightening torques, see chapter "Tightening torques" (→ 20). In this way you achieve optimum contact pressure between the pick-up, cooling plate, and the customer holding fixture.

- The cooling plate must not be covered by machine or system components. Design the customer's holding fixture in such a way that the cooling effect is not affected as far as possible.

4.3 Tightening torques

When tightening the screws during mechanical and electrical installation, observe the tightening torques specified in the following table:

Screw connection	Type/size	Tightening torque ¹⁾
Mounting of the pick-up unit with shield plate	M6 screw	4 Nm
M12 plug connector (connection cable)	M12 screw	0.5 Nm
Equipotential bonding connection	M6 screw	3 Nm

1) Nominal tightening torque (general tolerance $\pm 10\%$)

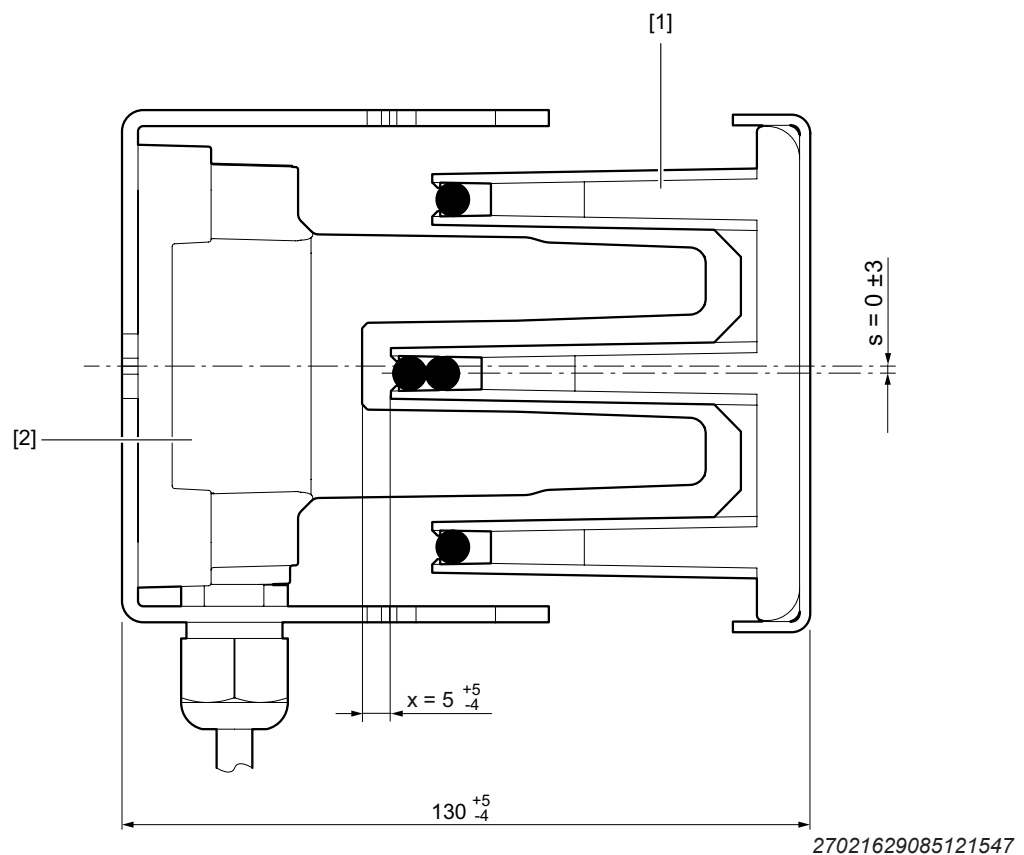
4.4 Installation

The pick-up is delivered as a unit together with the shield plate. The pick-up must be adapted to the system together with the shield plate using a customer-supplied holding fixture.

Observe the following notes:

- To ensure good heat dissipation, the customer's support must be made of aluminum.
- Observe the information on the clearance, see chapter "Clearance" (→ 23).
- Align the pick-up with the shield plate so that the tolerances specified in the following figure are adhered to. Note that the position of the pick-up and the line cable holder can change during operation, for example due to wear.

The following figure shows the position in operation with the required dimensions in mm:



- x Distance between pick-up and line cable holder
s Center offset between pick-up and line cable
[1] Line cable holder (mounted to the stationary subcomponent)
[2] Pick-up (mounted to the mobile subcomponent)

The pick-up is fastened using 4 mounting holes with M6 thread. For the necessary dimensions, refer to chapter "Technical data" (→ 41).



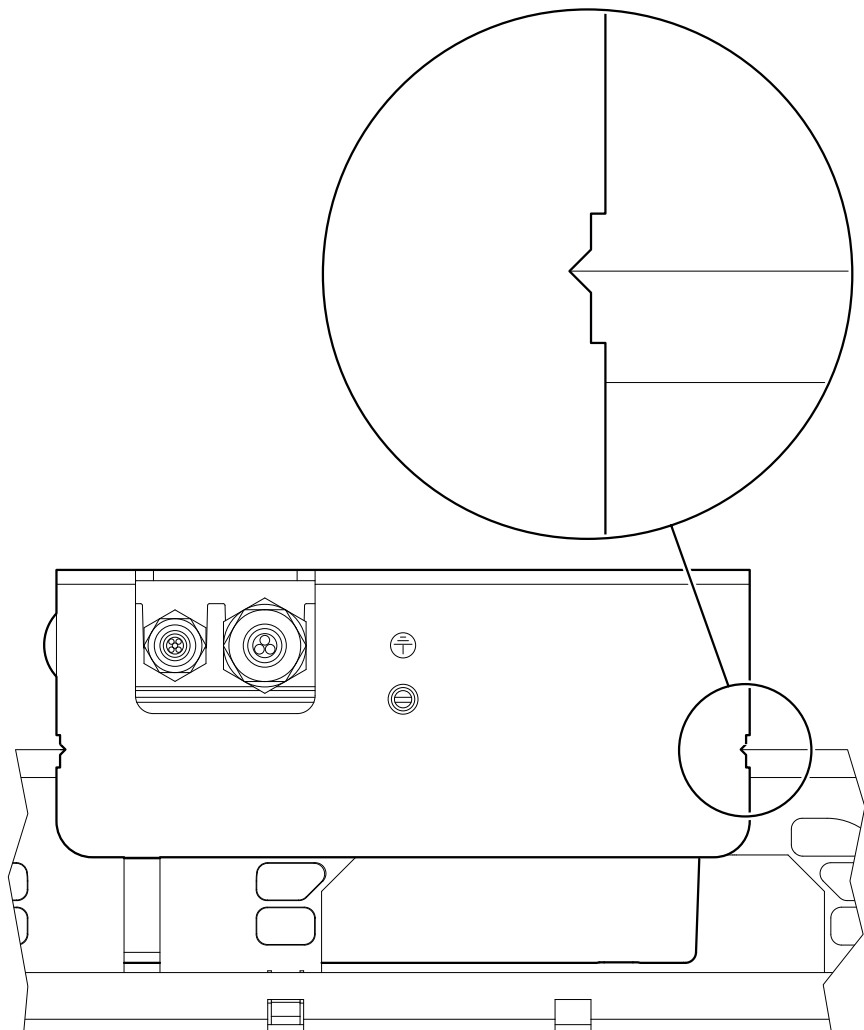
⚠ WARNING

Risk of crushing if the load falls.

Severe or fatal injuries.

- Do not stand under the load.
- Secure the area where loads can fall down.

1. Adhere to the maximum tightening torques "Tightening torques" (→ 20) when mounting the pick-up.
2. Notches are attached to the shield plate as an adjustment aid. Align the pick-up so that the notches in the shield plate align with the upper line cable.



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3. **⚠ CAUTION!** Ejection of parts during acceleration or deceleration. Minor injuries or damage to property. Use 4 × M6 screws for installation. Use appropriate measures to secure the screws such as liquid threadlocker. Attach the device to the customer holding fixture.
4. Ensure that the customer holding fixture is properly connected to the equipotential bonding of the mobile subcomponent.

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Observe the influence of the mechanical alignment on the performance of the pick-up system. This relationship is shown in the "position-dependent power output (derating)" curve, see chapter "Technical data" (→ 41).

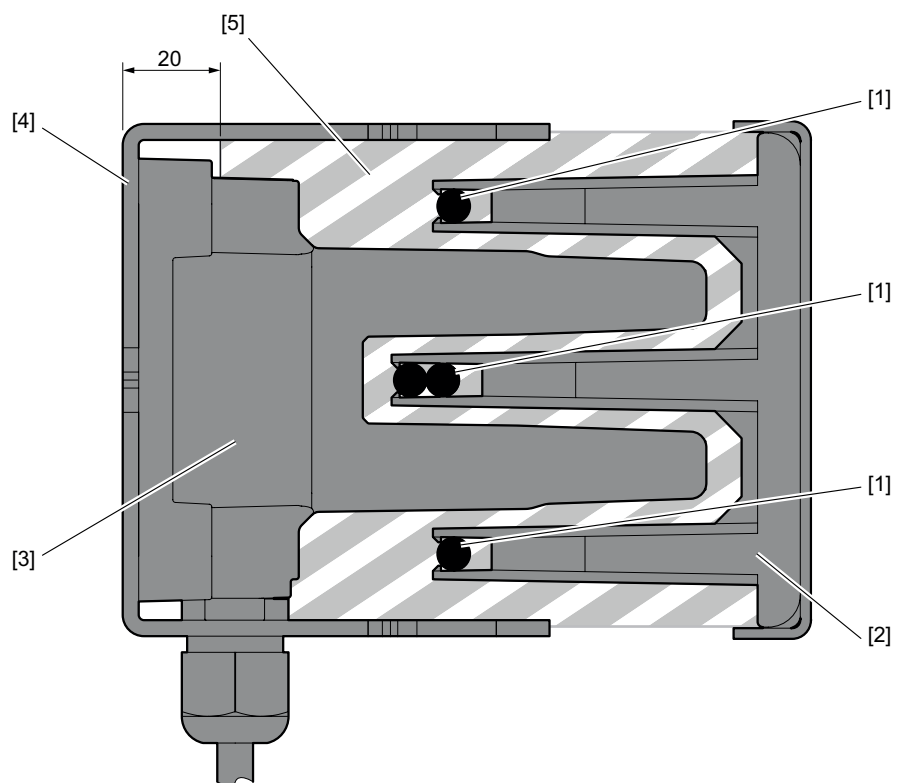
INFORMATION



Install several pick-ups with a minimum distance of 50 mm to each other.

4.4.1 Clearance

Ensure that there is no ferromagnetic or conductive material in the clearance shown in the drawing. This prevents the heating of this material and losses during power transmission.



18014435746819211

- [1] Line cable
- [2] Line cable holder
- [3] Pick-up
- [4] Aluminum shield plate (2 mm)
- [5] Clearance

5 Electrical installation

5.1 Installation notes

Observe the following points for electrical installation:

- Observe the general safety notes.
- Comply with all instructions referring to the technical data and the permissible conditions where the device is operated.

5.2 Cable routing

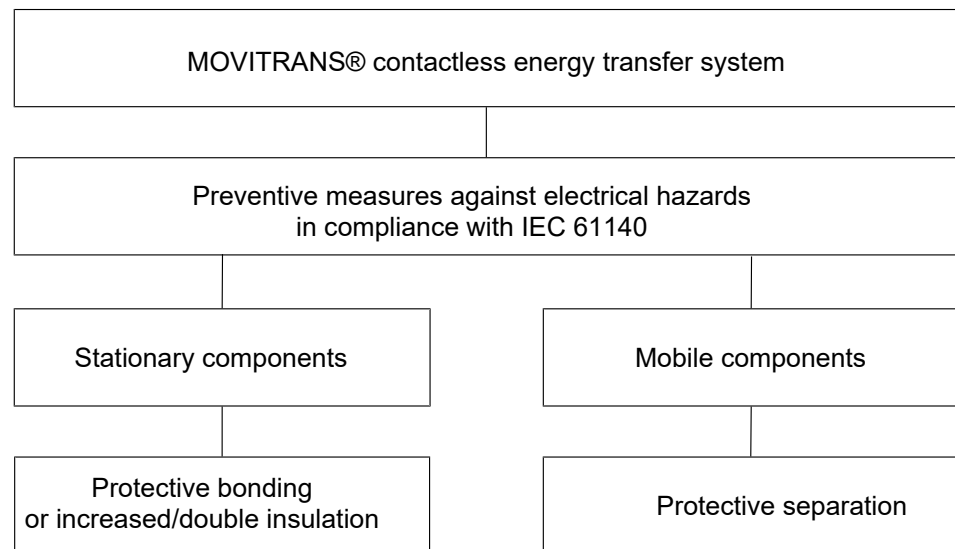
Comply with the following points when installing the cables:

- Route power cables and signal lines in separate cable ducts.
- Maintain the greatest possible distance between power cables and signal lines.
- Avoid using long cables running parallel to one another.
- Route the connection cable with a minimum bending radius of $10 \times$ cable diameter. Also observe the specifications of the connection cables.

