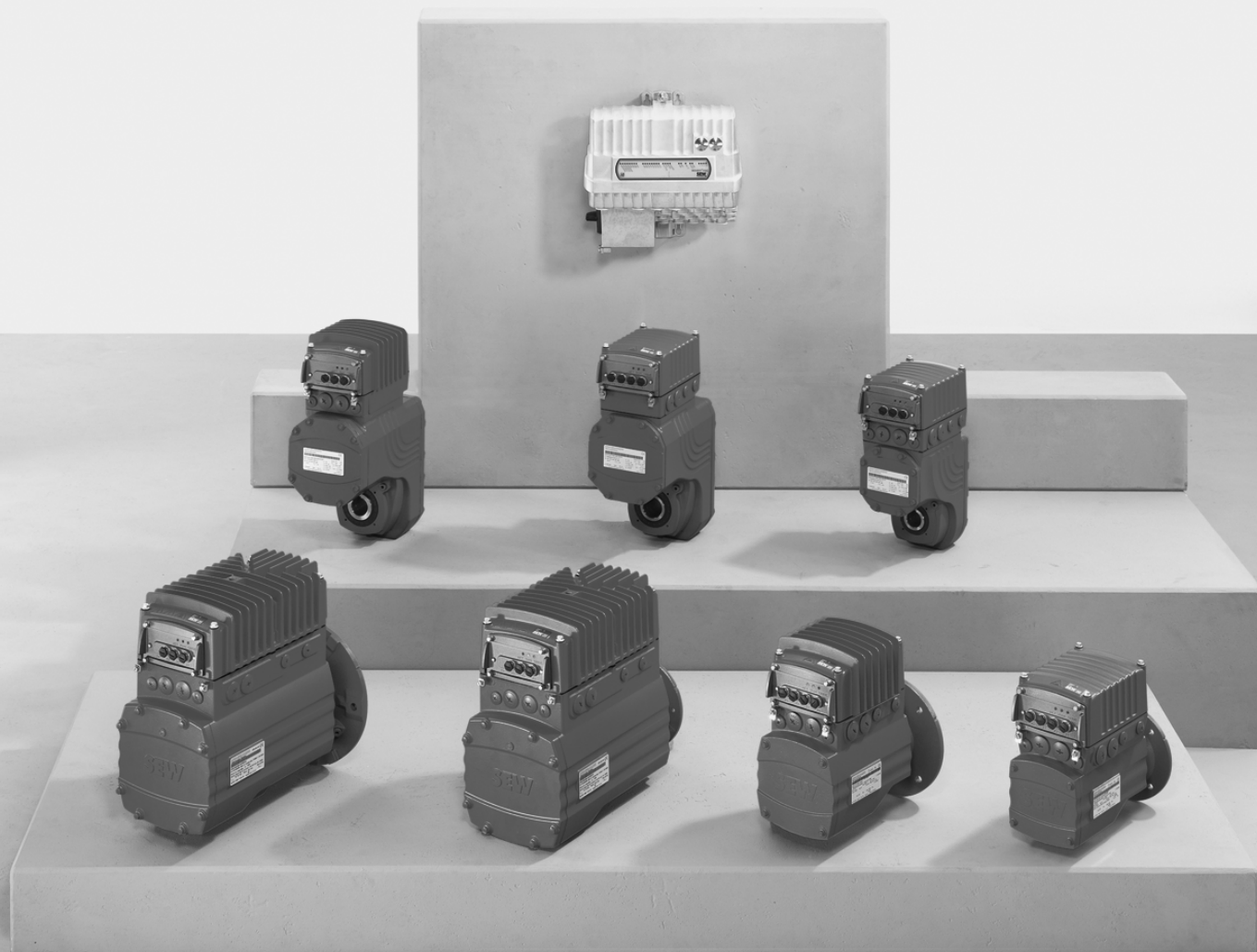




**SEW**  
**EURODRIVE**

## **Addendum to the Operating Instructions**



### **CSW..B Maintenance Switch for DRC../MOVIGEAR® Installations**



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## 1 General information

### 1.1 Structure of the safety notes

#### 1.1.1 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
<b>▲ DANGER</b>	Imminent hazard	Severe or fatal injuries.
<b>▲ WARNING</b>	Possible dangerous situation	Severe or fatal injuries.
<b>▲ CAUTION</b>	Possible dangerous situation	Minor injuries
<b>NOTICE</b>	Possible damage to property	Damage to the drive system or its environment.
<b>INFORMATION</b>	Useful information or tip: Simplifies handling of the drive system.	

#### 1.1.2 Structure of section-related safety notes

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

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



##### **SIGNAL WORD**

Type and source of hazard.

Possible consequence(s) if disregarded.

- Measure(s) to prevent the hazard.

#### 1.1.3 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.



## 1.2 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 unit!

## 1.3 Exclusion of liability

Read the information in this documentation, otherwise safe operation is impossible. You must comply with the information contained in this documentation to achieve the specified product characteristics and performance features. SEW-EURODRIVE assumes no liability for injury to persons or damage to equipment or property resulting from non-observance of these operating instructions. In such cases, SEW-EURODRIVE assumes no liability for defects.

## 1.4 Product names and trademarks

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

## 1.5 Copyright notice

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## 1.6 Other applicable documentation

Also observe the following documents:

- Operating instructions of the connected MOVIGEAR® and/or DRC.. drive units, such as:
  - "MOVIGEAR® DBC-" operating instructions
  - "MOVIGEAR® DAC-" operating instructions
  - "MOVIGEAR® DSC-" operating instructions
  - "MOVIGEAR® SNI-" operating instructions
  - "DRC.-...-DBC" operating instructions
  - "DRC.-...-DAC" operating instructions
  - "DRC.-...-DSC" operating instructions
  - "DRC.-...-SNI" operating instructions
- "MOVIFIT® FDC" operating instructions

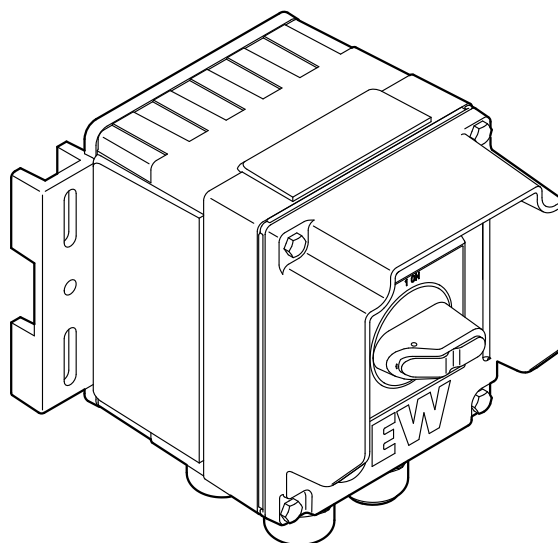
## 2 Device structure

### 2.1 Description

The CSW..B maintenance switch is a 3-phase switch disconnecter used to switch off the voltage supply of the connected drive units.

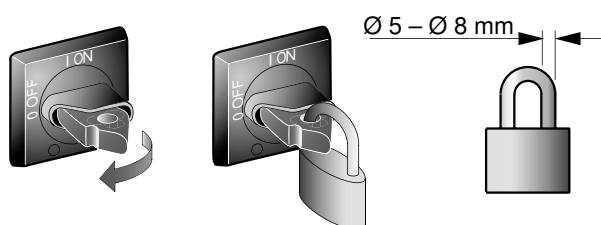
If the maintenance switch is used in an SNI line, only the voltage supply and communication to the connected drive unit is interrupted. The voltage supply and communication to the subsequent drive units in the line remain even if the drive unit is switched off.

The following figure shows the CSW..B maintenance switch:



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If required you can lock the maintenance switch in the "OFF" position with a padlock as shown in the following figure.



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### 2.2 Designs

The CSW..B maintenance switch is available in the following designs:

Connection technology	Part number	Loose items	Surface protection
3 × terminal connection + EMC cable gland	28207793	1 closing plug for cable gland (plastic)	Untreated aluminum surface (standard)
2 × terminal connection + EMC cable gland	28207807		
1 × Intercontec plug connector with SNI coding			
2 × terminal connection + EMC cable gland	28207815		
1 × Intercontec plug connector with DBC/DAC coding			

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Connection technology	Part number	Loose items	Surface protection
3 × terminal connection + EMC cable gland	28213610	1 hex head screw plug (stainless steel)	HP200 coating (designed for wet areas)
2 × terminal connection + EMC cable gland 1 × Intercontec plug connector with SNI coding	28213637		
2 × terminal connection + EMC cable gland 1 × Intercontec plug connector with DBC/DAC coding	28213629		

### 2.3 Maintenance switch with optional design for use in wet areas

#### INFORMATION

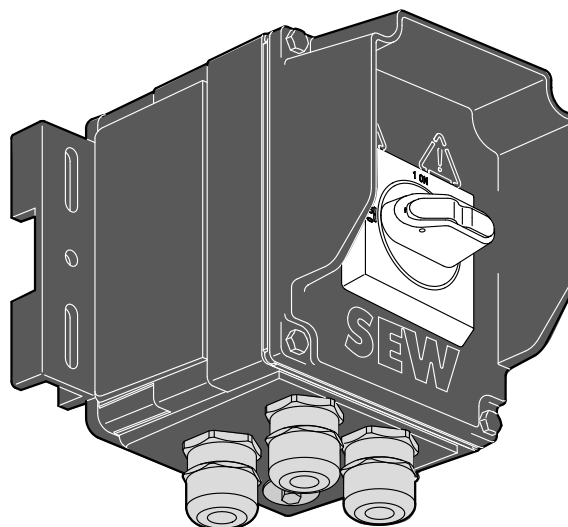


Slight color differences are possible in the HP200 surface coating due to the coating process (individual treatment of the components).

