



SEW
EURODRIVE

Operating Instructions



Contactless Energy Transfer System

**MOVITRANS® TPM12B Mobile Converter, System Frequency
A - 25 kHz**



Contents

1	General information.....	5
1.1	About this documentation	5
1.2	Structure of the safety notes	5
1.3	Decimal separator in numerical values	6
1.4	Rights to claim under limited warranty	6
1.5	Product names and trademarks	6
1.6	Copyright notice	6
2	Safety notes	7
2.1	Preliminary information	7
2.2	Duties of the user	7
2.3	Target group	8
2.4	Designated use	8
2.5	Functional safety technology	9
2.6	Transport.....	9
2.7	Installation/assembly	9
2.8	Electrical installation	10
2.9	Protective separation	10
2.10	Startup/operation	10
3	Device structure	12
3.1	Device designation.....	12
3.2	Scope of delivery	12
3.3	Short designation	12
3.4	Nameplate.....	13
3.5	Device overview	14
4	Mechanical installation	16
4.1	Mounting positions	16
4.2	Minimum clearance and bore dimensions	17
5	Electrical installation.....	18
5.1	Installation notes	18
5.2	Shielding	18
5.3	Protective measures against electrical hazards.....	19
5.4	Connection via hybrid cable	24
5.5	Connections	26
6	Startup	31
6.1	For your safety	31
6.2	Requirements.....	32
6.3	Startup procedure	32
7	Operation.....	33
7.1	For your safety	33
7.2	Operating state	33
7.3	Operating displays	33
7.4	Fault information	34

8	Service	35
8.1	Electronics Service by SEW-EURODRIVE	35
8.2	Waste disposal.....	35
9	Technical data.....	36
9.1	Basic device.....	36
9.2	Device data for 100% coupling with the THM pick-up	38
9.3	Dimension drawing	39
10	Address list	40
	Index	51

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 Structure of the safety notes

1.2.1 Meaning of signal words

The following table shows the grading and meaning of the signal words for safety notes.

Signal word	Meaning	Consequences if disregarded
▲ DANGER	Imminent hazard	Severe or fatal injuries
▲ WARNING	Possible dangerous situation	Severe or fatal injuries
▲ CAUTION	Possible 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.	

1.2.2 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.

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

1.2.3 Structure of embedded safety notes

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

This is the formal structure of an embedded safety note:

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

1.3 Decimal separator in numerical values

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

Example: 30.5 kg

1.4 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.

1.5 Product names and trademarks

The brands and product names in this documentation are trademarks or registered trademarks of their respective titleholders.

1.6 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:

- National and regional safety and accident prevention regulations
- Warning and safety signs on the product
- All other relevant project planning documents, installation and startup instructions, and wiring diagrams
- Do not assemble, install or operate damaged products
- All system-specific specifications and conditions

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 Target group

Specialist for mechanical work	<p>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 who possess the following qualifications:</p> <ul style="list-style-type: none"> • Qualification in the mechanical area in accordance with the national regulations • Familiarity with this documentation
Specialist for electrotechnical work	<p>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 who possess the following qualifications:</p> <ul style="list-style-type: none"> • Qualification in the electrotechnical area in accordance with the national regulations • Familiarity with this documentation
Additional qualification	<p>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.</p> <p>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.</p>
Instructed persons	<p>All work in the areas of transportation, storage, operation and waste disposal must be carried out by persons who are trained appropriately. The purpose of the instruction is to give persons the ability to perform the required tasks and work steps in a safe and correct manner.</p>

2.4 Designated use

The product is intended for installation in electrical plants 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.

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

You may use options and accessories from SEW-EURODRIVE exclusively in connection with products from SEW-EURODRIVE.

2.5 Functional safety technology

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

2.6 Transport

Inspect the shipment for damage as soon as you receive the delivery. Inform the shipping company immediately about any damage. If the product is damaged, it must not be assembled, installed or started up.

Observe the following notes when transporting the device:

- Ensure that the product is not subject to mechanical impact.
- Before transportation, cover the connections with the supplied protection caps.
- Only place the product on the cooling fins or on the side without connectors during transportation.
- Always use all attachment points if available. The attachment points are designed to carry only the mass of the product. Severe or fatal injuries. Do not apply any additional loads.


If necessary, use suitable, sufficiently dimensioned handling equipment.

Observe the information on climatic conditions in chapter "Technical data" of the documentation.

2.7 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" (→  16) in the documentation.

2.8 Electrical installation

Ensure that all of the required covers are correctly attached after carrying out 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).

2.8.1 Mobile application

Necessary protective measures for the product are:

Type of energy transfer	Preventive measure
Direct power supply	<ul style="list-style-type: none"> • Ground connection
MOVITRANS® contactless energy transfer system	<ul style="list-style-type: none"> • Protective separation DIN VDE 0100-410/IEC 60364-4-41 • ESD protection

2.9 Protective separation

The product meets all requirements for protective separation of power and electronics connections in accordance with EN 61800-5-1. To ensure protective separation, all connected circuits must also meet the requirements for protective separation.

2.10 Startup/operation

Observe the safety notes in the chapters "Startup" (→ 31) and "Operation" (→ 33) in the documentation.

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.

Additional preventive measures may be required for applications with increased hazard potential. Be sure to check the effectiveness of the protection devices after every modification.

In the event of deviations from normal operation, switch the product off. Possible deviations are increased temperatures, noise, or vibration, for example. Determine the cause. Contact SEW-EURODRIVE if necessary.

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.

An electric arc may occur when plug-in connections are disconnected or connected while voltage is applied (e.g. connection between drive and control). Observe the following to avoid risk of injury, risk of electric shock and damage to property:

- Ensure that the product is de-energized before disconnecting and connecting the plug-in connections.

The fact that the operation LED and other display elements are no longer illuminated does not indicate that the product has been disconnected from the supply system and no longer carries any voltage.

Cover unused connections with the supplied protection caps during operation.

Mechanical blocking or internal safety functions of the product can cause the power to interrupt. Removing the cause of the problem or performing a reset can result in an automatic restart of the plant. If, for safety reasons, this is not permitted for the drive-controlled machine, first disconnect the product from the supply system and then start troubleshooting.

Risk of burns: The surface temperature of the product can exceed 60 °C during operation. Do not touch the product during operation. Let the product cool down before touching it.

3 Device structure

3.1 Device designation

TPM12B	MOVITRANS® mobile converter	
...	Nominal power	
	030	3 kW
	036	3.6 kW
-		
EN	Increased degree of protection with heat sink	
.	Design of the pick-up	
	E	THM10E015
	C	THM10C008
-		
5	Output voltage: DC 500 V	
A	Integrated line filters	
2	DC voltage output	
-		
2	Version	

3.2 Scope of delivery

The scope of delivery includes the following components:

Device	
MOVITRANS® TPM12B030-ENE-5A2-2 mobile converter	
or	
MOVITRANS® TPM12B036-ENC-5A2-2 mobile converter	
Component	Part number
Protective covers for all plug connectors	–

