

3 MOVIPRO® SDC/ADC

3.1 Unit description

Plants must be flexible, modularized, and standardized to ensure success in today's international competition. This is necessary to respond quickly and efficiently to the ever changing market requirements. One of the challenges is to reduce the complexity of a plant while increasing its functionality. The decentralized MOVIPRO® SDC/ADC drive, positioning, and application controllers offer all the necessary functions and simplify the realization of a plant thanks to decentralized installation.

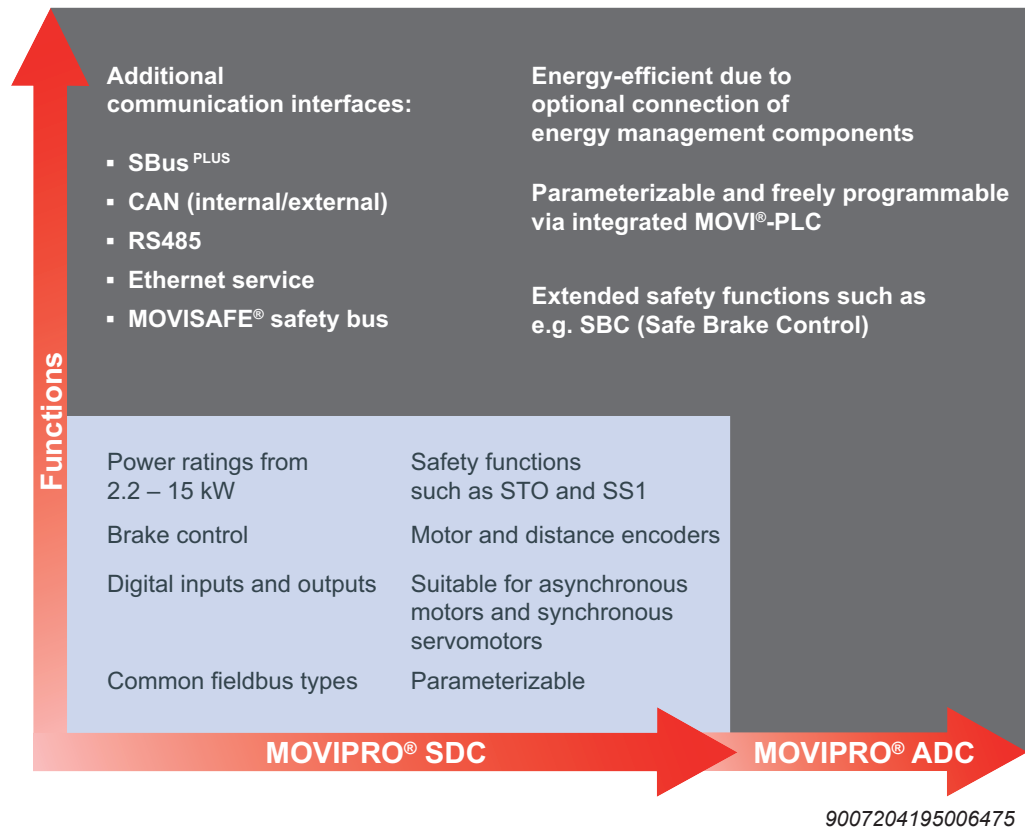


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3.2 Overview of functions of MOVIPRO® SDC/ADC

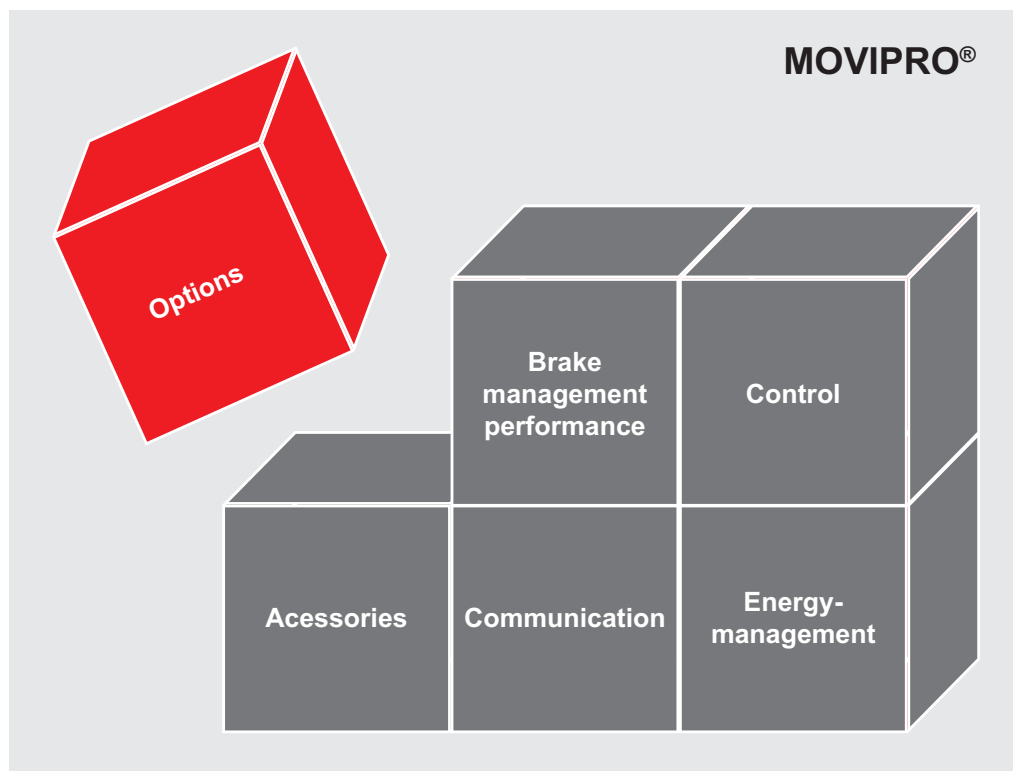
MOVIPRO® SDC offers various basic functions, which makes it an ideal solution for simple applications. MOVIPRO® ADC also includes these basic functions, but offers special functions for more complex applications in addition.

The following figure shows a rough overview of the functions and options of MOVIPRO® SDC and MOVIPRO® ADC.



3.3 Product philosophy

The tried and tested SEW-EURODRIVE modular system is also used for the MOVIPRO®. The modular system for MOVIPRO® consists of several scalable function modules that can be combined.



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For every application, MOVIPRO® offers an optimized and compact drive solution that meets all requirements placed on industrial drive technology.

3.4 General unit properties of MOVIPRO® SDC/ADC

MOVIPRO® has the following functional characteristics:

- Compact system: All important drive functions integrated in one unit
- Robust aluminum housing
- Easy installation due to pluggable connections
- Power: 2.2 kW, 4.0 kW, 7.5 kW, 11.0 kW and 15.0 kW
- Drive inverter on the MOVIDRIVE® platform
- Connection options for motor and distance encoder
- Asynchronous or synchronous motors can be controlled
- Integrated brake control: DC 24 V, AC 230 V, AC 400 V and AC 460 V
- Connection option for external braking resistor
- SD memory card for quick unit replacement
- Interface box with maintenance switch and energy distribution option for line topologies (power bus)
- Positioning tasks with application modules

- 12 digital inputs and 4 digital inputs/outputs
- Communication via the following fieldbus types possible:
 - PROFINET I/O
 - EtherNet/IP™
 - Modbus/TCP
 - PROFIBUS DP-V1
 - DeviceNet™
- STO, SS1 safety functions according to EN 61800-5-2
- Performance level d according to EN ISO 13849-1
- PROFIsafe-Device

3.5 Additional unit properties of MOVIPRO® ADC

MOVIPRO® ADC has the following additional functional characteristics:

- Available as parameterizable or programmable unit
- Communication packages for controlling auxiliary axes and sensors via the following interfaces:
 - SBus^{PLUS} interface
 - CAN interface (electrically isolated or with DC 24 V)
 - CAN interface (system bus)
 - RS485 interface (electrically isolated or with DC 24 V)
 - Ethernet engineering interface
 - MOVISAFE® safety bus interface
- Safe brake control (SBC according to IEC 61800-5-2)
- Energy management interface for connecting MOVI-DPS energy or power interface EKK
- Units with a power rating of 11.0 kW and higher are available with R15 regenerative power supply unit

3.6 Functional safety

3.6.1 Approved safety class

The units of the MOVIPRO® SDC/ADC series meet the requirements of Performance Level d according to EN ISO 13849-1.

3.6.2 Basic functionality

The following safety functions can be realized with MOVIPRO® as standard:

- **STO** (safe torque off according to EN 61800-5-2:2007) by disconnecting the safety-related DC 24 V supply.

If the STO function is activated, the frequency inverter no longer supplies power to the motor for generating torque. This safety function corresponds to a controlled stop according to EN 60204-1:2006, stop category 0.

The safety-related DC 24 V supply voltage must be disconnected by an external safety controller or safety relay.

- **SS1(c)** (safe stop 1, function variant c according to EN 61800-5-2:2007) by means of suitable external control (e.g. safety relay with delayed disconnection).

The following sequence is mandatory:

- Deceleration of the drive using an appropriate brake ramp specified via set-points
- Disconnection of the safety-related DC 24 V power supply (= triggers the STO function) after a specified safety-related time delay.

This safety function corresponds to a controlled stop according to EN 60204-1:2006, stop category 1.

3.6.3 Safety-related brake module

The safety function SBC (safe brake control) can also be realized with MOVIPRO® by an optional, safety-related brake module.

- **SBC** (Safe Brake Control according to EN 61800-5-2:2007)

The SBC function safely de-energizes the connected brake by disconnecting the safety-related control voltage. The control voltage must be disconnected by a suitable external safety relay or safety controller.

3.6.4 Extended safety functionality with S11 PROFIsafe option

The S11 PROFIsafe option allows you to control the basic safety functions of MOVIPRO® (STO or STO with SBC, depending on the unit configuration) via PROFIsafe.

The safety-related PROFIsafe communication with the higher-level safety controller can be realized via PROFIBUS or PROFINET.

3.7 Process data exchange

The relevant drive parameters and the local inputs and outputs can be transferred to and processed by the higher-level PLC. This means the PLC is capable of controlling drive-related functions.

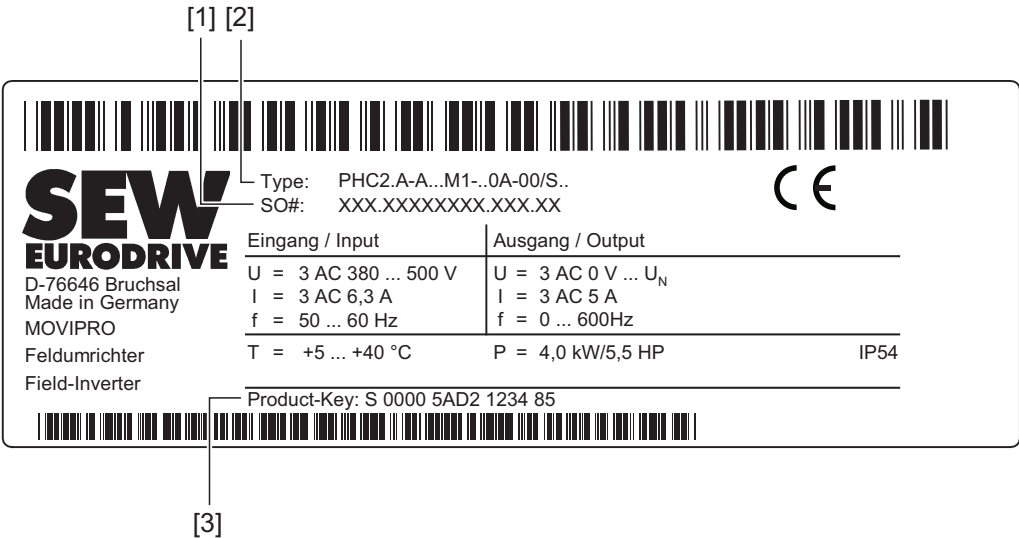
Communication between the PLC and MOVIPRO® is based on process data according to the uniform MOVILINK® unit profile from SEW-EURODRIVE. This means it is compatible with the existing decentralized components from SEW-EURODRIVE.

For further information, refer to the MOVIPRO® SDC and MOVIPRO® ADC manuals available at www.sew-eurodrive.de in the section "Data and documents".

3.8 Nameplates

Each MOVIPRO® unit has 2 nameplates that provide important information:

Main nameplate

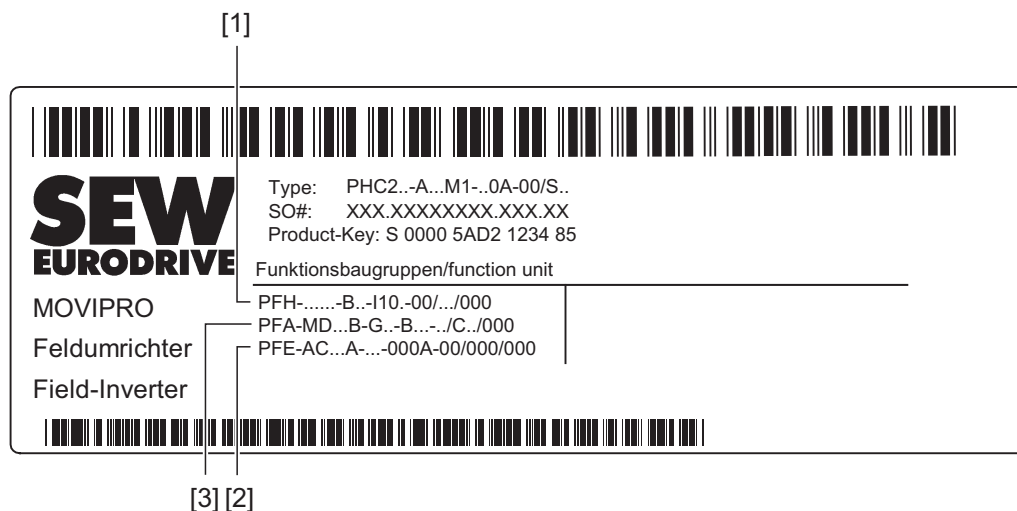


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- [1] Serial number SO#
- [2] Type code "Type"
- [3] Product key

Type code "Type"	The main nameplate lists some technical data, serial number "SO#" [1], the product key [3], and the type code "Type" [2]. The type code contains information about the most important unit features of a MOVIPRO®, such as the power rating or the fieldbus connection.
Serial number "SO#"	The serial number SO# encodes the order-specific data of the MOVIPRO®.
Product key	The product key encodes all production data of the MOVIPRO®. It contains the data of the main nameplate and the function module nameplate. With the product key, it is very easy to re-order an identical MOVIPRO® unit from SEW-EURODRIVE. The product key only encodes the MOVIPRO® basic unit. Accessories such as braking resistors or interface boxes are not encoded in the product key.

Nameplate of function units



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- [1] Communication and control unit
- [2] Power section
- [3] Energy supply

The function unit nameplate shows the code for the function units that are individually integrated in MOVIPRO®. The function units contain the specific features of a MOVIPRO®, such as encoder or SD memory card type. These features define the MOVIPRO® device type.

3.9 Type designation and function units of MOVIPRO® ADC

3.9.1 Type designation

The type designation of the drive and application controller MOVIPRO® ADC **PHC2.A-A...M1-..1A-00/...** includes the following data:

PHC2.A	MOVIPRO® ADC drive and application controller	
-		
A	Energy supply: 3-phase alternating current	
...	Rated input power:	
	022	2.2 kW
	040	4.0 kW
	075	7.5 kW
	110	11.0 kW
	150	15.0 kW
M1	1 integrated power section	
-		
..	Fieldbus:	
	P1	PROFIBUS DP V1
	D1	DeviceNet™
	E2	PROFINET IO
	E3	EtherNet/IP™, Modbus/TCP
1A	Control type: ADC	
-		
00/...	Unit option:	
	00/S11	PROFIsafe option S11

3.9.2 Type designations of the function modules

Power section

The type designation **PFA-MD...B-G..-B...-/C../000** of the power section contains the following data:

PFA-MD	Internal axis on MOVIDRIVE® basis	
...B	Axis type:	
	022B	2.2 kW
	040B	4 kW
	075B	7.5 kW
	110B	11 kW
	150B	15 kW
-		
G..	Encoder interface:	
	G00	without encoder interface
	G10	Motor encoder resolver Without distance encoder
	G20	Motor encoder HIPERFACE®, sin/cos, HTL, TTL, RS422 Without distance encoder
	G21	Motor encoder HIPERFACE®, sin/cos, HTL, TTL, RS422 Distance encoder CANopen
	G22	Motor encoder HIPERFACE®, sin/cos, HTL, TTL, RS422 Distance encoder SSI, HIPERFACE®, sin/cos, HTL, TTL, RS422
-		
B.	Brake control:	
	BG	Standard brake control
	BS	Brake control with safety-related brake module
..	Brake voltage:	
	02	DC 24 V
	23	AC 230 V
	40	AC 400 V
	46	AC 460 V
-		
..	Axis connections:	
	11	1 standard motor output with STO interface and 4 axis inputs to 2 × M12
	15	1 standard motor output with STO interface, 2 axis inputs and 1 analog input to 2 × M12
/		

C../000	Cooling:	
	C01/000	Standard without fan subassembly
	C02/000	Standard with fan subassembly

Communication and control unit

The type designation **PFH--1A--B--I1--00/.../000** of the communication and control unit contains the following data:

PFH	Control/communication	
-		
..	Fieldbus:	
	P1	PROFIBUS DP V1
	D1	DeviceNet™
	E2	PROFINET IO
	E3	EtherNet/IP™ / Modbus/TCP
1A	Control type: ADC	
H	SD memory card OMH for parameterizable and programmable functions	
.	Technology level	
	0	OMH_T0
	2	OMH_T2
-		
B..	Fieldbus interface:	
	B11	PROFIBUS, bus module 2 × M12
	B12	DeviceNet™, bus module 2 × M12
	B53	Ethernet, 2 × M12
	B63	Ethernet, 2 × Push-Pull RJ45
	B64	Ethernet, 2 × Push-Pull SCRJ
-		
I1	12 digital inputs and 4 digital inputs/outputs	

..	Communication package:	
	00	Without communication package
	01	SBus ^{PLUS} interface CAN interface – external RS485 interface – external
	02	SBus ^{PLUS} interface CAN interface – external S485 interface – external (with DC 24 V)
	03	SBus ^{PLUS} interface CAN interface – external (with DC 24 V) RS485 interface – external (with DC 24 V)
	04	SBus ^{PLUS} interface CAN interface – external (with DC 24 V) RS485 interface – external
	06	Ethernet engineering interface CAN interface – external (with DC 24 V) RS485 interface – external (with DC 24 V)
	10	MOVISAFE® safety bus interface CAN interface – external CAN interface – system bus (with DC 24 V)
	11	MOVISAFE® safety bus interface RS485 interface – external CAN interface – system bus (with DC 24 V)
-		
00/.../000	Option:	
	00/000/0 00	Without option 1
	00/ S11/000	PROFIsafe option S11

Energy supply

The type designation **PFE-AC...A-...-000A-00/...000** of the energy supply includes the following data:

PFE	Energy	
-		
AC...A	3-phase alternating current with the following maximum input power:	
	080	8.0 kW (Size 0, 1)
	160	16.0 kW (Size 2)
-		
...	Supply connection	
	001	Connection cable 2.2 kW, 4.0 kW, 7.5 kW
	002	Connection cable 11.0 kW, 15.0 kW
	101	Interface box 2.2 kW, 4.0 kW, 7.5 kW
	102	Interface box 11.0 kW, 15.0 kW
-		
000A	Without extra-low-voltage supply for external components	
-		
00/...	Energy management:	
	00/000	Without energy management
	00/R15	Regenerative power supply
	00/E42	Connection for external energy management components
000	Without option	

3.10 Type designation and function units of MOVIPRO® SDC

3.10.1 Type designation

The type designation of the drive and positioning control MOVIPRO® SDC **PHC2.A-A...M1-..0A-00/...** includes the following characteristic unit data:

