



SEW
EURODRIVE

Operating Instructions



DOP11C Operator Panels 2nd Generation



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1 General information

1.1 About this documentation

The current version of the documentation is the original.

This documentation is an integral part of the product. The documentation is intended for all employees who perform work on the product.

Make sure this documentation is accessible and legible. Ensure that persons responsible for the systems and their operation as well as persons who work on the product independently have read through the documentation carefully and understood it. If you are unclear about any of the information in this documentation, or if you require further information, contact SEW-EURODRIVE.

1.2 Other applicable documentation

Observe the corresponding documentation for all further components.

1.3 Structure of the safety notes

1.3.1 Meaning of signal words

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

Signal word	Meaning	Consequences if disregarded
▲ DANGER	Imminent hazard	Severe or fatal injuries
▲ WARNING	Possible dangerous situation	Severe or fatal injuries
▲ CAUTION	Possible dangerous situation	Minor injuries
NOTICE	Possible damage to property	Damage to the product or its environment
INFORMATION	Useful information or tip: Simplifies handling of the product.	

1.3.2 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 risk of crushing

1.3.3 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.

1.4 Decimal separator in numerical values

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

Example: 30.5 kg

1.5 Rights to claim under limited warranty

Read the information in this documentation. This is essential for fault-free operation and fulfillment of any rights to claim under limited warranty. Read the documentation before you start working with the product.

1.6 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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2 Safety notes

2.1 Preliminary information

The following general safety notes serve the purpose of preventing injury to persons and damage to property. They primarily apply to the use of products described in this documentation. If you use additional components, also observe the relevant warning and safety notes.

2.2 Duties of the user

As the user, you must ensure that the basic safety notes are observed and complied with. Make sure that persons responsible for the machinery and its operation as well as persons who work on the device independently have read through the documentation carefully and understood it.

As the user, you must ensure that all of the work listed in the following is carried out only by qualified specialists:

- Setup and installation
- Installation and connection
- Startup
- Maintenance and repairs
- Shutdown
- Disassembly

Ensure that the persons who work on the product pay attention to the following regulations, conditions, documentation, and information:

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

Ensure that systems in which the product is installed are equipped with additional monitoring and protection devices. Observe the applicable safety regulations and legislation governing technical work equipment and accident prevention regulations.

2.3 Target group

Specialist for mechanical work

Any mechanical work may be performed only by adequately qualified specialists. Specialists in the context of this documentation are persons who are familiar with the design, mechanical installation, troubleshooting, and maintenance of the product who possess the following qualifications:

- Qualification in the mechanical area in accordance with the national regulations
- Familiarity with this documentation

Specialist for electrotechnical work	<p>Any electrotechnical work may be performed only by electrically skilled persons with a suitable education. Electrically skilled persons in the context of this documentation are persons who are familiar with electrical installation, startup, troubleshooting, and maintenance of the product who possess the following qualifications:</p> <ul style="list-style-type: none"> • Qualification in the electrotechnical area in accordance with the national regulations • Familiarity with this documentation
Additional qualification	<p>In addition to that, these persons must be familiar with the valid safety regulations and laws, as well as with the requirements of the standards, directives, and laws specified in this documentation.</p> <p>The persons must have the express authorization of the company to operate, program, parameterize, label, and ground devices, systems, and circuits in accordance with the standards of safety technology.</p>
Instructed persons	<p>All work in the areas of transportation, storage, operation and waste disposal must be carried out by persons who are trained appropriately. The purpose of the instruction is to give persons the ability to perform the required tasks and work steps in a safe and correct manner.</p>

2.4 Designated use

This product is used for operation and diagnostics purposes of industrial and commercial systems.

The product is intended for control cabinet installation in electrical plants or machines.

In case of installation in electrical systems or machines, startup of the product is prohibited until it is determined that the machine meets the requirements stipulated in the local laws and directives. For Europe, Machinery Directive 2006/42/EC as well as the EMC Directive 2014/30/EU apply. Observe EN 60204-1 (Safety of machinery - electrical equipment of machines). The product meets the requirements stipulated in the Low Voltage Directive 2014/35/EU.

The standards given in the declaration of conformity apply to the product.

Technical data and information on the connection conditions are provided on the nameplate and in chapter "Technical data" in the documentation. Always comply with the data and conditions.

Unintended or improper use of the product may result in severe injury to persons and damage to property.

A suitable response to communication errors between the product 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 the product.

2.5 Functional safety technology

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

2.6 Network security and access protection

A bus system makes it possible to adapt electronic drive technology components to the particulars of the machinery within wide limits. There is a risk that a change of parameters that cannot be detected externally may result in unexpected but not uncontrolled system behavior and may have a negative impact on operational safety, system availability, or data security.

Ensure that unauthorized access is prevented, especially with respect to Ethernet-based networked systems and engineering interfaces.

Use IT-specific safety standards to increase access protection to the ports. For a port overview, refer to the respective technical data of the device in use.

2.7 Transportation/storage

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

If necessary, use suitable, sufficiently dimensioned handling equipment.

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

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

2.8 Setup/installation

The following applications are prohibited unless the device is explicitly designed for such use:

- Operation in a mining facility or outdoors
- Operation in potentially explosive atmospheres and high fire risk areas
- Use in areas with a strong magnetic field
- Use in direct sunlight

2.9 Installation

Install the product according to the accompanying installation instructions.

Place the product on a stable surface during installation. If the product falls down, it could be damaged.

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 product to the current supply.

To prevent scratches on the touchscreen of the product during delivery, the touchscreen has a laminated protective film. To avoid static electricity damaging the product, only remove the protective film from the glass after the installation.

2.10 Electrical connection

Familiarize yourself with the applicable national accident prevention regulations before working on the product.

Perform electrical installation according to the pertinent regulations (e.g. cable cross-sections, fusing, protective conductor connection). The documentation at hand contains additional information.

Ensure that all of the required covers are correctly attached after the electrical installation.

Protective measures and protection devices must comply with the regulations in force.

2.10.1 Required preventive measure

Make sure that the product is correctly attached to the ground connection.

2.10.2 Required protection devices

Make sure the product is protected against overload and short circuit by an overcurrent protection device.

2.11 Protective separation

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

2.12 Startup and operation

Observe the safety notes in the chapters Startup and Operation in the documentation.

Always keep the operator panel clean.

The openings in the housing are designed to allow air to circulate and must not be covered over. Make sure that no liquids enter the openings. This may lead to a fire or cause the equipment to become live.

Do not control any emergency stop functions and other safety functions with the operator panel.

Make sure that the touchscreen is not touched by any sharp objects.

Bear in mind that the operator 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.

2.13 Service/maintenance

Use only spare parts and accessories manufactured according to the specifications of SEW-EURODRIVE. SEW-EURODRIVE is not liable for modifications, changes, additions and / or alterations to the product.

Clean the touchscreen and face of the operator panel with a soft cloth and mild cleaning agent.

3 Device structure

3.1 Type designation and nameplates

3.1.1 Sample type designation

Example: DOP11C-51		
Type	DOP	DOP = D rive O perator P anel
Generation	11C	
Size	5	TFT-/LCD display with 5-inch screen diagonal
Design	1	1 = Plastic 2 = Aluminum

The following sizes and designs of the operator panel are available:

- Operator panels in design ..1
 - 51 = 5 inches, 800 x 480 pixels (64000 colors)
 - 71 = 7 inches, 800 x 480 pixels (64000 colors)
 - 101 = 10.1 inches, 800 x 480 pixels (64000 colors)
- Operator panels in design ..2
 - 42 = 4.3 inches, 480 x 272 pixels (64000 colors)
 - 72 = 7 inches, 800 x 480 pixels (64000 colors)
 - 102 = 10.1 inches, 1024 x 600 pixels (262000 colors)
 - 122 = 12.1 inches, 1280 x 800 pixels (262000 colors)
 - 152 = 15.4 inches, 1280 x 800 pixels (262000 colors)





INFORMATION



For more information on data of the operator panels, refer to chapter "Technical data" (→ 34).

3.1.2 Example nameplate

The nameplate is attached to the rear of the device.

																		
Type: DOP11C-51		HW: 1.00																
Part No: 17977541		SW: 1.00																
Power: 24VDC / 0.25 A																		
Serial No: 1645001		Note: 630005405 123456-00001																
Serial No: 1645001		WARNING / AVERTISSEMENT																
<div style="border: 1px solid black; padding: 5px; width: fit-content;"> Input Voltage: 24 V DC 24 V DC / 0.25 A, Class 2 </div>		<table border="0"> <tr> <td>Supplied by</td> <td>class 2</td> <td>power supply</td> </tr> <tr> <td>Use minimum</td> <td>75°C</td> <td>copper conductors</td> </tr> <tr> <td>Type 4X,</td> <td>Type</td> <td>12(indoor)</td> </tr> <tr> <td>INDUSTRIAL</td> <td>CONTROL</td> <td>EQUIPMENT</td> </tr> <tr> <td>E343852</td> <td colspan="2">-10°C ≤ Ta ≤ 60°C</td> </tr> </table>		Supplied by	class 2	power supply	Use minimum	75°C	copper conductors	Type 4X,	Type	12(indoor)	INDUSTRIAL	CONTROL	EQUIPMENT	E343852	-10°C ≤ Ta ≤ 60°C	
Supplied by	class 2	power supply																
Use minimum	75°C	copper conductors																
Type 4X,	Type	12(indoor)																
INDUSTRIAL	CONTROL	EQUIPMENT																
E343852	-10°C ≤ Ta ≤ 60°C																	
		<p>Made in Taiwan.</p>  <p>廢電池請回收</p>																

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3.2 Scope of delivery

Included in the delivery:

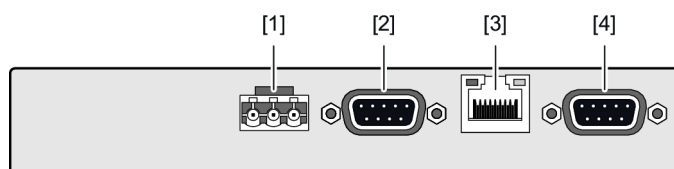
- DOP11C operator panel
- Installation material
- Connector for DC 24 V, 5 mm, 3-pin
- Installation instructions

3.3 Connections of the operator panel

3.3.1 Connections on the underside

Below, you can find a description of the connections on the underside of the different designs of the operator panel. For detailed information, refer to chapter "Technical data and dimension sheets" (→ 34).

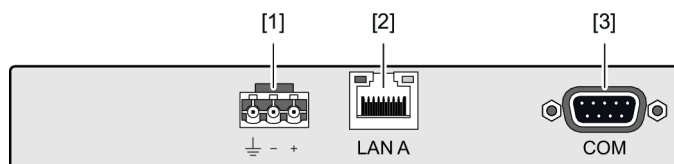
Connections of DOP11C-51, -71, -101



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Item	Connection	Description
[1]	Voltage supply	DC 24 V (DC 18 – 32 V)
[2]	COM1/2 interface	Communication ports (serial, 9-pin D-sub) <ul style="list-style-type: none"> • COM1: RS232 • COM2: RS422 or RS485
[3]	Ethernet interface (LAN)	1 x 10/100 Base-T (shielded RJ45)
[4]	COM3/4 interface	Communication ports (serial, 9-pin D-sub) <ul style="list-style-type: none"> • COM3: RS232 • COM4: RS422 or RS485

Connections of DOP11C-42, -72

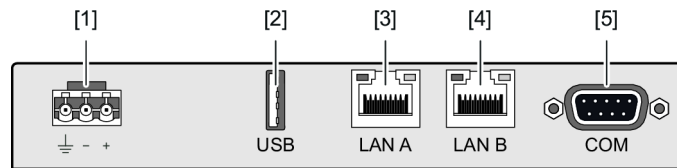


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Item	Connection	Description
[1]	Voltage supply	DC 24 V (DC 18 – 32 V)
[2]	Ethernet interface (LAN A)	1 x 10/100 Base-T (shielded RJ45)
[3]	COM interface	Communication ports (serial, 9-pin D-sub): <ul style="list-style-type: none"> • COM1: RS232 • COM2: RS422 or RS485 • COM3: RS485¹⁾ <p>NOTE: To operate several communication ports simultaneously, use the CAB150 adapter cable. Refer to chapter "CAB150 adapter cable" (→ 44) for detailed information on the W cable.</p>

1) COM3 can only be used if COM2 is a RS485 connection.

Connections of DOP11C-102, -122, 152



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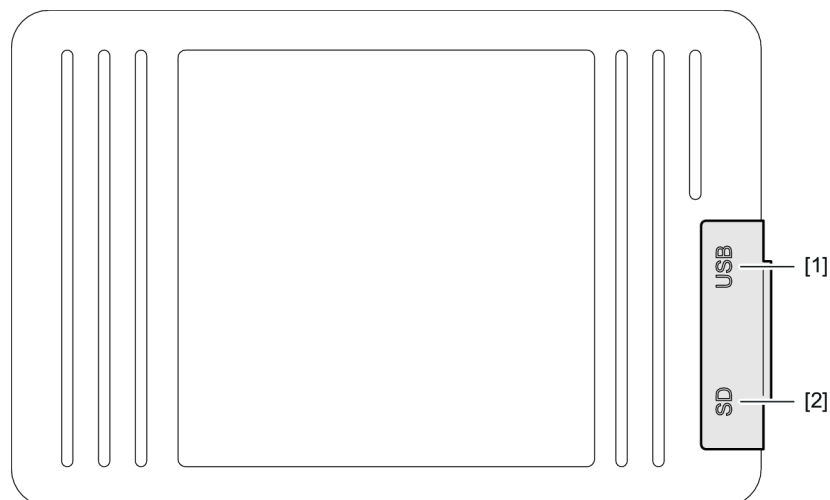
Item	Connection	Description
[1]	Voltage supply	DC 24 V (DC 18 – 32 V)
[2]	USB interface	1 x USB host 2.0, maximum output current 500 mA ¹⁾
[3]	Ethernet interface (LAN A)	1 x 10/100 Base-T (shielded RJ45)
[4]	Ethernet interface (LAN B)	1 x 10/100 Base-T (shielded RJ45)
[5]	COM interface	<p>Communication ports (serial, 9-pin D-sub)</p> <ul style="list-style-type: none"> • COM1: RS232 • COM2: RS422 or RS485 • COM3: RS485²⁾ <p>NOTE: To operate several communication ports simultaneously, use the CAB150 adapter cable. Refer to chapter "CAB150 adapter cable" (→ 44) for detailed information on the W cable.</p>

1) Another USB host 2.0 is located next to the SD slot on the rear.