5.3 Preventive measures against electrical hazards

5.3.1 Overview

The following figure provides an overview of the preventive measures against electrical hazards according to DIN EN 61140 (IEC 61140:2016):



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Further information can be found in the "MOVITRANS® Preventive Measures and Planning Information for Systems" manual.

5.3.2 Contactless energy transfer system

The following preventive measures protect mobile systems with contactless energy transfer against electrical hazards:

- Protective separation
- Discharge measures

Installing ground connection or protective bonding



⚠ WARNING

Electric shock due to faulty ground connection or faulty protective bonding.

Severe or fatal injuries.

- Make sure you install the ground connection and protective bonding correctly.

All electrical operating resources must be protected with a ground connection or protective bonding.

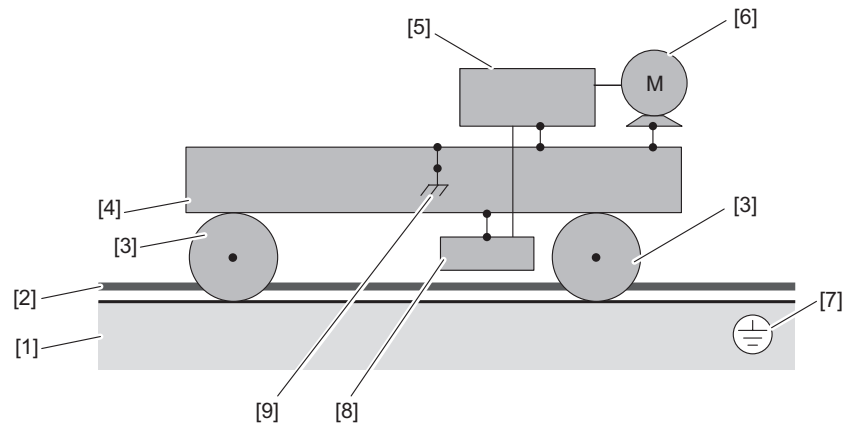
Protective separation

All electrical operating resources on the mobile part, such as on a vehicle, must be connected to one another by means of local protective bonding.

- Use the vehicle support frame (vehicle GND) for high-frequency equipotential bonding.
- Establish metallic contacts over a large area.
- Use high-frequency equipotential bonding cables with a minimum cross section of 10 mm².
- Mark the equipotential bonding cables according to DIN EN 61140 (IEC 61140) and color-code them according to IEC 60445.

On the mobile system, equipotential bonding ensures that no contact voltages occur in the event of a fault.

The following figure shows a sample mobile system with contactless energy transfer system:



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[1]	Dissipative floor coverings or work areas	[6]	Motor
[2]	Line cable	[7]	Ground
[3]	Dissipative or conductive track rollers or wheels	[8]	Pick-up
[4]	Vehicle support frame	[9]	Vehicle GND
[5]	Drive and application controller		

General information

- All cables must have double basic insulation. Double insulation is also required for the supply cable of the pick-up. These requirements are always met when using MOVITRANS® components.
- Dissipation of electrical charges between vehicle support frame (vehicle mass) and a ground potential is permitted.
- If required in certain production steps, temporary grounding of the vehicle support frame is permitted.
- Grounding of mobile systems in areas with "ground connection" as preventive measure does not result in a higher risk potential and is therefore permitted.
- A possible potential transfer to mobile components (vehicles) via third-party equipment must be ruled out during planning and operation.

Equipotential bonding

The connection point for equipotential bonding is located on the U-shaped shield plate on the connection side of the product.

Connect the connection point to the equipotential bonding of the mobile unit.

1. Attach the equipotential bonding cable to the connection point using the crimp cable lug. To do so, use an M6 screw and washer assembly, a washer, and a stainless steel serrated lock washer. This prevents corrosion on the aluminum.
2. Observe the maximum permitted tightening torque, see chapter "Tightening torques" (→ 20).

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Discharge measures

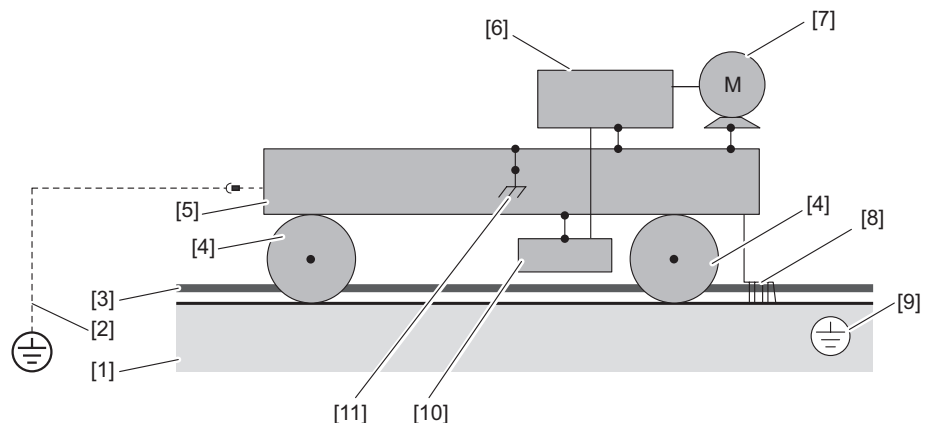
To ensure optimum protection against electrostatic discharge (ESD) and capacitive coupling, you have to take measures between the mobile component and the stationary end for dissipating the charges. This is particularly important for mobile systems such as lifting gears, floor conveyor vehicles, or floor conveyor systems.

You can dissipate charges as follows:

- Via conductive components, such as:
 - Combs
 - Brushes
 - Springs
 - Sliders
- Via dissipative or conductive track rollers or wheels
- Via dissipative floor coverings or work areas

If required in certain production steps, temporary grounding of the vehicle support frame is permitted.

The following figure shows an example of a vehicle with a contactless energy transfer system:



35742675723

[1]	Dissipative floor coverings or work areas	[7]	Motor
[2]	Temporary ground connection	[8]	Conductive component part
[3]	Line cable	[9]	Ground
[4]	Dissipative or conductive track rollers or wheels	[10]	Pick-up
[5]	Vehicle support frame	[11]	Vehicle GND
[6]	Drive and application controller		

5.3.3 Cable fuse protection

Protect the connection cable at connection X2341/X2319 with a single-pole DC fuse. For information on the design and type of the fuse, refer to chapter "Technical data" (→ 41).

Insulate the unused conductor (2) of the 4-pin connection cable against protective bonding, other conductive parts that can be touched, other circuits, and against conductors 1 and 3.

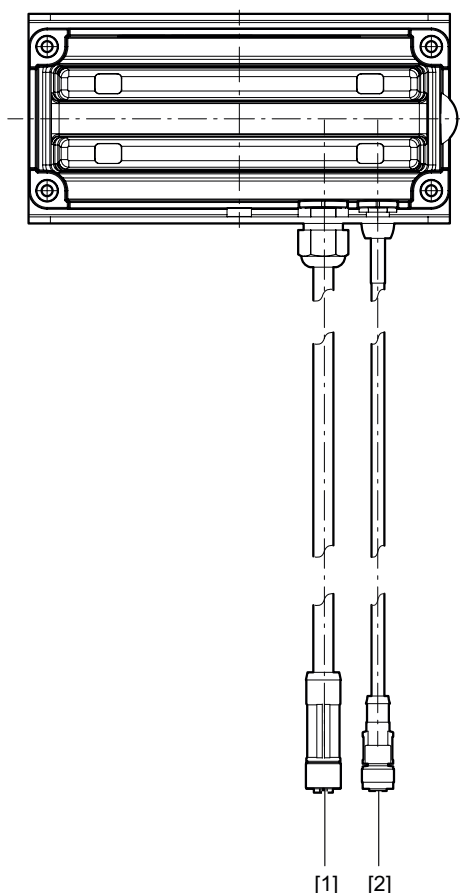
5.4 Connections

**⚠ WARNING**

Electric shock when disconnecting or connecting voltage-carrying plug connectors.
Severe or fatal injuries.

- Disconnect all supply voltages.
- Make sure that the device is de-energized.
- Never plug or unplug the plug connectors while they are energized.

For the connection designations, refer to the labeling on the cable end. Note that you tighten the knurled screw connections after you have plugged in the plug connectors.



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- | | | |
|-----|-------|--|
| [1] | X2341 | TDM90C (352 V): Power output DC 352 V |
| | X2319 | TDM90C (55 V) and TDM90C (48 V): Power output DC 48 V/55 V |
| [2] | X5221 | Storage bundle monitoring (galvanically isolated) |

Observe the permitted tightening torques when installing the plug connectors, see chapter "Tightening torques" (→ 20).

INFORMATION

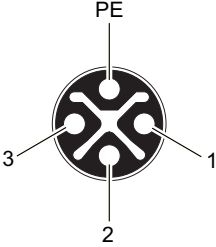
For mounting the M12 plug connectors to the connections, SEW-EURODRIVE recommends the following assembly tool from PHOENIX CONTACT: Torque screwdriver (part number: 1208429) with connector cap (part number: 1208432).

5.5 Electrical connections

5.5.1 Representation of connections

The diagrams show the contact end of the connections.

5.5.2 X2341: DC power output

Function		
Charging a double-layer capacitor storage module		
Connection type		
M12, 4-pin, female, S(ac)-coded		
Wiring diagram		
		
No.	Name	Function
1	+Uz	Connection Energy storage (+)
2	n. c.	Not assigned
3	-Uz	Connection Energy storage (-)
PE	n. c.	Not assigned

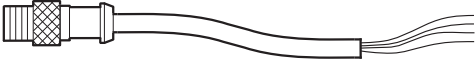
Information on connection X2341

PE is **not** wired internally at connection X2341.

Use the connection point on the U-shaped shield plate to connect the equipotential bonding, see chapter "Equipotential bonding" (→ 26).