PHC2.A	MOVIPRO® SDC drive and positioning control	
-		
A	Energy supply: 3-phase alternating current	
...	Rated input power:	
	022	2.2 kW
	040	4.0 kW
	075	7.5 kW
	110	11.0 kW
	150	15.0 kW
M1	1 integrated power section	
-		
..	Fieldbus:	
	P1	PROFIBUS DP V1
	D1	DeviceNet™
	E2	PROFINET IO
	E3	EtherNet/IP™, Modbus/TCP
0A	Control type: SDC	
-		
00/...	Unit option:	
	00/S11	PROFIsafe option S11

3.10.2 Type designations of the function modules

Power section

The type designation **PFA-MD...B-G..-BG...-/C../000** of the power section contains the following data:

3

PFA-MD	Internal axis on MOVIDRIVE® basis	
...B	Axis type:	
	022B	2.2 kW
	040B	4.0 kW
	075B	7.5 kW
	110B	11.0 kW
	150B	15.0 kW
-		
G..	Encoder interface:	
	G00	without encoder interface
	G10	Motor encoder resolver Without distance encoder
	G20	Motor encoder HIPERFACE®, sin/cos, HTL, TTL, RS422 Without distance encoder
	G21	Motor encoder HIPERFACE®, sin/cos, HTL, TTL, RS422 Distance encoder CANopen
	G22	Motor encoder HIPERFACE®, sin/cos, HTL, TTL, RS422 Distance encoder SSI, HIPERFACE®, sin/cos, HTL, TTL, RS422
-		
BG..	Brake voltage:	
	BG02	DC 24 V
	BG23	AC 230 V
	BG40	AC 400 V
	BG46	AC 460 V
-		
..	Axis connections:	
	11	1 standard motor output with STO interface and 4 axis inputs to 2 × M12
	15	1 standard motor output with STO interface, 2 axis inputs and 1 analog input to 2 × M12
/		
C../000	Cooling:	
	C01/000	Standard without fan subassembly
	C02/000	Standard with fan subassembly

Communication and control unit

The type designation **PFH-..0AC0-B..I100-00/.../000** of the communication and control unit contains the following data:

PFH	Control/communication	
-		
..	Fieldbus:	
	P1	PROFIBUS DP V1
	D1	DeviceNet™
	E2	PROFINET IO
	E3	EtherNet/IP™ / Modbus/TCP
0A	Control type: SDC	
C0	Storage medium/technology level: OMC_T0	
-		
B..	Fieldbus interface:	
	B11	PROFIBUS, bus module 2 × M12
	B12	DeviceNet™, bus module 2 × M12
	B53	Ethernet, 2 × M12
	B63	Ethernet, 2 × Push-Pull RJ45
	B64	Ethernet, 2 × Push-Pull SCRJ
-		
I1	12 digital inputs and 4 digital inputs/outputs	
00	Without communication package	
-		
00/.../000	Option:	
	00/000/ 000	Without option 1
	00/ S11/00 0	PROFIsafe option S11

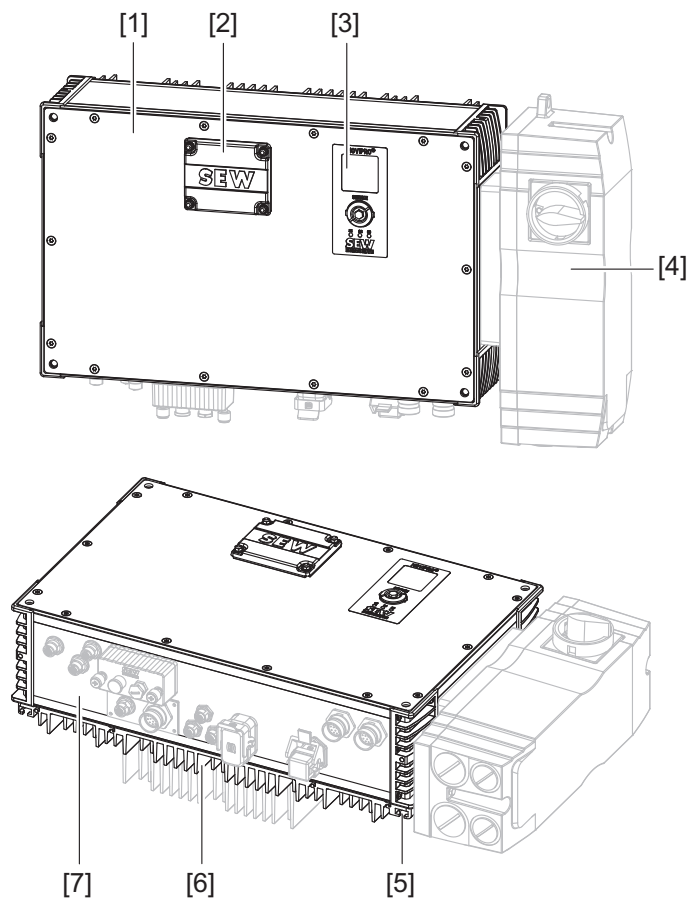
Energy supply

The type designation **PFE-AC...A-...-000A-00/000/000** of the energy supply includes the following data:

PFE	Energy	
-		
AC...A	3-phase alternating current with the following maximum input power:	
	080	8 kW (Size 0, 1)
	160	16 kW (Size 2)
-		
...	Supply connection	
	001	Connection cable 2.2 kW, 4 kW, 7.5 kW
	002	Connection cable 11 kW, 15 kW
	101	Interface box 2.2 kW, 4 kW, 7.5 kW
	102	Interface box 11 kW, 15 kW
-		
000A	Without extra-low-voltage supply for external components	
-		
00/000/000	Without option	

3.11 Unit structure of MOVIPRO® SDC/ADC**3.11.1 2.2 kW, 4.0 kW and 7.5 kW (size 0 and 1)**

The following figures show the unit structure:

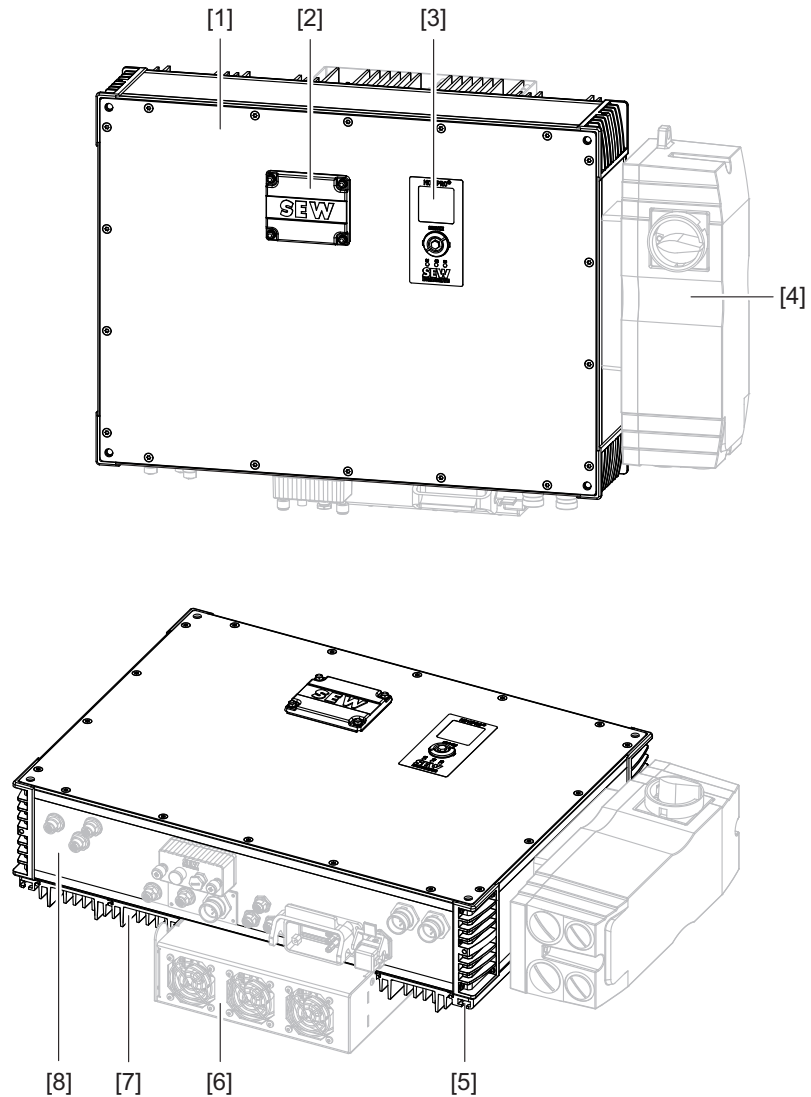


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- [1] Unit cover
- [2] Service cover plate
- [3] Service unit
- [4] Interface box (optional)
- [5] T-slot profile
- [6] Cooling fins
- [7] Connection block (connections depend on the unit design)

3.11.2 11.0 kW and 15.0 kW (Size 2)

The following figures show the unit structure:

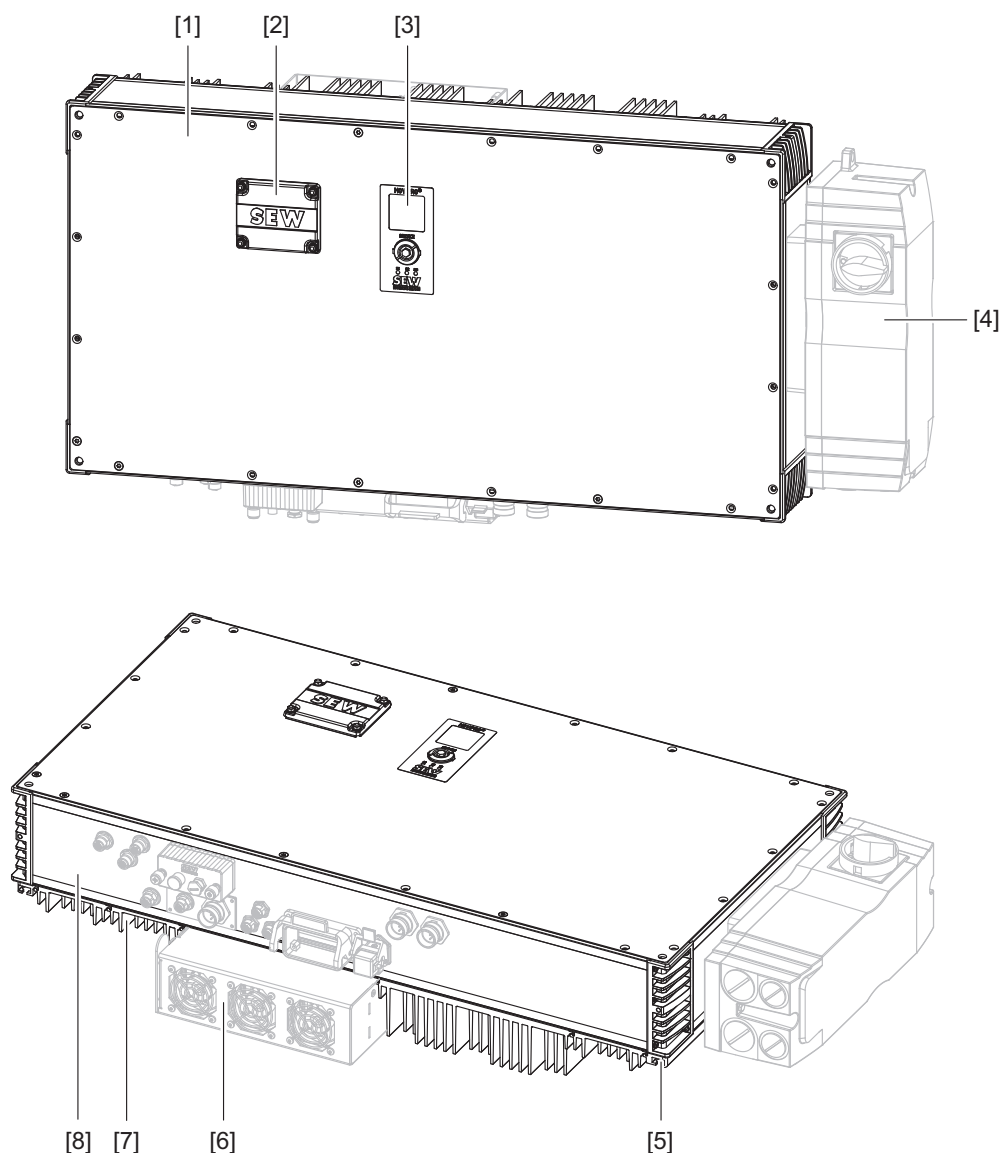


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- [1] Unit cover
- [2] Service cover plate
- [3] Service unit
- [4] Interface box (optional)
- [5] T-slot profile
- [6] Fan subassembly (optional for 11 kW, mandatory for 15 kW)
- [7] Cooling fins
- [8] Connection block (connections depend on the unit design)

Size 2 with R15 regenerative power supply unit (MOVIPRO® ADC only)

The following illustrations show the unit structure with regenerative power supply R15:

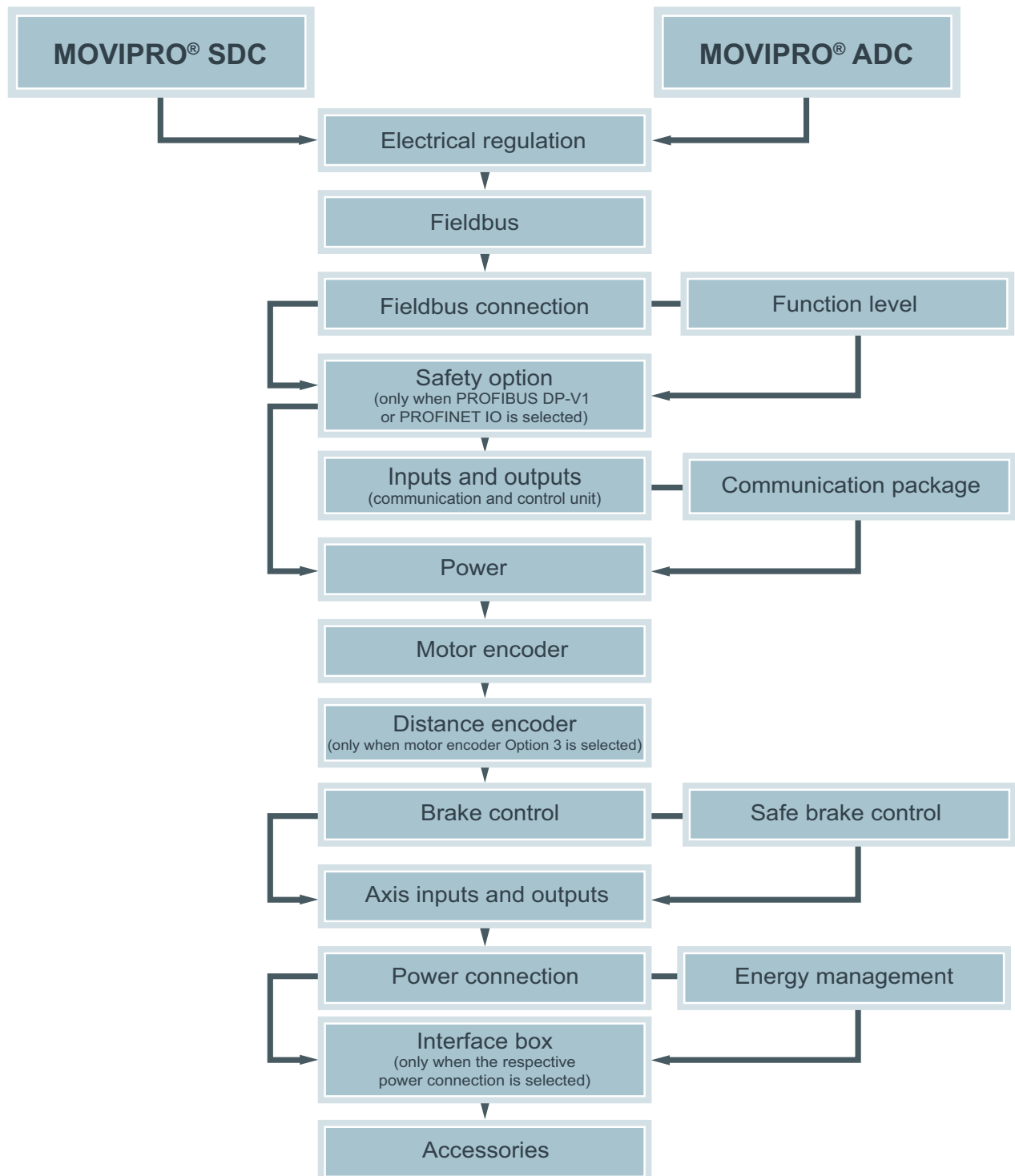


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- [1] Unit cover
- [2] Service cover plate
- [3] Service unit
- [4] Interface box (optional)
- [5] T-slot profile
- [6] Fan subassembly
- [7] Cooling fins
- [8] Connection block (connections depend on the unit design)

3.12 Selecting the right MOVIPRO® for your drive solution

The diagram below shows an overview of the necessary configuration steps to select the right MOVIPRO® for you:



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3.12.1 Selecting the product type

Select a MOVIPRO® SDC or MOVIPRO® ADC that meets your requirements. The following chapters will give you detailed information about the products.

3.12.2 Electrical regulation

Depending on the country where the unit will be installed, you can choose one of the following 2 electric regulations for MOVIPRO®:

- IEC
- UL (specifically for the North American continent)

3.12.3 Fieldbus

You can choose from different fieldbus types for MOVIPRO®:

- PROFIBUS DP-V1
- EtherNet/IP™
- Modbus/TCP
- PROFINET IO
- DeviceNet™

3.12.4 Fieldbus connections

MOVIPRO® offers the following connection options depending on the fieldbus type:

Fieldbus	Connection types
PROFIBUS DP-V1	DIP module PROFIBUS with 2 × M12 connectors
EtherNet/IP™, Modbus/TCP	2 × M12 connections, D-coded, Ethernet, copper
	2 × push-pull RJ45 connections, Ethernet, copper
PROFINET IO	2 × M12 connections, D-coded, Ethernet, copper
	2 × push-pull RJ45 connections, Ethernet, copper
	2 push-pull SCRJ connections (POF)
DeviceNet™	DIP module DeviceNet™ with 2 × M12 connections

3.12.5 Function level (for MOVIPRO® ADC only)

With the MOVIPRO® ADC, the SD memory cards OMH_T0 or OMH_T2 can be selected, according to the required functions.

In addition, you can decide if you wish to parameterize or even program the MOVIPRO® ADC.

Parameterization MOVIPRO® ADC can be parameterized using the configuration software Application Configurator. Our Application configurator provides a large number of standardized, configurable software modules.

Programming A user program for complex automated motion sequences can be programmed for your MOVIPRO® ADC. Therefore, the programming software PLC Editor offers optimal support.

Depending on the range of functions, you can choose from different technology levels for the individual SD memory cards.

Technology level of the OMH_T SD memory card.	Description	
	Application Configurator (CCU)	PLC editor (MOVI-PLC®)
T0	- Speed specification - Bus positioning - Universal module - Cam positioning	MultiMotion light: - Speed control - Positioning
T2	–	MultiMotion: - Speed control - Positioning - Electronic cam - Electronic gear unit

3.12.6 Safety option

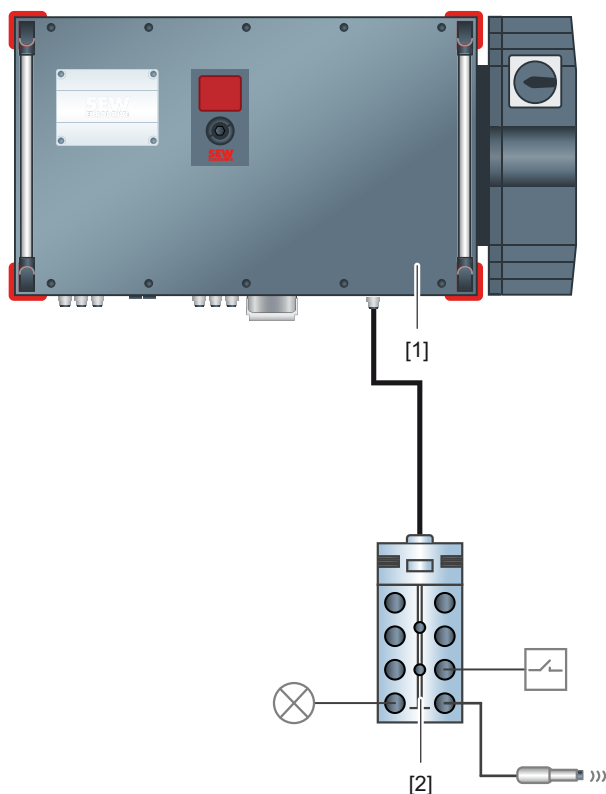
If you have selected PROFIBUS or PROFINET as fieldbus, you can also select the PROFIsafe option S11.