2) COM3 can only be used if COM2 is a RS485 connection.

3.3.2 Connections on the rear

Below, you can find a description of the connections on the rear of the different designs of the operator panel. For detailed information, refer to chapter "Technical data and dimension sheets" (→ 34).



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Item	Connection	Description
[1]	USB interface	1 x USB host 2.0 with a maximum output current of 500 mA
[2]	SD memory card slot	1 x SD memory card (optional)

**INFORMATION**

The following operator panels do not have a SD memory card slot:

- DOP11C-51
 - DOP11C-71
 - DOP11C-101
-

4 Installation



⚠ WARNING

Electric shock due to incorrect installation.

Severe or fatal injuries.

- Observe the safety notes in the chapter "Installation" (→ 10).



INFORMATION

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

4.1 Installation notes for the basic unit

4.1.1 Separate cable ducts

Route power cables and signal cables in separate cable ducts.

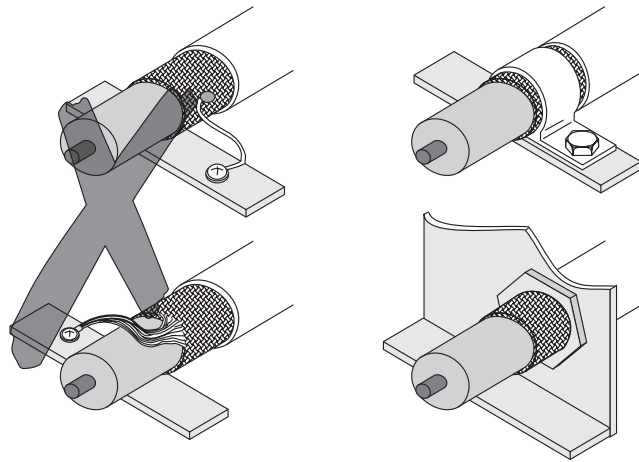
4.1.2 Cable cross sections

- Voltage supply: Cable cross section according to nominal input current.
- Signal lines:
 - 1 core per terminal 0.20 mm²– 0.75 mm² (AWG 20 – 17)
 - 2 cores per terminal 0.20 mm²– 0.75 mm² (AWG 20 – 17)

4.1.3 EMC-compliant installation

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

The following figure displays examples of correct shield connections using a metal clamp (shield terminal) or metal Pg cable gland:



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- You can also use grounded sheet-metal ducts or metal pipes to shield the cables. Route the power and signal cables separately.
- Ground the device using the built-in connector for a voltage supply of 24 V.

4.2 UL-compliant installation

INFORMATION



Due to UL requirements, the following chapter is always printed in English independent of the language of the documentation.

4.2.1 UL and cUL installation

Validity

This section is only valid for UL labeled panels.

Suitability

- This equipment is suitable for use in Class 2 non-hazardous locations only.
- Combinations of equipment in your system are subject to investigation by the local authority having jurisdiction at the time of installation.
- All devices have to be supplied by a Class 2 power supply.

Expansion units

Only UL and cUL approved expansion units are allowed to be connected to the port designated "EXPANSION". At the moment there are no such units evaluated or allowed.

Battery

Battery may explode if mistreated. Do not recharge, disassemble or dispose of in fire.

- This product contains a battery; this must only be changed in an area known to be non-hazardous.
- Replace the battery with a BR 2032 battery. Use of another type of battery may present a risk of fire or explosion.

Flat surface

For use on a flat surface of a type 4X enclosure indoor use only.

Power terminals

Use minimum 75 °C copper wire only.

Wiring connections

To make wiring connections to the power supply connector, follow the table with cable and torque specifications below:

Terminal Block Connector	Wire Size AWG	Torque (Lb. In.)
X1/X100 Phoenix connectors	AWG 30 – 12	5 – 7
X1/X100 Anytek connectors	AWG 24 – 12	3.5
X1/X100 DECA connectors	AWG 24 – 12	7

Usage

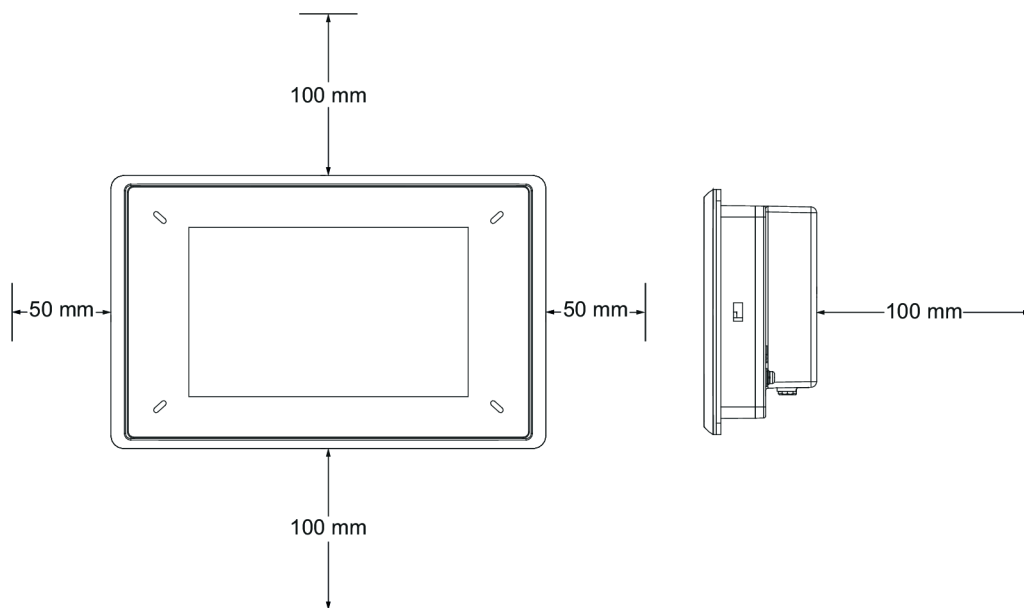
These devices are Class 2 supplied programmable controllers (industrial PCs) for the use in industrial control equipment and are intended to be (front) panel mounted (type 12 and 4X for indoor use only).

International protection

The enclosure provides a degree of protection of at least IP20, but when installed in an apparatus, it should meet IP65.

4.3 Space required for installation

The following figure shows the required space for installing the operator panel:



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4.4 Thickness of mounting plate

The thickness of the mounting plate depends on the device design.

4.4.1 Operator panels in design ..1

	DOP11C-51	DOP11C-71	DOP11C-101
Maximum thickness	5.5 mm	6.5 mm	

4.4.2 Operator panels in design ..2

	DOP11C-42	DOP11C-72	DOP11C-102	DOP11C-122	DOP11C-152
Maximum thickness	11 mm		7 mm	8 mm	

4.5 Unpacking the operator panel

Proceed as follows:

1. Unpack the delivery and check it.
2. Inform your supplier immediately in the event of damage.

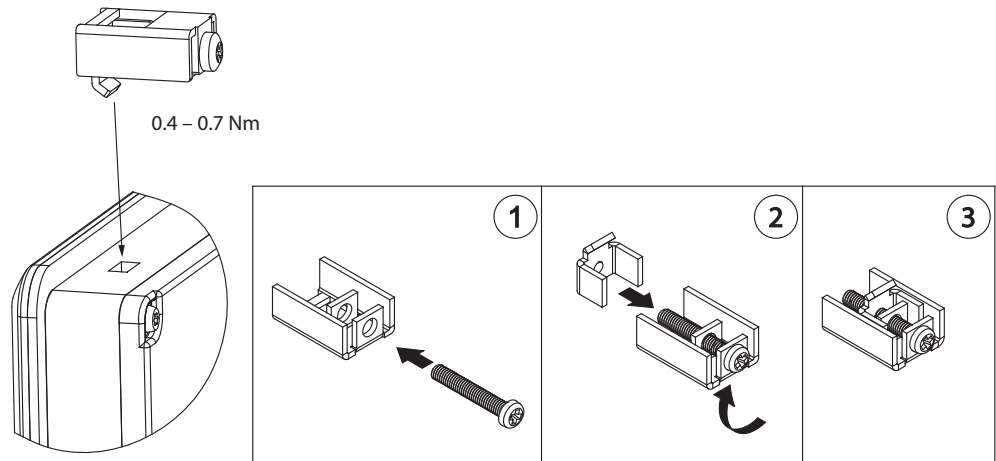
4.6 Mounting the operator panel

How the operator panel is mounted depends on the used device design.

4.6.1 Mounting the DOP11C-51, -71, -101

Proceed as follows:

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



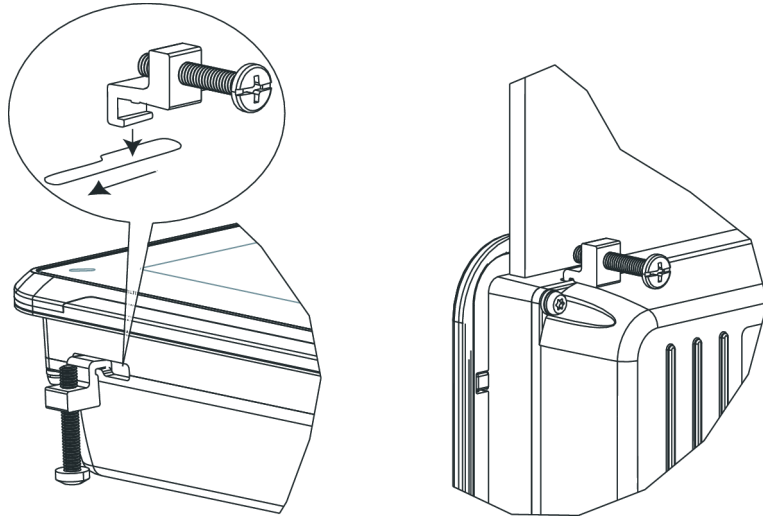
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2. Tighten the screws with a tightening torque of 0.4 – 0.7 Nm.

4.6.2 Mounting the DOP11C-42, -72, -102

Proceed as follows:

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



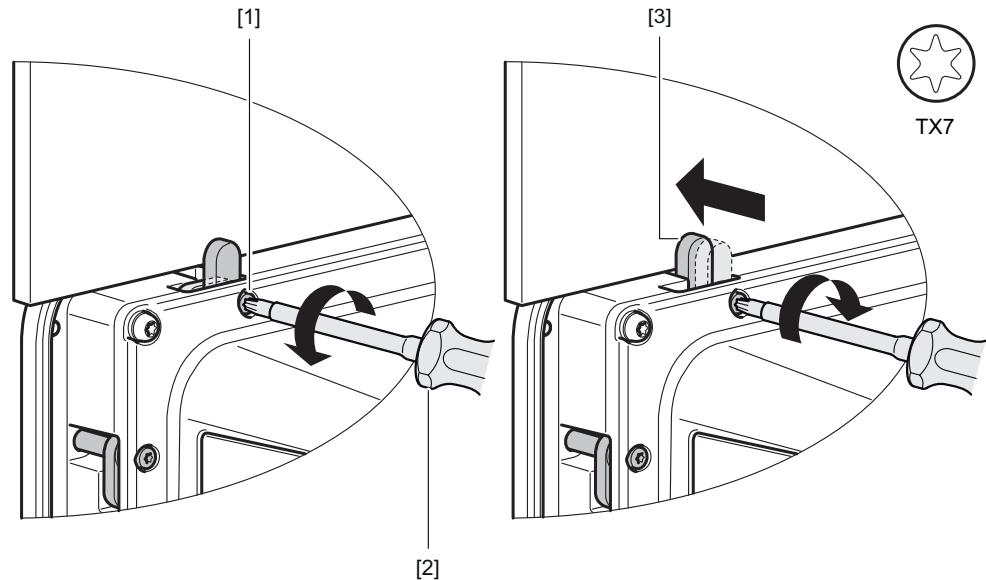
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2. Tighten the screws with a tightening torque of 0.5 – 1.0 Nm.

4.6.3 Mounting the DOP11C-122, -152

Proceed as follows:

1. Loosen the screw [1] with a screwdriver (Torx, TX7) [2] until the retaining clamp [3] tilts up.



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

2. Tighten the screw clockwise with a tightening torque of 0.7 Nm +/- 0.2 Nm until the retaining clamp [3] is pressed against the housing wall.
3. Repeat the procedure for the remaining screws.

4.7 Connecting the operator panel

NOTICE

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

Possible damage to property.

