p300

P30GAP... / P30GAH...

Panel Controller / HMI p300

Operating Instructions EN

13469726

Lenze

Please read these instructions before you start working!
Follow the enclosed safety instructions.

Tip!

Information and tools concerning the Lenze products can be found in the download area under **www.lenze.com**

i Contents

Contents

This documentation provides you with information about the intended use of the **Panel Controller / HMI p300** in the Lenze "Controller-based Automation" control system.

Reference manual "Controller"

Here you can find detailed information on the **parameter setting and programming** of the Lenze Controllers.

Target group

This documentation is directed at qualified skilled personnel according to IEC 60364.

Qualified skilled personnel are persons who have the required qualifications to carry out all activities involved in installing, mounting, commissioning, and operating the product.

1.1 Document history

Version			Description
2.0	08/2014	TD17	• EAC conformity supplemented • General updates and corrections • New layout
1.1	07/2014	TD15	corrected: Torque for mounting 10.9 cm (4.3 ")
1.0	03/2014	TD15	First edition

1.2 Conventions used

This documentation uses the following conventions to distinguish between different types of information:

Type of information	Writing	Example/notes
Spelling of numbers		
Decimal	Normal spelling	Example: 1234
Decimal separator	Point	The decimal point is always used. For example: 1234.56
Warnings		
UL warnings		Given in English and French
UR warnings		
Text		
Program name	» «	PC software For example: Lenze »Engineer«
Icons		
Page reference		Reference to another page with additional information For instance: 16 = see page 16
Documentation reference		Reference to another documentation with additional information Example: EDKxxx = see documentation EDKxxx

EtherCAT®

EtherCAT® is a registered trademark and patented technology licensed by Beckhoff Automation GmbH, Germany.

1.3 Notes used

The following pictographs and signal words are used in this documentation to indicate dangers and important information:

Safety instructions

Layout of the safety instructions:

Danger!

(characterises the type and severity of danger)

Note

(describes the danger and gives information about how to prevent dangerous situations)

Pictograph and signal word	Meaning
 **Danger!**	**Danger of personal injury through dangerous electrical voltage** Reference to an imminent danger that may result in death or serious personal injury if the corresponding measures are not taken.
 **Danger!**	**Danger of personal injury through a general source of danger** Reference to an imminent danger that may result in death or serious personal injury if the corresponding measures are not taken.
 **Stop!**	**Danger of property damage** Reference to a possible danger that may result in property damage if the corresponding measures are not taken.

Application notes

Pictograph and signal word	Meaning
 **Note!**	Important note to ensure trouble-free operation
 **Tip!**	Useful tip for easy handling
	Reference to another document

Special safety instructions and application notes

Pictograph and signal word	Meaning
 **Warnings!**	**Safety note or application note for the operation according to UL or CSA requirements.** The measures are required to meet the requirements according to UL or CSA.
 **Warnings!**	

2.1 General safety information

Scope

The following general safety instructions apply to all Lenze drive and automation components.

The product-specific safety and application notes given in this documentation must be observed!

For your own safety

Danger!
Disregarding the following basic safety measures may lead to severe personal injury and damage to material assets!

- Lenze drive and automation components ...
  ... must only be used for the intended purpose.
  ... must never be operated if damaged.
  ... must never be subjected to technical modifications.
  ... must never be operated unless completely assembled.
  ... must never be operated without the covers/guards.
  ... can - depending on their degree of protection - have live, movable or rotating parts during or after operation. Surfaces can be hot.
- For Lenze drive and automation components ...
  ... only use approved accessories.
  ... only use original manufacturer spare parts.
- All specifications of the corresponding enclosed documentation must be observed.
  This is vital for a safe and trouble-free operation and for achieving the specified product features.
  The procedural notes and circuit details provided in this document are proposals which the user must check for suitability for his application. The manufacturer does not accept any liability for the suitability of the specified procedures and circuit proposals.
- Only qualified skilled personnel are permitted to work with or on Lenze drive and automation components.
  According to IEC 60364 or CENELEC HD 384, these are persons ...
  ... who are familiar with the installation, assembly, commissioning and operation of the product,
  ... possess the appropriate qualifications for their work,
  ... and are acquainted with and can apply all the accident prevent regulations, directives and laws applicable at the place of use.

Transport, storage

- Transport and storage in a dry, low-vibration environment without aggressive atmosphere; preferably in the packaging provided by the manufacturer.
  – Protect against dust and impacts.
  – Observe climatic conditions according to the technical data.

Mechanical installation

- Install the product according to the regulations of the corresponding documentation. In particular observe the section ”Operating conditions” in the chapter ”Technical data”.
- Provide for a careful handling and avoid mechanical overload. During handling neither bend components, nor change the insulation distances.
- The product contains electrostatic sensitive devices which can easily be damaged by short circuit or static discharge (ESD). Thus, electronic components and contacts must not be touched unless ESD measures are taken beforehand.

Electrical installation

- Carry out the electrical installation according to the relevant regulations (e. g. cable cross-sections, fusing, connection to the PE conductor). Additional notes are included in the documentation.
- When working on live products, observe the applicable national regulations for the prevention of accidents (e.g. BGV 3).
- The Instructions contain notes concerning wiring according to EMC regulations (shielding, earthing, filters and cable routing). The compliance with limit values required by the EMC legislation is the responsibility of the manufacturer of the machine or system.

  Warning: The inverters are automation components which can be used in industrial environment according to EN 61000-6-4. These products may cause radio interference in residential areas. If this happens, the operator may need to take appropriate action.
- For compliance with the limit values for radio interference emission at the site of installation, the components - if specified in the technical data - have to be mounted in housings (e. g. control cabinets). The housings have to enable an EMC-compliant installation. In particular observe that for example control cabinet doors preferably have a circumferential metallic connection to the housing. Reduce openings or cutouts through the housing to a minimum.
- Only plug in or remove pluggable terminals in the deenergised state!

Commissioning

- If required, you have to equip the system with additional monitoring and protective devices in accordance with the respective valid safety regulations (e. g. law on technical equipment, regulations for the prevention of accidents).

Maintenance and servicing

- The components are maintenance-free if the required operating conditions are observed.
- If the cooling air is polluted, the cooling surfaces may be contaminated or the air vents may be blocked. Under these operating conditions, the cooling surfaces and air vents must be cleaned at regular intervals. Never use sharp objects for this purpose!
- After the system has been disconnected from the supply voltage, live components and power connections must not be touched immediately because capacitors may be charged. Please observe the corresponding notes on the device.