The PROFIsafe option S11 lets you control the STO or STO with SBC safety functions via PROFIsafe, depending on the unit configuration.

3.12.7 Digital inputs/outputs (communication and control unit)

Each MOVIPRO® has 12 digital inputs and 4 digital inputs and outputs as standard.

The following figure shows an example of the connection options:



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- [1] MOVIPRO®
- [2] Sensor/actuator box with M23 connector and M12 connections, e.g. for:
- Switch
 - Inductive sensors
 - Light barriers
 - Indicator lamps, etc.

3.12.8 Communication packages (for MOVIPRO® ADC only)

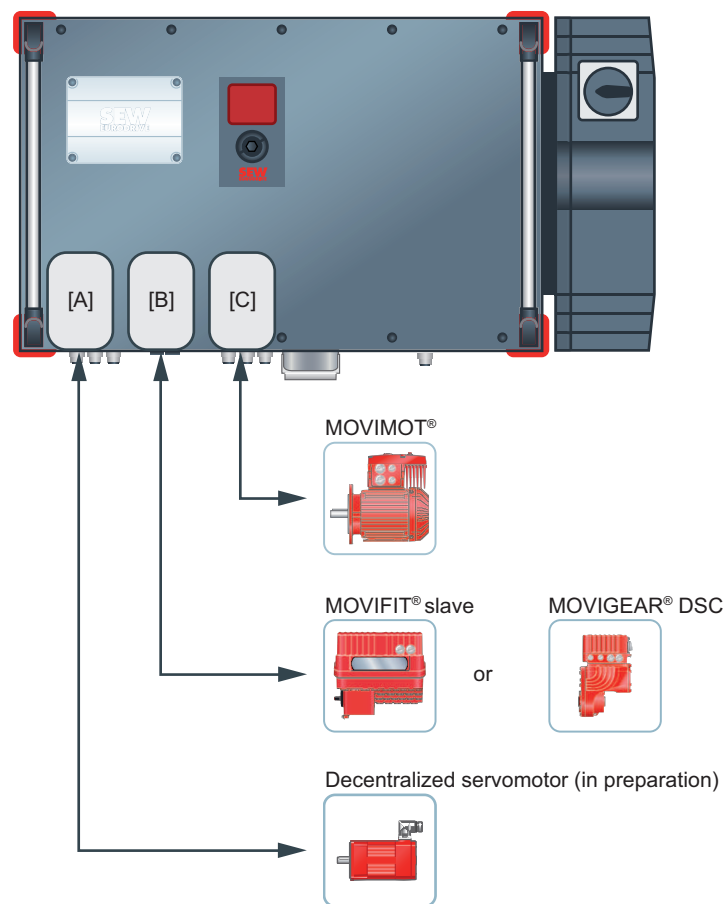
For communication with external auxiliary axes, such as MOVIFIT® or MOVIGEAR®, you can select additional communication packages for MOVIPRO® ADC.

Communication package 1

The communication package contains the following additional interfaces:

Interfaces	
[A]	SBus ^{PLUS} interface
[B]	CAN interface (electrically isolated)
[C]	RS485 interface (electrically isolated)

The following figure shows an example of the connection options:



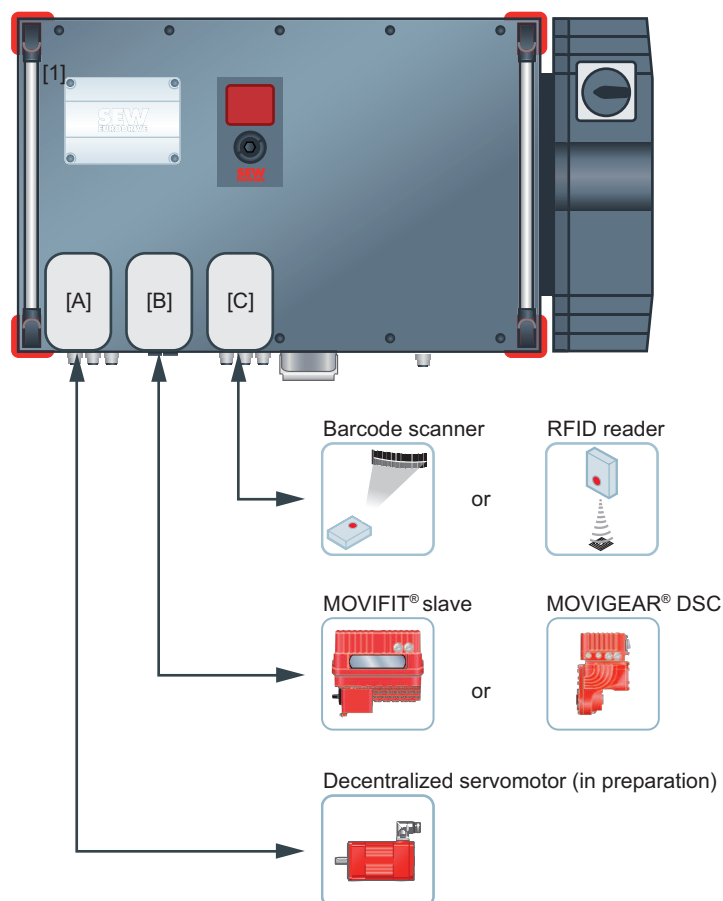
- [A] SBus^{PLUS} interface
- [B] CAN interface (electrically isolated)
- [C] RS485 interface (electrically isolated)

Communication package 2

The communication package contains the following additional interfaces:

Interfaces	
[A]	SBus ^{PLUS} interface
[B]	CAN interface (electrically isolated)
[C]	RS485 interface (with DC 24 V)

The following figure shows an example of the connection options:



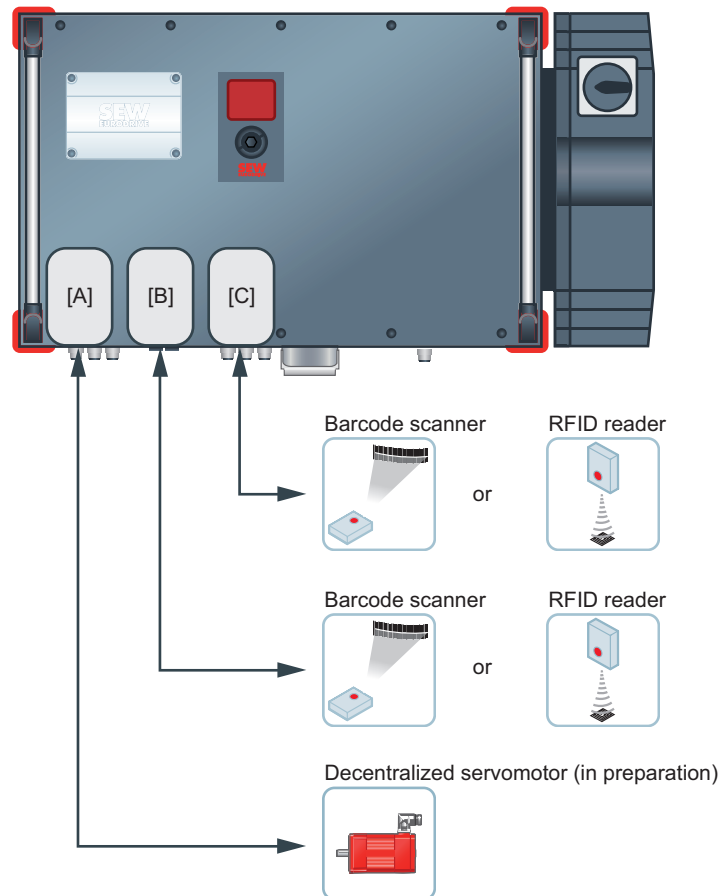
- [A] SBus^{PLUS} interface
 [B] CAN interface (electrically isolated)
 [C] RS485 interface (with DC 24 V)

Communication package 3

The communication package contains the following additional interfaces:

Interfaces	
[A]	SBus ^{PLUS} interface
[B]	CAN interface (with DC 24 V)
[C]	RS485 interface (with DC 24 V)

The following figure shows an example of the connection options:



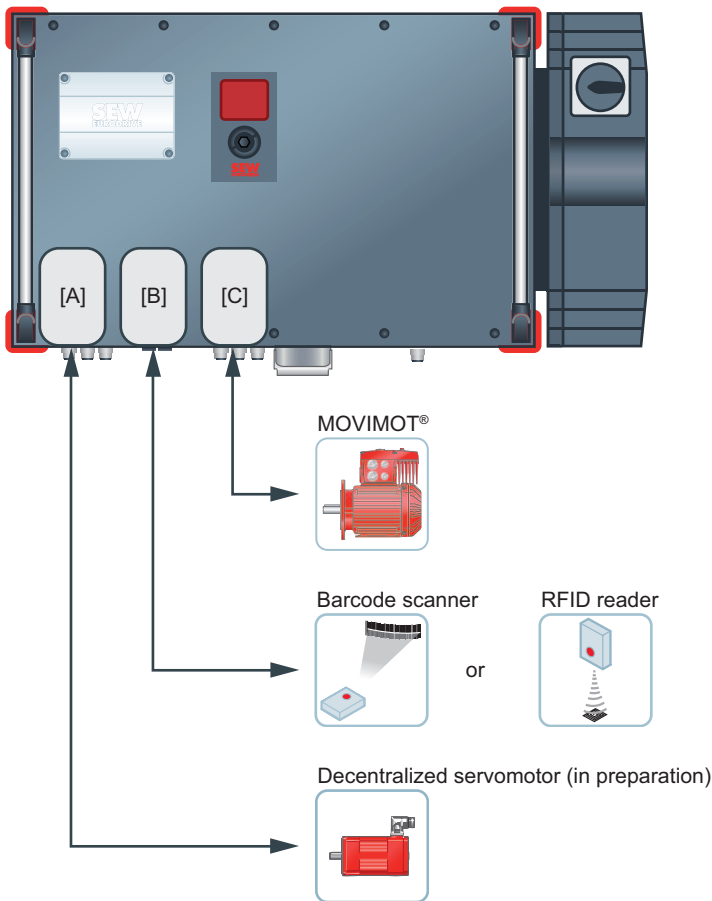
- [A] SBus^{PLUS} interface
 [B] CAN interface (with DC 24 V)
 [C] RS485 interface (with DC 24 V)

Communication package 4

The communication package contains the following additional interfaces:

Interfaces	
[A]	SBus ^{PLUS} interface
[B]	CAN interface (with DC 24 V)
[C]	RS485 interface (electrically isolated)

The following figure shows an example of the connection options:



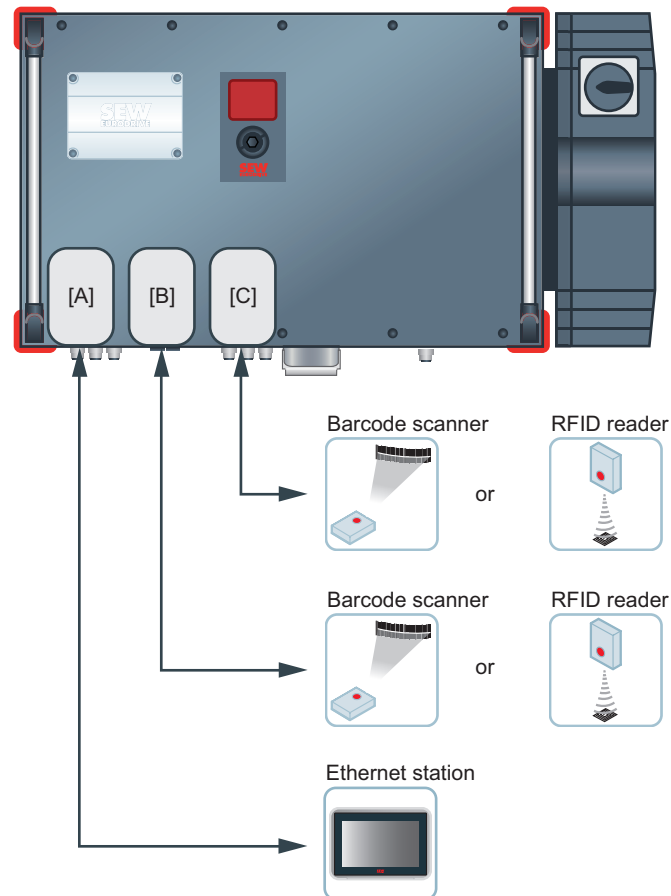
- [A] SBus^{PLUS} interface
- [B] CAN interface (with DC 24 V)
- [C] RS485 interface (electrically isolated)

Communication package 6

The communication package contains the following additional interfaces:

Interfaces	
[A]	Ethernet engineering interface (without DC 24 V)
[B]	CAN interface (with DC 24 V)
[C]	RS485 interface (with DC 24 V)

The following figure shows an example of the connection options:



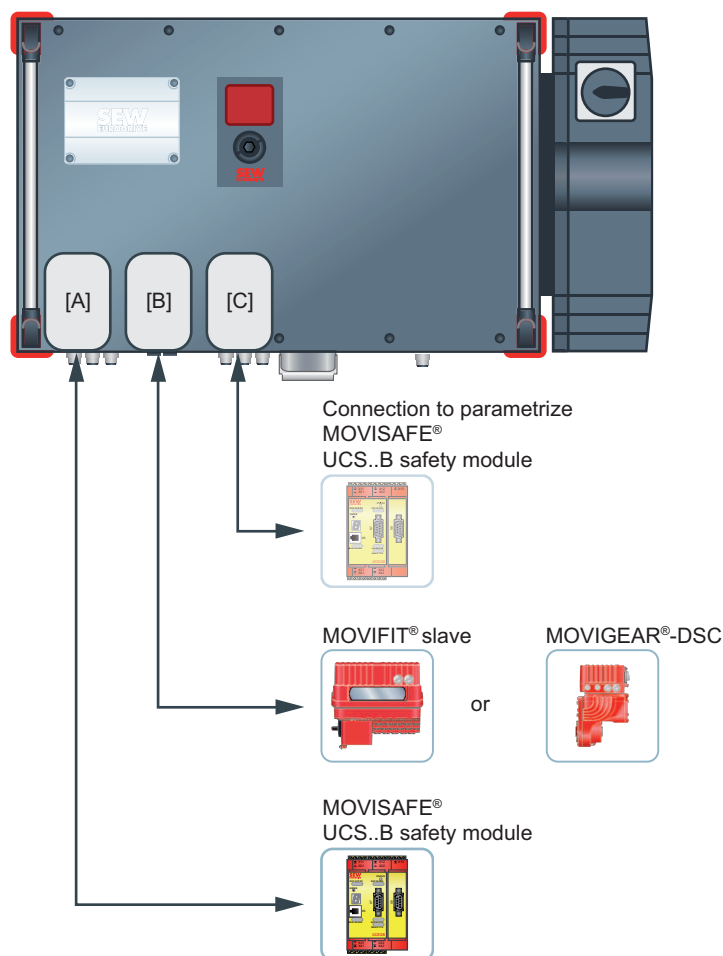
- [A] Ethernet engineering interface (without DC 24 V)
- [B] CAN interface (with DC 24 V)
- [C] RS485 interface (with DC 24 V)

Communication package 10

The communication package contains the following additional interfaces:

Interfaces	
[A]	MOVISAFE® safety bus interface
[B]	CAN interface – (electrically isolated)
[C]	CAN interface – system bus (with DC 24 V)

The following figure shows an example of the connection options:



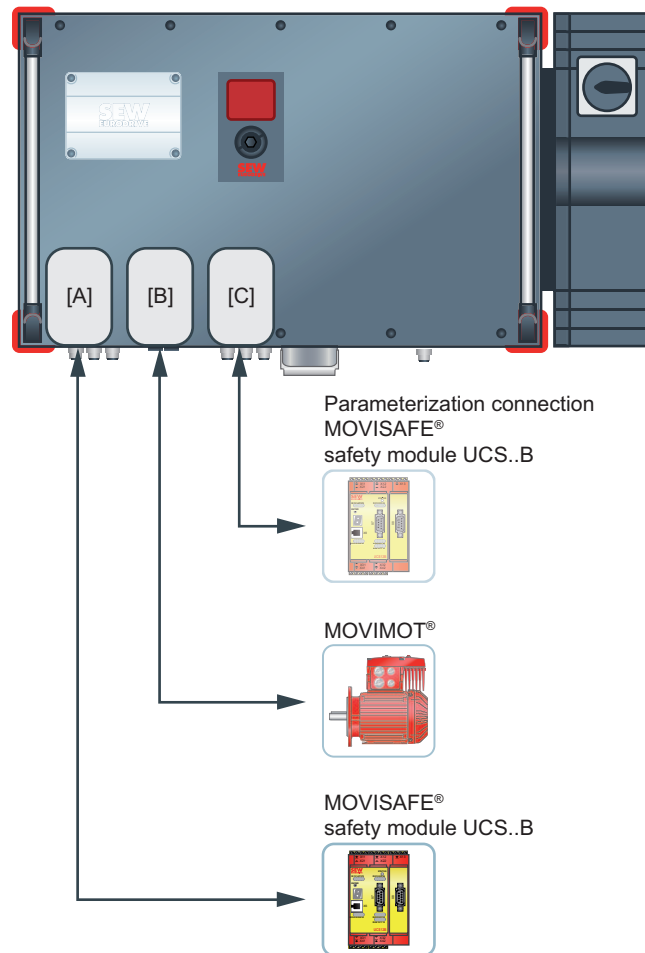
- [A] MOVISAFE® safety bus interface
 [B] CAN interface – (electrically isolated)
 [C] CAN interface – system bus (with DC 24 V)

Communication package 11

The communication package contains the following additional interfaces:

Interfaces	
[A]	MOVISAFE® safety bus interface
[B]	RS485 interface (electrically isolated)
[C]	CAN interface – system bus (with DC 24 V)

The following figure shows an example of the connection options:



- [A] MOVISAFE® safety bus interface
 [B] RS485 interface (electrically isolated)
 [C] CAN interface – system bus (with DC 24 V)

3.12.9 Power rating

Depending on the connected drive, you can choose from different power levels of the MOVIPRO®:

- 2.2 kW
- 4.0 kW
- 7.5 kW
- 11.0 kW
- 15.0 kW

3.12.10 Motor encoder



INFORMATION

If you want to use a distance encoder, you have to select the motor encoder type "Sin/Cos, TTL, HTL, HIPERFACE®, RS422".

If you want to connect a motor with motor encoder to the MOVIPRO®, you can choose from the following motor encoder types for the encoder evaluation option:

- Resolver
- Sin/Cos, TTL, HTL, HIPERFACE®, RS422

3.12.11 Distance encoder

If you want to evaluate a distance encoder with MOVIPRO®, you can choose from the following distance encoder types for the encoder evaluation option:

- CANopen
- SSI, Sin/Cos, TTL, HTL, HIPERFACE®, RS422

3.12.12 Brake control

The brake control system is responsible for the power supply and control of the SEW-EURODRIVE disk brakes. Only connect approved SEW-EURODRIVE disk brakes with the following brake voltages to the unit.

- DC 24 V
- AC 230 V
- AC 400 V
- AC 460 V

Safety-related brake module (MOVIPRO® ADC only)

The safety-related brake module offers the safety function SBC (Safe Brake Control). SBC is possible for the following brake voltages:

- AC 230 V
- AC 400 V
- AC 460 V

INFORMATION

For detailed information, refer to the "MOVIPRO® ADC – Functional Safety" manual.