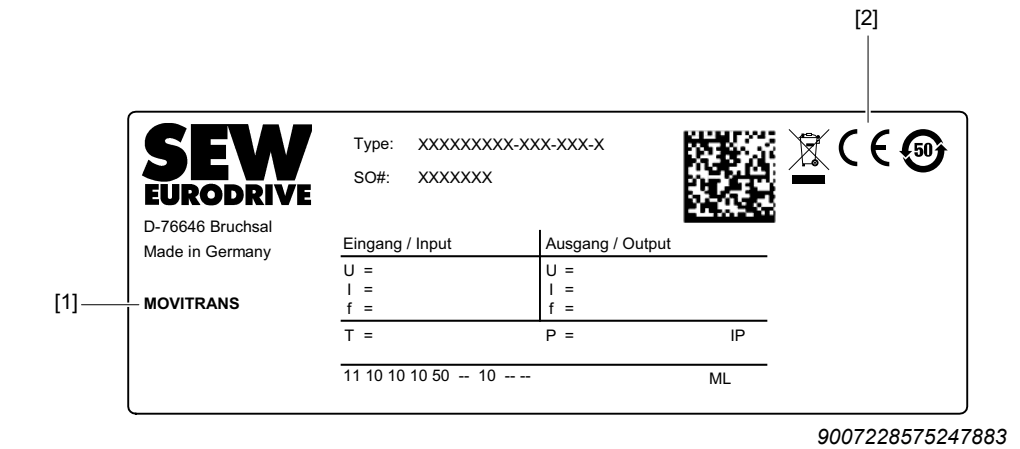
3.3 Short designation

The following short designations are used:

Device	Short designation
MOVITRANS® TPM12B030-ENE-5A2-2 mobile converter	Device
MOVITRANS® TPM12B036-ENC-5A2-2 mobile converter	

3.4 Nameplate

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



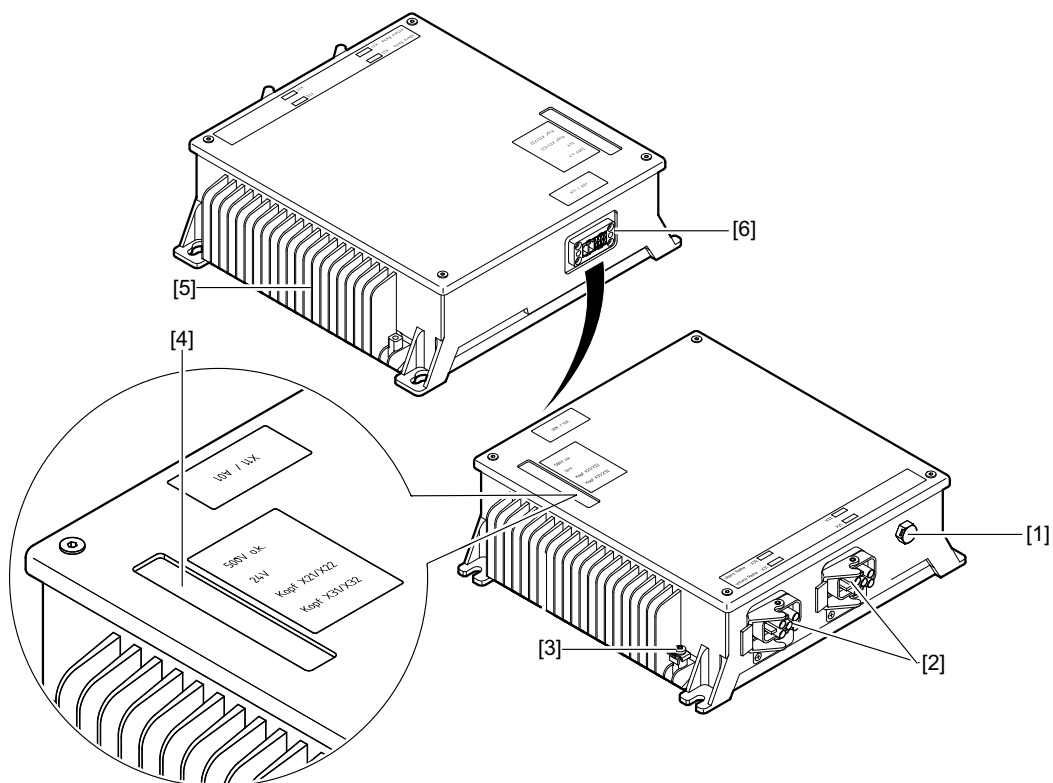
- [1] Product name
- [2] Approval identification

Depending on the device 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	Rated output power
IP	Degree of protection

3.5 Device overview

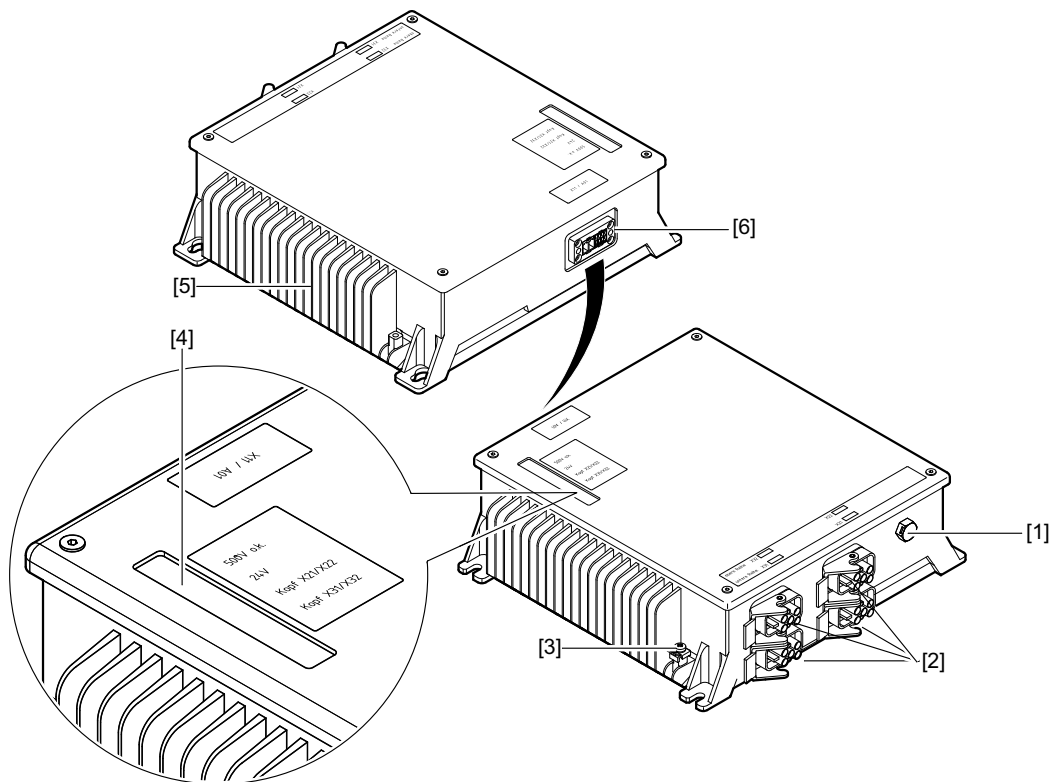
The following figure shows the device structure of the TPM12B030 mobile converter:



18014419937961099

- [1] Pressure compensation fitting
- [2] Connections for THM pick-up
- [3] Equipotential bonding
- [4] 4 operation LEDs to display the operating state
- [5] Heat sink
- [6] X11.2-pin voltage output (DC 500 V), control inputs, and outputs

The following figure shows the device structure of the TPM12B036 mobile converter:

