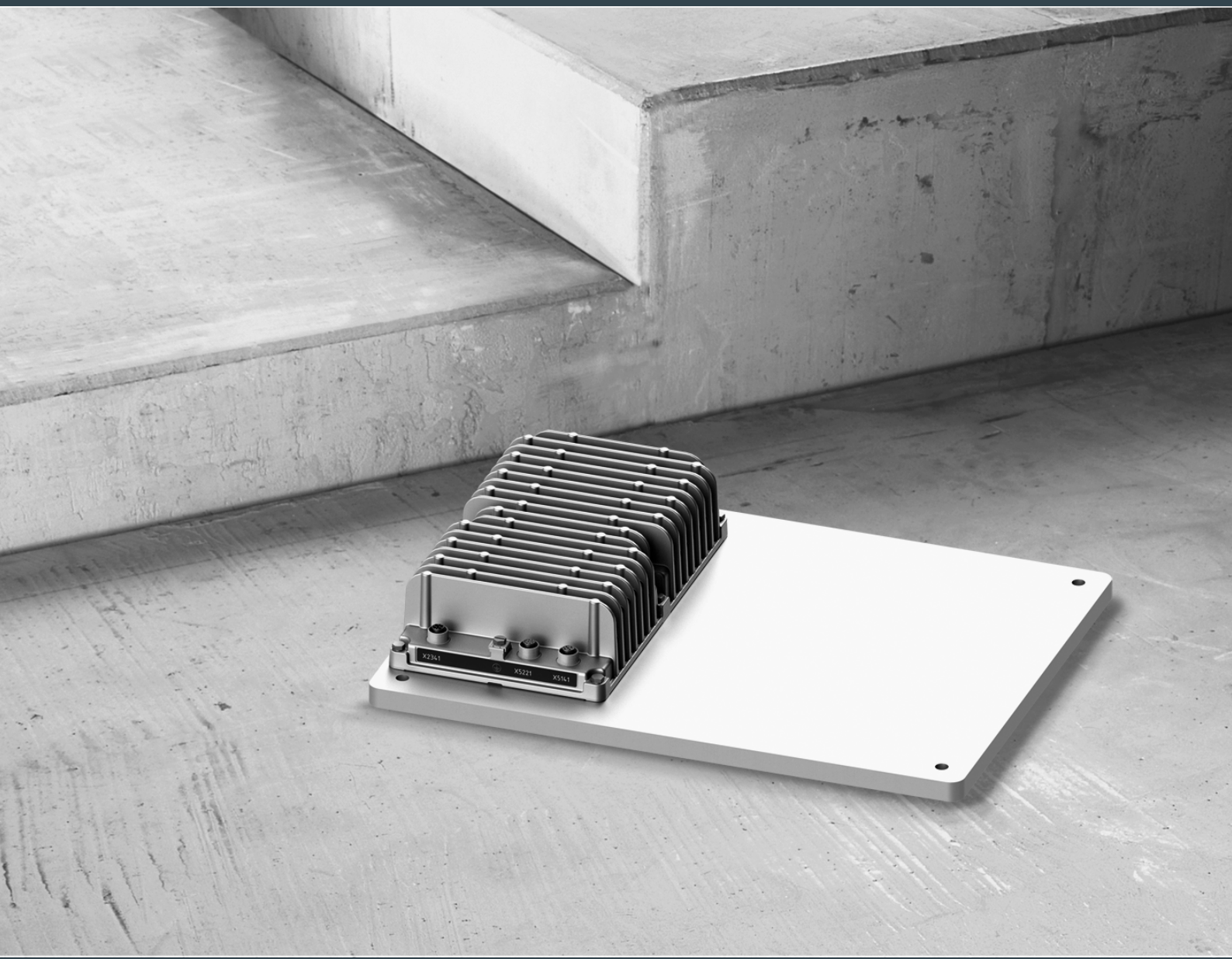
SEW EURODRIVE

Product Description



Contactless Energy Transfer System

MOVITRANS® TDM90E Pick-Up with MOVI-DPS® Storage Bundle

Edition 06/2020

28485475/EN

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1 Introduction

1.1 Operating the TDM90E pick-up with a MOVI-DPS® storage bundle

The TDM90E pick-up is a component of the MOVITRANS® contactless energy transfer system. The pick-up draws energy from a stationary line cable and uses it to charge a capacitive energy storage unit. The MOVI-DPS® storage bundle from SEW-EURODRIVE is available for this purpose.

In this product description, you will find all important information on the operation of the TDM90E pick-up with the MOVI-DPS® storage bundle.

1.2 Benefits

Using the MOVI-DPS® storage bundle in combination with the TDM90E pick-up offers the following benefits:

- The energy storage unit supplies the mobile component with energy in track sections where line cables cannot be routed. Track sections without line cable are jumpered in this way.
- The energy supply must be designed only for the mean power of the mobile component. The energy storage unit supplies the energy during peak load.

1.3 Possible applications

- Contactlessly charged mobile energy storage unit for autonomous electric vehicles.

1.4 Applications

The following applications can be equipped with the TDM90E pick-up in combination with the MOVI-DPS® storage bundle:

- Automated guided vehicle systems (AGVS)

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2 Overview of components

The combination of TDM90E pick-up and MOVI-DPS® storage bundle is coordinated with the drive components from SEW-EURODRIVE. In this way, you can receive all the components for your application from a single source.

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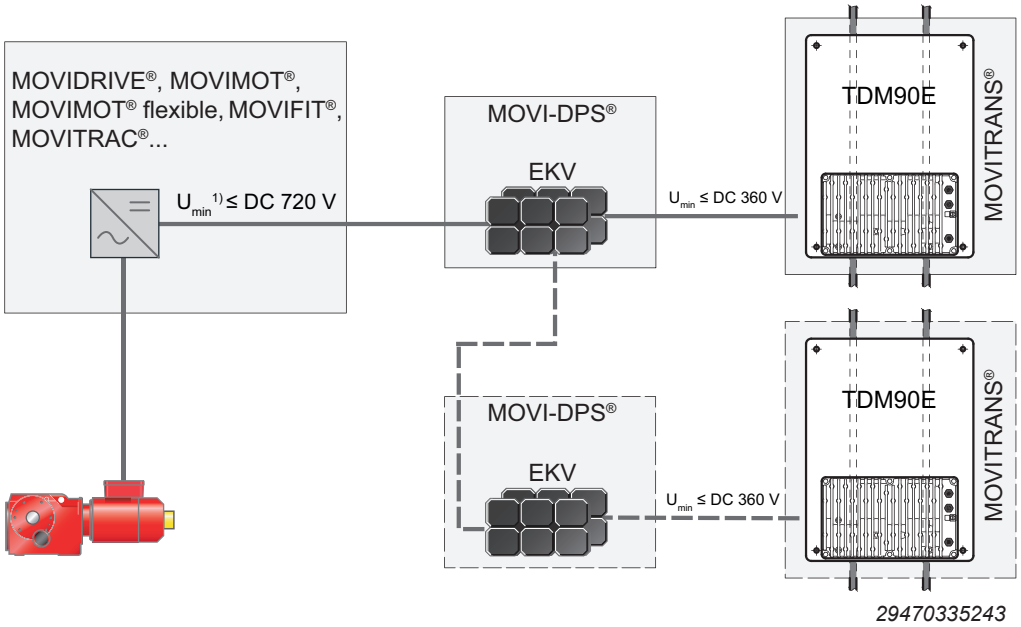
3 Operation

3.1 Functional principle

The TDM90E pick-up draws energy from the routed line cable and charges the MOVI-DPS® storage bundle. The drive and control components are supplied with energy by the MOVI-DPS® storage bundle. The MOVI-DPS® storage bundle discharges if the required drive power exceeds the charging power.

The following figure shows the connection of the components:



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1) Depends on the project planning of the application.

A single TDM90E pick-up provides a maximum output voltage of 360 V. If the DC link voltage U_Z of the frequency inverter must be higher than 360 V, you must interconnect several pick-ups in series. For information about the connections, refer to the chapter "Technical diagram (wiring)" (→ 🗎 14).

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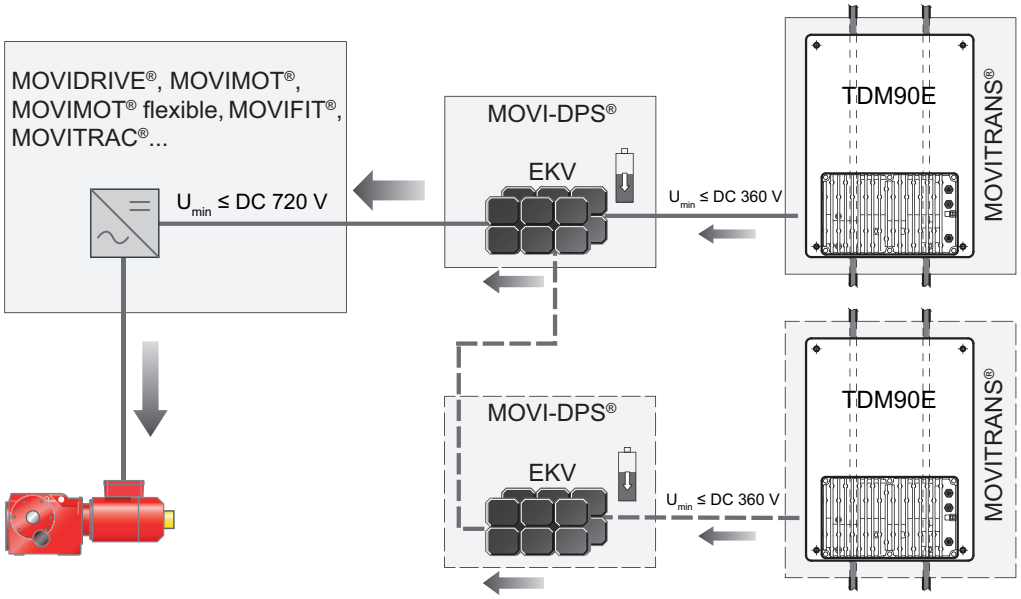
3.2 Operating phases

3.2.1 Accelerating

The MOVITRANS® contactless energy transfer system supplies the application with the mean electrical power (project-planned). The MOVI-DPS® storage bundle provides peak power, which causes the storage bundle to discharge.



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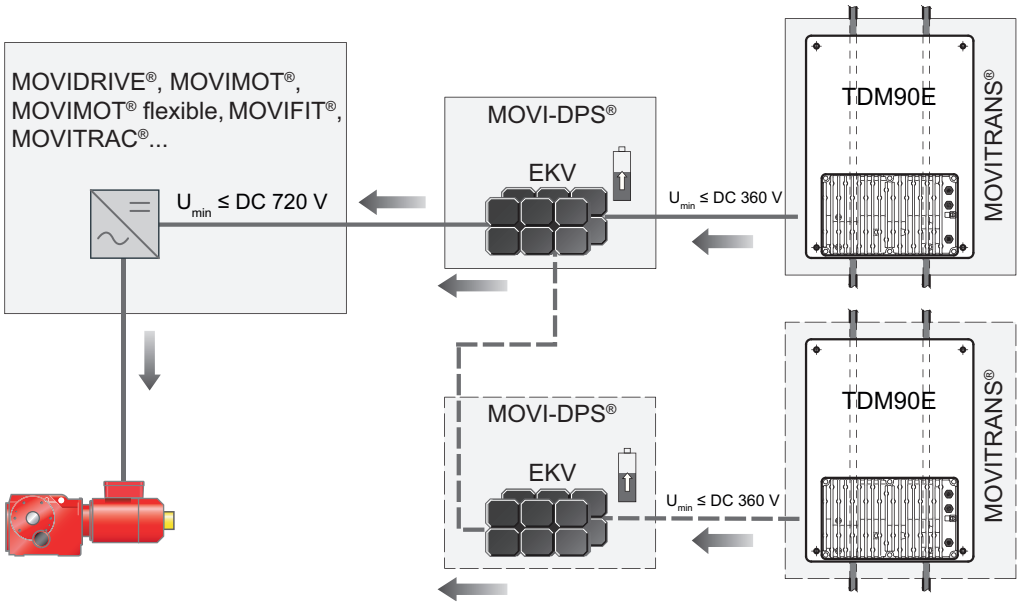
3.2.2 Constant travel

For most applications, the required energy can be supplied by the contactless energy transfer system during constant travel. The MOVI-DPS® storage bundle is charged during constant travel depending on the application and project planning.