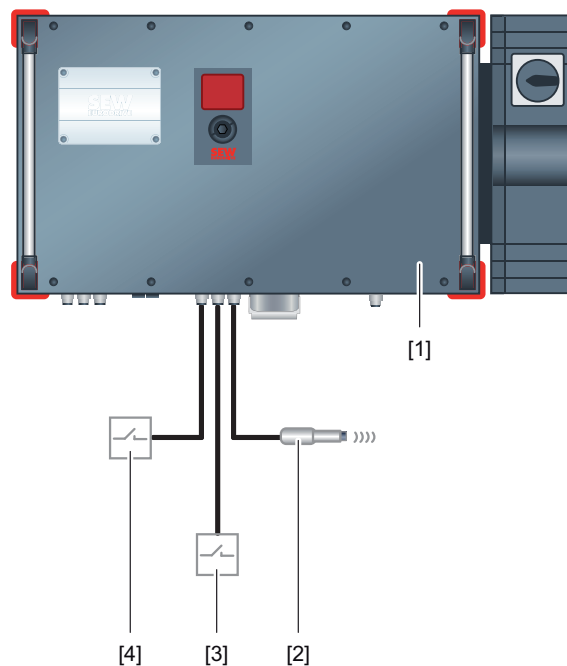
3.12.13 Axis inputs (power section)

The axis inputs can be used to connect sensors and actuators.

Depending on the unit design, the unit has the following axis inputs:

- 4 digital axis inputs
- 2 digital axis inputs and 1 analog axis input

The following figure shows an example of a connection of sensors and actuators to the axis inputs:



- [1] MOVIPRO®
 [2] Inductive sensor
 [3]+[4] Switch

15290821899

3.12.14 Power connection

You can choose, whether you want to connect MOVIPRO® directly via supply plug connector or via interface box.

The interface box offers the following advantages:

- Disconnection of MOVIPRO® via intelligent maintenance switch with switch feed-back
- Variants for UL-compliant installation with integrated motor circuit breaker ("branch protection")
- Connected voltages are looped through for line topology

3.12.15 Energy management (for MOVIPRO® ADC only)

Instead of the braking resistor converting regenerative energy to heat, you can also store or feed back excess energy to the power grid.

For this purpose the MOVIPRO® modular concept offers the following functions:

- Energy management interface (4.0 kW or higher)
- Regenerative power supply R15 (11.0 kW or higher)

Energy management interface (4.0 kW or higher)

The energy management interface allows to connect a MOVI-DPS energy or power interface to the MOVIPRO® ADC.

Advantages	• Decentralized energy storage • Providing energy • Energetically optimizing of applications • Reduction of overall operation costs • Reduction of supply system infrastructure • Increase of process reliability
Operating modes	• Energy mode – Operation without permanent power supply – Storing of energy in the MOVI-DPS storage bundle – Use of additionally required energy from the MOVI-DPS storage bundle • Power mode – Reducing of load peaks – Saving energy – Storing of regenerative energy in the MOVI-DPS storage bundle
Applications	• Energy mode: – Heavy and light load automated guided vehicle systems (AGVS) – Pallet transfer shuttle – Satellite for storage/retrieval system • Power mode – Lifting station for electrified monorail vehicles – Vertical conveyor

Regenerative power supply R15 (11.0 kW or higher)

A regenerative power supply unit R15 can be configured for MOVIPRO® ADC units with a power rating of 11.0 kW and higher. The MOVIPRO® ADC already contains the required line chokes and line filters.

Typical applications for regenerative power supply units are, for example:

- Hoists
- Storage and retrieval systems

3.13 Accessories

3.13.1 Interface box

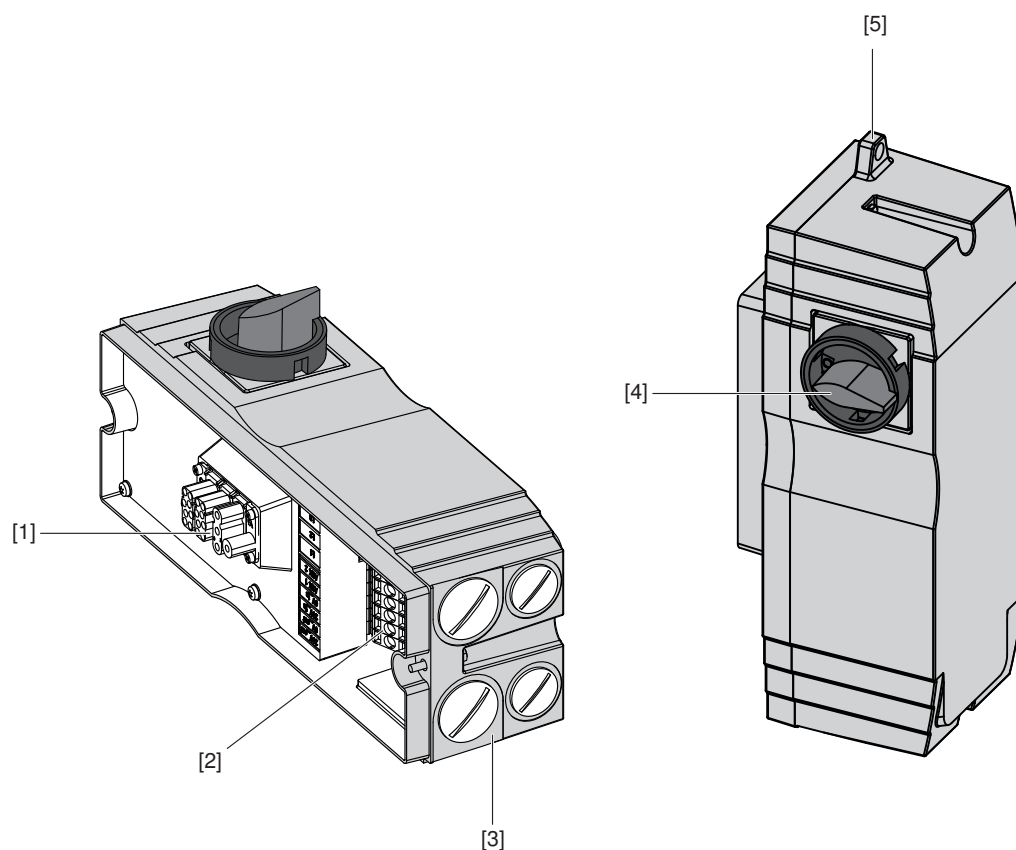
Scope of functions

The interface box allows for the following functions:

- Connection to the AC 400 V supply system
- Connection to the DC 24 V backup voltage
- DC 24 V supply of the connected unit via the integrated power supply of the unit.
- Connected voltages are looped through
- Disconnect the unit from the supply system by using the maintenance switch of the interface box

Structure

The following figure provides an overview of the most important parts of the interface box:



2048160523

- [1] MOVIPRO® connection (Han® 10 B, female)
- [2] Power input terminal strip X1
- [3] Front panel connectors
- [4] Maintenance switch
- [5] Suspension device (for storing the interface box during a MOVIPRO® unit replacement, for example)

Type designation

The type designation of the MOVIPRO® PZM2xA-A...-...-00 interface box comprises the following characteristic data:

PZM2xA	MOVIPRO® interface box	
-		
A...	Maximum switching capacity:	
	022	2.2 kW
	040	4.0 kW
	075	7.5 kW
	150	15.0 kW
-		
..-00	Connection of MOVIPRO®:	
	D02-00	Disconnection switch up to 25 A
	D03-00	Disconnection switch up to 40 A
	M13-00	line and unit protection up to 5 A
	M14-00	line and unit protection up to 9 A
	M16-00	line and unit protection up to 15 A

Power interface assignment

The following overview illustrates the assignment of the individual interface boxes to the respective MOVIPRO® units:

Interface box	Part number	MOVIPRO®				
		up to 2.2 kW	up to 4.0 kW	up to 7.5 kW	up to 11.0 kW	up to 15.0 kW
PZM2xA-A075-D02-00	18250149	•	•	•		
PZM2xA-A150-D03-00	18250157	•	•	•	•	•
PZM2xA-A022-M13-00	18250238	•				
PZM2xA-A040-M14-00	18250165		•			
PZM2xA-A075-M16-00	18250173			•		

Power interfaces – technical data

Basic unit

The following table lists the technical data for the PZM2xA-A...-...-00 power interfaces:

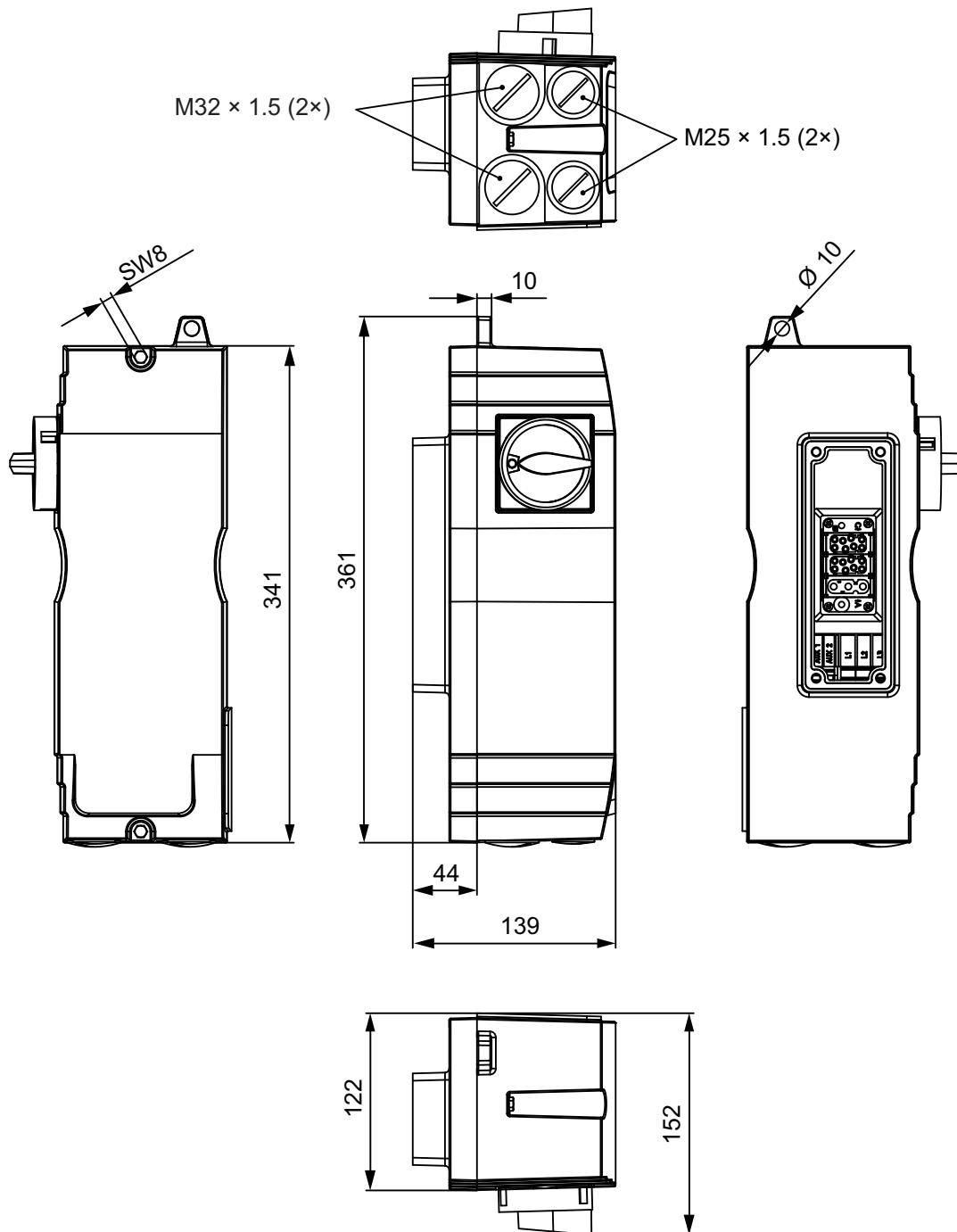
Interface box					
Description	PZM2xA-A022-M13-00	PZM2xA-A040-M14-00	PZM2xA-A075-M16-00	PZM2xA-A075-D02-00	PZM2xA-A150-D03-00
	2.2 kW	4.0 kW	7.5 kW	7.5 kW	15.0 kW
	With line and unit protection			with disconnection switch	
Ambient temperature	+5 – +40 °C (non-condensing, no moisture condensation)				
Derating Ambient temp. ϑ_A	P_N reduction: 3% I_N per K to max. 60 °C				
Climate class	EN 60721-3-3; class 3K3				
Storage temp. ϑ_L	-25 – +70 °C				
Degree of protection	IP20, IP54 (in assembled state)				
Mass	2.5 kg				
Dimensions W×H×D	139 mm × 116 mm × 341 mm				
Unit output to MOVIPRO®					
Max. output current	5 A	9 A	15 A	25 A	40 A
Integrated unit protection	5 A	9 A	15 A	–	–
Max. switching capacity (IEC, AC 3)	2.2 kW	4.0 kW	7.5 kW	7.5 kW	15.0 kW
Max. switching capacity (UL, DOL rating)	–	–	–	7.5 HP	15.0 HP
Unit input					
Line voltage V_{line}	3 AC 380 V – 500 V				
Line frequency f_{line}	50 – 60 Hz ± 5%				
Terminal cross section power supply	2.5 mm ² – 10 mm ² (flexible with conductor end sleeve)				
24 V terminal cross section	1.5 mm ² – 6 mm ² (flexible with conductor end sleeve)				
Maximum permitted back-up fuse (gL characteristics)	60 A			35 A ¹⁾	50 A ²⁾

1) For UL-compliant installation, also observe the maximum permitted fuse for the connected MOVIPRO®. Always adhere to the smaller value.

2) For UL-compliant installation, also observe the maximum permitted fuse for the connected MOVIPRO®. Always adhere to the smaller value.

Dimension drawing

The dimension drawing shows the mechanical dimensions of the interface box in mm:



9007201307199371

3.13.2 External braking resistors

The external braking resistors are described in chapter "External braking resistors for MOVIPRO®" (→ 352).

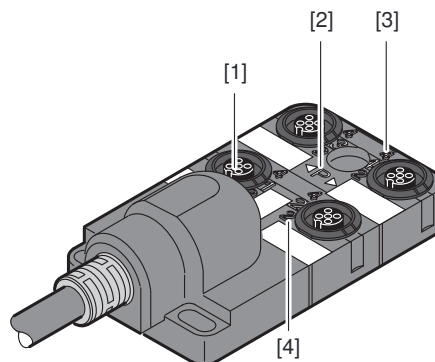
3.13.3 Sensor/actuator box

The sensor/actuator box allows to connect up to 4 or up to 8 sensors/actuators to the MOVIPRO®, depending on the design. It occupies only one connection for digital inputs/outputs of the MOVIPRO® unit. To use all digital inputs and outputs 2 sensor/actuator boxes must be connected to the MOVIPRO®.

The sensor/actuator box provides one connection cable with M23 plug connector and M12 slots for the sensors or actuators. The green LED "P" indicates the use of the DC 24 V supply voltage. Each M12 slot is equipped with LEDs for displaying the status of the inputs/outputs.

The sensor/actuator box is available with different connection cable lengths.

Design with 4 slots



14785117835

- [1] M12 slot
- [2] Operating display LED
- [3] Yellow status display signal 1
- [4] White status display signal 2

	Part number
Sensor/actuator box 1.0 m (4 connections)	18255477
Sensor/actuator box 3.0 m (4 connections)	18255485

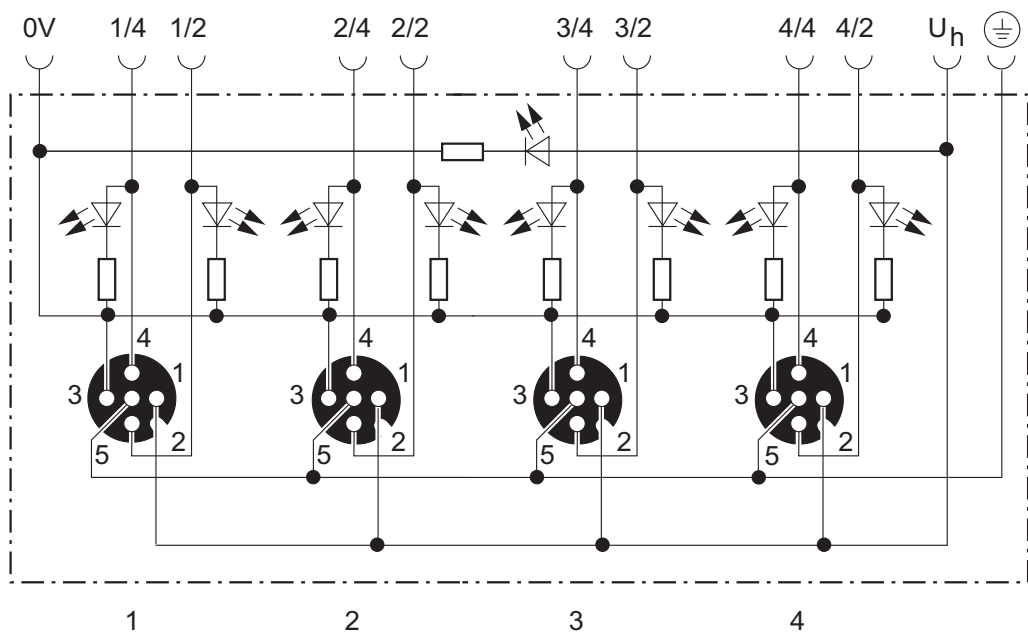
Technical Data

Basic unit		
Nominal voltage	V_N	DC 24 V
Maximum operating voltage	V_{max}	DC 30 V

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Basic unit		
Current carrying capacity per slot		4 A
in total		8 A
Operating voltage display		Green LED
Status display		Yellow LED (signal 1) White LED (signal 2)
Operating current display elements		≤ 5 mA
Degree of protection		IP65 (with screwed plug connectors)
Connection cable		
Ambient temperature for fixed routing		-30 – +80 °C
for cable carrier		-5 – +70 °C
Cable type		Main cable suitable for cable carriers

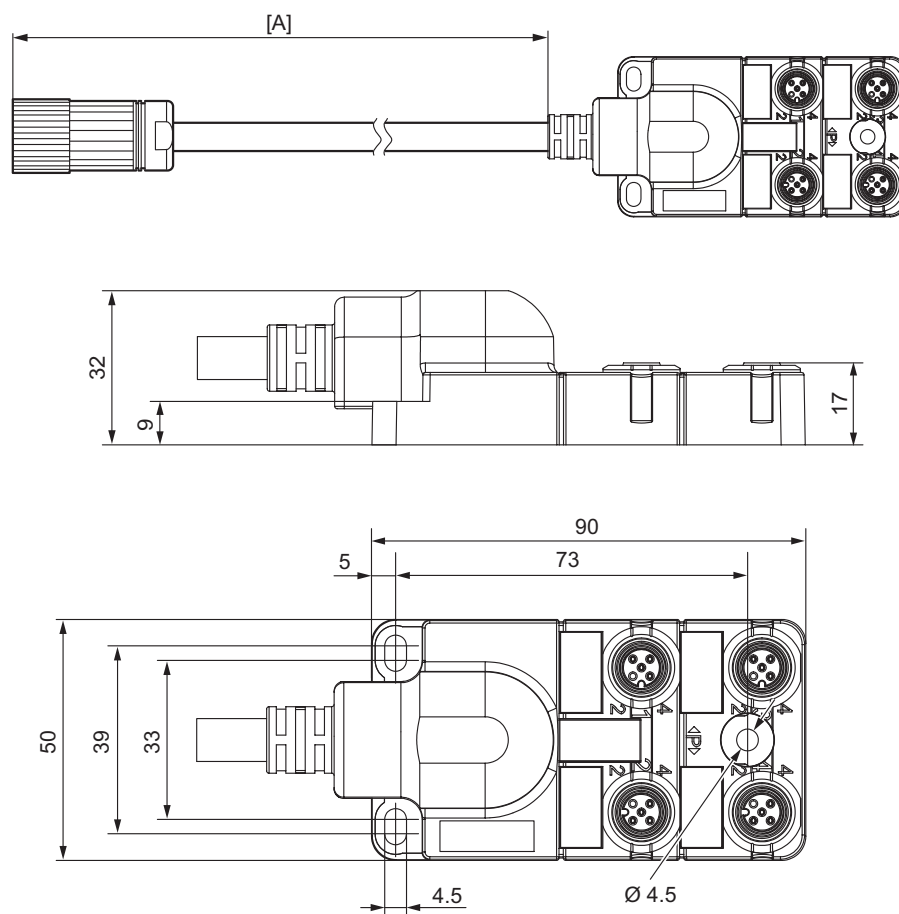
Wiring



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Dimension drawing

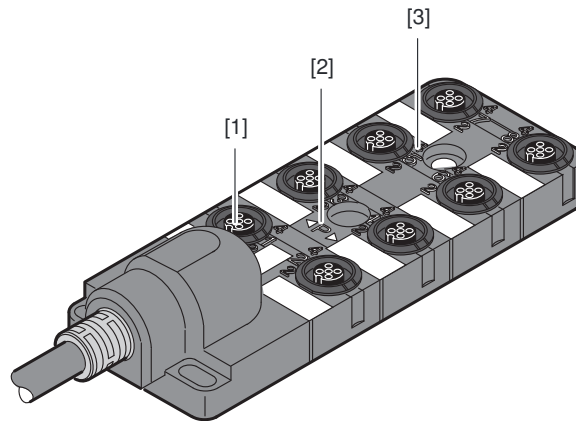
The dimension drawing shows the mechanical dimensions of the sensor/actuator box in mm: ♦