The following figure shows the additional features of the maintenance switch with the optional design for applications in wet areas:

- The design for use in wet areas is delivered with cable glands made of stainless steel as standard.
- A screw plug made from stainless steel is provided with the maintenance switch. Use this if looping does not take place.

To do so, replace the cable gland installed at the factory with the supplied screw plug. Observe the required tightening torque when doing so.



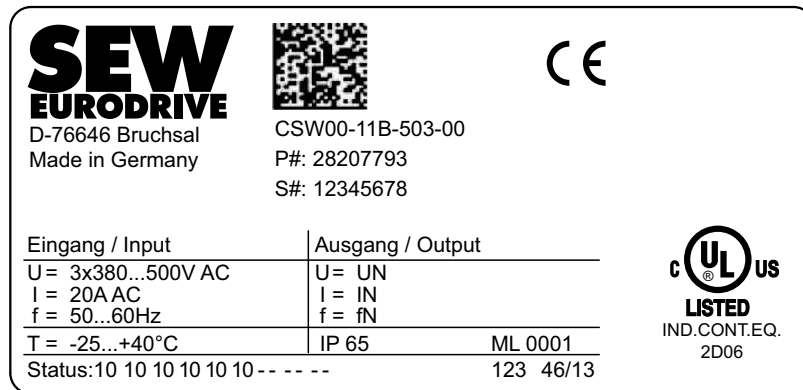
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In this documentation, all illustrations depicting the design for use in wet areas are displayed with a shading (= HP200 surface protection).

## 2.4 Type designation

### 2.4.1 Nameplate

You can find the nameplate on the maintenance switch housing. The following figure shows an example of the nameplate of the CSW..B maintenance switch:



18014407285524107

### 2.4.2 Type designation

The following table shows the type designation of the maintenance switch **CSW02-11B-503-00/IV**:

<b>C</b>	<b>Device family</b>	C =	Components/accessories
<b>SW</b>	<b>Device type</b>	SW =	Switch
<b>0</b>	<b>Function</b>	0 =	Maintenance switch
<b>2</b>	<b>Connection</b>	0 =	Cable glands
	<b>Drive unit</b>	1 =	Plug connector (400 V)
		2 =	Plug connector (400 V + SNI)
<b>-</b>			
<b>1</b>	<b>Size</b>	1 =	Size 1
<b>1</b>	<b>Series</b>	1 =	Standard (IP65)
		3 =	Design for use in wet areas (IP65)
<b>B</b>	<b>Version B</b>		
<b>-</b>			
<b>50</b>	<b>Connection voltage</b>	50 =	AC 380 V – 500 V
<b>3</b>	<b>Connection type</b>	3 =	3-phase (AC)
<b>-</b>			
<b>00</b>	<b>Design</b>	00 =	Series
<b>/</b>			
<b>IV</b>	<b>Option</b>	IV =	Plug connector

## 3 Mechanical installation

### 3.1 General information

Observe the following notes on mechanical installation:

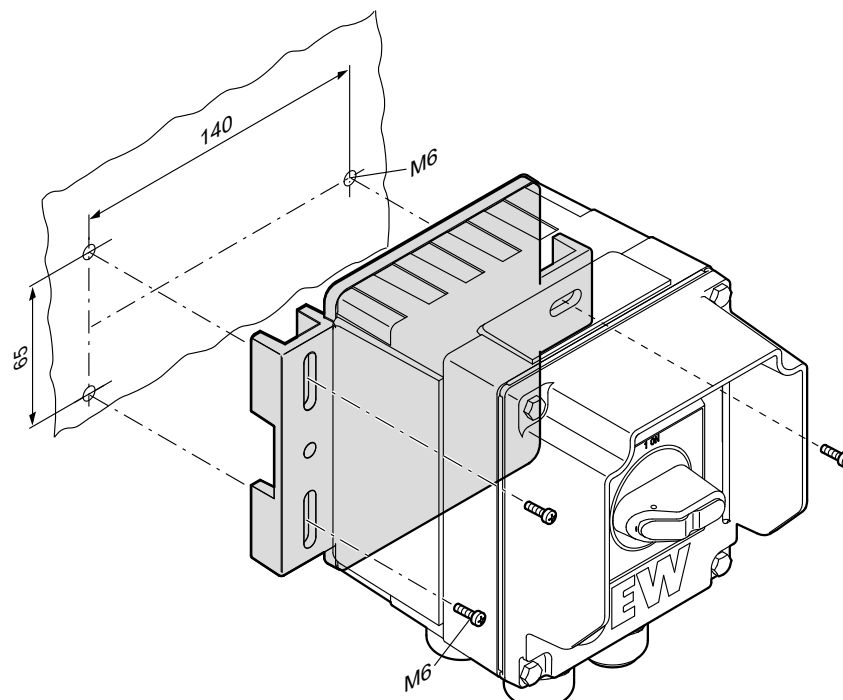
- Only install the maintenance switch on a level, low-vibration, and torsionally rigid support structure.
- Observe the general safety notes for the drive units.
- Strictly observe all instructions as to the technical data and the permissible conditions regarding the place of installation.
- Use only the provided attachment options when mounting the device.
- When selecting and dimensioning the mounting and safety elements, observe the applicable standards, the technical data of the device, and the local circumstances.

### 3.2 Tolerances for torque ratings

The specified torques must be adhered to with a tolerance of  $\pm 10\%$ .

### 3.3 Installation

Install the maintenance switch with 3 M6 size screws in accordance with the figure below:



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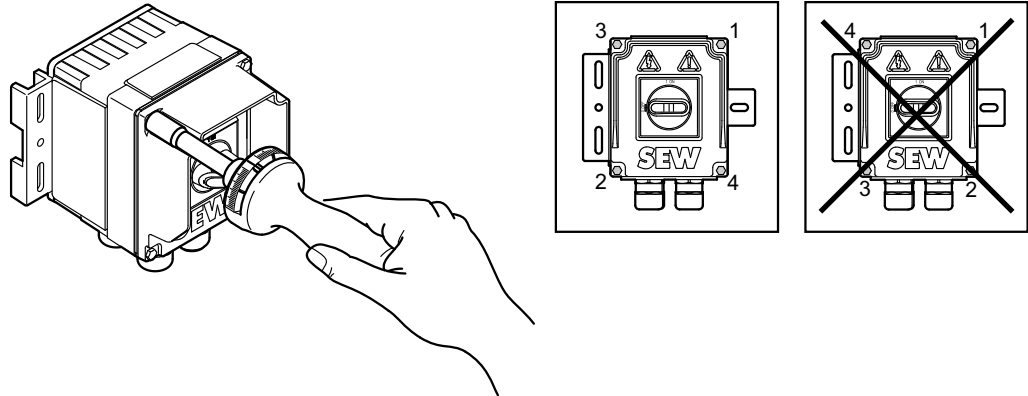
After the installation, the electrical connections and cable glands must be at the bottom of the maintenance switch as shown in the figure.

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### 3.4 Tightening torques

#### 3.4.1 Housing cover screws

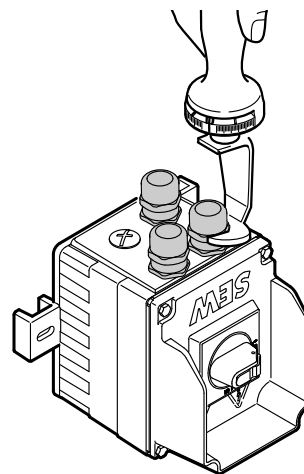
Insert the housing cover screws and tighten them in diametrically opposite sequence with a tightening torque of 3.0 Nm.



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#### 3.4.2 Closing plug

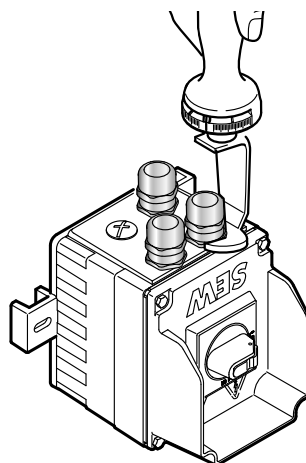
Insert the closing plugs **supplied** by SEW-EURODRIVE in the cable glands and tighten the cable glands in accordance with the picture below with a torque of 7.0 Nm:



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### 3.4.3 EMC cable glands

Tighten the EMC cable glands **supplied** by SEW-EURODRIVE with the following torques:



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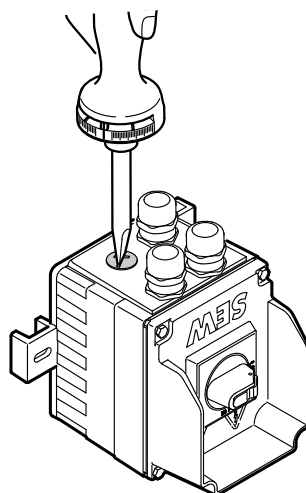
Screw fitting	Part number	Contents	Size	Outer cable diameter	Tightening torque
EMC cable glands (nickel-plated brass)	18204805	10 piece	M25 x 1.5	11 to 16 mm	7.0

The cable retention in the cable gland must withstand the following removal force of the cable from the cable gland:

- Cable with outer diameter > 10 mm:  $\geq 160$  N
- Cable with outer diameter < 10 mm:  $= 100$  N

### 3.4.4 M16 screw plug

Tighten the screw plugs **supplied** by SEW-EURODRIVE with 1.5 Nm.