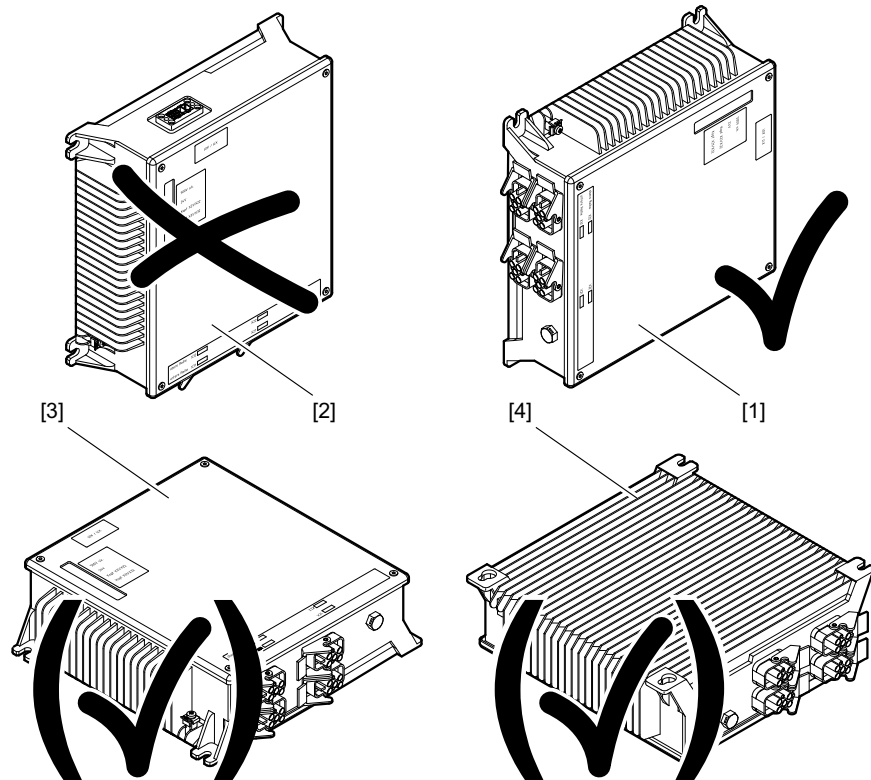


18014400028478091

- [1] Pressure compensation fitting
- [2] Connections for THM pick-up
- [3] Equipotential bonding
- [4] 4 operation LEDs to display the operating state
- [5] Heat sink
- [6] X11.2-pin voltage output (DC 500 V), control inputs, and outputs

4 Mechanical installation

4.1 Mounting positions



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- [1] Recommended mounting position
- [2] Non-permitted mounting positions
- [3] The mounting position is only permitted if the cooling fins can be ventilated from underneath.
- [4] The mounting position is only permitted if the heated air can be dissipated upwards.

The disadvantage of this mounting position is that you cannot read the operation LEDs.

5 Electrical installation

5.1 Installation notes

Observe the following points for electrical installation:

- The general safety notes.
- Comply with all instructions referring to the technical data and the permissible conditions where the device is operated.
- Avoid using long cables running parallel to one another.
- Incorrect connection of the THM pick-ups reduces the power output of the device due to incorrect compensation.
- If a low-resistance short circuit occurs when an output voltage is present, this results in very high discharge currents that could cause irreparable damage to the device. If the unit is connected to an existing short circuit, the current is limited to a value of < 15 A.
- The binary inputs are electrically isolated by optocouplers.
- The binary outputs are short-circuit-proof but not external-voltage-proof. Do not apply external voltage to the binary outputs.

Device input/
device output

Binary input/binary
output

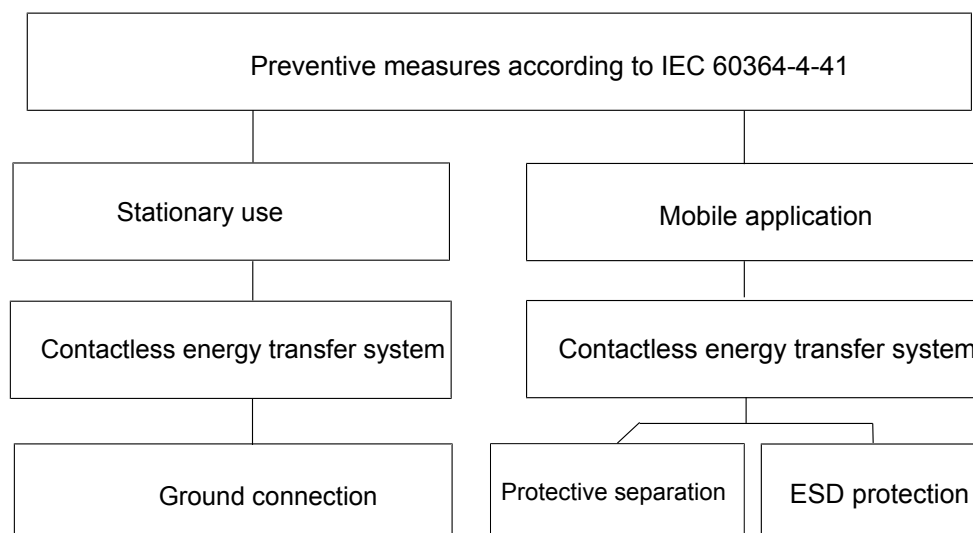
5.2 Shielding

Observe the following installation instructions:

- Use shielded control cables.
- Connect the shield of the hybrid cable by the shortest possible route and make sure it is grounded over a wide area.

5.3 Protective measures against electrical hazards

5.3.1 Overview



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5.3.2 Contactless energy transfer system

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

- Protective separation
- ESD protection

Protective separation

Comply with "preventive separation" in line with VDE 0100 part 410 nominal voltage < 500 V by using the following measures:

- All electrical equipment on the mobile part, such as on a vehicle, must be equipotentially bonded to each other.
- Establish high-frequency equipotential bonding via the vehicle support frame (vehicle GND).
- All cables must have double basic insulation. This requirement is always met when using MOVITRANS® components.

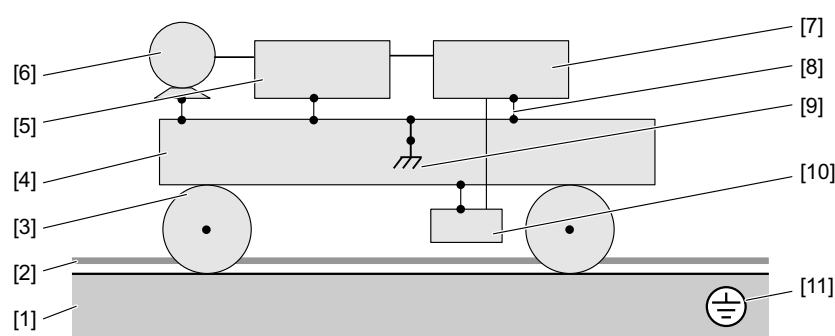
Equipotential bonding on the mobile part

Equipotential bonding on mobile systems ensures that in case of a fault, no contact voltages occur.

You can implement equipotential bonding as follows:

- Establish high-frequency equipotential bonding via the vehicle support frame (vehicle GND).
- Provide metal-to-metal contact over a large surface area.
- Use high-frequency equipotential bonding cables with a minimum cross section of 10 mm².
- Use only gray or black cables for equipotential bonding.