14791723915

[A] = 1 m (sensor/actuator box 18255477)
 = 3 m (sensor/actuator box 18255485)

Design with 8 slots



54043196599307403

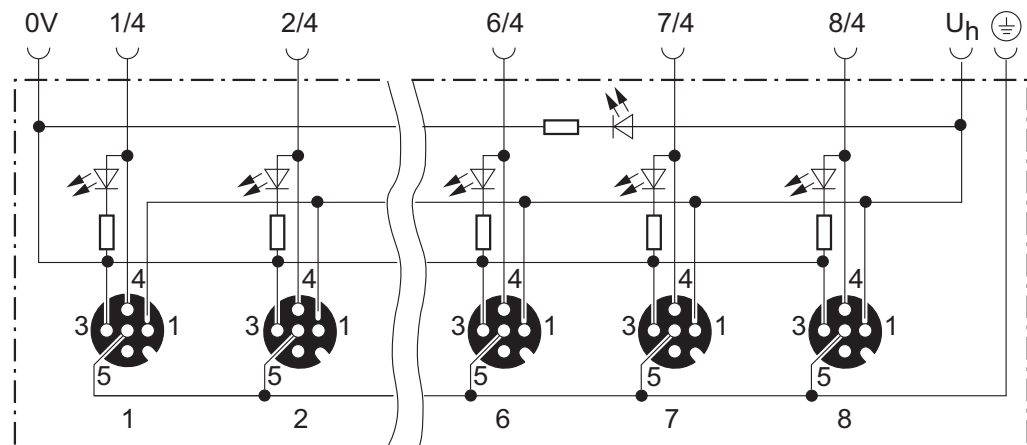
- [1] M12 slot
- [2] Operating display LED
- [3] Display status of inputs/outputs

Sensor/actuator boxes	Part number
Sensor/actuator box 1.0 m (8 connections)	13309269
Sensor/actuator box 2.0 m (8 connections)	13309277
Sensor/actuator box 3.0 m (8 connections)	13309285
Sensor/actuator box 5.0 m (8 connections)	13309293
Sensor/actuator box 10.0 m (8 connections)	13309307

Technical Data

Basic unit		
Nominal voltage	V_N	DC 24 V
Maximum operating voltage	V_{max}	DC 30 V
Current carrying capacity per slot		4 A
in total		8 A
Operating voltage display		Green LED
Status display		Yellow LED (signal 1)
Operating current display elements		≤ 5 mA
Degree of protection		IP65 (with screwed plug connectors)
Connection cable		
Ambient temperature for fixed routing		-30 – +80 °C
for cable carrier		-5 – +70 °C
Cable type		Main cable suitable for cable carriers

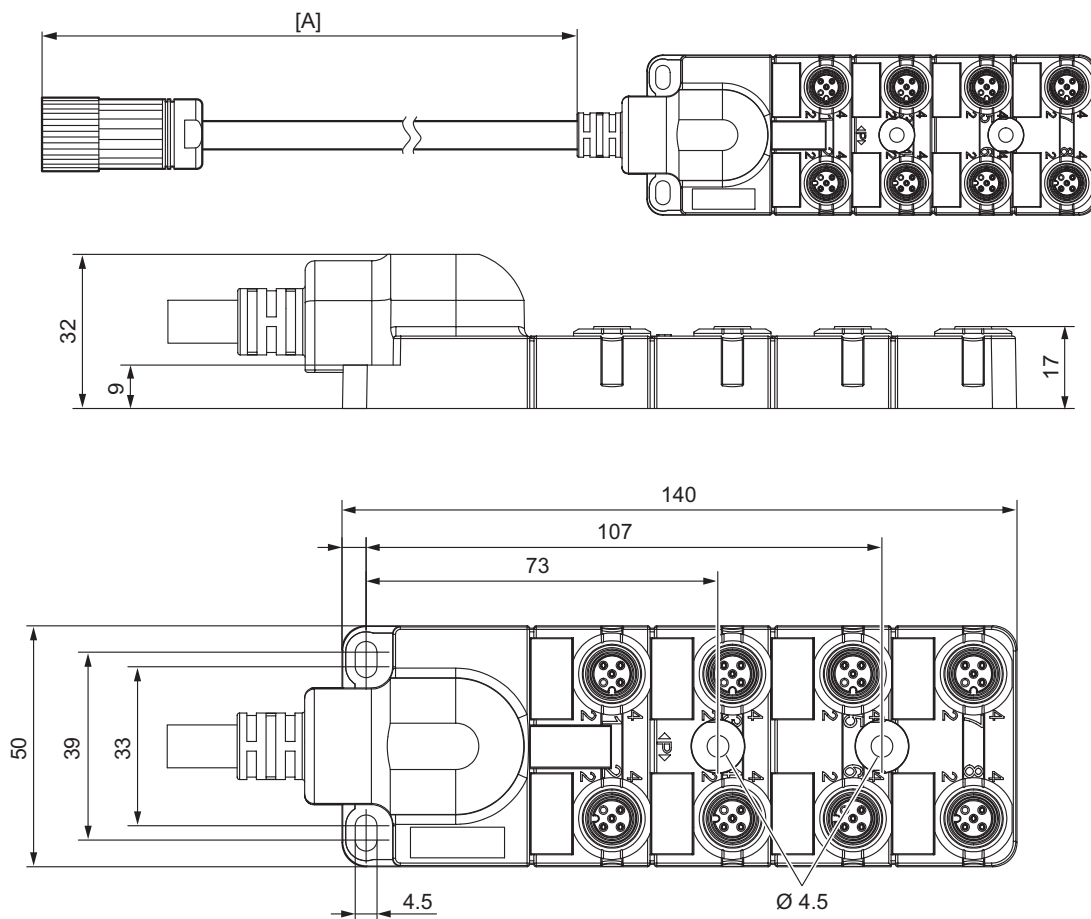
Wiring



9007200469396363

Dimension drawing

The dimension drawing shows the mechanical dimensions of the sensor/actuator box in mm:



18014399580341515

- [A] = 1 m (sensor/actuator box 13309269)
 = 2 m (sensor/actuator box 13309277)
 = 3 m (sensor/actuator box 13309285)
 = 5 m (sensor/actuator box 13309293)
 = 10 m (sensor/actuator box 13309307)

3.13.4 Jumper plug



▲ WARNING

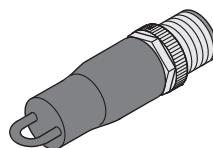
Safe disconnection of the unit is not possible when the jumper plug is used.

Severe or fatal injuries.

- Use the jumper plug only if the unit is not used to perform any safety functions according to DIN EN ISO 13849-1.

The jumper plug can be connected to the X5502 terminal of MOVIPRO®. The jumper plug deactivates the safety functions of the MOVIPRO®. You can use this function, for example, when you want to move a drive in manual mode for test purposes at startup.

The following figure shows the jumper plug, part number 1 174 709 9:

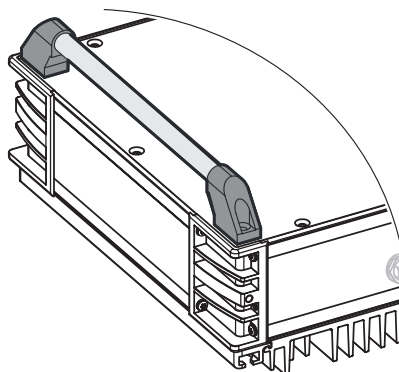


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3.13.5 Mounting accessories

Handles

You can equip the MOVIPRO® with handles for easier handling:



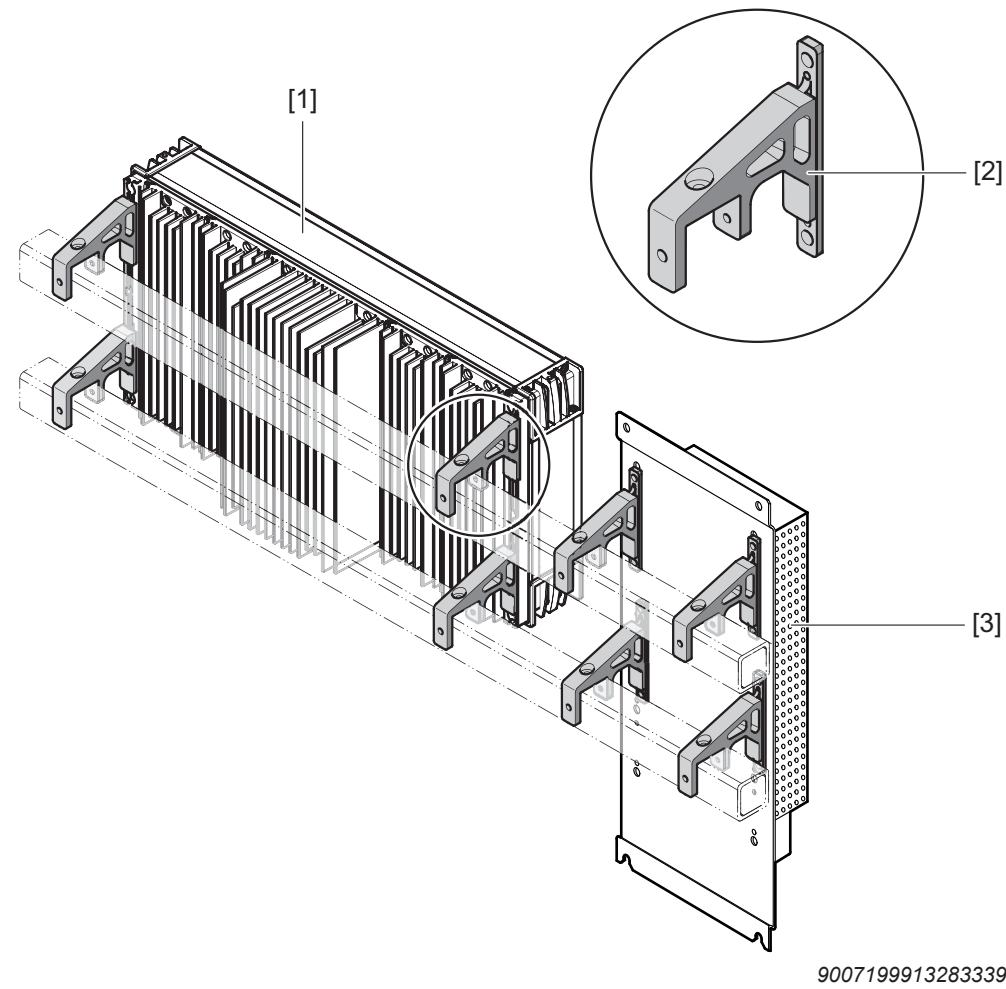
2049840395

The handles are available in two lengths depending on the size of MOVIPRO®:

Handles	Part number	MOVIPRO® housing height
Handle option 270 (2 pieces with 4 retaining screws)	18222781	300 mm
Handle option 390 (2 pieces with 4 retaining screws)	18222803	420 mm

Mounting brackets

You can use mounting brackets to mount the MOVIPRO® and braking resistors safely and easily:



- [1] MOVIPRO®
- [2] Mounting brackets
- [3] Braking resistor

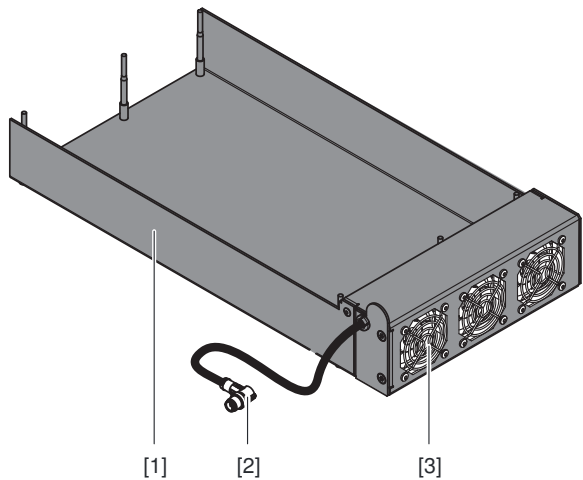
	Mounting brackets	Part number
MOVIPRO®	Mounting bracket kit, large (4 pieces)	12708305
Braking resistors: BW050-008-01 BW033-012-01 BW017-024-02	Mounting bracket kit, BW (4 pieces)	18229689

3.13.6 Fan

The fan subassembly is connected to the MOVIPRO® externally. The fans are controlled automatically depending on the temperature. The fans are encapsulated, and their degree of protection is IP54.

The fan subassembly is mandatory for MOVIPRO® units with a power rating of 15.0 kW and higher; it is included automatically in the configuration here. For units with 11.0 kW, you can select the fan subassembly as an option.

The following figure shows the fan subassembly:



45035996953718155

- [1] Air baffle
- [2] Connection cable
- [3] Axial fan

	Part number
Fan subassembly	12709700

3.14 Connection cables

INFORMATION



For more detailed information regarding the cable types, refer to the "Technical data" chapter.

Connection cables are not included in the delivery.

Pre-fabricated cables for connecting SEW-EURODRIVE components can be ordered. For each connection, the available prefabricated cables are listed. Specify the part number and length of the required cable in your order.

The number and design of the required connection cables depend on the unit variant and the components to be connected. This is why you do not need all listed cables.

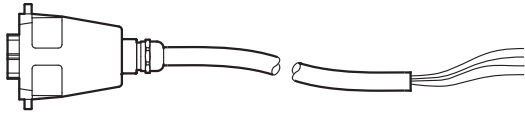
3.14.1 Cable types

The table below shows the depiction and what they mean:

Depiction	Meaning
	Set length
	Variable length
	Suitable for cable carriers
	Not suitable for cable carriers

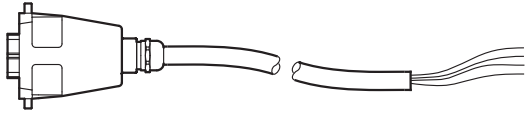
3.14.2 Connection cable for AC 400 V/DC 24 V supply

Up to 7.5 kW (IEC/UL)

Cable	Length/installation type	Component
Part number: 18131433 Cable design: 4G2.5  Han® Q 4/2 ↔ Open with conductor end sleeves	Variable length 	—

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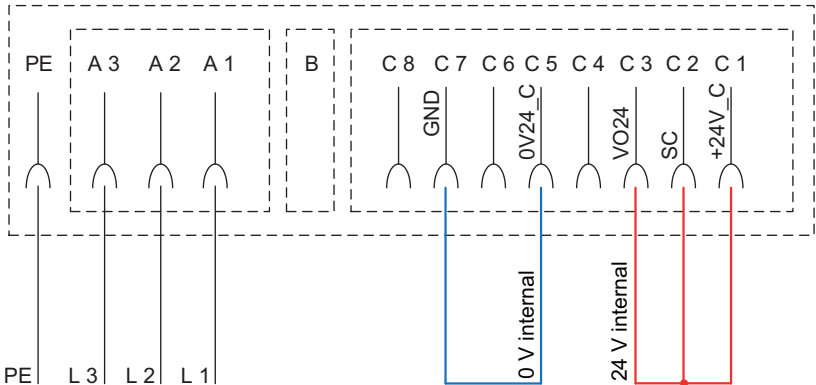
11 kW up to 15 kW (IEC/UL)

Cable	Length/installation type	Component
Part number: 18131468 Cable design: 4G6.0  Han® Q 4/2 ↔ Open with conductor end sleeves	Variable length 	—
Part number: 18174183 Cable design: 4G6.0  Han® Q 4/2 ↔ Open with conductor end sleeves	Variable length 	—

Wiring diagram

The figure shows the wiring diagram of the connection cables with the following part numbers:

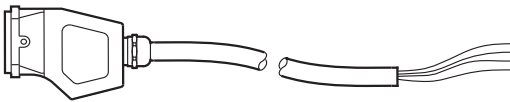
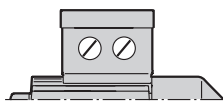
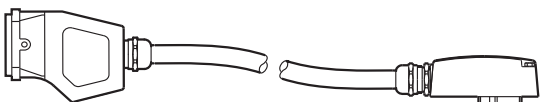
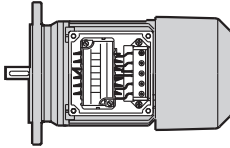
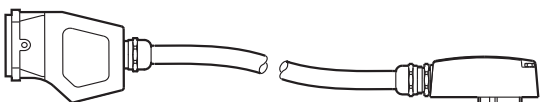
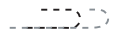
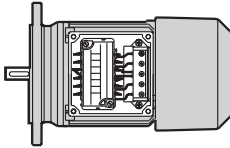
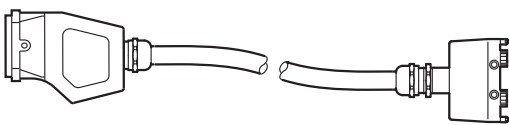
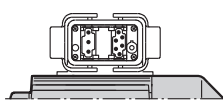
- 18131433
- 18311468
- 18174183

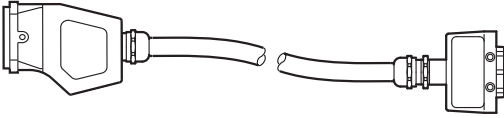
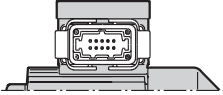
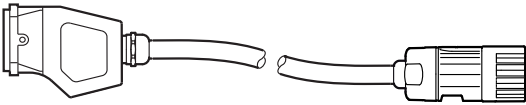
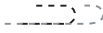
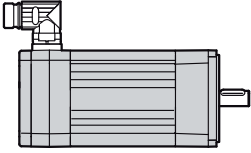


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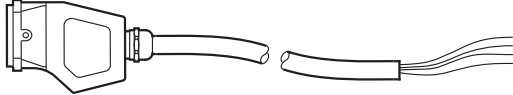
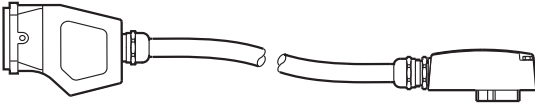
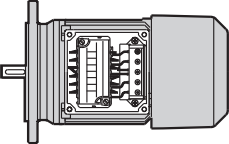
3.14.3 Connection cable for asynchronous and synchronous servomotors

