



► PMI v704e/v707e

PILZ
THE SPIRIT OF SAFETY

Operating Manual-1003980-EN-06
- Operator terminals



This document is the original document.

Where unavoidable, for reasons of readability, the masculine form has been selected when formulating this document. We do assure you that all persons are regarded without discrimination and on an equal basis.

All rights to this documentation are reserved by Pilz GmbH & Co. KG. Copies may be made for the user's internal purposes. Suggestions and comments for improving this documentation will be gratefully received.

Pilz®, PIT®, PMI®, PNOZ®, Primo®, PSEN®, PSS®, PVIS®, SafetyBUS p®, SafetyEYE®, SafetyNET p®, the spirit of safety® are registered and protected trademarks of Pilz GmbH & Co. KG in some countries.



SD means Secure Digital

1	Introduction	5
1.1	Validity of documentation	5
1.1.1	Retaining the documentation	5
1.2	Definition of symbols	5
2	Overview	7
2.1	Unit structure	7
2.1.1	Unit features	7
2.2	Front view	8
2.2.1	PMI v704e	8
2.2.2	PMI v707e	9
2.3	Scope of supply	9
2.4	Accessories	10
3	Safety	11
3.1	Intended use	11
3.1.1	Supported hardware and software	11
3.1.2	Third-party manufacturer licence information	12
3.2	Safety regulations	12
3.2.1	Use of qualified personnel	12
3.2.2	Warranty and liability	12
3.2.3	Disposal	12
3.3	Unit-specific safety regulations	13
3.3.1	Installation site	13
3.3.2	Measures to protect against interference	13
3.3.3	Supply voltage	13
3.3.4	Operation	13
3.3.5	Maintenance	14
4	Security	15
4.1	Required security measures	15
5	Function description	17
5.1	Device properties	17
5.2	Side view	18
5.2.1	PMI v704e	18
5.2.2	PMI v707e	19
6	Installation	20
6.1	Safety	20
6.1.1	Installation site and unit surroundings	20
6.2	Dimensions	21
6.3	Installing the unit	22
6.4	Installation	23
6.4.1	PMI v704e	23
6.4.2	PMI v707e	26

7	Wiring	27
7.1	General wiring guidelines	27
7.1.1	Shielding	27
7.1.2	Measures to protect against interference voltages	27
7.2	Connecting the unit	28
7.2.1	Supply voltage	28
7.2.2	Connection example	29
7.2.3	USB socket	29
8	Commissioning	30
8.1	Setup of the device with the PMI Manager	30
8.1.1	Network settings	31
8.1.2	Configuration and Backup & Restore of the device	32
8.1.3	Settings for the PASvisu server	35
8.1.4	Third-party manufacturer licence information	38
8.1.5	Certificates	38
8.1.5.1	Trust and reject certificates	39
8.1.5.2	Generate, export and import certificates	41
8.1.6	Exit PMI Manager	43
9	Firmware update	44
10	Care and Maintenance	45
10.1	Cleaning the touchscreen	45
11	Technical details	46
12	Supplementary data	48
12.1	Network data	48
13	Order reference	49
13.1	Product	49
13.2	Accessories	49

1 Introduction

1.1 Validity of documentation

This operating manual is valid for the following products

- ▶ PMI v704e
- ▶ PMI v707e

This operating manual explains the function and operation, describes the installation and provides guidelines on how to connect the product.

1.1.1 Retaining the documentation

This documentation is intended for instruction and should be retained for future reference.

1.2 Definition of symbols

Information that is particularly important is identified as follows:



DANGER!

This warning must be heeded! It warns of a hazardous situation that poses an immediate threat of serious injury and death and indicates preventive measures that can be taken.



WARNING!

This warning must be heeded! It warns of a hazardous situation that could lead to serious injury and death and indicates preventive measures that can be taken.



CAUTION!

This refers to a hazard that can lead to a less serious or minor injury plus material damage, and also provides information on preventive measures that can be taken.



NOTICE

This describes a situation in which the product or devices could be damaged and also provides information on preventive measures that can be taken. It also highlights areas within the text that are of particular importance.



INFORMATION

This gives advice on applications and provides information on special features.

2 Overview

2.1 Unit structure

The PMI is an operator terminal that is used to operate and monitor technical processes.