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



9007199752652939

- | | |
|--|---------------------------|
| [1] Conductive floor coverings or work areas | [7] Mobile converter |
| [2] Line cable | [8] Equipotential bonding |
| [3] Conductive track rollers or wheels | [9] Vehicle GND |
| [4] Vehicle frame | [10] Pick-up |
| [5] Drive and application controller | [11] Ground |
| [6] Motor | |

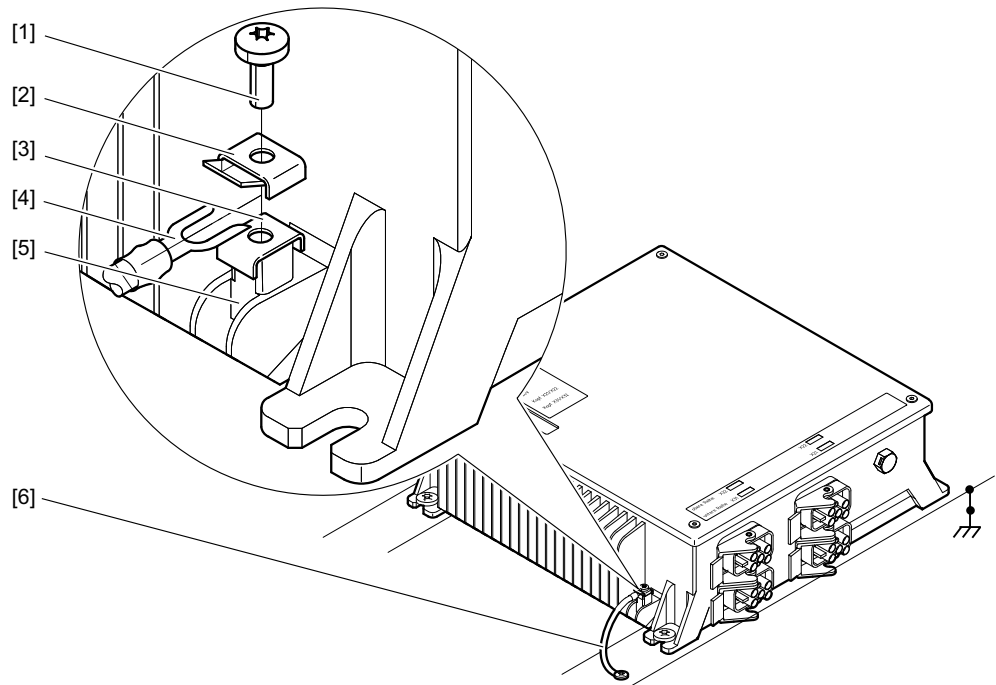
Observe the following installation instructions:

- Confirm the insulating strength of the equipment and the effectiveness of the equipotential bonding within the context of cyclical system checks.
- A possible potential transfer to mobile components via third-party equipment must be ruled out during planning and operation.

Equipotential bonding

Implement equipotential bonding as follows:

- Connect a cable between the TPM12B mobile converter and the metallic vehicle frame (mounting plate) to establish low-impedance equipotential bonding as displayed in the following illustration.



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[1] M5 screw

[2] Upper terminal clip

[3] Lower terminal clip

[4] Cable lug

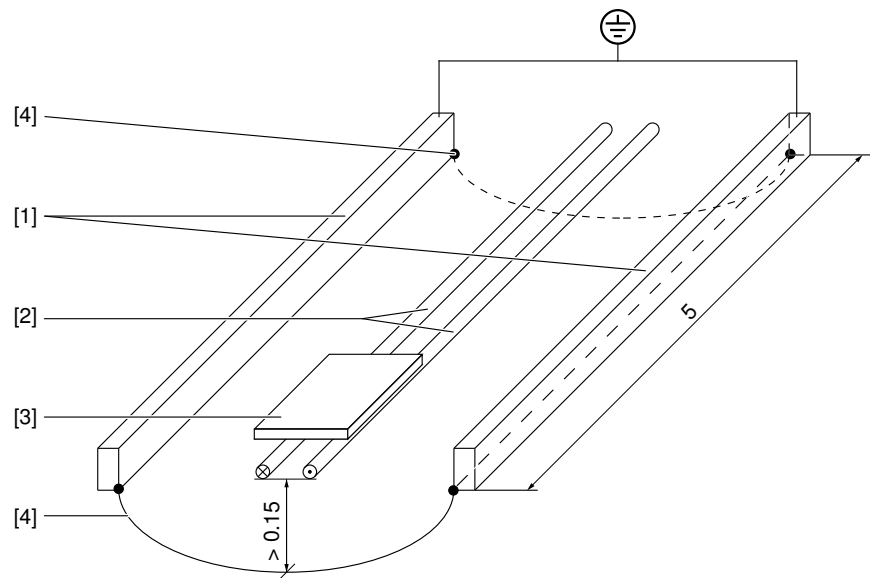
[5] Housing

[6] Cable connection/equipotential bonding

Equipotential bonding for floor rails

For metallic floor rails, high-frequency equipotential bonding must be implemented between the rails at least at the start and end of the track. For long tracks, implement equipotential bonding at least every 5 m. Use a fine-wire cable with a cable cross section of at least 10 mm². Pay special attention to the distance between the equipotential bonding cable and the line cable.

The following illustration shows an example for equipotential bonding for metallic floor rails. All dimensions are specified in m:



9007200929782411

- [1] Rails
- [2] Line cable
- [3] Pick-up
- [4] Equipotential bonding

ESD protection

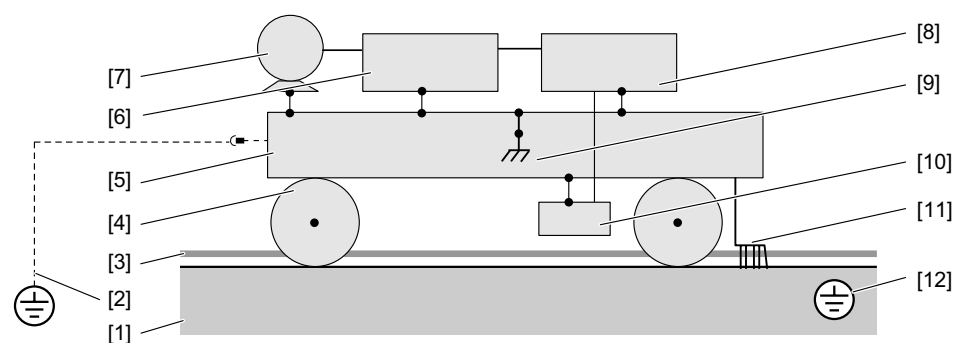
In order to ensure optimal protection against electrostatic discharge (ESD), measures must be taken for all places where non-conductive surfaces rub against one another to ensure that charges are dissipated. This is particularly important for mobile systems such as lifting gears, floor conveyor vehicles, and floor conveyor systems.