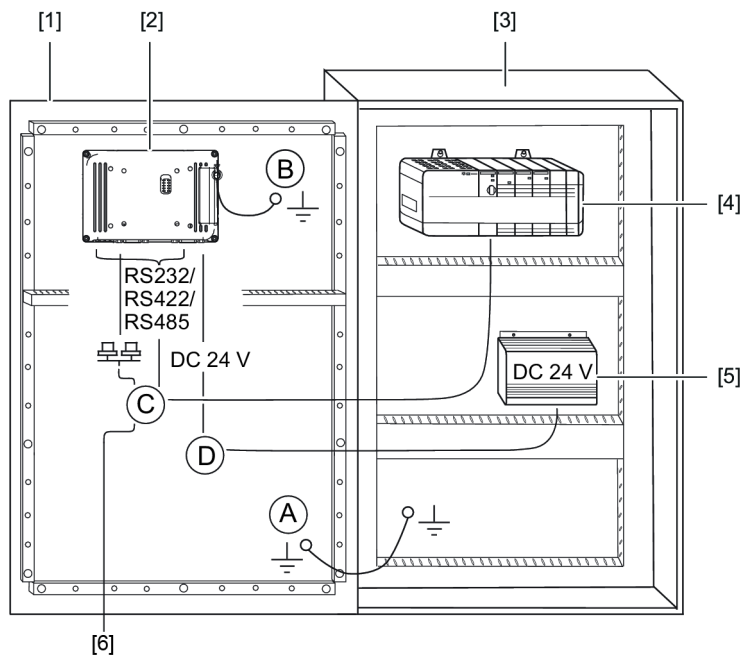
- Switch off the line voltage.
- Never plug or unplug plug connectors while they are energized.

INFORMATION



Only use shielded communication cables. Route high-voltage cables separately from signal and supply cables.

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



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- [1] Control cabinet door/front panel
- [2] Operator panel
- [3] Control cabinet
- [4] Controller
- [5] Power supply unit (voltage supply)
- [6] Ethernet

Connect the cables in the order indicated.

Proceed as follows:

1. Connect cable A. Make sure that the operator panel and the controller have the same electrical grounding (reference voltage value). Communication errors may occur if this is not the case.
2. Connect cable B. Use a PE (as short as possible) with a minimum cross section of 2.5 mm². You can use the following screws:
 - M3 screws for operator panels in design ..1 (DOP11C-51, -71 and -101)
 - M5 screws for operator panels in design ..2 (DOP11C-42, -72, -102, -122 and -152)
3. Connect the operator panel to the controller, the inverters and the engineering PC (cable C). For information on the connection cable between operator panel and controller, refer to the help file for the corresponding driver. For information on the connection to the inverters and the engineering PC, refer to chapter "Connecting the operator panel to the inverter and engineering PC" (→ 25).
4. Connect cable D (→ 30).
5. Carefully remove the laminated protective film from the glass of the touchscreen to prevent the operator panel from being damaged by static electricity.

4.8 Connecting the operator panel to the inverter and engineering PC



⚠ WARNING

Risk of crushing if the motor starts up unintentionally via the connected MOVIDRIVE® 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
 - Switch off the line voltage. A backup voltage of 24 V 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® 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.

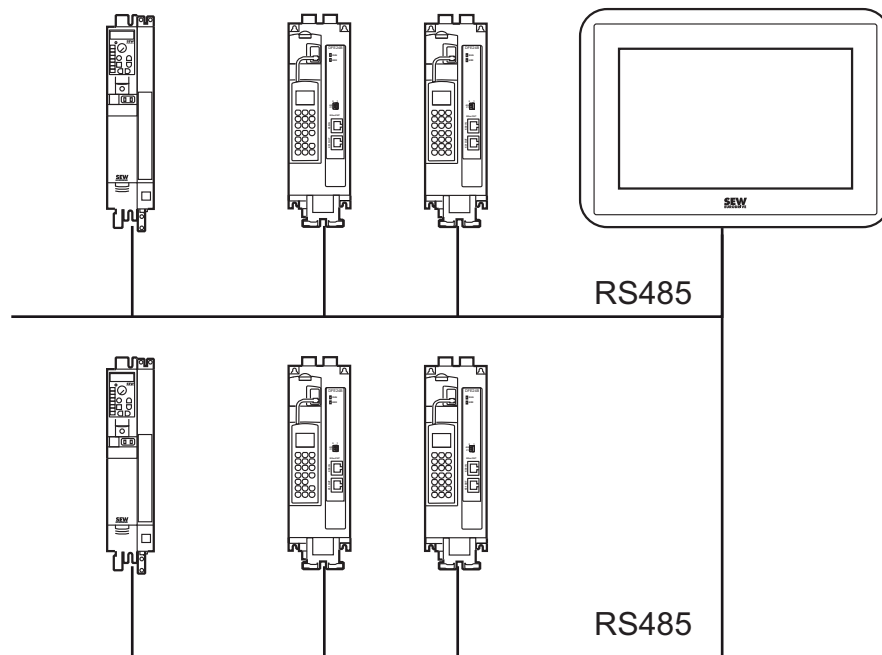


INFORMATION

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

Proceed as follows:

1. Connect the operator panel and the inverters. For detailed information, refer to chapter "RS485 connection" (→ 26).



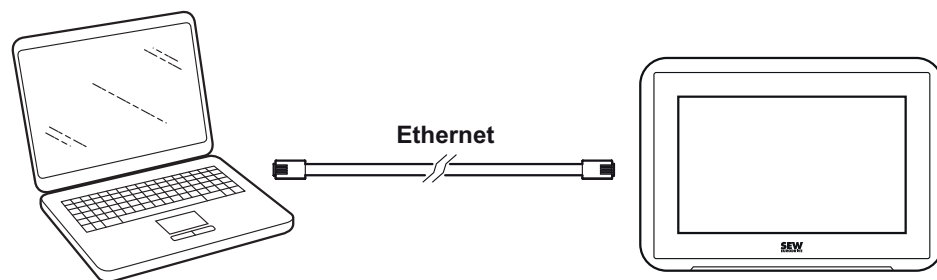
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2. Connect the operator panel to the engineering PC using a standard Ethernet patch cable. For detailed information on Ethernet communication, refer to chapter "Ethernet connection" (→ 29)

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.



30789496971

3. Switch on the engineering 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 voltage supply (DC 24 V) for the operator panel and the connected inverters.

4.8.1 Connection types

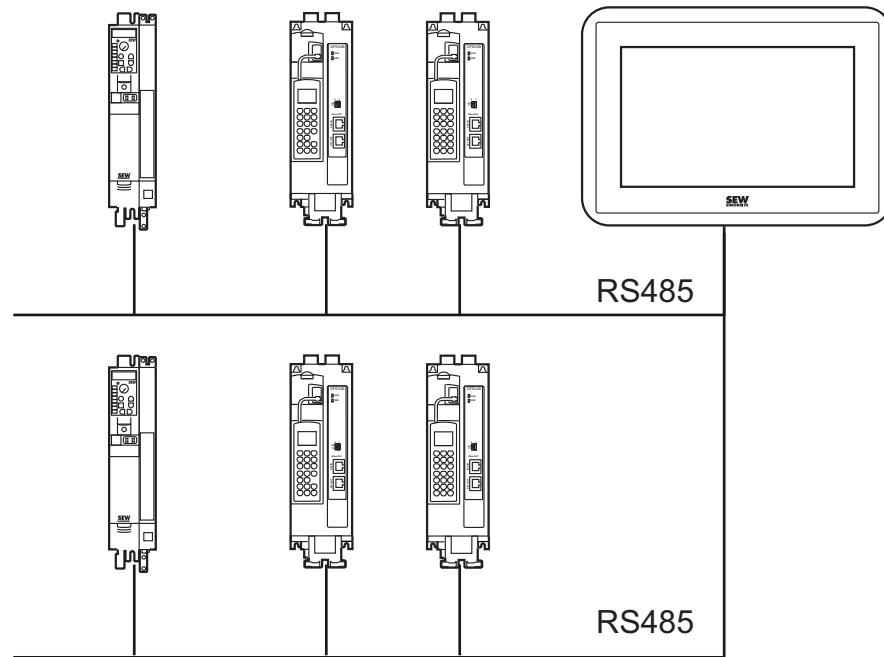
RS485 connection

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

The operator panel can be directly connected to a MOVIDRIVE® inverter via the RS485 COM interface using a 9-pin D-sub connector.

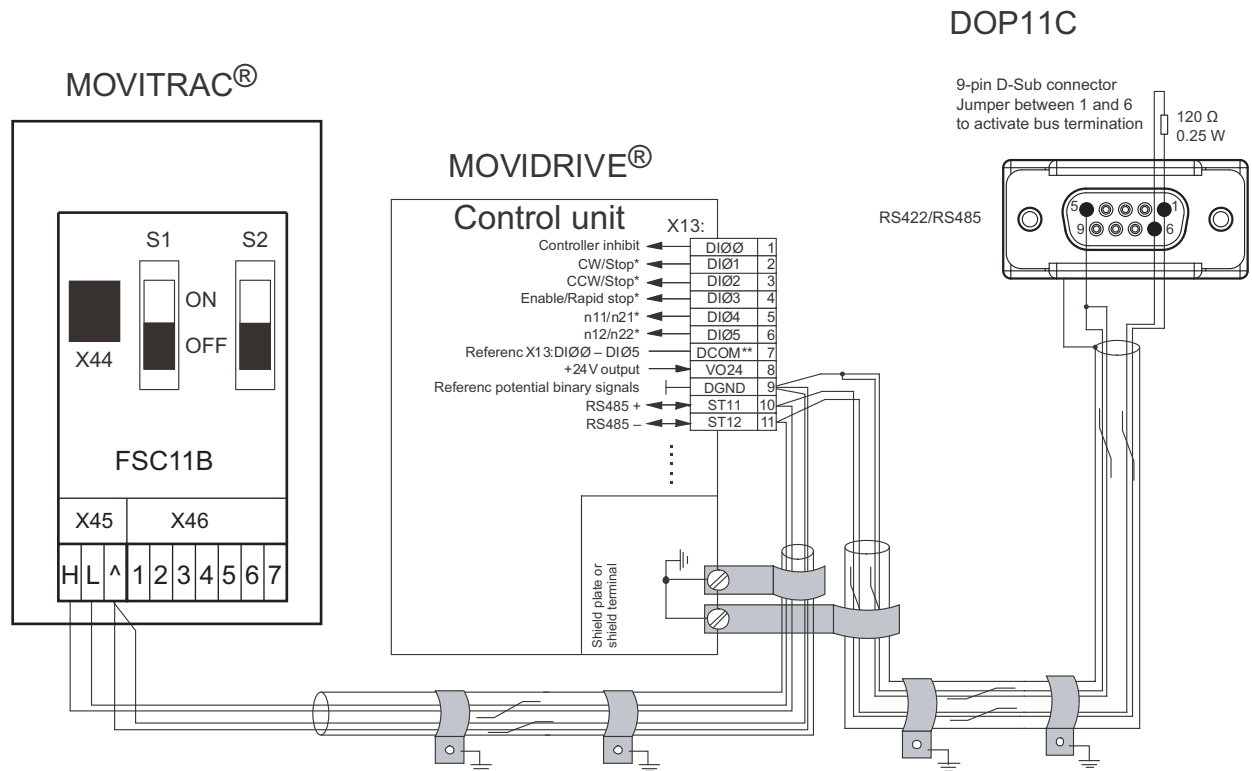
Wiring diagram RS485 interface

The following figure shows the RS485 connection of the operator panel to the inverters:



30789499403

The following figure shows the pin assignment of the operator panel:



9007208220403339

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:

- Maximum core cross section at the terminals: 0.75 mm² (AWG20 – 18)
- Line 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 further information, refer to chapter "Prefabricated communication cables" (→ 42).
- UNITRONIC® BUS CAN, 2 x 2 x 0.22 mm² by Lappkabel.

Applying the shield

Connect the shield over a wide area at both ends:

- at the electronics shield clamp of the control unit in the inverter
- at the 9-pin D-sub socket in the operator panel

NOTICE

Short-circuit of the EMC decoupling between electronics and ground might destroy the bus controller in the control unit of the inverter.

Possible damage to property.

- Never connect the shield ends to DGND.

Cable length

The permitted total cable length is 200 m.

*Potential shift***NOTICE**

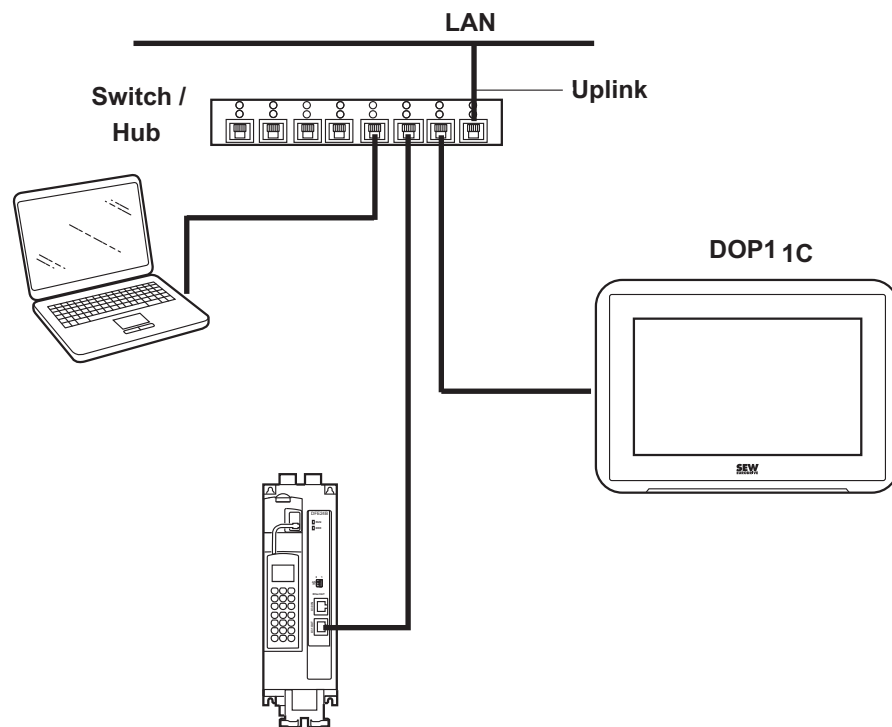
Malfunction of devices connected with RS485 due to potential shift.