2.1.1 Unit features

- ▶ Capacitive touchscreen
- ▶ Character set: Unicode
- ▶ Memory:
 - 512 MB DDR SDRAM
 - 2 GB Flash
- ▶ 1 Ethernet interface
- ▶ 1 USB Host interface 2.0 Type A
- ▶ Capacitor-buffered real-time clock
- ▶ Pre-installed software:
 - Pilz visualisation software

2.2 Front view

2.2.1 PMI v704e

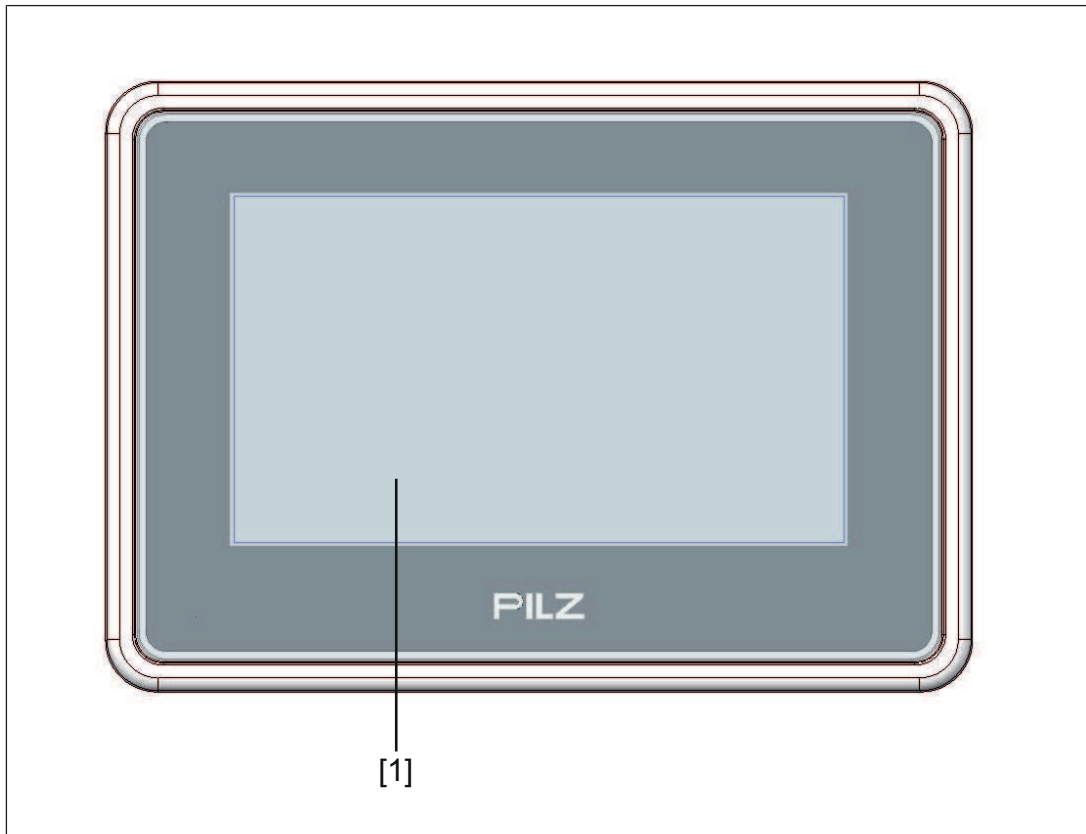


Fig.: Front view PMI v704e

Legend

[1] Touchscreen (see [Technical details](#) [ 46])