Connection cables

Cable	Length/installation type	Component
10 m: Part number: 25676830  M12 male ↔ open	Fixed length 	

Cable	Length/installation type	Component
10 m: Part number: 25676849  M12 male ↔ open	Fixed length 	

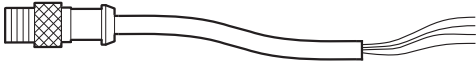
Conductor assignment

Part number	Signal name	Conductor color
25676830 25676849	+Uz	Black/1
	-Uz	Black/3
	PA	Green/yellow

5.5.3 X2319: DC power output

Function		
Charging a double-layer capacitor storage module		
Connection type		
M12, 4-pin, female, L-coded		
Wiring diagram		
		
No.	Name	Function
1	+Uz	Energy storage (+) connection
2	n. c.	Not connected
3	-Uz	Energy storage (-) connection
4	n. c.	Not connected

Connection cables

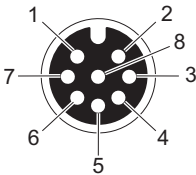
Cable	Length/installation type	Component
Standard lengths: 1.5 m: Part number 25764772 3 m: Part number 25765884  M12, 4-pin, male, L-coded ↔ open	Fixed length 	

Conductor assignment

Part number	Signal name	Conductor color
25764772 25765884	+Uz	Brown
	n.c.	White
	-Uz	Blue
	n.c.	Black

31959814/EN – 02/2024

5.5.4 X5221: Storage bundle monitoring (galvanically isolated)

Function		
Connection for monitoring the operating state of a MOVI-DPS® storage bundle (galvanically isolated)		
Connection type		
M12, 8-pin, female, A-coded		
Pin assignment		
		
No.	Name	Function
1	+5V	DC 5 V output
2	ES_DIAG1	Energy storage system – diagnostic signal 1
3	ES_DIAG2	Energy storage system – diagnostic signal 2
4	ES_DIAG3	Energy storage system – diagnostic signal 3
5	0V5	0V5 reference potential
6	ES_DIAG4	Energy storage system – diagnostic signal 4
7	ES_DIAG5	Energy storage system – diagnostic signal 5
8	res.	Reserved

Connection cables

Cable	Length/installation type	Component
Standard lengths: 1.5 m: Part number 19115881 3 m: Part number 18161103 Order-specific lengths: 1 m: Part number 18161073 2 m: Part number 18161081 4 m: Part number 18161111 5 m: Part number 18161138  M12, male, A-coded ↔ M12, female	Fixed length 	MOVI-DPS® storage bundle

31959814/EN – 02/2024

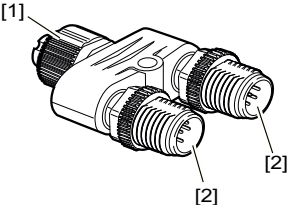
Cable	Length/installation type	Component
Order-specific lengths: 1 m: Part number 18161146 2 m: Part number 18161154 3 m: Part number 18161162 4 m: Part number 18161170 5 m: Part number 18161189	Fixed length 	MOVI-DPS® storage bundle
 M12, male, A-coded ↔ M12, female		
Order-specific lengths: 1.5 m: Part number 25645749	Fixed length 	MOVI-DPS® storage bundle
 M12, male, A-coded ↔ M12, female, A-coded		

Y adapter

Part number: 25646567

Connection: 3 × M12

Y adapter for parallel connection of several TDM pick-ups with a MOVI-DPS® storage bundle



[1]

Connection X5222 at the MOVI-DPS® storage bundle

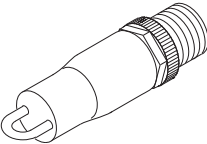
[2]

Connection cable of the TDM pick-up (connection X5221)

Jumper plug

Part number: 28217063

Connection: M12



31959814/EN – 02/2024

5.6 Connect the pick-up with or without MOVI-DPS® storage bundle

Operation of the pick-up with MOVI-DPS® EKV storage bundle

Connect the X5221 connection to the storage bundle, see "Technical diagram (wiring) TDM90C ↔ MOVI-DPS® storage bundle" (→ 35).

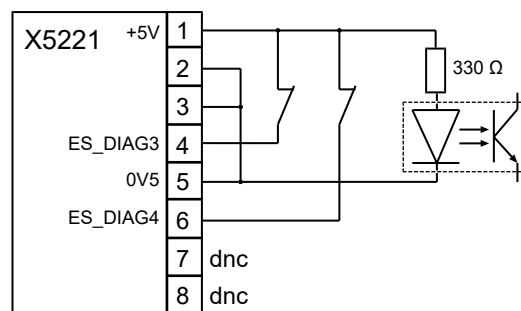
Operation of the pick-up without MOVI-DPS® EKV storage bundle

If you do not want to use diagnostic signals of connection X5221, you can connect the connection with "the jumper plug" (→ 33).

To enable charging mode and to signal the readiness for charging, you must connect the X5221 connection to an external isolated interface. Observe the following requirements:

- For charging enable, connect pin 1 (+5 V) with low-impedance to inputs ES_DIAG3 (pin 4) and ES_DIAG4 (pin 6). The connection of an optocoupler or relay is permitted.
- An optocoupler can be applied to the 5 V output to signal that it is ready for charging. The current must not exceed 15 mA. Pins 2 and 3 must be connected to pin 5.
- Pins 7 and 8 must remain open.

As an example, the following figure shows the wiring of an isolated interface:



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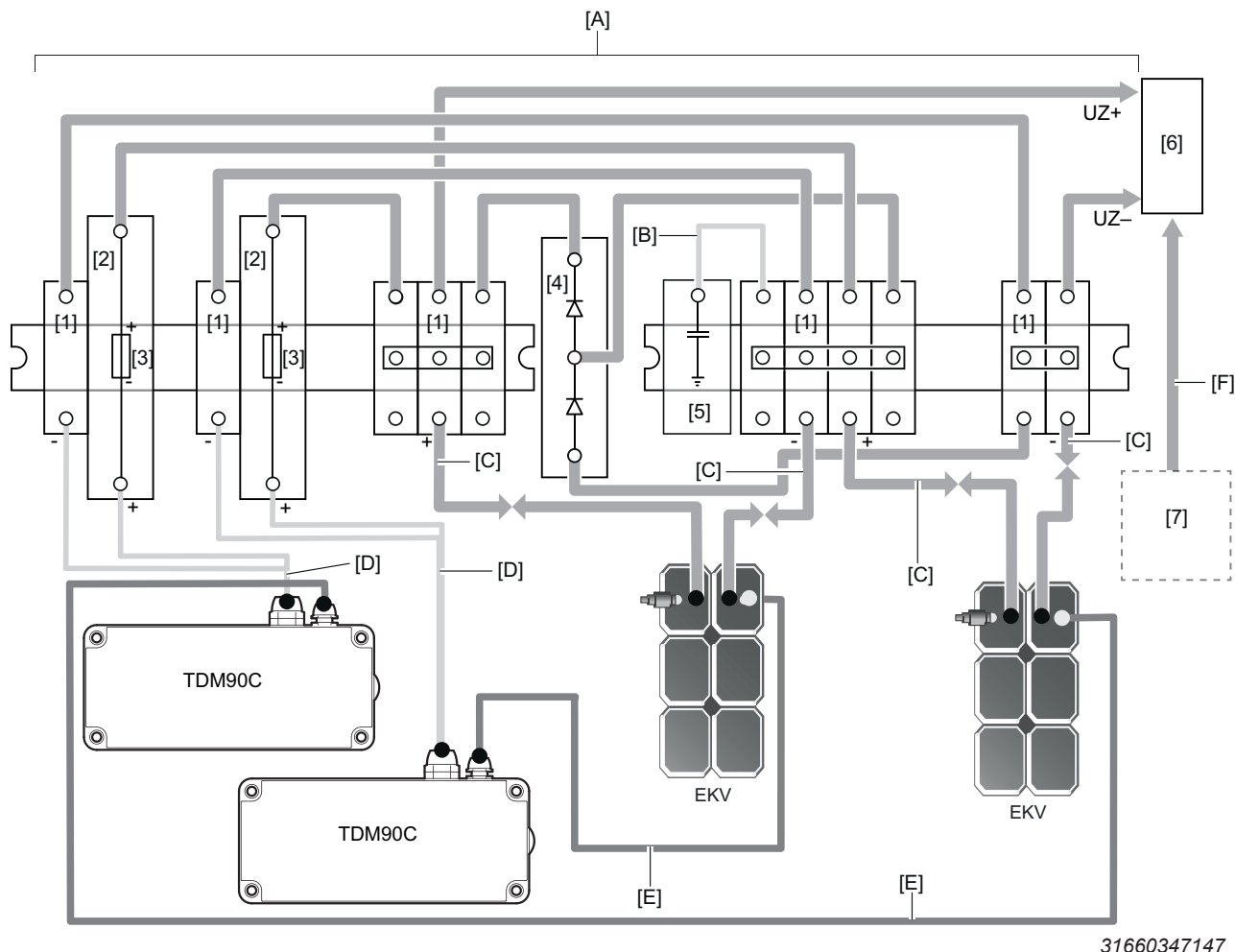
5.7 Technical diagram (wiring) TDM90C ↔ MOVI-DPS® MOVI-DPS® storage bundle

5.7.1 Several pick-ups, each with a storage bundle

The TDM90C005-D35-B03-0 pick-up is approved for series connection with one MOVI-DPS® EKV storage bundle each.

The DC link voltage increases with this connection type. The transmitted power also increases.

As an example, the following figure shows the series connection of 2 pick-ups TDM90C005-D35-B03-0.



31660347147

- [1] Terminal block
- [2] Fuse PCB
- [3] Fuse-link DC 10 A, 1 kV, operating class gPV
For example, Siba, part number 5021528.10 ¹⁾
- [4] Diode module
For example, Semikron, part number 07897022, type SKKD26 ¹⁾
- [5] 4-fold capacitance module
For example, Phoenix Conclock, part number 2748069, type TT-SLKK 5-C 12N-230AC ¹⁾
- [6] Interface terminal block (at the customer site)
The distributor provides the DC link voltage (UZ+ and UZ-) for the frequency inverter and the discharge unit.
- [7] MOVIE-DPS® discharge unit
For discharging the MOVIE-DPS® EKV storage bundle, for example, in case of maintenance work.
- [A] Power cable 6 mm² (short-circuit proof)
- [B] Power cable 1.5 mm² Cu
- [C] Connection cable for the power connections of the MOVIE-DPS® storage bundle EKV
- [D] "Connection cable" (→ 29) for TDM90C005-D35-B03-0 pick-up (X2341 DC 352 V power output)
- [E] "Connection cables" (→ 32) for monitoring the MOVIE-DPS® EKV storage bundle
- [F] Connection cable for MOVIE-DPS® discharge unit

¹⁾ part number at the time of publication of this documentation

You must connect a power diode [4] in parallel to each storage bundle. Connect the low-impedance series connection point to the equipotential bonding via a Y capacitor [5].

5.7.2 Several pick-ups with one storage bundle

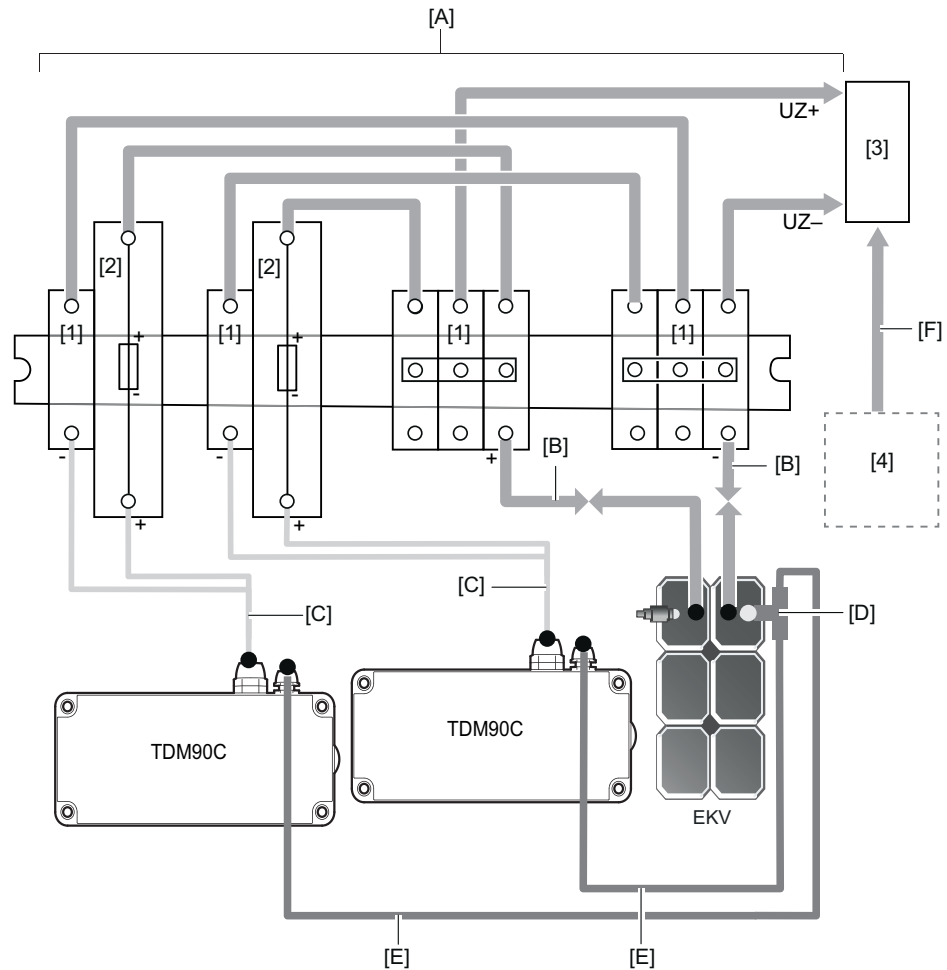
All variants of the TDM90C pick-up are approved for parallel connection with a MOVI-DPS® EKV storage bundle.