Possible damage to property.

- Take suitable measures to avoid potential shift, e.g. by connecting the unit grounds (GND) using a separate cable.

Ethernet connection

The following figure shows the connection of the operator panel to an engineering PC that is used for programming and remote maintenance via Ethernet.



30789501835

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

4.9 Connecting a voltage supply

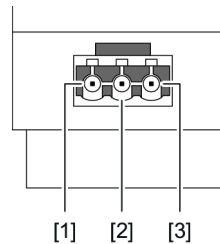
NOTICE

Damage to the device due to reversed polarity during connection.

Possible damage to property.

- Ensure correct polarity when making the connection.

The following figure shows the connection of the voltage supply:



9007208307719819

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

Proceed as follows:

1. Make sure that the operator panel and the controller have the same electrical grounding (reference voltage value). Communication errors may occur if this is not the case.
2. Before startup, the operator panel must be brought to ambient temperature. If condensation builds up, you must ensure that the operator panel is dry before connecting it to the voltage supply.

5 Startup

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



⚠ WARNING

Risk of injury if the operator panels 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.

5.1 Starting the operator panel

INFORMATION



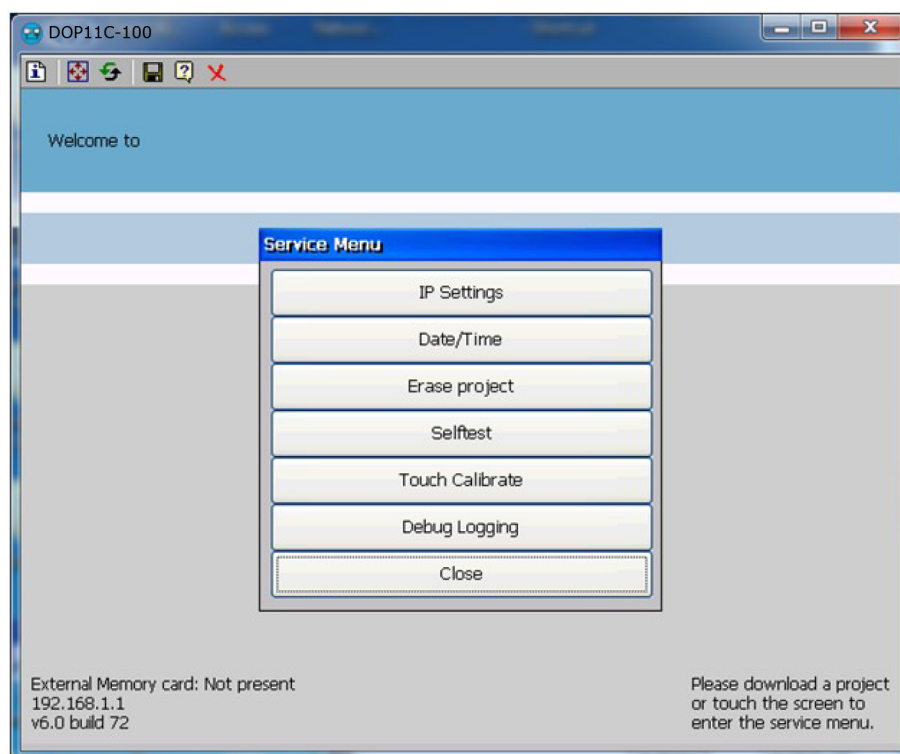
Units are delivered without an uploaded project.

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" (→ 32).



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6 Operation

6.1 Opening the service menu

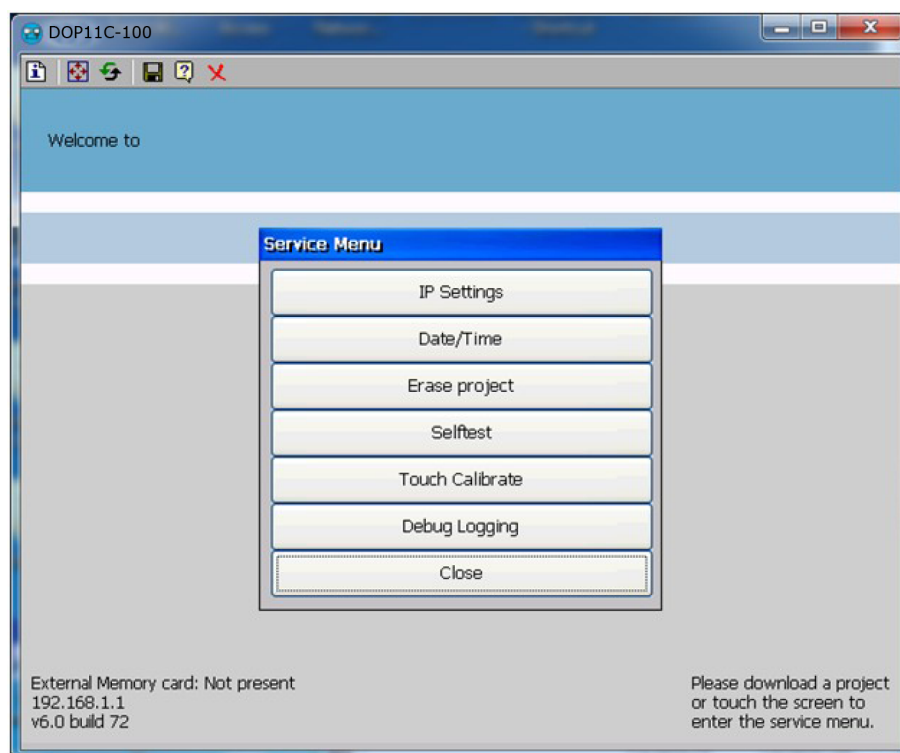
INFORMATION



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 Waste disposal

Dispose of the product and all parts separately in accordance with their material structure and the national regulations. Put the product through a recycling process or contact a specialist waste disposal company. If possible, divide the product into the following categories:

- Iron, steel or cast iron
- Stainless steel
- Magnets
- Aluminum
- Copper
- Electronic parts
- Plastics

The following materials are hazardous to health and the environment. These materials must be collected and disposed of separately.

- Oil and grease

Collect used oil and grease separately according to type. Ensure that the used oil is not mixed with solvent. Dispose of used oil and grease correctly.

- Screens
- Capacitors
- Rechargeable batteries
- Batteries



Waste disposal according to WEEE Directive 2012/19/EU

This product and its accessories may fall within the scope of the country-specific application of the WEEE Directive. Dispose of the product and its accessories according to the national regulations of your country.

For further information, contact the responsible SEW-EURODRIVE branch or an authorized partner of SEW-EURODRIVE.



Waste disposal according to the Battery Directive 2006/66/EC

This product contains batteries or accumulators. Dispose this product and the batteries or accumulators separately from the municipal waste according to the national regulations.

8 Technical data and dimension sheets

8.1 Technical data

8.1.1 Part numbers

Operator panels in design ..1

	DOP11C-51	DOP11C-71	DOP11C-101
Part number	17977541	19500726	19500734

Operator panels in design ..2

	DOP11C-42	DOP11C-72	DOP11C-102	DOP11C-122	DOP11C-152
Part number	19500742	19500750	19500769	19500777	19500785

8.1.2 Voltage supply

Operator panels in design ..1

	DOP11C-51	DOP11C-71	DOP11C-101
Voltage supply	DC 24 V (DC 18 – 32 V) CE: The voltage supply meets the requirements of IEC 60950 and IEC 61558-2-4. UL/cUL: The current supply has to be in line with guidelines for current supply class 2.		
Fuse	Internal DC fuse, 2.0 AT (slow-blow), 5 x 20 mm		
Power consumption at rated voltage	6 W	9.6 W	10.8 W
Accumulator/Battery	Battery: BR 2032		

Operator panels in design ..2

	DOP11C-42	DOP11C-72	DOP11C-102	DOP11C-122	DOP11C-152
Voltage supply	DC 24 V (DC 18 – 32 V) CE: The voltage supply must meet the requirements of IEC 60950 and IEC 61558-2-4. UL/cUL: The current supply has to be in line with guidelines for current supply class 2.				
Fuse	Internal DC fuse, 3.14 AT (slow-blow), 5 x 20 mm		Internal DC fuse, 4 AT (slow-blow), 5 x 20 mm		
Power consumption at rated voltage	12 W	14.4 W	21.6 W	28.8 W	31.2 W
Accumulator/Battery	Battery: BR 2032				

8.1.3 Touchscreen

Operator panels in design ..1

	DOP11C-51	DOP11C-71	DOP11C-101
Resolution (pixel)	800 x 480 (16:9)	800 x 480 (16:9)	800 x 480 (16:9)
Active screen size, W x H	108 x 64.8 mm (5")	154.1 x 85.9 mm (7")	222 x 132.5 mm (10.1")
Brightness (cd/m ²)	300	400	350
Contrast	500 : 1	500 : 1	400 : 1
Background lighting	LED		
Service life of the back- lighting ¹⁾	> 20000 h		
Screen	TFT-LCD, 64 k colors		
Angle of vision (H)/(V)	140 °/120 °	140 °/120 °	140 °/115 °
Touchscreen contacts	1 million touchscreen contacts		
Touchscreen material ²⁾	Polyester on glass, resistive		
Touchscreen coating	Autoflex EB		

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

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

Operator panels in design ..2

	DOP11C-42	DOP11C-72	DOP11C-102	DOP11C-122	DOP11C-152
Resolution (pixel)	480 x 272 (16:9)	800 x 480 (16:9)	1024 x 600 (16:9)	1280 x 800 (16:10)	1280 x 800 (16:10)
Active screen size, W x H	95.0 x 53.9 mm (4.3")	152.4 x 91.4 mm (7")	222.7 x 125.3 mm (10.1")	261.1 x 163.2 mm (12.1")	331.2 x 207 mm (15.4")
Brightness (cd/m ²)	300	350	500	400	450
Contrast	400 : 1	400 : 1	700 : 1	1000 : 1	1000 : 1
Background lighting	LED	LED	LED	LED	LED
Service life of the backlighting ¹⁾	> 50000 h	> 20000 h	> 50000 h		
Screen	TFT-LCD, 64 k colors		TFT-LCD, 262 k colors		
Angle of vision (H)/(V)	140 °/115 °	140 °/115 °	160 °/140 °	176 °/176 °	160 °/140 °
Touchscreen contacts	1 million touchscreen contacts				
Touchscreen material ²⁾	Polyester on glass, ITO film, resistive				
Touchscreen coating	Autoflex EBA180L				

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

Operator panels in design ..1

	DOP11C-51	DOP11C-71	DOP11C-101
Front dimensions W × H × D	170.4 x 106.8 x 7.5 mm	196 x 146 x 7.5 mm	284.3 x 186.6 x 7.5 mm
Cutout W × H	160.4 x 93 mm	185.8 x 135.8 mm	274.3 x 176.6 mm
Installation depth/In- stallation depth incl. clearance	41.7 mm/141.7 mm	44.7 mm/145 mm	44.7 mm/145 mm
Weight	0.5 kg	0.7 kg	1.3 kg
Protection material, rear and frame	Plastic (PC and ABS)		
Degree of protection front	IP 65		
Degree of protection, rear	IP 20		

Operator panels in design ..2

	DOP11C-42	DOP11C-72	DOP11C-102	DOP11C-122	DOP11C-152
Front dimensions W × H × D	145 x 104 x 7 mm	204 x 143 x 7 mm	292 x 194 x 8 mm	340 x 242 x 8 mm	410 x 286 x 8 mm
Cutout W × H	130 x 89 mm	189 x 128 mm	275 x 177 mm	324 × 226 mm	394 x 270 mm
Installation depth/In- stallation depth incl. clearance	43 mm/143 mm	43 mm/143 mm	45 mm/145 mm	49 mm/149 mm	53 mm/153 mm
Weight	0.5 kg	0.8 kg	1.65 kg	2.6 kg	3.85 kg
Protection material, rear and frame	Powder-coated aluminum				
Degree of protection front	IP 66, NEMA 4X/12, UL type 4X/12	IP 65, NEMA 4X/12, UL type 4X/12			
Degree of protection, rear	IP 20				

8.1.5 Ambient Conditions

Operator panels in design ..1

	DOP11C-51	DOP11C-71	DOP11C-101
Operating temperature	-10 °C – +50 °C		
Storage temperature	-20 °C – +60 °C		
Rel. Air humidity	5% – 85% (non-condensing)		

Operator panels in design ..2

	DOP11C-42	DOP11C-72	DOP11C-102	DOP11C-122	DOP11C-152
Operating temperature	-10 °C – +60 °C				
Storage temperature	-20 °C – +70 °C				
Rel. Air humidity	5% – 85% (non-condensing)				

8.1.6 Certifications

Operator panels in design ..1

	DOP11C-51	DOP11C-71	DOP11C-101
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 ¹⁾	UL 61010-2-201	UL 61010-2-201	UL 61010-2-201
Part number of installation guide	21375399 / EN		
CE certification	Yes		
FCC certification	Yes		
KCC certification	Yes		

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

Operator panels in design ..2

	DOP11C-42	DOP11C-72	DOP11C-102	DOP11C-122	DOP11C-152
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 equals the degree of protection of device front				
UL approval ¹⁾	UL 61010-2-201	UL 61010-2-201	UL 61010-2-201	UL 61010-2-201	UL 61010-2-201
Part number of installation guide					
CE certification	Yes				
FCC certification	Yes				
KCC certification	Yes				

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

8.1.7 Communication and memory

Operator panels in design ..1

	DOP11C-51	DOP11C-71	DOP11C-101
COM1 RS232 and COM2 RS422/RS485 serial interface	9-pin D-sub connection, installed connector with 4-40 UNC retaining screws		
Serial interface COM3 RS232 and COM4 RS485	9-pin D-sub connection, installed connector with 4-40 UNC retaining screws		
Ethernet	1 x 10/100 Base-T (shielded RJ45)		
USB ¹⁾	1 x USB host 2.0		
Maximum output current	500 mA		
LED	1 x blue/red, programmable using software		
Processor	ARM9 400 MHz		
RAM	128 MB (DDR2)		
Application memory	200 MB		
SD memory card slot	None		
Real-time clock	Yes (on chip)		

1) Compatible with USB 2.0 sticks with a memory capacity of up to 16 GB.