You can dissipate charges as follows:

- With conductive components such as combs, brushes, springs, or polishers
- With conductive track rollers or wheels
- With conductive floor coverings or work areas

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

The following figure shows the potential methods for ESD protection:



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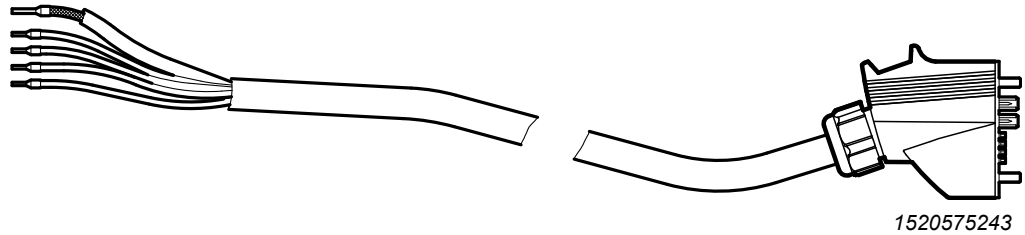
[1]	Conductive floor coverings or work areas	[7]	Motor
[2]	Temporary ground connection	[8]	Mobile converter
[3]	Line cable	[9]	Vehicle GND
[4]	Conductive track rollers or wheels	[10]	Pick-up
[5]	Vehicle frame	[11]	Conductive component part
[6]	Drive and application controller	[12]	Ground

5.4 Connection via hybrid cable

5.4.1 Prefabricated hybrid cable

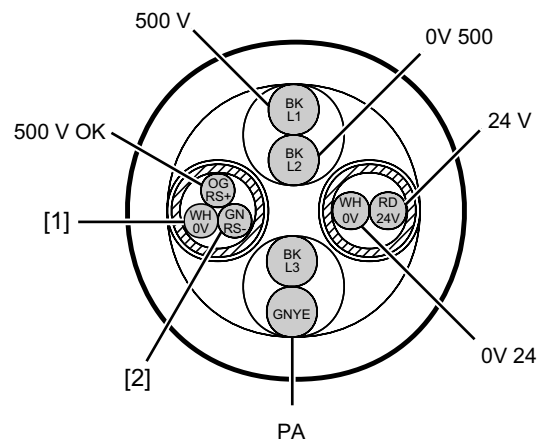
For connection to the plug connector, SEW-EURODRIVE provides a prefabricated hybrid cable (part number: 11715073) which houses all the cables in a single sheath.

One cable end is fitted with a plug connector for connection to the TPM12B mobile converter. The other cable end is open and fitted with conductor end sleeves. The cables are available in half-meter lengths from 1 m to 7.5 m.



5.4.2 Cable cross section

The following illustration shows the cross-section of the open cable end:



1520642187

[1] Enable mode

[2] Enable

5.4.3 Connecting the load cable

Observe the following:

- Do not apply external voltage to the terminal "500 V OK".
- Core L3 of the hybrid cable must not be connected.
- The terminals "Enable" and "Enable mode" only affect the DC 500 V output voltage. The DC 24 V voltage output is not affected.
- If the power output on the TPM12B is connected to an energy storage unit, the connection to the energy storage unit must be disconnected or the energy storage unit must be entirely discharged before the load cable is connected.

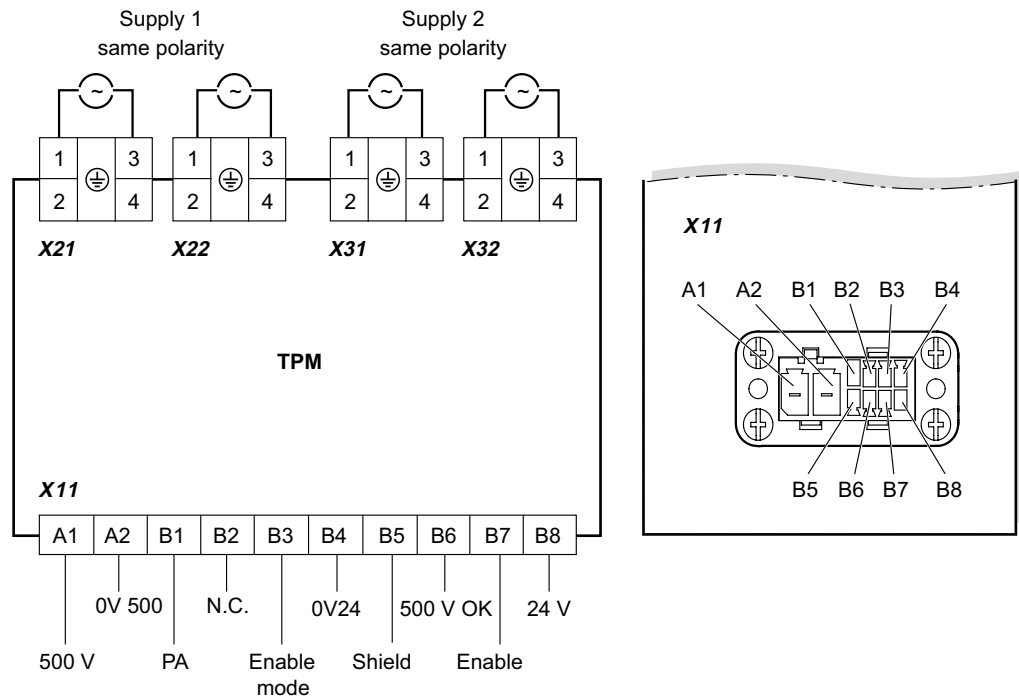
Proceed as follows to connect the load to the hybrid cable:

1. **⚠ CAUTION!** Faulty installation. Destruction of the mobile converter, the pick-ups, and the connected load.
Only connect loads approved by SEW-EURODRIVE. For this purpose, use the prefabricated hybrid cable from SEW-EURODRIVE.
2. Ensure that the pick-ups are not located above the line cable.
3. If the pick-ups are located above the line cable, make sure that the line cable is not energized.
4. Do not connect or disconnect the connection cables of the pick-ups when they are under load.
5. Connect the individual cores of the hybrid cable as described in the table.

Device connector	Designation	Hybrid cable
X11:A1 +U _z	500 V	L1
X11:A2 -U _z	0V500	L2
–	–	L3
X11:B1	PA	GNYE
X11:B2	N.c./not connected	–
X11:B3	Enable mode	WH
X11:B4	0V24	WH
X11:B5	PA	Shield
X11:B6	500 V OK	OG
X11:B7	Enable	GN
X11:B8	24 V auxiliary voltage	RD

5.5 Connections

Connect the device according to the following figure:



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INFORMATION

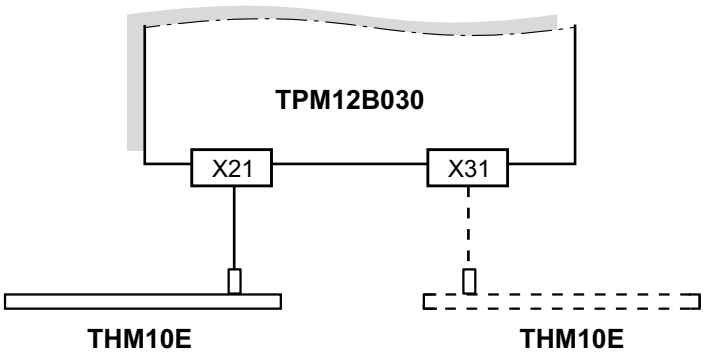


For TPM12B030, the terminals X22 and X32 are not available.

5.5.1 TPM12B030 mobile converter

You can connect 1 or 2 flat THM10E pick-ups, each with a rating of 1.5 kW, to the TP-M12B030 mobile converter. Proceed as follows:

1. **⚠ CAUTION!** Faulty installation. Destruction of the mobile converter, the pick-ups, and the connected load.
Only connect the THM10E pick-ups approved by SEW-EURODRIVE.
2. Ensure that the pick-ups are not located above the line cable.
3. If the pick-ups are located above the line cable, make sure that the line cable is not energized.
4. Do not connect or disconnect the connection cables of the pick-ups when they are under load.
5. Connect the THM10E pick-ups to the connections X21 and/or X31.