2.2.2 PMI v707e

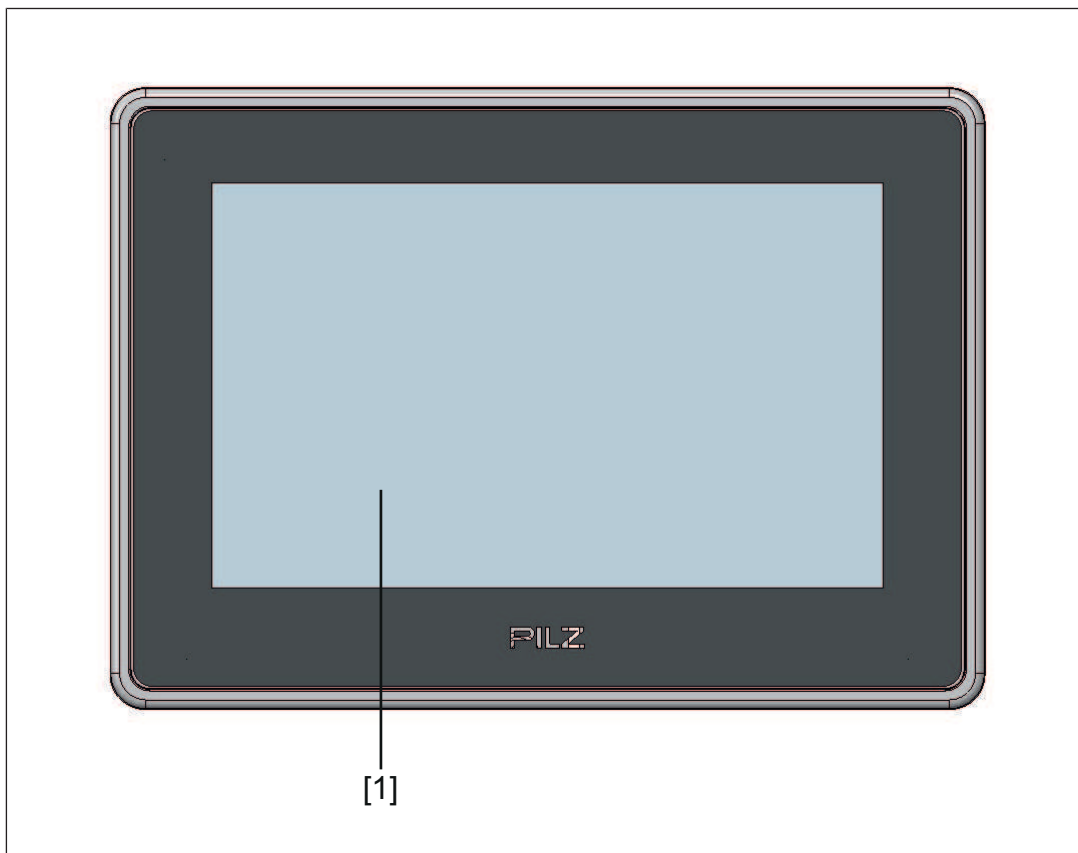


Fig.: Front view PMI v707e

Legend

[1] Touchscreen (see [Technical details](#) [ 46])

2.3 Scope of supply

- ▶ Operator terminal
- ▶ 1 clamp frame for installation
- ▶ 1 set of screws and connectors
- ▶ Projection stand in the shape of the packaging carton