Disposal

- Recycle or dispose of the product according to the applicable regulations.

2.2 Product-specific safety instructions

- Protect the device against direct solar radiation, since the housing may heat up strongly.
- The device is classified as a class A device and can cause radio interference in residential areas. In this case, the operator may have to take special measures. Any costs arising from these measures have to be paid by the operator.
- A touchscreen does not comply with the Ergonomics Directive ZH 1/618. This is why it is only designed for short-time inputs and monitoring functions. For longer inputs, connect an external keyboard.
- In the event of a fault, unplug the power connector immediately and send back the device to the manufacturer. The address can be found on the self-addressed envelope included in this documentation. Please use the original packaging to return the device!

Stop!

The product contains electrostatic sensitive devices.

Before working in the connection area, the personnel must be free of electrostatic charge.

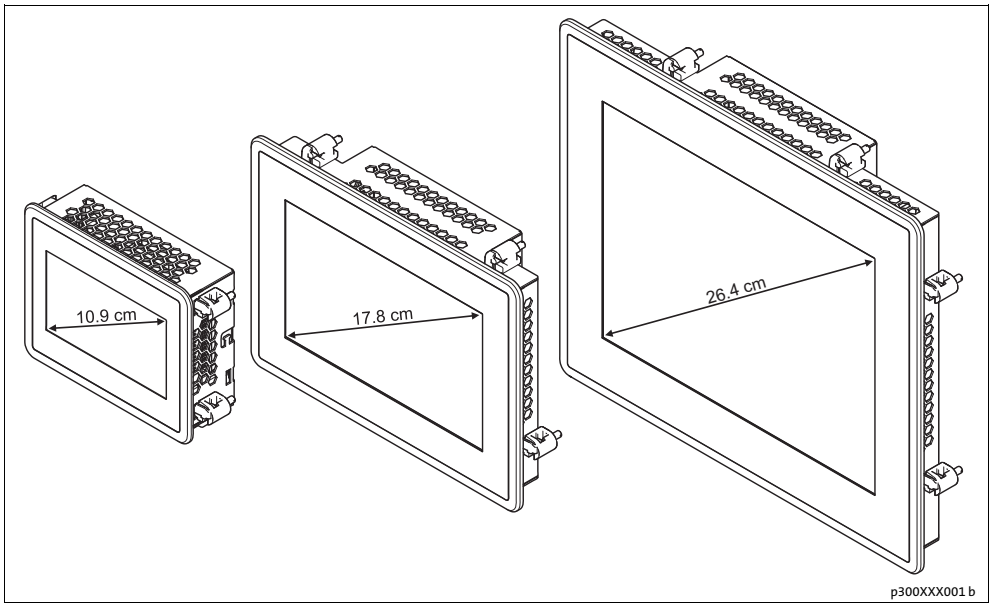


Fig. 3-1 Panel Controller / HMI p300

3.1 Scope of supply

Number	Name
1	Panel Controller / HMI
4 4 8	Screw tensioner for screen size 10.9 cm (4.3”) For screen size 17.8 cm (7.0”) For screen size 26.4 cm (10.4”)
1	Connection plug for voltage supply
1	Connection plug for CAN bus
1	SD card (inserted)
1	Mounting instructions

3.2 Application as directed

The Controller is used as directed if it is solely used for implementing control and operating concepts or for presenting information in usual industrial and commercial fields. A different use, or one beyond these purposes, is not permissible.

A **use that is not intended** also includes a use harbouring fatal risks or dangers which, without the provision of exceptionally high safety measures, may result in death, injury or damage to material assets.

The Controller in particular must **not** be used ...

- in private areas
- in potentially explosive atmospheres
- in areas with harmful gases, oils, acids, radiation, etc.
- in applications where vibration and impact loads occur which exceed the requirements of EN 61131-2.
- to execute safety functions, as for example
  - in the air-traffic control/in flight control systems
  - for monitoring/controlling nuclear reactions
  - for monitoring/controlling mass transportation
  - for monitoring/controlling medical systems
  - for monitoring/controlling weapons systems

  In order to ensure the protection of persons and material assets, higher-level safety systems must be used!

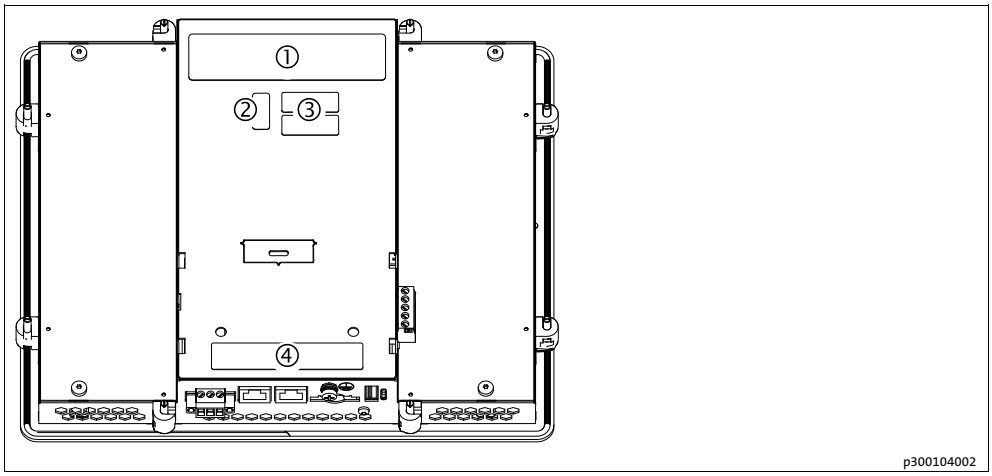
3.3 Device features

Field	Panel Controller / HMI p300		
Design/mounting	• Sheet steel housing • Front frame of anodised and etched aluminium • Front film of polyester • Installation in control cabinets, machine panels, and switchboards		
Screen			
Diagonal	10.9 cm (4.3”)	17.8 cm (7.0”)	26.4 cm (10.4”)
Resolution	480 x 272 pixels (PSP)	800 x 480 pixels (WVGA)	800 x 600 pixels (SVGA)
Touchscreen	• Resistive single touch • Anti-Newton ring design • Surface hardness 3H • Transmittance ~80 %		
Processor type			
Fanless	Cortex™-A8, 800 MHz		
Memory			
RAM	512 MB, DDR3-RAM		
Read-only memory (flash)	2 GB		
SD/SDHC card	≥ 128 MB		
Retain memory	128 kB		
Interfaces			
SD/SDHC card	1		
Ethernet	1		
EtherCAT 1)	1		
CANopen 2)	1		
USB 2.0	1		
UPS function	Internal capacitor		
Control/display elements			
Reset button	✓		
Diagnostic LEDs	4		
Operating system			
	Windows® Embedded Compact 7		
Runtime software			
Logic	✓ (not for HMI p300)		
Visu	VisiWinNET® Compact CE, 1000 power tags		

1) In preparation
2) Only the CAN master functionality is supported.