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Pin assignment X21, X31

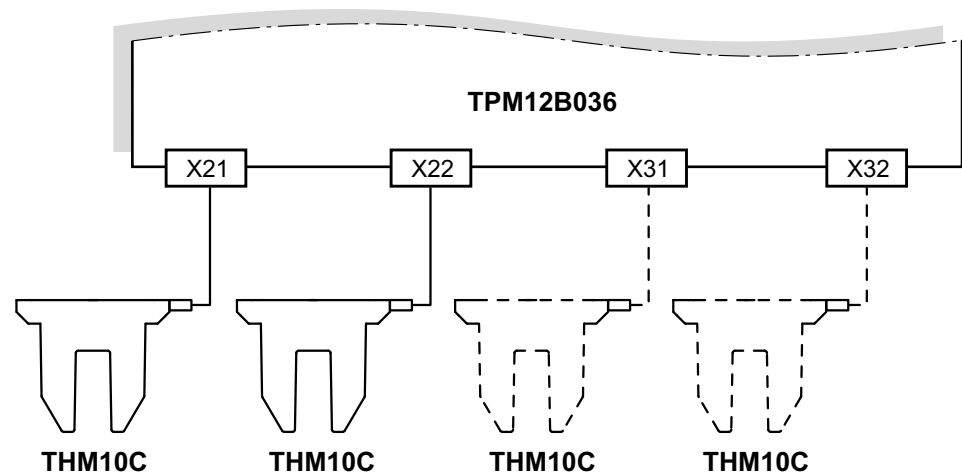
Function		
Connection for energy supply		
Connection type		
Han® Q 4/2, female		
Connection image		
No.	Name	Function
1	Pole 1	Pick-up 1 or 2
2	Pole 1	Pick-up 1 or 2
3	Pole 2	Pick-up 1 or 2
4	Pole 2	Pick-up 1 or 2
11	n.c.	Not connected
12	n.c.	Not connected
PE	FE	Equipotential bonding / functional earth

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5.5.2 TPM12B036 mobile converter

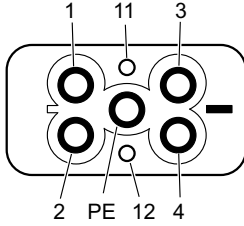
You can connect 2 or 4 U-shaped THM10C pick-ups, each with a rating of 0.8 kW, to the TPM12B036 mobile converter. Proceed as follows:

1. **▲ CAUTION!** Faulty installation. Destruction of the mobile converter, the pick-ups, and the connected load.
Only connect the THM10C pick-ups approved by SEW-EURODRIVE.
2. Ensure that the pick-ups are not located above the line cable.
3. If the pick-ups are located above the line cable, make sure that the line cable is not energized.
4. Do not connect or disconnect the connection cables of the pick-ups when they are under load.
5. If you wish to connect only two pick-ups, then connect the pick-ups to the connections X21/X22 or X31/X32.
6. If you wish to connect 4 pick-ups, then connect the pick-ups to the connections X21, X22, X31, and X32.



1362541835

Pin assignment X21, X31, X22, X32

Function		
Connection for energy supply		
Connection type		
Han® Q 4/2, female		
Connection image		
		
No.	Name	Function
1	Pole 1	Pick-up 1 or 2, 3, 4
2	n.c.	Not connected
3	Pole 2	Pick-up 1 or 2, 3, 4
4	n.c.	Not connected
11	n.c.	Not connected
12	n.c.	Not connected
PE	FE	Equipotential bonding / functional earth

5.5.3 Pin assignment X11

The following table shows the pin assignment of X11:

Pin assignment	Designation	Function
X11:A1 (+U _z)	500 V	DC 500 V output voltage
X11:A2 (–U _z)	0V500	Reference potential for the DC 500 V output voltage
X11:B1, B5	PA	Equipotential bonding for line and shield
X11:B2	n.c.	Not connected
X11:B3	Enable mode	Digital input enable mode (for DC 500 V output voltage only): "0" signal = delayed enable (ramp) "1" signal = instantaneous enable
X11:B4	0V24	Reference potential for DC 24 V binary signals
X11:B6	500 V OK	Digital output 500V OK, "1" signal, if DC 500 V output voltage is present.
X11:B7	Enable	Digital input enable (for DC 500 V output voltage only): "0" signal = DC 0 V output voltage "1" signal = DC 500 V output voltage
X11:B8	24 V	DC 24 V voltage output (max. 2 A)

The pin assignments "Enable" and "Enable mode" only affect the DC 500 V output voltage. The pin assignment "DC 24 V voltage output" remains unaffected.

6 Startup

6.1 For your safety



⚠ WARNING

Electric shock due to missing or defective protection covers.

Severe or fatal injuries.

- Make sure all protection covers are installed properly.
- Never start the device if the protection covers are not installed.



INFORMATION

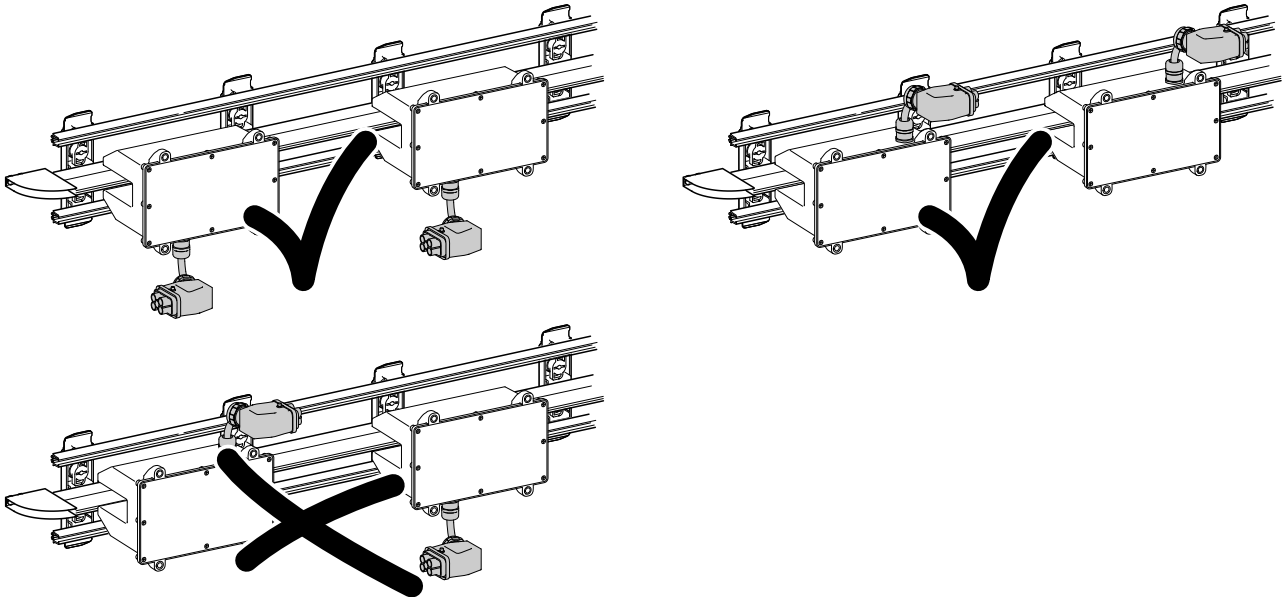
Observe the safety notes in chapter "Safety notes" > "Startup/Operation".

6.2 Requirements

The following prerequisites apply to startup:

- The device must be installed correctly both mechanically and electrically.
- Safety measures prevent accidental drive startup.
- Safety measures prevent danger to persons or machines.
- Make sure that compensation is made for the line cable and that the current supply is correct.
- Make sure the load is correctly connected to the device.
- Make sure that the cable outputs of the THM10C pick-ups connected to X21/X22 or X31/X32 of the device are always aligned in the same way.