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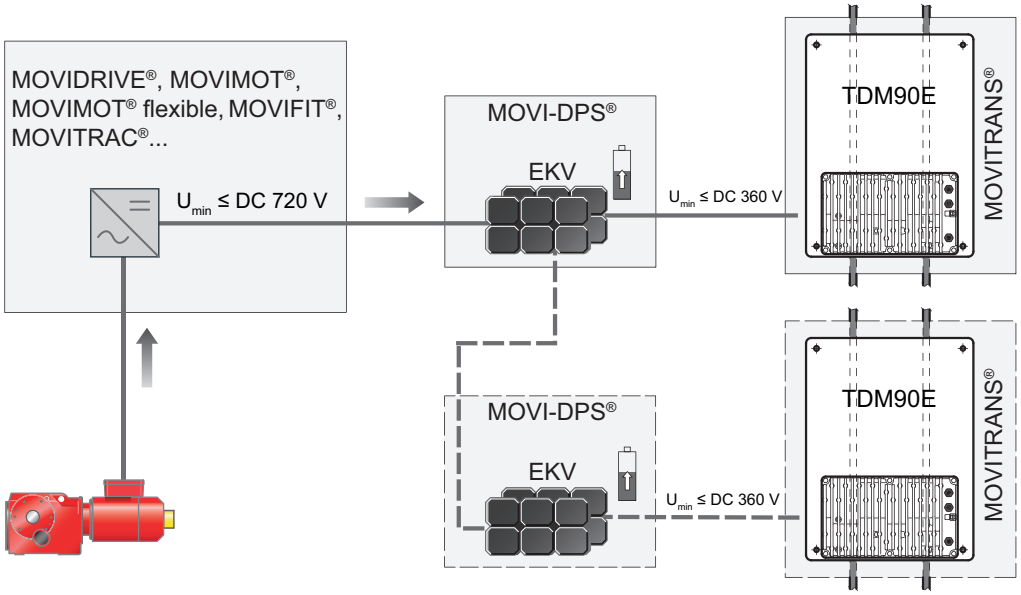
3.2.3 Braking

During braking, regenerative energy is created charging the MOVI-DPS® storage bundle. During the next travel cycle, the MOVI-DPS® storage bundle supplies the application with the stored energy.



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3.3 Available energy and power rating

3.3.1 Calculation formulas

Charging time and average charging power

The following formulas are used to calculate the charging time and average charging power:

The charging time depends on the charging current I_L and the charging capacity C. Since the charging current is constant as a first approximation, the voltage at the capacitor increases linearly:

$$\frac{\Delta U}{\Delta t_L} = \frac{I_L}{C}$$

$$\Delta t_L = \Delta U \times \frac{C}{I_L} = (U_2 - U_1) \times \frac{C}{I_L}$$

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ΔV	=	Charging voltage difference	$[\Delta U]$ = V
Δt_L	=	Charging time difference	$[\Delta t_L]$ = s
I_L	=	Charging current	$[I_L]$ = A
C	=	Charging capacity	[C] = F
U_1	=	Voltage at the time t_1 (prior to charging)	$[U_1]$ = V
U_2	=	Voltage at the time t_2 (after charging)	$[U_2]$ = V

Since the charging current is constant as a first approximation, the charging power P_L increases linearly with the voltage:

$$P_L = U \times I_L$$

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P_F	=	Charging power	$[P_L]$ = W
I_L	=	Charging current	$[I_L]$ = A
U	=	Charging voltage	[U] = V

The mean charging power or discharging capacity between 2 voltages U_1 and U_2 is calculated using the following formula:

$$P_{av} = \frac{1}{2} \times [(U_2 \times I_L) - (U_1 \times I_L)] = \frac{1}{2} \times (U_2 - U_1) \times I_L$$

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P_{av}	=	Mean charging power	$[P_{av}]$ = W
I_L	=	Charging current	$[I_L]$ = A
U_1	=	Voltage at the time t_1 (prior to charging)	$[U_1]$ = V
U_2	=	Voltage at the time t_2 (after charging)	$[U_2]$ = V

During project planning of the application consider that the available power depends on the state of charge of the MOVI-DPS® storage bundle.

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Rated power and peak power

The following formulas are used to determine the power with which the MOVI-DPS® storage bundle is charged and discharged.

Rated current I_N × voltage on storage bundle end U_B = Rated power P_N

Peak current I_{max} × voltage on storage bundle end U_B = Peak power P_{max}

During project planning of the application consider that the available power depends on the state of charge of the MOVI-DPS® storage bundle.

3.3.2 Value table

A MOVI-DPS® EKV storage bundle consisting of several MOVI-DPS® EKK storage units is connected to the TDM90E pick-up. A MOVI-DPS® storage unit consists of several energy modules with installed capacitor cells (25 F, 100 F or 350 F) that are interconnected in series.

The maximum operating voltage of the interconnected energy modules must at least correspond to the maximum output voltage of the pick-up (355 V). This is considered by the respective number of energy modules in the following table. The table shows the available power storage and the rated power.

The rated power P_N of the storage bundle is the power that can be taken from the storage bundle in the specified operating voltage range.

Operating voltage range of the EKV storage bundle: DC 240 – 350 V

	Energy module		Storage bundle (charged to 350 V)	
	Quantity	Nominal voltage	Energy content	Rated power P_N
	–	VDC	kWs	kW
EKV...A-...025-00	3	120	6	7
	6	60	11	14
EKV...A-...100-00	6	60	23	8
	12	30	45	16
EKV...A-...350-00	6	60	79	29
	12	30	158	59

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3.3.3 Charge characteristic curve and performance data

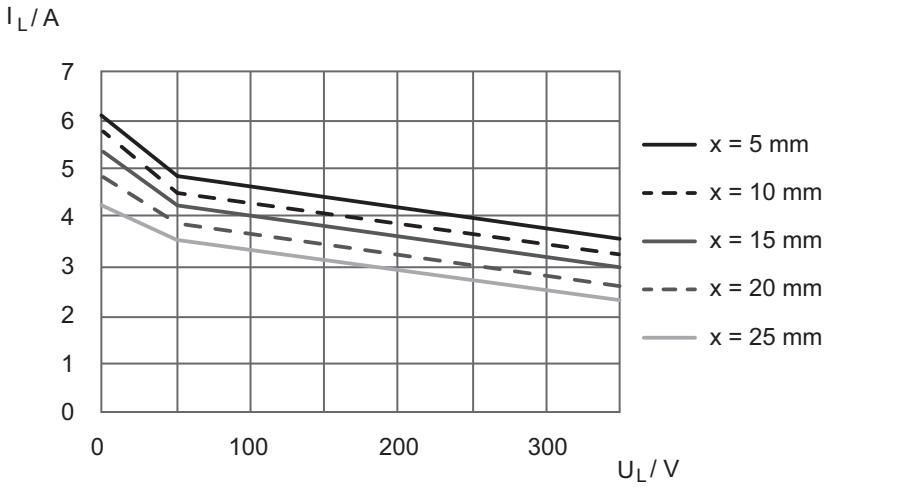
The charge characteristic curve shows the charging current depending on the charging voltage and the distance of the pick-up to the line cable. The characteristic curve is linearized.

The table specifies the peak power P_{max} and the average charging power P_{av} depending on the distance of the pick-up to the line cable. The performance data was determined without iron reinforcement or steel reinforcement in the floor. If the line cable is located directly above the reinforcement in the floor, the performance data is reduced. SEW-EURODRIVE recommends to measure and evaluate the reinforcement of the bottom prior to project planning.

The measured values were determined under the following conditions:

- Lateral offset of maximum ±10 mm (to the centerline) between pick-up and line cable
- No angular offset (parallel alignment)

TDM90E007-D35-A08-0



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I_L Charging current
U_L Charging voltage
x Distance between pick-up and line cable

x	Peak power P_{max}	Average charging power P_{av}
mm	W	W
25	805	700
20	910	700
15	1050	700
10	1120	700
5	1225	700

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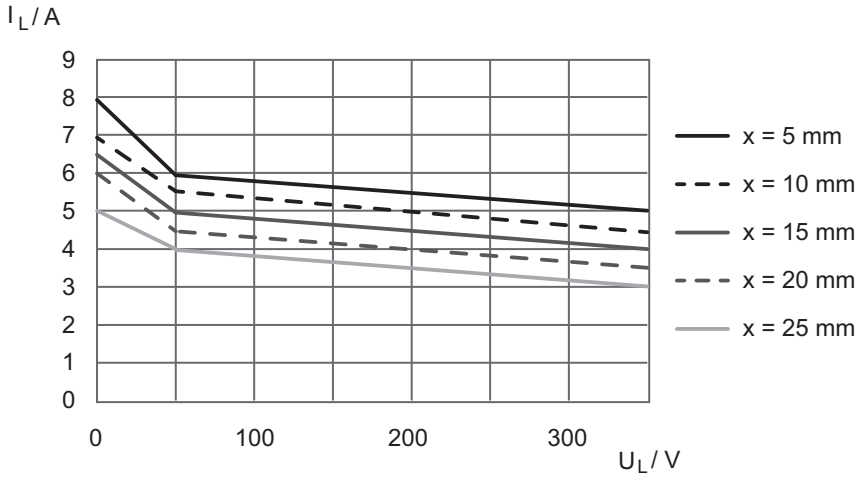
TDM90E011-D35-B06-0



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I_L Charging current
U_L Charging voltage
x Distance between pick-up and line cable

x	Peak power P_{max}	Average charging power P_{av}
mm	W	W
25	1050	1050
20	1225	1100
15	1400	1100
10	1575	1100
5	1750	1100

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4 Technical diagram (wiring)

4.1 TDM90E pick-up ↔ MOVI-DPS® storage bundle

The following figures show 3 wiring examples between pick-up and storage bundle.

You must provide the following components for cabling at the factory:

- Mounting rail
- Terminal blocks
- Fuse PCB
- Diode module, for example, SKKD 26 from Semikron (only for series connection)

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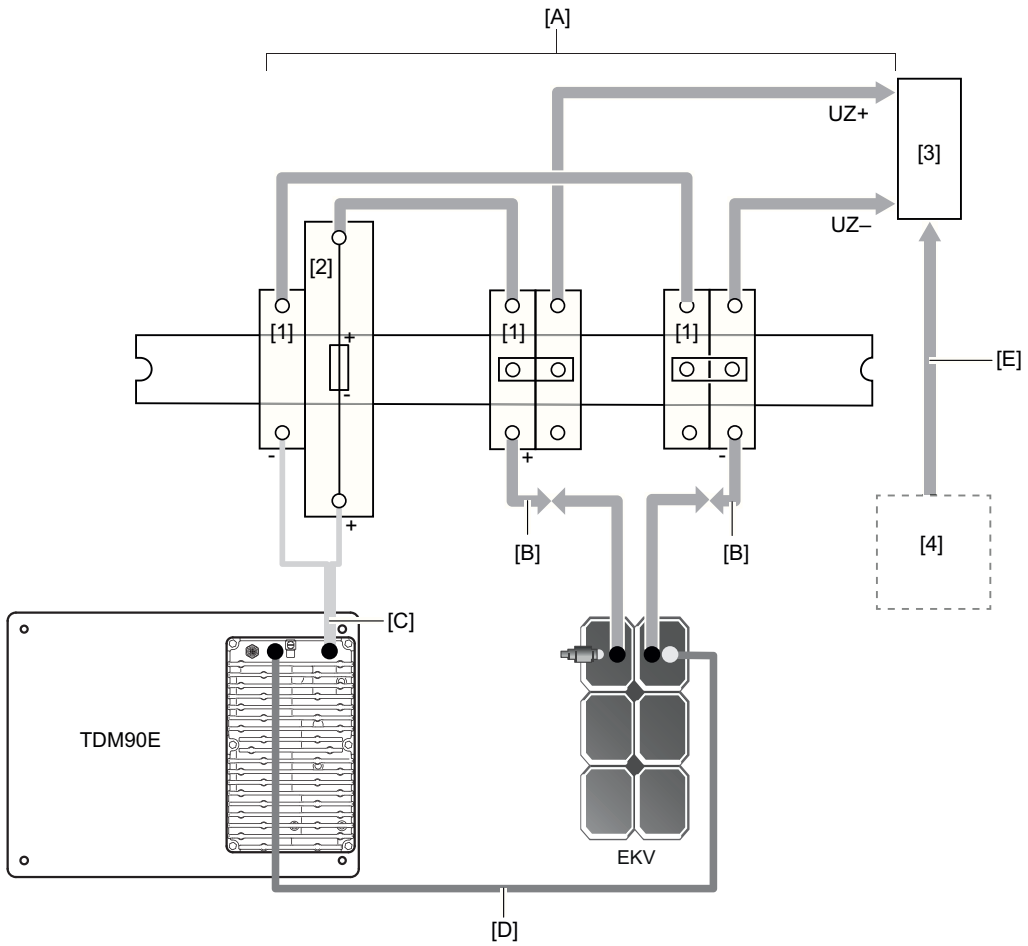
4.1.1 TDM90E pick-up with storage bundle

The following figure shows the wiring of a pick-up.