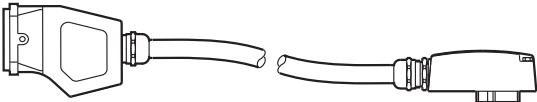
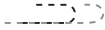
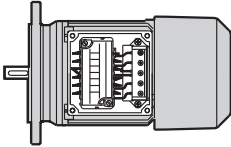
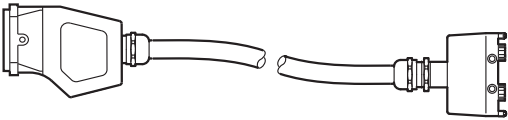
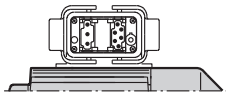
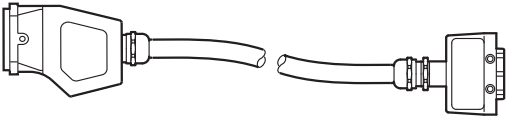
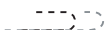
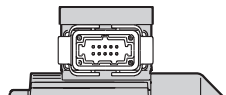
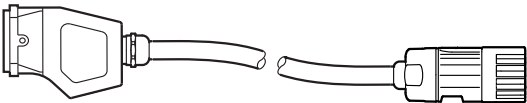
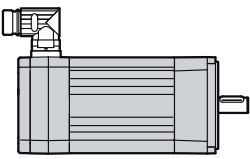
Up to 2.2 kW (IEC)

Cable	Length/installation type	Type	Component
Part number: 18125794  Han® Q 8/0 ↔ open (terminal box connection M4)	Variable length 	D/1.5	DRS71 – 90L DRE80 – 100 DRP90 – 100 DRN80 – 100 DRL71 – 80 
Part number: 18127703 人  Han® Q 8/0 ↔ IS 人	Variable length 	D/1.5	DRS71 – 90人 DRE80 – 100人 DRP90 – 100人 DRN80 – 100人 DRL71 – 80人 
Part number: 18127681 △  Han® Q 8/0 ↔ IS △	Variable length 	D/1.5	DRS71 – 90△ DRE80 – 100△ DRP90 – 100△ DRN80 – 100△ DRL71 – 80△ 
Part number: 18127711  Han® Q 8/0 ↔ ABB8	Variable length 	D/1.5	DRS71 – 90 DRE80 – 100 DRP90 – 100 DRN80 – 100 DRL71 – 80 

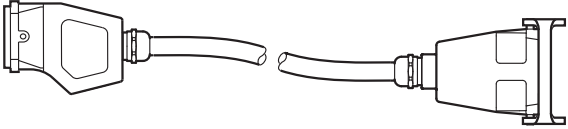
Cable	Length/installation type	Type	Component
Part number: 18127738  Han® Q 8/0 ↔ ASB8	Variable length 	D/1.5	DRS71 – 90 DRE80 – 100 DRP90 – 100 DRN80 – 100 DRL71 – 80 
Part number: 18125859  Han® Q 8/0 ↔ SB11	Variable length 	E/1.5	CMP63 – 80 

Up to 2.2 KW (IEC / UL)

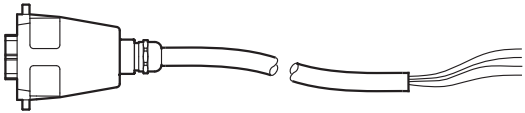
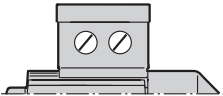
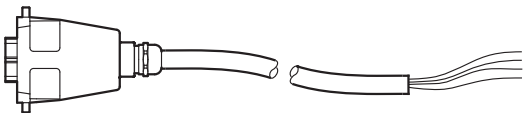
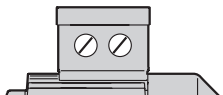
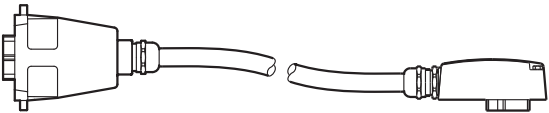
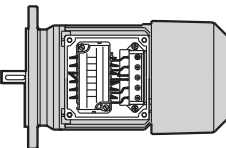
Cable	Length/installation type	Type	Component
Part number: 18143776  Han®Q 8/0 ↔ open (terminal box connection M4)	Variable length 	D/2.5	DRS71 – 90 DRE80 – 100 DRP90 – 100 DRN80 – 100 DRL71 – 80 
Part number: 18145949 人  Han® Q 8/0 ↔ IS 人	Variable length 	D/2.5	DRS71 – 90人 DRE80 – 100人 DRP90 – 100人 DRN80 – 100人 DRL71 – 80人 

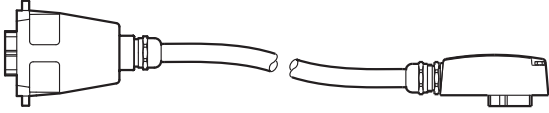
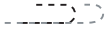
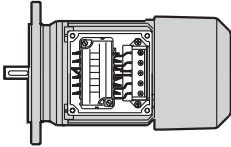
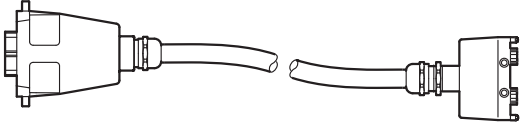
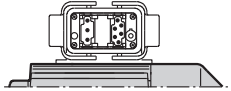
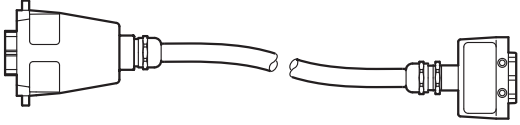
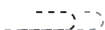
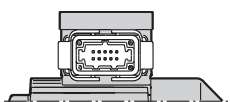
Cable	Length/installation type	Type	Component
Part number: 18144284 Δ  Han® Q 8/0 $\leftrightarrow$ IS Δ	Variable length 	D/2.5	DRS71 – 90 Δ DRE80 – 100 Δ DRP90 Δ DRN80 – 100 Δ DRL71 – 80 Δ 
Part number: 18174442  Han® Q 8/0 $\leftrightarrow$ ABB8	Variable length 	D/2.5	DRS71 – 90 DRE80 – 100 DRP90 – 100 DRN80 – 100 DRL71 – 80 
Part number: 18174434  Han® Q 8/0 $\leftrightarrow$ ASB8	Variable length 	D/2.5	DRS71 – 90 DRE80 – 100 DRP90 – 100 DRN80 – 100 DRL71 – 80 
Part number: 18174450  Han® Q 8/0 $\leftrightarrow$ SB11	Variable length 	E/2.5	CMP63 – 80 

Adapter cable up to 2.2 kW

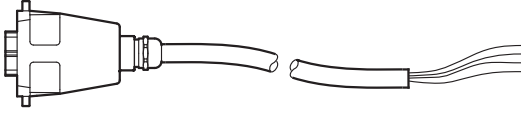
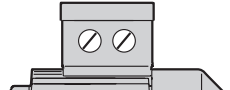
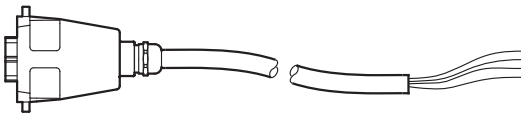
Cable	Length/installation type	Type	Component
Part number: 18161243  Han® Q 8/0 ↔ Han® 6 B	Variable length 	D/2.5	All connection cables with Han® 6B Note the motor assignments to the device (2.2 kW).

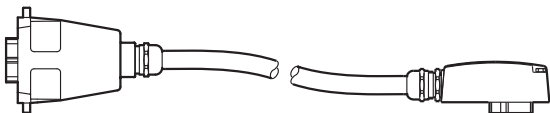
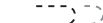
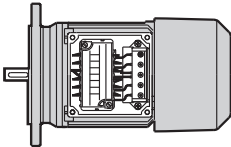
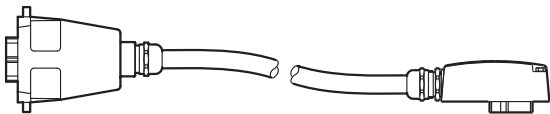
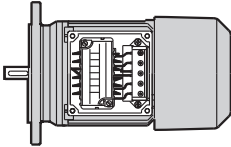
4,0 kW (IEC)

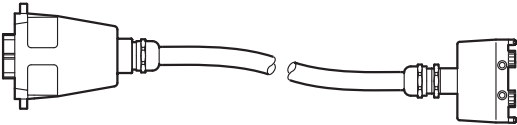
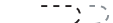
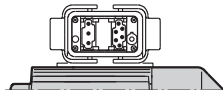
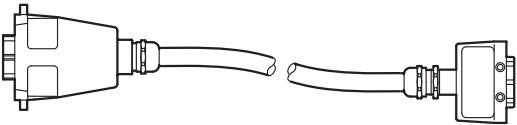
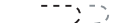
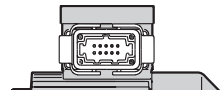
Cable	Length/installation type	Type	Component
Part number: 18118135  Han® 6 B ↔ Open (terminal box connection M4)	Variable length 	D/1.5	DRS71 – 100 DRE80 – 100 DRP90 – 100 DRN80 – 100 DRL71 – 100 
Part number: 18118143  Han® 6 B ↔ Open (terminal box connection M5)	Variable length 	D/1.5	DRS112 DRE112 – 132 DRP112 – 132 DRN112 DRL112 – 132 
Part number: 18118178 人  Han® 6 B ↔ IS 人	Variable length 	D/1.5	DRS71 – 112 人 DRE80 – 132 人 DRP90 – 132 人 DRN80 – 132 人 DRL71 – 132 人 

Cable	Length/installation type	Type	Component
Part number: 18118151   Han® 6 B ↔ IS 	Variable length 	D/1.5	DRS71 – 132  DRE80 – 132  DRP90 – 132  DRN80 – 132  DRL71 – 132  
Part number: 18118186  Han® 6 B ↔ ABB8	Variable length 	D/1.5	DRS71 – 112 DRE80 – 132 DRP90 – 132 DRN80 – 112 DRL71 – 132 
Part number: 18118194  Han® 6 B ↔ ASB8	Variable length 	D/1.5	DRS71 – 112 DRE80 – 132 DRP90 – 132 DRN80 – 112 DRL71 – 132 

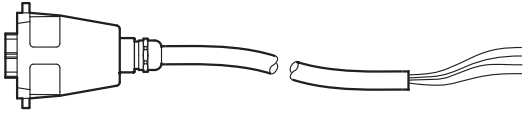
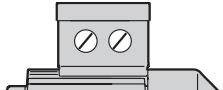
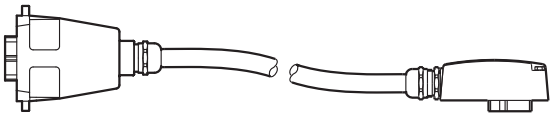
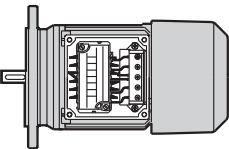
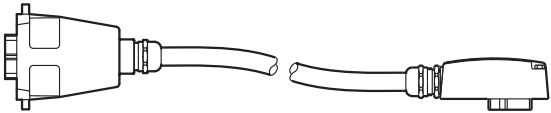
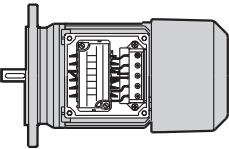
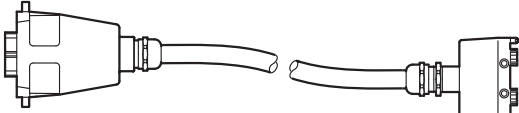
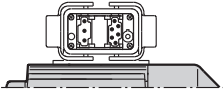
4.0 kW (IEC/UL) – 7.5 kW (IEC)

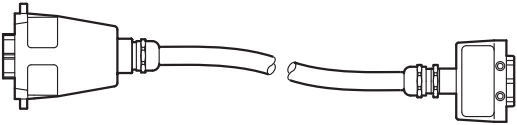
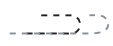
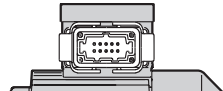
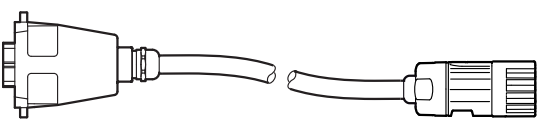
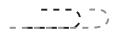
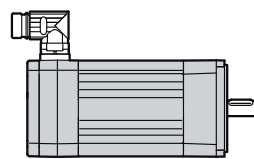
Cable	Length/installation type	Type	Component
Part number: 18108334  Han® 6 B ↔ Open (terminal box connection M4)	Variable length 	D/2.5	4.0 kW (IEC/UL): DRS71 – 100 DRE80 – 100 DRP90 – 100 DRN80 – 100 DRL71 – 100 7.5 kW (IEC): DRS71 – 100 DRE80 – 100 DRP90 – 100 DRN80 – 100 DRL71 – 90 
Part number: 18108342  Han® 6 B ↔ Open (terminal box connection M5)	Variable length 	D/2.5	4.0 kW (IEC/UL): DRS112 DRE112 – 132 DRP112 – 132 DRN112 DRL71 – 100 7.5 kW (IEC/UL): DRS71 – 132 DRE80 – 132 DRP90 – 132 DRN80 – 132 DRL71 – 90 

Cable	Length/installation type	Type	Component
Part number: 18108326 人  Han® 6 B ↔ IS 人	Variable length 	D/2.5	4.0 kW (IEC/UL): DRS71 – 112 人 DRE80 – 132 人 DRP90 – 132 人 DRN80 – 112 人 DRL71 – 100 人 7.5 kW (IEC): DRS71 – 132 人 DRE80 – 160 人 DRP90 – 160 人 DRN80 – 132 人 DRL71 – 90 人 
Part number: 18108318 △  Han® 6 B ↔ IS △	Variable length 	D/2.5	4.0 kW (IEC/UL): DRS71 – 112 △ DRE80 – 132 △ DRP90 – 132 △ DRN80 – 112 △ DRL71 – 100 △ 7.5 kW (IEC): DRS71 – 132 △ DRE80 – 160 △ DRP90 – 160 △ DRN80 – 132 △ DRL71 – 90 △ 

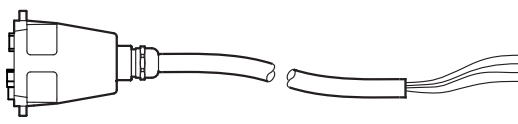
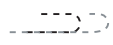
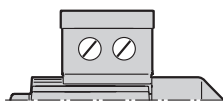
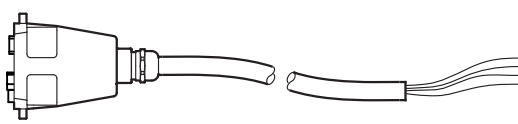
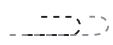
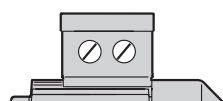
Cable	Length/installation type	Type	Component
Part number: 18108245  Han® 6 B ↔ ABB8	Variable length 	D/2.5	4.0 kW (IEC/UL): DRS71 – 112 DRE80 – 132 DRP90 – 132 DRN80 – 112 DRL71 – 100 7.5 kW (IEC): DRS71 – 132 DRE80 – 160 DRP90 – 160 DRN80 – 132 DRL71 – 90 
Part number: 18108202  Han® 6 B ↔ ASB8	Variable length 	D/2.5	4.0 kW (IEC/UL): DRS71 – 112 DRE80 – 132 DRP90 – 132 DRN80 – 112 DRL71 – 100 7.5 kW (IEC): DRS71 – 132 DRE80 – 160 DRP90 – 160 DRN80 – 132 DRL71 – 90 

7.5 kW (IEC/UL)

Cable	Length/installation type	Type	Component
Part number: 18120601  Han® 6 B ↔ Open (terminal box connection M5)	Variable length 	D/4.0	DRS112 – 132 DRE112 – 132 DRP112 – 132 DRN112 – 132 DRL112 – 132 
Part number: 18121284 ∟  Han® 6 B ↔ IS ∟	Variable length 	D/4.0	DRS71 – 132 ∟ DRE80 – 160 ∟ DRP90 – 160 ∟ DRN80 – 132 ∟ DRL71 – 90 ∟ 
Part number: 18121276 △  Han® 6 B ↔ IS △	Variable length 	D/4.0	DRS71 – 132 △ DRE80 – 160 △ DRP90 – 160 △ DRN80 – 132 △ DRL71 – 90 △ 
Part number: 18120628  Han® 6 B ↔ ABB8	Variable length 	D/4.0	DRS71 – 132 DRE80 – 160 DRP90 – 160M DRN80 – 132 DRL71 – 90 

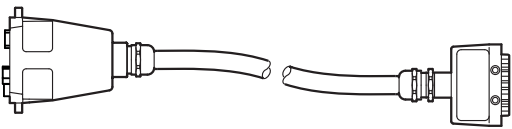
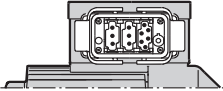
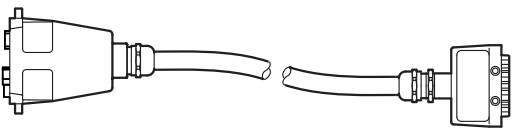
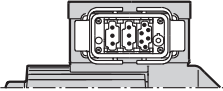
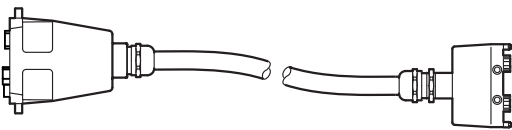
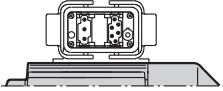
Cable	Length/installation type	Type	Component
Part number: 18120636  Han® 6 B ↔ ASB8	Variable length 	D/4.0	DRS71 – 132 DRE80 – 160 DRP90 – 160 DRN80 – 132 DRL71 – 90 
Part number: 18122035  Han® 6 B ↔ SB14	Variable length 	E/4.0	CMP63 – 100 

11.0 kW (IEC/UL)

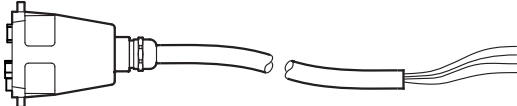
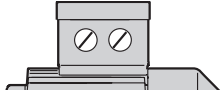
Cable	Length/installation type	Type	Component
Part number: 18110452  Han® 10 B ↔ Open (terminal box connection M5)	Variable length 	D/6.0	DRS112 – 132 DRE112 – 132 DRP112 – 132 DRN112 – 132 DRL112 – 132 
Part number: 18110479  Han® 10 B ↔ Open (terminal box connection M6)	Variable length 	D/6.0	DRS160 DRE160 DRP160 DRN160 DRL160 

3 MOVIPRO® SDC/ADC

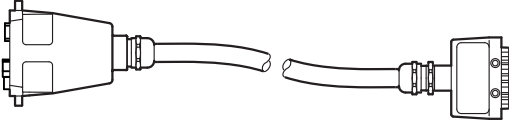
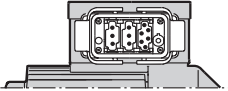
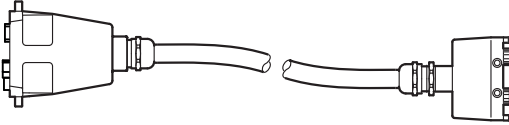
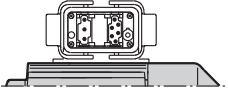
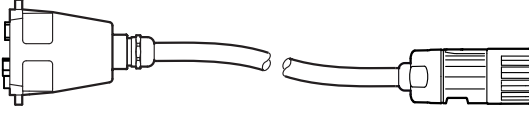
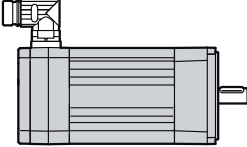
Connection cables

Cable	Length/installation type	Type	Component
Part number: 18123562   Han® 10 B ↔ ADB2 	Variable length 	D/6.0	DRS160  DRE180  DRP180  DRN160  DRL160  
Part number: 18123570   Han® 10 B ↔ ADB2 	Variable length 	D/6.0	DRS160  DRE180  DRP180  DRN160  DRL160  
Part number: 18110436  Han® 10 B ↔ ABB8	Variable length 	D/6.0	DRS160 DRE180 DRP180 DRN160 DRL160 

11.0 kW (IEC/UL) up to 15.0 kW (IEC/UL)

Cable	Length/installation type	Type	Component
Part number: 18121985  Han® 10 B ↔ Open (terminal box connection M6)	Variable length 	D/10.0	DRS180 DRE180 DRP180 DRN160 DRL180 

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Cable	Length/installation type	Type	Component
Part number: 18123589 人  Han® 10 B ↔ ADB2 人	Variable length 	D/10.0	DRS180人 DRE180人 DRP180人 DRN160人 DRL180人 
Part number: 18118208  Han® 10 B ↔ ABB8	Variable length 	D/10.0	DRS180 DRE180 DRP180 DRN160 DRL180 
Part number: 18110533  Han® 10 B ↔ SBB6	Variable length 	E/6.0	CMP80 – 100 

Phase reversal cable

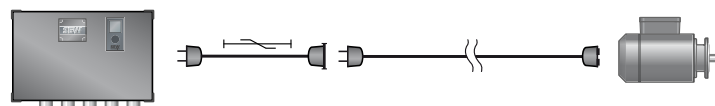
The phase reversal cables are available with a length of 1 m. You need these cables if you are already using a motor cable and only want to reverse the phases. The additional phase reversal cable is connected to MOVIPRO® and the motor cable.