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### 3.5 Design for use in wet areas

#### INFORMATION



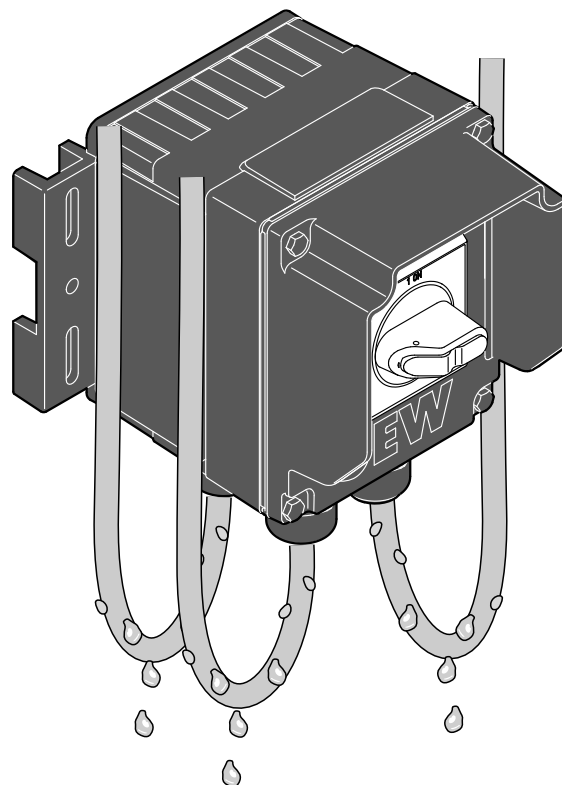
SEW-EURODRIVE guarantees that the specially treated surface is free from flaws. Report any transport damage immediately.

Although the coating of the housing surfaces has a high impact resistance, it is to be handled with care. The corrosion protection can be affected by coating damages as a result from improper handling during transport, installation, operation, cleaning, etc. SEW-EURODRIVE is not liable for such damage.

#### 3.5.1 Installation notes

Observe the following additional notes when installing the maintenance switch for use in wet areas:

- Make sure to prevent moisture and dirt from entering the device during installation.
- After electrical installation and during assembly, check for damaged seals and sealing surfaces.
- Note the permitted mounting position, in which the electrical connections and cable glands are located at the bottom of the maintenance switch.
- Make sure to install the cables with a drip loop; see the following figure:



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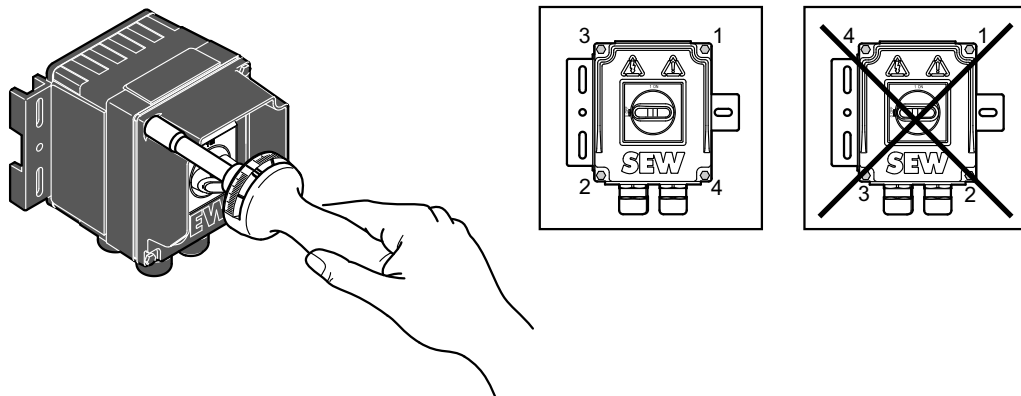
# 3 Mechanical installation

Design for use in wet areas

## 3.5.2 Tightening torques

### Housing cover screws

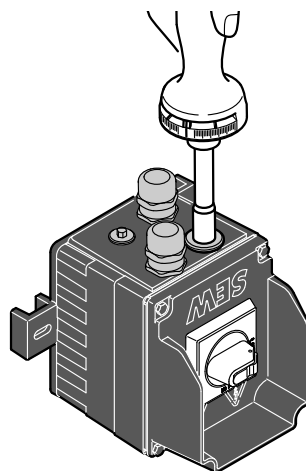
Insert the housing cover screws and tighten them in diametrically opposite sequence **step by step** (1.2 Nm / 1.8 Nm / 2.6 N / 3.0 Nm) with a tightening torque of 3.0 Nm.



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### Screw plugs

Tighten the screw plugs **supplied** by SEW-EURODRIVE with the following torques:



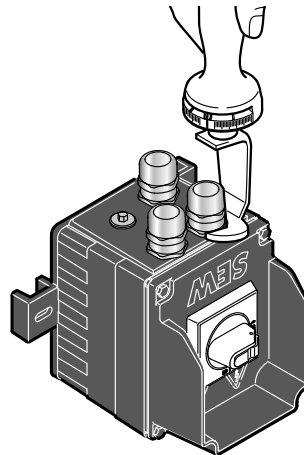
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Screw plug	Part number	Contents	Size	Tightening torque
Screw plug (stainless steel)	18247342	10 piece	M16 × 1.5	6.8 Nm
	18247350	10 piece	M25 × 1.5	6.8 Nm

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## EMC cable glands

Tighten the EMC cable glands **supplied** by SEW-EURODRIVE with the following torques:



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Screw fitting	Part number	Contents	Size	Outer cable diameter	Tightening torque
EMC cable glands (stainless steel)	18216382	10 piece	M25 × 1.5	11 to 16 mm	7.0 Nm

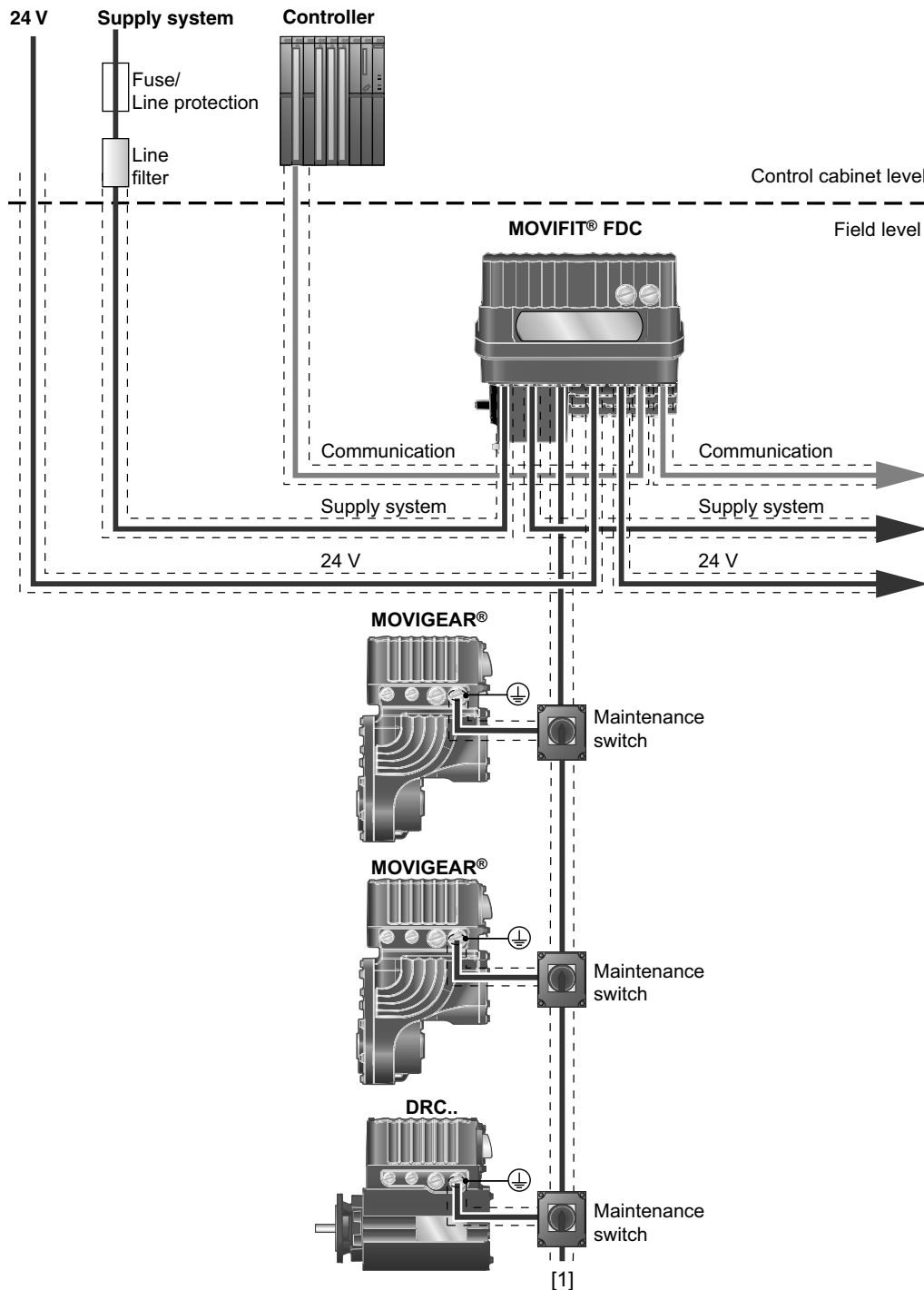
The cable retention in the cable gland must withstand the following removal force of the cable from the cable gland:

- Cable with outer diameter > 10 mm: ≥ 160 N
- Cable with outer diameter < 10 mm: = 100 N

## 4 Electrical installation

### 4.1 Installation topology (example)

The following figure illustrates the general installation topology with the CSW..B maintenance switch and MOVIFIT® FDC using SNI as an example:



## 4.2 Terminal assignment



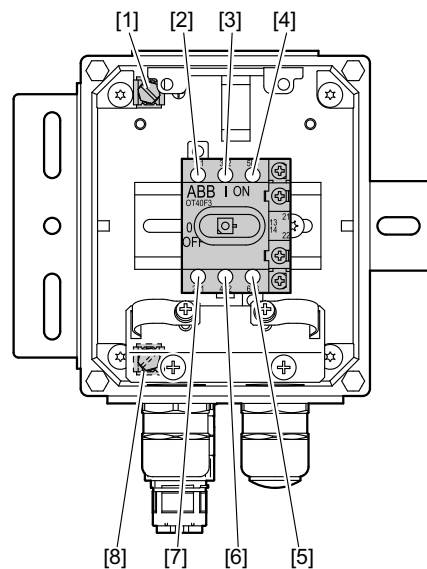
### ▲ WARNING

Electric shock due to regenerative operation while turning the output shaft.