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[1] Terminal block (partially jumpered)
[2] Fuse PCB for fuse 10 A DC 400 V
[3] Interface terminal block (at the customer site)
The distributor provides the DC link voltage (UZ+ and UZ-) for the frequency inverter and the discharge unit.
[4] MOVI-DPS® discharge unit
For discharging the storage bundle, for example, in case of maintenance work.
[A] Power cable 6 mm² (short-circuit proof)
[B] "Connection cable for the power connections of the MOVI-DPS® storage bundle" (→ 🗎 24)
[C] "Connection cable for TDM90E pick-up (DC 360 V output)" (→ 🗎 21)
[D] "Connection cable for monitoring the MOVI-DPS® storage bundle" (→ 🗎 22)
[E] "Connection cable for MOVI-DPS® discharge unit" (→ 🗎 23)

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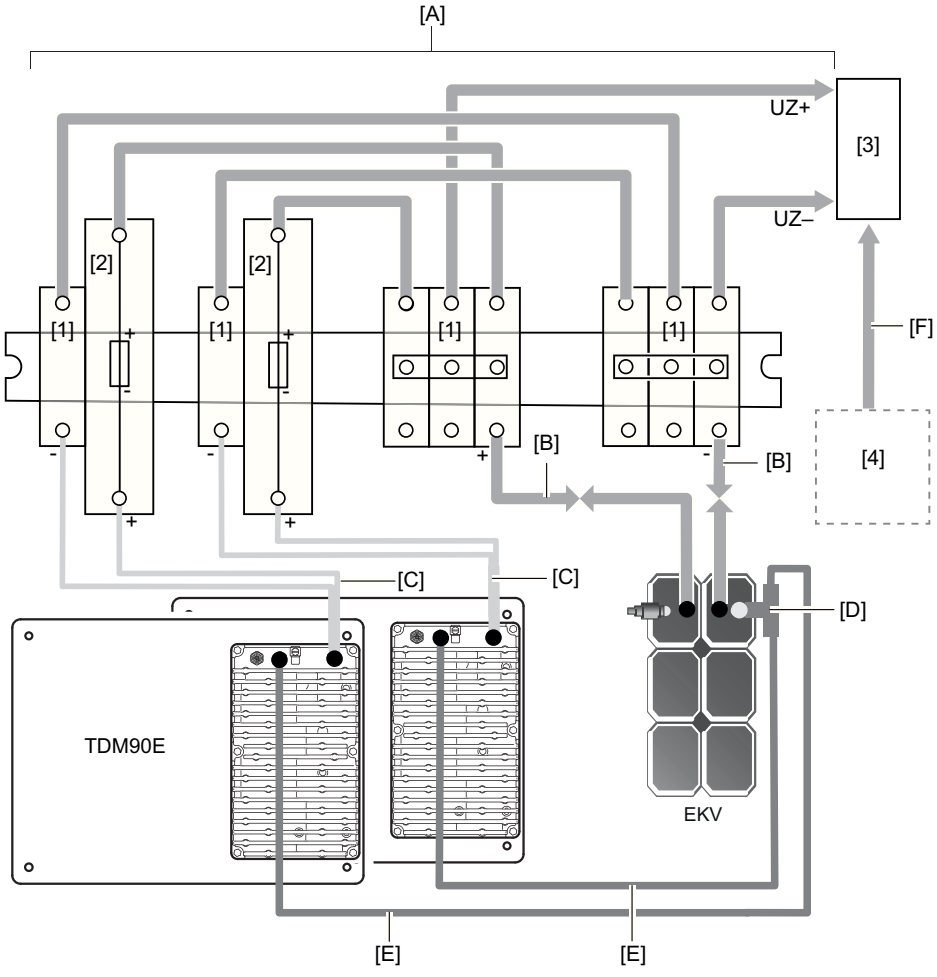
4.1.2 Several pick-ups with a storage bundle

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

Note the following points during cabling:

- In principle, you can connect any number of TDM90E pick-ups in parallel. The cabling leads to the storage bundle in a star-type connection. Each pick-up must be secured with a respective line protection with at least one pole.
- Parallel connection of more than 10 TDM90E pick-ups: Contact SEW-EURODRIVE.

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



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[1] Terminal block (partially jumpered)
[2] Fuse PCB for fuse 10 A DC 400 V
[3] Interface terminal block (at the customer site)
The distributor provides the DC link voltage (UZ+ and UZ-) for the frequency inverter and the discharge unit.
[4] MOVI-DPS® discharge unit
For discharging the storage bundle, for example, in case of maintenance work.
[A] Power cable 6 mm^2 (short-circuit proof)
[B] "Connection cable for the power connections of the MOVI-DPS® storage bundle" (→ 🗎 24)
[C] "Connection cable for TDM90E pick-up (DC 360 V output)" (→ 🗎 21)
[D] "Y adapter" (→ 🗎 23)
[E] "Connection cable for monitoring the MOVI-DPS® storage bundle" (→ 🗎 22)
[F] "Connection cable for MOVI-DPS® discharge unit" (→ 🗎 23)

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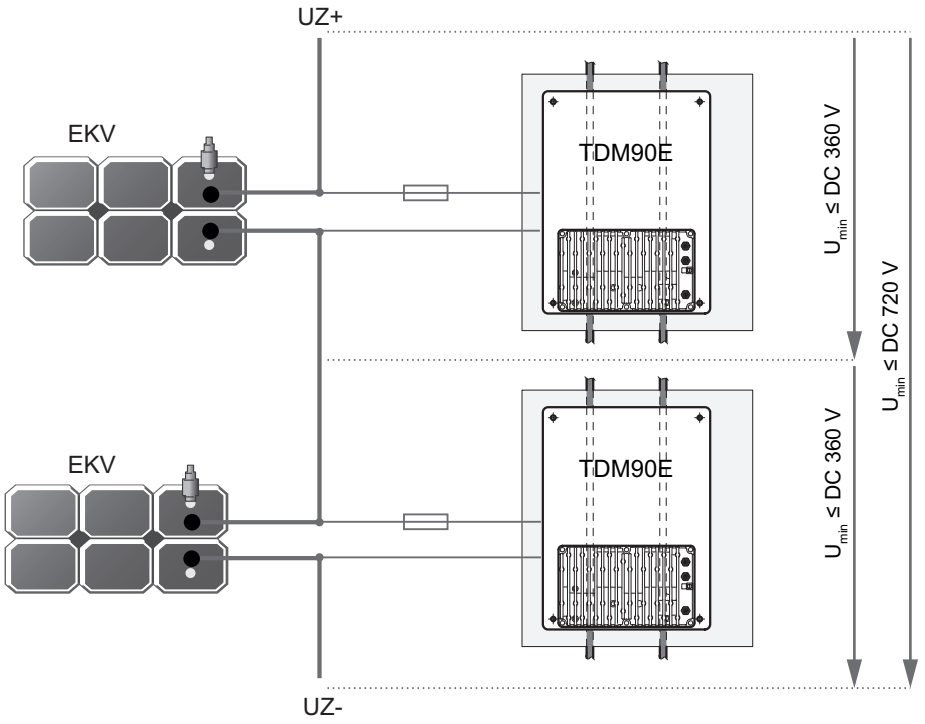
4.1.3 Several pick-ups, each with a storage bundle

Several TDM90E pick-ups, each with one storage bundle, can be interconnected in series.

The following figure shows a sketch.



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The DC link voltage increases with this connection type. The power transferred to the vehicle also increases.

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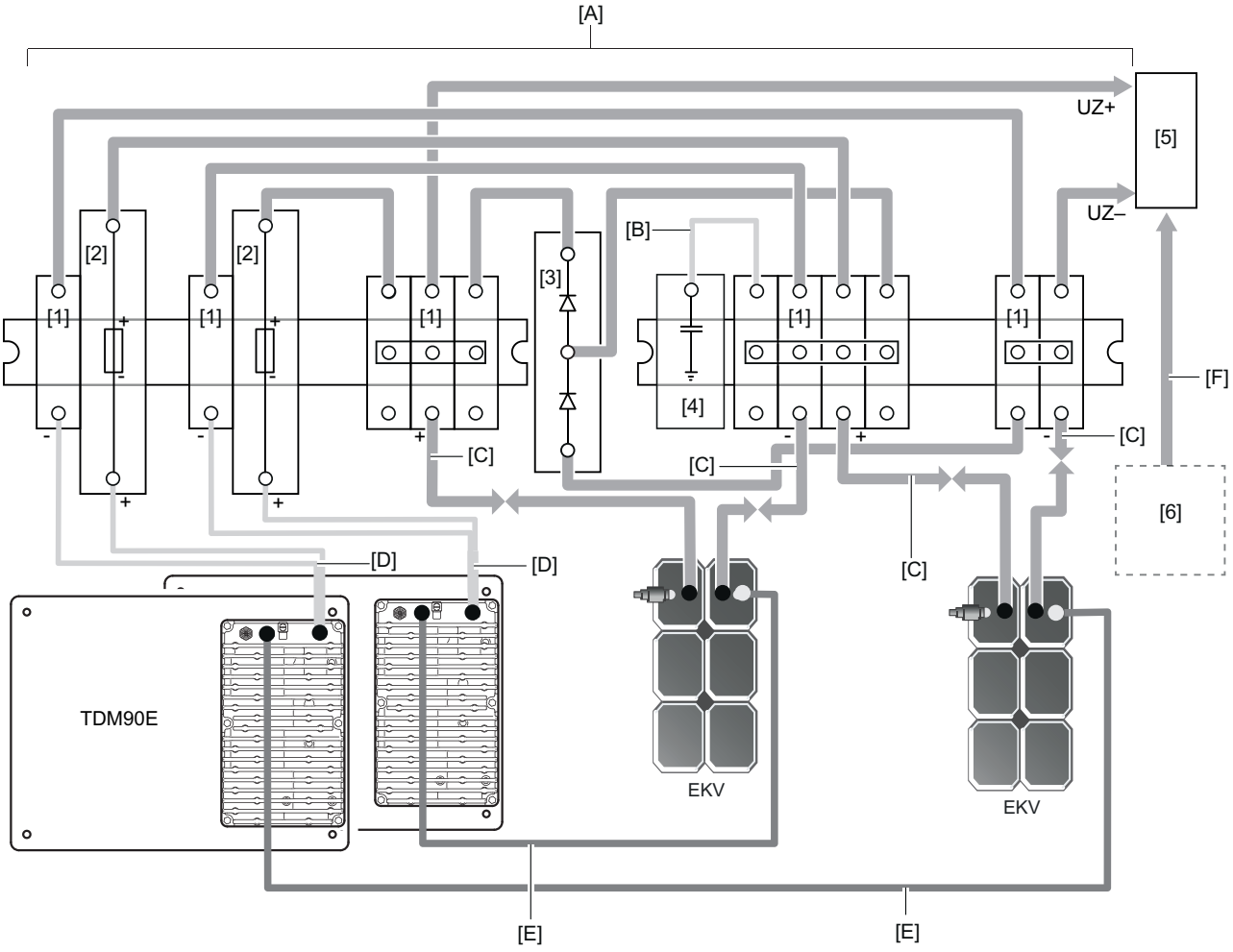
As an example, the following figure shows the wiring of 2 pick-ups.



