



# Compact Operating Instructions



## DOP11C Operator Panels



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# 1 General information

## 1.1 About this documentation

The documentation is part of the product and contains important information. The documentation is for everyone who works with this product.

The documentation must be accessible and legible. Make sure that persons responsible for the system and its operation as well as persons who work independently with the software and the connected units of SEW-EURODRIVE have read through the manual carefully and understood it. If you are unclear about any of the information in this documentation or if you require further information, please contact SEW-EURODRIVE.

## 1.2 Design 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
<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.	

### 1.2.2 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
	Warning of hot surfaces
	Warning of risk of crushing
	Warning of suspended load
	Warning of automatic restart

### 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 Right to claim under warranty**

A requirement of fault-free operation and fulfillment of any rights to claim under limited warranty is that you adhere to the information in the documentation at hand. Therefore, read the documentation before you start working with the software and the connected units from SEW-EURODRIVE.

Make sure that the documentation is available to persons responsible for the machinery and its operation as well as to persons who work independently on the units. Also ensure that the documentation is legible.

### **1.4 Exclusion of liability**

Please observe this documentation as well as the documentation for the software used and the SEW-EURODRIVE devices connected. This documentation must be observed to ensure that the devices operate safely and that the specified product properties and performance characteristics are achieved.

SEW-EURODRIVE assumes no liability for injury to persons or damage to equipment or property resulting from non-observance of the documentation. In such cases, SEW-EURODRIVE assumes no liability for defects.

### **1.5 Additional documentation**

Always use the latest version of the documentation and software.

The SEW-EURODRIVE homepage ([www.sew-eurodrive.com](http://www.sew-eurodrive.com)) provides a wide selection of documents for download in various languages.

If required, you can also order printed and bound copies of the documentation from SEW-EURODRIVE.

### **1.6 Product names and trademarks**

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

### **1.7 Copyright notice**

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Unauthorized reproduction, modification, distribution or any other use of the whole or any part of this documentation is strictly prohibited.

## 2 Safety notes

### 2.1 General information

- Read the safety notes carefully.
- Check the delivery for damage caused during transport on receipt. Inform your supplier immediately in the event of damage.
- The panel meets the requirements of article 4 of the EMC Directive 2004/108/EC.
- Do not use the operator panel in or near a mining facility or outdoors, or in areas where there is a risk of explosion or fire hazard.
- SEW-EURODRIVE is not liable for modifications, changes, additions and/or alterations to the product.
- Use only spare parts and accessories manufactured according to the specifications of SEW-EURODRIVE.
- Read the installation and operating instructions carefully prior to installation, use or repair of the operator panel.
- Never allow fluids to penetrate the slots or holes in the operator panel. This may lead to a fire or cause the equipment to become live.
- Operation of the panel is restricted to qualified personnel.

### 2.2 Target group

Mechanical work of any kind may be carried out only by trained specialists. Specialists in the context of this documentation are persons who are familiar with the design, mechanical installation, troubleshooting and maintenance of the product and have the following qualifications:

- Training in mechanical engineering (for example, as a machinist or mechatronics technician) and the successful completion of final examinations.
- Knowledge of this documentation.

Electrical work of any kind may be carried out only by skilled persons. In the context of this documentation, skilled persons are persons who are familiar with the electrical installation, startup, troubleshooting and maintenance of the product and who have the following qualifications:

- Training in electrical engineering, e.g. as an electrician or mechatronics technician (final examinations must have been passed).
- Knowledge of this documentation.

In addition to that, they must be familiar with the relevant safety regulations and laws, especially with the requirements of the performance levels according to DIN EN ISO 13849-1 and all other standards, directives and laws specified in this documentation. The above-mentioned persons must have the express authorization of the company to operate, program, parameterize, identify and ground units, systems and circuits in accordance with safety technology standards.

All work in the areas of transportation, storage, operation and waste disposal must be performed by suitably trained personnel.



## 2.3 Designated use

The operator panel of the DOP11C series are intended for the operation and diagnostics of industrial and commercial systems.

The DOP11C series comprises only panels for fixed installation .

A suitable response to communication errors between the DOP11C and the controller must be implemented in the controller. Additionally, suitable measures (e.g. limit switches, position monitoring) must be implemented to ensure that no damage occurs as a result of a communication error with DOP11C.

Startup (i.e. the start of designated use) is only permitted under observance of the local laws and directives.

The following standards apply, if the operator panels are marketed in the EU/EFTA:

- Startup (meaning the start of designated use) is prohibited until it is determined that the machine meets the requirements stipulated in Directive 2006/42/EC (Machinery Directive); observe EN 60204.
- Startup (i.e. the start of designated use) is only permitted under observance of the EMC Directive (2004/108/EC).

## 2.4 Non-designated use

Do not install or operate the panels where they will be exposed to direct sunlight.

### 2.4.1 Safety functions

Operator panels of the DOP11C series may not perform any safety functions without higher-level safety systems.

## 2.5 Bus systems

A bus system makes it possible to adapt frequency inverters and/or motor starters to the particulars of the machinery within wide limits. This results in the risk that a change of parameters that cannot be detected externally can result in unexpected, though not uncontrolled, system behavior.

## 2.6 Preventive measures and protection devices

Make sure that **preventive measures** and **protection devices** correspond to the **applicable regulations** (e.g. EN 60204 or EN 50178).

- Required preventive measure: Grounding the unit
- Required protection devices: Overcurrent protection devices

## 2.7 Transportation/storage

Inspect the shipment for damage as soon as you receive the delivery. Inform the shipping company immediately about any damage. Do not startup the operator panel if it is damaged.

If necessary, use suitable, sufficiently dimensioned handling equipment.

Store the operator panel in a dry, dust-free room if you do not install it right away.

## **2.8 Installation and startup**

- Place the panel on a stable base during installation. If the panel falls down, it could be damaged.
- Install the panel according to the accompanying installation instructions.
- The unit must be grounded according to the accompanying installation instructions.
- The installation must be performed by an adequately qualified specialist.
- Route high-voltage cables, signal cables and supply cables separately from one another.
- Make sure that the voltage and polarity of the current source are correct before you connect the operator panel to the current supply.
- The openings in the housing are designed to allow air to circulate and therefore must not be covered.
- Do not install the operator panel in locations where it will be exposed to a powerful magnetic field.
- The peripheral equipment must be suitable for the designated use.
- To prevent scratches on the display glass of the operator panel during delivery, the display has a laminated protective film. To avoid static electricity damaging the panel, remove the protective film from the display after installation.

## **2.9 Operating notes**

- Always keep the panel clean.
- Emergency stop and other functions should not be controlled using the operator panel.
- Make sure that the keys, display, etc. are not touched by any sharp objects.
- Bear in mind that the panel is ready for operation even if the backlighting is no longer illuminated, which means that entries made on the touchscreen will still be registered.

## **2.10 Service and maintenance**

- The agreed limited warranty applies.
- Clean the display and face of the terminal with a soft cloth and mild detergent.
- Repair work must be performed by an adequately qualified specialist.

### 3 Unit structure

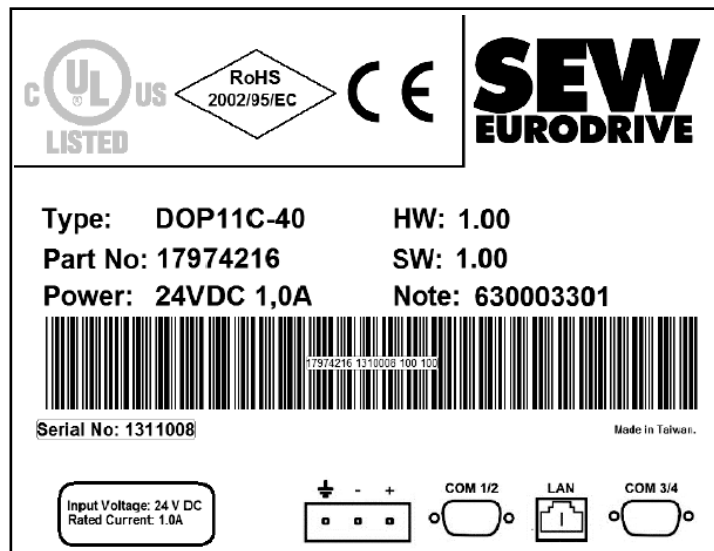
#### 3.1 Type designation and nameplates

##### 3.1.1 Sample type designation

Example: DOP11C-40		
Type	<b>DOP</b>	DOP = Drive Operator Panel
Generation	<b>11</b>	
Version	<b>C</b>	
Design	<b>40</b>	TFT /LCD display: <ul style="list-style-type: none"> <li>• 40 = 4.3 inches, 480 x 272 pixels (65,536 colors)</li> <li>• 51 = 5 inches, 800 x 480 pixels (65,536 colors)</li> <li>• 70 = 7 inches, 800 x 480 pixels (65,563 colors)</li> <li>• 100 = 10.4 inches, 640 x 480 pixels (65,536 colors)</li> <li>• 120 = 12.1 inches, 1280 x 800 pixels (262,144 colors)</li> <li>• 150 = 15.4 inches, 1280 x 800 pixels (262,144 colors)</li> </ul>

##### 3.1.2 Example nameplate

The nameplate is attached to the rear of the unit.



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#### 3.2 Scope of delivery

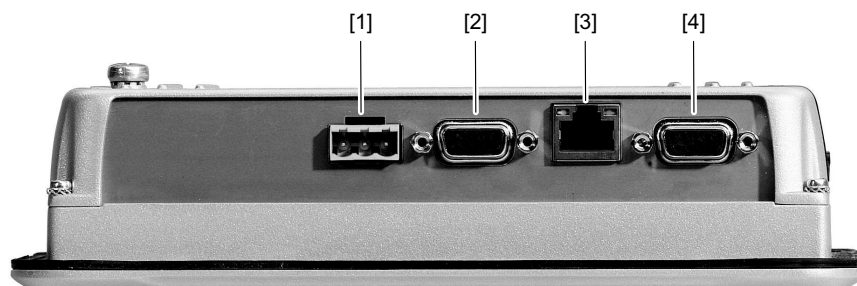
Included in the scope of delivery:

- DOP11C operator panel
- Installation material
- Connector for DC 24 V, 5 mm, 3-pin
- Compact operating instructions and installation guide at hand (in English)

## 3.3 DOP11C-40, -51, -70 and -100

The following section gives an overview of the connections. For further details, refer to chapter "Technical data and dimension sheets" (→ 32).

- The following illustration shows the connections on the bottom of the operator panel:



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Item	Connection	Description
[1]	Voltage supply	DC 24 V (18 – 32 V DC)
[2]	COM1/2	Communication ports (serial, 9-pin D-sub): RS232, RS422 and RS485
[3]	Ethernet interface (LAN)	1 x 10/100 Base-T (shielded RJ45)
[4]	COM3/4	Communication ports (serial, 9-pin D-sub): <ul style="list-style-type: none"> <li>RS232, RS422 and RS485 for DOP11C-40, -70 and -100</li> <li>RS232 and RS485 for DOP11C-51</li> </ul>

- The following illustration shows the connections on the back of the operator panel:



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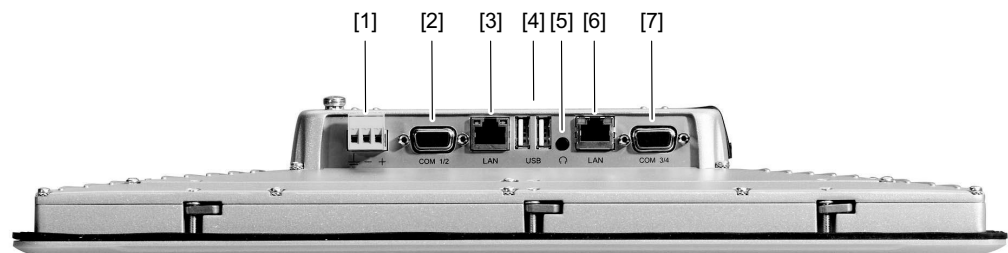
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Item	Connection	Description
[1]	USB interface	1 x USB host 2.0, maximum output current: <ul style="list-style-type: none"> <li>200 mA for DOP11C-40, -70 and -100</li> <li>400 mA for DOP11C-51</li> </ul>
[2]	SD memory card slot for DOP11C-40, -70 and -100 <b>Please note:</b> DOP11C-51 is not equipped with an SD memory card slot.	1 x SD memory card (optional)

### 3.4 DOP11C-120 and -150

The following section gives an overview of the connections. For further details, refer to chapter "Technical data and dimension sheets" (→ 32).