With this connection type, the power that is transferred to the vehicle increases. The charging time of the storage bundle is shortened.

Note the following points during cabling:

- In principle, you can connect any number of TDM90C pick-ups in parallel. The cabling leads to the storage bundle in a star-type connection. Each pick-up must be secured with a respective line protection with at least one pole.
- Parallel connection of more than 10 TDM90C pick-ups: Contact SEW-EURODRIVE.

As an example, the following figure shows the parallel connection of 2 pick-ups.



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- [1] Terminal block (partially jumpered)
- [2] TDM90C005-D35-B03-0:
Fuse PCB for fuse 10 A DC 400 V
TDM90C005-D06-B03-0, TDM90C005-D05-B03-0 and TDM90C005-D05-B03-1:
Fuse PCB for fuse 16 A DC 60 V
- [3] Interface terminal block (at the customer site)
The distributor provides the DC link voltage (UZ+ and UZ-) for the frequency inverter and the discharge unit.
- [4] MOVI-DPS® discharge unit
For discharging the MOVI-DPS® storage bundle EKV, for example, in case of maintenance work.
- [A] Power cable 6 mm² (short-circuit proof)
- [B] Connection cable for the power connections of the MOVI-DPS® storage bundle EKV
- [C] "Connection cable" (→ 29) for TDM90C pick-up (352 V) (X2341 power output DC 352 V)
"Connection cable" (→ 31) for TDM90C (55 V) and TDM90C (48 V) pick-up (X2319 power output DC 55 V/48 V)
- [D] "Y adapter" (→ 33)
- [E] "Connection cable" (→ 32) for monitoring the MOVI-DPS® storage bundle EKV
- [F] Connection cable for MOVI-DPS® discharge unit

6 Operation

6.1 For your safety



⚠ WARNING

When the device is switched on, dangerous voltages are present at the connectors and at any connected cables and motor terminals. This also applies even when the device is inhibited and the motor is at standstill.

Severe or fatal injuries from electric shock.

- Do not disconnect the device under load.
- Disconnect the device from the voltage supply before you perform any work on the device.



⚠ CAUTION

Risk of burns due to hot surfaces of the device or connected options, e.g. braking resistors.

Injury.

- Provide covers to secure hot surfaces.
- Install the protection devices according to the regulations.
- Check the protection devices on a regular basis.
- Let the device and the connected options cool down before you start working on them.

7 Service

7.1 Waste disposal

Dispose of the product and all parts separately in accordance with their material structure and the national regulations. Put the product through a recycling process or contact a specialist waste disposal company. If possible, divide the product into the following categories:

- Iron, steel or cast iron
- Stainless steel
- Magnets
- Aluminum
- Copper
- Electronic parts
- Plastics

The following materials are hazardous to health and the environment. These materials must be collected and disposed of separately:

- Oil and grease

Collect used oil and grease separately according to type. Ensure that the used oil is not mixed with solvent. Dispose of used oil and grease correctly.

- Screens
- Capacitors



Waste disposal according to WEEE Directive 2012/19/EU

This product and its accessories may fall within the scope of the country-specific application of the WEEE Directive. Dispose of the product and its accessories according to the national regulations of your country.

For further information, contact the responsible SEW-EURODRIVE branch or an authorized partner of SEW-EURODRIVE.

8 Technical data

8.1 Markings

The markings depend on the destination country selected when the order is placed. Therefore, combinations of the following markings are possible.

8.1.1 CE mark



The CE mark represents conformity with all standards and directives applicable to the product within the European Union. The applicable standards and directives are listed in the declaration of conformity or declaration of incorporation.

8.1.2 UKCA mark



The UKCA mark states the compliance with British guidelines.

Compliance with British guidelines is confirmed by the symbol on the nameplate and in the declaration of conformity or declaration of incorporation.

8.2 TDM90C general pick-up

General		
Ambient temperature	ϑ_A	-25 °C to +40 °C (at P_A) -25 °C to +45 °C (at $0.9 \times P_A$)
Climate class		DIN EN IEC 60721-3-3:2020-05 Class 3K22 (with extended temperature range)
Storage temperature	ϑ_L	-25 °C to +75 °C
Degree of protection		IP54
Installation altitude	h	P_A reduction at 1000 m to 2000 m above sea level: 1 % per 100 m
Mass		2.5 kg
Dimension (H × W × D)		110 mm × 96 mm × 193 mm

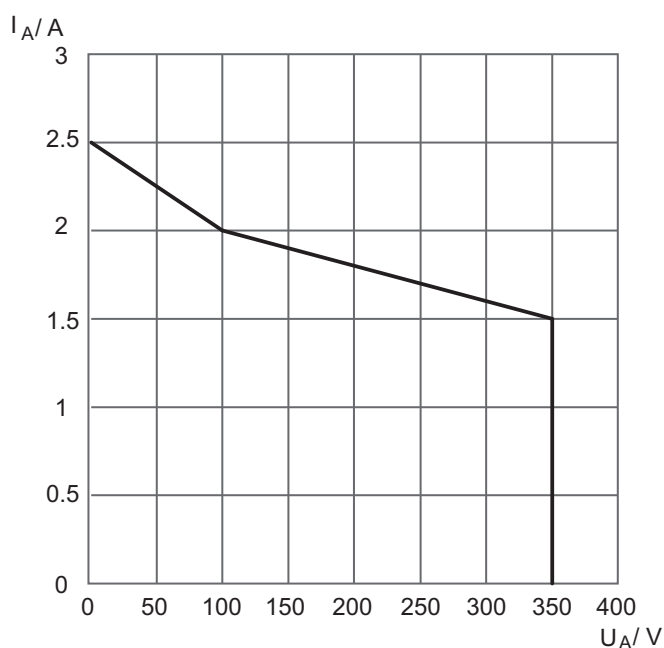
8.3 TDM90C005-D35-B03-0 pick-up

Input		
Nominal current line cable	I_N	AC 30 A eff
Operating frequency	f_A	50 kHz
Output		
Nominal output power	P_A	500 W
Nominal output voltage	U_A	DC 352 V
Overvoltage switch-off (OVP)	U_{OVP}	DC 400 V
Nominal output current	I_A	DC 1.5 A
Short-circuit current	I_K	< 2.5 A
Output characteristics	DC current source	
Required minimum load capacity	C_L	2 mF
Required DC voltage fuse, external	Si	Fuse-link DC 10 A, 1 kV Utilization category gPV Siba part number 5021528.10 ¹⁾

1) part number at the time of publication of this documentation

Inductive feedback on the track	
At nominal distance and in no-load operation	2.07 μ H
At nominal distance and under nominal load	2.23 μ H

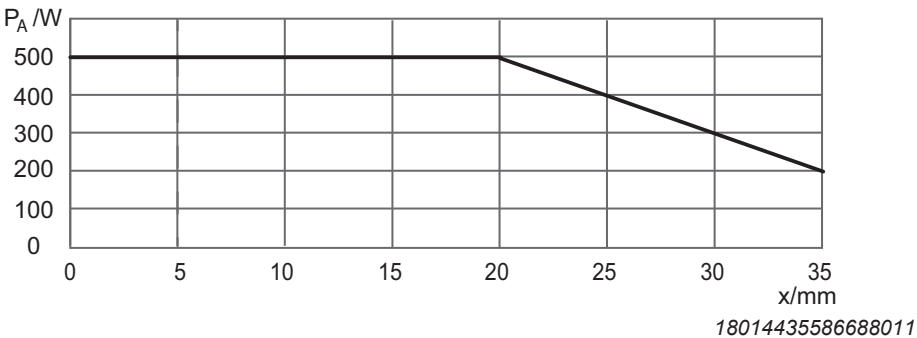
The following figure shows an example of a typical output characteristic curve.



18014430885209867

I_A Nominal output current
 U_A Nominal output voltage

The position-dependent power output (derating) is shown below.

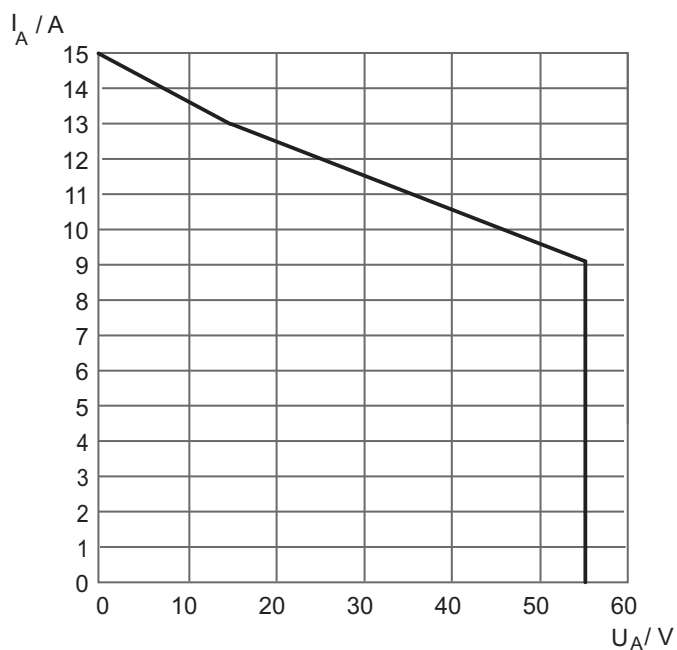


P_A Nominal output power
x Distance between pick-up and line cable holder, see chapter "Installation" (→ 21)

8.4 TDM90C005-D06-B03-0 pick-up

Input		
Nominal current line cable	I_N	AC 30 A eff
Operating frequency	f_A	50 kHz
Output		
Nominal output power	P_A	500 W
Nominal output voltage	U_A	DC 55 V
Overvoltage switch-off (OVP)	U_{OVP}	DC 64 V
Nominal output current	I_A	DC 9.1 A
Short-circuit current	I_K	< 15 A
Output characteristics	DC current source	
Required minimum load capacity	C_L	2 mF
Required DC voltage fuse, external	Si	Fuse-link DC 16 A, 60 V
Inductive feedback on the track		
At nominal distance and in no-load operation	2.01 μ H	
At nominal distance and under nominal load	2.36 μ H	

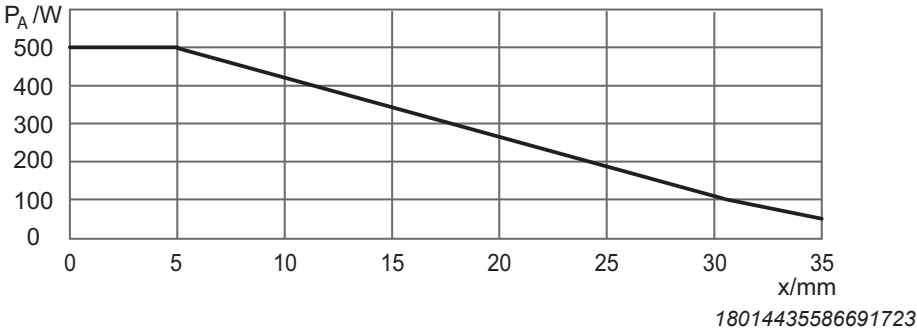
The following figure shows an example of a typical output characteristic curve.



9007236289436171

I_A Nominal output current
 U_A Nominal output voltage

The position-dependent power output (derating) is shown below.