When choosing the mounting position, ensure that the cable outputs of the pick-ups do not point in opposite directions (up and down). The following illustration shows correct and incorrect mounting positions:



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6.3 Startup procedure

Proceed as follows for startup:

1. Select the enable mode of the output voltage at connection X11 → "0" for delayed enable, "1" for instantaneous enable
2. Apply a "1" signal to the digital input "Enable" at connection X11.
 - ⇒ The output voltage of DC 500 V is present at connection X11.
 - ⇒ The DC 24 V output voltage is present, regardless of the DC 500 V output voltage of the device.

When the output voltage "DC 500 V" is present at connection X11, the digital output "500 V OK" switches from "0" to a "1" signal. You can use this signal, for example, as an enable signal by the connected load.

7 Operation

7.1 For your safety



NOTICE

Danger due to arcing.

Damage to electrical components.

- Do not disconnect power connections during operation.
- Do not connect power connections during operation.



INFORMATION

To ensure fault-free operation, do not disconnect or connect signal cables during operation.

7.2 Operating state

The device has 2 operating states that you can set with the digital input "Enable" at connection X11:

- "0" signal = DC 0 V output voltage
- "1" signal = DC 500 V output voltage

7.3 Operating displays

4 operation LEDs show the operating state of the TPM12B mobile converter:

Operating LED	Status	Meaning
500 V OK	Lights up green	DC 500 V output voltage present at X11.
	Off	Output voltage V_o at X11: $DC\ 0\ V < V_o < DC\ 460\ V$
24 V	Lights up green	DC 24 V output voltage present.
	Off	<ul style="list-style-type: none"> • DC 24 V output voltage is not present. • 24 V short circuit • No supply
Pick-up X21, X22 or/and pick-up X31, X32	Lights up green	Coupling > 50%
	Off	Coupling current $0 \dots < 50\%$

7.4 Fault information

7.4.1 Device protection

The device is protected against overtemperature and overvoltage. The device will turn itself off in case of a malfunction; the digital output "500 V OK" will have a "0" signal and the LED "500 V OK" will go out. The DC 24 V output voltage remains intact.

7.4.2 Reset

Proceed as follows to perform a reset:

- Apply a "0" signal to the digital input "Enable".
DC 0 V output voltage is now present.
- After waiting for 1 second, apply a "1" signal again to the digital input "Enable".
DC 500 V output voltage is now present at the device.

8 Service

8.1 Electronics Service by SEW-EURODRIVE

If you are unable to rectify a fault, contact SEW-EURODRIVE Service. For the addresses, refer to www.sew-eurodrive.com.

When contacting SEW-EURODRIVE Service, always specify the following information so that our service personnel can assist you more effectively:

- Information on the device type on the nameplate (e.g. type designation, serial number, part number, product key, purchase order number)
- Brief description of the application
- Fault message on the status display
- Nature of the fault
- Accompanying circumstances
- Any unusual events preceding the problem

8.2 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.



9 Technical data

9.1 Basic device

The following table shows the technical data of the basic device:

General information	
Electromagnetic compatibility to EN 61800-3	Interference emission: C3 Interference immunity: 2. Environment (industrial)
Heat sink temperature Climate class to EN 60721-3-3	-25 °C – +85 °C Similar to Class 3K3
Ambient temperature ϑ	-25 °C – +45 °C (cyclic duration factor cdf = 100%)
Storage and transport temperature ϑ_L to EN 60721-3-3	-25 °C – +75 °C
Degree of protection	IP65 for screwed-on connectors
Pollution class to IEC 60664-1	2 (VDE 0110-1)
Operating mode to EN 60149-1-1 and EN 60149-1-3	DB
Installation altitude	$h \leq 1000$ m
Vibration resistance	Met in accordance with EN 50178
Output voltage U_{out}	DC 500 V +16 V/-5 V
Mass	10.3 kg
Dimensions W × H × D Width including connector	463 mm × 330 mm × 117 mm
Pick-up connection X21, X22, X31, X32	Han® Q 4/2 from Harting
DC 500 V connection	2-pin, 1.5 mm ² , Phoenix type PLUSCON®
Control terminals	8-pin, 0.5 mm ² , Phoenix type PLUSCON®
Reference terminal "0V24"	Reference potential for DC 24 V signals (connected to housing ground)
Binary output "500 V OK"	Notice Do not apply external voltage. PLC-compatible to EN 61131-2 $I_{max} = 50$ mA, short-circuit-proof Signal level → "0" = 0 V, "1" = DC 24 V Fixed assignment of function with 500 V OK: "0" = DC 500 V output voltage not present "1" = DC 500 V output voltage is present

General information	
Binary input "Enable"	<p>PLC-compatible to EN 61131-2</p> <p>Isolated via optocoupler $R_i \approx 3 \text{ k}\Omega$, $I_E \approx 10 \text{ mA}$</p> <p>Signal level:</p> <p>DC +13 V – +30 V = "1" = contact closed</p> <p>DC -3 V – +5 V = "0" = contact open</p> <p>Fixed assignment of control function with enable:</p> <p>"0" = DC 0 V output voltage</p> <p>"1" = DC 500 V output voltage</p>
Binary input "Enable mode"	<p>PLC-compatible to EN 61131-2</p> <p>Isolated via optocoupler $R_i \approx 3 \text{ k}\Omega$, $I_E \approx 10 \text{ mA}$</p> <p>Signal level:</p> <p>DC +13 V – +30 V = "1" = contact closed</p> <p>DC -3 V – +5 V = "0" = contact open</p> <p>Fixed assignment of control function with enable mode:</p> <p>"0" = delayed enable DC 500 V output voltage</p> <p>"1" = instantaneous enable DC 500 V output voltage</p>
DC 24 V voltage output	<p>U = DC 24 V (22 V – 26 V), current carrying capacity: $I_{\max} = \text{DC } 2 \text{ A}$</p>