- The following illustration shows the connections on the bottom of the operator panel:



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Item	Connection	Description
[1]	Voltage supply	DC 24 V (18 – 32 V DC)
[2]	COM1/2	Communication ports (serial, 9-pin D-sub): RS232, RS422 and RS485
[3]	Ethernet interface (LAN2)	1 x 10/100/1000 Base-T (shielded RJ45)
[4]	USB interface	2 x USB host 2.0, max. output current 500 mA
[5]	Audio output	Jack plug 3.5 mm
[6]	Ethernet interface (LAN1)	1 x 10/100 Base-T (shielded RJ45)
[7]	COM3/4	Communication ports (serial, 9-pin D-sub): RS232, RS422 and RS485

- The following illustration shows the connections on the back of the operator panel:

### 3 Unit structure

DOP11C-120 and -150



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Item	Connection	Description
[1]	USB interface	1 x USB host 2.0, max. output current 500 mA
[2]	SD memory card	1 x SD memory card (optional)

## 4 Installation

### 4.1 Important installation notes

#### 4.1.1 Installation notes for the basic unit

##### Separate cable ducts

Route **power cables** and **electronic cables** in **separate cable ducts**.

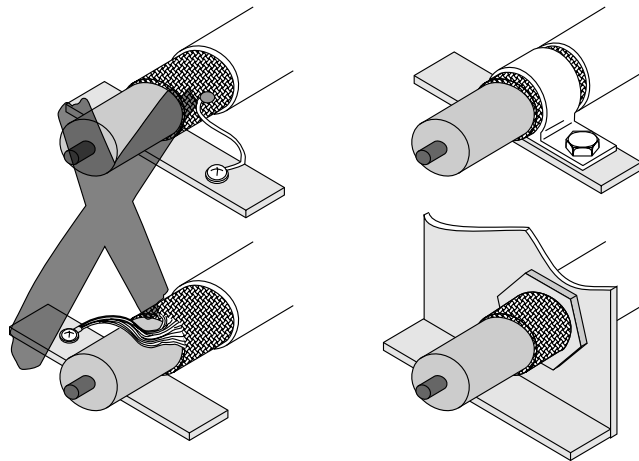
##### Cross-sections

- Voltage supply: **Cross section according to rated input current.**
- Electronics cables:
  - 1 conductor per terminal 0.20 – 0.75 mm<sup>2</sup> (AWG20 - 17)
  - 2 cores per terminal 0.20 – 0.75 mm<sup>2</sup> (AWG20 - 17)

##### Shielding and grounding

- Use only **shielded signal cables**.
- Connect the **shield by the shortest possible route and make sure it is grounded over a wide area at both ends**. You can ground one shield end via an interference suppression capacitor (220 nF/50 V) to avoid ground loops. If using double-shielded cables, ground the outer shield on the controller end and the inner shield on the other end.

Examples of correct shield connection with metal clamp (shield terminal) or metal Pg cable gland:



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- **Shielding** can also be achieved by routing the cables in **grounded sheet metal ducts or metal pipes**. In this case, the **power cables and control cables** should be **routed separately**.
- The unit is grounded via the connector for 24 V voltage supply.

#### 4.1.2 UL-compliant installation

Note the following information for UL-compliant installation:

- Use only copper conductors with a thermal rated values of 60/75 °C as connection cable.
- Disconnect units only if no voltage is applied.
- This device is equipped with an accumulator/battery.

### INFORMATION



Use the device only **indoors** and on a smooth, even surface.

---



### INFORMATION

Only use tested units with a **limited output voltage** ( $V_{\max} = \text{DC } 30 \text{ V}$ ) and **limited output current** ( $I \leq 8 \text{ A}$ ) as an **external DC 24 V voltage source**.

UL certification does not apply to operation in voltage supply systems with a non-grounded star point (IT systems).

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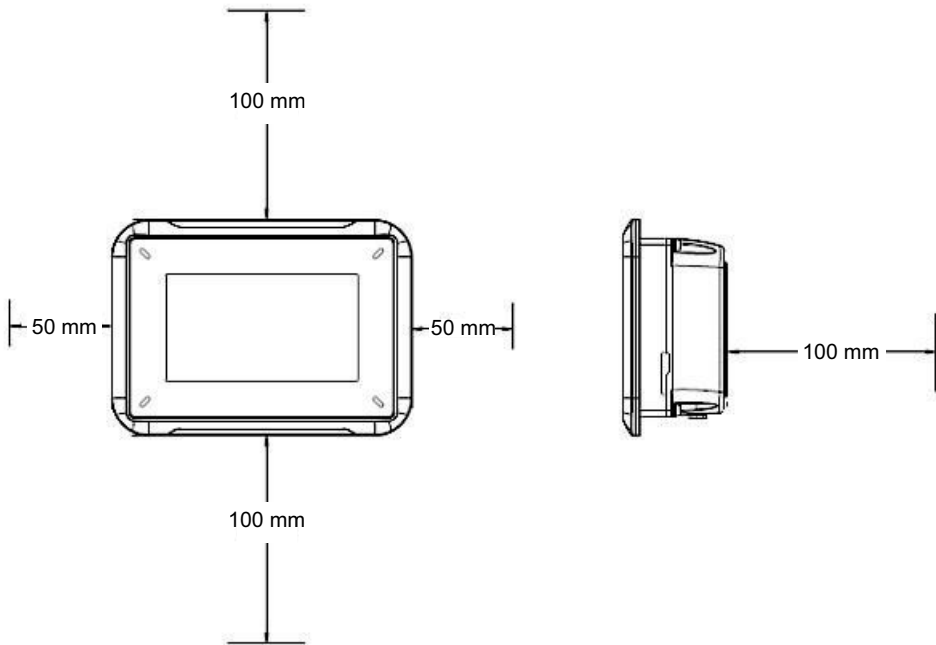


### 4.1.3 Space required for installation

The thickness of the mounting plate depends on the device type. The following table lists the maximum wall thickness for each device type:

Device type	Maximum thickness of mounting plate
DOP11C-40	11 mm
DOP11C-51	5.5 mm
DOP11C-70	11 mm
DOP11C-100	8 mm
DOP11C-120	8 mm
DOP11C-150	8 mm

Space required for installing the operator panel:



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## 4.2 Unpacking the operator panel

Unpack the operator panel. Check the scope of delivery. Inform your supplier immediately in the event of damage.

### INFORMATION



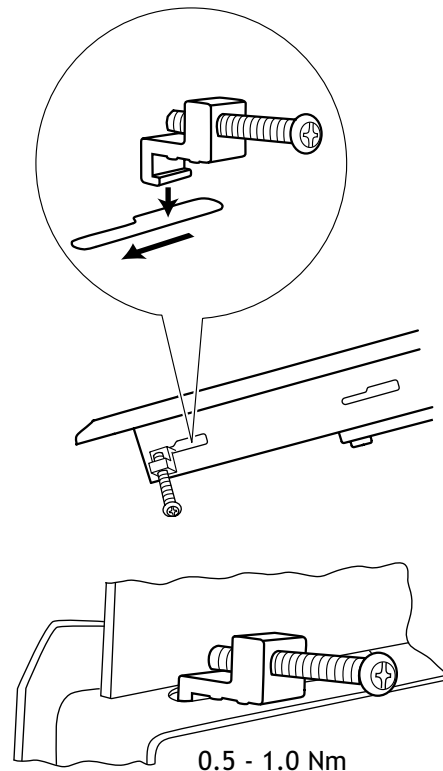
Place the operator panel on a stable base during installation. If the device falls down, it could be damaged.

## 4.3 Mounting the operator panel

How the operator panel is mounted depends on the device type:

- **DOP11C-40, -70 and -100:**

Use all the retaining slots and the brackets and screws supplied to mount the operator panel:



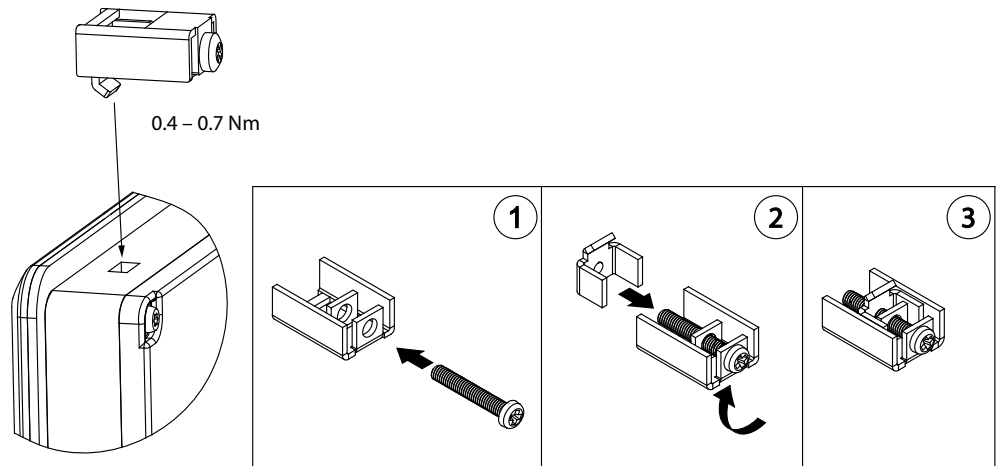
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- **DOP11C-51:**

Use all the retaining slots and the brackets and screws supplied to mount the operator panel:



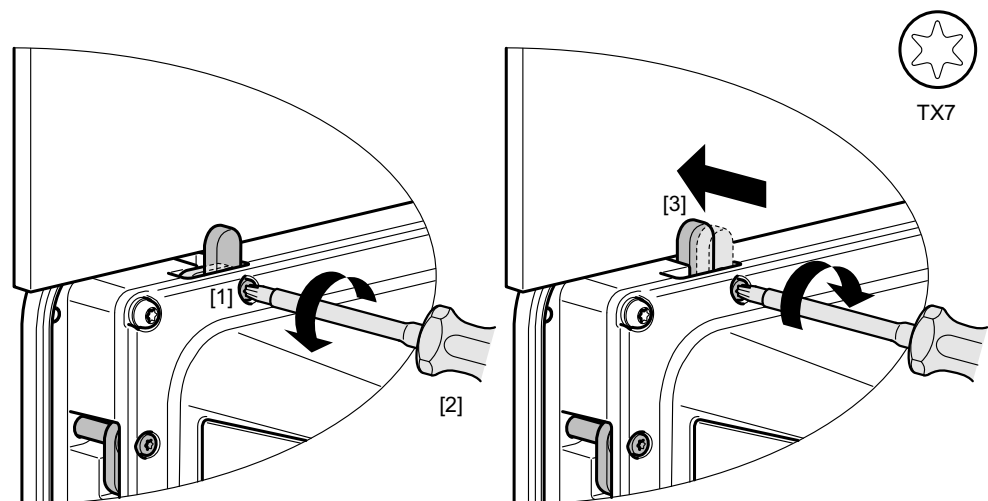
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• **DOP11C-120 and DOP11C-150:**

Mount the operator panel to its designated spot using 8 screws (Torx, M4).

Loosen the screw [1] with a screw driver (Torx, TX7) [2] until the retaining clamp [3] tilts up. Then tighten the screw clockwise (0.4 Nm) until the retaining clamp [3] is pressed against the housing wall.

Repeat the procedure for the remaining screws.

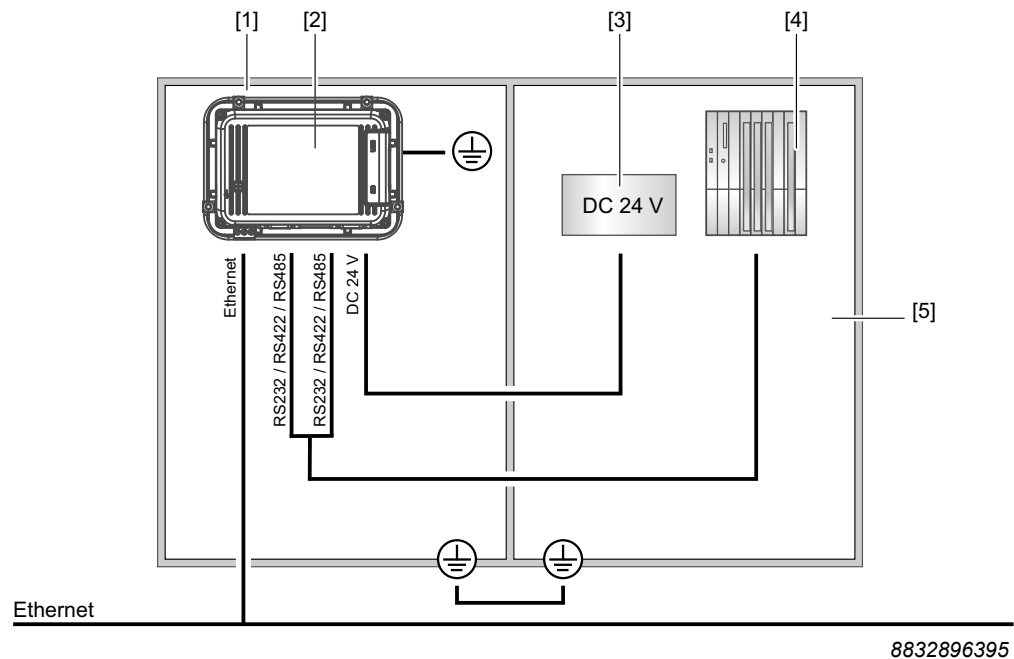


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- [1] Screw (Torx, M4)
- [2] Screw driver (Torx, TX7)
- [3] Retaining clamp

#### 4.4 Installing the operator panel

The following figure shows the installation diagram of the operator panel:



- |   |                     |
|---|---------------------|
| [1] Control cabinet door/front panel      | [4] Control         |
| [2] Operator panel                        | [5] Control cabinet |
| [3] DC power supply unit (current supply) |                     |

To install the operator panel, proceed as follows:

- Connect the cables as shown to the following diagram. Observe:
  - Operator panel and controller must have the same electrical grounding (reference voltage value). Communication errors may occur if this is not the case.
  - You can use the following screws:
    - M5 screws for DOP11C-40, -70, -100, -120, and -150
    - M3 screws for DOP11C-51
  - Use a PE (as short as possible) with a minimum cross section of 2.5 mm<sup>2</sup>.
  - Only use shielded communication cables. Route high-voltage cables separately from signal and supply cables.
  - The operator panel must be at ambient temperature before startup. If condensation builds up, you must ensure that the operator panel is dry before connecting it to the current supply. Ensure that the voltage and polarity of the current source are correct.
- To avoid static electricity damaging the panel, carefully remove the protective film of the display glass after installation.