29112019851

[1] Terminal block
[2] Fuse PCB for fuse 10 A DC 400 V
[3] Diode module
[4] 4-way capacity module (TT-SLKK 5-C 12N-230AC from PHOENIX CONTACT)
[5] Interface terminal block (at the customer site)
The distributor provides the DC link voltage (UZ+ and UZ-) for the frequency inverter and the discharge unit.
[6] MOVI-DPS® discharge unit
For discharging the storage bundle, for example, in case of maintenance work.
[A] Power cable 6 mm² (short-circuit proof)
[B] Power cable 1.5 mm² Cu
[C] "Connection cable for the power connections of the MOVI-DPS® storage bundle" (→ 🗎 24)
[D] "Connection cable for TDM90E pick-up (DC 360 V output)" (→ 🗎 21)
[E] "Connection cable for monitoring the MOVI-DPS® storage bundle" (→ 🗎 22)
[F] "Connection cable for MOVI-DPS® discharge unit" (→ 🗎 23)

You must connect a power diode [3] in parallel to the storage bundles. Connect the series connection point to the vehicle chassis via a Y capacitor [4].

4.2 Connection cables

Connection cables are not included in the delivery.

Prefabricated 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 device design and the components to be connected. This is why you do not need all listed cables.

4.2.1 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

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4.2.2 Connection cable for TDM90E pick-up (DC 360 V output)

Cable	Length/installation type	Component
Custom lengths: 10 m: Part number: 25645757  M12 male ↔ open	Fixed length 	
Custom lengths: 10 m: Part number: 25646265  M12 male ↔ open	Fixed length 	

Conductor assignment

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

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4.2.3 Connection cable for monitoring the MOVI-DPS® storage bundle

Cables	Length/installation type	Component
Standard lengths: 1.5 m: Part number 19115881 3 m: Part number 18161103 **Custom lengths:** 1 m: Part number 18161073 2 m: Part number 18161081 4 m: Part number 18161111 5 m: Part number 18161138  M12 male ↔ M12 female	Fixed length 	MOVI-DPS® storage bundle
Custom lengths: 1 m: Part number: 18161146 2 m: Part number: 18161154 3 m: Part number: 18161162 4 m: Part number: 18161170 5 m: Part number: 18161189  M12 male ↔ M12 female	Fixed length 	MOVI-DPS® storage bundle
Custom lengths: 1.5 m: Part number: 25645749  M12 male ↔ M12 female	Fixed length 	MOVI-DPS® storage bundle

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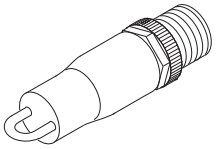
Jumper plug

Part number: 28217063

Connection: M12

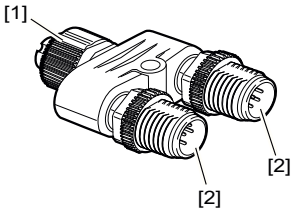


Y adapter

Part number: 25646567

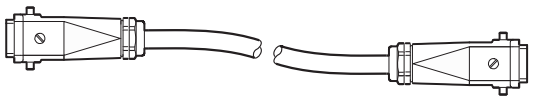
Connection: 3 × M12

Y adapter for parallel connection of several TDM90E pick-ups with a MOVI-DPS® storage bundle



[1] Connection X5222 at the MOVI-DPS® storage bundle
[2] Connection cable of TDM90E pick-up (connection X5221)

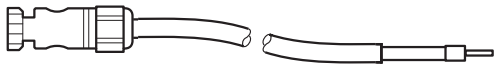
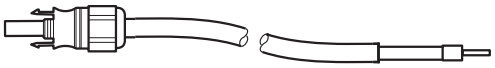
4.2.4 Connection cable for MOVI-DPS® discharge unit

Cable	Length/installation type	Component
Part number: 18162037  Han® Q 2/0, male ↔ Han® Q 2/0, male	Variable length 	• MOVI-DPS® energy interface • MOVI-DPS® power interface

Conductor assignment

Part number	Signal name	Core color
18162037	R+	Black/1
	R-	Black/2
	PE	Green-yellow

4.2.5 Connection cable for the power connections of the MOVI-DPS® storage bundle

Cables	Length/installation type	Component
Part number: 18195199 Cable design: (1x6.0)  Multi-Contact PV-KST4/6II-UR female↔ open	Variable length (max. 4 m) 	MOVI-DPS® storage unit
Part number: 18195202 Cable design: (1x6.0)  Multi-Contact PV-KST4/6II-UR male↔ open	Variable length (max. 4 m) 	MOVI-DPS® storage unit

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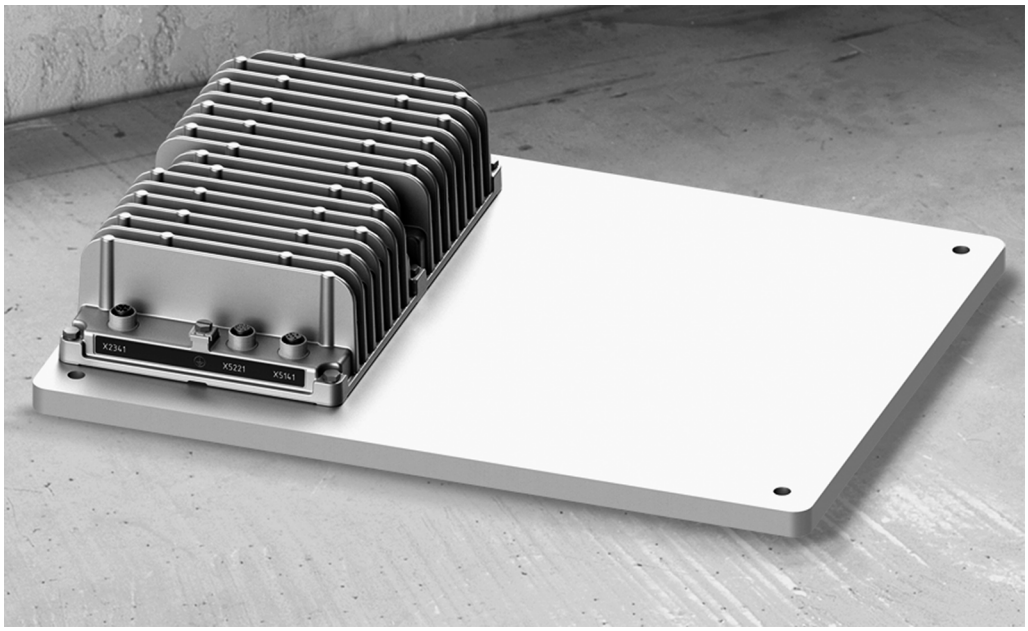
5 Component description

5.1 TDM90E pick-up



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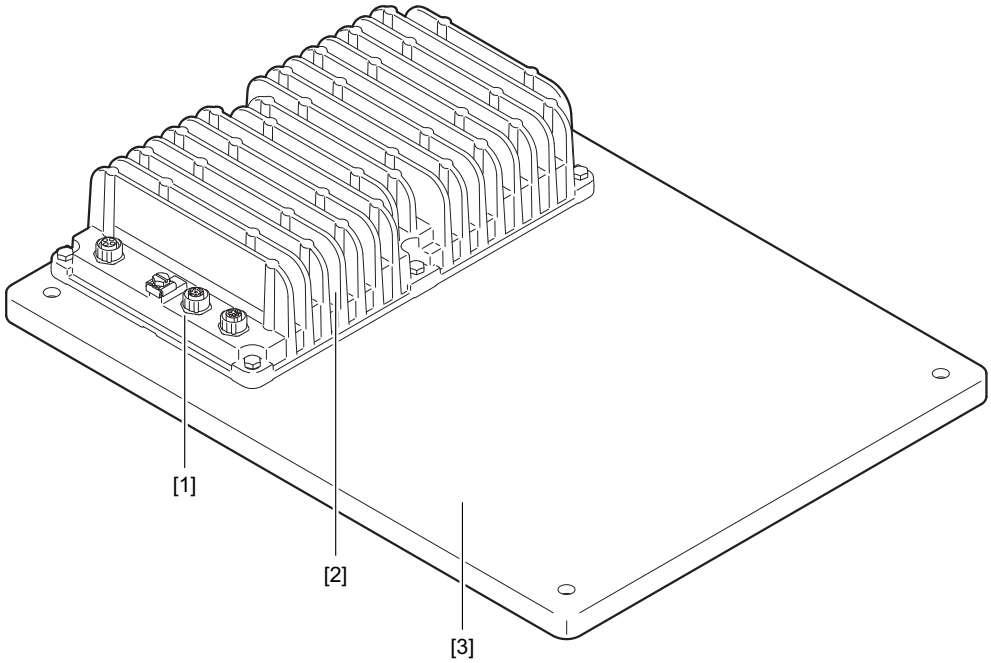
5.1.1 Device overview

The following figure shows the device structure:



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[1] Connections
[2] Mobile converter
[3] Pick-up

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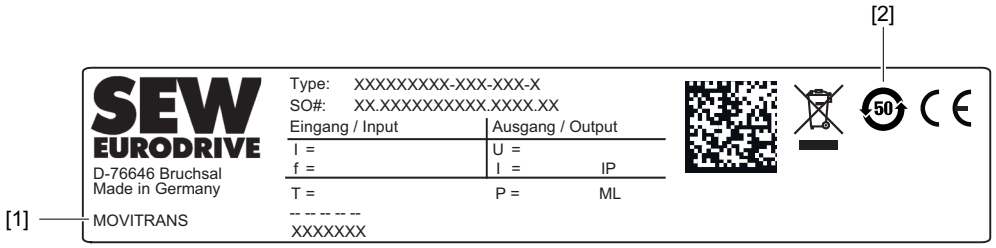
5.1.2 Scope of delivery

Component
MOVITRANS® pick-up with direct supply TDM90E007-D35-A08-0
or
MOVITRANS® pick-up with direct supply TDM90E011-D35-B06-0

5.1.3 Nameplate

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



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[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#	Order number
U	Voltage
I	Current
f	Frequency
T	Ambient temperature
P	Nominal power
IP	Degree of protection

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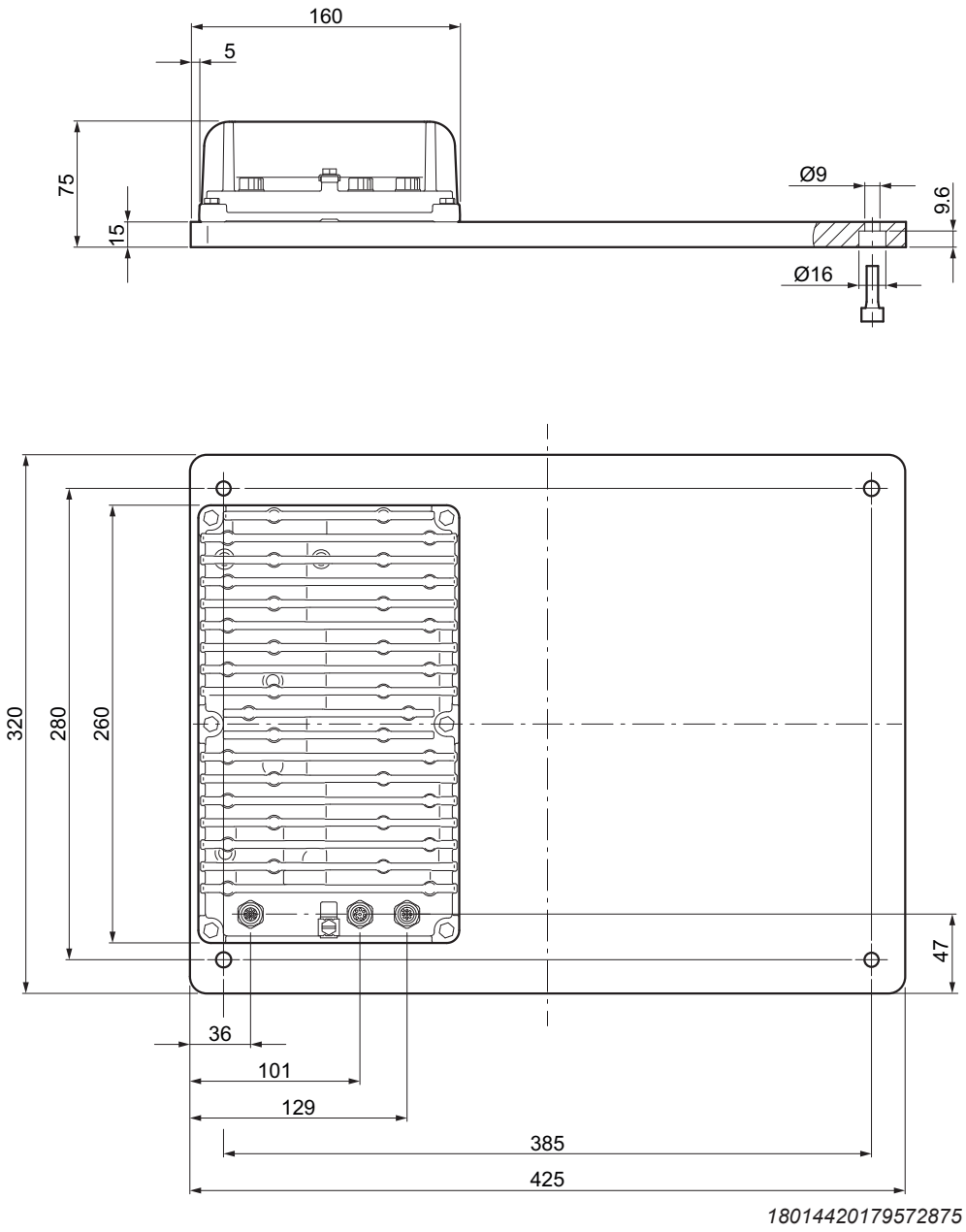
5.1.4 Dimension drawing