Severe or fatal injuries.

- Secure the output shafts of the drive units against rotation when the cover of the maintenance switch is removed.

The following figure shows the terminal assignment of the CSW..B maintenance switch:



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Assignment		
No.	Terminal designation	Function (permitted tightening torque)
[1]	⊕	PE connection IN/OUT (2.0 to 3.3 Nm )
[2]	1L1	Phase L1, IN/OUT (1.2 to 1.4 Nm )
[3]	3L2	Phase L2, IN/OUT (1.2 to 1.4 Nm )
[4]	5L3	Phase L3, IN/OUT (1.2 to 1.4 Nm )
[5]	6T3	Actuator supply phase L3 (1.2 to 1.4 Nm)
[6]	4T2	Actuator supply phase L2 (1.2 to 1.4 Nm)
[7]	2T1	Actuator supply phase L1 (1.2 to 1.4 Nm)
[8]	⊕	Protective earth connection for actuator supply phase (2.0 to 3.3 Nm)

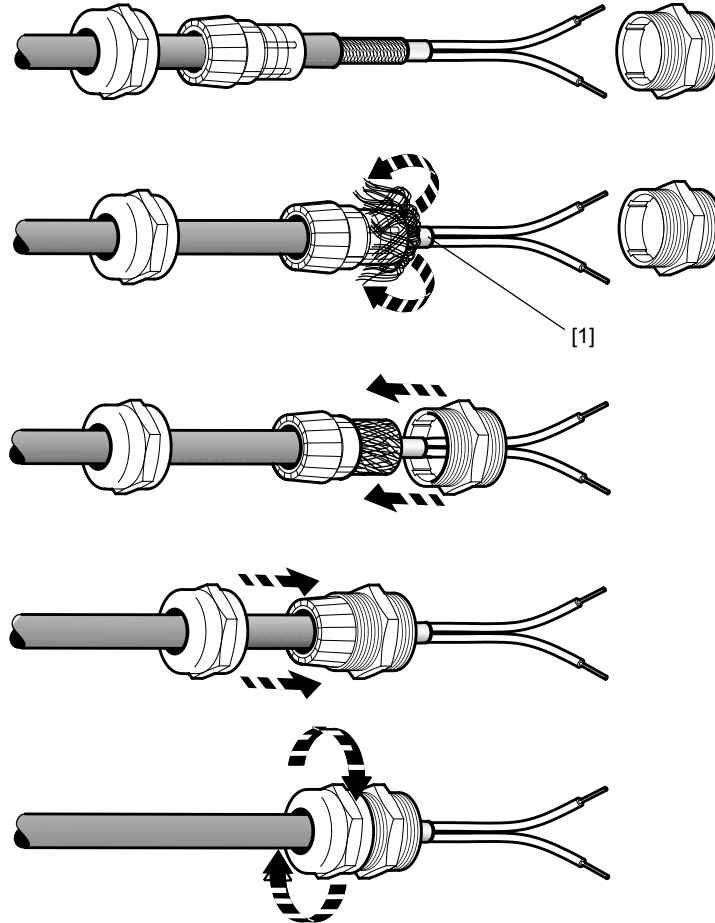
When the maintenance switch is switched, only the connection to the drive unit on the branched-off line is interrupted. Connection to the outgoing cable remains.

The communication method requires that you must observe the order of the line phases L1, L2, L3 between SNI controller and MOVIGEAR® DRC...SNI drive units 1 to 10.

### 4.3 EMC cable glands

#### 4.3.1 Assembly of EMC cable glands

Install the EMC cable glands supplied by SEW-EURODRIVE according to the following picture:



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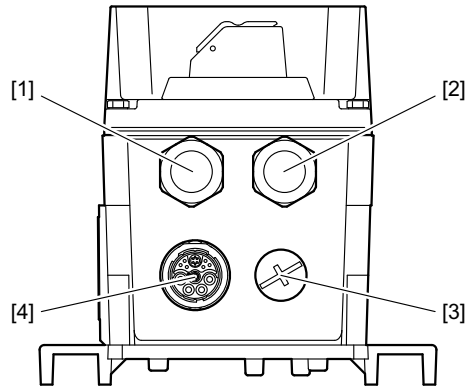
[1] Cut off the insulating foil and fold it back.

## 4.4 Plug connector

The wiring diagrams of the plug connectors show the contact end of the connection.

### 4.4.1 Plug connector position

The following figure shows the positions of the plug connector and cable glands:



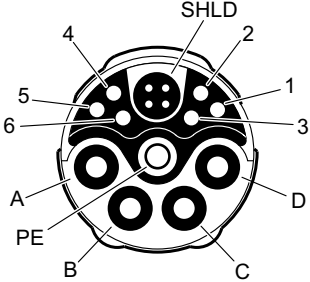
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[1]	Cable gland for AC 400 V supply IN/OUT
[2]	Cable gland for AC 400 V supply IN/OUT
[3]	M16 screw plug
[4] <sup>1)</sup>	Cable gland, drive unit connection
	X1241 drive unit connection, M23 plug connector, female, Coding ring: Red (SNI, supply system and communication)
	X1203 drive unit connection, M23 plug connector, female, Coding ring: Black (supply system)

1) The connection for the drive unit depends on the type of the maintenance switch.

### 4.4.2 X1241\_1 and X1241\_2: AC 400 V connection with SNI

The following tables show information about this connection:

Function		
AC 400 V connection for supplying the device/for looping through With Single Line Network Installation (SNI)		
Connection type		
M23, SEW insert, SpeedTec equipment, Intercontec, female, coding ring: red, protected against contact		
Wiring diagram		
 <p>The diagram shows a circular M23 connector with 11 terminals. Terminals 1 through 6 are arranged in a ring. Terminal A is at the bottom left, B is at the bottom, C is at the bottom right, and D is at the right. PE is at the bottom left, and SHLD is at the top. The diagram indicates the internal wiring connections for the SNI system.</p>		
Assignment		
No.	Name	Function
A	L1_SNI	Actuator supply phase L1 with SNI communication
B	L2_SNI	Actuator supply phase L2 with SNI communication
C	L3_SNI	Actuator supply phase L3 with SNI communication
D	n.c.	Not connected
PE	PE	PE connection
1	n.c.	Not connected
2	n.c.	Not connected
3	n.c.	Not connected
4	n.c.	Not connected
5	n.c.	Not connected
6	n.c.	Not connected
7	n.c.	Not connected
8	n.c.	Not connected
9	n.c.	Not connected
10	n.c.	Not connected
SHLD	n.c.	Not connected



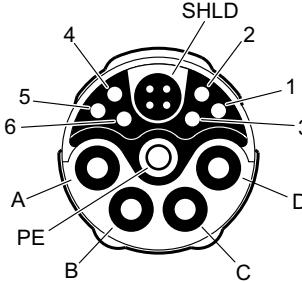
### INFORMATION

The communication method requires that you must observe the order of the line phases L1, L2, L3 between SNI controller and SNI stations 1 to 10!



#### 4.4.3 X1203\_1 and X1203\_2: AC 400 V connection

The following table shows information about this connection:

Function		
AC 400 V connection for supplying the device/for looping through		
Connection type		
M23, SEW insert, SpeedTec-capable, company: Intercontec, female, coding ring: black, protected against contact		
Wiring diagram		
		
Assignment		
No.	Name	Function
A	L1	Line connection phase L1
B	L2	Line connection phase L2
D	L3	Line connection phase L3
D	n.c.	Not connected
PE	PE	PE connection
1	n.c.	Not connected
2	n.c.	Not connected
3	n.c.	Not connected
4	n.c.	Not connected
5	n.c.	Not connected
6	n.c.	Not connected
7	n.c.	Not connected
8	n.c.	Not connected
9	n.c.	Not connected
10	n.c.	Not connected
SHLD	n.c.	Not connected

#### Connection cable



### INFORMATION

For detailed information on the connection cables, refer to the operating instructions of the drive unit.

## 5 Service

### 5.1 Measures for use of emergency off function

#### INFORMATION



The IEC 60204-1 standard stipulates that:

- Switching elements in yellow-red indicate a task in case of emergency.
- After an emergency off device has been activated, reset of the emergency off device must not restart the machine. Reset of the emergency off device must only enable a new startup.