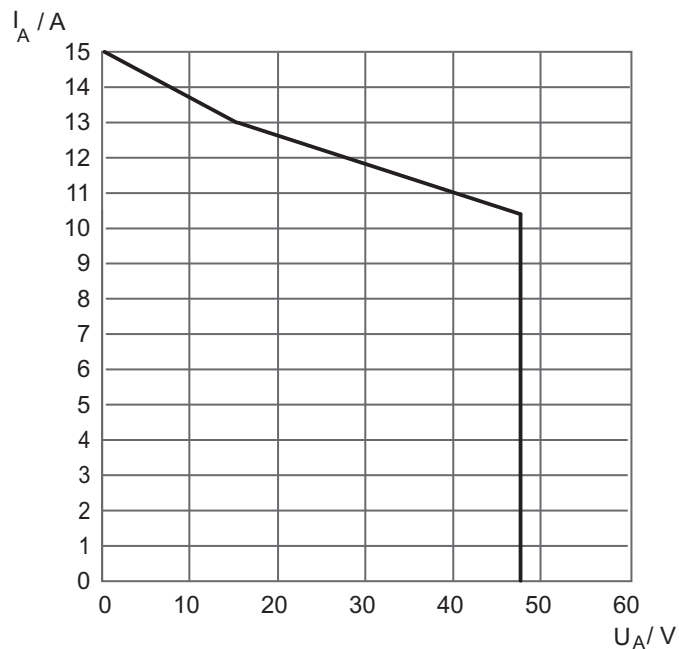


P_A Nominal output power
x Distance between pick-up and line cable holder, see chapter "Installation" (→ 21)

8.5 Pick-ups TDM90C005-D05-B03-0 and TDM90C005-D05-B03-1

Input		
Nominal current line cable	I_N	AC 30 A eff
Operating frequency	f_A	50 kHz
Output		
Nominal output power	P_A	500 W
Nominal output voltage	U_A	DC 48 V
Overvoltage switch-off (OVP)	U_{OVP}	DC 64 V
Nominal output current	I_A	DC 10.4 A
Short-circuit current	I_K	< 15 A
Output characteristics	DC current source	
Required minimum load capacity	C_L	2 mF
Required DC voltage fuse, external	Si	Fuse-link DC 16 A, 60 V
Inductive feedback on the track		
At nominal distance and in no-load operation	1.75 μ H	
At nominal distance and under nominal load	1.99 μ H	

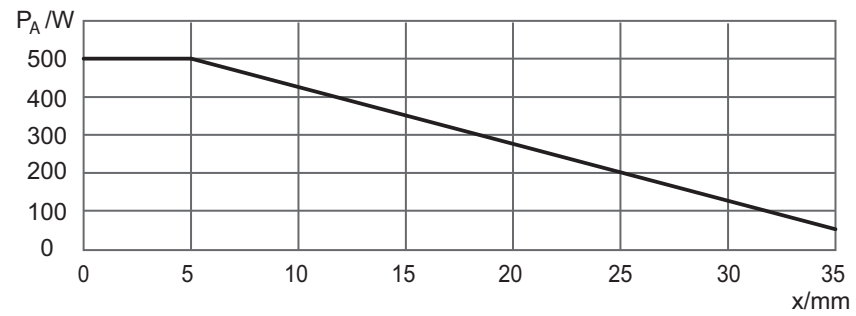
The following figure shows an example of a typical output characteristic curve.



9007236289432203

I_A Nominal output current
 U_A Nominal output voltage

The position-dependent power output (derating) is shown below.



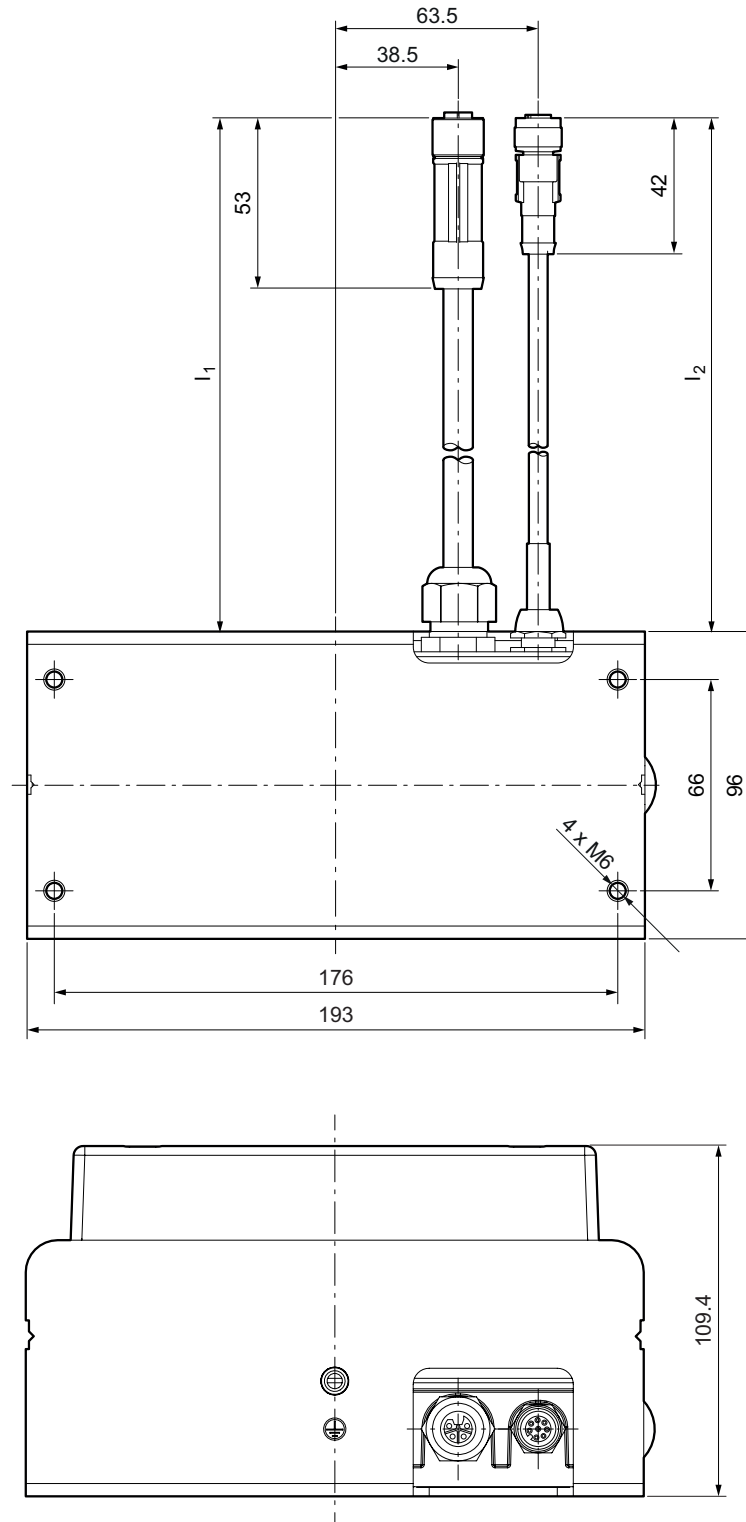
18014435586695435

P_A Nominal output power
 x Distance between pick-up and line cable holder, see chapter "Installation" (→ 21)

8.6 Dimension drawings

8.6.1 TDM90C pick-up

The dimension drawing shows the mechanical dimensions in mm:



9007239148499723

Cable length (including connector)	TDM90C005-D..-B03-0	TDM90C005-D05-B03-1
l_1	433 mm $\pm$ 15 mm	640 mm $\pm$ 10 mm
l_2	422 mm $\pm$ 15 mm	640 mm $\pm$ 10 mm

9 Address list

Argentina

Assembly Sales	Buenos Aires	SEW EURODRIVE ARGENTINA S.A. Ruta Panamericana Km 37.5, Lote 35 (B1619IEA) Centro Industrial Garín Prov. de Buenos Aires	Tel. +54 3327 4572-84 Fax +54 3327 4572-21 http://www.sew-eurodrive.com.ar sewar@sew-eurodrive.com.ar
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Australia

Assembly Sales Service	Melbourne	SEW-EURODRIVE PTY. LTD. 27 Beverage Drive Tullamarine, Victoria 3043	Tel. +61 3 9933-1000 Fax +61 3 9933-1003 http://www.sew-eurodrive.com.au enquires@sew-eurodrive.com.au
	Sydney	SEW-EURODRIVE PTY. LTD. 9, Sleigh Place, Wetherill Park New South Wales, 2164	Tel. +61 2 9725-9900 Fax +61 2 9725-9905 enquires@sew-eurodrive.com.au
Service	Tomago	SEW-EURODRIVE PTY. LTD. 8 Epson Drive Tomago, New South Wales, 2322	Tel. +61 2 49505585 mail@sew-eurodrive.com.au

Austria

Assembly Sales Service	Vienna	SEW-EURODRIVE Ges.m.b.H. Richard-Strauss-Straße 24 1230 Wien	Tel. +43 1 617 55 00-0 Fax +43 1 617 55 00-30 http://www.sew-eurodrive.at sew@sew-eurodrive.at
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Bangladesh

Sales	Bangladesh	SEW-EURODRIVE INDIA PRIVATE LIMITED 345 DIT Road East Rampura Dhaka-1219, Bangladesh	Tel. +88 01729 097309 salesdhaka@seweurodrivebangladesh.com
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Belarus

Sales	Minsk	Foreign unitary production enterprise SEW-EURODRIVE Novodvorskiy village council 145 223016, Minsk region	Tel. +375 17 319 47 56 / +375 17 378 47 58 Fax +375 17 378 47 54 http://www.sew-eurodrive.by sew@sew-eurodrive.by
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Belgium

Assembly Sales Service	Brussels	SEW-EURODRIVE n.v./s.a. Researchpark Haasrode 1060 Evenementenlaan 7 3001 Haasrode	Tel. +32 16 386-311 Fax +32 16 386-336 http://www.sew-eurodrive.be info@sew-eurodrive.be
Service Competence Center	Industrial Gears	SEW-EURODRIVE n.v./s.a. Rue du Parc Industriel, 31 6900 Marche-en-Famenne	Tel. +32 84 219-878 Fax +32 84 219-879 http://www.sew-eurodrive.be info@sew.be

Brazil

Production Sales Service	São Paulo	SEW-EURODRIVE Brasil Ltda. Estrada Municipal José Rubim, 205 – Rodovia Santos Dumont Km 49 Indaiatuba – 13347-510 – SP	Tel. +55 19 3835-8000 sew@sew.com.br
Assembly Sales Service	Rio Claro	SEW-EURODRIVE Brasil Ltda. Rodovia Washington Luiz, Km 172 Condomínio Industrial Conpark Caixa Postal: 327 13501-600 – Rio Claro / SP	Tel. +55 19 3522-3100 Fax +55 19 3524-6653 montadora.rc@sew.com.br
	Joinville	SEW-EURODRIVE Brasil Ltda. Jvl / Ind Rua Dona Francisca, 12.346 – Pirabeiraba 89239-270 – Joinville / SC	Tel. +55 47 3027-6886 Fax +55 47 3027-6888 filial.sc@sew.com.br

Bulgaria

Sales	Sofia	BEVER-DRIVE GmbH Bogdanovetz Str.1 1606 Sofia	Tel. +359 2 9151160 Fax +359 2 9151166 bever@bever.bg
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Cameroon

Sales	Douala	SEW-EURODRIVE SARLU Ancienne Route Bonabéri P.O. Box B.P 8674 Douala-Cameroun	Tel. +237 233 39 12 35 Fax +237 233 39 02 10 www.sew-eurodrive.ci/ info@sew-eurodrive.cm
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Canada

Assembly Sales Service	Toronto	SEW-EURODRIVE CO. OF CANADA LTD. 210 Walker Drive Bramalea, ON L6T 3W1	Tel. +1 905 791-1553 Fax +1 905 791-2999 http://www.sew-eurodrive.ca l.watson@sew-eurodrive.ca
	Vancouver	SEW-EURODRIVE CO. OF CANADA LTD. Tilbury Industrial Park 7188 Honeyman Street Delta, BC V4G 1G1	Tel. +1 604 946-5535 Fax +1 604 946-2513 b.wake@sew-eurodrive.ca
	Montreal	SEW-EURODRIVE CO. OF CANADA LTD. 2001 Ch. de l'Aviation Dorval Quebec H9P 2X6	Tel. +1 514 367-1124 Fax +1 514 367-3677 n.paradis@sew-eurodrive.ca