The dimension drawing shows the mechanical dimensions in mm:

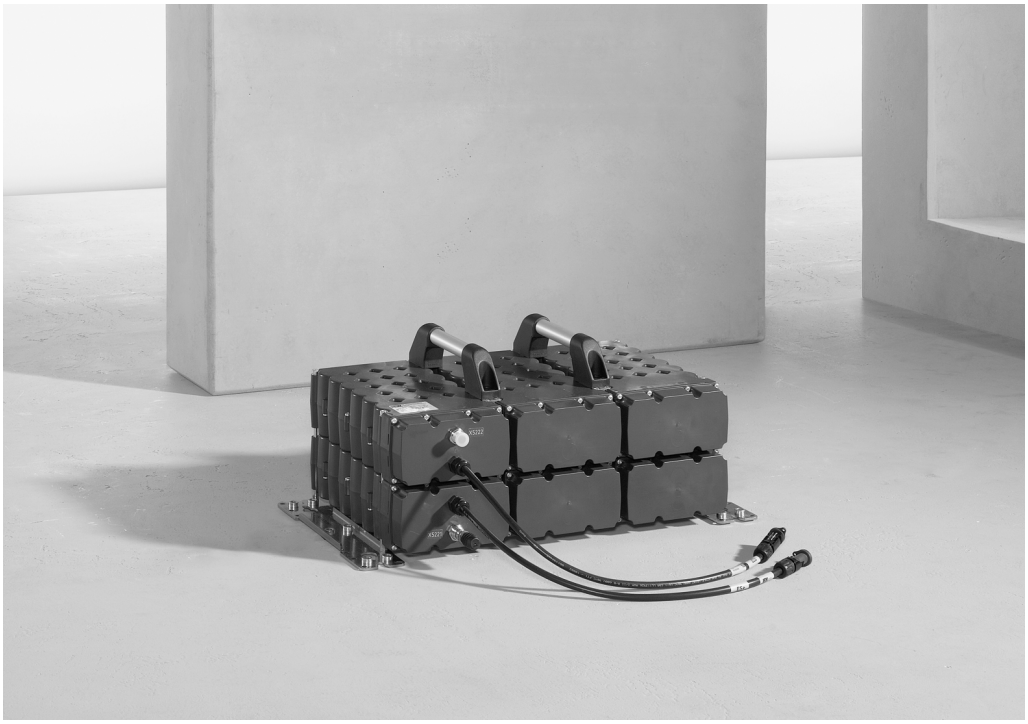


18014420179572875

5.2 MOVI-DPS® storage unit and bundle

The MOVI-DPS® storage unit stores energy and supplies the energy to the application as needed. The MOVI-DPS® storage unit is scalable and can consist of various energy modules.

Several MOVI-DPS® storage units are combined into one MOVI-DPS® storage bundle. The MOVI-DPS® storage bundle is connected directly to the TDM90E pick-up.



9007212062147723

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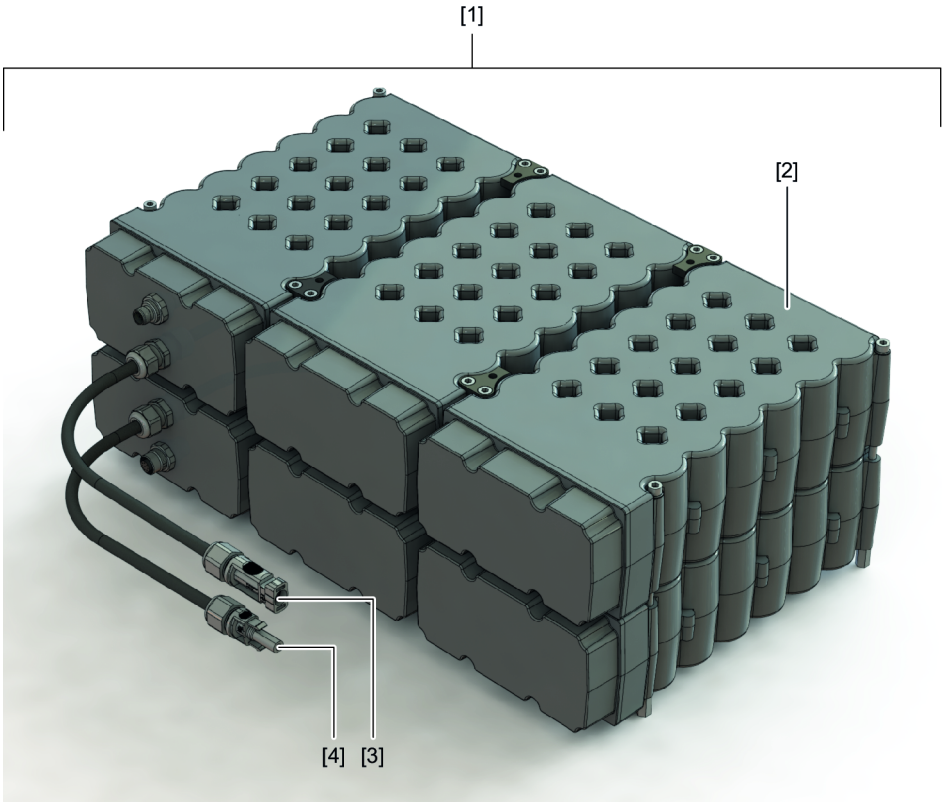
5.2.1 MOVI-DPS storage unit

A MOVI-DPS storage unit consists of a varying number of energy modules.

The following figure shows an example of a MOVI-DPS storage unit structure with 6 energy modules (3 × 2):



27021604741996171

[1] MOVI-DPS storage unit
[2] Energy module (number depends on MOVI-DPS storage unit)
[3] Connection cable for ES– with Multi-Contact PV-KST4/6II-UR plug connector
[4] Connection cable for ES+ with Multi-Contact PV-KBT4/6II-UR plug connector

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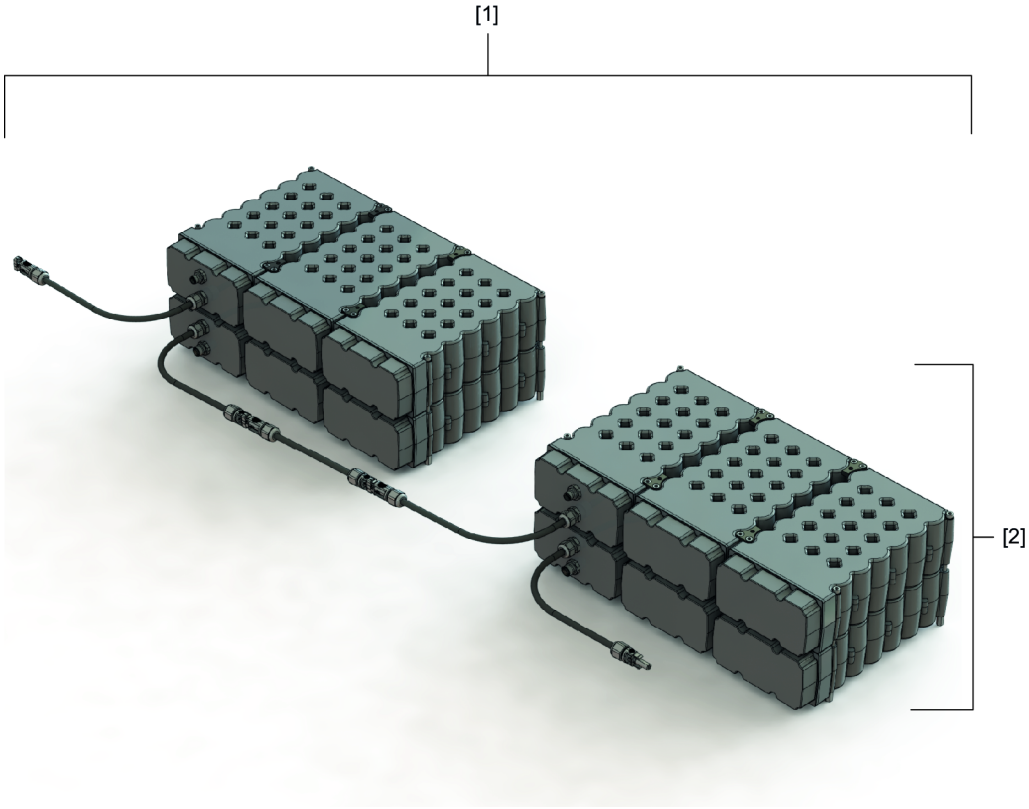
5.2.2 MOVI-DPS storage bundle

A MOVI-DPS storage bundle consists of a variable number of MOVI-DPS storage units.

Combine only MOVI-DPS storage units with the same production number to one MOVI-DPS storage bundle.

The following figure shows a MOVI-DPS storage bundle with 2 MOVI-DPS storage units:



16949739019

[1] MOVI-DPS storage bundle
[2] MOVI-DPS storage unit

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5.2.3 Type designation of MOVI-DPS® storage units

The type designation of the MOVI-DPS® storage unit EKS...A-.....M...S..-00 comprises the following device characteristic data:

EKS...A	MOVI-DPS® storage unit
-..	Nominal voltage: Value × 10 V
.	Connection: P = Parallel connection S = Series connection
...	Nominal capacitance per cell 350 = 350 F 100 = 100 F
M	Energy modules
.	Number of energy modules at x axis (maximum 4)
.	Number of energy modules at y axis (maximum 3)
S	Cell monitoring = standard
.	Waste heat: P = Passive A = Active, with fan assembly (only for 350 F and number of energy modules on x axis = 3)
..-00	Connection type

5.2.4 Type designation of MOVI-DPS® storage bundle

The type designation of the MOVI-DPS® storage bundle EKV...A-..S...-00 comprises the following device characteristic data:

EKV...A	MOVI-DPS® storage bundle
-	
..	Nominal voltage: Value × 10 V
.	Connection: P = Parallel connection S = Series connection
...-00	Nominal capacitance per cell in F

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5.2.5 Nameplate

Each MOVI-DPS® storage unit has a nameplate that provides important information. The following figure shows an example of a nameplate with the data of a MOVI-DPS® storage unit:

9007206232519051

S/N	Production number
Type	Type designation
EKS	Number of MOVI-DPS® storage units in a MOVI-DPS® storage bundle (example: 1/3 = MOVI-DPS® storage unit 1 of 3)
U_N	Nominal voltage
C_N	Nominal capacity
U_{max}	Maximum operating voltage
I_{max}	Peak current for 1 s
T	Permitted ambient temperature

5.2.6 Scope of delivery

The following components are included in the delivery of the MOVI-DPS storage bundle:

Component
MOVI-DPS storage unit EKS...A-.....M...S..-00 including the following permanently installed connection cables, length 0.5 m: • For ES– with plug connector Multi-Contact PV-KST4/6II-UR • For ES+ with plug connector Multi-Contact PV-KBT4/6II-UR Optional: Pre-assembled fan assembly for MOVI-DPS storage unit EKS...A-...**350**M**3**.S**A**..-00
Jumper plug (part number 28217063)
Protective covers for all signal plug connectors