2.4 Accessories

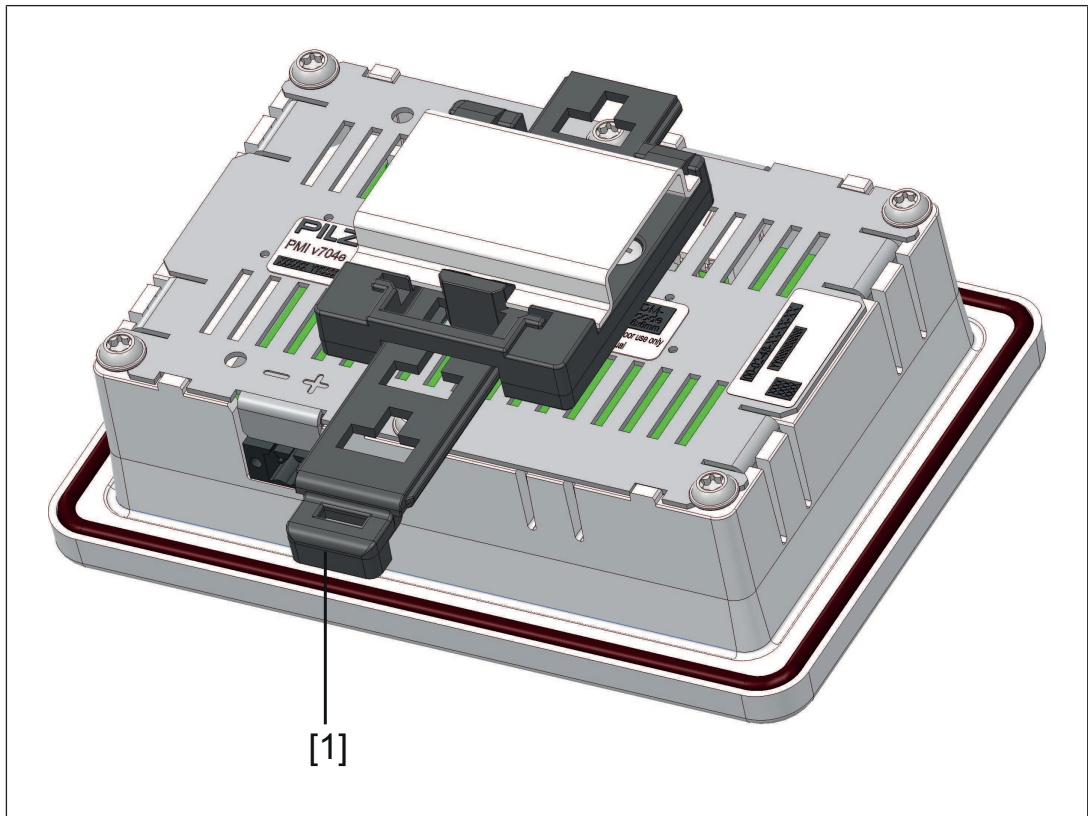


Fig.: Top hat rail for PMI v704e

Legend

[1] Top hat rail for installation in the control cabinet, see [order data](#) [ 49]



NOTICE

The top hat rail may only be used for PMI v704e.

3 Safety

3.1 Intended use

This device is used to create a point-to-point connection with a PNOZmulti device, to operate and to monitor the device.

**CAUTION!**

The product is not suitable for use in applications with stringent safety requirements (e.g. E-STOP).

Improper use

The following is deemed improper use in particular:

- ▶ Any component, technical or electrical modification to the product,
- ▶ Use of the product outside the areas described in this operating manual,
- ▶ Use of the product outside the technical details (see chapter entitled [Technical Details](#) [46]).

**NOTICE****EMC-compliant electrical installation**

The product is designed for use in an industrial environment. The product may cause interference if installed in other environments. If installed in other environments, measures should be taken to comply with the applicable standards and directives for the respective installation site with regard to interference.

3.1.1 Supported hardware and software

- ▶ PNOZmulti base units:
 - PNOZ m B0
 - PNOZ m B0.1
 - PNOZ m B1
 - PNOZ m B1 Burner
 - ▶ PNOZmulti Configurator from Version 11.4.0
 - ▶ PASvisu Builder from Version 1.15.0
- Further information on PASvisu can be found in the PASvisu online help.

3.1.2 Third-party manufacturer licence information

The product contains open source software, whose terms of use could further limit the product's application area. It is essential that you observe the third-party manufacturer licence information.



Further information is available by calling up the button in the PMI Manager sidebar.

3.2 Safety regulations

3.2.1 Use of qualified personnel

The products may only be assembled, installed, programmed, commissioned, operated, de-commissioned and maintained by persons who are competent to do so.

A competent person is a qualified and knowledgeable person who, because of their training, experience and current professional activity, has the specialist knowledge required. In order to inspect, assess and handle products, devices, systems, plant and machinery, this person must be familiar with the state of the art and the applicable national, European and international laws, directives and standards.

It is the company's responsibility only to employ personnel who

- ▶ Are familiar with the basic regulations concerning health and safety / accident prevention,
- ▶ Have read and understood the information provided in the section entitled Safety
- ▶ Have a good knowledge of the generic and specialist standards applicable to the specific application.

3.2.2 Warranty and liability

All claims to warranty and liability will be rendered invalid if

- ▶ The product was used contrary to the purpose for which it is intended,
- ▶ Damage can be attributed to not having followed the guidelines in the manual,
- ▶ Operating personnel are not suitably qualified,
- ▶ Any type of modification has been made (e.g. exchanging components on the PCB boards, soldering work etc.).

3.2.3 Disposal

- ▶ When decommissioning, please comply with local regulations regarding the disposal of electronic devices, such as the Electrical and Electronic Equipment Act.

3.3 Unit-specific safety regulations

Before you install or commission the system, you should refer to any guidelines laid down by the control manufacturer or operator.

3.3.1 Installation site

- ▶ Do not position PMI close to highly flammable materials.
- ▶ When installing the unit within a control cabinet, you must ensure the ventilation slots are not obstructed, otherwise the unit could be damaged through overheating.
- ▶ Protect the unit from direct sunlight and dust.