Chile

Assembly Sales Service	Santiago de Chile	SEW-EURODRIVE CHILE LTDA Las Encinas 1295 Parque Industrial Valle Grande LAMP Santiago de Chile P.O. Box Casilla 23 Correo Quilicura - Santiago - Chile	Tel. +56 2 2757 7000 Fax +56 2 2757 7001 http://www.sew-eurodrive.cl ventas@sew-eurodrive.cl
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China

Production Assembly Sales Service	Tianjin	SEW-EURODRIVE (Tianjin) Co., Ltd. No. 78, 13th Avenue, TEDA Tianjin 300457	Tel. +86 22 25322612 Fax +86 22 25323273 http://www.sew-eurodrive.cn info@sew-eurodrive.cn
Assembly Sales Service	Suzhou	SEW-EURODRIVE (Suzhou) Co., Ltd. 333, Suhong Middle Road Suzhou Industrial Park Jiangsu Province, 215021	Tel. +86 512 62581781 Fax +86 512 62581783 suzhou@sew-eurodrive.cn
	Guangzhou	SEW-EURODRIVE (Guangzhou) Co., Ltd. No. 9, JunDa Road East Section of GETDD Guangzhou 510530	Tel. +86 20 82267890 Fax +86 20 82267922 guangzhou@sew-eurodrive.cn
	Shenyang	SEW-EURODRIVE (Shenyang) Co., Ltd. 10A-2, 6th Road Shenyang Economic Technological Development Area Shenyang, 110141	Tel. +86 24 25382538 Fax +86 24 25382580 shenyang@sew-eurodrive.cn
	Taiyuan	SEW-EURODRIVE (Taiyuan) Co., Ltd. No.3, HuaZhang Street, TaiYuan Economic & Technical Development Zone ShanXi, 030032	Tel. +86-351-7117520 Fax +86-351-7117522 taiyuan@sew-eurodrive.cn
	Wuhan	SEW-EURODRIVE (Wuhan) Co., Ltd. 10A-2, 6th Road No. 59, the 4th Quanli Road, WEDA 430056 Wuhan	Tel. +86 27 84478388 Fax +86 27 84478389 wuhan@sew-eurodrive.cn
	Xi'An	SEW-EURODRIVE (Xi'An) Co., Ltd. No. 12 Jinye 2nd Road Xi'An High-Technology Industrial Development Zone Xi'An 710065	Tel. +86 29 68686262 Fax +86 29 68686311 xian@sew-eurodrive.cn
Assembly	Tianjin	SEW-EURODRIVE (Tianjin) Co., Ltd. No. 66, 10th Avenue, TEDA Tianjin 300457	Tel. +86 22 25322612 Fax +86 22 25322611 http://www.sew-sew-eurodrive.cn info@sew-eurodrive.cn

China			
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 36902200 Fax +852 36902211 contact@sew-eurodrive.hk
Colombia			
Assembly Sales Service	Bogota	SEW-EURODRIVE COLOMBIA LTDA. Calle 17 No. 132-18 Interior 2 Bodega 6, Manzana B Santafé de Bogotá	Tel. +57 1 54750-50 Fax +57 1 54750-44 http://www.sew-eurodrive.com.co sew@sew-eurodrive.com.co
Croatia			
Sales Service	Zagreb	KOMPEKS d. o. o. Zeleni dol 10 10 000 Zagreb	Tel. +385 1 4613-158 Fax +385 1 4613-158 kompeks@inet.hr
Czech Republic			
Assembly Sales Service	Hostivice	SEW-EURODRIVE CZ s.r.o. Floriánova 2459 253 01 Hostivice	Tel. +420 255 709 601 Fax +420 235 350 613 http://www.sew-eurodrive.cz sew@sew-eurodrive.cz
Denmark			
Assembly Sales Service	Copenhagen	SEW-EURODRIVE A/S Geminivej 28-30 2670 Greve	Tel. +45 43 95 8500 Fax +45 43 9585-09 http://www.sew-eurodrive.dk sew@sew-eurodrive.dk
Service	Vejle	SEW-EURODRIVE A/S Bødkervej 2 7100 Vejle	Tel. +45 43 9585 00 http://www.sew-eurodrive.dk sew@sew-eurodrive.dk
Egypt			
Technical Office	Cairo	SEW-EURODRIVE Representative Office in Egypt REGUS Paramount Business Complex, Block 1258M, Unit 1, Ground Floor, Sheraton Heli- opolis Cairo	Tel. +20 2 2503 2807 Fax +20 2 2503 2801 info@sew-eurodrive.eg
Estonia			
Sales	Tallin	ALAS-KUUL AS Loomäe tee 1, Lehmja küla 75306 Rae vald Harjumaa	Tel. +372 6593230 Fax +372 6593231 http://www.alas-kuul.ee info@alas-kuul.ee
Finland			
Assembly Sales Service	Hollola	SEW-EURODRIVE OY Vesimäentie 4 15860 Hollola	Tel. +358 201 589-300 Fax +358 3 780-6211 http://www.sew-eurodrive.fi sew@sew.fi
Service	Hollola	SEW-EURODRIVE OY Keskikankaantie 21 15860 Hollola	Tel. +358 201 589-300 Fax +358 3 780-6211 http://www.sew-eurodrive.fi sew@sew.fi
	Tornio	SEW-EURODRIVE Oy Lossirannankatu 5 95420 Tornio	Tel. +358 201 589 300 Fax +358 3 780 6211 http://www.sew-eurodrive.fi sew@sew.fi
Production Assembly	Karkkila	SEW Industrial Gears Oy Santasalonkatu 6, PL 8 03620 Karkkila, 03601 Karkkila	Tel. +358 201 589-300 Fax +358 201 589-310 http://www.sew-eurodrive.fi sew@sew.fi
France			
Production Sales	Haguenau	SEW USOCOME 48-54 route de Soufflenheim B. P. 20185 67506 Haguenau Cedex	Tel. +33 3 88 73 67 00 http://www.usocom.com sew@usocom.com

France			
Production	Forbach	SEW USOCOME Zone industrielle Technopôle Forbach Sud B. P. 30269 57604 Forbach Cedex	Tel. +33 3 87 29 38 00
	Brumath	SEW USOCOME 1 Rue de Bruxelles 67670 Mommenheim Cedex	Tel. +33 3 88 37 48 00
Assembly Sales Service	Bordeaux	SEW USOCOME Parc d'activités de Magellan 62 avenue de Magellan – B. P. 182 33607 Pessac Cedex	Tel. +33 5 57 26 39 00 dtcbordeaux@usocome.com
	Haguenau	SEW USOCOME 48-54 route de Soufflenheim B. P. 20185 67506 Haguenau Cedex	Tel. +33 3 88 73 67 00 dtchaguenau@usocome.com
	Lyon	SEW USOCOME 75 rue Antoine Condorcet 38090 Vaulx-Milieu	Tel. +33 4 74 99 60 00 dtclyon@usocome.com
	Nantes	SEW USOCOME Parc d'activités de la forêt 4 rue des Fontenelles 44140 Le Bignon	Tel. +33 2 40 78 42 00 dtcnantes@usocome.com
	Paris	SEW USOCOME Zone industrielle 2 rue Denis Papin 77390 Verneuil l'Étang	Tel. +33 1 64 42 40 80 dtcparis@usocome.com

Gabon

Representation: Cameroon

Germany			
Headquarters Production Sales	Bruchsal	SEW-EURODRIVE GmbH & Co KG Ernst-Blickle-Straße 42 76646 Bruchsal	Tel. +49 7251 75-0 Fax +49 7251 75-1970 http://www.sew-eurodrive.de sew@sew-eurodrive.de
Production / Industrial Gears	Bruchsal	SEW-EURODRIVE GmbH & Co KG Christian-Pähr-Str. 10 76646 Bruchsal	Tel. +49 7251 75-0 Fax +49 7251 75-2970
Production / Precision Gear Units	Bruchsal	SEW-EURODRIVE GmbH & Co KG Ernst-Blickle-Straße 42 76646 Bruchsal	Tel. +49 7251 75-0 Fax +49 7251 75-1970 sew@sew-eurodrive.de
Production	Graben	SEW-EURODRIVE GmbH & Co KG Ernst-Blickle-Straße 1 76676 Graben-Neudorf	Tel. +49 7251 75-0 Fax +49 7251-2970
Service Competence Center	Mechanics / Mechatronics	SEW-EURODRIVE GmbH & Co KG Ernst-Blickle-Straße 1 76676 Graben-Neudorf	Tel. +49 7251 75-1710 Fax +49 7251 75-1711 scc-mechanik@sew-eurodrive.de
	Electronics	SEW-EURODRIVE GmbH & Co KG Christian-Pähr-Straße 12 76646 Bruchsal	Tel. +49 7251 75-1780 Fax +49 7251 75-1769 scc-elektronik@sew-eurodrive.de
	MAXOLU- TION® Factory Automation	SEW-EURODRIVE GmbH & Co KG Eisenbahnstraße 11 76646 Bruchsal	Tel. +49 7251 75-0 Fax +49 7251 75-1970 sew@sew-eurodrive.de
Drive Technology Center	North	SEW-EURODRIVE GmbH & Co KG Alte Ricklinger Straße 43 30823 Garbsen (Hannover)	Tel. +49 5137 8798-30 Fax +49 5137 8798-55 dtc-nord@sew-eurodrive.de
	East	SEW-EURODRIVE GmbH & Co KG Dänkritzer Weg 1 08393 Meerane (Zwickau)	Tel. +49 3764 7606-0 Fax +49 3764 7606-20 dtc-ost@sew-eurodrive.de
	South	SEW-EURODRIVE GmbH & Co KG Domagkstraße 5 85551 Kirchheim (München)	Tel. +49 89 909551-21 Fax +49 89 909551-50 dtc-sued@sew-eurodrive.de
	West	SEW-EURODRIVE GmbH & Co KG Siemensstraße 1 40764 Langenfeld (Düsseldorf)	Tel. +49 2173 8507-10 Fax +49 2173 8507-50 dtc-west@sew-eurodrive.de

Germany			
Drive Center	Berlin	SEW-EURODRIVE GmbH & Co KG Melitta-Schiller-Straße 8 12526 Berlin	Tel. +49 306331131-30 Fax +49 306331131-36 dc-berlin@sew-eurodrive.de
	Bremen	SEW-EURODRIVE GmbH & Co KG Allerkai 4 28309 Bremen	Tel. +49 421 33918-10 Fax +49 421 33918-22 dc-bremen@sew-eurodrive.de
	Hamburg	SEW-EURODRIVE GmbH & Co KG Hasselbinnen 11 22869 Schenefeld	Tel. +49 40298109-60 Fax +49 40298109-70 dc-hamburg@sew-eurodrive.de
	Saarland	SEW-EURODRIVE GmbH & Co KG Gottlieb-Daimler-Straße 4 66773 Schwalbach Saar – Hülzweiler	Tel. +49 6831 48946 10 Fax +49 6831 48946 13 dc-saarland@sew-eurodrive.de
	Ulm	SEW-EURODRIVE GmbH & Co KG Dieselstraße 18 89160 Dornstadt	Tel. +49 7348 9885-0 Fax +49 7348 9885-90 dc-ulm@sew-eurodrive.de
	Würzburg	SEW-EURODRIVE GmbH & Co KG Nürnbergerstraße 118 97076 Würzburg-Lengfeld	Tel. +49 931 27886-60 Fax +49 931 27886-66 dc-wuerzburg@sew-eurodrive.de
Drive Service Hotline / 24 Hour Service			0 800 SEWHELP 0 800 7394357
Great Britain			
Assembly Sales Service	Normanton	SEW-EURODRIVE Ltd. DeVilliers Way Trident Park Normanton West Yorkshire WF6 1GX	Tel. +44 1924 893-855 Fax +44 1924 893-702 http://www.sew-eurodrive.co.uk info@sew-eurodrive.co.uk
Greece			
Sales	Athens	Christ. Boznos & Son S.A. 12, K. Mavromichali Street P.O. Box 80136 18545 Piraeus	Tel. +30 2 1042 251-34 Fax +30 2 1042 251-59 http://www.boznos.gr info@boznos.gr
Hungary			
Sales Service	Budapest	SEW-EURODRIVE Kft. Csillaghegyi út 13. 1037 Budapest	Tel. +36 1 437 06-58 Fax +36 1 437 06-50 http://www.sew-eurodrive.hu office@sew-eurodrive.hu
Iceland			
Sales	Reykjavik	Varma & Vélaverk ehf. Knarrarvogi 4 104 Reykjavik	Tel. +354 585 1070 Fax +354 585)1071 https://vov.is/ vov@vov.is
India			
Registered Office Assembly Sales Service	Vadodara	SEW-EURODRIVE India Private Limited 302, NOTUS IT PARK, Sarabhai Campus, Beside Notus Pride, Genda Circle, Vadodara 390023 Gujarat	Tel. +91 265 3045200 Fax +91 265 3045300 https://www.seweurodriveindia.com salesvadodara@seweurodriveindia.com
Assembly Sales Service	Chennai	SEW-EURODRIVE India Private Limited Plot No. K3/1, Sipcot Industrial Park Phase II Mambakkam Village Sriperumbudur - 602105 Kancheepuram Dist, Tamil Nadu	Tel. +91 44 37188888 Fax +91 44 37188811 saleschennai@seweurodriveindia.com
	Pune	SEW-EURODRIVE India Private Limited Plant: Plot No. D236/1, Chakan Industrial Area Phase- II, Warale, Tal- Khed, Pune-410501, Maharashtra	Tel. +91 21 35 628700 Fax +91 21 35 628715 salespune@seweurodriveindia.com
	Tapukara	SEW-EURODRIVE India Private Limited Plot No SP-6-46, Tapukara, Karoli Industrial Area, No. 1, district : Alwar , Rajasthan - 301707	Tel. +91 265 3045200 Fax +91 265 3045300 tapukara.plant@seweurodriveindia.com