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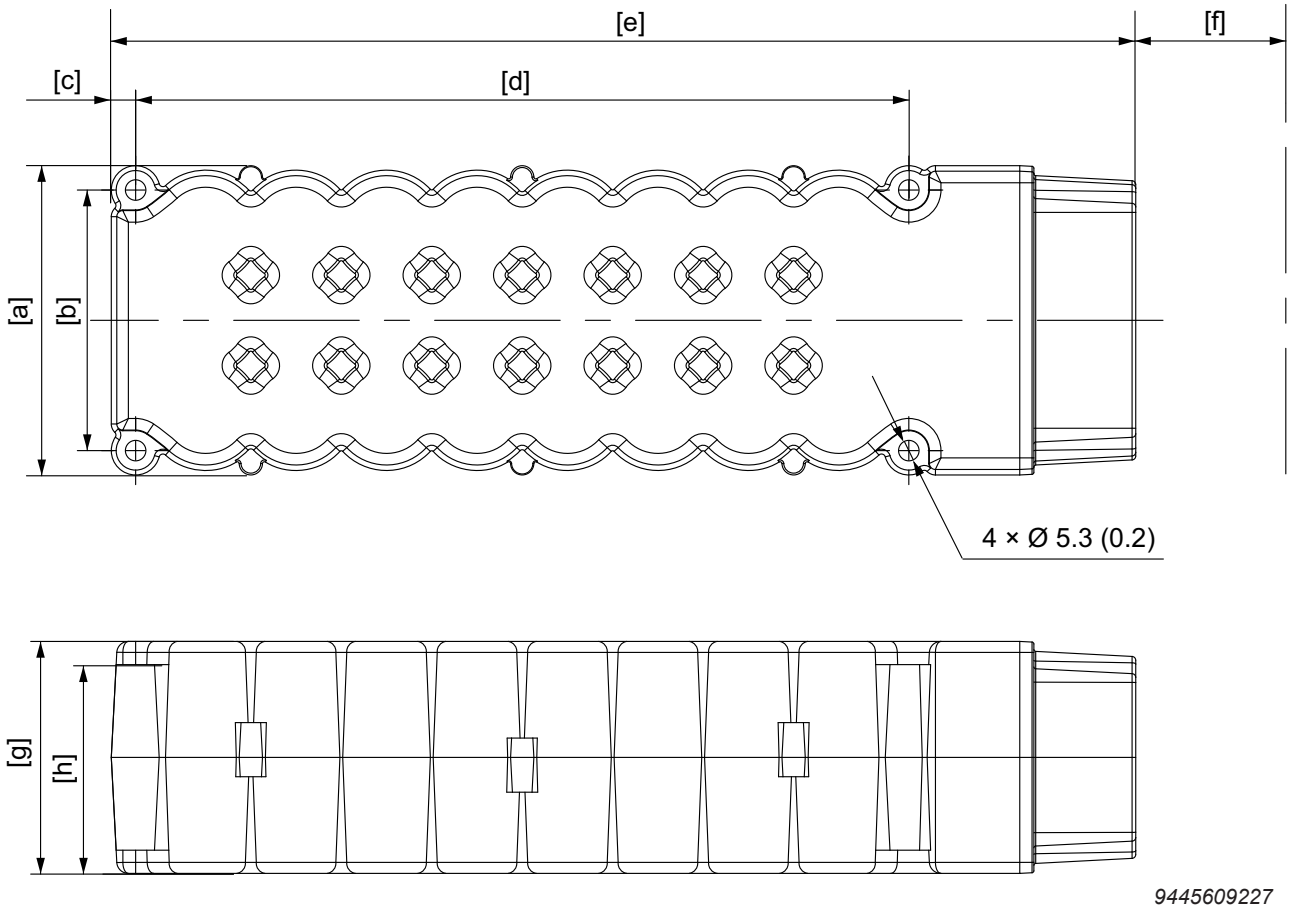
5.2.7 Dimension drawings

Dimension drawing energy module

The dimension drawing shows the mechanical dimensions of the energy module in mm (in). The dimensions depend on the variant.



Energy module	Value [mm (in)]	
Dimension	**100 F**	**350 F**
a	80 (3.1)	150 (5.91)
b	67.4 (2.65)	136 (5.35)
c	6.3 (0.3)	7 (0.3)
d	200 (7.87)	208 (8.19)
e	265 (10.4)	270 (10.6)
f	100 (3.94)	100 (3.94)
g	60 (2.4)	80 (3.1)
h	54 (2.1)	74 (2.9)

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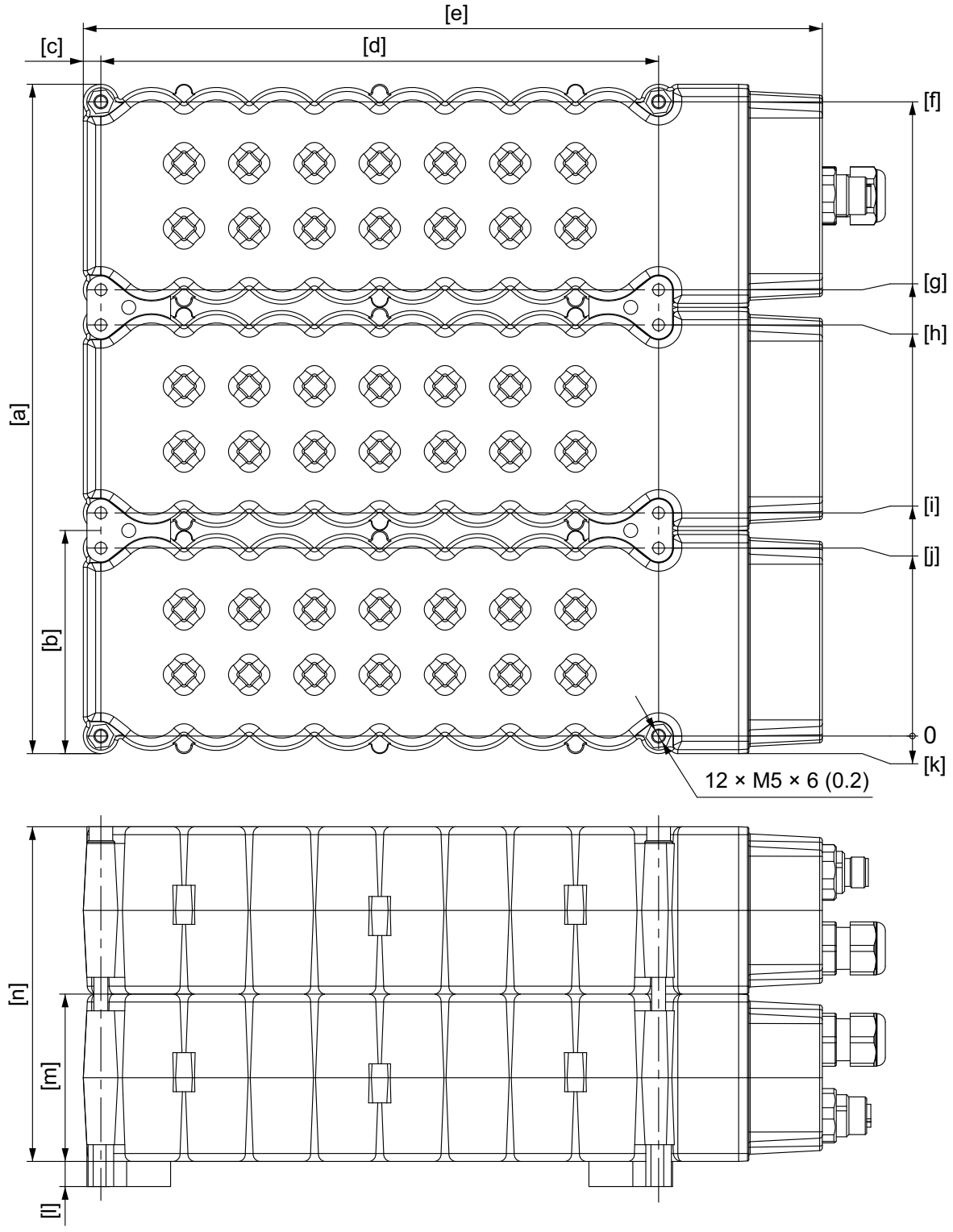
Dimension drawing of MOVI-DPS storage unit

The dimension drawing shows an example of the mechanical dimensions of a MOVI-DPS storage unit with 6 energy modules (3 × 2) in mm (in). The dimensions depend on the number and variant of the energy modules.



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Dimension	Value [mm (in)]		
	EKS...A-..S025M032SP..-00 **EKS...A-..P025M032SP..-00**	**EKS...A-..S100M032SP..-00** **EKS...A-..P100M032SP..-00**	**EKS...A-..S350M032SP..-00** **EKS...A-..P350M032SP..-00**
a	240 (= 3 × 80) (9.45 (= 3 × 3.1))	240 (= 3 × 80) (9.45 (= 3 × 3.1))	450 (= 3 × 150) (17.7 (= 3 × 5.91))
b	80 (3.1)	80 (3.1)	150 (5.91)
c	6.3 (0.3)	6.3 (0.3)	7 (0.3)
d	222 (8.66)	200 (7.87)	208 (8.19)
e	280 (11.4)	265 (10.4)	270 (10.6)
f	227.4 (8.95)	227.4 (8.95)	436 (17.2)
g	160 (6.2)	160 (6.2)	300 (11.8)
h	147.4 (5.8)	147.4 (5.8)	286 (11.3)
i	80 (3.1)	80 (3.1)	150 (5.91)
j	67.4 (2.65)	67.4 (2.65)	136 (5.35)
k	6.3 (0.3)	6.3 (0.3)	7 (0.3)
l	9 (0.4)	9 (0.4)	9 (0.4)
m	42 (1.7)	60 (2.4)	80 (3.1)
n	84 (= 2 × 42) (3.4 (= 2 × 1.7))	120 (= 2 × 60) (4.8 (= 2 × 2.4))	160 (= 2 × 80) (6.2 (= 2 × 3.1))

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6 Accessories

6.1 MOVI-DPS® storage unit and bundle

The following accessories are available:

	Part number
Input module OAI41C (analog)	28211960
Mounting bracket kit	18157890
Mounting kit	18157882
Handle 180	18157904
MOVI-DPS® discharge unit size 1	13574949
MOVI-DPS® discharge unit size 2	13574930

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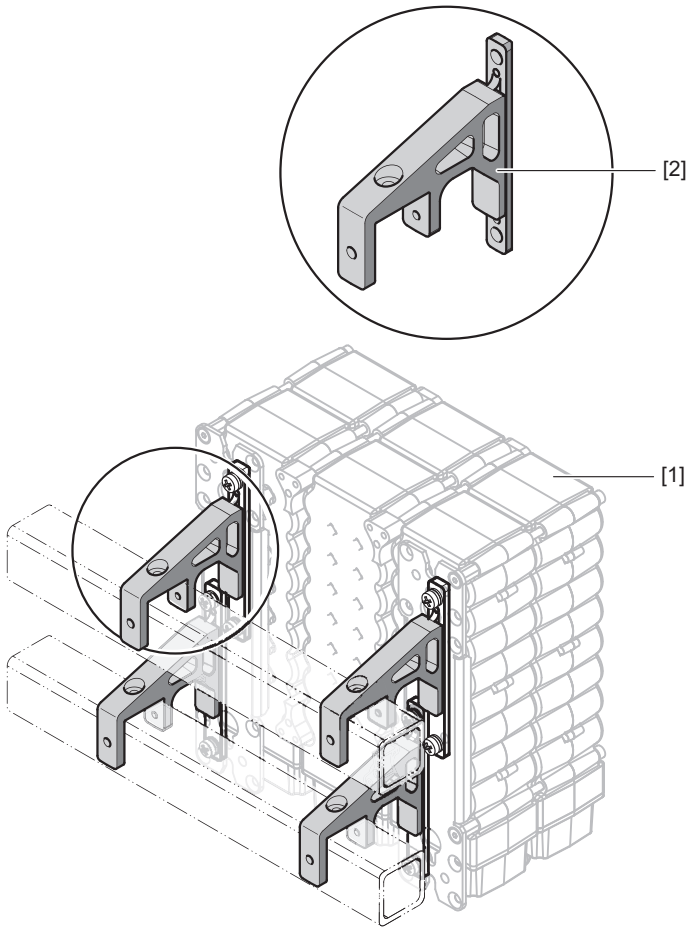
6.1.1 Mounting brackets for mounting to square tubes or rods

The mounting brackets allow for safe and convenient attachment of the MOVI-DPS® storage units to square tubes or rods:



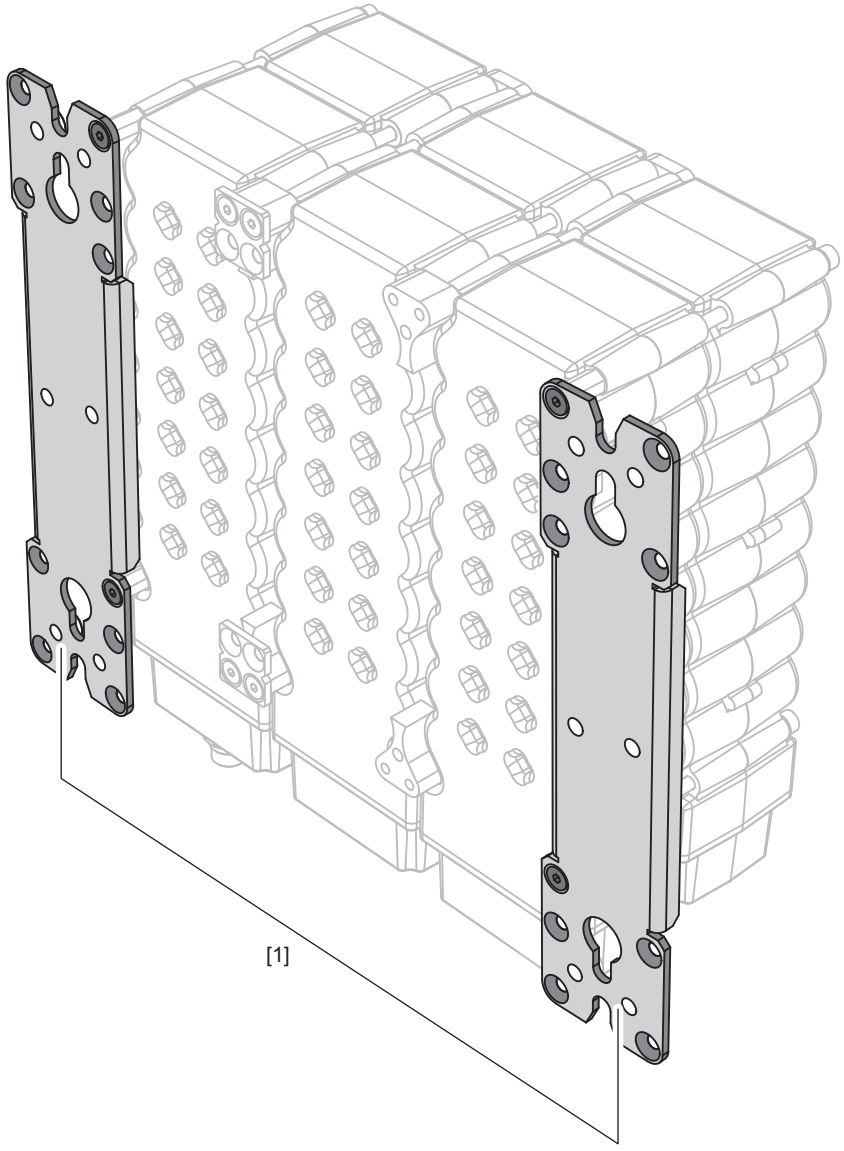
25906330379

[1] MOVI-DPS storage unit
[2] Mounting bracket

	Mounting bracket	Part number
MOVI-DPS storage unit	Mounting bracket set (4 mounting bracket, 2 retaining plates)	18157890

6.1.2 Retaining plates for surface mounting

The retaining plates allow for safe and convenient attachment of the MOVI-DPS® storage units to surfaces:



18150197643

[1] Retaining plates

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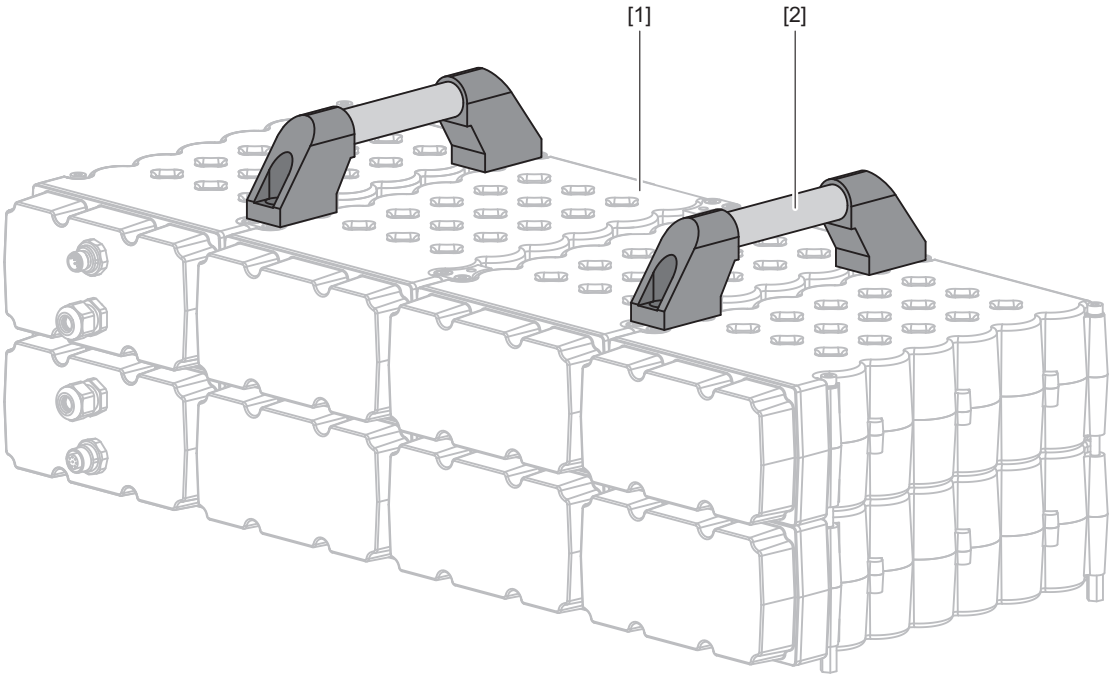
6.1.3 Handles

INFORMATION

No handles can be used for MOVI-DPS storage units with fan assembly.

For easier handling, the MOVI-DPS storage units can be equipped with handles.



17118124043

[1] MOVI-DPS storage unit
[2] Handle

Handle	Part number
1 pieces with 2 retaining screws	18157904

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6.1.4 MOVI-DPS® discharge unit

The MOVI-DPS® discharge unit serves to discharge the MOVI-DPS® storage bundle. This is necessary so that you can disconnect the MOVI-DPS® storage bundle from the TDM90E pick-up. The MOVI-DPS® discharge unit is connected to the MOVI-DPS® storage bundle using the terminal block, see chapter "Technical diagram (wiring)" (→ 🗎 14).

18166899339

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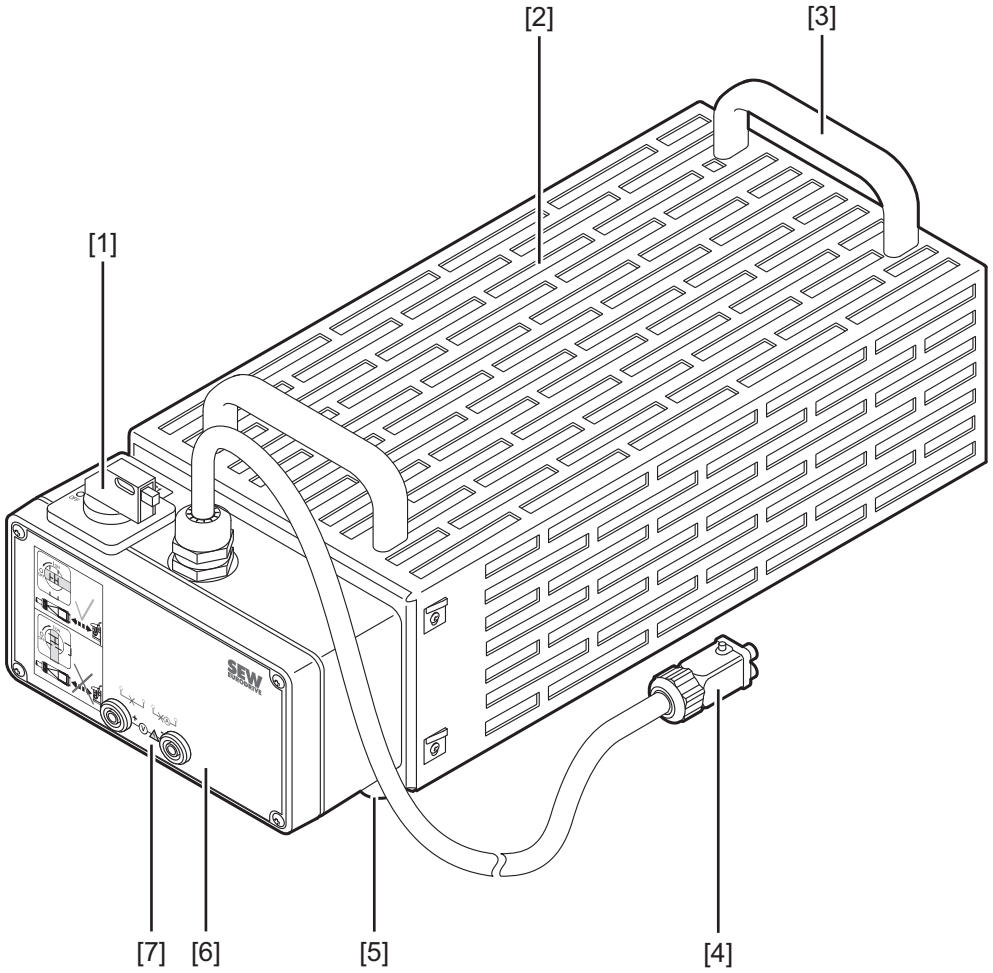
Size 1



9007211315817995

[1] Switch S1
[2] Ventilation grille
[3] Handle (2 ×)
[4] Connection cable with Han® Q 2/0, male
[5] Foot (4 ×)
[6] Front panel connectors
[7] Caution sign

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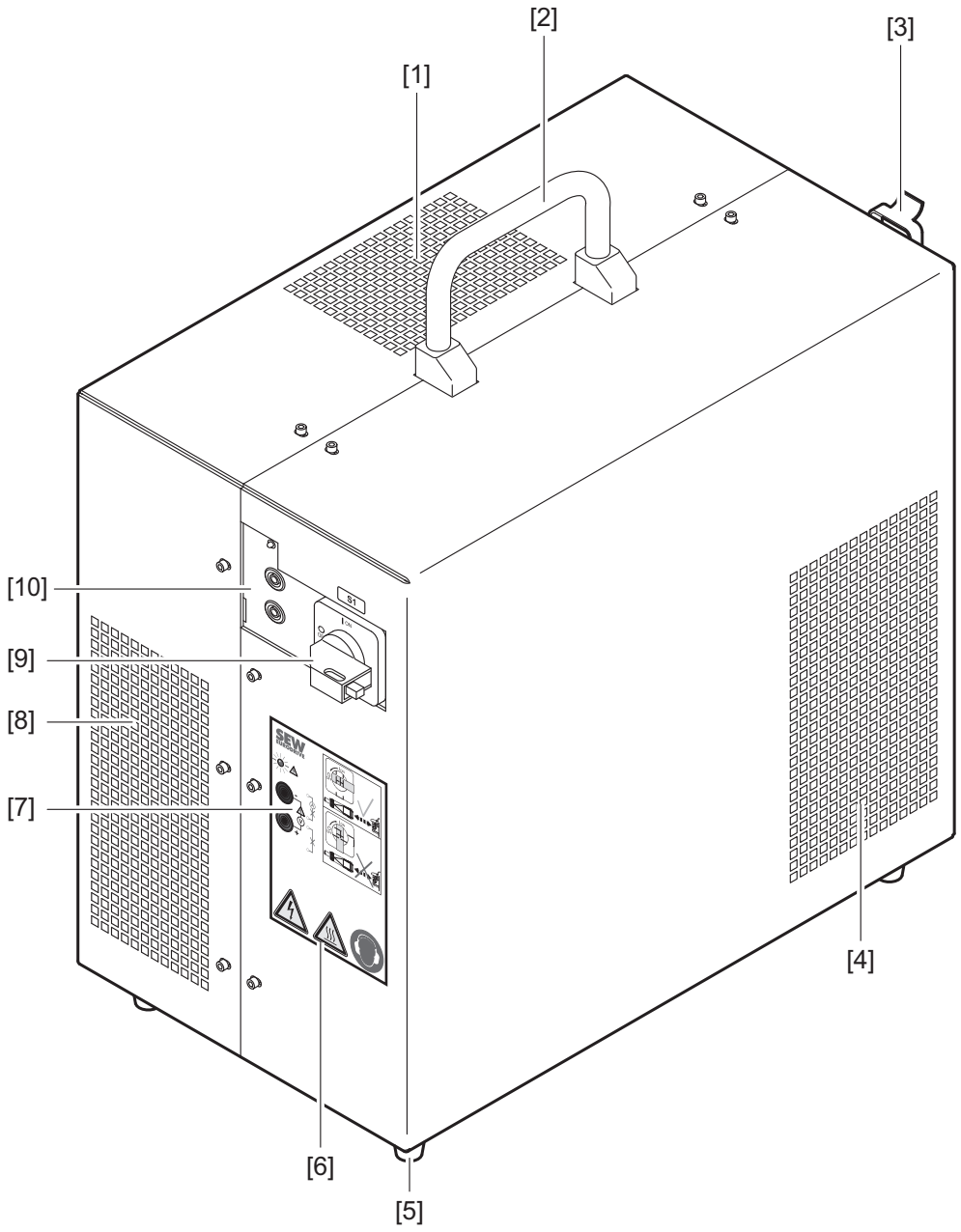
Size 2