## 4.5 Connecting a voltage supply



### NOTICE

Damage to the unit due to reversed polarity during connection.

Possible damage to property.

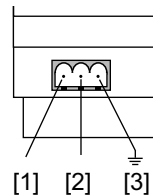
- Ensure correct polarity when connecting the panel.



### INFORMATION

Make sure that the operator panel and the controller system have the same electrical grounding (reference voltage value). Communication errors may occur if this is not the case.

Voltage supply DOP11C:



- [1] +24 V
- [2] 0 V
- [3] Grounding

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## 4.6 Connecting the operator panel

### 4.6.1 Preparation



#### NOTICE

Damage to the unit due to connecting or disconnecting plug connectors when voltage is applied.

Possible damage to property.

- Switch off the line voltage.
- Never plug or unplug plug connectors while they are energized.



#### ⚠ WARNING

Risk of crushing if the motor starts up unintentionally via the connected MOVIDRIVE® frequency inverter.

Severe or fatal injuries.

- Provide for suitable measures to prevent the motor from starting up unintentionally:
  - Disconnect the electronics input X13.0/controller inhibit or
  - Disconnect the line voltage (24 V backup voltage must still be applied).
- Additional safety precautions must be taken depending on the application to avoid injury to people and damage to machinery.



#### ⚠ WARNING

Risk of crushing if the motor starts up unintentionally via the connected MOVITRAC® frequency inverter.

Severe or fatal injuries.

- Disconnect the terminals "clockwise rotation" and "enable".
- Additional safety precautions must be taken depending on the application to avoid injury to people and damage to machinery.

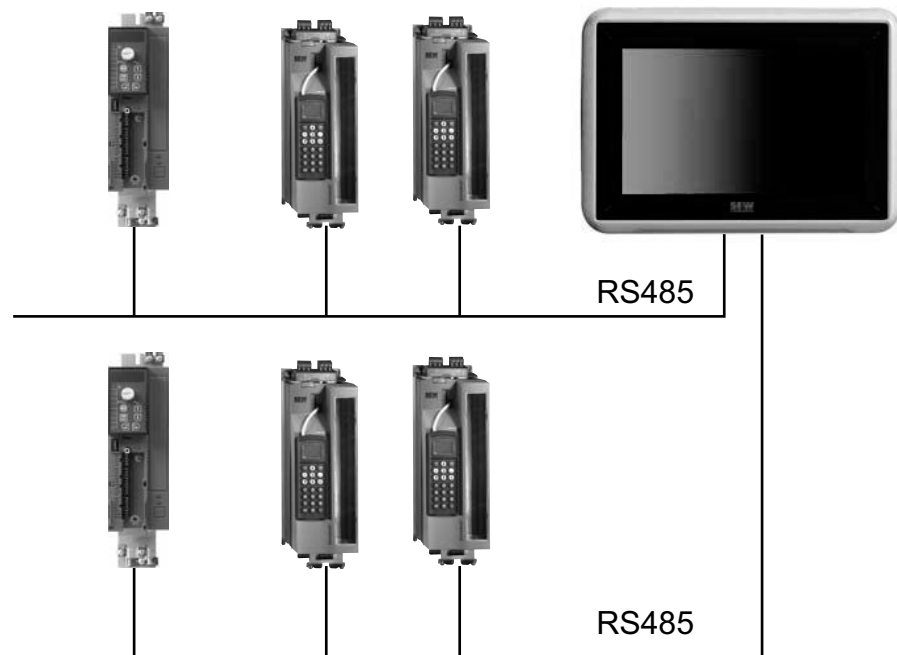
#### 4.6.2 Connecting the operator panel to the inverter and PC

### INFORMATION



Before connecting the operator panel, observe the online help of the HMI-Build-er.PRO software. The software is an integral part of MOVITOOLS® MotionStudio.

1. Connect the operator panel and the inverters. For detailed information, refer to chapter "RS485 connection" (→ 24).



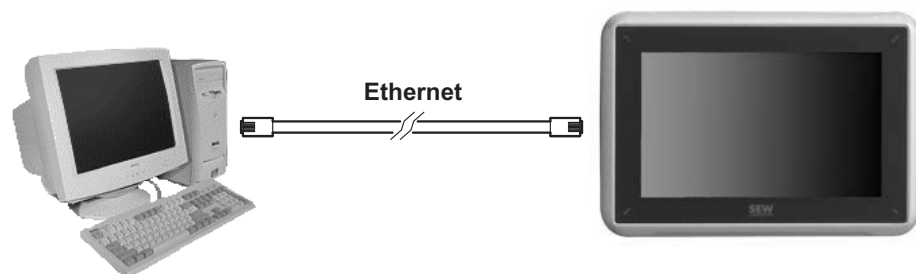
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2. Connect the operator panel to the PC using the standard Ethernet patch cable. For detailed information on the Ethernet communication, refer to chapter "Ethernet connection" (→ 26).

### INFORMATION



The Ethernet interface of the operator panel has an "auto-crossing" function. Therefore, there is no need for a crossover cable for a point-to-point connection.



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3. Switch on the PC. If the HMI Builder.PRO software is not already installed on the PC, install it now and then start the software.
4. Switch on the supply (24 V) for the operator panel and the connected frequency inverter.

#### 4.6.3 Connection types

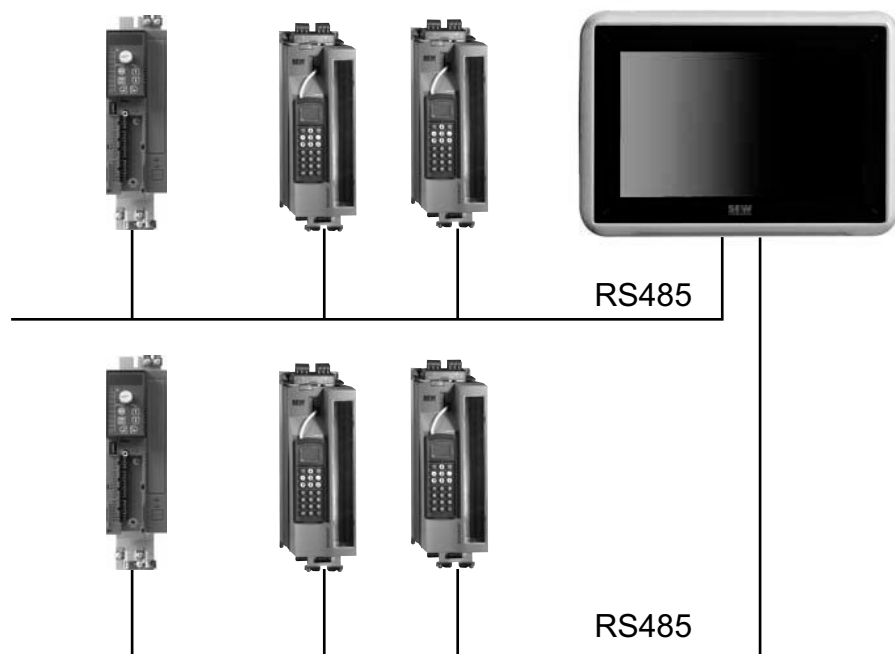
##### RS485 connection

With one of the RS485 interfaces you can connect up to 31 MOVIDRIVE® units to one operator panel.

DOP11C can be directly connected to a frequency inverter of the type MOVIDRIVE® via the RS485 interface using a 9-pin D-sub connector.

##### Wiring diagram RS485 interface

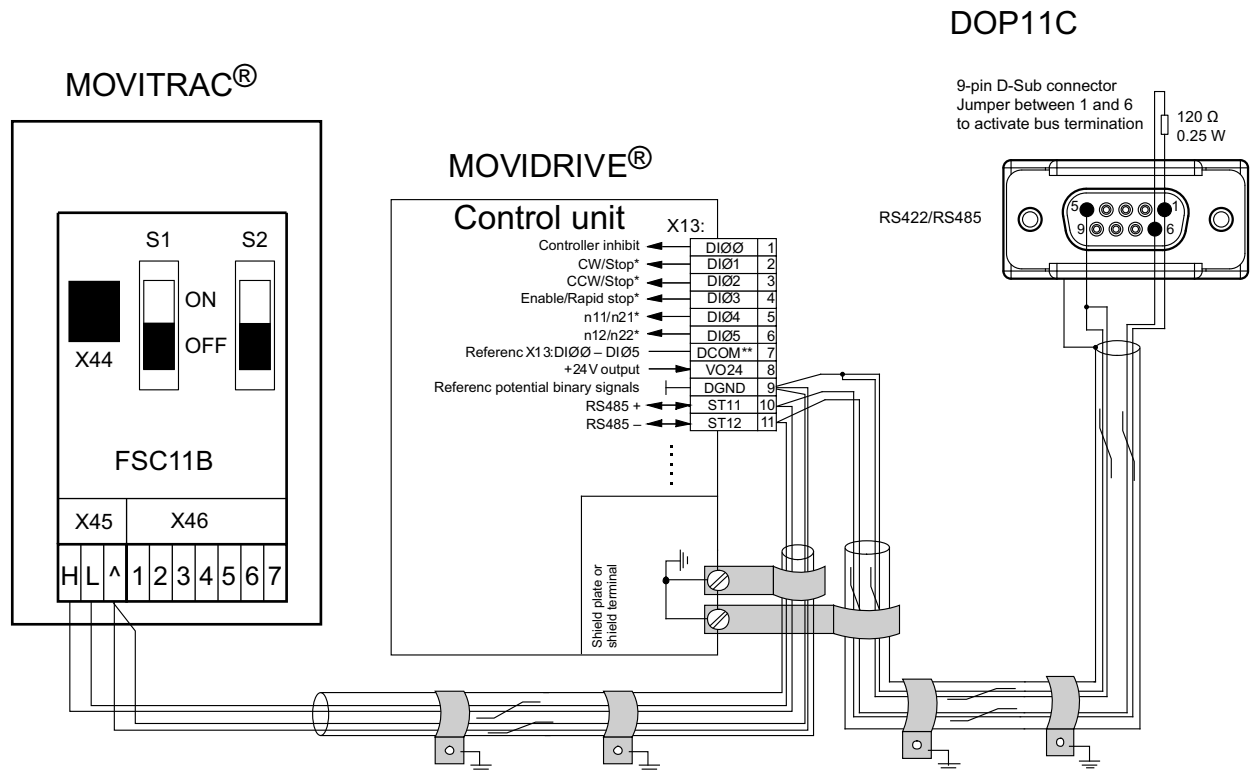
RS485 connection:



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Pin assignment for DOP11C:



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### Cable specification

Use a 2 x 2-core twisted and shielded copper cable (data transmission cable with braided copper shield). The cable must meet the following specifications:

- Core cross section 0.5 – 0.75 mm<sup>2</sup> (AWG20 – 18)
- Cable resistance 100 – 150 Ω at 1 MHz
- Capacitance per unit length ≤ 40 pF/m (12 pF/ft) at 1 Hz

For example, the following cables are suitable:

- Prefabricated cables from SEW-EURODRIVE. For detailed information, refer to chapter "Prefabricated communication cables" (→ 36).
- UNITRONIC® BUS CAN, 2 x 2 x 0.22 mm<sup>2</sup> by Lappkabel.

### Applying the shield

Apply the shield at both ends over large area to the electronics shield clamp of the controller and in the housing of the 9-pin D-sub connector of the operator panel.

### NOTICE

The bus controller may suffer irreparable damage as a result of a short circuit in the EMC decoupling between the electronics and ground.

Possible damage to property.