3.3.2 Measures to protect against interference

- ▶ If necessary, use bulkhead separators to protect the unit from sources of interference.
- ▶ Inductive loads within the environment (e.g. contactor, relay and magnetic valve coils) should be wired using suppression elements (e.g. RC elements). This is particularly important if these inductive loads are fed from the same supply.
- ▶ The power cables and the data cables should be physically separate from each other in their own conduits (recommended minimum distance: 10 cm/3.94"). This will avoid inductive and capacitive interference.
- ▶ PMI v707e: The prescribed earth point  for the functional earth is designed to guarantee compliance with noise immunity requirements.
Always connect the functional earth to the central earth point in star form. A cable cross section of at least 1.5 mm² should be used. Connections should be kept as short as possible.

3.3.3 Supply voltage

- ▶ The supply voltage must be +24 V DC



CAUTION!

Safe electrical isolation must be ensured for the external power supply generating the 24 V voltage supply. Failure to do so could result in electric shock. Power supplies must conform to DIN VDE 0551/EN 60742 and EN 50178.

3.3.4 Operation

- ▶ Plan the system correctly to ensure that a communication error between the PMI and the host computer does not cause a malfunction.
- ▶ The maximum ambient temperature must not be exceeded when using the unit.
- ▶ Do not pour liquids over the unit or insert any objects into the unit.
- ▶ When in storage and during operation, protect the unit from vibration and shock.
- ▶ Avoid using chemicals close to the system.

3.3.5 Maintenance

- ▶ Do not use thinners or organic solvents to clean the unit and touchscreen surface.

Further information on care and maintenance of the touchscreen can be found in the chapter "Care and Maintenance".

4 Security

To secure plants, systems, machines and networks against cyberthreats it is necessary to implement (and continuously maintain) an overall industrial security concept that is state of the art.

Perform a risk assessment in accordance with VDI/VDE 2182 or IEC 62443-3-2 and plan the security measures with care. If necessary, seek advice from Pilz Customer Support.

4.1 Required security measures

- ▶ The product is not protected from physical manipulation or from reading of memory contents during physical access. Use appropriate measures to ensure that there is no physical access by unauthorised persons. You should also use security seals so that you can detect any manipulation of the product or interfaces. Installation inside a lockable control cabinet is recommended as a minimum measure.
- ▶ The configuration computer that accesses the product has to be protected from attacks by a firewall or other suitable measures. We recommend that a virus scanner is used on this configuration computer and updated regularly.
- ▶ If necessary, protect the configuration computer and the product from unauthorised use by assigning passwords and taking further measures if required. We also recommend that the user logged on to this configuration computer does not have administrator rights.
- ▶ Protect the product from unauthorised data exchange via the network by using a firewall or providing other appropriate measures. Only allow the data exchange that's required for the application. Any data exchange that is not required for the application must be prevented by the firewall.
- ▶ As soon as possible, install firmware updates that Pilz provides for the product.
- ▶ The product permits firmware downgrades. Before you downgrade, you should check what firmware version you install to prevent re-opening up safety gaps that are already known and that were closed by a firmware update.
- ▶ Use only one USB memory from a secure source. A manipulated USB memory could compromise the system.
- ▶ Before disposal, the product must be safely decommissioned. To do this, all the data must be deleted from the device.
 - Set the configuration back to its default settings or delete the configuration.
 - Switch off the product.
 - If the product includes a removable data medium, remove it and format it at the computer. Do not carry out a quick formatting. Alternatively, you can use a program to safely delete data or destroy the memory mechanically.