If an emergency off function is used, you must retrofit the CSW..B maintenance switch as follows.

- Exchange the black rotary button to a yellow-red one
- Install an auxiliary contact for external evaluation of the switch position

### 5.2 Retrofit accessories

For retrofitting the CSW..B maintenance switch, you require the following accessories:

Accessories		Type	Supplier	Purchase order number <sup>1)</sup>
	Rotary button (yellow/red)	OHYS2AJ	ABB	1SCA105296R1001
		OA2G11	ABB	1SCA022379R8100

1) Order the accessories from the manufacturer ABB.

### 5.3 Exchanging the rotary button



#### ▲ WARNING

Electric shock caused by dangerous voltages in the maintenance switch. Dangerous voltages may still be present for up to 5 minutes after disconnection from the supply system.

Severe or fatal injuries.

- Before removing the housing cover, de-energize the maintenance switch via a suitable external disconnection device.
- Secure the maintenance switch against unintended re-connection of the voltage supply.
- Secure the output shaft of the drive unit against rotation.
- Wait for at least 5 minutes before removing the housing cover.
- Observe the notes in the chapter "Mechanical installation".

#### NOTICE

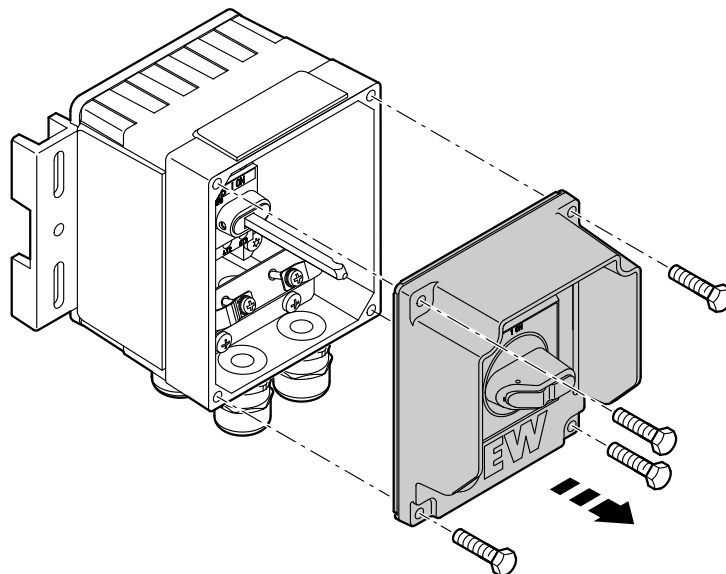
Loss of the ensured degree of protection if the instructions or the tightening torques are not adhered to.

Damages to the device.

- Adhere to the following instructions.
- Observe the notes and the instructions for the external accessories.
- Observe the tightening torques in the chapter "Mechanical installation".

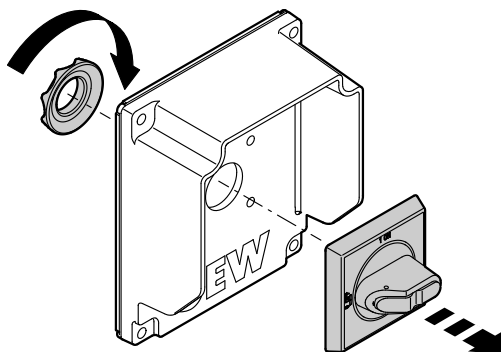
Replace the rotary button of the maintenance switch as follows:

1. De-energize the maintenance switch and wait at least 5 minutes.
2. Turn the rotary button to the "OFF" position.
3. Remove the 4 screws of the cover. Remove the housing cover.



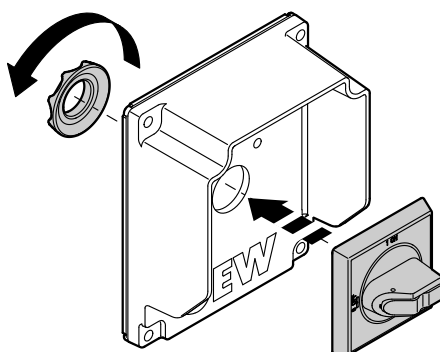
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4. Loosen the nut of the rotary button. Remove the rotary button from the housing cover.



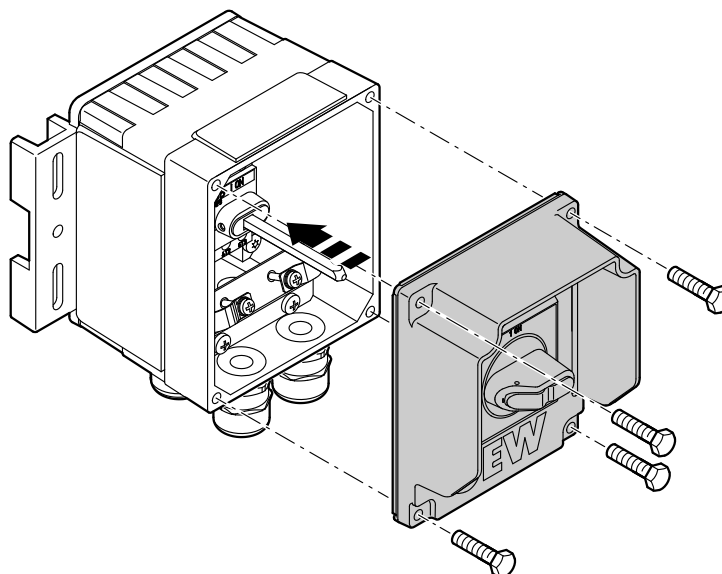
18444108683

5. Insert the new rotary button onto the housing cover that the "ON" mark points upwards. Screw the new nut onto the rotary button from behind (tightening torque = 1 Nm).



18444115211

- ⇒ Make sure that the surface under the rotary button on the housing cover is clean. Check the rotary button gasket.
6. Turn the rotary button to the "OFF" position.
  7. Install the housing cover on the housing. Secure the housing cover with 4 screws. Observe the notes and tightening torques in the chapter "Mechanical installation".



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## 5.4 Installing the auxiliary contact



### ▲ WARNING

Electric shock caused by dangerous voltages in the maintenance switch. Dangerous voltages may still be present for up to 5 minutes after disconnection from the supply system.

Severe or fatal injuries.

- Before removing the housing cover, de-energize the maintenance switch via a suitable external disconnection device.
- Secure the maintenance switch against unintended re-connection of the voltage supply.
- Secure the output shaft of the drive unit against rotation.
- Wait for at least 5 minutes before removing the housing cover.
- Observe the notes in the chapter "Mechanical installation".

### NOTICE

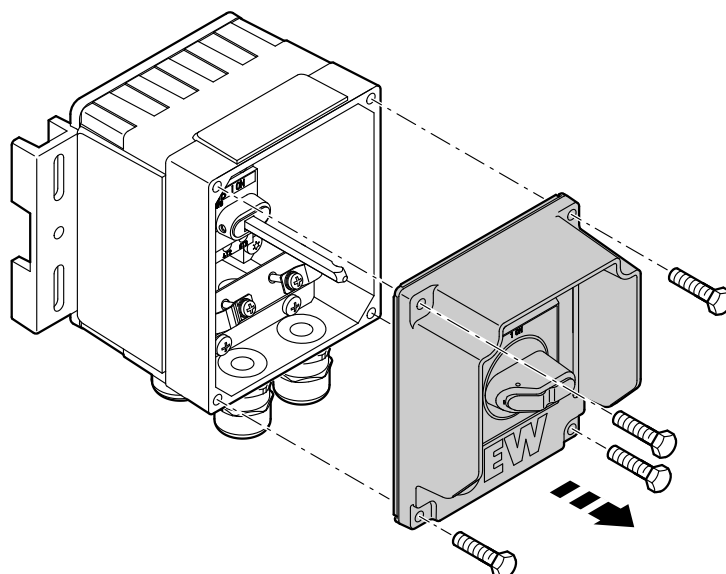
Loss of the ensured degree of protection if the instructions or the tightening torques are not adhered to.

Damages to the device.

- Adhere to the following instructions.
- Observe the notes and the instructions for the external accessories.
- Observe the tightening torques in the chapter "Mechanical installation".

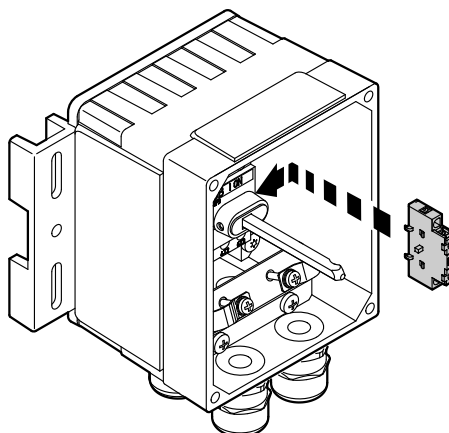
Install the auxiliary contact as follows:

1. De-energize the maintenance switch and wait at least 5 minutes.
2. Turn the rotary button to the "OFF" position.
3. Remove the 4 screws of the cover. Remove the housing cover.