Operator panels in design ..2

	DOP11C-42	DOP11C-72	DOP11C-102	DOP11C-122	DOP11C-152
COM1 RS232 serial interface	9-pin D-sub connection, installed connector with 4-40 UNC retaining screws				
COM2 RS422/RS485 serial interface	9-pin D-sub connection, installed connector with 4-40 UNC retaining screws				
COM3 RS485 serial interface ¹⁾	9-pin D-sub connection, installed connector with 4-40 UNC retaining screws				
Ethernet	1 x 10/100 Base-T (shielded RJ45)		2 x 10/100 Base-T (shielded RJ45)		
USB ²⁾	1 x USB host 2.0		2 x USB host 2.0		
Maximum output current	500 mA		500 mA		
LED	1 x multicolor				
Processor	i.MX6Solo, Single Cortex-A9 1.0 GHz 512 kB L2 cache memory		i.MX6DualLite, Dual Cortex-A9, 1.0 GHz 512 kB L2 cache memory		
RAM	512 MB (DDR3)		1 GB (DDR3)		
Application memory	1.5 GB				
SD memory card slot ³⁾	1 x SD memory card (optional)				
Real-time clock	Yes (on chip)				

1) COM3 can only be used if COM2 is a RS485 connection.

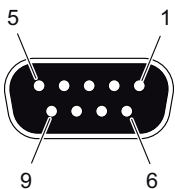
2) Compatible with USB 2.0 sticks with a memory capacity of up to 16 GB.

3) SD cards ≤ 4 GB and SDHC cards 4 GB – 32 GB can be used.

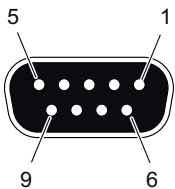
8.2 Pin assignment

8.2.1 Serial connections

Operator panels in design ..1

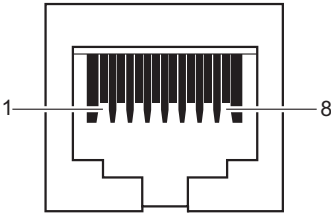
Representation	9-pin D-sub socket				
	Terminal no.	COM1	COM2	COM3	COM4
	1	–	RS422 Tx+ RS485 Tx+/Rx+	–	RS485 Tx+/Rx+
	2	RS232 RxD	–	RS232 RxD	–
	3	RS232 TxD	–	RS232 TxD	–
	4	–	RS422 Rx+	–	–
	5	GND	GND	GND	GND
	6	–	RS422 Tx- RS485 Tx-/Rx-	–	RS485 Tx-/Rx-
	7	RS232 RTS	–	–	–
	8	RS232 CTS	–	–	–
	9	–	RS422 Rx-	–	–

Operator panels in design ..2

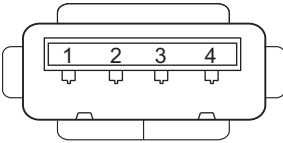
Representation	9-pin D-sub socket			
	Terminal no.	COM1	COM2	COM3
	1	–	RS422 Tx+ RS485 Tx+/Rx+	–
	2	RS232 RxD	–	–
	3	RS232 TxD	–	–
	4	–	RS422 Rx+	RS485 Tx+/Rx+
	5	GND	GND	–
	6	–	RS422 Tx- RS485 Tx-/Rx-	–
	7	RS232 RTS	–	–
	8	RS232 CTS	–	–
	9	–	RS422 Rx-	RS485 Tx-/Rx-

The CAB150 adapter cable is required for operating 3 communication ports (RS232 and 2 x RS485).

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	–

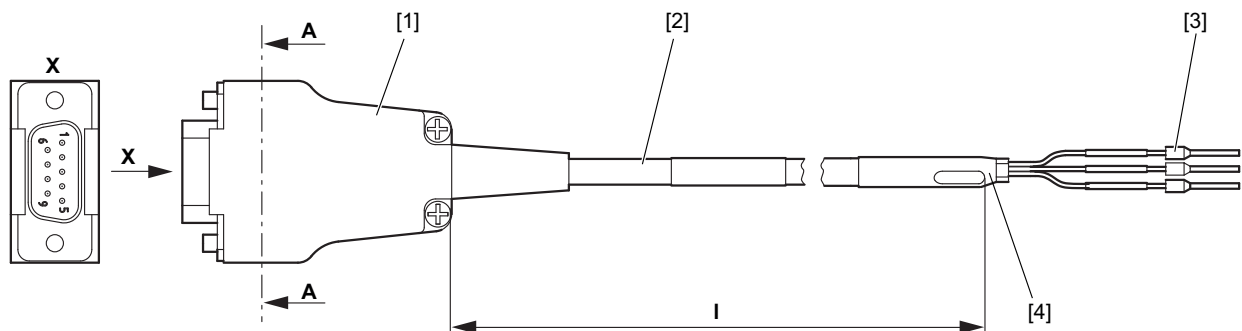
8.3 Cable

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

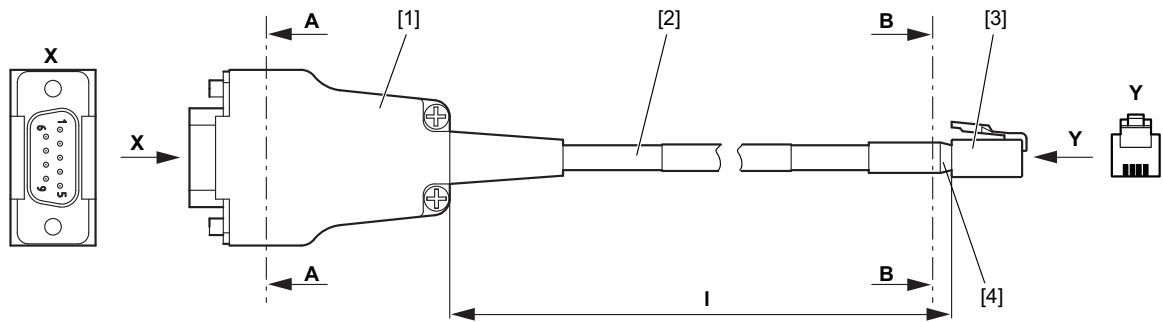


A			Connection overview			B
X	A-A	Contact male	Terminal link	Cable Conductor designation Color \ imprint	Signal	Terminal
		1	•	WHOG	RS485 +	CS
		6	•	OG	RS485 -	CS
		5		GN	GND	CS
		Housing		WHGN		
		nc. 2.3.4.7.8.9		Shielding (Outer)		

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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		
		Housing		WHGN				
		no. 2.3.4.7.8.9		Shielding (Outer)				

13892082187

- [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

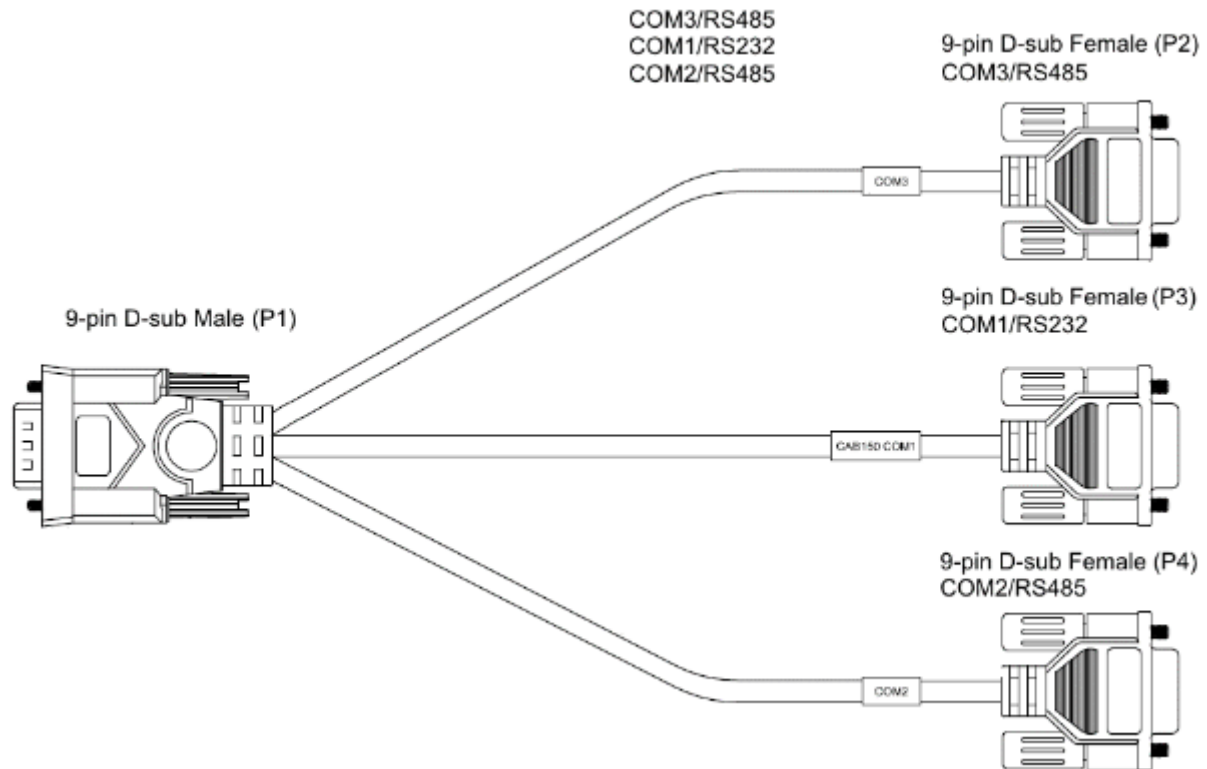
[4] Braided shield fixed with heat shrink tubing

8.3.2 CAB150 adapter cable

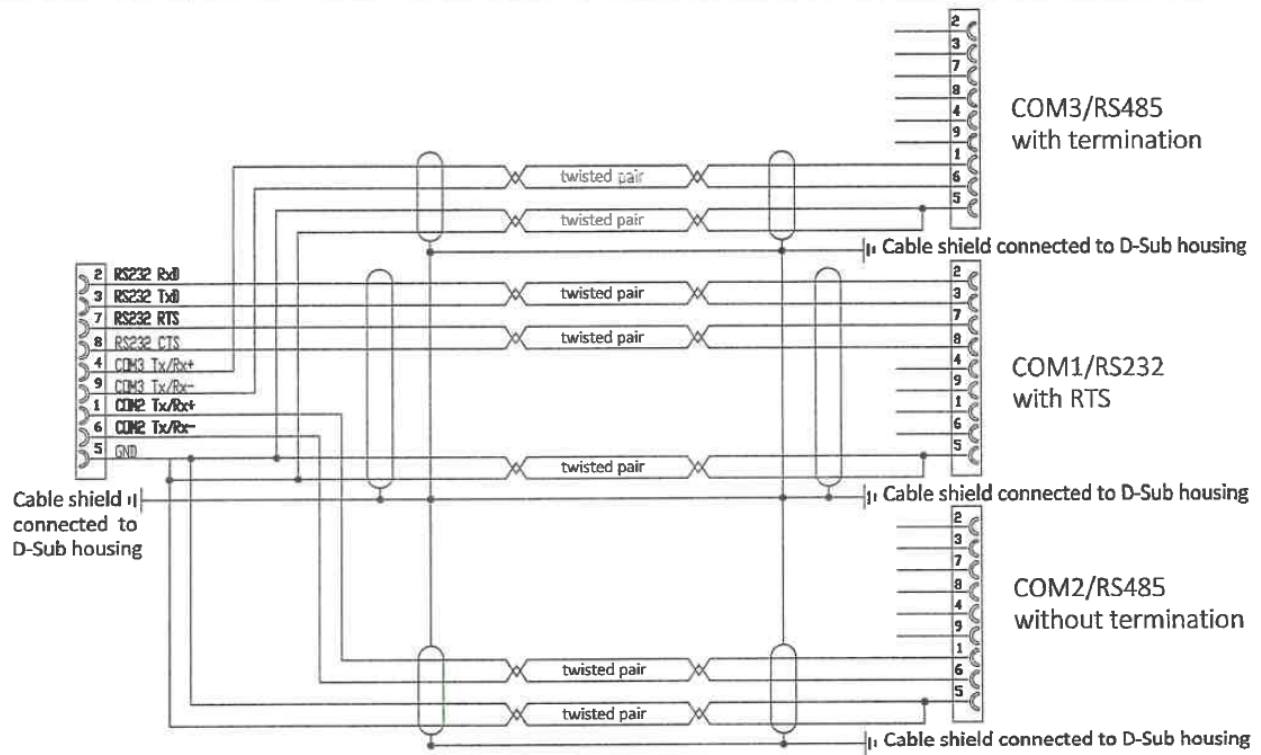
SEW-EURODRIVE part number: 19500793

Use the CAB150 adapter cable for splitting the RS485 interfaces of the following operator panels:

Operator panels in design ..2 (DOP11C-42, DOP11C-72, DOP11C-102, DOP11C-122, DOP11C-152).