- **Never** connect the shield ends to DGND.



*Cable length*

The permitted total cable length is 200 m.

*Potential shift***NOTICE**

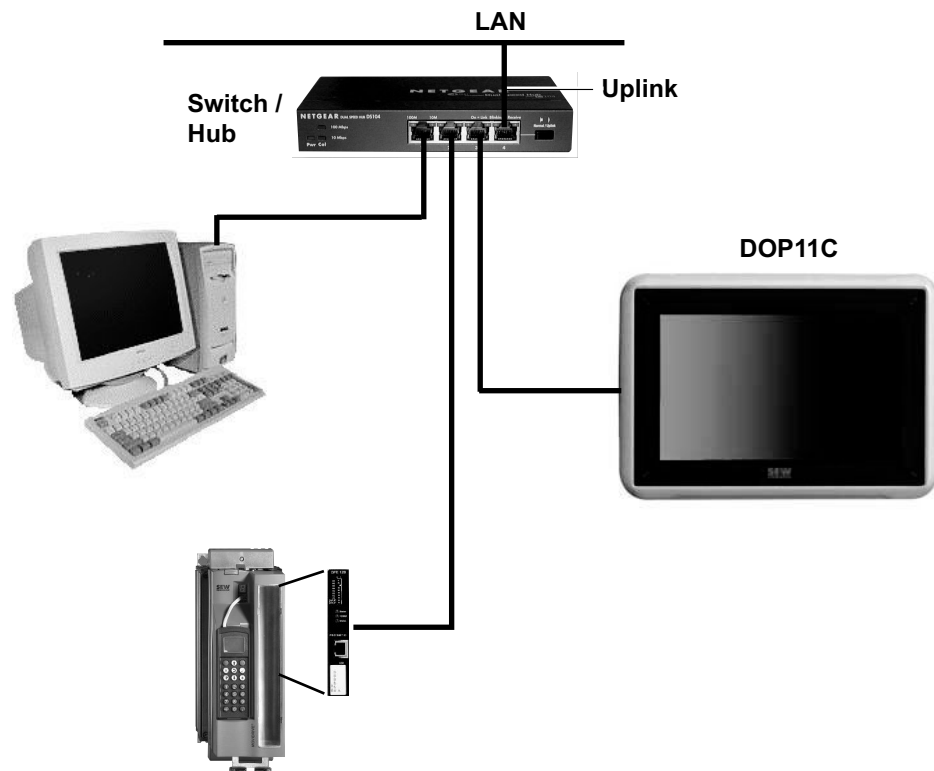
Damage of units connected with RS485 due to potential shift.

Possible damage to property.

- Prevent potential shift with suitable measures such as:
  - Connection of the unit grounds (GND) with separate cable.
  - Connection of voltage supply (24 V).

**Ethernet connection**

Connecting DOP11C to a PC for programming and remote maintenance via Ethernet and TCP/IP.



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*Cable specification*

Use a standard shielded Ethernet cable with shielded RJ45 connectors and cables according to the CAT5 specification. The maximum cable length is 100 m.

For example, the following cable is suitable:

- UNITRONIC® LAN UTP BS flexible 4 × 2 26 AWG by Lappkabel

*Ethernet connections of DOP11C-120 and -150*

The units DOP11C-120 and -150 are equipped with 2 Ethernet connections.



**INFORMATION**

The Ethernet connections cannot be used as a switch (with the same IP address).

- To connect the operator panel with other units (inverter, controller), use the Ethernet connections independently (simultaneously or one at a time).
- Assign one IP address from your local network (IP address range) to each Ethernet connection.

## 5 Startup



### **▲ WARNING**

Risk of injury due to electric shock.

Severe or fatal injuries.

- It is essential to comply with the safety notes in chapter "Safety notes" (→ 8) during installation.
- 

### 5.1 Important notes on startup

For a successful startup, a correct electrical connection of the operator panel is required.



### **▲ WARNING**

Risk of injury if the operator panels of the DOP11C series perform any safety functions without higher-level safety systems.

Severe or fatal injuries.

- Use higher-level safety systems to ensure protection of equipment and personnel.
-

## 5.2 Starting the operator panel

### INFORMATION



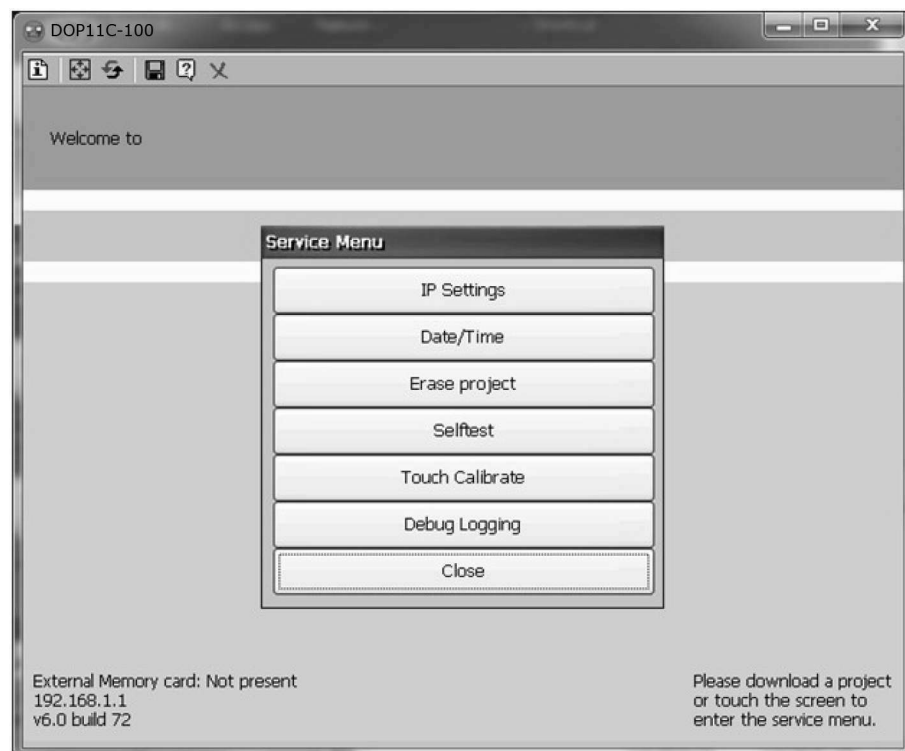
Units are delivered without an uploaded project.

The unit starts automatically when the voltage supply is connected. Without a loaded project, the unit shows the start screen.

Basic settings (e.g. IP addresses) can be set in the service menu.

To open a service menu, proceed as follows:

1. If no project is loaded, touch the start screen.
2. If a project was uploaded to the unit, observe the instructions in chapter "Opening the service menu" (→ 30).



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## 6 Operation

### 6.1 Opening the service menu

#### INFORMATION



The following procedure describes how to open the service menu if a project was already uploaded to the operator panel.

Proceed as follows:

1. Close the operator panel and switch on the voltage supply.
  - ⇒ An hourglass symbol appears on the screen.
2. When the hourglass disappears, touch the display and keep the finger on the display until the following message appears:
  - ⇒ *"Tap anywhere on screen, or touch calibrate will start in 10 seconds"*
3. Lift your finger and tap the display again.
  - ⇒ The service menu is displayed.



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## **7 Service**

### **7.1 Disassembly and waste disposal**

The operator panel should be completely or partly recycled according to the respective applicable regulations.

Note that the following components contain substances that may pose a health hazard and cause environmental pollution: Lithium battery, electrolyte capacitor and display.

Observe the applicable national regulations.

Dispose of the following materials separately in accordance with the country-specific regulations in force, as:

- Electronics scrap
- Plastics
- Sheet metal
- Copper

## 8 Technical data and dimension sheets

### 8.1 Technical data

#### 8.1.1 Part numbers

	DOP11C-40	DOP11C-51	DOP11C-70	DOP11C-100	DOP11C-120	DOP11C-150
Part number	17974216	17977541	17974224	17974232	17974240	17974259

#### 8.1.2 Voltage supply

	DOP11C-40	DOP11C-51	DOP11C-70	DOP11C-100	DOP11C-120	DOP11C-150
Voltage supply	+24 V DC (18-32 V DC) CE: The voltage supply has to meet the requirements of IEC 60950 and IEC 61558-2-4. The current supply of units with UL/cUL certification (see section "Approvals" (→ 33)) must be according to the regulations of current supply class II.					
Fuse	Internal DC fuse, 2.0 A T (slow-blow), 5 x 20 mm				3.15 A TT (super slow-blow), 5 x 20 mm	
Power consumption at nominal voltage	3.6 W	6 W	6 W	9.6 W	22 W	24 W
Accumulator/Battery	Accumulator: MS920-SE	Battery: BR 2032	Accumulator: MS920-SE	Accumulator: MS920-SE	Battery: CR 2032	Battery: CR 2032

#### 8.1.3 Display

	DOP11C-40	DOP11C-51	DOP11C-70	DOP11C-100	DOP11C-120	DOP11C-150
Resolution (pixel)	480 × 272 (16:9)	800 × 480 (16:9)	800 × 480 (16:9)	640 × 480 (4:3)	1280 × 800 (16:10)	1280 × 800 (16:10)
Active screen size, W x H	95.0 × 53.9 mm (4.3")	108 × 64.8 mm (5")	152.4 × 91.4 mm (7")	211.2 × 158.4 mm (10.4")	261.1 × 163.2 mm (12.1")	331.2 × 207.0 mm (15.4")
Brightness (cd/m <sup>2</sup> )	350	350	350	450	400	450
Contrast	400: 1	500: 1	400: 1	700: 1	1000: 1	1000: 1
Backlighting	LED					
Service life of the backlighting <sup>1)</sup>	> 50000 h	> 20000 h	> 20000 h	> 50000 h	> 50000 h	> 50000 h
Display	TFT-LCD, 65 k colors				TFT-LCD, 262 k colors	
Angle of vision (H)/(V)	140 °/115 °	140 °/120 °	140 °/115 °	160 °/140 °	176 °/176 °	160 °/140 °
Touchscreen contacts	1 million touchscreen contacts					
Touchscreen material <sup>2)</sup>	Polyester on glass, resistive					
Touchscreen coating	Autoflex EBA180L	Autoflex EB	Autoflex EBA180L	Autoflex EBA180L	Autotex F157/F207	Autotex F157/F207

1) Can be dimmed at an ambient temperature of +25 °C.

2) For detailed information, refer to "Chemical resistance" in the appendix.



### 8.1.4 Housing

	DOP11C-40	DOP11C-51	DOP11C-70	DOP11C-100	DOP11C-120	DOP11C-150
Dimensions W × H × D	145 × 103 × 7 mm	171 × 109 × 7 mm	204 × 143 × 7 mm	280 × 228 × 7 mm	340 × 242.2 × 79 mm	410 × 286 × 83 mm
Cutout W × H	128 × 87 mm	160.7 × 93 mm	187 × 126 mm	262 × 209 mm	324 × 226 mm	394 × 270 mm
Installation depth/Installation depth incl. clear- ance	43 mm/143 mm	41.7 mm/ 141.7 mm	43 mm/143 mm	44 mm/144 mm	72 mm/172 mm	76 mm/176 mm
Weight	0.5 kg	0.5 kg	0.8 kg	1.5 kg	2.6 kg	3.85 kg
Protection mate- rial back and frame	Powder-coated aluminum	Plastic (PC and ABS)	Powder-coated aluminum			
Degree of pro- tection front	IP 65					
Degree of pro- tection back	IP 20					

### 8.1.5 Ambient Conditions

	DOP11C-40	DOP11C-51	DOP11C-70	DOP11C-100	DOP11C-120	DOP11C-150
Operating tempera- ture	-10 °C – +60 °C	-10 °C – +50 °C	-10 °C – +60 °C	-10 °C – +60 °C	-10 °C – +50 °C	-10 °C – +50 °C
Storage temperature	-20 °C – +70 °C	-20 °C – +60 °C	-20 °C – +70 °C	-20 °C – +70 °C	-20 °C – +70 °C	-20 °C – +70 °C
Rel. Humidity	< 85% (non-condensing)				5% – 85% (non-condensing)	

### 8.1.6 Certifications

	DOP11C-40	DOP11C-51	DOP11C-70	DOP11C-100	DOP11C-120	DOP11C-150
EMC tests on panel	Tested according to: EN 61000-6-3 (emission) and EN 61000-6-2 (interference immunity).					
DNV approval	Yes					
NEMA	4X, only indoor installation					
UL approval <sup>1)</sup>	UL 508	No UL approval	UL 508	UL 508	UL 508	UL 508
Part number of in- stallation guide	20162944 / EN	21287791 / EN	20194544 / EN	20194943 / EN	20195346 / EN	20195745 / EN

1) In association with the UL approval, the installation guides (in English) delivered with the unit apply.