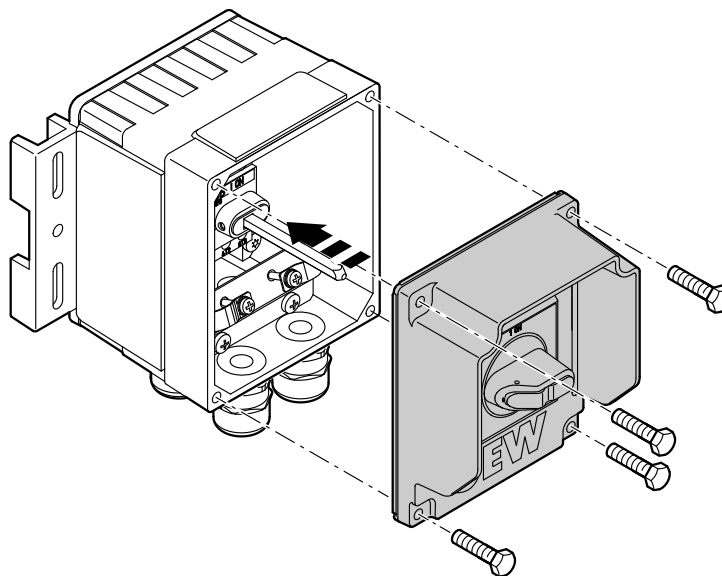
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4. Plug the auxiliary contact on the switching element from the right. Make sure the auxiliary contact snaps in place. You hear a clicking sound.



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5. Replace the M16 screw plug with a cable gland. Insert the connection lead of the auxiliary contact through the cable gland into the housing.
6. During the electrical installation of the auxiliary contact, observe the instructions and the terminal assignment of the manufacturer ABB.
7. Turn the rotary button to the "OFF" position.
8. Install the housing cover on the housing. Secure the housing cover with 4 screws. Observe the notes and tightening torques in the chapter "Mechanical installation".



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## 6 Technical data

### 6.1 General technical data

Maintenance switch type		CSW..B
Function		Load disconnecter (for maintenance tasks, for example) With emergency off function according to IEC 60204-1 <sup>1)</sup>
Switching element coloring		Black (only maintenance switch function)
Connection voltages		3 x AC 380 V -5% to AC 500 V +10%
Line frequency		50 – 60 Hz
Current carrying capacity of terminals		Max. 20 A
Permitted core cross section		2.5 – 4.0 mm <sup>2</sup> / AWG13 – AWG11 The core cross section must at least correspond with the chosen line protection.
Permitted cable length – T-junction (for SNI system)		Max. 2 m
Ambient temperature	$\vartheta_A$	–25 °C to +60 °C, non-condensing, no moisture condensation
Climate class		EN 60721-3-3, class 3K3
Storage temperature	$\vartheta_L$	–30 °C to +85 °C (EN 60721-3-3, class 3K3)
Permissible oscillation and impact load		According to EN 61800-5-1
Degree of protection		IP65 according to EN 60529 (Housing closed and all cable glands and plug connections sealed)
Type of cooling (DIN 41751)		Natural cooling
Overvoltage category		III according to IEC 60664-1 (VDE 0110-1)
Pollution class		2 according to IEC 60664-1 (VDE 0110-1)
Installation altitude	h	Up to $h \leq 1000$ m without restrictions. The following restrictions apply to heights $\geq 1000$ m: <ul style="list-style-type: none"> <li>From 1000 m to max. 4000 m: – <math>I_N</math> reduction by 1% per 100 m</li> <li>From 2000 m to max. 4000 m: – <math>V_N</math> reduced by AC 6 V per 100 m</li> </ul> Over 2000 m only overvoltage class 2; external measures are required for overvoltage class 3. Overvoltage classes according to DIN VDE 0110-1.
Weight	m	Approx. 2.5 kg
Dimensions (W × D × H)		Approx. 150 × 140 × 120 mm

1) Observe chapter "Measures for use of emergency off function".

## 6.2 Design for use in wet areas

### 6.2.1 HP200 surface treatment



#### INFORMATION

The information in this chapter is based on the current technical knowledge and experience. No legally binding guarantee of certain properties or of the suitability for a specific application purpose can be derived from the given information.

#### Characteristics

Thermoplastic fluorinated polymer coating with nearly non-porous surface, excellent anti-stick properties and chemical resistance. Approved for contact with food.

#### Properties

The HP200 surface finish has the following properties:

HP200 surface treatment	
Anti-adhesive properties	Excellent
Wear resistance	Good, not suitable for abrasion or high pressure
Chemical resistance	Excellent
Solvent resistance	Not soluble
Corrosion resistance	DIN 50021, > 1000 h depending on layer structure
Flammability	Not flammable
Temperature resistance	–40 to +200 °C, thermoplastic behavior
Layer thickness	Approx. 25 µm
Color	Silver-gray  Slight color differences are possible in the HP200 surface coating, due to the coating process (individual treatment of the components).
Food grade approval	Approved according to German Federal law and US FDA (no. 21 CFR 175.300)

#### Cleaning

**Do not mix cleaning and disinfecting agents under any circumstances!**  
**Never mix acids and chloralkalis, as poisonous chlorine gas will result.**  
**Strictly observe the safety instructions of the cleaning agent manufacturer.**



Certificate of Ecolab Deutschland GmbH



**Ecolab Deutschland GmbH  
P.O. Box 13 04 06  
D-40554 Düsseldorf**

certifies that

**a material resistance test**

was performed for

**SEW-EURODRIVE GmbH & Co. KG  
Ernst-Blickle-Straße 42  
D-76646 Bruchsal**

with the following cleaning agents and disinfectants:

**P3-topax 19, P3-topax 56, P3-topax 58, P3-topax 686, P3-topactive 200,  
P3-topactive 500, P3-topactive DES, P3-topax 990 and P3-oxysan ZS,  
and demineralized water.**

The protective properties of the **High Protection surface treatment HP 200** tested against the above-mentioned Ecolab products used in the test can be considered to be positive according to the cleaning procedures mentioned overleaf.

Düsseldorf, 14 August 2009

**Ecolab Deutschland GmbH**

i.V.

**Thomas Wershofen**  
Manager Corporate Service RD&E  
Center of Excellence EMEA  
Food & Beverage Division

i. A.

**Karin Uhlenbrock**  
Service Engineer RD&E  
Center of Excellence EMEA  
Food & Beverage Division

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**This certificate for the HP200 surface treatment is based on**

- documented test procedures on material resistance
- defined product specifications
- a standardized cleaning procedure

**Test procedure**

**Dipping test:**

- Immersion into the test medium with contact surface toward ambient air

**Test period:**

- 7 days

**Evaluation:**

- Evaluation approx. 7 days after regeneration
- Evaluation of changes of the protective properties according to DIN EN ISO 4628-1
- Evaluation of decorative changes (color, brightness, blistering)
  - (+) no changes
  - (o) possible minor changes
  - (-) possible changes under long-term influence

The HP200 surface treatment was tested in the following media:

Alkaline and chlorinated foam cleaners			
P3-topax 19	5%	40°C	o
P3-topax 686	5%	40°C	o

TFC cleaning agents			
P3-topactive 200	4%	40°C	o
P3-topactive 500	4%	40°C	o

Acid foam cleaning agents			
P3-topax 56	5%	40°C	o
P3-topax 58	5%	40°C	+

Disinfectants			
P3-topax 990	5%	23°C	+
P3-topactive DES	3%	23°C	+
P3-oxysan ZS	1%	23°C	+

DI water	-	40°C	+
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**Product specifications:**

**P3-topax 19**

Alkaline foam cleaning agent

**P3-topax 56**

Acid foam cleaning agent based on phosphoric acid

**P3-topax 58**

Acid foam cleaning agent based on organic acids

**P3-topax 686**

Alkaline foam cleaning agent with active chlorine

**P3-topactive 200**

Alkaline cleaning agent for operational cleaning as TFC application

**P3-topactive 500**

Acid cleaning agent for operational cleaning as TFC application

**P3-topax 990**

Alkaline foam disinfectant based on alkylamine acetate

**P3-topactive DES**

Foam and TFC capable disinfectant based on H<sub>2</sub>O<sub>2</sub> and peroxy acid