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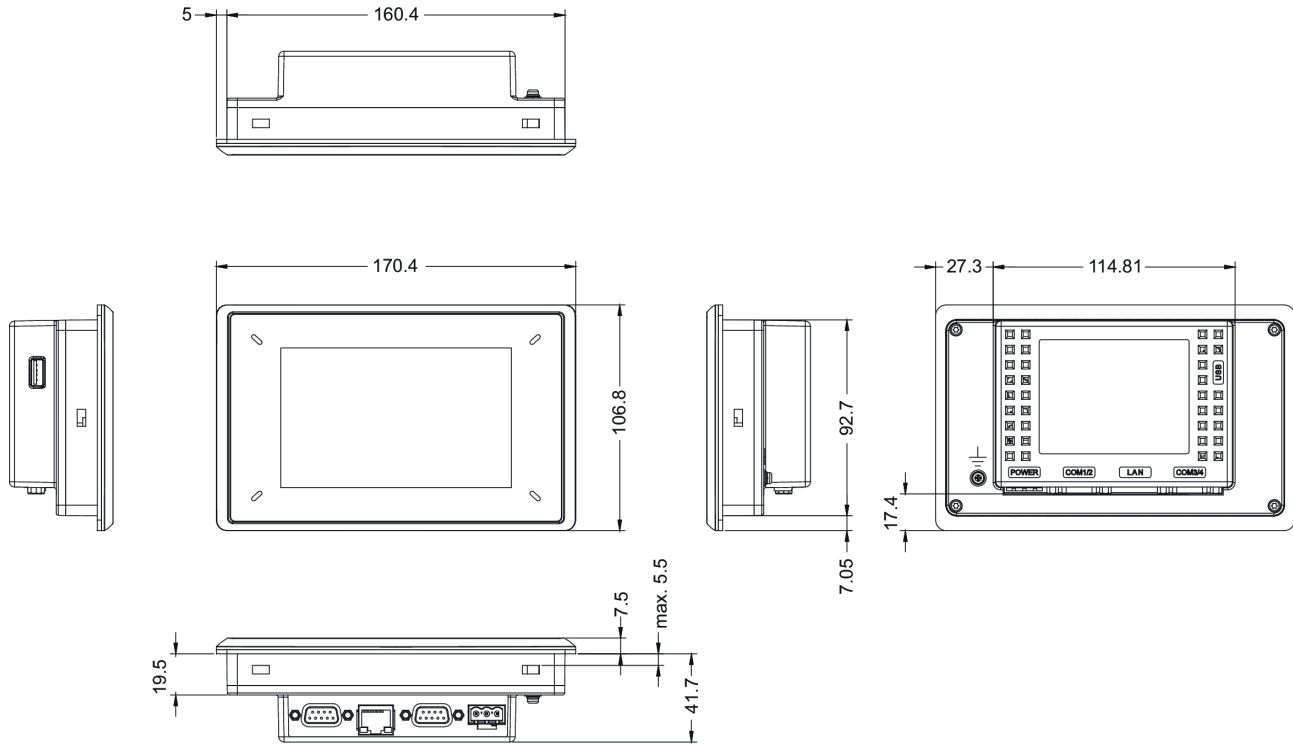