India			
Sales	Gurgaon	SEW-EURODRIVE India Private Limited Global Business Park, Sector -26, M.G. Road, Sikanderpur Unit No. 205, 2nd Floor, Tower – D Gurugram 122002, Haryana	Tel. +91 9958376669 salesgurgaon@seweurodriveindia.com
Drive Center	Raipur	SEW-EURODRIVE India Private Limited Plot unit no. 129/17 P.O. GSI-Mandhar District: Raipur, State: Chhattisgarh	Tel. +91 8294630772 salesraipur@seweurodriveindia.com
Indonesia			
Registered Office Sales Service	Jakarta	PT SEW EURODRIVE INDONESIA Palma Tower, 16th Floor, Unit H & I, Jl R.A. Kartini II-S Kav 06 Pondok Pinang, Kebayoran Lama Jakarta Selatan 12310	Tel. +62 21 7593 0272 Fax +62 21 7593 0273 sales.indonesia@sew-eurodrive.com https://www.sew-eurodrive.com.sg
Sales	Medan	PT. Serumpun Indah Lestari Jl.Pulau Solor no. 8, Kawasan Industri Medan II Medan 20252	Tel. +62 61 687 1221 Fax +62 61 6871429 / +62 61 6871458 / +62 61 30008041 sil@serumpunindah.com serumpunindah@yahoo.com http://www.serumpunindah.com
	Jakarta	PT. Cahaya Sukses Abadi Komplek Rukan Puri Mutiara Blok A no 99, Sunter Jakarta 14350	Tel. +62 21 65310599 Fax +62 21 65310600 csajkt@cbn.net.id
	Jakarta	PT. Agrindo Putra Lestari Jl.Pantai Indah Selatan, Komplek Sentra Industri Terpadu, Pantai indah Kapuk Tahap III, Blok E No. 27 Jakarta 14470	Tel. +62 21 2921-8899 Fax +62 21 2921-8988 aplindo@indosat.net.id http://www.aplindo.com
	Surabaya	PT. TRIAGRI JAYA ABADI Jl. Sukosemolo No. 63, Galaxi Bumi Permai G6 No. 11 Surabaya 60111	Tel. +62 31 5990128 Fax +62 31 5962666 sales@triagri.co.id http://www.triagri.co.id
	Surabaya	CV. Multi Mas Jl. Raden Saleh 43A Kav. 18 Surabaya 60174	Tel. +62 31 5458589 Fax +62 31 5317220 sianhwa@sby.centrin.net.id http://www.cvmultimas.com
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 http://www.alperton.ie info@alperton.ie
Israel			
Sales	Tel Aviv	Liraz Handasa Ltd. Ahofer Str 34B / 228 58858 Holon	Tel. +972 3 5599511 Fax +972 3 5599512 http://www.liraz-handasa.co.il office@liraz-handasa.co.il
Italy			
Assembly Sales Service	Milan	SEW-EURODRIVE S.a.s. di SEW S.r.l. & Co. Via Bernini,12 20033 Solaro (Milano)	Tel. +39 02 96 980229 Fax +39 02 96 980 999 http://www.sew-eurodrive.it milano@sew-eurodrive.it
Ivory Coast			
Sales	Abidjan	SEW-EURODRIVE SARL Ivory Coast Rue des Pêcheurs, Zone 3 26 BP 916 Abidjan 26	Tel. +225 27 21 21 81 05 Fax +225 27 21 25 30 47 info@sew-eurodrive.ci http://www.sew-eurodrive.ci
Japan			
Assembly Sales Service	Iwata	SEW-EURODRIVE JAPAN CO., LTD 250-1, Shimoman-no, Iwata Shizuoka 438-0818	Tel. +81 538 373811 Fax +81 538 373814 http://www.sew-eurodrive.co.jp sewjapan@sew-eurodrive.co.jp

Kazakhstan			
Sales Service	Almaty	SEW-EURODRIVE LLP 291-291A, Tole bi street 050031, Almaty	Tel. +7 (727) 350 5156 Fax +7 (727) 350 5156 http://www.sew-eurodrive.com kazakhstan@sew-eurodrive.com
	Tashkent	Representative Office SEW-EURODRIVE Representative office in Uzbekistan 95A Amir Temur ave, office 401/3 100084 Tashkent	Tel. +998 97 134 01 99 http://www.sew-eurodrive.uz sew@sew-eurodrive.uz
	Ulaanbaatar	IM Trading LLC Olympic street 28B/3 Sukhbaatar district, Ulaanbaatar 14230, MN	Tel. +976-77109997 Fax +976-77109997 imt@imt.mn
Latvia			
Sales	Riga	SIA Alas-Kuul Katlakalna 11C 1073 Riga	Tel. +371 6 7139253 Fax +371 6 7139386 http://www.alas-kuul.lv info@alas-kuul.com
Lebanon			
Sales (Lebanon)	Beirut	Gabriel Acar & Fils sarl B. P. 80484 Bourj Hammoud, Beirut	Tel. +961 1 510 532 Fax +961 1 494 971 ssacar@inco.com.lb
Sales (Jordan, Kuwait , Beirut Saudi Arabia, Syria)		Middle East Drives S.A.L. (offshore) Sin El Fil. B. P. 55-378 Beirut	Tel. +961 1 494 786 Fax +961 1 494 971 http://www.medrives.com info@medrives.com
Lithuania			
Sales	Alytus	UAB Irseva Statybininku 106C 63431 Alytus	Tel. +370 315 79204 Fax +370 315 56175 http://www.irseva.lt irmantas@irseva.lt
Luxembourg			
Representation: Belgium			
Macedonia			
Sales	Skopje	Boznos DOOEL Dime Anicin 2A/7A 1000 Skopje	Tel. +389 23256553 Fax +389 23256554 http://www.boznos.mk
Malaysia			
Assembly Sales Service	Johor	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 sales@sew-eurodrive.com.my
Mexico			
Assembly Sales Service	Quéretaro	SEW-EURODRIVE MEXICO S.A. de C.V. SEM-981118-M93 Tequisquiapan No. 102 Parque Industrial Quéretaro C.P. 76220 Querétaro, México	Tel. +52 442 1030-300 Fax +52 442 1030-301 http://www.sew-eurodrive.com.mx scmexico@seweurodrive.com.mx
Sales Service	Puebla	SEW-EURODRIVE MEXICO S.A. de C.V. Calzada Zavaleta No. 3922 Piso 2 Local 6 Col. Santa Cruz Buenavista C.P. 72154 Puebla, México	Tel. +52 (222) 221 248 http://www.sew-eurodrive.com.mx scmexico@seweurodrive.com.mx
Mongolia			
Technical Office	Ulaanbaatar	IM Trading LLC Olympic street 28B/3 Sukhbaatar district, Ulaanbaatar 14230, MN	Tel. +976-77109997 Tel. +976-99070395 Fax +976-77109997 http://imt.mn/ imt@imt.mn

Morocco			
Sales Service Assembly	Bouskoura	SEW-EURODRIVE Morocco SARL Parc Industriel CFCIM, Lot. 55/59 27182 Bouskoura Grand Casablanca	Tel. +212 522 88 85 00 Fax +212 522 88 84 50 http://www.sew-eurodrive.ma sew@sew-eurodrive.ma
Namibia			
Sales	Swakopmund	DB MINING & INDUSTRIAL SUPPLIES CC Einstein Street Strauss Industrial Park Unit1 Swakopmund	Tel. +264 64 462 738 Fax +264 64 462 734 anton@dbminingnam.com
Netherlands			
Assembly Sales Service	Rotterdam	SEW-EURODRIVE B.V. Industrieweg 175 3044 AS Rotterdam Postbus 10085 3004 AB Rotterdam	Tel. +31 10 4463-700 Fax +31 10 4155-552 Service: 0800-SEWHELP http://www.sew-eurodrive.nl info@sew-eurodrive.nl
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 http://www.sew-eurodrive.co.nz sales@sew-eurodrive.co.nz
	Christchurch	SEW-EURODRIVE NEW ZEALAND LTD. 30 Lodestar Avenue, Wigram Christchurch	Tel. +64 3 384-6251 Fax +64 3 384-6455 sales@sew-eurodrive.co.nz
Nigeria			
Sales	Lagos	Greenpeg Nig. Ltd 64C Toyin Street Opebi-Allen Ikeja Lagos-Nigeria	Tel. +234-701-821-9200-1 http://www.greenpeg ltd.com sales@greenpeg ltd.com
Norway			
Assembly Sales Service	Moss	SEW-EURODRIVE A/S Hornebergvegen 11 B 7038 Trondheim	Tel. +47 69 24 10 20 Fax +47 69 24 10 40 http://www.sew-eurodrive.no sew@sew-eurodrive.no
Pakistan			
Sales	Karachi	Industrial Power Drives Al-Fatah Chamber A/3, 1st Floor Central Com- mercial Area, Sultan Ahmed Shah Road, Block 7/8, Karachi	Tel. +92 21 452 9369 Fax +92-21-454 7365 seweurodrive@cyber.net.pk
Paraguay			
Sales	Fernando de la Mora	SEW-EURODRIVE PARAGUAY S.R.L Nu Guazu No. 642 casi Campo Esperanza Santisima Trinidad Asuncion	Tel. +595 991 519695 Fax +595 21 3285539 sewpy@sew-eurodrive.com.py
Peru			
Assembly Sales Service	Lima	SEW EURODRIVE DEL PERU S.A.C. Los Calderos, 120-124 Urbanizacion Industrial Vulcano, ATE, Lima	Tel. +51 1 3495280 Fax +51 1 3493002 http://www.sew-eurodrive.com.pe sewperu@sew-eurodrive.com.pe
Philippines			
Sales	Makati	P.T. Cerna Corporation 4137 Ponte St., Brgy. Sta. Cruz Makati City 1205	Tel. +63 2 519 6214 Fax +63 2 890 2802 mech_drive_sys@ptcerna.com http://www.ptcerna.com
Poland			
Assembly Sales Service	Łódź	SEW-EURODRIVE Polska Sp.z.o.o. ul. Techniczna 5 92-518 Łódź	Tel. +48 42 293 00 00 Fax +48 42 293 00 49 http://www.sew-eurodrive.pl sew@sew-eurodrive.pl