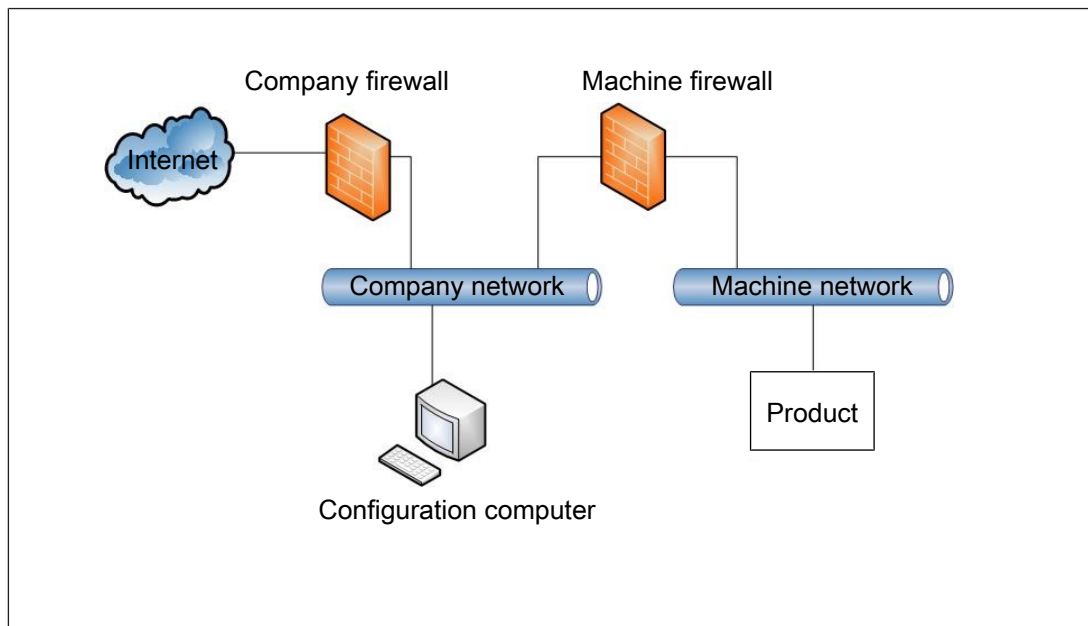


Fig.: Example network topology

- Note the [network data](#) [48] for risk analysis and the security measures.

5 Function description

5.1 Device properties

The operator terminal has a memory in which a Pilz visualisation software is preinstalled. With the help of this software, processes can be shown on the display and directly influenced via the touchscreen. An Ethernet interface is available for the transfer of data, e.g. diagnostic data, and for communication with other subscribers.

The device is fitted with a real-time clock that is capacitor-buffered, so allowing it to run for approx. 14 days without an external power supply. The capacitor is automatically charged during operation via the device's power supply.