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8.4 Dimension sheets

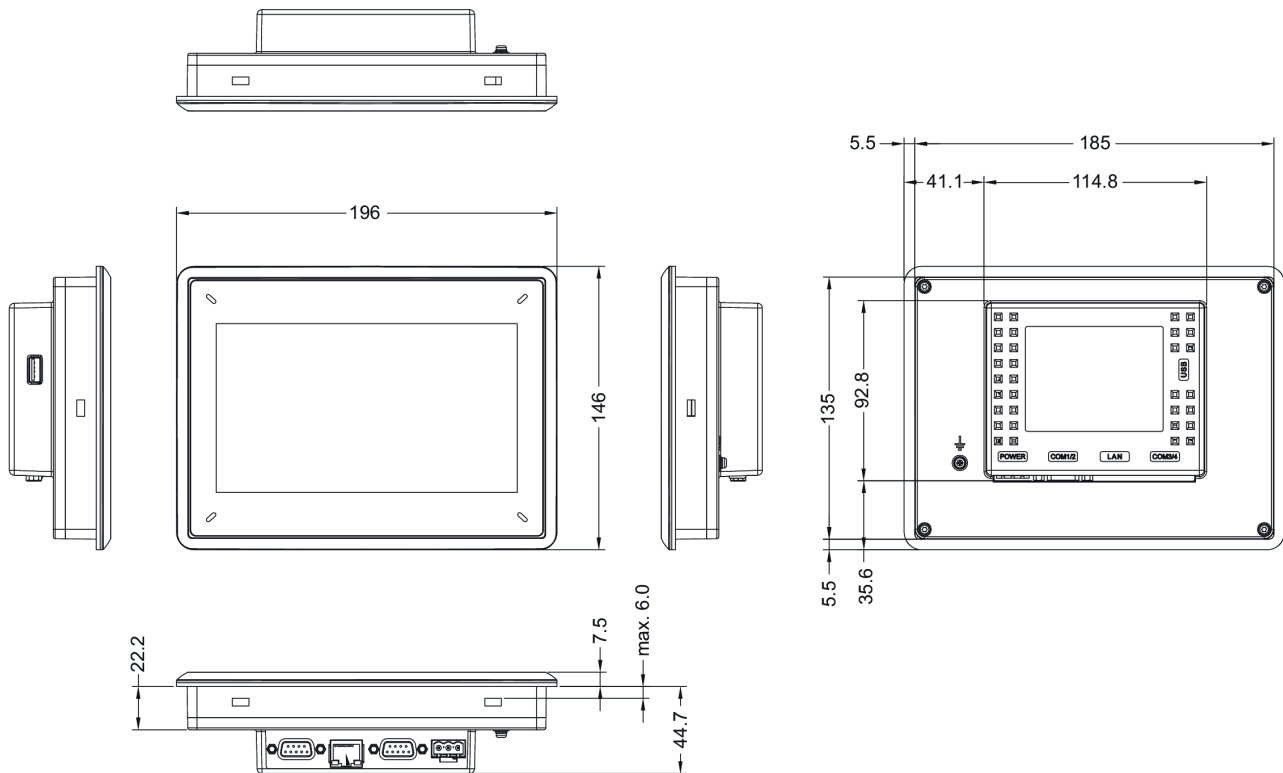
8.4.1 Operator panels in design ..1

Dimension sheet DOP11C-51



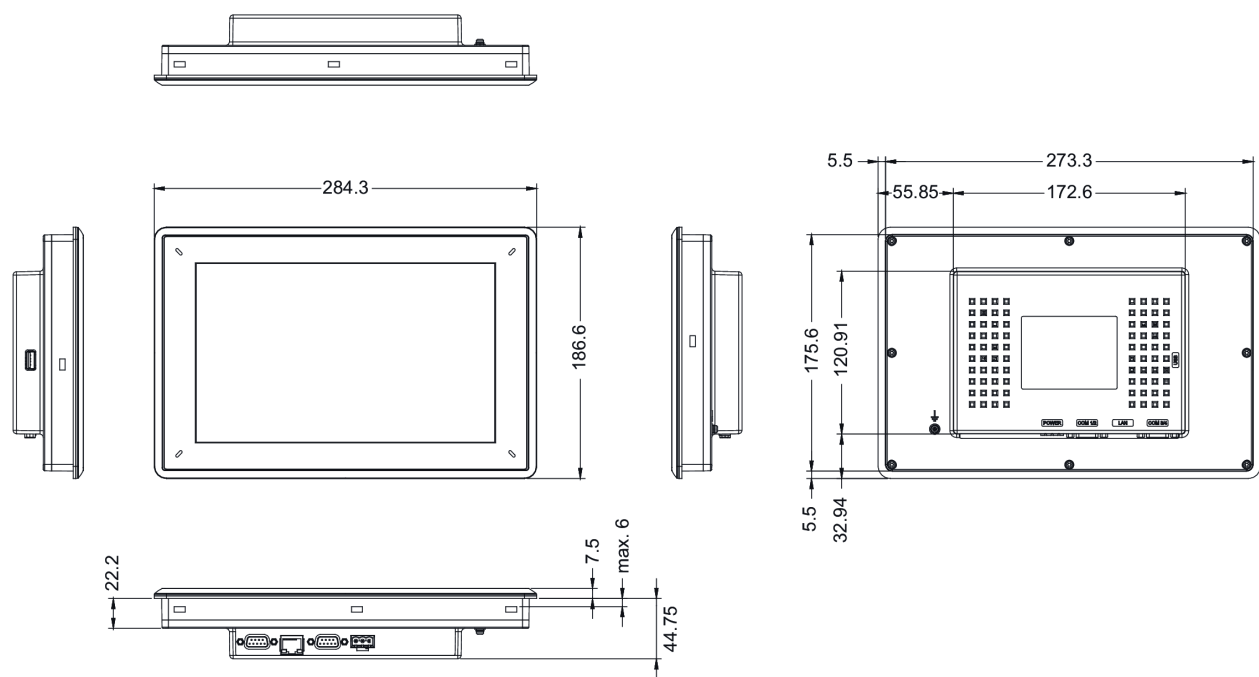
9007213072021259

Dimension sheet DOP11C-71



19291537291

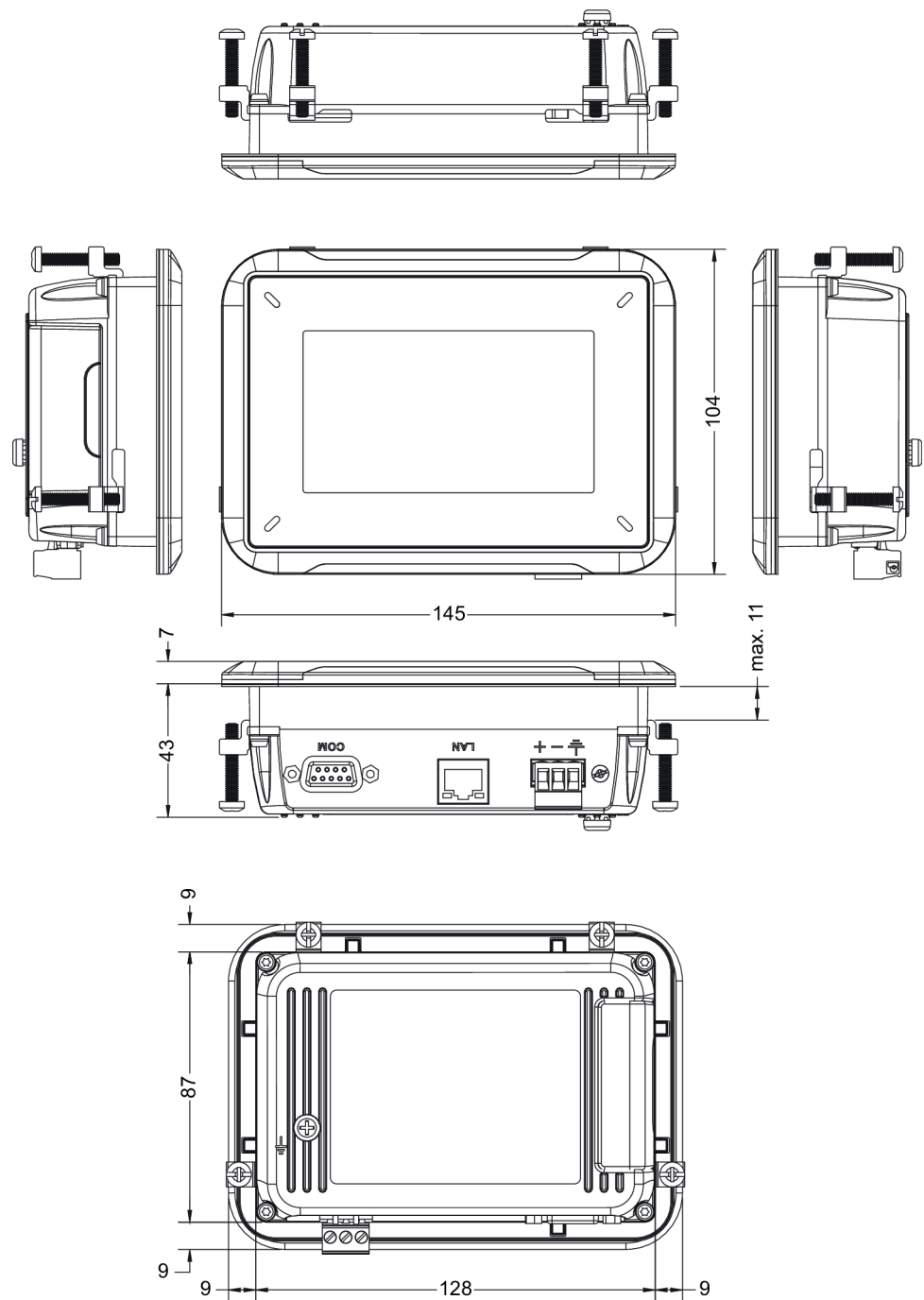
Dimension sheet DOP11C-101



19292392971

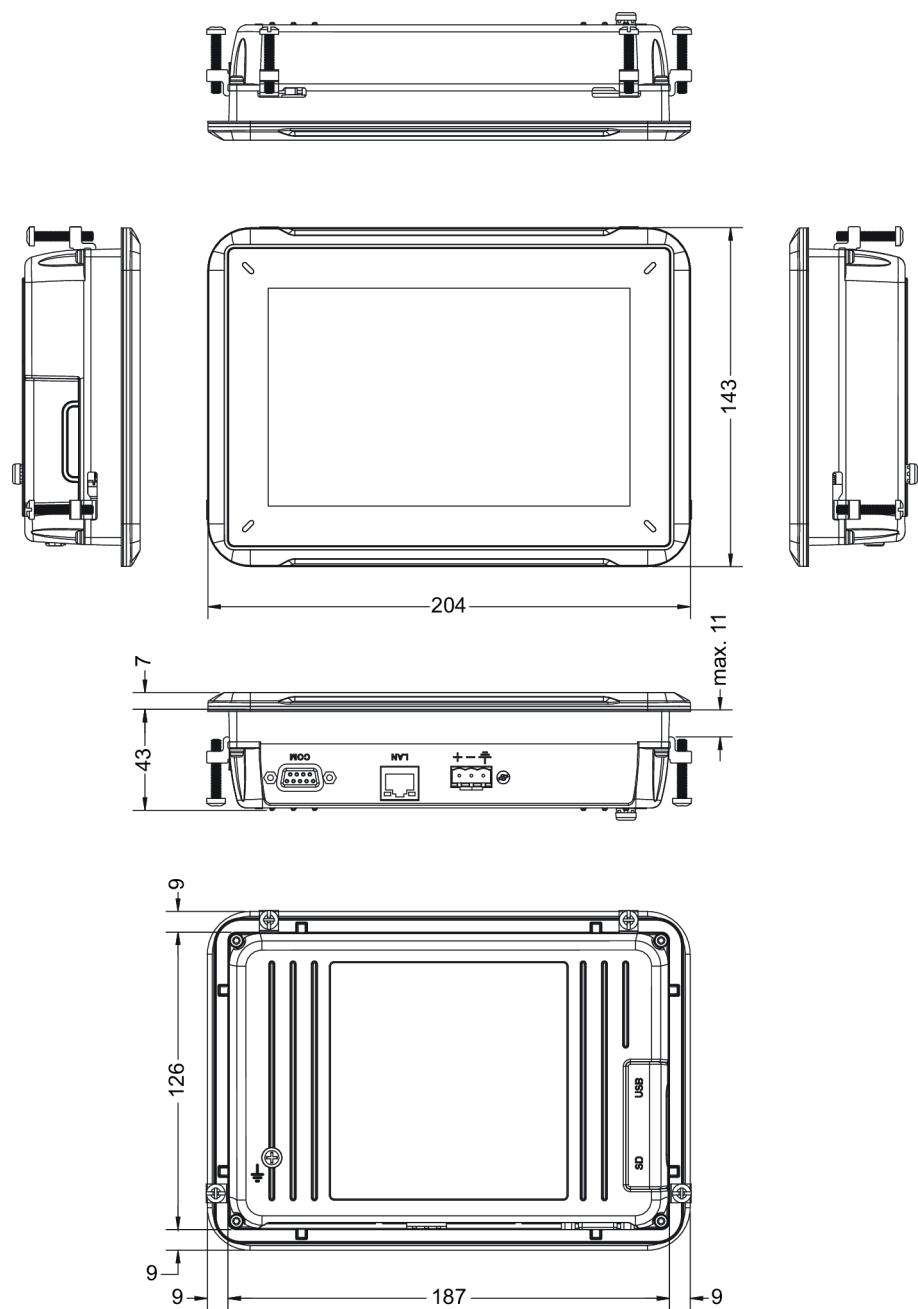
8.4.2 Operator panels in design ..2

Dimension sheet DOP11C-42



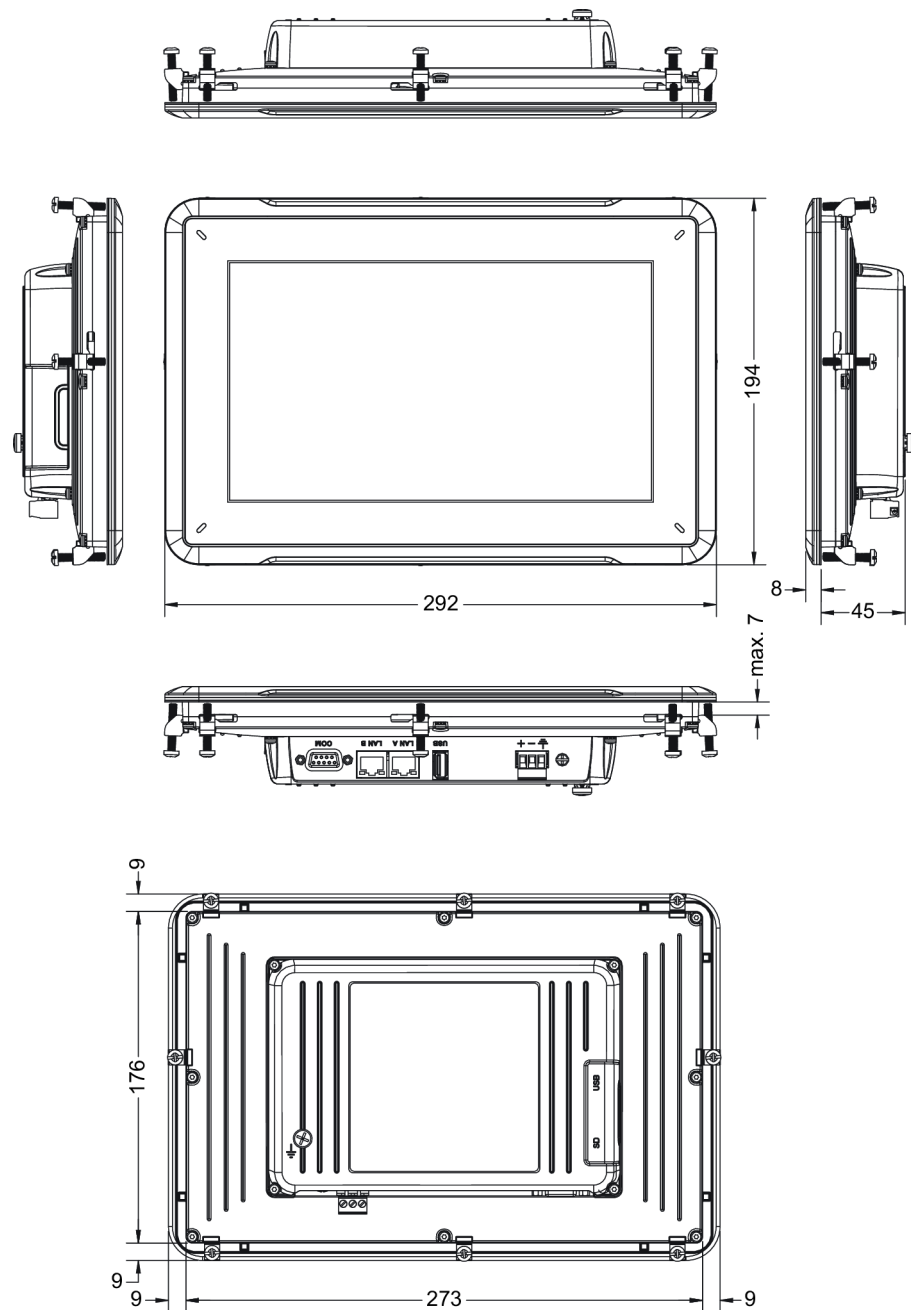
19293742987

Dimension sheet DOP11C-72



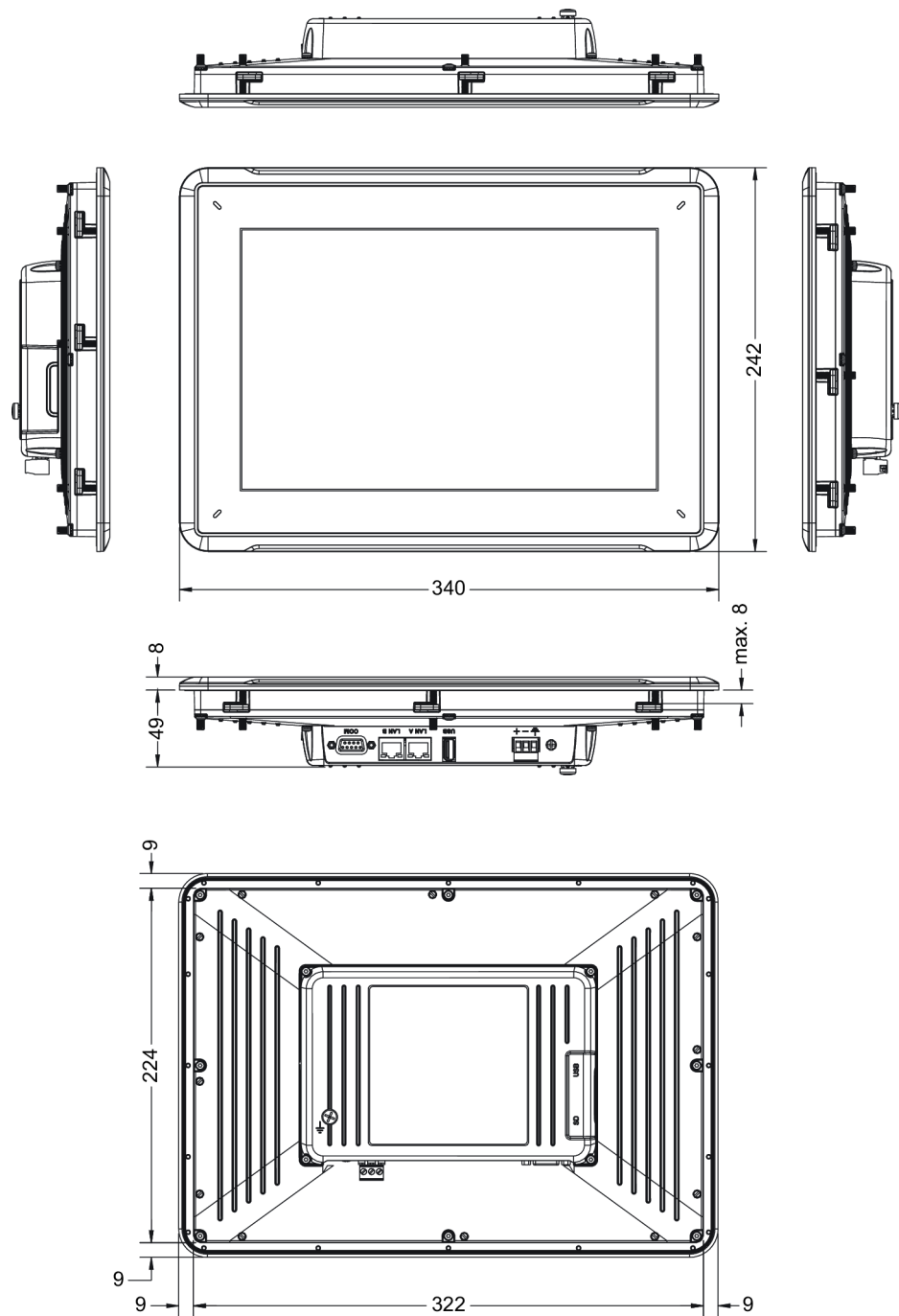
19294904587

Dimension sheet DOP11C-102



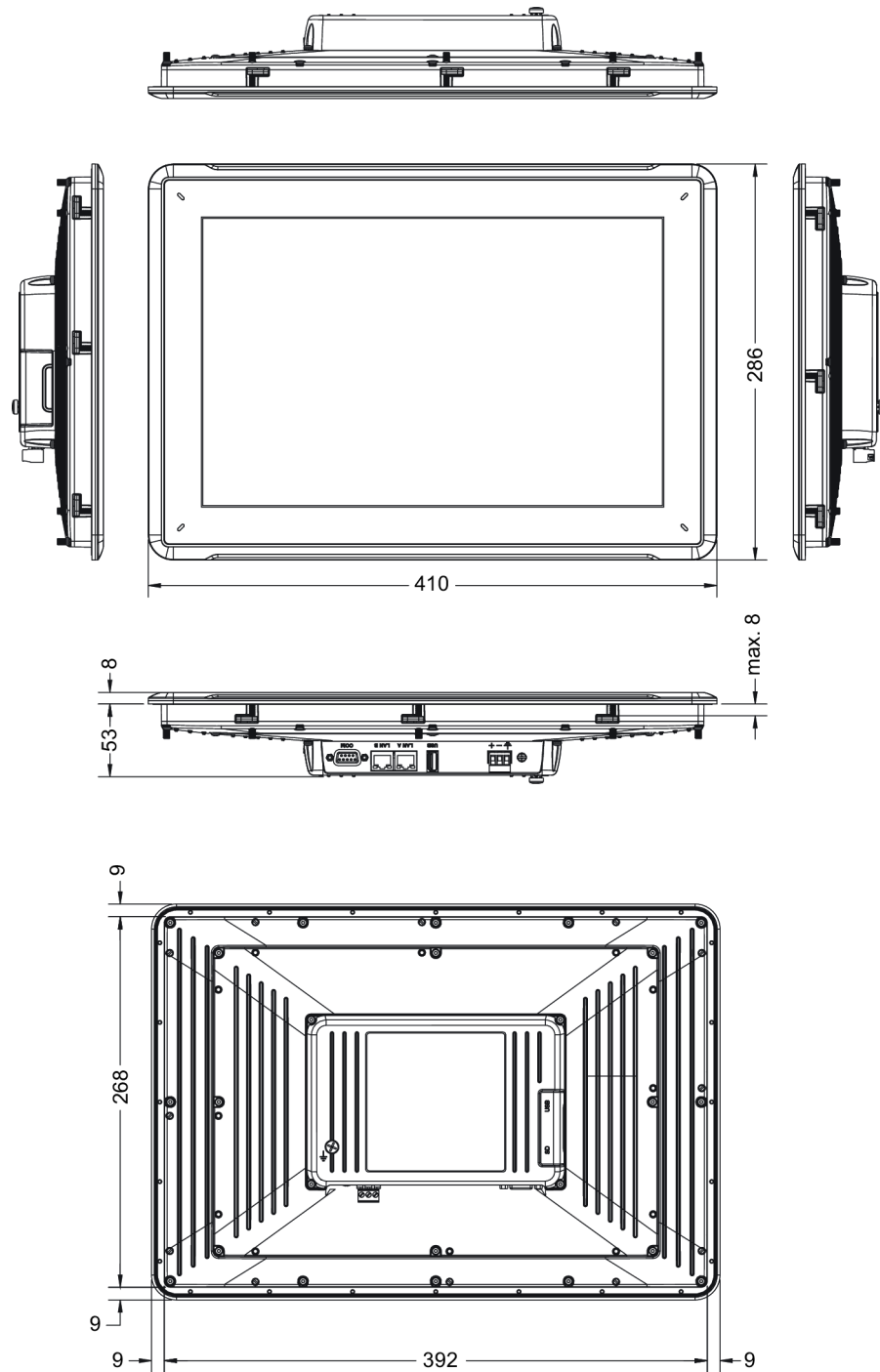
19303106955

Dimension sheet DOP11C-122



19303115403

Dimension sheet DOP11C-152



19292405643

9 Appendix

9.1 Chemical resistance

9.1.1 Plastic housing

Frame and housing of operator panels in design ..1 (DOP11C-51, -71 and -101) are 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
Glycerin	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	Methyl isobutyl ketone
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

9.1.2 Aluminum housing

Frame and housing of operator panels in design ..2 (DOP11C-42, -72, -102, -122 and -152) 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:

Acetic acid 10%	Phosphoric acid 4%
Citric acid 10%	Phosphoric acid 10%
Diesel	Sea water
Distilled water	Sodium chloride 2%
Cooking oil	Sodium chloride 20%
Fuel	Sulfuric acid 20%
Hydrogen peroxide 3%	Tap water

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 aluminum housing that is not visible to everybody.