**P3-oxysan ZS**

Disinfectant based on peroxy compounds

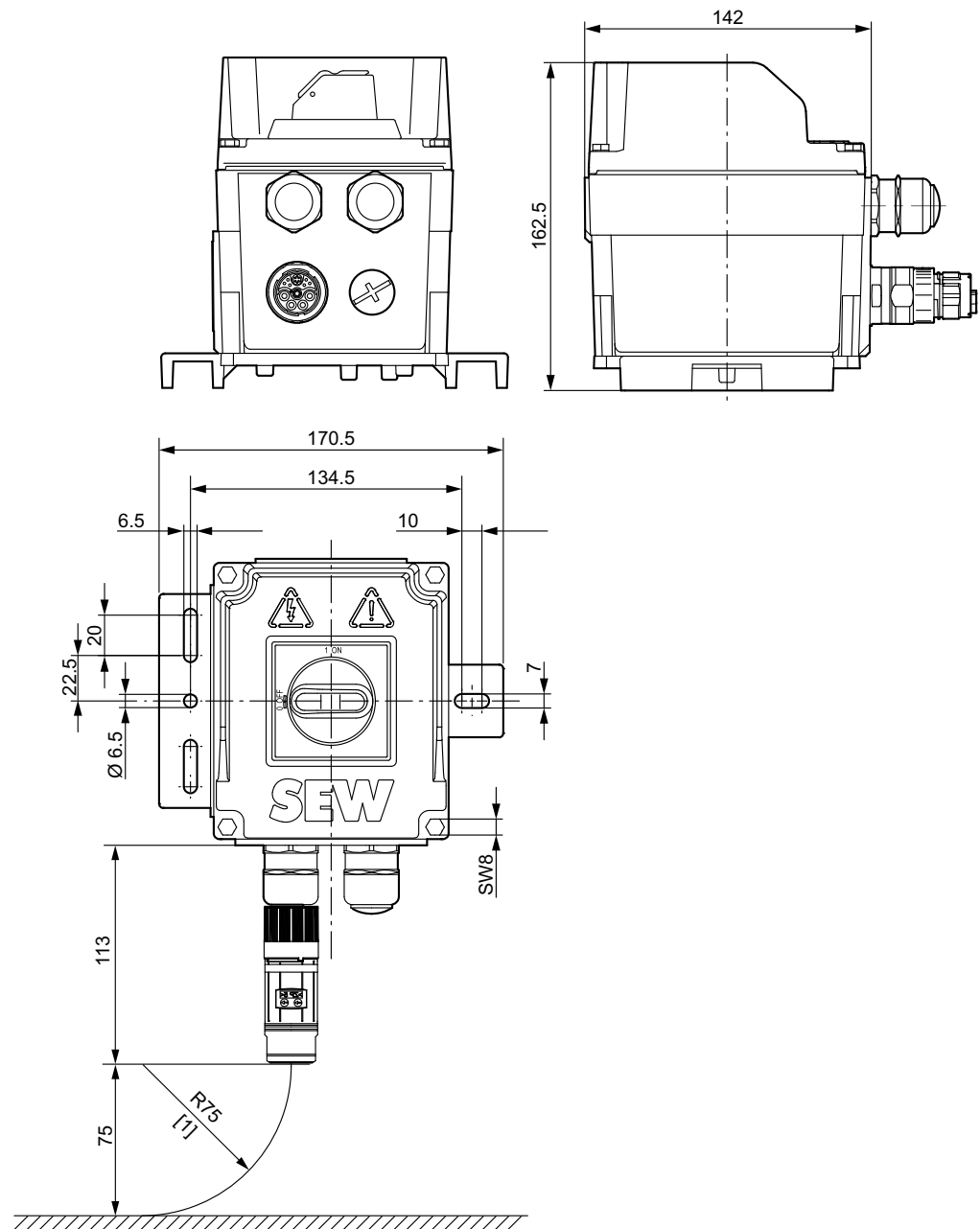
**DI water**

Demineralized water

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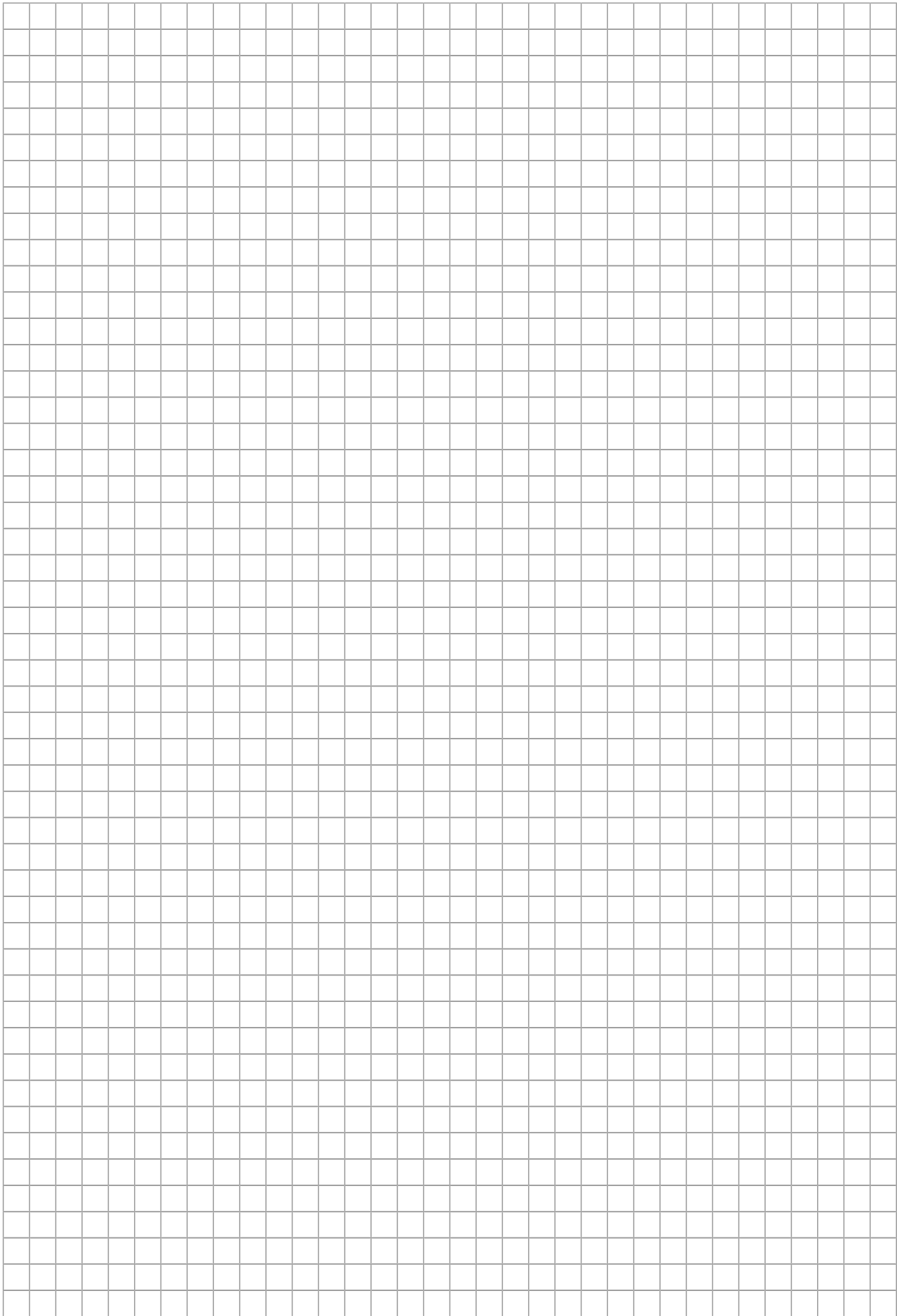
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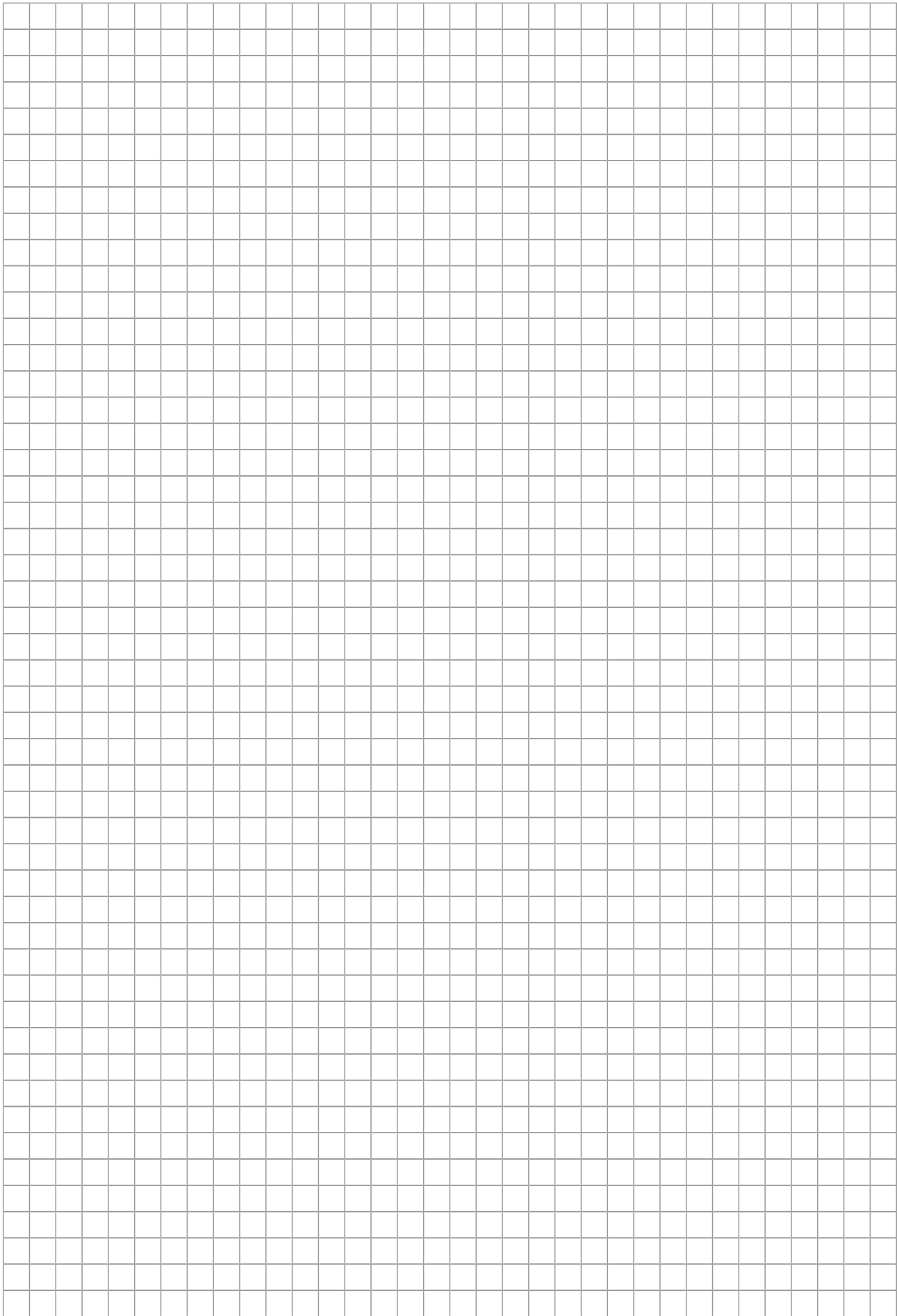
### 6.3 Dimension drawing of CSW..B maintenance switch