3.4 Identification

How to find information



Pos.	Description
1	Nameplate
2	Windows® licence number (can also be attached on the right side)
3	Type designation
4	Technical data

Nameplate

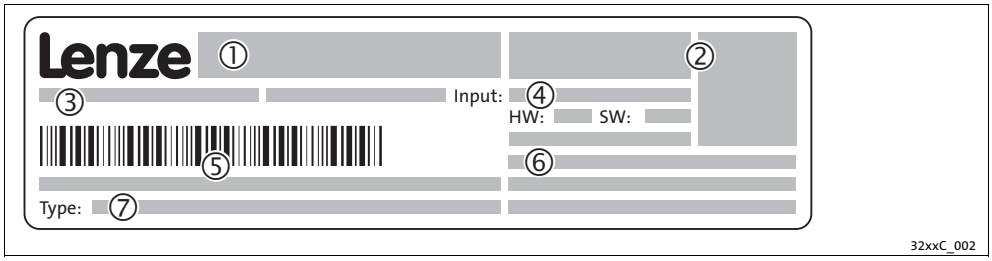


Fig. 3-2 Typenschild

Pos.	Description
1	Manufacturer
2	Certification
3	Type designation
4	Technical data
5	Serial number as bar code and numerically
6	Material number (customer-specific)
7	Type code/order number

Type code

Type code Panel Controller p300	P30GAP	x	0300F3G	x	XXX-02S3C	x	14	000

Screen size
8 = 10.9 cm (4.3”)
9 = 17.8 cm (7.0”)
4 = 26.4 cm (10.4”)

Extensions
0 = without

Control technology runtime software
0 = without
3 = Logic: LPC1000 (V3.x)

Type code HMI p300	P30GAH	x	0300F3G	x	XXX-02S3C	x	14	000

Screen size
8 = 10.9 cm (4.3”)
9 = 17.8 cm (7.0”)
4 = 26.4 cm (10.4”)

Extensions
0 = without

Control technology runtime software
0 = without

3.5 Controls and displays

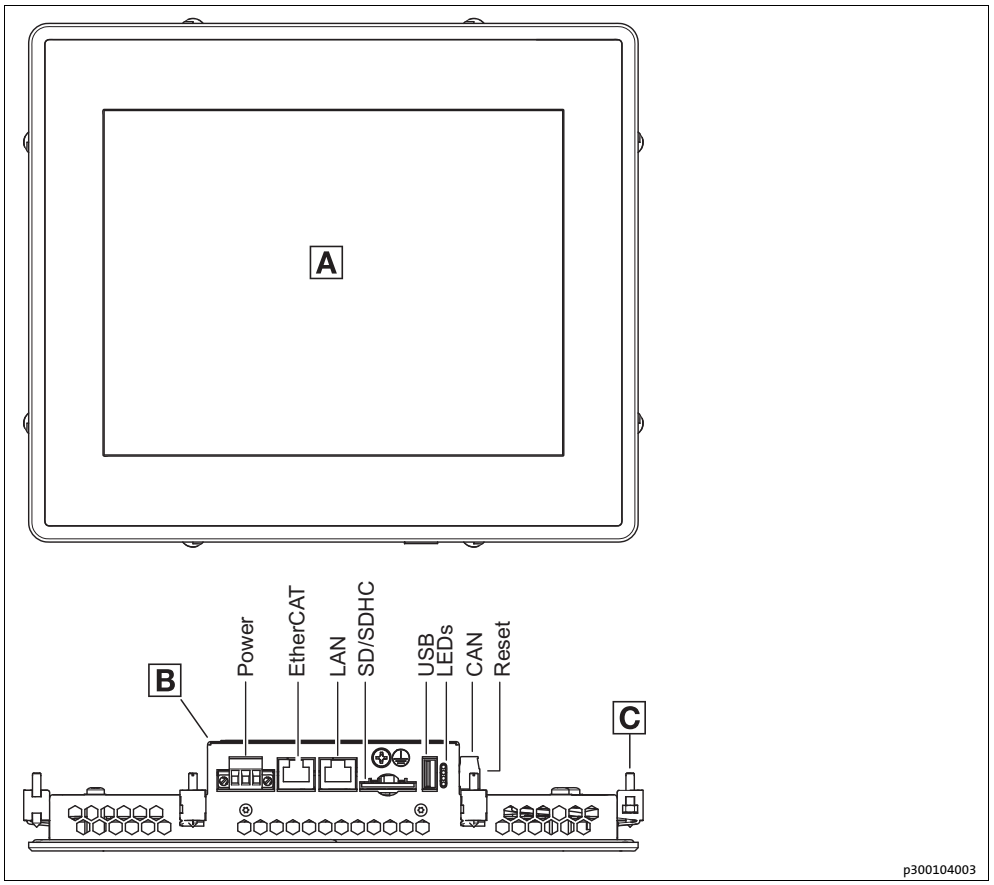


Fig. 3-3 Control and display elements

Pos.	Description
A	Touchscreen
B	Controller
C	Screw tensioner

LED status displays

LED				Meaning
Power	Error	Status 1	Status 2	
Flashing blue	Off	Off	Off	Supply voltage available and system clock synchronised.
Flashing blue	Off	Blinking yellow	Off	Operating system running and control technology (PLC project) is started.
Flashing blue	Blinking red	Blinking yellow	Off	SD card not available/not inserted correctly.
Flashing yellow	Off	Off	Off	Input voltage has not reached a minimum value (powerfail). UPS function is triggered.
Blinking yellow	Off	Off	Off	State after switch-on/restart or a reset
Blinking blue/ yellow	Off	Off	Off	System clock not synchronised.
Off	Off	Off	Off	Reset has been triggered.