## 8.1.7 Communication and memory

	DOP11C-40	DOP11C-51	DOP11C-70	DOP11C-100	DOP11C-120	DOP11C-150
RS232 serial interface (COM1, 3)	9-pin D-sub connection, installed connector with 4-40 UNC retaining screws					
RS422/RS485 serial interface (COM2, 4) <sup>1)</sup>						
Ethernet	1 x 10 Base-T / 100 Base-T (shielded RJ45)				1 x 10/100/1000 Mbit/s and 1 x 10/100 Mbit/s. Shielded RJ45	
USB <sup>2)</sup>	1 x USB host 2.0				3 x USB host 2.0	
Maximum output current	200 mA	400 mA	200 mA	200 mA	500 mA	500 mA
LED	1 x blue/red, programmable using software				1 x multicolor	
Processor	ARM9 400 MHz				Intel® Atom 1.1 GHz	
RAM	128 MB (DDR2)				1 GB (DDR2)	
Application memory	80 MB	200 MB	80 MB	80 MB	1.4 GB	1.4 GB
SD memory card slot <sup>3)</sup>	1 x SD memory card (optional).	Is not equipped with an SD memory card slot.	1 x SD memory card (optional).	1 x SD memory card (optional).	1 x SD memory card (optional).	1 x SD memory card (optional).
Real-time clock	Yes (on chip)					

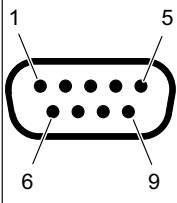
1) The DOP11C-51 operator panel is equipped with a RS485 interface.

2) Compatible with USB 2.0 stick with a memory capacity of up to 16 GB.

3) For DOP11C-40, -70, -100 as of firmware version V6.0 Build 1080 and for DOP11C-120 and -150 as of firmware version V6.0 Build 309, SD cards ≤ 4 GB and SDHC cards 4 GB – 32 GB can be used.

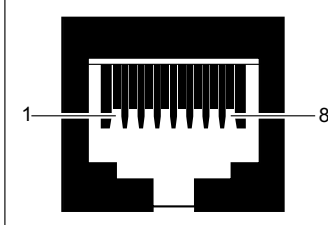
## 8.2 Pin assignment

### 8.2.1 Serial connections

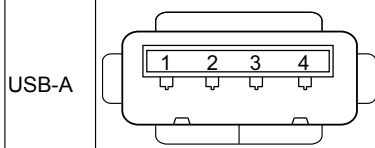
9-pole D-sub connector					
Diagram connector	Terminal no.	COM1	COM2	COM3	COM4
	1	–	RS422 Tx+ RS485 Tx+/Rx+	–	RS422 Tx+ RS485 Tx+/Rx+
	2	RS232 RxD	–	RS232 RxD	–
	3	RS232 TxD	–	RS232 TxD	–
	4	–	RS422 Rx+	–	RS422 Rx+
	5	GND	GND	GND	GND
	6	–	RS422 Tx- RS485 Tx-/Rx-	–	RS422 Tx- <sup>1)</sup> RS485 Tx-/Rx-
	7	RS232 RTS	–	–	RS422 RTS+
	8	RS232 CTS	–	–	RS422 RTS-
	9	–	RS422 Rx-	–	RS422 Rx

1) The DOP11C-51 operator panel is not equipped with an RS422 interface on the COM4 port.

### 8.2.2 Ethernet

RJ45 socket	Terminal no.	Designation	Signal direction operator panel ↔ XXX
	1	Tx+	→
	2	Tx-	→
	3	Rx+	←
	6	Rx-	←
	4, 5, 7, 8	GND	–

### 8.2.3 USB

USB socket	Terminal no.	Designation	Signal direction operator panel ↔ XXX
	1	VBUS	–
	2	D-	↔
	3	D+	↔
	4	GND	–

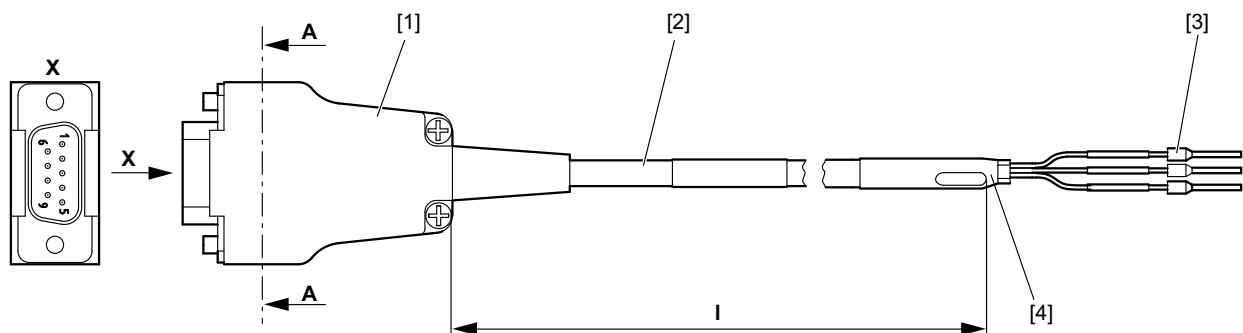
### 8.3 Cable

#### 8.3.1 Prefabricated communication cables

SEW-EURODRIVE offers the following prefabricated RS485/RS422 communication cables with 9-pole D-sub connector for connecting the operator panel to inverters and PCs:

Cable type	Part number
Open end/conductor end sleeve	17975182
RJ10	17975190

#### Cable 17975182

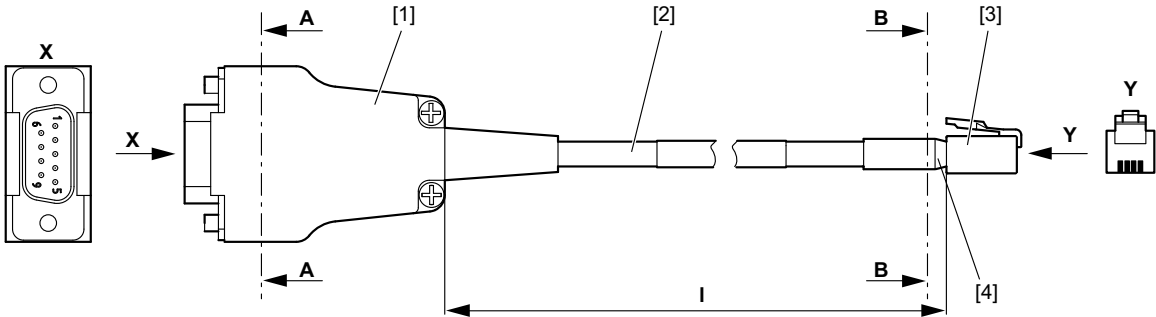


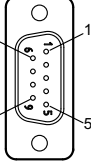
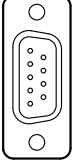

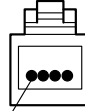
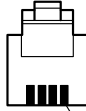
A		Connection overview				B
X	A-A	Contact male	Terminal link	Cable Conductor designation Color \ imprint	Signal	Terminal
		1	•	WHOG	RS485 +	CS
		6	•	OG	RS485 -	CS
		5		GN	GND	CS
		Housing		WHGN		
		nc. 2.3.4.7.8.9		Shielding (Outer)		

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- |   |  |
|---|--|
| [1] Plug connector D-sub 9-pole, female                                 | [3] 3 × conductor end sleeves                    |
| [2] Cable LIYCY-Pair, 2 × 2 × 0.14 or Etherline Y Flex, 2 × 2 × AWG22/7 | [4] Braided shield fixed with heat shrink tubing |

Cable 17975190



A		Connection overview					B	
X	A-A	Contact male	Terminal link	Cable Conductor designation Color \ imprint	Signal	Terminal	B-B	Y
		1		WHOG	RS485 +	2		
		6		OG	RS485 -	3		
		5		GN	GND	4		
				WHGN				
		Housing		Shielding (Outer)				
		nc. 2.3.4.7.8.9						

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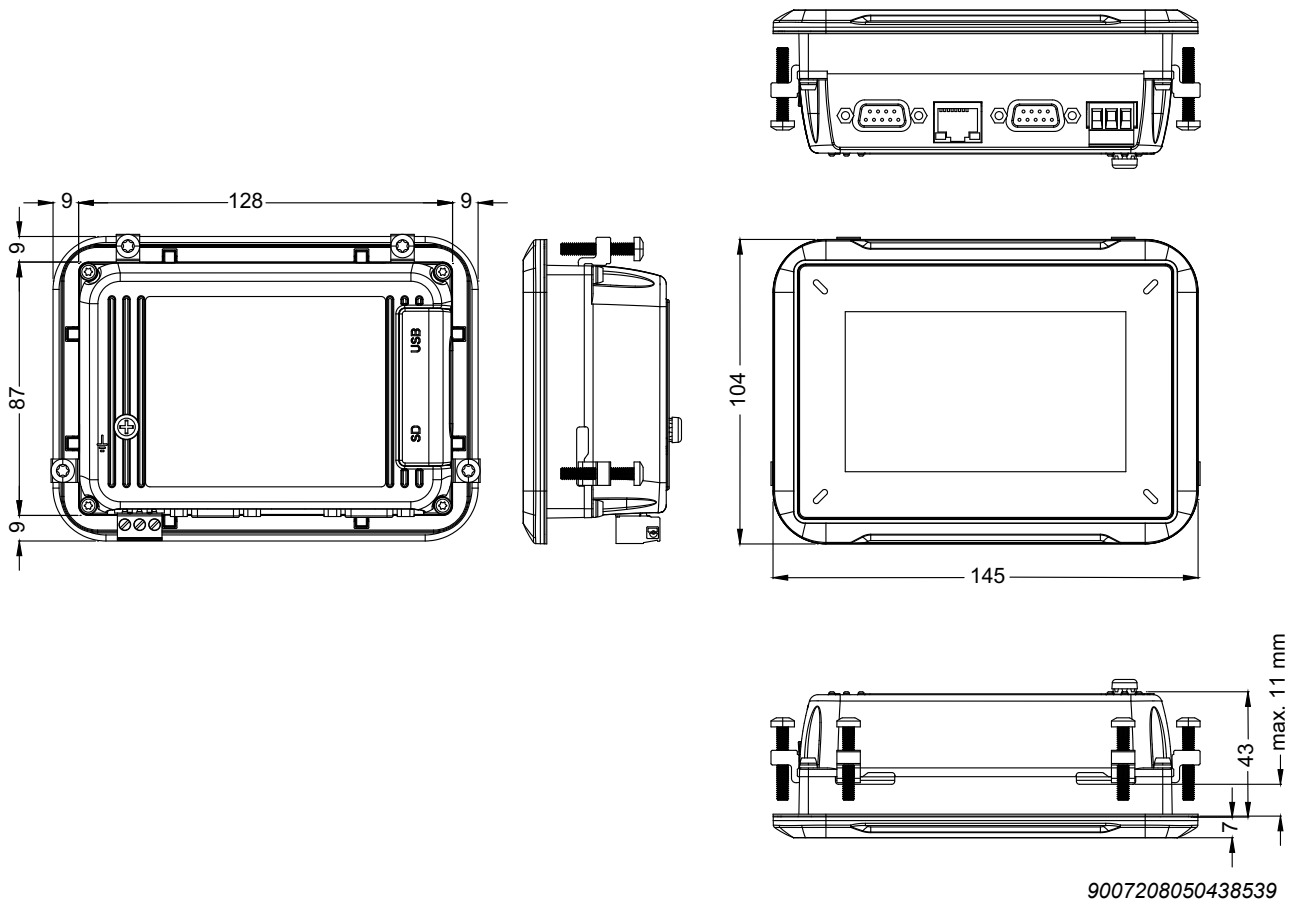
- [1] Plug connector D-sub 9-pole, fe-  
male

[2] Cable LIYCY-Pair, 2 × 2 × 0.14 or  
Etherline Y Flex, 2 × 2 × AWG22/7
- [3] RJ10 connector