5.2 Side view

5.2.1 PMI v704e

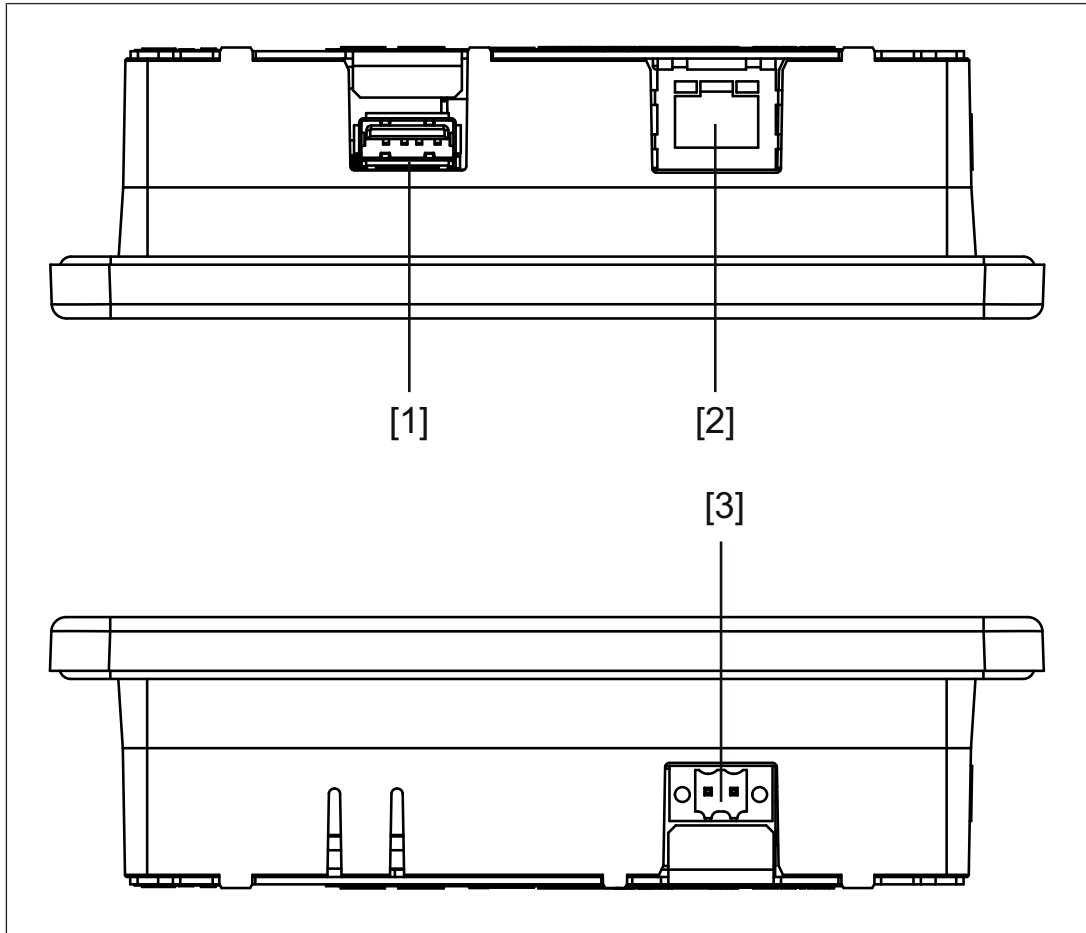


Fig.: Side view PMI v704e

Legend

- [1] USB Host
- [2] Ethernet interface (100 BaseTX)
- [3] Supply voltage

5.2.2

PMI v707e

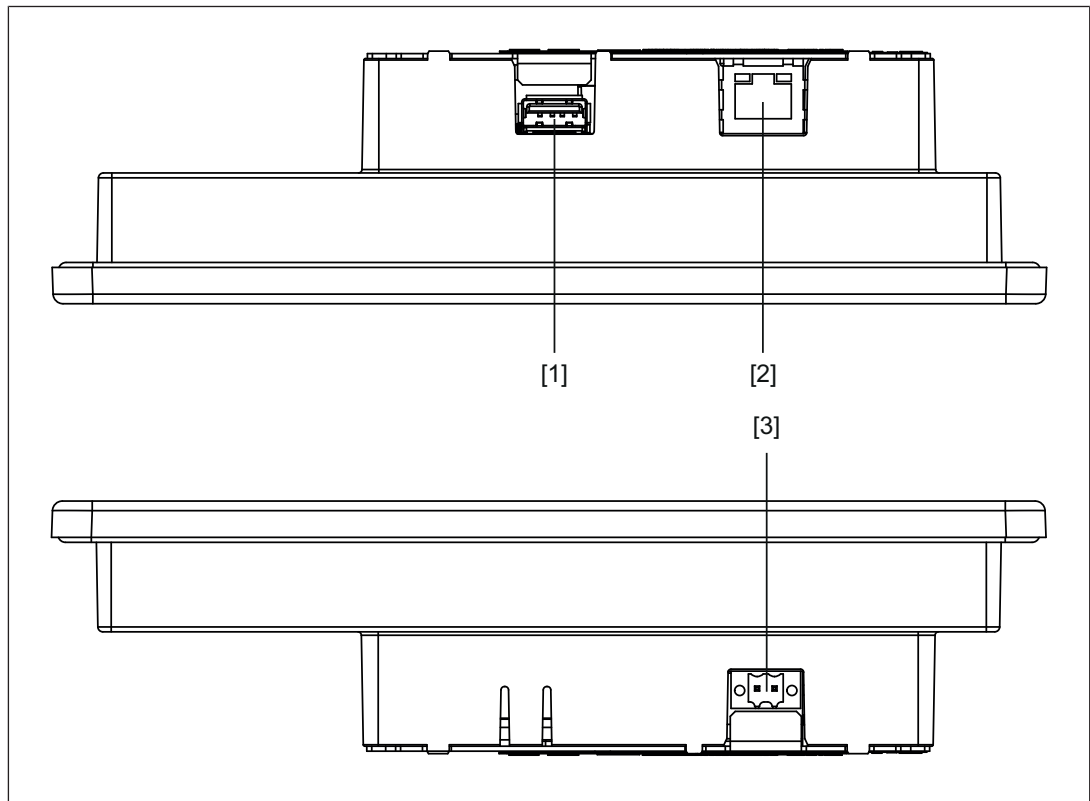


Fig.: Side view PMI v707e

Legend

- [1] USB Host
- [2] Ethernet interface (100 BaseTX)
- [3] Supply voltage

6 Installation

6.1 Safety



NOTICE

Damage due to electrostatic discharge!

Electrostatic discharge can damage components. Ensure against discharge before touching the product, e.g. by touching an earthed, conductive surface or by wearing an earthed armband.

Please read the safety guidelines before assembling and installing the product.