”Backup & Restore” software manual

Here you’ll find some detailed information relating to the LED status displays of the optional ”Backup & Restore” Engineering tools.

3.6 UPS functionality

With the UPS functionality (uninterruptible power system), the device is provided with a backup function. This means that, in the case of a supply voltage failure, the user data (retain variables, logbook data) are saved before the device is switched off.

In order to minimise the power consumption during the buffer time and increase safety during the buffer times, circuitry parts that are not required can be optionally switched off if the supply voltage fails (e.g. backlight of the screen).

	Panel Controller / HMI p300
UPS functionality via...	Internal buffer capacitor
Storage medium for backup data	SD/SDHC card
Buffer time sufficient for ...	128 kB of retain/logbook data

3.7 ”Real Time Clock” functionality

The operating system is provided with the CMOS-RTC time via a maintenance-free clock chip.

The CMOS-RTC time is stored internally for at least 28 days. Then the time must be reset manually, e.g. via the »WebConfig« (parameter 91). A battery is not required.

3.8 Resetting the device (Reset)

To reset the device, press the reset button (🕮 17).

Two options are provided:

- Press the reset button for **4 ... 10 s**:
  - A reset of the complete system is carried out.
  - All LEDs are off during the reset.
  - After a successful reset, the POWER-LED is flashing blue.
- Press the reset button **for more than 10 s**:
  - The Lenze standard setting is loaded and a restart is carried out.
  - All LEDs are off during the reset.
  - A backup image is loaded.
  - After a successful reset, the POWER-LED is flashing blue.

4.1 General data and operating conditions

General data

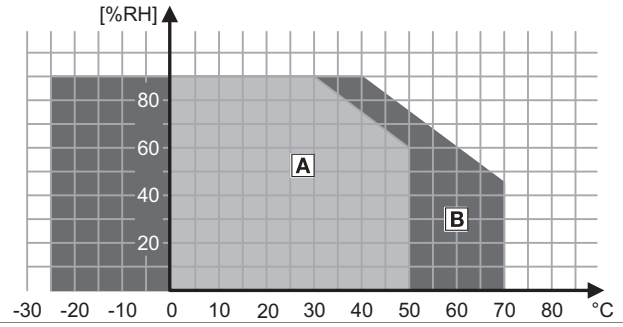
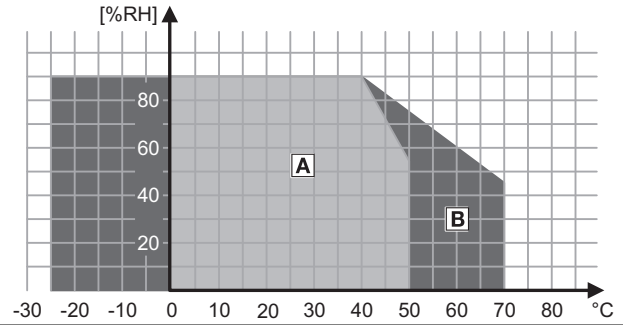
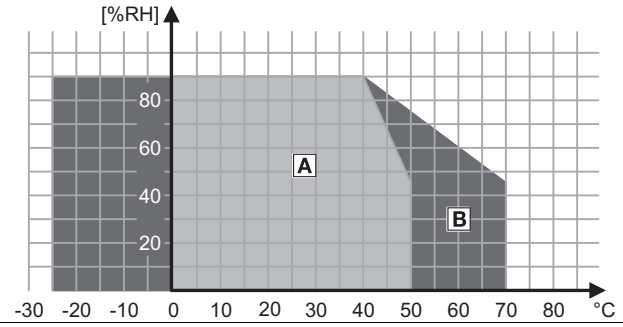
Conformity and approval			
Conformity			
CE	2004/108/EC	EMC Directive	
EAC	TP TC 020/2011 (TR CU 020/2011)	Electromagnetic compatibility of technical means	Eurasian Conformity TR CU: Technical Regulation of Customs Union
Other			
RoHS	2011/65/EU	Products are lead-free acc. to directive.	

Protection of persons and device protection		
Enclosure		
Front panel	EN 60529	IP65
Rear panel	EN 60529	IP20
Electrical isolation		
To the fieldbus		yes
To the process level		None
Protective measures		Against short circuit

EMC			
Interference emission	EN 61000-6-4	Class A (industrial premises)	
Noise immunity	EN 61000-6-2	Industrial premises	
		EN 61000-4-2	ESD; severity 3, i.e. Air discharge: 8 kV, 4 kV with contact discharge
		EN 61000-4-3	RF interference (housing) 80 MHz ... 1000 MHz, 10 V/m 80 % AM (1 kHz)
		EN 61000-4-4	Burst, severity level 3
		EN 61000-4-5	Surge, severity 1
		EN 61000-4-6	RF cable-guided 150 kHz ... 80 MHz, 10 V/m 80 % AM (1 kHz)

Operating conditions

Ambient conditions		
Climatic		
Storage/transport	EN 60721-3-2	2K3: -25 ... +70 °C depending on the air humidity (see diagrams 📖 21)
Operation	EN 60721-3-2	3K3: 0 ... +50 °C depending on the air humidity (see diagrams 📖 21)
Air humidity	EN 60721-3-3	3K3 (without condensation, relative humidity 10 ... 95 %)
Pollution	EN 61131-2	Pollution degree 2
Mechanical		
Vibration	EN 61131-2	1 g
Shock	EN 61131-2	15 g
Site altitude		
Operation		< 2000 m amsl

Panel Controller/HMI	Diagrams regarding the air humidity/temperature
p300 10.9 cm (4.3”)	
17.8 cm (7.0”)	
26.4 cm (10.4”)	

A During operation
B During storage/transport

Mounting conditions	
Mounting place	In the control cabinet, screen protected against direct solar radiation
Mounting position	Connections to the sides or at the bottom

4.2 Mechanical data

Panel Controller/HMI		Dimensions W x H x D [mm]	Mass [kg]
p300	10.9 cm (4.3”)	130 x 104 x 45	0.5
	17.8 cm (7.0”)	210 x 155 x 51	1.0
	26.4 cm (10.4”)	282 x 240 x 51	2.0

4.3 Electrical data

Panel Controller/HMI		Supply				
		Rated data 1)			Maximum 2)	
		Voltage [V DC]	Current [A]	Power [W]	Current [A]	Power [W]
p300	10.9 cm (4.3”)	24.0 (+18.0 ... +30.0)	0.36	9.0	0.87	21.0
	17.8 cm (7.0”)		0.47	12.0	0.88	21.0
	26.4 cm (10.4”)		0.59	15.0	0.89	22.0