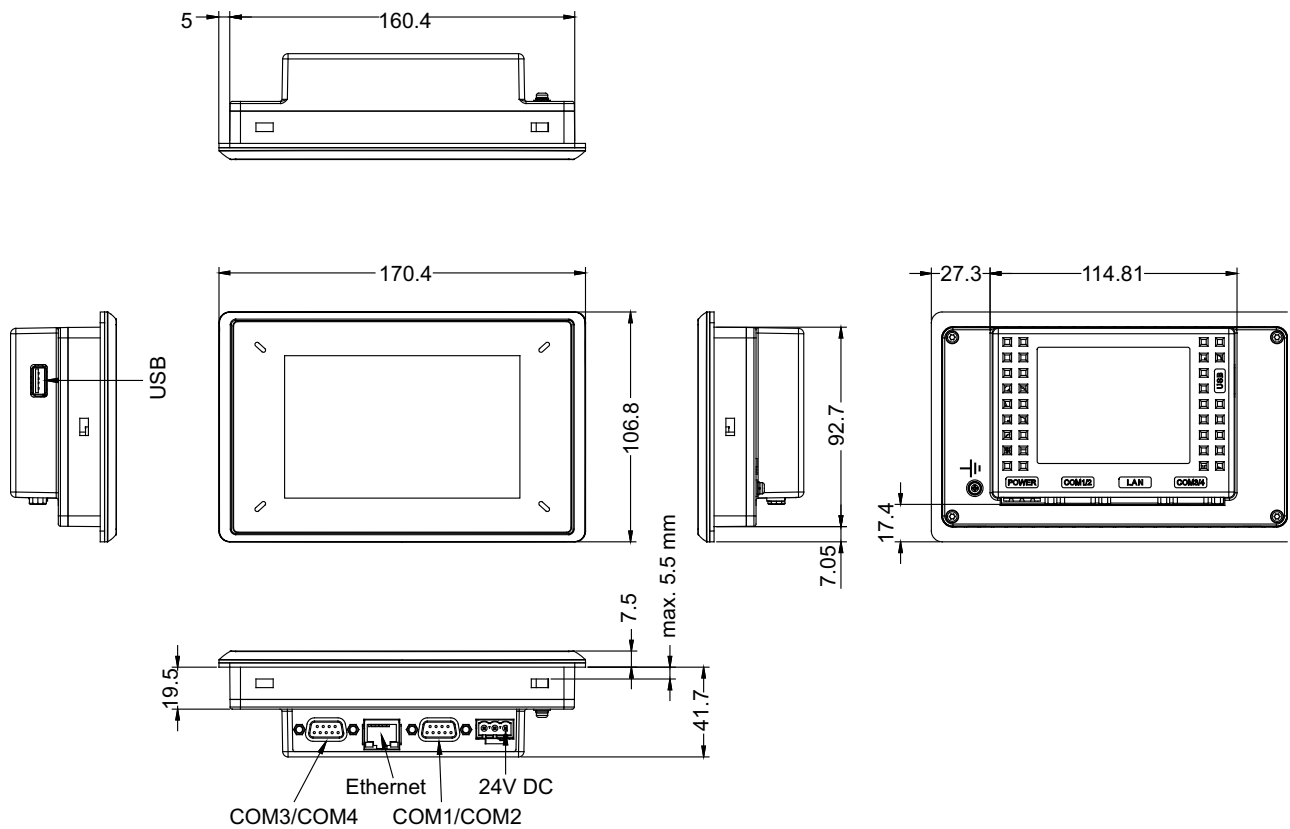
[4] Braided shield fixed with heat shrink tubing

## 8.4 Dimension sheets

### 8.4.1 Dimension sheet DOP11C-40

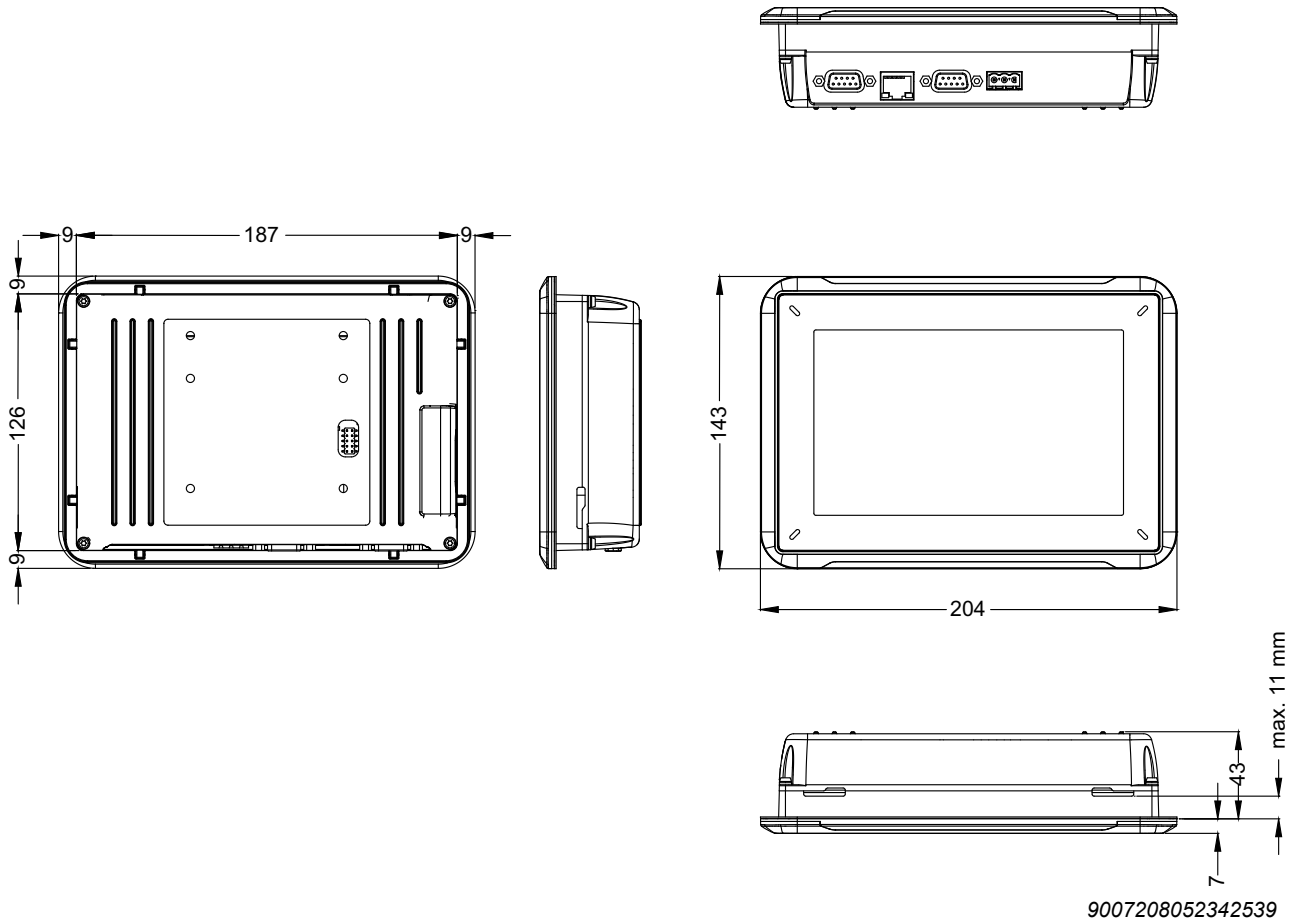


#### 8.4.2 Dimension sheet DOP11C-51



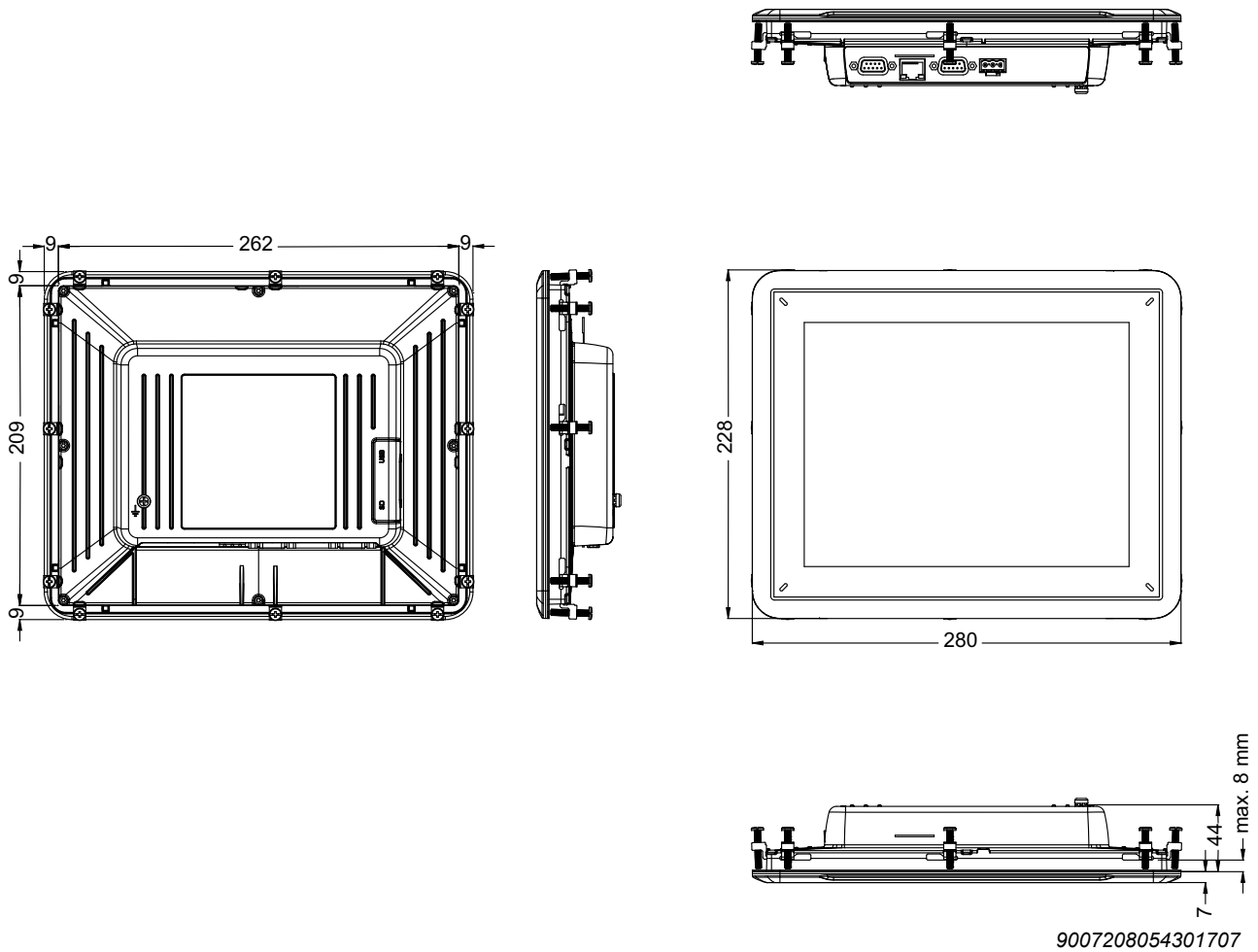
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## 8.4.3 Dimension sheet DOP11C-70