INFORMATION

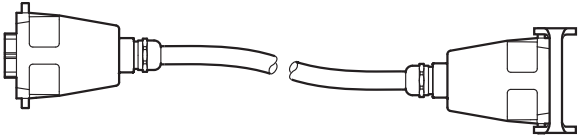


If you are using an encoder, note that you also need an encoder signal reversal cable in addition to the phase reversal cable. For more information about encoder signal reversal cables, refer to the description of the encoder connection cable.

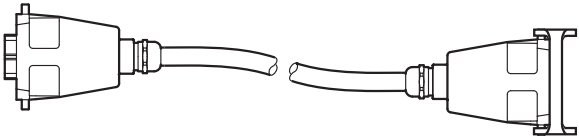
Function:



4.0 kW (IEC/UL) – 7.5 kW (IEC)

Cable	Length/installation type	Type	Wiring diagram
Part number: 18113737  Han® 6 B ↔ Han® 6 B	Fixed length 	D/2.5	U1 – V1 V1 – U1 W1 – W1 13 – 13 14 – 14 15 – 15 TF+ – TF+ TF- – TF-

4.0 kW (IEC/UL) – 7.5 kW (IEC/UL)

Cable	Length/installation type	Type	Wiring diagram
Part number: 18122000  Han® 6 B ↔ Han® 6 B	Fixed length 	D/6.0	U1 – V1 V1 – U1 W1 – W1 13 – 13 14 – 14 15 – 15 TF+ – TF+ TF- – TF-

11.0 kW (IEC/UL)

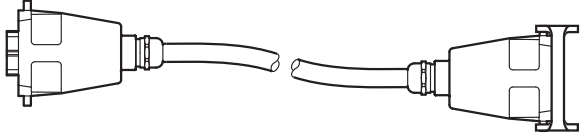
Cable	Length/installation type	Type	Wiring diagram
Part number: 18119638  Han® 10 B ↔ Han® 10 B	Fixed length 	D/6.0	U1 – V1 V1 – U1 W1 – W1 13 – 13 14 – 14 15 – 15 TF+ – TF+ TF- – TF-

15.0 kW (IEC/UL)

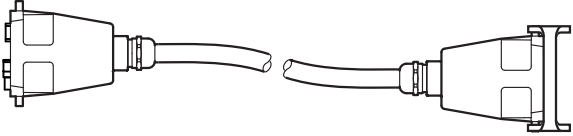
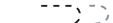
Cable	Length/installation type	Type	Wiring diagram
Part number: 18113745  Han® 10 B ↔ Han® 10 B	Fixed length 	D/10.0	U1 – V1 V1 – U1 W1 – W1 13 – 13 14 – 14 15 – 15 TF+ – TF+ TF- – TF-

Extension cable

4.0 kW (IEC/UL) – 7.5 kW (IEC/UL)

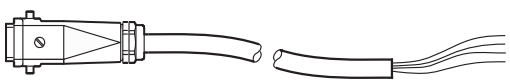
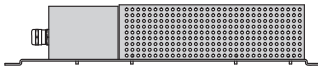
Cable	Length/installation type	Type	Component
Part number: 18157475  Han® 6 B ↔ Han® 6 B	Variable length 	D/6.0	Connection cables: 18108202 18108245 18108318 18108326 18108334 18108342 18110525 18118135 18118143 18118151 18118178 18118186 18118194 18120601 18120628 18120636 18121276 18121284 18122027 18122035

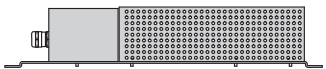
11.0 kW (IEC/UL) – 15.0 kW (IEC)

Cable	Length/installation type	Type	Component
Part number: 18164226  Han® 10 B ↔ Han® 10 B	Variable length 	D/6.0	Connection cables: 18110436 18110533 18110452 18110479 18118208 18121985 18122051 18123562 18123570 18123589

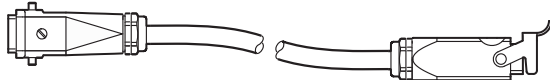
3.14.4 Connection cables for braking resistors

The following table shows the connection cables available for braking resistors:

Cable	Length/installation type	Component
Part number: 18166563 (replacement for 11722916) Cable design: (3G2.5) Core cross section: 2.5 mm ²  Han®Q 5/0 ↔ Open with conductor end sleeves	Variable length 	External braking resistor  Terminal cross section 6 mm ²
Part number: 18166571 (replacement for 18121969) Cable design: (3G2.5) Core cross section: 2.5 mm ²  Han®Q 2/0 ↔ Open with conductor end sleeves	Variable length 	External braking resistor  Terminal cross section: 6 mm ²

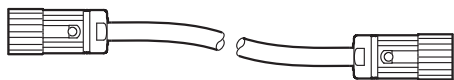
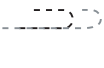
Cable	Length/installation type	Component
Part number: 18166598 (replacement for 18121977) Cable design: (3G6.0) Core cross section: 6 mm ²  Han® Q 2/0 ↔ Open with conductor end sleeves	Variable length 	External braking resistor  Terminal cross section: 6 mm ²

Extension cable

Cable	Length/installation type	Component
Part number: 18121349 Cable design: (3G2.5) Core cross section: 2.5 mm ²  Han® Q 5/0 ↔ Han® Q 5/0	Variable length 	Connection cable 18166563

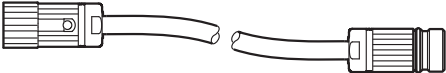
3.14.5 Connection cables for encoders

Motor encoder (resolver)

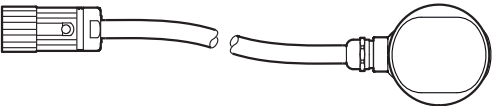
Cable	Length/installation type	Component
Part number: 11724927 Cable design: (4X2X0.25)  M23, 12-pole, 20°-coded ↔ M23, 12-pole, 0°-coded	Variable length 	Resolver RH1M, RH1L

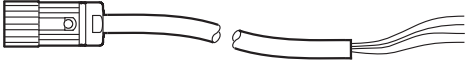
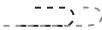
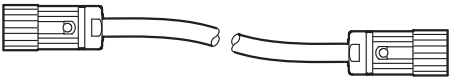
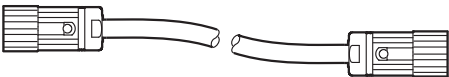
Cable	Length/installation type	Component
Part number: 11726431 Cable design: (4X2X0.25)  M23, 12-pole, 20°-coded ↔ Open with conductor end sleeves	Variable length 	Resolver RH1M, RH1L

Extension cable

Cable	Length/installation type	Component
Part number: 18156851 Cable design: (6X2X0.25)  M23, 12-pole, 20°-coded ↔ M23, 12-pole, 20°-coded	Variable length 	Connection cables: 11724927 11726431 18110991 18121438 18121446 18121454 18121926 18121934 18121942 18121950

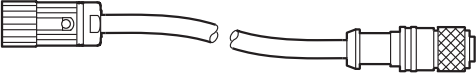
Motor encoder (HIPERFACE®, sin/cos, TTL, HTL, RS422)

Cable	Length/installation type	Component
Part number: 18110991 (without temperature sensor) Cable design: (6X2X0.25)  M23, 12-pole, 20°-coded ↔ encoder cover	Variable length 	• A.7W • E.7C • E.7R • E.7S

Cable	Length/installation type	Component
Part number: 18121438 (without temperature sensor) Cable design: (6X2X0.25)  M23, 12-pin, 20°-coded ↔ Open with conductor end sleeves	Variable length 	• A.7W • AG7Y • AS7Y • E.7C • E.7R • E.7S • EH1. • EI7. • EV1. • ES1. • ES2.
Part number: 18121446 (with temperature sensor) Cable design: (6X2X0.25)  M23, 12-pin, 20°-coded ↔ Open with conductor end sleeves	Variable length 	• AK1H • EK1H • ES1H • AS1H
Part number: 18121454 (with temperature sensor) Cable design: (6X2X0.25)  M23, 12-pin, 20°-coded ↔ M23, 12-pin, 0°-coded	Variable length 	• AK0H • AK1H • AS1H • EK0H • EK1H • ES1H
Part number: 18121926 (without temperature sensor) Cable design: (6X2X0.25)  M23, 12-pin, 20°-coded ↔ M23, 12-pin, 0°-coded	Variable length 	• AS3H • AS4H • AV1H • AV6H

3 MOVIPRO® SDC/ADC

Connection cables

Cable	Length/installation type	Component
Part number: 18121950 (without temperature sensor) Cable design: (4X2X0.25)  M23, 12-pin, 20°-coded ↔ M12, 8-pin	Variable length 	• EI7.

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Encoder signal reversal cable for motor encoders (sin/cos, TTL, HTL, RS422)

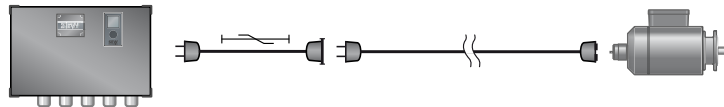
INFORMATION

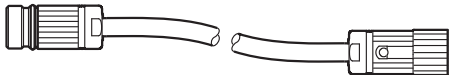


An additional encoder signal reversal cable is only necessary if you are using a phase reversal cable.

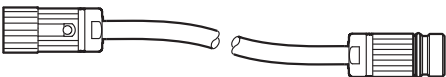
The encoder signal reversal cable is available with flexible length. You need this cable if you are already using a phase reversal cable for a motor with motor encoder. The encoder signal reversal cable is connected to MOVIPRO® and the motor encoder cable.

Function:



Cable	Length/installation type	Component
Part number: 18114806 (not suitable for HIPERFACE® encoders) Cable design: (6X2X0.25)  M23, 12-pole, 20°-coded ↔ M23, 12-pole, 20°-coded	Variable length 	• E..T • E..C • E..S • E..R

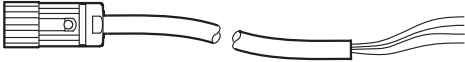
Extension cable

Cable	Length/installation type	Component
Part number: 18156851 Cable design: (6X2X0.25)  M23, 12-pole, 20°-coded ↔ M23, 12-pole, 20°-coded	Variable length 	Connection cables: 11724927 11726431 18110991 18121438 18121446 18121454 18121926 18121934 18121942 18121950

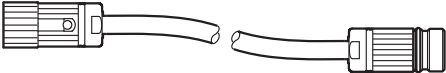
Distance encoder (CANopen)

Cable	Length/installation type	Component
Length 1 m: Part number: 13237748 Length 1.5 m: Part number: 13286293 Length 2 m: Part number: 13287756 Length 2.5 m: Part number: 13286307 Length 3 m: Part number: 13286315 Length 4 m: Part number: 13286323 Length 5 m: Part number: 13286331 Length 10 m: Part number: 13286358 Length 15 m: Part number: 13286366 Cable design: ((1X2X0.2)+(1X2X0.32)+1X0.32)  M12, male, A-coded ↔ M12, female, A-coded	Fixed length 	Sick DME4000, TR CE58M, TR LE200, WCS3(B)-LS410
Length 1 m: Part number: 13281348 Length 1.5 m: Part number: 13281356 Length 2 m: Part number: 13281364 Length 2.5 m: Part number: 13281372 Length 3 m: Part number: 13281380 Length 4 m: Part number: 13281399 Length 5 m: Part number: 13281402 Length 10 m: Part number: 13281410 Length 15 m: Part number: 13281429 Cable design: ((1X2X0.2)+(1X2X0.32)+1X0.32)  M12, male, A-coded ↔ Open	Fixed length 	Sick DME4000, TR CE58M, TR LE200, WCS3(B)-LS410

Multi-distance encoder (HIPERFACE®, SSI, Sin/Cos, TTL, HTL, RS422)

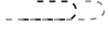
Cable	Length/installation type	Component
Part number: 18121934 Cable design: (6X2X0.25)  M23, 12-pin, 20°-coded ↔ Open with conductor end sleeves	Variable length 	HIPERFACE®/SSI encoder (12 V)
Part number: 18121942 Cable design: (6X2X0.25)  M23, 12-pin, 20°-coded ↔ Open with conductor end sleeves	Variable length 	HIPERFACE®/SSI encoder (24 V)

Extension cable

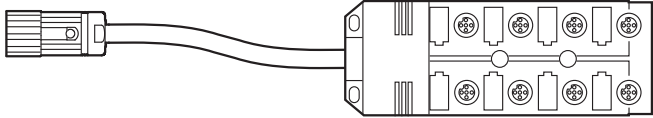
Cable	Length/installation type	Component
Part number: 18156851 Cable design: (6X2X0.25)  M23, 12-pole, 20°-coded ↔ M23, 12-pole, 20°-coded	Variable length 	Connection cables: 11724927 11726431 18110991 18121438 18121446 18121454 18121926 18121934 18121942 18121950

3.14.6 Connection cables for the CAN interface

The following table shows the cables for connecting external components to the CAN interface:

Cable	Length/installation type	Component
Standard lengths: 1 m: Part number: 13237748 2 m: Part number: 13237756 3 m: Part number: 13286315 4 m: Part number: 13286323 5 m: Part number: 13286331 10 m: Part number: 13286358 15 m: Part number: 13286366 Custom lengths: 1.5 m: Part number: 13286293 2.5 m: Part number: 13286307 Cable design: ((1X2X0.2)+(1X2X0.32)+1X0.32)  M12, male, A-coded ↔ M12, female, A-coded	Fixed length 	—
Standard lengths: 2 m: Part number: 13281364 5 m: Part number: 13281402 Custom lengths: 1 m: Part number: 13281348 1.5 m: Part number: 13281356 2.5 m: Part number: 13281372 3 m: Part number: 13281380 4 m: Part number: 13281399 10 m: Part number: 13281410 15 m: Part number: 13281429 Cable design: ((1X2X0.2)+(1X2X0.32)+1X0.32)  M12, male, A-coded ↔ Open	Fixed length 	—

3.14.7 Connection cables for digital inputs and outputs

Cable	Length/installation type	Component
Length 1 m: Part number: 18255477 Length 3 m: Part number: 18255485 Cable design: (3X0.75+8X0.34)  M23, 12-pole, male, 0°-coded ↔ sensor/actuator box with 4 slots M12	Fixed length 	—
Length 1 m: Part number 13309269 Length 2 m: Part number 13309277 Length 3 m: Part number 13309285 Length 5 m: Part number 13309293 Length 10 m: Part number 13309307 Cable design: (3X0.75+8X0.34)  M23, 12-pin, male, 0°-coded ↔ sensor/actuator box with 8 slots M12	Fixed length 	—
Part number: 11741457 Cable design: (6X2X0.25)  M23, 12-pin, male, 0°-coded ↔ Open with conductor end sleeves	Variable length 	—

Extension cable

The following extension cable is available for the sensor/actuator box:

Cable	Length/installation type
Part number: 18123465 Cable design: (6X2X0.25)  M23, 12-pole, male, 0°-coded (1:1 assignment) ↔ M23, 12-pole, female, 0°-coded	Variable length 

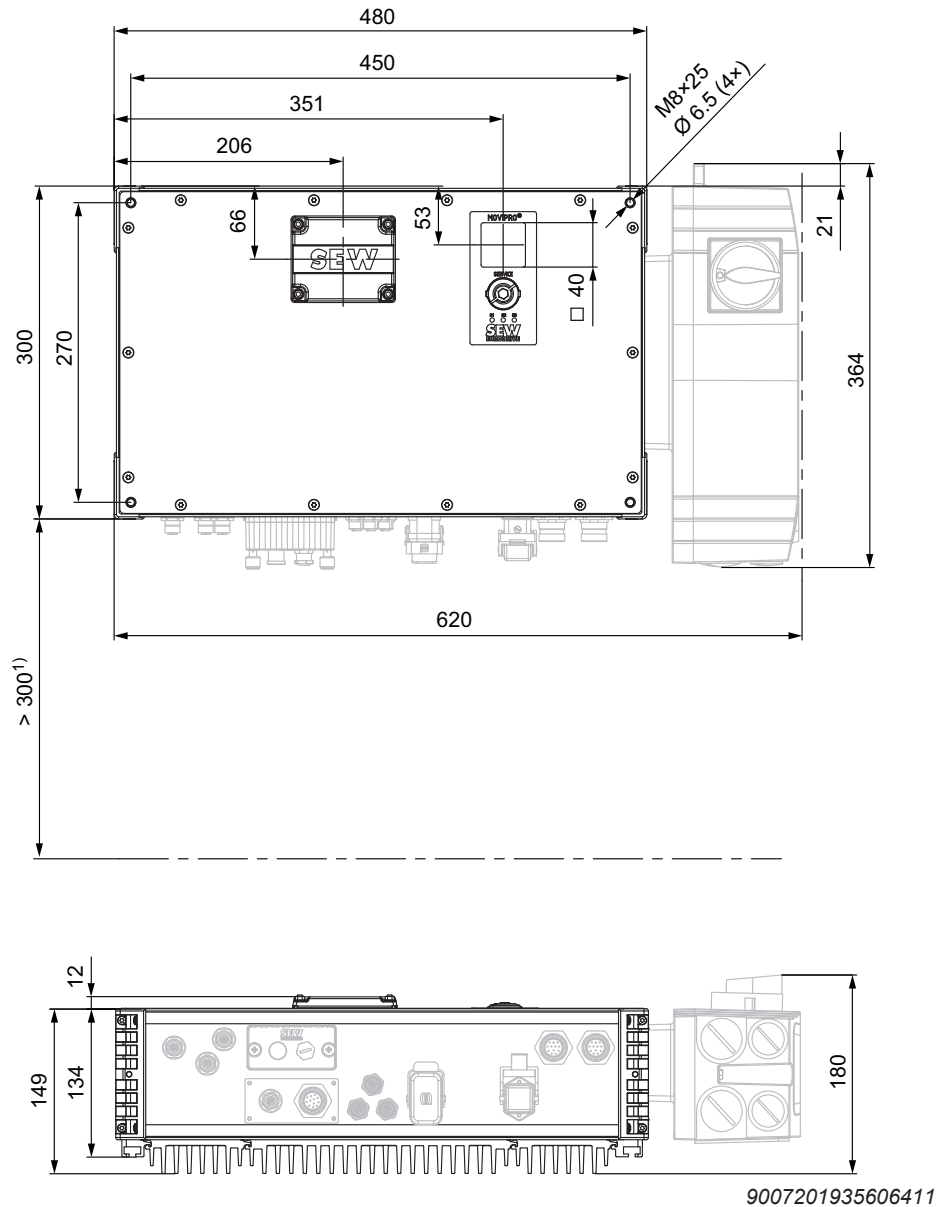
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3.15 Dimension drawings

3.15.1 MOVIPRO® SDC/ADC

2.2 kW (Size 0)