1) at 24 V, without USB consumer (max. 0.5 A)
2) For 24 V, full load, and during the boot/UPS loading phase (max. 30 s)

Screen display

Panel Controller/HMI		Format	Resolution [pixels]	Number Colours	Brightness [cd/m²]	Contrast	BLT 1) [h]
p300	10.9 cm (4.3”)	16:9	480 x 272 (PLC)	16777216	400	1:400	50000
	17.8 cm (7.0”)	15:9	800 x 480 (WVGA)	262144	320	1:400	20000
	26.4 cm (10.4”)	4:3	800 x 600 (SVGA)		400	1:700	50000

1) Backlight Life Time

5.1 Important notes

- To prevent damage to electronic components, only mount/remove the device with the voltage supply switched off.
- The mounting location always must correspond to the operating conditions specified in the technical data. If required, take additional measures.
- In the installation space, continuous and sufficient air circulation is absolutely required to dissipate the heat of the device. The ventilation slots must not be covered.
- When selecting the installation site, be sure to observe an ergonomic position of the screen and pay regard to the incidence of light, which may cause reflections on the screen.
- During installation, there is a danger that the controller will fall out of the mounting cutout. You should therefore secure it to prevent this happening until all screw clamps have been fitted.
- During mounting, the gasket of the front frame is exposed and can be damaged.
  – Handle the gasket with care during mounting.
  – Protect the gasket against ultraviolet rays.
  – Check the gasket to make sure it is undamaged before you install the device.
- The device must be securely seated in the mounting cutout and the front panel seal must be correctly fitted. Otherwise, class of protection IP65 will not be achieved on the front side of the device!

5.2 Dimensions

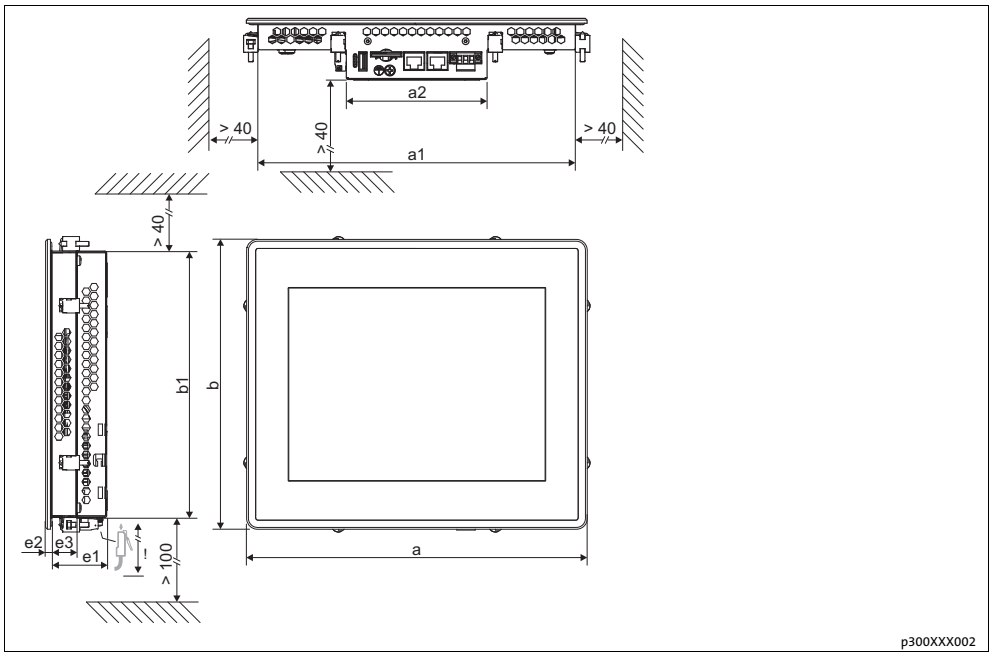
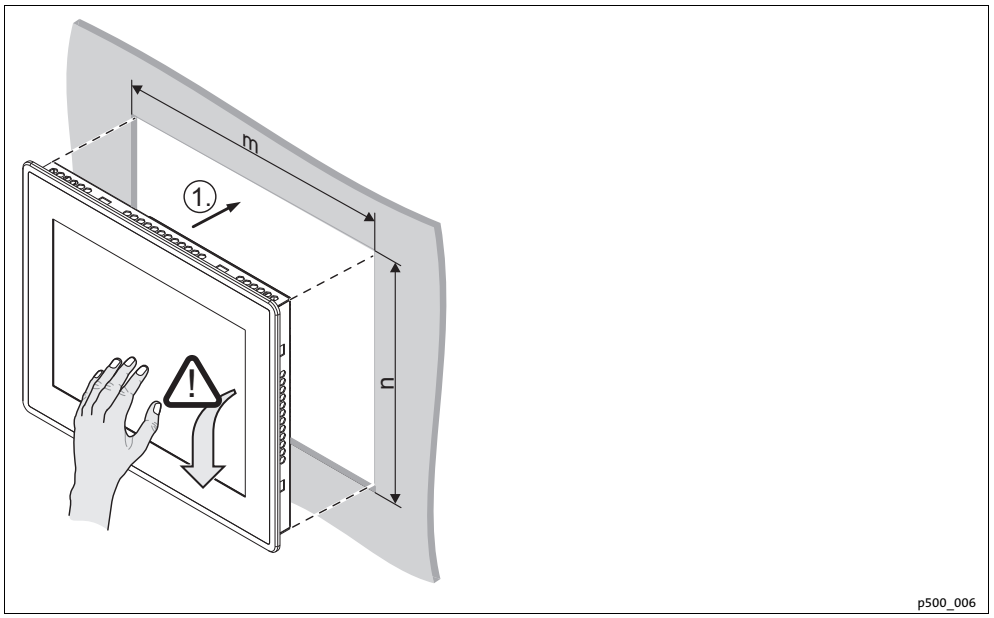


Fig. 5-1 Dimensions and mounting clearances

Panel Controller/HMI		a	a1	a2	b	b1	e1	e2	e3
		[mm]							
p300	10.9 cm (4.3")	130	117	117	104	91	42	3	-
	17.8 cm (7.0")	210	191		155	136	47	4	22
	26.4 cm (10.4")	282	263		240	221			