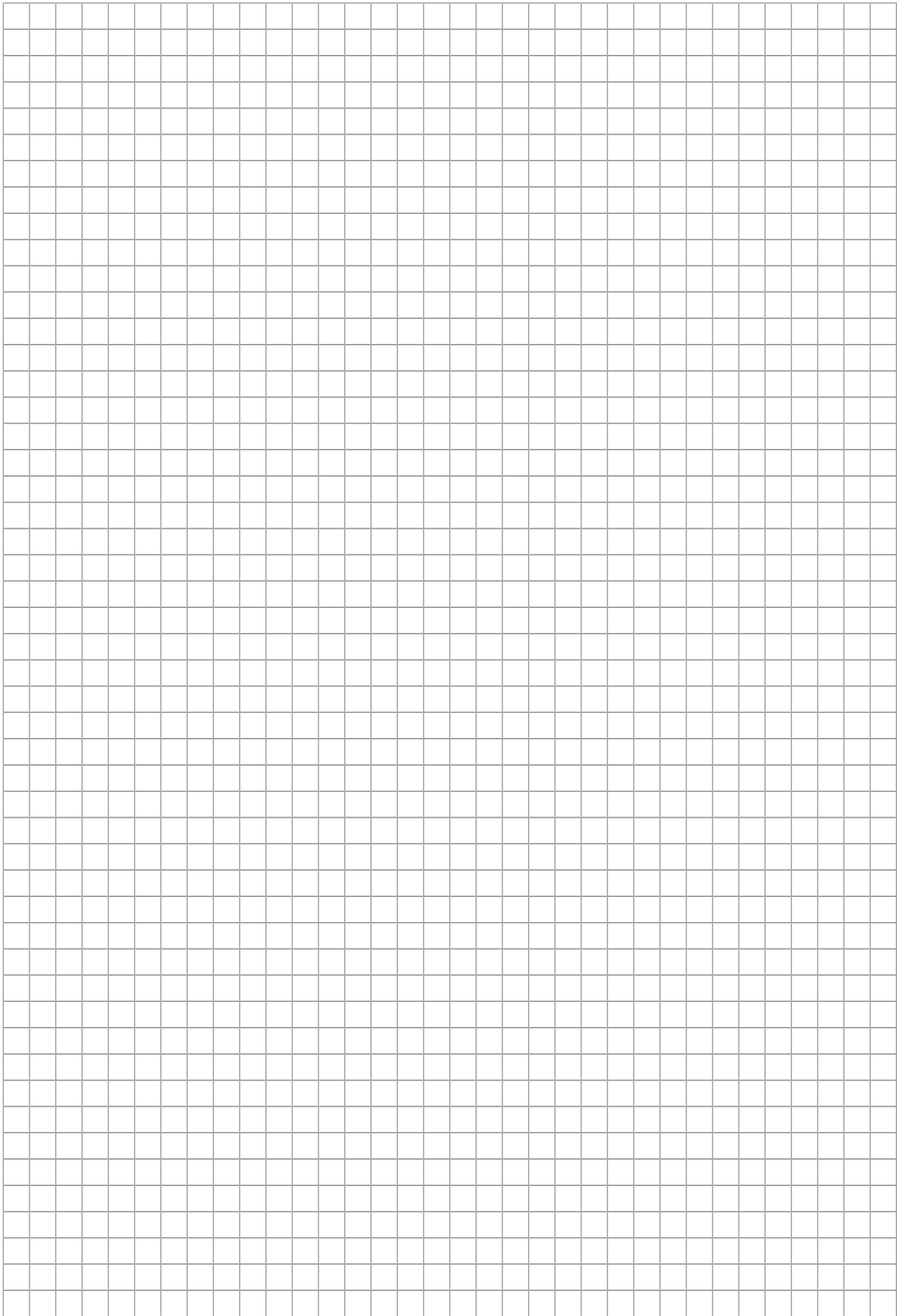


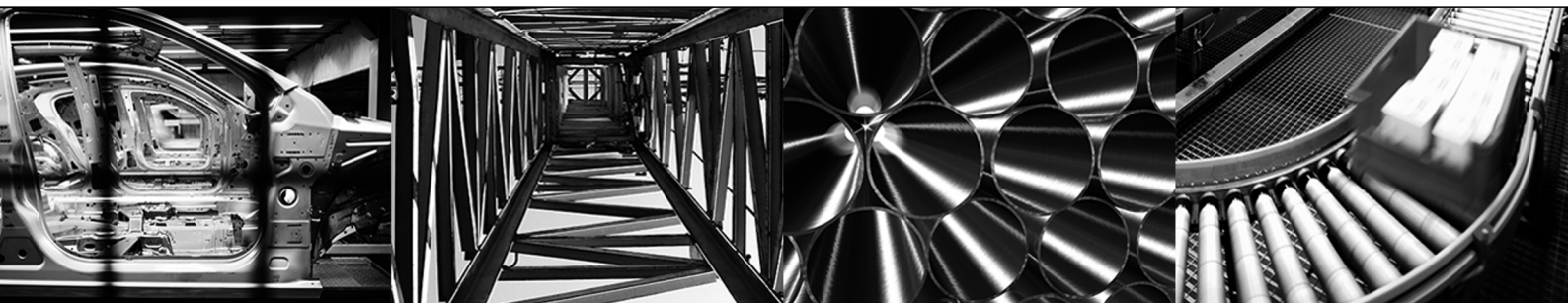
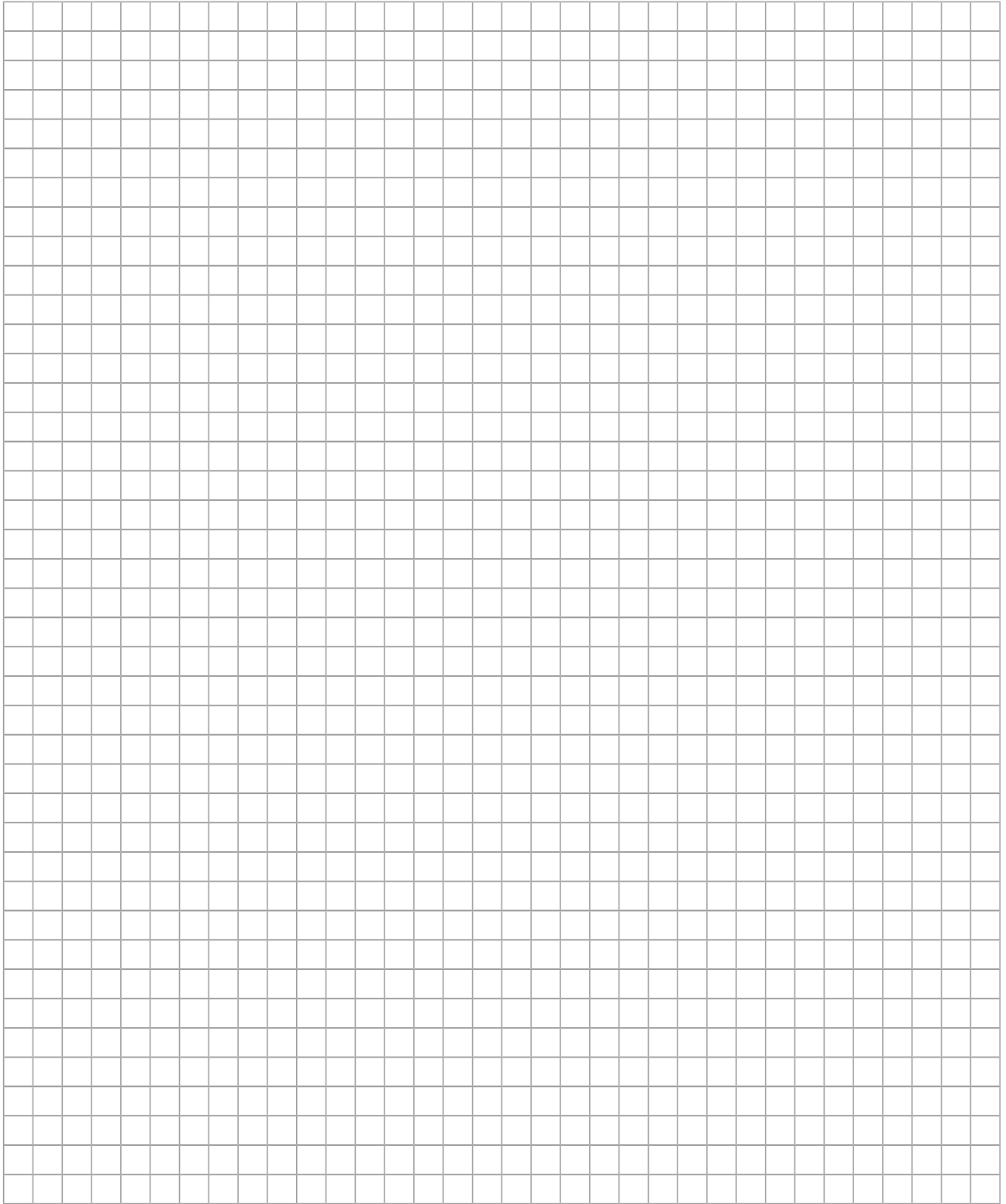
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[1] Bending radius of bulk cable











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