9.2 Device data for 100% coupling with the THM pick-up

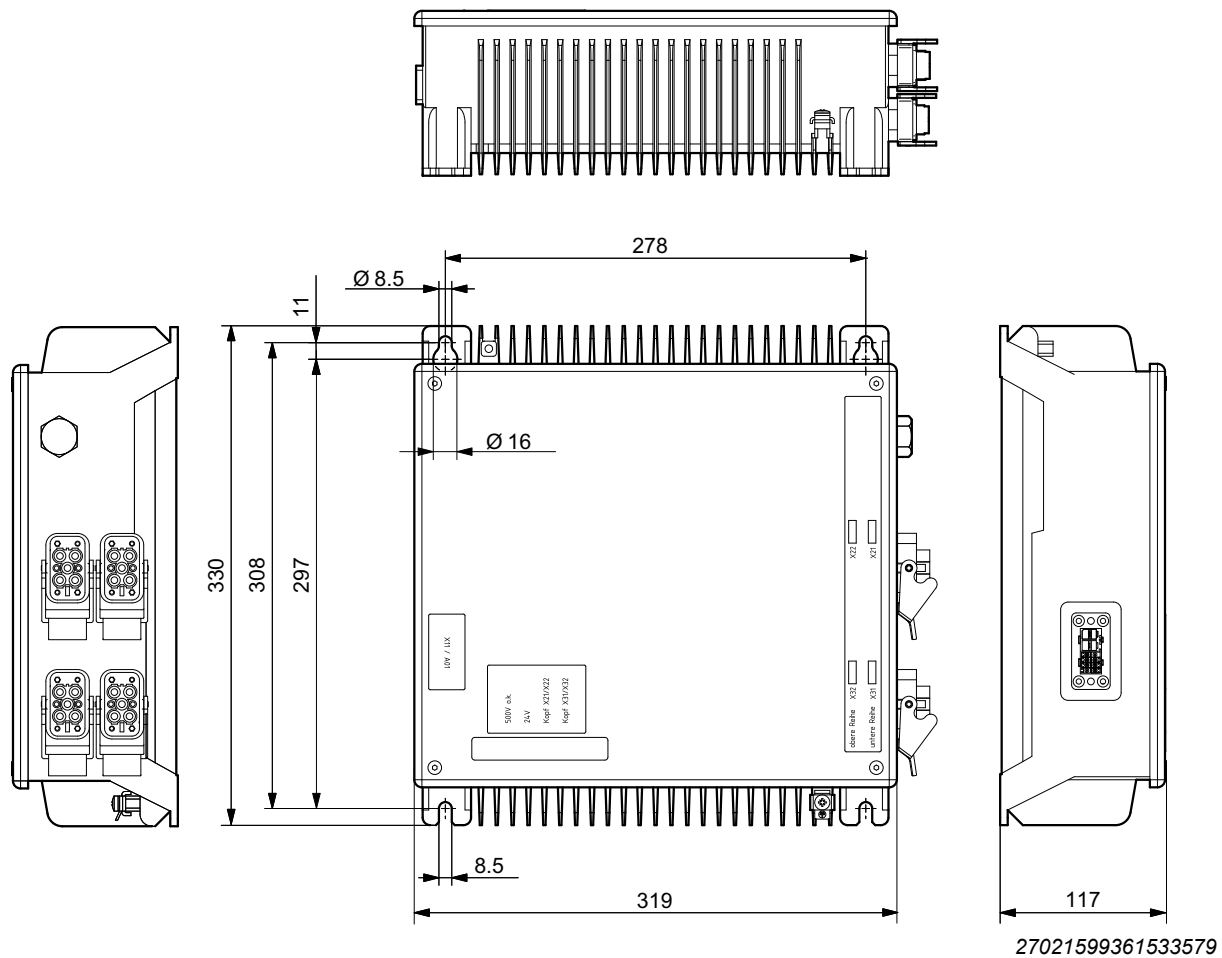
The data in the following table applies when the connected THM pick-up achieves 100% coupling.

	TPM12B030-ENE-5A2-2				TPM12B036-ENC-5A2-2	
Operating frequency f _o	25 kHz					
Current in the line cable I ₁ at operating frequency f _o	AC 60 A		AC 85 A		AC 60 A	
Design of pick-up	THM10E flat pick-up				THM10C U-shaped pick-up	
Available power P ₁ of the pick-up measured at the output of the device	950 W		1500 W		800 W	
Number of connected pick-ups	2	1	2	1	4	2
Nominal output power at nominal distance from the pick-up to the line cable P _N	1.9 kW	0.95 kW	3 kW	1.5 kW	3.2 kW	1.6 kW
Output power of DC 24 V supply P _{24 V}	24 W	12 W	48 W	24 W	48 W	24 W
Power loss at enabled device P _V	60 W	30 W	120 W	60 W	120 W	60 W
Power loss at inhibited device P _V	12 W	6 W	15 W	8 W	15 W	8 W

For more information about this topic, refer to the "MOVITRANS® THM10C/THM10E Pick-Ups" operating instructions.

9.3 Dimension drawing

The dimension drawing shows the mechanical dimensions in mm:



10 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

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 Rybalko Str. 26 220033 Minsk	Tel. +375 17 298 47 56 / 298 47 58 Fax +375 17 298 47 54 http://www.sew.by sales@sew.by
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Belgium

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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 service-IG@sew-eurodrive.be

Brazil

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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
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Bulgaria

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	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
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Egypt			
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Gabon

Representation: Cameroon

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	Hamburg	SEW-EURODRIVE GmbH & Co KG Hasselbinnen 44 22869 Schenefeld	Tel. +49 40298109-60 Fax +49 40298109-70 dc-hamburg@sew-eurodrive.de
	Ludwigshafen	SEW-EURODRIVE GmbH & Co KG c/o BASF SE c/o BASF SE Gebäude W130 67056 Ludwigshafen	Tel. +49 7251 75 3759 Fax +49 7251 75 503759 dc-ludwigshafen@sew-eurodrive.de

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	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
Drive Service Hotline / 24 Hour Service			Tel. 01924 896911
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 http://www.varmaverk.is vov@vov.is
India			
Registered Office Assembly Sales Service	Vadodara	SEW-EURODRIVE India Private Limited Plot No. 4, GIDC POR Ramangamdi • Vadodara - 391 243 Gujarat	Tel. +91 265 3045200 Fax +91 265 3045300 http://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
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Assembly Sales Service	Basel	Alfred Imhof A.G. Jurastrasse 10 4142 Münchenstein bei Basel	Tel. +41 61 417 1717 Fax +41 61 417 1700 http://www.imhof-sew.ch info@imhof-sew.ch
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Zambia

Representation: South Africa

Index

A

Assembly	
Safety notes	9

B

Basic device	
Device structure	14
Technical data	36
Bore dimensions	
Installation	17

C

Connector assignment X11	30
Contactless energy transfer system	19
Copyright notice	6

D

Decimal separator	6
Designated use	8
Device	
Structure	12
Device data	38
Device structure	
Basic device	14
Nameplate	13
Scope of delivery	12
Short designation	12
Type designation	12
Dimension drawing	39

E

Electrical hazard	19
Electrical installation	10, 18
Safety notes	10
Electronics Service	35
Embedded safety notes	6
Error information	34
ESD protection	23

F

Functional safety technology	
Safety note	9

G

Ground connection	19
-------------------------	----

H

Hazard symbols	
Meaning	6
Hybrid cable	
Cable cross section	24
Hybrid cables	
Core assignment	25
Prefabricated	24

I

Installation	
Bore dimensions	17
Connection via hybrid cable	24
Connector assignment X11	30
Ground connection	19
Minimum distances	17
Notes on equipotential bonding	21
Notes on shielding	18
Wiring diagram	26
Installation notes	18

M

Mechanical installation	16
Minimum distances	
Installation	17
Mounting positions	
Non-permitted	16
Permitted	16

N

Nameplate	13
Notes	
Designation in the documentation	5
Meaning of the hazard symbols	6

O

Operating display	33
Operating state	33
Operation	33
Device protection	34
Error information	34
Operating display	33
Operating state	33
Reset	34

P

Preventive measures against electrical hazards .	19
Product names	6
Protective separation.....	10

R

Repair	35
Reset	34
Rights to claim under limited warranty	6

S

Safety functions	9
Safety notes	
Assembly	9
Designated use	8
Designation in the documentation	5
Installation	9
Meaning of the hazard symbols	6
Preliminary information.....	7
Structure of embedded	6
Structure of section-related	5
Scope of delivery	12
Section-related safety notes	5
Separation, protective	10
Service	35

Short designation	12
Signal words in safety notes	5
Startup	31, 32

T

Target group	8
Technical data	36
Basic device	36
Device data	38
Dimension drawing.....	39
Trademarks	6
Transport	9
Type designation	12

W

Waste disposal	35
Wiring diagram	
Installation	26
TPM12B030 mobile converter.....	26
TPM12B036 mobile converter.....	28

X

X21	27, 29
X22	29
X31	27, 29
X32	29









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