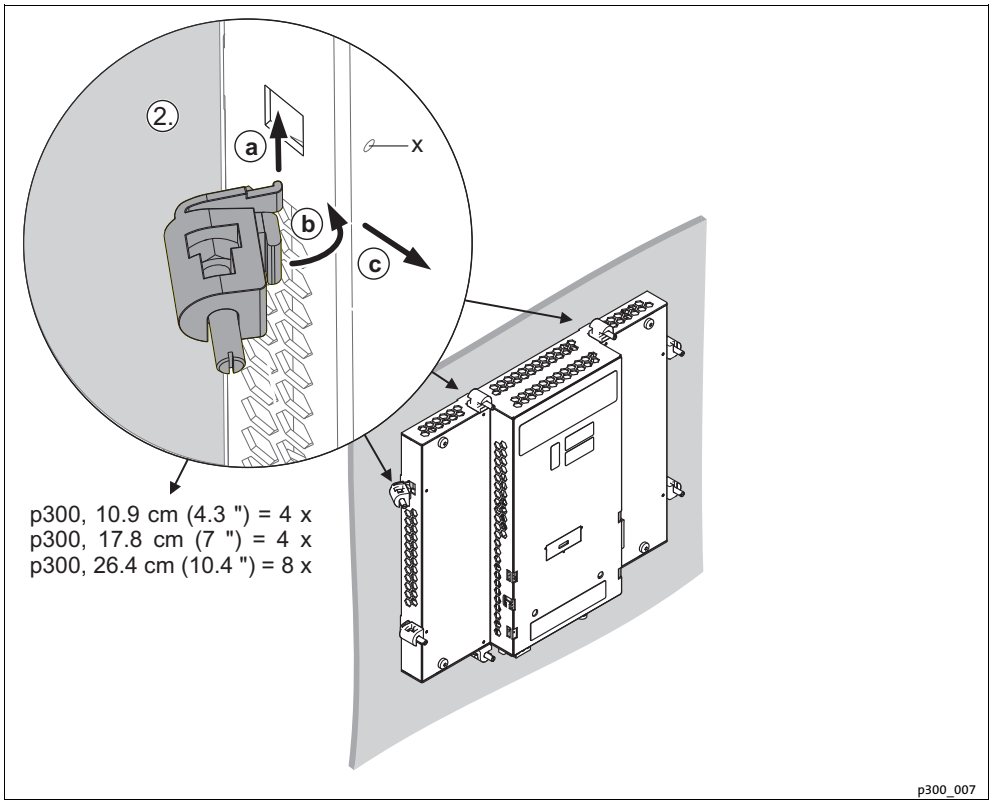
5.3 Mounting steps

1. Insert the panel controller/HMI into the mounting cutout.



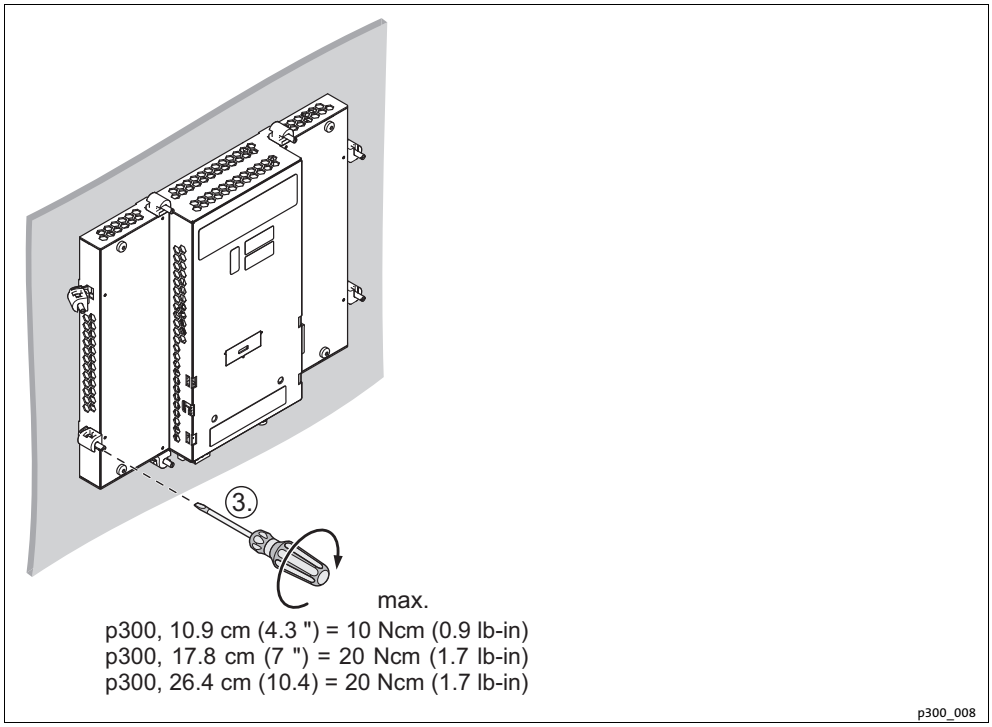
Panel Controller/HMI		m	n
		[mm]	
p300	10.9 cm (4.3”)	119	94
	17.8 cm (7.0”)	194	139
	26.4 cm (10.4”)	266	224

2. Use vice clamp.



x Positioning aid for screw clamps

3. Tighten the screws.



6.1 Important notes

The installation must be carried out by qualified, skilled personnel familiar with the applicable national standards.

Stop!

Short circuit and static discharge

The device contains components which are endangered in the case of short circuit or static discharge.

Possible consequences:

- The device or parts of it will be destroyed.

Protective measures:

- Always switch off the voltage supply when working on the device. This particularly applies:
  - Before connecting / disconnecting connectors.
  - Before plugging in / plugging out modules.