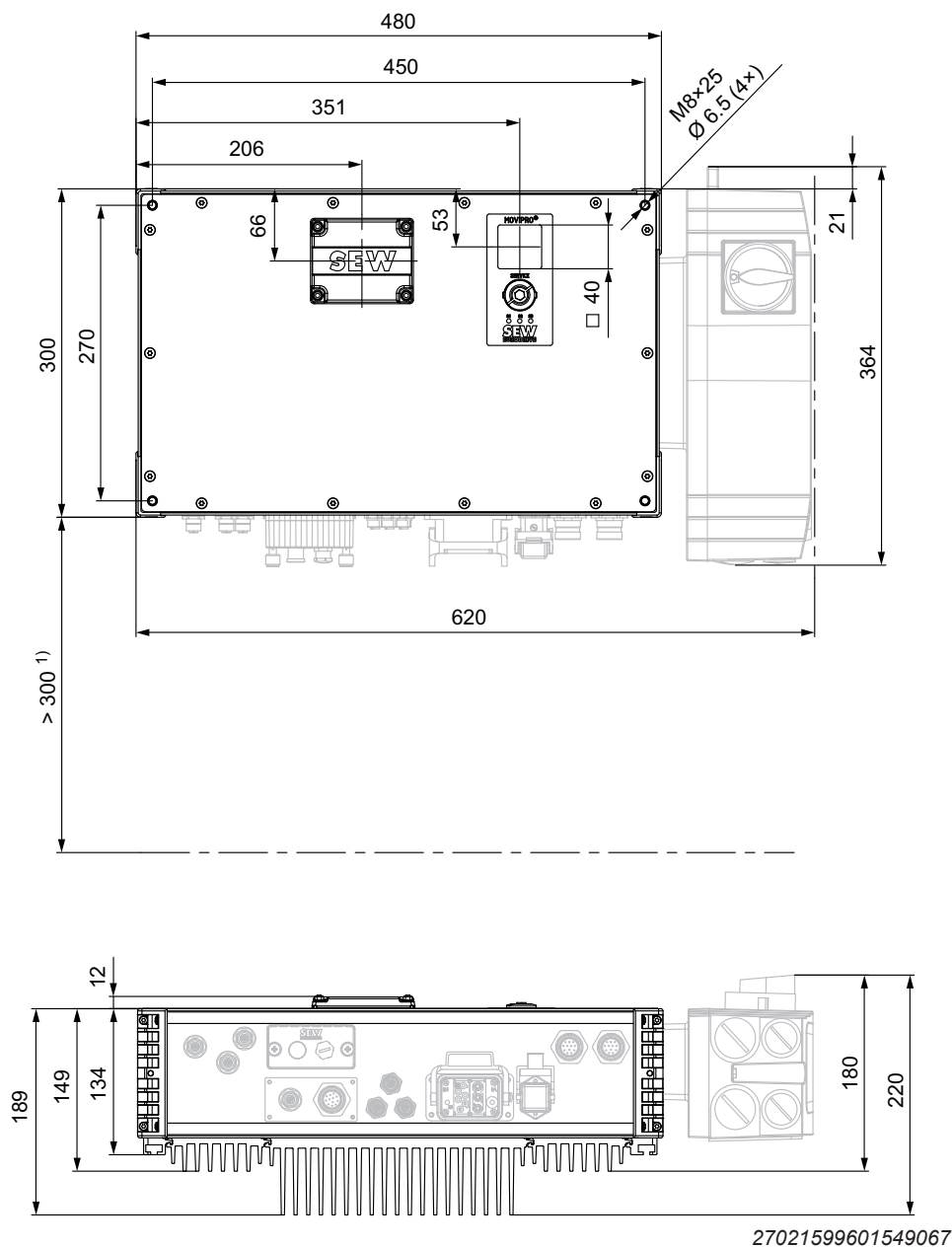
The dimension drawing shows the mechanical dimensions of the MOVIPRO® in mm:



¹⁾ Recommended clearance for connection cables (can vary depending on the cables used)

4.0 kW – 7.5 kW (size 1)

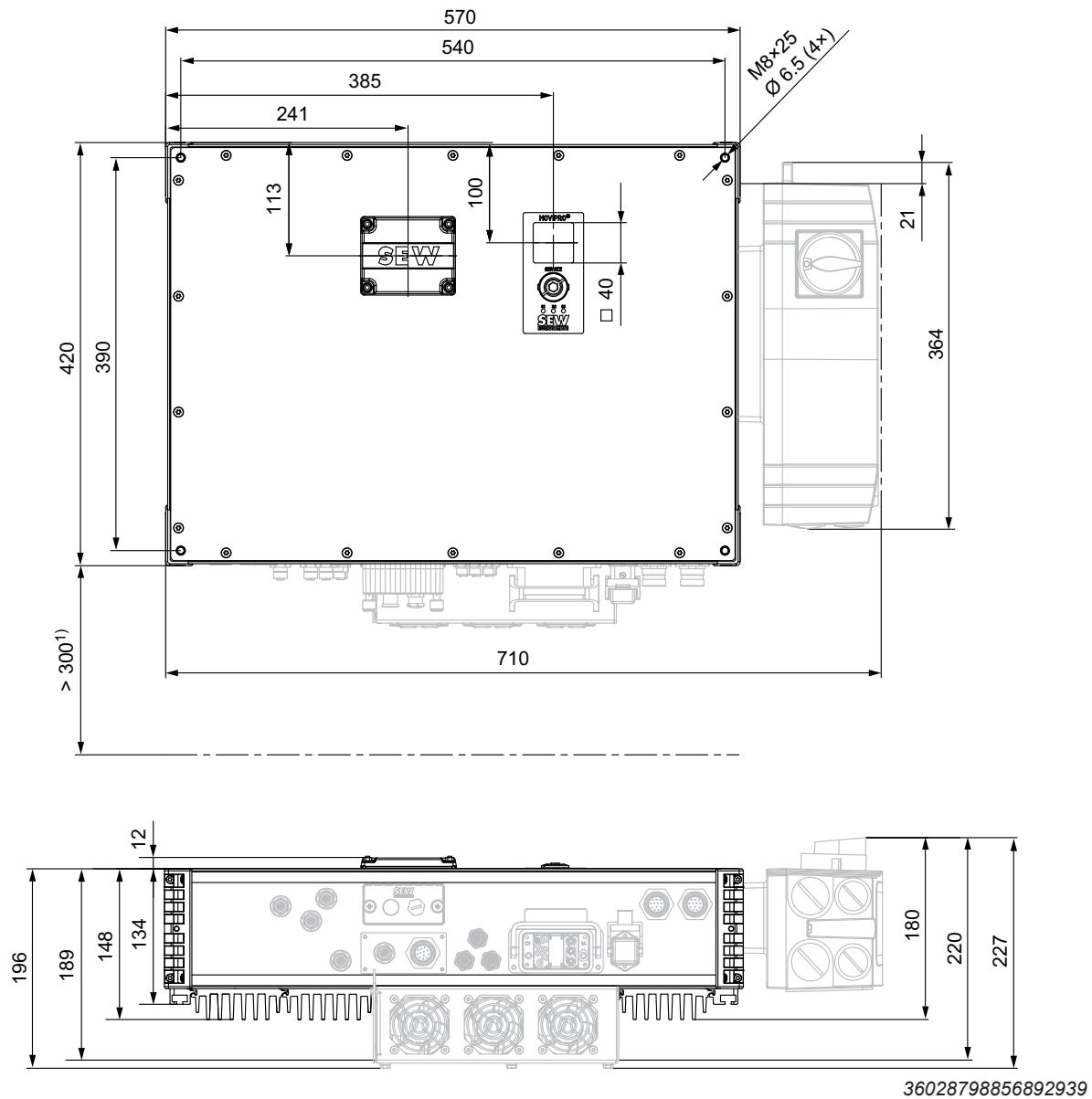
The dimension drawing shows the mechanical dimensions of the MOVIPRO® in mm:



¹⁾ Recommended clearance for connection cables (can vary depending on the cables used)

11.0 kW – 15.0 kW (size 2)

The dimension drawing shows the mechanical dimensions of the MOVIPRO® in mm:

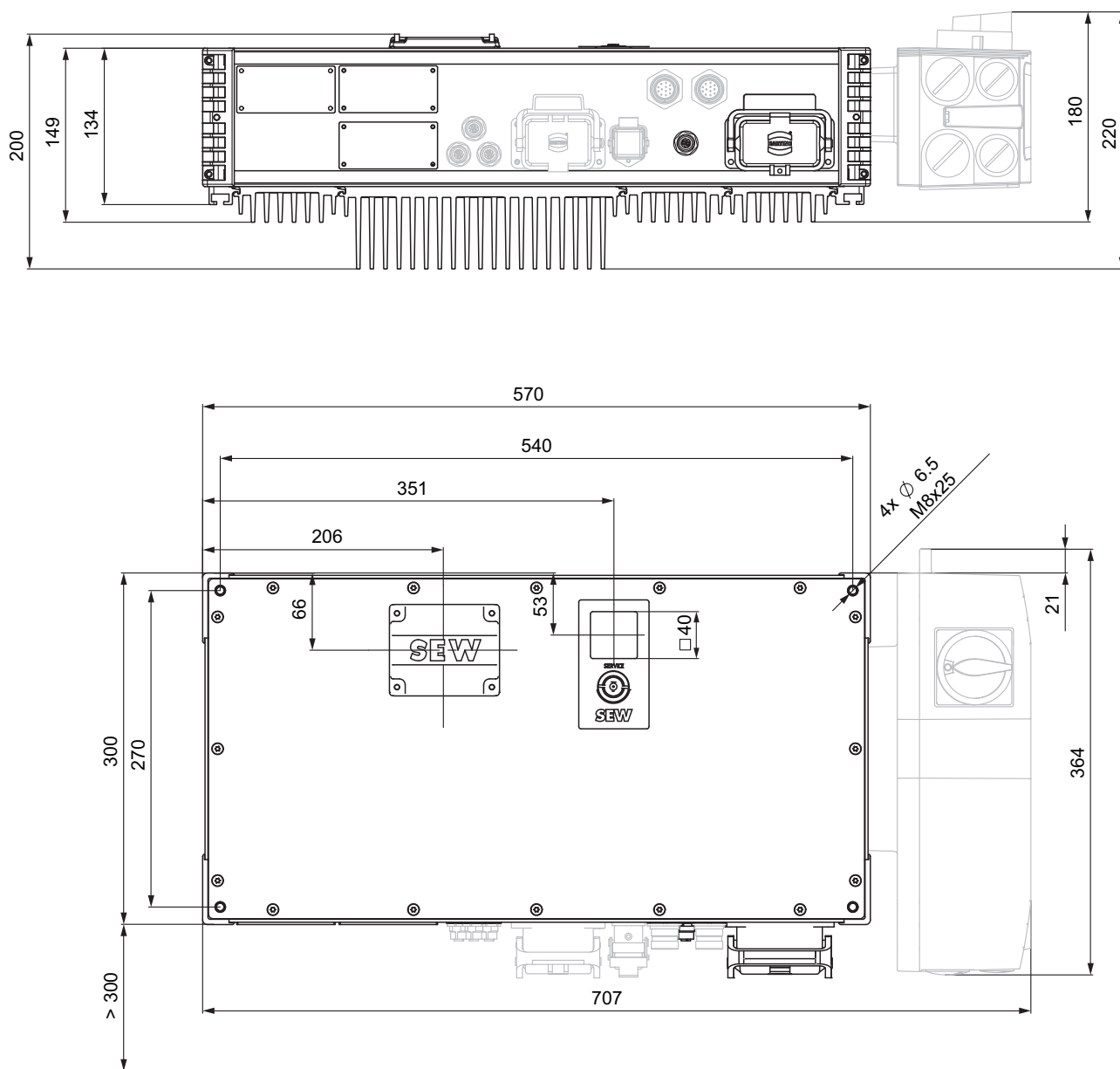


- ¹⁾ Recommended clearance for connection cables (can vary depending on the cables used)

With energy management interface

4.0 kW and 7.5 kW (Size 1)

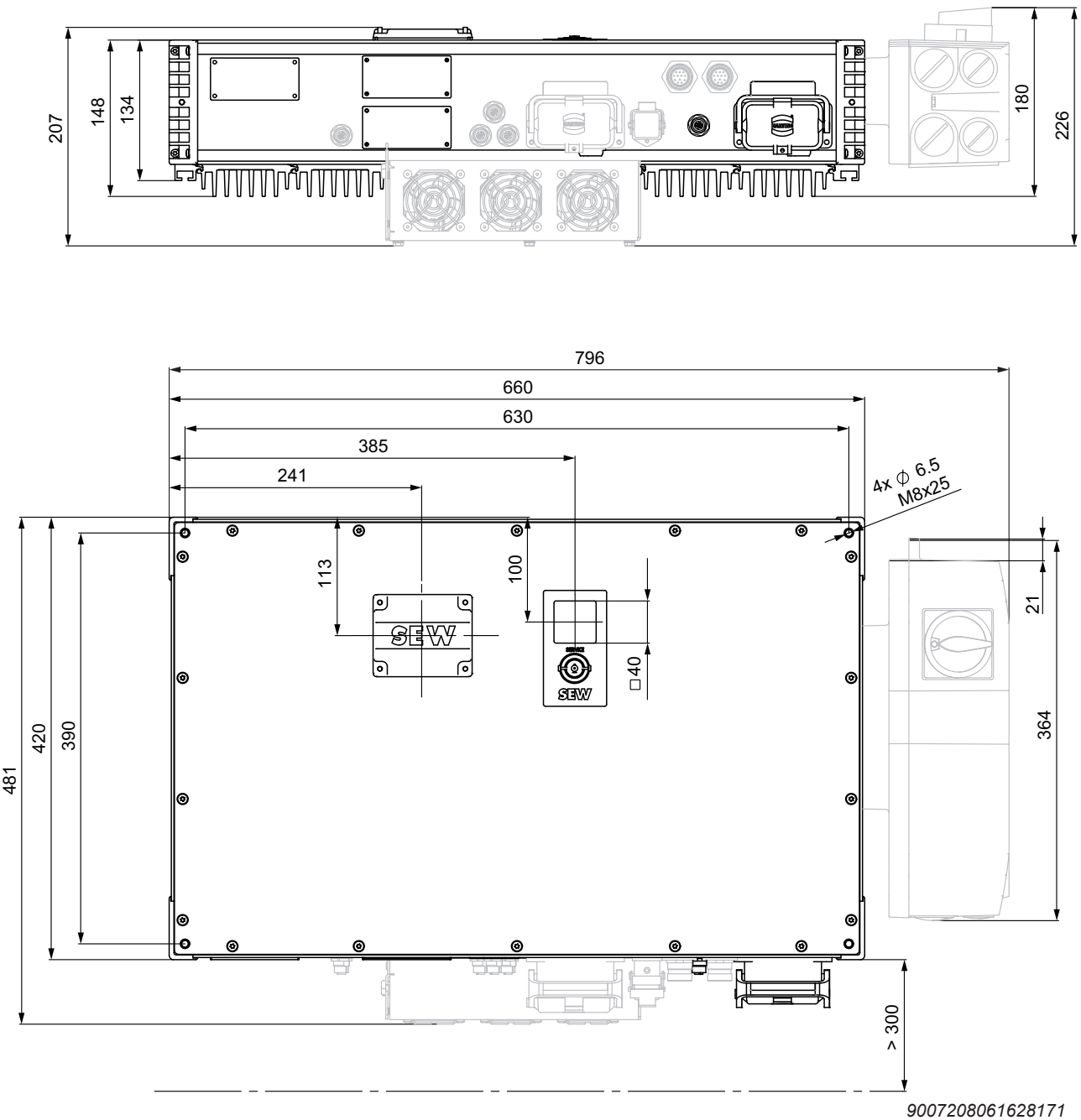
The dimension drawing shows the mechanical dimensions of the MOVIPRO® size 1 in mm:



9007208604670347

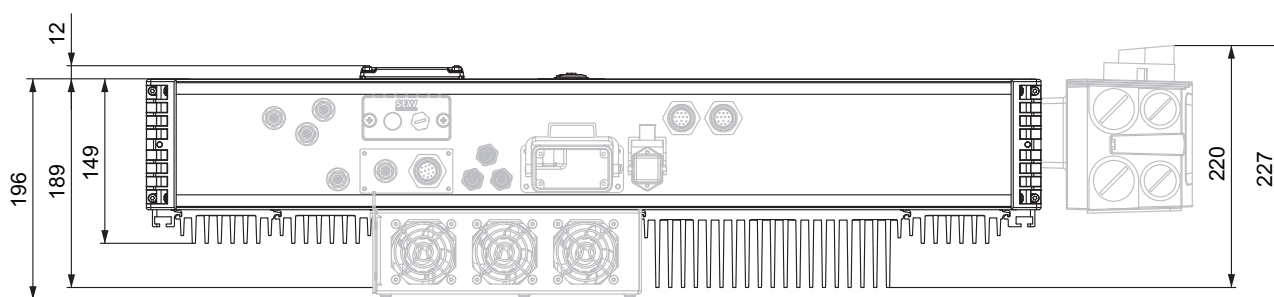
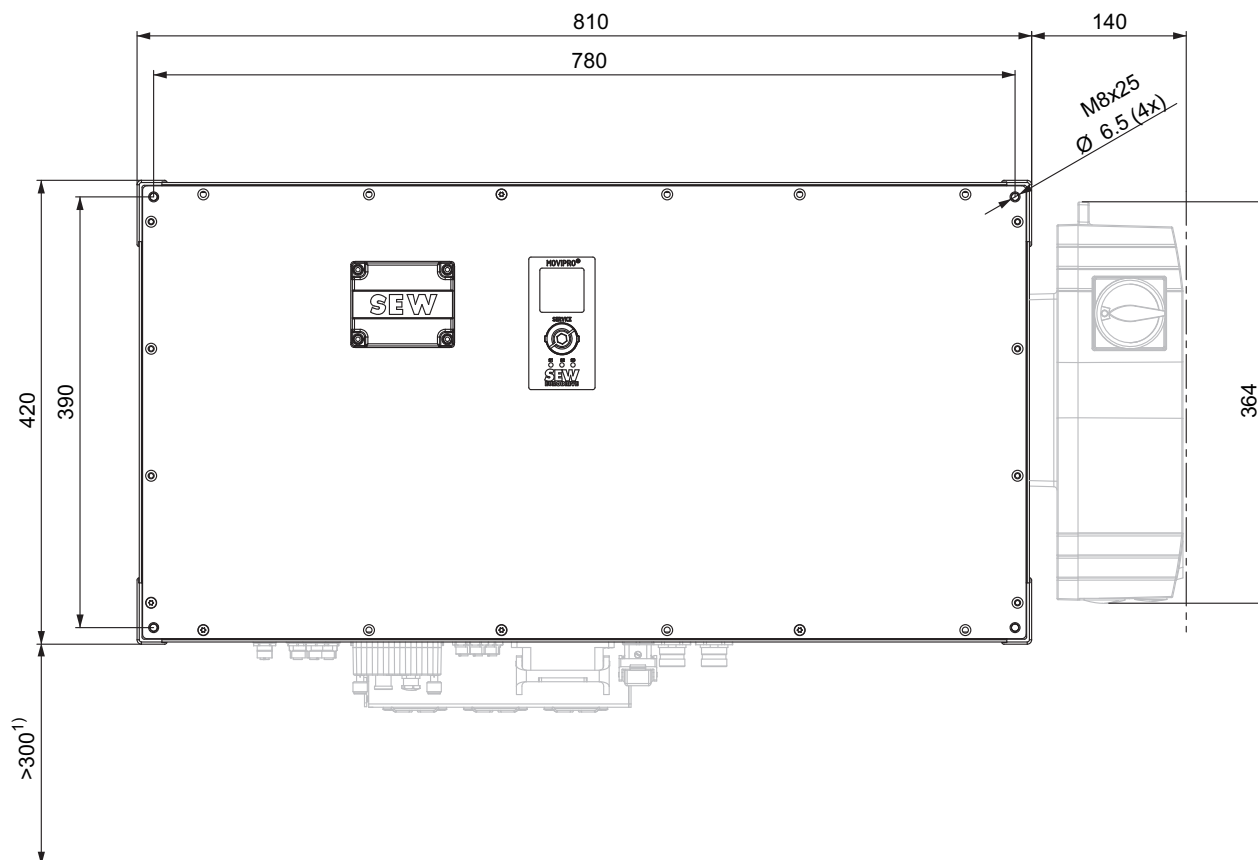
11.0 kW and 15.0 kW (Size 2)

The dimension drawing shows the mechanical dimensions of the MOVIPRO® size 2 in mm:



11.0 kW and 15.0 kW with regenerative power supply unit (Size 2)

The dimension drawing shows the mechanical dimensions of the MOVIPRO® in mm:



18014402039593099

- ¹⁾ Recommended clearance for connection cables (can vary depending on the cables used)