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

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

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	Glycerin	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 can be observed 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

Argentina

Assembly Sales	Buenos Aires	SEW EURODRIVE ARGENTINA S.A. Ruta Panamericana Km 37.5, Lote 35 (B1619IEA) Centro Industrial Garín Prov. de Buenos Aires	Tel. +54 3327 4572-84 Fax +54 3327 4572-21 http://www.sew-eurodrive.com.ar sewar@sew-eurodrive.com.ar
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Australia

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	Sydney	SEW-EURODRIVE PTY. LTD. 9, Sleigh Place, Wetherill Park New South Wales, 2164	Tel. +61 2 9725-9900 Fax +61 2 9725-9905 enquires@sew-eurodrive.com.au

Austria

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Bangladesh

Sales	Bangladesh	SEW-EURODRIVE INDIA PRIVATE LIMITED 345 DIT Road East Rampura Dhaka-1219, Bangladesh	Tel. +88 01729 097309 salesdhaka@seweurodrivebangladesh.com
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Belarus

Sales	Minsk	Foreign unitary production enterprise SEW- EURODRIVE Rybalko Str. 26 220033 Minsk	Tel. +375 17 298 47 56 / 298 47 58 Fax +375 17 298 47 54 http://www.sew.by sales@sew.by
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Belgium

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Service Competence Center	Industrial Gears	SEW-EURODRIVE n.v./s.a. Rue du Parc Industriel, 31 6900 Marche-en-Famenne	Tel. +32 84 219-878 Fax +32 84 219-879 http://www.sew-eurodrive.be service-IG@sew-eurodrive.be

Brazil

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Assembly Sales Service	Rio Claro	SEW-EURODRIVE Brasil Ltda. Rodovia Washington Luiz, Km 172 Condomínio Industrial Conpark Caixa Postal: 327 13501-600 – Rio Claro / SP	Tel. +55 19 3522-3100 Fax +55 19 3524-6653 montadora.rc@sew.com.br
	Joinville	SEW-EURODRIVE Brasil Ltda. Jvl / Ind 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

Bulgaria

Sales	Sofia	BEVER-DRIVE GmbH Bogdanovetz Str.1 1606 Sofia	Tel. +359 2 9151160 Fax +359 2 9151166 bever@bever.bg
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Cameroon			
Sales	Douala	SEW-EURODRIVE S.A.R.L. Ancienne Route Bonabéri P.O. Box B.P 8674 Douala-Cameroun	Tel. +237 233 39 02 10 Fax +237 233 39 02 10 sew@sew-eurodrive-cm
Canada			
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	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. 2001 Ch. de l'Aviation Dorval Quebec H9P 2X6	Tel. +1 514 367-1124 Fax +1 514 367-3677 n.paradis@sew-eurodrive.ca
Chile			
Assembly Sales Service	Santiago de Chile	SEW-EURODRIVE CHILE LTDA Las Encinas 1295 Parque Industrial Valle Grande LAMP Santiago de Chile P.O. Box Casilla 23 Correo Quilicura - Santiago - Chile	Tel. +56 2 2757 7000 Fax +56 2 2757 7001 http://www.sew-eurodrive.cl ventas@sew-eurodrive.cl
China			
Production Assembly Sales Service	Tianjin	SEW-EURODRIVE (Tianjin) Co., Ltd. No. 78, 13th Avenue, TEDA Tianjin 300457	Tel. +86 22 25322612 Fax +86 22 25323273 http://www.sew-eurodrive.cn info@sew-eurodrive.cn
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Service	Vejle	SEW-EURODRIVE A/S Bødkervej 2 7100 Vejle	Tel. +45 43 9585 00 http://www.sew-eurodrive.dk sew@sew-eurodrive.dk
Egypt			
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Estonia			
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Representation: Cameroon			
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	Electronics	SEW-EURODRIVE GmbH & Co KG Ernst-Blickle-Straße 42 76646 Bruchsal	Tel. +49 7251 75-1780 Fax +49 7251 75-1769 scc-elektronik@sew-eurodrive.de
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	East	SEW-EURODRIVE GmbH & Co KG Dankritzer Weg 1 08393 Meerane (Zwickau)	Tel. +49 3764 7606-0 Fax +49 3764 7606-20 dtc-ost@sew-eurodrive.de
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	Hamburg	SEW-EURODRIVE GmbH & Co KG Hasselbinnen 44 22869 Schenefeld	Tel. +49 40298109-60 Fax +49 40298109-70 dc-hamburg@sew-eurodrive.de
	Ludwigshafen	SEW-EURODRIVE GmbH & Co KG c/o BASF SE c/o BASF SE Gebäude W130 67056 Ludwigshafen	Tel. +49 7251 75 3759 Fax +49 7251 75 503759 dc-ludwigshafen@sew-eurodrive.de

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0 800 7394357**Great Britain**

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Drive Service Hotline / 24 Hour Service			Tel. 01924 896911

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India

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	Pune	SEW-EURODRIVE India Private Limited Plant: Plot No. D236/1, Chakan Industrial Area Phase- II, Warale, Tal- Khed, Pune-410501, Maharashtra	Tel. +91 21 35 628700 Fax +91 21 35 628715 salespune@seweurodriveindia.com
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	Jakarta	PT. Agrindo Putra Lestari JL.Pantai Indah Selatan, Komplek Sentra In- dustri Terpadu, Pantai indah Kapuk Tahap III, Blok E No. 27 Jakarta 14470	Tel. +62 21 2921-8899 Fax +62 21 2921-8988 aplindo@indosat.net.id http://www.aplindo.com
	Surabaya	PT. TRIAGRI JAYA ABADI Jl. Sukosemolo No. 63, Galaxi Bumi Permai G6 No. 11 Surabaya 60111	Tel. +62 31 5990128 Fax +62 31 5962666 sales@triagri.co.id http://www.triagri.co.id
	Surabaya	CV. Multi Mas Jl. Raden Saleh 43A Kav. 18 Surabaya 60174	Tel. +62 31 5458589 Fax +62 31 5317220 sianhwa@sby.centrin.net.id http://www.cvmultimas.com
Ireland			
Sales Service	Dublin	Alperton Engineering Ltd. 48 Moyle Road Dublin Industrial Estate Glasnevin, Dublin 11	Tel. +353 1 830-6277 Fax +353 1 830-6458 http://www.alperton.ie info@alperton.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	Milan	SEW-EURODRIVE S.a.s. di SEW S.r.l. & Co. Via Bernini,12 20020 Solaro (Milano)	Tel. +39 02 96 980229 Fax +39 02 96 980 999 http://www.sew-eurodrive.it milano@sew-eurodrive.it
Ivory Coast			
Sales	Abidjan	SEW-EURODRIVE SARL Ivory Coast Rue des Pêcheurs, Zone 3 26 BP 916 Abidjan 26	Tel. +225 21 21 81 05 Fax +225 21 25 30 47 info@sew-eurodrive.ci http://www.sew-eurodrive.ci
Japan			
Assembly Sales Service	Iwata	SEW-EURODRIVE JAPAN CO., LTD 250-1, Shimoman-no, Iwata Shizuoka 438-0818	Tel. +81 538 373811 Fax +81 538 373814 http://www.sew-eurodrive.co.jp sewjapan@sew-eurodrive.co.jp
Kazakhstan			
Sales Service	Almaty	SEW-EURODRIVE LLP 291-291A, Tole bi street 050031, Almaty	Tel. +7 (727) 350 5156 Fax +7 (727) 350 5156 http://www.sew-eurodrive.kz sew@sew-eurodrive.kz
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	Ulaanbaatar	IM Trading LLC Olympic street 28B/3 Sukhbaatar district, Ulaanbaatar 14230, MN	Tel. +976-77109997 Fax +976-77109997 imt@imt.mn
Latvia			
Sales	Riga	SIA Alas-Kuul Katlakalna 11C 1073 Riga	Tel. +371 6 7139253 Fax +371 6 7139386 http://www.alas-kuul.lv info@alas-kuul.com

Lebanon			
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Sales (Jordan, Kuwait , Beirut Saudi Arabia, Syria)		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 http://www.medrives.com info@medrives.com
Lithuania			
Sales	Alytus	UAB Irseva Statybininku 106C 63431 Alytus	Tel. +370 315 79204 Fax +370 315 56175 http://www.irseva.lt irmantas@irseva.lt
Luxembourg			
Representation: Belgium			
Macedonia			
Sales	Skopje	Boznos DOOEL Dime Anicin 2A/7A 1000 Skopje	Tel. +389 23256553 Fax +389 23256554 http://www.boznos.mk
Malaysia			
Assembly Sales Service	Johor	SEW-EURODRIVE SDN BHD No. 95, Jalan Seroja 39, Taman Johor Jaya 81000 Johor Bahru, Johor West Malaysia	Tel. +60 7 3549409 Fax +60 7 3541404 sales@sew-eurodrive.com.my
Mexico			
Assembly Sales Service	Quéretaro	SEW-EURODRIVE MEXICO S.A. de C.V. SEM-981118-M93 Tequisquiapan No. 102 Parque Industrial Quéretaro C.P. 76220 Querétaro, México	Tel. +52 442 1030-300 Fax +52 442 1030-301 http://www.sew-eurodrive.com.mx scmexico@seweurodrive.com.mx
Sales Service	Puebla	SEW-EURODRIVE MEXICO S.A. de C.V. Calzada Zavaleta No. 3922 Piso 2 Local 6 Col. Santa Cruz Buenavista C.P. 72154 Puebla, México	Tel. +52 (222) 221 248 http://www.sew-eurodrive.com.mx scmexico@seweurodrive.com.mx
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Namibia			
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New Zealand			
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	Christchurch	SEW-EURODRIVE NEW ZEALAND LTD. 30 Lodestar Avenue, Wigram Christchurch	Tel. +64 3 384-6251 Fax +64 3 384-6455 sales@sew-eurodrive.co.nz
Nigeria			
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Norway			
Assembly Sales Service	Moss	SEW-EURODRIVE A/S Solgaard skog 71 1599 Moss	Tel. +47 69 24 10 20 Fax +47 69 24 10 40 http://www.sew-eurodrive.no sew@sew-eurodrive.no
Pakistan			
Sales	Karachi	Industrial Power Drives Al-Fatah Chamber A/3, 1st Floor Central Com- mercial Area, Sultan Ahmed Shah Road, Block 7/8, Karachi	Tel. +92 21 452 9369 Fax +92-21-454 7365 seweurodrive@cyber.net.pk
Paraguay			
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Philippines			
Sales	Makati	P.T. Cerna Corporation 4137 Ponte St., Brgy. Sta. Cruz Makati City 1205	Tel. +63 2 519 6214 Fax +63 2 890 2802 mech_drive_sys@ptcerna.com http://www.ptcerna.com
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Assembly Sales Service	St. Petersburg	ЗАО «СЕВ-ЕВРОДРАЙФ» 188660, Russia, Leningrad Region, Vse- volozhsky District, Korabselki, Aleksandra Nevskogo str. building 4, block 1 P.O. Box 36 195220 St. Petersburg	Tel. +7 812 3332522 / +7 812 5357142 Fax +7 812 3332523 http://www.sew-eurodrive.ru sew@sew-eurodrive.ru
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Slovenia			
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Sales	Manzini	C G Trading Co. (Pty) Ltd Simunye street Matsapha, Manzini	Tel. +268 7602 0790 Fax +268 2 518 5033 charles@cgtrading.co.sz www.cgtradingswaziland.com
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	Nan Tou	Ting Shou Trading Co., Ltd. No. 55 Kung Yeh N. Road Industrial District Nan Tou 540	Tel. +886 49 255353 Fax +886 49 257878 sewtwn@ms63.hinet.net http://www.tingshou.com.tw
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Zambia

Representation: South Africa

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