6.2 EMC-compliant wiring

Notes on EMC-compliant wiring	
General notes	• The electromagnetic compatibility of the system depends on the type of installation and care taken. Especially consider the following: – Structure – Shielding – Earthing • For installations differing from the one described, the evaluation of the conformity with the EMC Directive requires a check of the system regarding the EMC limit values. This for instance applies to: – Use of unshielded cables • **The compliance with the EMC Directive is in the responsibility of the user.** – If you observe the following measures, you can assume that no EMC problems will occur during operation and that compliance with the EMC Directive and the EMC law is achieved. – If devices which do not comply with the CE requirement concerning noise immunity (EN 6100042) are operated close to the system, these devices may be electromagnetically affected by the system.
Structure	• Provide electrical contact between the device and the earthed mounting plate: – Mounting plates with conductive surfaces (zinc-coated, stainless steel) allow permanent contact. – Painted plates are not suitable for an EMC-compliant installation. • If you use several mounting plates: – Connect as much surface of the mounting plates as possible (e.g. with copper strips). • When laying the cables, pay attention to the separation of signal cables and mains cables. • Lay the cables as close as possible to the reference potential. Freely suspended cables act like aerials.
Shielding	• Only use cables with braids if possible. • The overlap rate of the shield should be higher than 80%. • For data cables for serial connection, always use metal or metallised connectors. Connect the shield of the data cable to the connector shell.
Earthing	• Earth all metallically conductive components using suitable cables connected to a central earthing point (PE bar). • Maintain the minimum cross-sections prescribed in the safety regulations: – For the EMC, not the cable cross-section is important, but the surface and the contact with a cross-section as large as possible, i.e. large surface.

6.3 Connecting voltage supply (24 V)

Stop!

No device protection against excessive input voltage

The voltage input is not fused internally.

Possible consequences:

- The device can be destroyed when the input voltage is too high.

Protective measures:

- Observe the max. permissible input voltage.
- Professionally fuse the device on the input side against voltage fluctuations and voltage peaks.

Note!

The controller starts as soon as the supply voltage is applied.

After the operating system has been shut down, the controller switches off automatically. For restarting, the supply voltage has to be disconnected for a short time.

6.3.1 Connection plan

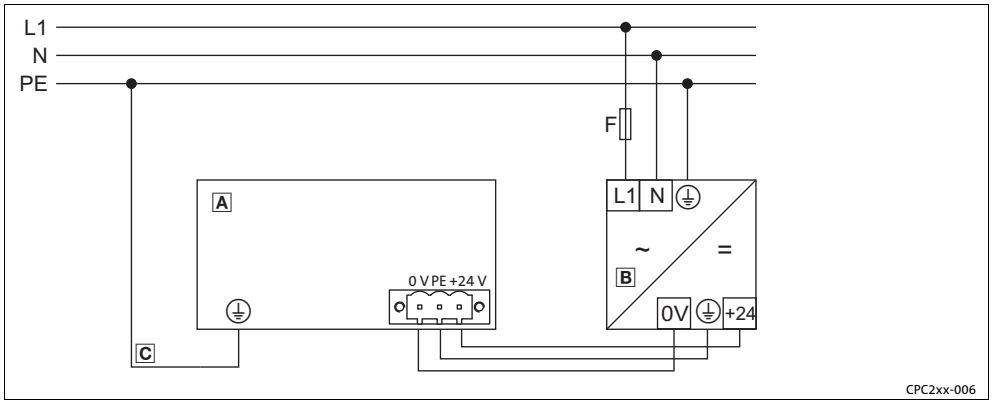
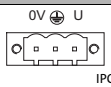


Fig. 6-1 Connection plan for voltage supply (24 V)

Pos.	Description
A	Panel Controller/HMI
B	Power supply unit
C	PE conductor connection on the supply side (PE, bridged internally with GND)

6.3.2 Mains connection (24 V)

Figure	Connection	Connection type	Cable type
 IPC001	X1: DC voltage supply (24 V)	3-pin Combicon socket	Cable with Combicon plug (conductor cross-section max. 2.5 mm²)
 IPC001	PE connection	M4 (PH 2)	Separate earth conductor (min. 2.5 mm²) with ring cable lug

6.4 Interfaces for peripheral devices

6.4.1 Ethernet interface

Figure	Connection	Connection type	Cable type
 IPC001	X3: Ethernet LAN	RJ45 socket	Network cable CAT5e S/FTP (recommended) Cable length max. 100 m

Note!

If the RJ45 plug connection is exposed to oscillating or vibrating stress:

- Use a strain relief in the immediate vicinity of the RJ45 socket.
- Select the contact surface on which the device is mounted as fixing point of the strain relief.
- Comply with the related minimum bending radius of the cable used.

6.4.2 EtherCAT interface

Support of this interface is in preparation!

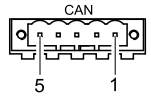
Figure	Connection	Connection type	Cable type
 IPC001	X2: EtherCAT	RJ45 socket	Network cable CAT5e S/FTP (recommended) Max. cable length 100 m

Note!

If the RJ45 plug connection is exposed to oscillating or vibrating stress:

- Use a strain relief in the immediate vicinity of the RJ45 socket.
- Select the contact surface on which the device is mounted as fixing point of the strain relief.
- Comply with the related minimum bending radius of the cable used.

6.4.3 CAN port

Figure	Connection	Connection type	Cable type
	X5: CAN bus connection Pin 1: CAN-GND (CG) Pin 2: CAN-LOW (LO) Pin 3: not assigned Pin 4: CAN-HIGH (HI) Pin 5: not assigned	5-pole Phoenix Combicon socket	CAN cable complying with ISO 11898-2 with Phoenix Combicon plug, MSTB 2.5 / 5-STF-5.8

Specification of the bus cable

We recommend using CAN cables complying with ISO 11898-2:

CAN cable complying with ISO 11898-2	
Cable type	Paired with shielding
Impedance	120 Ω (95 ... 140 Ω)
Cable resistance/cross-section	
Cable length ≤ 300 m	≤ 70 mΩ/m / 0.25 ... 0.34 mm² (AWG22)
Cable length 301 ... 1000 m	≤ 40 mΩ/m / 0.5 mm² (AWG20)
Signal propagation delay	≤ 5 ns/m

Connection plan

Stop!

Connect a 120 Ω terminating resistor to the first and last bus device.