9007211340293515

[1] Upper ventilation grille
[2] Handle
[3] Connection for MOVI-DPS® energy or power interface
[4] Ventilation grille at the side
[5] Foot (4 ×)
[6] Caution signs (3 ×)
[7] Caution sign
[8] Front ventilation grille
[9] Switch S1
[10] Front panel connectors

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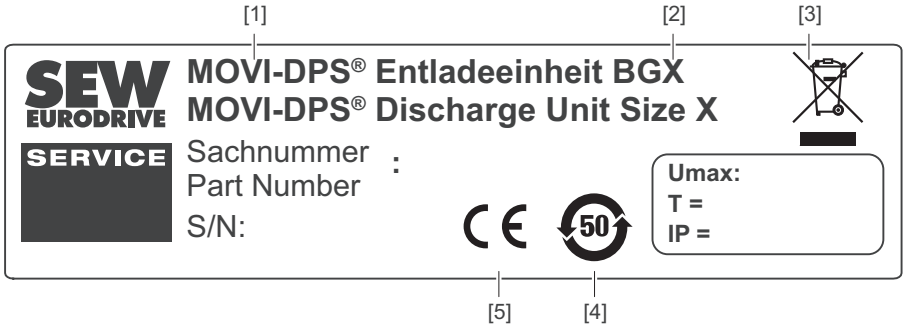
Scope of delivery

The scope of delivery includes the following components:

Discharge unit	Part number
MOVI-DPS® discharge unit size 1	13574949
or	
MOVI-DPS® discharge unit size 2	13574930

Nameplate

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



27021607501569419

[1] Product name (German/English)
[2] Size
[3] Designation in accordance with WEEE Directive
[4] China RoHS-2 marking
[5] CE marking

Depending on the device design, the following information is listed on the main nameplate:

Value	Specification
Part Number	Part number
S/N	Serial number
U_{max}	Maximum storage voltage
T	Operating temperature
IP	Degree of protection

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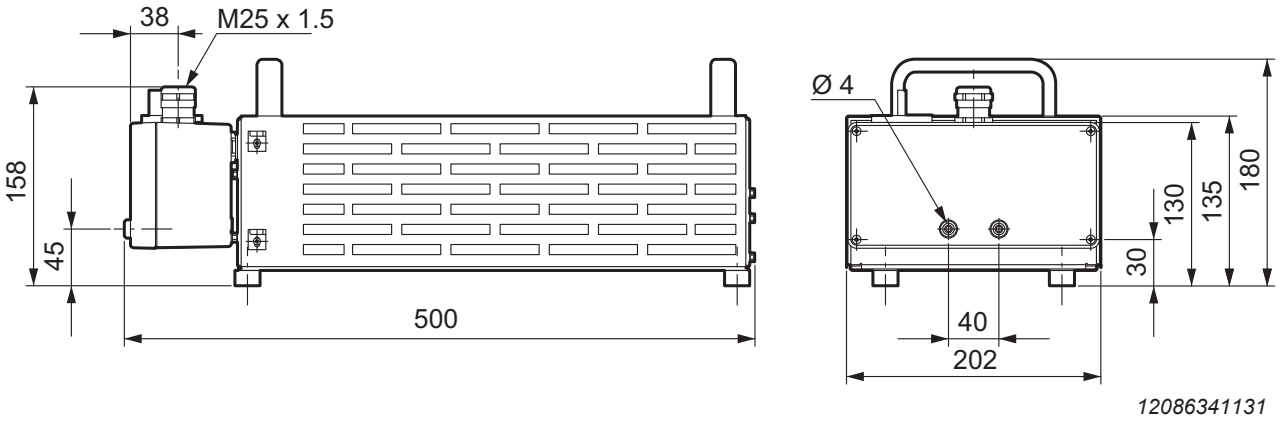
Dimension drawings

Size 1

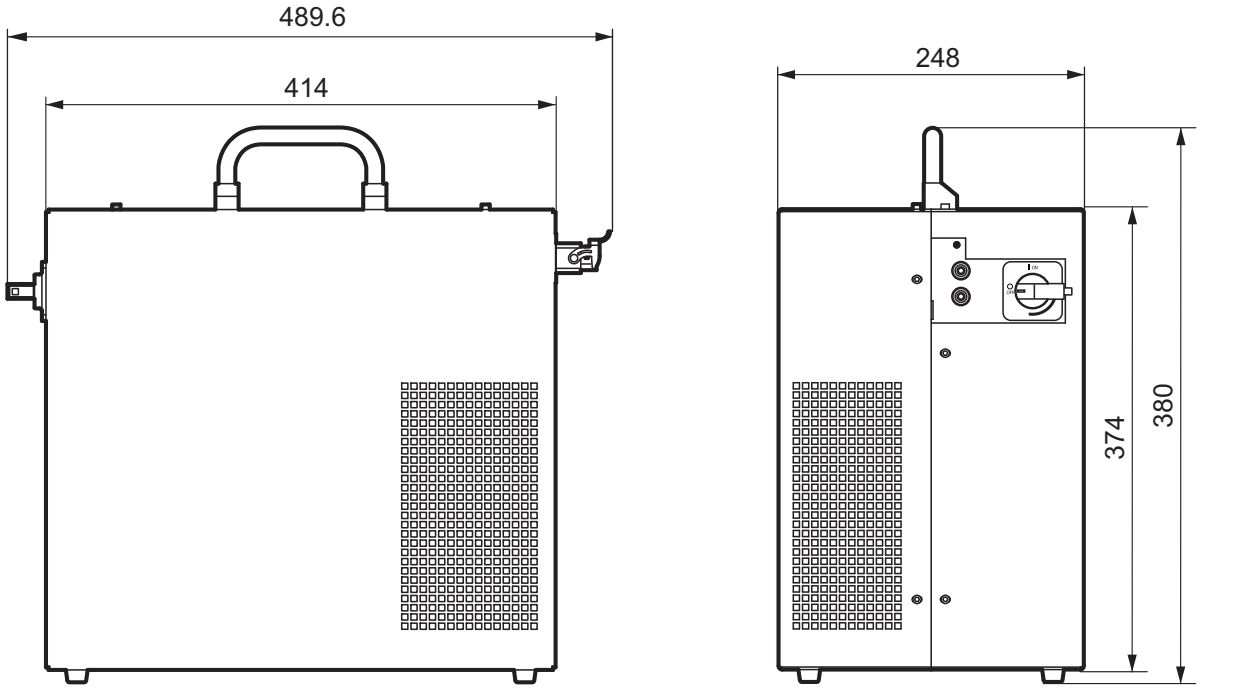
The dimension drawing shows the mechanical dimensions in mm:



12086341131

Size 2

The dimension drawing shows the mechanical dimensions in mm:



12086343051

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7 System project planning

Contact your SEW-EURODRIVE contact person for a detailed system project planning. For contact data, refer to chapter "MAXOLUTION® Competence Center" (→ 🗎 48).

7.1 Project planning procedure

Note that drive project planning for your application must be completed before project planning for the TDM90E pick-up in combination with the MOVI-DPS® storage bundle can be performed.

The project planning consists of several steps:

17899244683

1. You specify the basic conditions.
2. SEW-EURODRIVE performs project planning for the components and calculates the relevant application values.
3. SEW-EURODRIVE puts together a component list including the technical diagram and accessories.

7.2 Framework conditions

For SEW-EURODRIVE to perform detailed project planning, you have to specify all the relevant information for the application. The following information is relevant:

1. Project number
2. Project name
3. Application
4. Travel cycle:
   - Estimate
     - Peak power × time (kWs)
     - Nominal power × travel time (kWs)
     - Wait time for charging (s)
   - Workbench project file
5. Requirements for the stationary part of the application
   - System layout with transfer points
   - Separate project planning for power supply using MOVITRANS® (see questionnaire for MOVITRANS® project planning)
   - Environment
     - Ambient temperature (°C)
     - Distance of ferromagnetic material in the vicinity (m)
     - Further specifications (explosion-protected area, clean-room requirements, etc.)

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6. Requirements for the mobile part of the application
   - Technical diagram of the mobile part of the application
   - Maximum downtime during the travel cycle (min)
   - Basic consumption of the vehicle (external DC 24 V consumer) (kW)

7.3 Project planning

Using the basic conditions for the application, SEW-EURODRIVE performs project planning for the components and calculates the relevant application values:

1. Type and number of MOVI-DPS® storage units
2. Number of TDM90E pick-ups
3. State of charge and voltage conditions during operation
4. Required recharging time
5. Required charging time until a completely discharged MOVI-DPS® storage bundle is charged to the minimally required state of charge
6. Estimated useful life of a MOVI-DPS® storage bundle
7. Check of the torque at minimum DC link voltage

7.4 Project planning result

The result of the project planning and calculation by SEW-EURODRIVE contains the following:

1. List of required components and connection cables
2. Overview of optional accessories
3. Technical diagram of the components
4. List of the relevant application values

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8 Available documentation

The following documents are available for the TDM90E pick-up and MOVI-DPS® storage bundle:

- "MOVITRANS® Pick-up with TDM90E Direct Connection" operating instructions
- "MOVI-DPS® Storage Unit" operating instructions
- "MOVI-DPS® Discharge Unit" operating instructions

Go to www.sew-eurodrive.com to download the documents.

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9 MAXOLUTION® Competence Center

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MOVI-DPS® storage unit 31
Type designation
MOVI-DPS® storage bundle 31
MOVI-DPS® storage unit 31

Y

Y adapter 23

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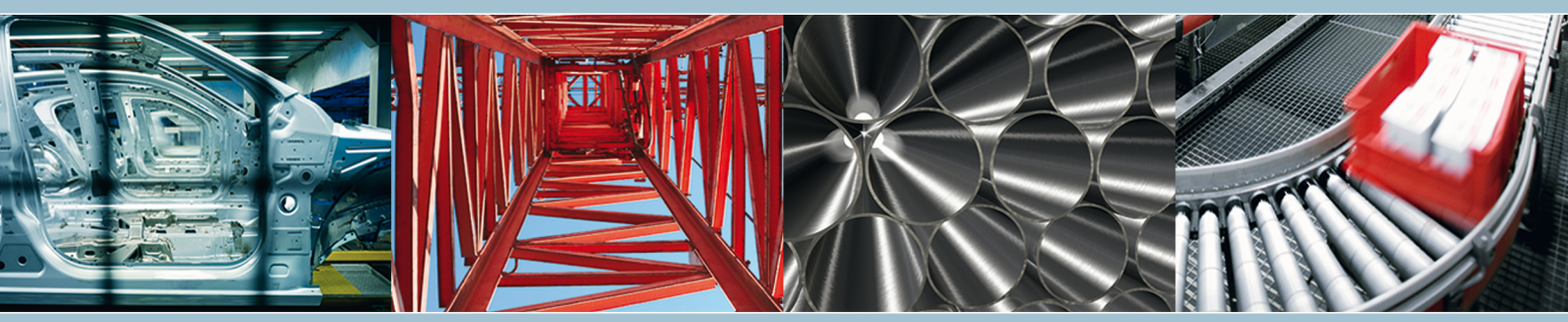

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