Poland			
	Service	Tel. +48 42 293 0030 Fax +48 42 293 0043	24 Hour Service Tel. +48 602 739 739 (+48 602 SEW SEW) serwis@sew-eurodrive.pl
Portugal			
Assembly Sales Service	Coimbra	SEW-EURODRIVE, LDA. Av. da Fonte Nova, n.º 86 3050-379 Mealhada	Tel. +351 231 20 9670 Fax +351 231 20 3685 http://www.sew-eurodrive.pt infosew@sew-eurodrive.pt
Romania			
Sales Service	Bucharest	Sialco Trading SRL str. Brazilia nr. 36 011783 Bucuresti	Tel. +40 21 230-1328 Fax +40 21 230-7170 http://www.sialco.ro sialco@sialco.ro
Senegal			
Sales	Dakar	SENEMECA Mécanique Générale Km 8, Route de Rufisque B.P. 3251, Dakar	Tel. +221 338 494 770 Fax +221 338 494 771 http://www.senemeca.com senemeca@senemeca.sn
Serbia			
Sales	Belgrade	DIPAR d.o.o. Ustanicka 128a PC Košum, IV floor 11000 Beograd	Tel. +381 11 347 3244 / +381 11 288 0393 Fax +381 11 347 1337 office@dipar.rs
Singapore			
Assembly Sales Service	Singapore	SEW-EURODRIVE PTE. LTD. 9, Tuas Drive 2 Singapore 638644	Tel. +65 68621701 Fax +65 68612827 http://www.sew-eurodrive.com.sg sewsingapore@sew-eurodrive.com
Slovakia			
Drive Technology Center	Bernolákovo	SEW-Eurodrive SK s.r.o. Priemyselná ulica 6267/7 900 27 Bernolákovo	Tel. +421 2 48 212 800 http://www.sew-eurodrive.sk sew@sew-eurodrive.sk
Slovenia			
Representation: Austria			
South Africa			
Assembly Sales Service	Johannesburg	SEW-EURODRIVE (PROPRIETARY) LIMITED 32 O'Connor Place Eurodrive House Aeroton Johannesburg 2190 P.O.Box 90004 Bertsham 2013	Tel. +27 11 248-7000 Fax +27 11 248-7289 http://www.sew.co.za info@sew.co.za
	Cape Town	SEW-EURODRIVE (PROPRIETARY) LIMITED Rainbow Park Cnr. Racecourse & Omuramba Road Montague Gardens Cape Town P.O.Box 36556 Chempet 7442	Tel. +27 21 552-9820 Fax +27 21 552-9830 Telex 576 062 bgriffiths@sew.co.za
	Durban	SEW-EURODRIVE (PROPRIETARY) LIMITED 48 Prospecton Road Isipingo Durban P.O. Box 10433, Ashwood 3605	Tel. +27 31 902 3815 Fax +27 31 902 3826 cdejager@sew.co.za
	Nelspruit	SEW-EURODRIVE (PROPRIETARY) LIMITED 7 Christie Crescent Vintonia P.O.Box 1942 Nelspruit 1200	Tel. +27 13 752-8007 Fax +27 13 752-8008 robermeyer@sew.co.za

South Korea			
Assembly Sales Service	Ansan	SEW-EURODRIVE Korea Co., Ltd. 7, Dangjaengi-ro, Danwon-gu, Ansan-si, Gyeonggi-do, Zip 425-839	Tel. +82 31 492-8051 Fax +82 31 492-8056 http://www.sew-eurodrive.kr master.korea@sew-eurodrive.com
	Busan	SEW-EURODRIVE Korea Co., Ltd. 28, Noksansandan 262-ro 50beon-gil, Gangseo-gu, Busan, Zip 618-820	Tel. +82 51 832-0204 Fax +82 51 832-0230
Assembly Service	Siheung	SEW-EURODRIVE Korea Co., Ltd. 35, Emtibeui 26-ro 58beon-gil, Siheung-si, Gyeonggi-do	http://www.sew-eurodrive.kr
Spain			
Assembly Sales Service	Bilbao	SEW-EURODRIVE ESPAÑA, S.L. Parque Tecnológico, Edificio, 302 48170 Zamudio (Vizcaya)	Tel. +34 94 43184-70 http://www.sew-eurodrive.es sew.spain@sew-eurodrive.es
Sri Lanka			
Sales	Colombo	SM International (Pte) Ltd 254, Galle Raod Colombo 4, Sri Lanka	Tel. +94 1 2584887 Fax +94 1 2582981
Swaziland			
Sales	Manzini	C G Trading Co. (Pty) Ltd Simunye street Matsapha, Manzini	Tel. +268 7602 0790 Fax +268 2 518 5033 charles@cgtrading.co.sz www.cgtradingswaziland.com
Sweden			
Assembly Sales Service	Jönköping	SEW-EURODRIVE AB Gnejsvägen 6-8 553 03 Jönköping Box 3100 S-550 03 Jönköping	Tel. +46 36 34 42 00 Fax +46 36 34 42 80 http://www.sew-eurodrive.se jonkoping@sew.se
Switzerland			
Assembly Sales Service	Basel	Alfred Imhof AG Jurastrasse 10 CH-4142 Münchenstein bei Basel	Tel. +41 61 417 17 17 http://www.imhof-sew.ch info@imhof-sew.ch
Taiwan			
Sales	Taipei	Ting Shou Trading Co., Ltd. 6F-3, No. 267, Sec. 2 Tung Huw S. Road Taipei	Tel. +886 2 27383535 Fax +886 2 27368268 Telex 27 245 sewtwn@ms63.hinet.net http://www.tingshou.com.tw
	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 sewtwn@ms63.hinet.net http://www.tingshou.com.tw
Tanzania			
Sales	Daressalam	SEW-EURODRIVE PTY LIMITED TANZANIA Plot 52, Regent Estate PO Box 106274 Dar Es Salaam	Tel. +255 0 22 277 5780 Fax +255 0 22 277 5788 http://www.sew-eurodrive.co.tz info@sew.co.tz
Thailand			
Assembly Sales Service	Chonburi	SEW-EURODRIVE (Thailand) Ltd. 700/456, Moo.7, Donhuaroh Muang Chonburi 20000	Tel. +66 38 454281 Fax +66 38 454288 sewthailand@sew-eurodrive.com https://www.sew-eurodrive.co.th
Tunisia			
Sales	Tunis	T. M.S. Technic Marketing Service Zone Industrielle Mghira 2 Lot No. 39 2082 Fouchana	Tel. +216 79 40 88 77 Fax +216 79 40 88 66 http://www.tms.com.tn tms@tms.com.tn

Turkey			
Assembly Sales Service	Kocaeli-Gebze	SEW-EURODRIVE Ana Merkez Gebze Organize Sanayi Böl. 400 Sok No. 401 41480 Gebze Kocaeli	Tel. +90 262 9991000 04 Fax +90 262 9991009 http://www.sew-eurodrive.com.tr sew@sew-eurodrive.com.tr
Ukraine			
Assembly Sales Service	Dnipropetrovsk	SEW-EURODRIVE, LLC Robochya str., bld. 23-B, office 409 49008 Dnipro	Tel. +380 56 370 3211 Fax +380 56 372 2078 http://www.sew-eurodrive.ua sew@sew-eurodrive.ua
United Arab Emirates			
Drive Technology Center	Dubai	SEW-EURODRIVE FZE PO Box 263835 Jebel Ali Free Zone – South, P.O. Box Dubai, United Arab Emirates	Tel. +971 (0)4 8806461 Fax +971 (0)4 8806464 info@sew-eurodrive.ae
Uruguay			
Assembly Sales	Montevideo	SEW-EURODRIVE Uruguay, S. A. Jose Serrato 3569 Esquina Corumbe CP 12000 Montevideo	Tel. +598 2 21181-89 Fax +598 2 21181-90 sewuy@sew-eurodrive.com.uy
USA			
Production Sales Service	Southeast Region	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 Production +1 864 439-9948 Fax Assembly +1 864 439-0566 Fax Confidential/HR +1 864 949-5557 http://www.seweurodrive.com cslyman@seweurodrive.com
Assembly Sales Service	Northeast Region	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
	Midwest Region	SEW-EURODRIVE INC. 2001 West Main Street Troy, Ohio 45373	Tel. +1 937 335-0036 Fax +1 937 332-0038 cstroy@seweurodrive.com
	Southwest Region	SEW-EURODRIVE INC. 202 W. Daniieldale Rd. DeSoto, TX 75115	Tel. +1 214 330-4824 Fax +1 214 330-4724 csdallas@seweurodrive.com
	Western Region	SEW-EURODRIVE INC. 30599 San Antonio St. Hayward, CA 94544	Tel. +1 510 487-3560 Fax +1 510 487-6433 cshayward@seweurodrive.com
	Wellford	SEW-EURODRIVE INC. 148/150 Finch Rd. Wellford, S.C. 29385 SEW-EURODRIVE INC. 220 Finch Rd. Wellford, S.C. 29385-9630	Tel. +1 864 439-7537 Fax +1 864 661 1167 IGOrders@seweurodrive.com
Additional addresses for service provided on request!			
Vietnam			
Sales	Ho Chi Minh City	SEW-EURODRIVE PTE. LTD. RO at Hochim- inh City Floor 8, KV I, Loyal building, 151-151 Bis Vo Thi Sau street, ward 6, District 3, Ho Chi Minh City, Vietnam	Tel. +84 937 299 700 huytam.phan@sew-eurodrive.com
	Hanoi	MICO LTD Quảng Trị - North Vietnam / All sectors except Construction Materials 8th Floor, Ocean Park Building, 01 Dao Duy Anh St, Ha Noi, Viet Nam	Tel. +84 4 39386666 Fax +84 4 3938 6888 nam_ph@micogroup.com.vn http://www.micogroup.com.vn
Zambia			
Representation: South Africa			

Index

A

Accessories	17
Jumper plug.....	33
Y adapter.....	33
Assembly	
Safety notes	10

C

Cable fuse protection	27
Cable routing	24
CE mark.....	41
Connection	
DC fuse	27
Connection cable.....	31, 32
Connection cables.....	29
Connections	29
Contactless energy transfer system	25
Cooling	19
Copyright notice	7

D

Decimal separator	6
Derating	
TDM90C (352 V)	43
TDM90C (48 V)	47
TDM90C (55 V)	45
Designated use	9
Dimension drawing	48
Discharge measures	27

E

Electrical hazard	24
Electrical installation	11, 24
Safety notes	11
Embedded safety notes.....	6
Equipotential bonding	25

F

Functional principle	17
Functional safety technology	
Safety note	10

G

Ground connection	25
-------------------------	----

H

Hazard symbols	
Meaning	6

I

Information	
Designation in the documentation	5
Installation.....	21
Cable fuse protection.....	27
Installation notes.....	24

J

Jumper plug	33
-------------------	----

M

Mechanical installation.....	19
Cooling.....	19
Prerequisites.....	19
Waste heat.....	19

N

Nameplate	14
Notes	
Meaning of the hazard symbols.....	6

O

Operation	
Safety notes.....	12

P

Preventive measures against electrical hazards ..	24
Product names.....	6
Protective bonding	25
Protective separation	12

R

Restrictions of use	9
Rights to claim under limited warranty	6

S

Safety functions	10
Safety notes	
Assembly	10
Designated use.....	9
Designation in the documentation	5

Electromagnetic fields	9	Transport	10
Installation	10	U	
Meaning of the hazard symbols	6	UKCA mark	41
Operation	12	W	
Preliminary information	8	Warning notes	
Startup	12	Structure of the embedded safety notes	6
Structure of section-related	5	Waste heat	19
Transport	10	Wiring diagrams	29
Scope of delivery	13	X	
Section-related safety notes	5	X2319	31
Separation, protective	12	X2341	29
Signal words in safety notes	5	Cable fuse protection	27
Startup		X5221	32
Safety note	12	Y	
T		Y adapter	33
Target group	10		
Trademarks	6		





SEW-EURODRIVE
Driving the world

SEW
EURODRIVE

SEW-EURODRIVE GmbH & Co KG
Ernst-Blickle-Str. 42
76646 BRUCHSAL
GERMANY
Tel. +49 7251 75-0
Fax +49 7251 75-1970
sew@sew-eurodrive.com
→ www.sew-eurodrive.com