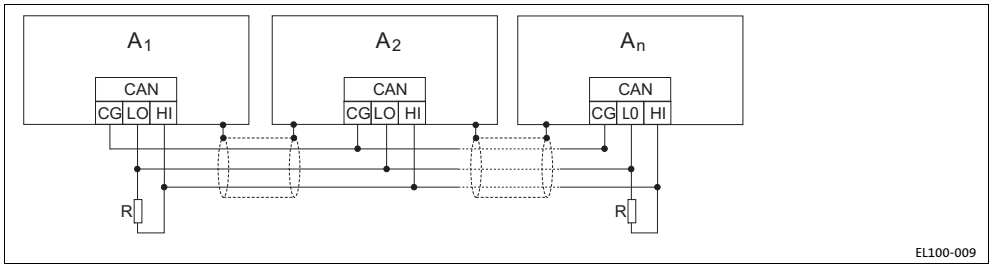


Fig. 6-2 Connection plan for the CAN bus

A1 Node 1
A2 Node 2
An Node n
CG CAN-GND
LO CAN-LOW
HI CAN-HIGH
R 120 Ω-bus terminating resistor

Shielding

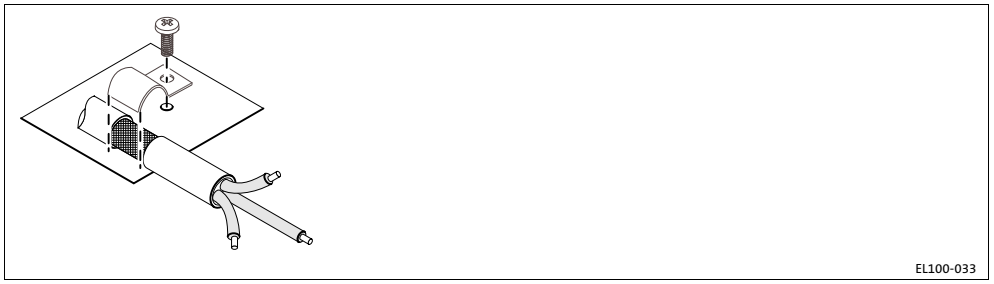


Fig. 6-3 CAN cable shield connection via cable clamp in the control cabinet

6.4.4 Cable fixing and strain relief

Fasten the cable bundles to the device using cable ties.

The fastening points for cable ties for strain relief are located at the top and at the bottom of the device, respectively.

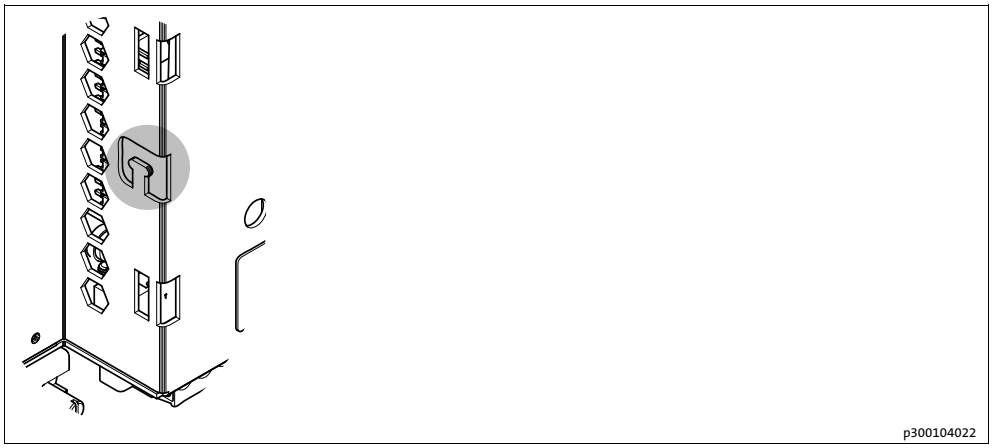


Fig. 6-4 Fastening point for cable ties for strain relief

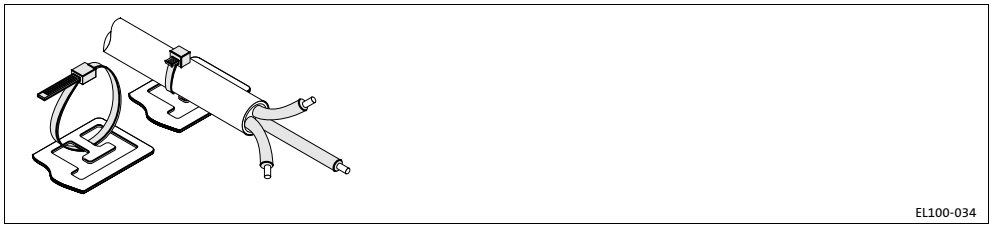
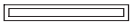


Fig. 6-5 Kabelfixierung mit Kabelbinder

6.4.5 USB interface

Figure	Connection	Connection type	Cable type
 IPC001	X4: USB 2.0 connection (max. load: 5 V/500 mA)	USB-A socket	USB cable with USB-A plug

6.4.6 SD card interface

Figure	Connection	Connection type	Cable type
	SD/SDHC card	Slot	-

Note!

The combination of control technology software and application data on the SD card ensures that the data match the application in the present version in each case. With the SD card, data in another device can be easily replaced.

This makes it possible to avoid automatic update/downgrade processes that are possibly undesirable and difficult to manage.

The SD card is used as flash memory for the following applications:

- PLC boot project (not for HMI)
- Visualisation
- Databases of the data manager
- prestart.txt/poststart.txt
- Retain and logbook data
- Customised data

The SD card is not bootable and must always be inserted!

How to exchange the SC card:

1. To unlock the SD card, press it carefully into the slot and release it.
2. Remove the SD card carefully.
3. Gently press the new SD card into the slot until it clicks into place.

7.1 Regular checks

The device is free of maintenance. Nevertheless, visual inspections should be carried out at regular intervals which must not be too long, depending on the ambient conditions.

Please check the following:

- Does the environment of the device meet the operating conditions specified in the Technical data?
- Is the heat dissipation of the device not impeded by dust or dirt?
- Are the mechanical and electrical connections o.k.?

7.2 Cleaning

Stop!

Sensitive surfaces and components

If not cleaned properly, the device may be damaged.

Possible consequences:

- The housing or the screen may be scratched or blunt if you use alcoholic, solvent-containing or abrasive detergents.
- Electric components may be destroyed ...
  – by a short circuit due to humidity.
  – by static discharge.

Protective measures:

- Before cleaning, disconnect the device from the power supply as otherwise unintentional commands may be activated via the touchscreen.
- Clean the device front (screen and frame) as follows:
  – Use a clean, soft and lint-free cloth.
  – Only use water with a fluid addition as detergent or a detergent declared especially for flat screens.
  – Moisten the cloth with the detergent. Do not spray the detergent directly on the device.
- Clean the rear side of the device with a clean, lintfree and soft cloth. Do not use liquid or foaming detergent since it may enter the housing or terminals.

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