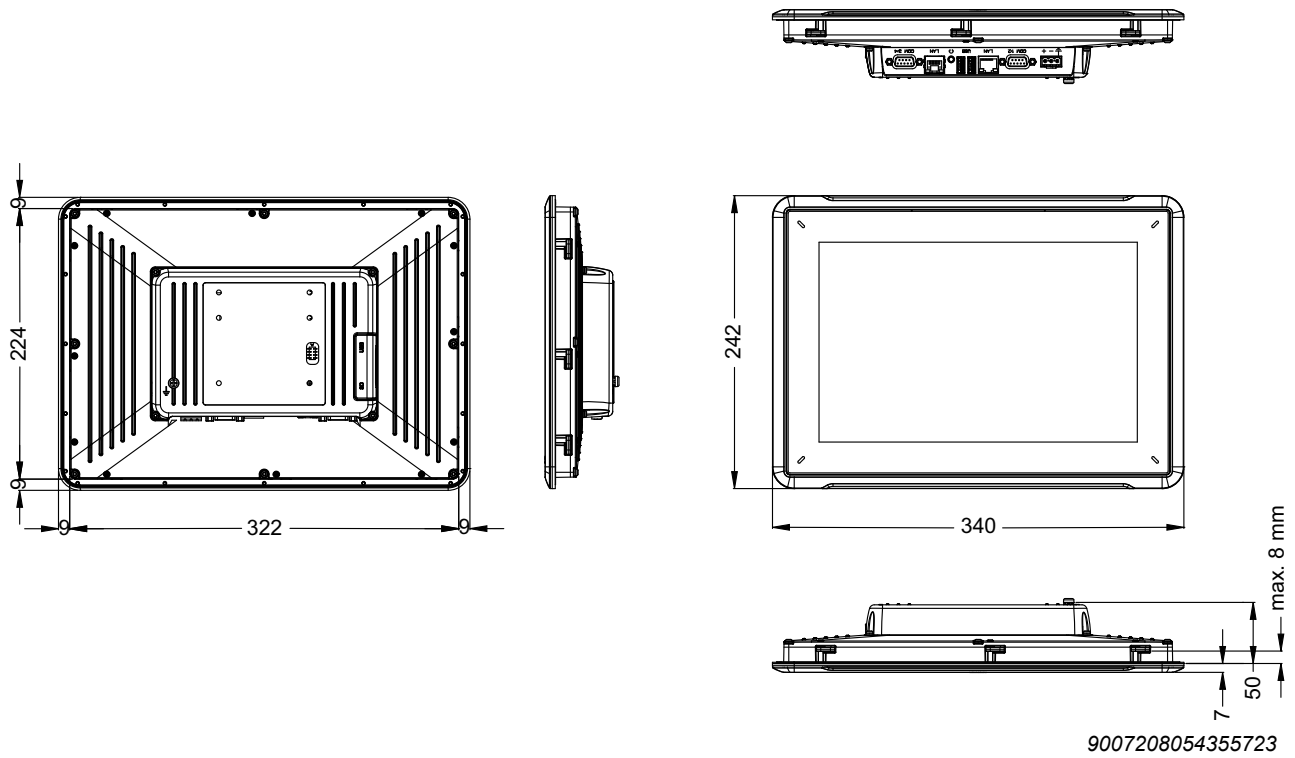




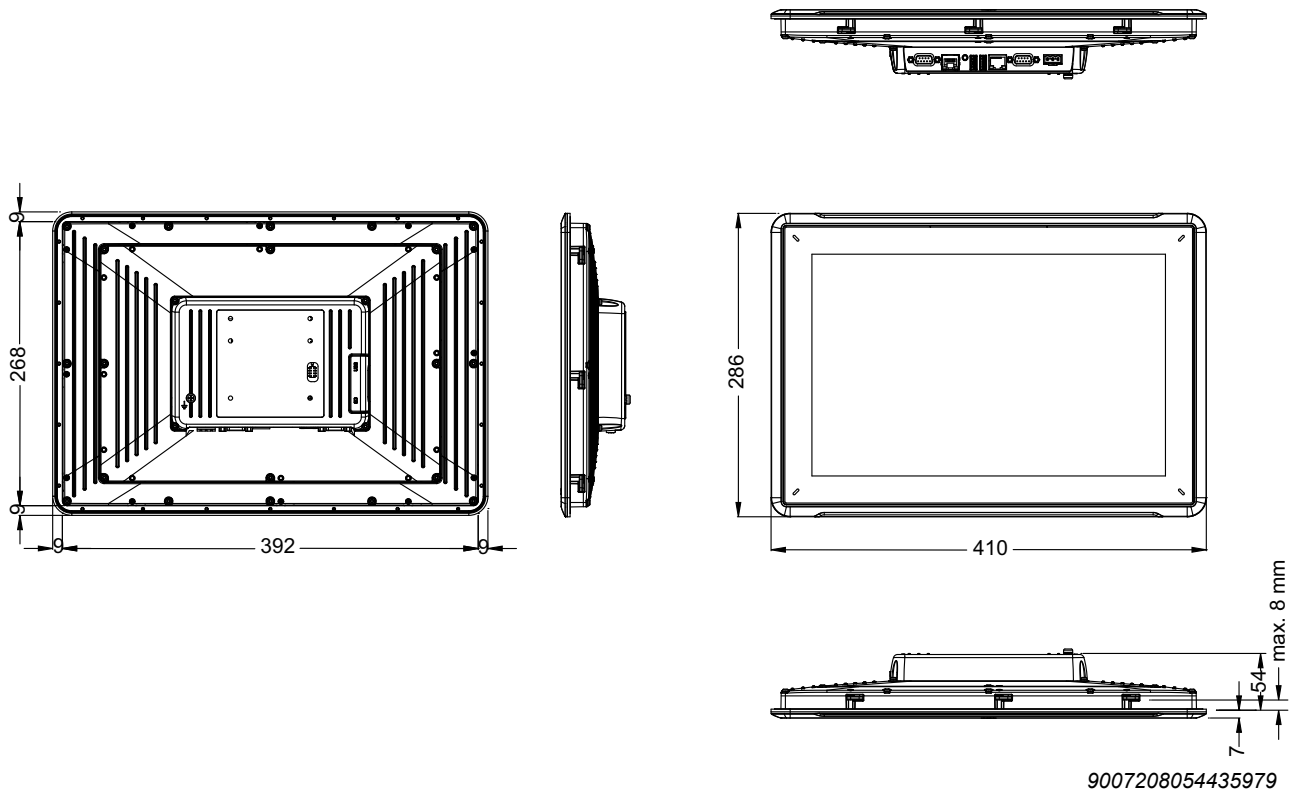
#### 8.4.4 Dimension sheet DOP11C-100



## 8.4.5 Dimension sheet DOP11C-120



#### 8.4.6 Dimension sheet DOP11C-150



## 9 Appendix

### 9.1 Chemical resistance

#### 9.1.1 Metal housing

Frame and housing of the DOP11C-40, -70, -100, -120 and -150 are made of powder-coated aluminum. This powder coating can be exposed to the following substances for more than 24 hours without any visible changes:

Sea water	Tap water
Diesel oil / fuel oil	Sodium chloride solution 2% / 20%
Deionized water	Phosphoric acid 4% / 10%
Acetic acid 10%	Sulfuric acid 20%
Hydroperoxide 3%	Cooking oil
Citric acid 10%	–

The powder coating is partly resistant to the following chemicals at room temperature:

Butanol	Nitric acid 3%
Hydrochloric acid 5%	Nitric acid 10%
Isopropyl alcohol	Phosphoric acid 43%
Sodium hypochlorite 10%	Turpentine

## INFORMATION



If contact with any of the above mentioned chemicals cannot be avoided, first test the reaction of the substance at a spot of the metal housing which is not visible to everybody.

The powder coating is hardly or not resistant to the following chemicals at room temperature:

Concentrated acetic acid	Acetone
Toluene	Trichlorethylene
Nitric acid 30%	Phenol
Ammonia 5%	Concentrated ammonia
Xylene	Gasoline, 97 octane, unleaded
Sodium hydroxide 5%	Gasoline, 98 octane, leaded
Ethyl acetate	Sodium hydroxide 30%
Methyl ethyl ketone	–

### 9.1.2 Plastic housing

The frame and the housing of the DOP11C-51 operator panel is made of the plastics PC and ABS. The plastics can be exposed to the following substances without any visible changes:

Acetic acid 10%	Nitric acid 10 %
Silicone oil	Phosphoric acid 30%
Citric acid 10%	Sea water
Universal cleaner	Sodium hypochlorite
Curd soap solution 2%	Sodium thiosulfate
Hydrochloric acid 20%	Sulfuric acid 30%
Hydrogen peroxide 30%	Carbamide
Lactic acid 10%	–

The plastics are partly resistant to the following chemicals at room temperature:

Naphtha, free from aromatic hydrocarbon	Fuel
Ethanol 96%	Isopropyl alcohol
Glycerine	Hexane
Glycol	Dissolved washing agent

## INFORMATION



If contact with any of the above mentioned chemicals cannot be avoided, first test the reaction of the substance at a spot of the plastic housing which is not visible to everybody.

The plastics are hardly or not resistant to the following chemicals at room temperature:

Acetone	Methylisobutylcetone
Dilute ammonia	Naphthalene
Aniline	Nitrobenzene
Aromatic hydrocarbon	Oleic acid
Benzene	Olive oil
Bromine	Phenol
Butter	Saturated potassium carbonate
Chlorine	Sodium hydroxide solution 10%
Diethyl ether	Soy bean oil
Iodine	Toluene
Lard	Trichloroethylene

### 9.1.3 Solvent resistance of the display

The display can be exposed to the following substances for given time period the without any visible changes:

Solvent	Time period
Acetone	10 min
Isopropyl alcohol	10 min
Toluene	5 h

### 9.1.4 Solvent resistance of the coating

According to DIN 42115 part 2, Autotex F157/F207, Autoflex EBA180L and Autoflex EB can be exposed to the following chemicals for more than 24 hours without showing any noticeable changes:

Acetonitrile	Drilling oil	Paraffin oil
Dissolved abrasive cleaner	Cyclohexanol	Petroleum ether
Alkali carbonate solution	Diacetone alcohol	Phosphoric acid (< 30%)
Ammonia (< 40%)	Diesel	Potassium ferrocyanide / ferri-cyanide
Acetic acid (< 50%)	Ethanol	Potassium hydroxide (< 30%)
Dissolved washing agent	Glycerine	Pure turpentine
Liquid laundry detergent	Glycol	SBP 60/95
Cleaning paste	Hydrochloric acid (< 36%)	Sulfuric acid (< 10%)
Glass cleaner	Linseed oil	Ketchup
Bleach	Methanol	Trichloroacetic acid (< 50%)
Caster oil	Nitric acid (< 10%)	Test gasoline
Sodium hydroxide (< 40%)	–	–

A barely noticeable shininess was detected in the structure with the following chemicals:

Alkali carbonate solution	Liquid laundry detergent	Petroleum ether
Ammonia (< 40%)	Cleaning paste	SBP 60/95
Sodium hydroxide (< 40%)	Glass cleaner	Test gasoline
Dissolved washing agent	Bleach	–

According to DIN 42115 part 2, Autotex F157/F207, Autoflex EBA180L and Autoflex EB can be exposed to glacial acetic acid for a maximum of 1 hour without showing any noticeable changes.

Autotex F157 / F207, Autoflex EBA180L and Autoflex EB is neither resistant to high pressure steam of over 100 °C nor to the following chemicals:

Concentrated inorganic acids	Benzyl alcohol
Concentrated etching solution	Methylene chloride

## 10 Address list

<b>Algeria</b>			
Sales	Algiers	REDUCOM Sarl 16, rue des Frères Zaghroune Bellevue 16200 El Harrach Alger	Tel. +213 21 8214-91 Fax +213 21 8222-84 <a href="http://www.reducom-dz.com">http://www.reducom-dz.com</a> <a href="mailto:info@reducom-dz.com">info@reducom-dz.com</a>
<b>Argentina</b>			
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 <a href="http://www.sew-eurodrive.com.ar">http://www.sew-eurodrive.com.ar</a> <a href="mailto:sewar@sew-eurodrive.com.ar">sewar@sew-eurodrive.com.ar</a>
<b>Australia</b>			
Assembly Sales Service	Melbourne	SEW-EURODRIVE PTY. LTD. 27 Beverage Drive Tullamarine, Victoria 3043	Tel. +61 3 9933-1000 Fax +61 3 9933-1003 <a href="http://www.sew-eurodrive.com.au">http://www.sew-eurodrive.com.au</a> <a href="mailto:enquires@sew-eurodrive.com.au">enquires@sew-eurodrive.com.au</a>
	Sydney	SEW-EURODRIVE PTY. LTD. 9, Sleigh Place, Wetherill Park New South Wales, 2164	Tel. +61 2 9725-9900 Fax +61 2 9725-9905 <a href="mailto:enquires@sew-eurodrive.com.au">enquires@sew-eurodrive.com.au</a>
<b>Austria</b>			
Assembly Sales Service	Vienna	SEW-EURODRIVE Ges.m.b.H. Richard-Strauss-Strasse 24 A-1230 Wien	Tel. +43 1 617 55 00-0 Fax +43 1 617 55 00-30 <a href="http://www.sew-eurodrive.at">http://www.sew-eurodrive.at</a> <a href="mailto:sew@sew-eurodrive.at">sew@sew-eurodrive.at</a>
Croatia	Zagreb	KOMPEKS d. o. o. Zeleni dol 10 HR 10 000 Zagreb	Tel. +385 1 4613-158 Fax +385 1 4613-158 <a href="mailto:kompeks@inet.hr">kompeks@inet.hr</a>
Romania	Bucharest	Sialco Trading SRL str. Brazilia nr. 36 011783 Bucuresti	Tel. +40 21 230-1328 Fax +40 21 230-7170 <a href="mailto:sialco@sialco.ro">sialco@sialco.ro</a>
Serbia	Belgrade	DIPAR d.o.o. Ustanicka 128a PC Košum, IV floor SRB-11000 Beograd	Tel. +381 11 347 3244 / +381 11 288 0393 Fax +381 11 347 1337 <a href="mailto:office@dipar.rs">office@dipar.rs</a>
Slovenia	Celje	Pakman - Pogonska Tehnika d.o.o. Ul. XIV. divizije 14 SLO - 3000 Celje	Tel. +386 3 490 83-20 Fax +386 3 490 83-21 <a href="mailto:pakman@siol.net">pakman@siol.net</a>
<b>Bangladesh</b>			
Vertrieb	Bangladesh	SEW-EURODRIVE INDIA PRIVATE LIMITED 345 DIT Road East Rampura Dhaka-1219, Bangladesh	Tel. +88 01729 097309 <a href="mailto:salesdhaka@seweurodrivebangladesh.com">salesdhaka@seweurodrivebangladesh.com</a>
<b>Belarus</b>			
Sales	Minsk	Foreign Enterprise Industrial Components Rybalko Str. 26 BY-220033 Minsk	Tel. +375 17 298 47 56 / 298 47 58 Fax +375 17 298 47 54 <a href="http://www.sew.by">http://www.sew.by</a> <a href="mailto:sales@sew.by">sales@sew.by</a>
<b>Belgium</b>			
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Service Competence Center	Industrial Gears	SEW-EURODRIVE n.v./s.a. Rue de Parc Industriel, 31 BE-6900 Marche-en-Famenne	Tel. +32 84 219-878 Fax +32 84 219-879 <a href="http://www.sew-eurodrive.be">http://www.sew-eurodrive.be</a> <a href="mailto:service-wallonie@sew-eurodrive.be">service-wallonie@sew-eurodrive.be</a>

<b>Brazil</b>			
Production Sales Service	São Paulo	SEW-EURODRIVE Brasil Ltda. Estrada Municipal José Rubim, 205 – Rodovia Santos Dumont Km 49 Indaiatuba – 13347-510 – SP	Tel. +55 19 3835-8000 sew@sew.com.br
Assembly Sales Service	Rio Claro	SEW-EURODRIVE Brasil Ltda. Rodovia Washington Luiz, Km 172 Condomínio Industrial Conpark Caixa Postal: 327 13501-600 – Rio Claro / SP	Tel. +55 19 3522-3100 Fax +55 19 3524-6653 montadora.rc@sew.com.br
	Joinville	SEW-EURODRIVE Brasil Ltda. Rua Dona Francisca, 12.346 – Pirabeiraba 89239-270 – Joinville / SC	Tel. +55 47 3027-6886 Fax +55 47 3027-6888 filial.sc@sew.com.br
<b>Bulgaria</b>			
Sales	Sofia	BEVER-DRIVE GmbH Bogdanovetz Str.1 BG-1606 Sofia	Tel. +359 2 9151160 Fax +359 2 9151166 bever@bever.bg
<b>Cameroon</b>			
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<b>Canada</b>			
Assembly Sales Service	Toronto	SEW-EURODRIVE CO. OF CANADA LTD. 210 Walker Drive Bramalea, ON L6T 3W1	Tel. +1 905 791-1553 Fax +1 905 791-2999 <a href="http://www.sew-eurodrive.ca">http://www.sew-eurodrive.ca</a> l.watson@sew-eurodrive.ca
	Vancouver	SEW-EURODRIVE CO. OF CANADA LTD. Tilbury Industrial Park 7188 Honeyman Street Delta, BC V4G 1G1	Tel. +1 604 946-5535 Fax +1 604 946-2513 b.wake@sew-eurodrive.ca
	Montreal	SEW-EURODRIVE CO. OF CANADA LTD. 2555 Rue Leger Lasalle, PQ H8N 2V9	Tel. +1 514 367-1124 Fax +1 514 367-3677 a.peluso@sew-eurodrive.ca
<b>Chile</b>			
Assembly Sales Service	Santiago de Chile	SEW-EURODRIVE CHILE LTDA Las Encinas 1295 Parque Industrial Valle Grande LAMP RCH-Santiago de Chile P.O. Box Casilla 23 Correo Quilicura - Santiago - Chile	Tel. +56 2 2757 7000 Fax +56 2 2757 7001 <a href="http://www.sew-eurodrive.cl">http://www.sew-eurodrive.cl</a> ventas@sew-eurodrive.cl
<b>China</b>			
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	Guangzhou	SEW-EURODRIVE (Guangzhou) Co., Ltd. No. 9, JunDa Road East Section of GETDD Guangzhou 510530	Tel. +86 20 82267890 Fax +86 20 82267922 guangzhou@sew-eurodrive.cn
	Shenyang	SEW-EURODRIVE (Shenyang) Co., Ltd. 10A-2, 6th Road Shenyang Economic Technological Development Area Shenyang, 110141	Tel. +86 24 25382538 Fax +86 24 25382580 shenyang@sew-eurodrive.cn
	Taiyuan	SEW-EURODRIVE (Taiyuan) Co., Ltd. No.3, HuaZhang Street, TaiYuan Economic & Technical Development Zone ShanXi, 030032	Tel. +86-351-7117520 Fax +86-351-7117522 taiyuan@sew-eurodrive.cn



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	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
Sales Service	Hong Kong	SEW-EURODRIVE LTD. Unit No. 801-806, 8th Floor Hong Leong Industrial Complex No. 4, Wang Kwong Road Kowloon, Hong Kong	Tel. +852 36902200 Fax +852 36902211 contact@sew-eurodrive.hk
<b>Colombia</b>			
Assembly Sales Service	Bogota	SEW-EURODRIVE COLOMBIA LTDA. Calle 22 No. 132-60 Bodega 6, Manzana B Santafé de Bogotá	Tel. +57 1 54750-50 Fax +57 1 54750-44 <a href="http://www.sew-eurodrive.com.co">http://www.sew-eurodrive.com.co</a> sew@sew-eurodrive.com.co
<b>Croatia</b>			
Sales Service	Zagreb	KOMPEKS d. o. o. Zeleni dol 10 HR 10 000 Zagreb	Tel. +385 1 4613-158 Fax +385 1 4613-158 kompeks@inet.hr
<b>Czech Republic</b>			
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<b>Denmark</b>			
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<b>Egypt</b>			
Sales Service	Cairo	Copam Egypt for Engineering & Agencies 33 El Hegaz ST Heliopolis, Cairo	Tel. +20 222566299 Fax +20 2 22594-757 <a href="http://www.copam-egypt.com">http://www.copam-egypt.com</a> copam@copam-egypt.com
<b>Estonia</b>			
Sales	Tallin	ALAS-KUUL AS Reti tee 4 EE-75301 Peetri küla, Rae vald, Harjumaa	Tel. +372 6593230 Fax +372 6593231 veiko.soots@alas-kuul.ee
<b>Finland</b>			
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Service	Hollola	SEW-EURODRIVE OY Keskikankaantie 21 FIN-15860 Hollola	Tel. +358 201 589-300 Fax +358 3 780-6211 <a href="http://www.sew-eurodrive.fi">http://www.sew-eurodrive.fi</a> sew@sew.fi
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	Brumath	SEW-USOCOME 1 rue de Bruxelles F-67670 Mommenheim	Tel. +33 3 88 37 48 48
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	Lyon	SEW-USOCOME Parc d'affaires Roosevelt Rue Jacques Tati F-69120 Vaulx en Velin	Tel. +33 4 72 15 37 00 Fax +33 4 72 15 37 15
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## Gabon

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	Electronics	SEW-EURODRIVE GmbH & Co KG Ernst-Blickle-Straße 42 D-76646 Bruchsal	Tel. +49 7251 75-1780 Fax +49 7251 75-1769 <a href="mailto:scc-elektronik@sew-eurodrive.de">scc-elektronik@sew-eurodrive.de</a>
Drive Technology Center	North	SEW-EURODRIVE GmbH & Co KG Alte Ricklinger Straße 40-42 D-30823 Garbsen (Hannover)	Tel. +49 5137 8798-30 Fax +49 5137 8798-55 <a href="mailto:dtc-nord@sew-eurodrive.de">dtc-nord@sew-eurodrive.de</a>
	East	SEW-EURODRIVE GmbH & Co KG Dankritzer Weg 1 D-08393 Meerane (Zwickau)	Tel. +49 3764 7606-0 Fax +49 3764 7606-30 <a href="mailto:dtc-ost@sew-eurodrive.de">dtc-ost@sew-eurodrive.de</a>
	South	SEW-EURODRIVE GmbH & Co KG Domagkstraße 5 D-85551 Kirchheim (München)	Tel. +49 89 909552-10 Fax +49 89 909552-50 <a href="mailto:dtc-sued@sew-eurodrive.de">dtc-sued@sew-eurodrive.de</a>

Germany			
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	Saarland	SEW-EURODRIVE GmbH & Co KG Gottlieb-Daimler-Straße 4 D-66773 Schwalbach Saar – Hülzweiler	Tel. +49 6831 48946 10 Fax +49 6831 48946 13 dc-saarland@sew-eurodrive.de
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Great Britain			
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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 GR-18545 Piraeus	Tel. +30 2 1042 251-34 Fax +30 2 1042 251-59 <a href="http://www.boznos.gr">http://www.boznos.gr</a> info@boznos.gr
Hungary			
Sales Service	Budapest	SEW-EURODRIVE Kft. Csillaghegyi út 13. H-1037 Budapest	Tel. +36 1 437 06-58 Fax +36 1 437 06-50 <a href="http://www.sew-eurodrive.hu">http://www.sew-eurodrive.hu</a> office@sew-eurodrive.hu
Iceland			
Sales	Reykjavik	Varma & Vélaverk ehf. Knarrarvogi 4 IS-104 Reykjavik	Tel. +354 585 1070 Fax +354 585)1071 <a href="http://www.varmaverk.is">http://www.varmaverk.is</a> 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 <a href="http://www.seweurodriveindia.com">http://www.seweurodriveindia.com</a> 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 35301400 salespune@seweurodriveindia.com
Indonesia			
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	Jakarta	PT. Agrindo Putra Lestari Jl.Prof.DR.Latumenten no27/A Jakarta 11330	Tel. +62 21 63855588 Fax +62 21 63853789 aplindo@indosat.net.id

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	Surabaya	PT. TRIAGRI JAYA ABADI Jl. Sukosemolo No. 63, Galaxi Bumi Permai G6 No. 11 Surabaya 60122	Tel. +62 31 5990128 Fax +62 31 5962666 sales@triagri.co.id
	Surabaya	CV. Multi Mas Jl. Raden Saleh 43A Kav. 18 Surabaya 60174	Tel. +62 31 5458589 / +62 31 5317224 Fax +62 31 5317220 / +62 31 5994629 sianhwa@sby.centrin.net.id
Ireland			
Sales Service	Dublin	Alpert Engineering Ltd. 48 Moyle Road Dublin Industrial Estate Glasnevin, Dublin 11	Tel. +353 1 830-6277 Fax +353 1 830-6458 http://www.alpert.ie info@alpert.ie
Israel			
Sales	Tel Aviv	Liraz Handasa Ltd. Ahofer Str 34B / 228 58858 Holon	Tel. +972 3 5599511 Fax +972 3 5599512 http://www.liraz-handasa.co.il office@liraz-handasa.co.il
Italy			
Assembly Sales Service	Solaro	SEW-EURODRIVE di R. Blicke & Co.s.a.s. Via Bernini,14 I-20020 Solaro (Milano)	Tel. +39 02 96 9801 Fax +39 02 96 79 97 81 http://www.sew-eurodrive.it sewit@sew-eurodrive.it
Ivory Coast			
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Japan			
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Kazakhstan			
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	Tashkent	SEW-EURODRIVE LLP Representative office in Uzbekistan 96A, Sharaf Rashidov street, Tashkent, 100084	Tel. +998 71 2359411 Fax +998 71 2359412 http://www.sew-eurodrive.uz sew@sew-eurodrive.uz
	Ulaanbaatar	SEW-EURODRIVE LLP Representative office in Mongolia Suite 407, Tushig Centre Seoul street 23, Sukhbaatar district, Ulaanbaatar 14250	Tel. +976-77109997 Fax +976-77109997 http://www.sew-eurodrive.mn sew@sew-eurodrive.mn
Kenya			
is supported by Tanzania.			
Latvia			
Sales	Riga	SIA Alas-Kuul Katlakalna 11C LV-1073 Riga	Tel. +371 6 7139253 Fax +371 6 7139386 http://www.alas-kuul.com info@alas-kuul.com

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Sales / Jordan / Kuwait / Saudi Arabia / Syria	Beirut	Middle East Drives S.A.L. (offshore) Sin El Fil. B. P. 55-378 Beirut	Tel. +961 1 494 786 Fax +961 1 494 971 <a href="http://www.medrives.com">http://www.medrives.com</a> info@medrives.com
<b>Lithuania</b>			
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<b>Luxembourg</b>			
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<b>Macedonia</b>			
Sales	Skopje	Boznos DOOEL Dime Anicin 2A/7A 1000 Skopje	Tel. +389 23256553 Fax +389 23256554 <a href="http://www.boznos.mk">http://www.boznos.mk</a>
<b>Madagascar</b>			
Sales	Antananarivo	Ocean Trade BP21bis. Andraharo Antananarivo 101 Madagascar	Tel. +261 20 2330303 Fax +261 20 2330330 oceantrabp@moov.mg
<b>Malaysia</b>			
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<b>Mexiko</b>			
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<b>Mongolia</b>			
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<b>Morocco</b>			
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<b>Namibia</b>			
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Nigeria			
Sales	Lagos	EISNL Engineering Solutions and Drives Ltd Plot 9, Block A, Ikeja Industrial Estate ( Ogba Scheme) Adeniyi Jones St. End Off ACME Road, Ogba, Ikeja, Lagos	Tel. +234 1 217 4332 <a href="http://www.eisnl.com">http://www.eisnl.com</a> <a href="mailto:team.sew@eisnl.com">team.sew@eisnl.com</a>
Norway			
Assembly Sales Service	Moss	SEW-EURODRIVE A/S Solgaard skog 71 N-1599 Moss	Tel. +47 69 24 10 20 Fax +47 69 24 10 40 <a href="http://www.sew-eurodrive.no">http://www.sew-eurodrive.no</a> <a href="mailto:sew@sew-eurodrive.no">sew@sew-eurodrive.no</a>
Pakistan			
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