Before you install or commission the system, you should refer to any guidelines laid down by the plant manufacturer or operator.

6.1.1 Installation site and unit surroundings

- ▶ Keep as large a distance as possible between the system and any electromagnetic fields, particularly when frequency converters are nearby.
- ▶ To avoid the build-up of heat, a distance of 10 cm/3.94" should be kept free all round the unit.
- ▶ Protect the system from direct sunlight and dust
- ▶ Do not use chemicals close to the system.
- ▶ Ensure the maximum ambient and operating temperatures are not exceeded.
- ▶ Ensure that neither liquids nor objects can enter the unit at any time.
- ▶ Do **not** position the system close to flammable materials.

6.2 Dimensions

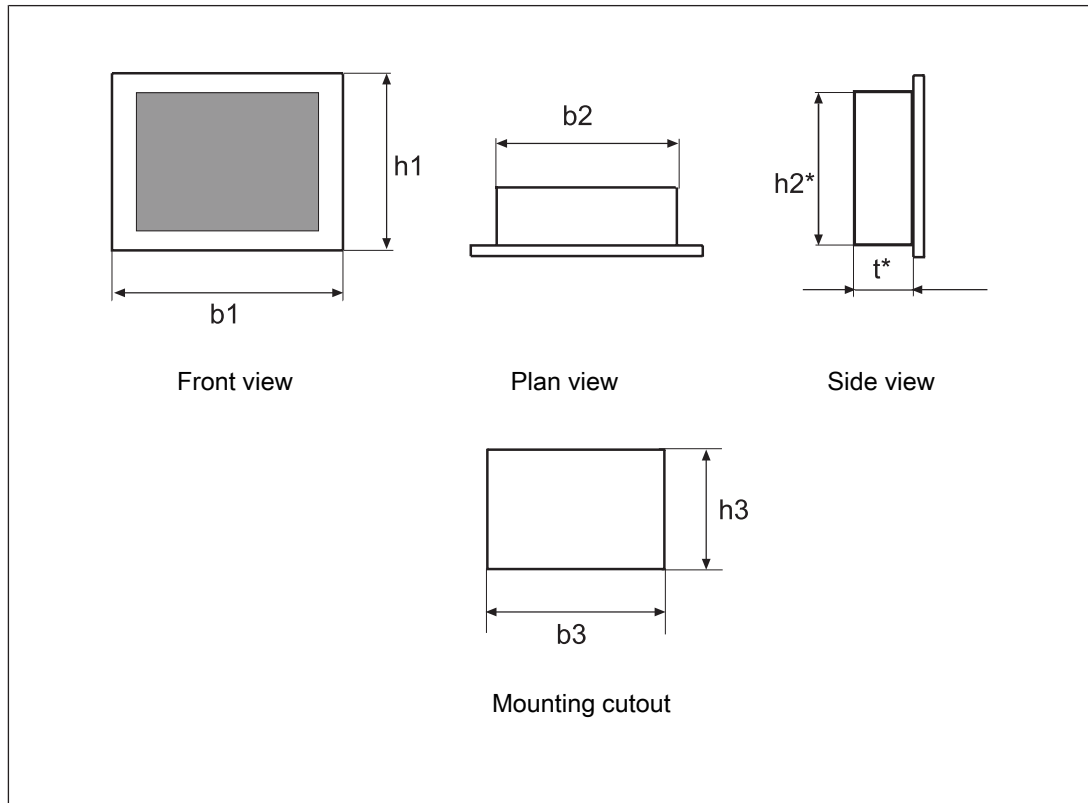


Fig.: Dimensions

	PMI v704e	PMI v707e
b1/mm	135 (5.315")	200 (7.874")
h1/mm	95 (3.740")	142 (5.591")
b2/mm	116,6 (4.591")	182 (7.165")
h2*/mm	77,6 (3.055")	124 (4.882")
t*/mm	29 (1.142")	43 (1.693")
b3/mm	117 + 1 (4.606" + 0.039")	183 + 1 (7.205" + 0.039")
h3/mm	78 + 1 (3.071" + 0.039")	125 + 1 (4.921" + 0.039")

h^*/t^* = Dimensions without connections

$b2/h2^*$ = Dimensions without press-in frame

Allow extra for hardware connections!

6.3 Installing the unit

When installing the device, please note the following:

- ▶ For reasons of stability, the front panel, console or control cabinet should have a wall thickness of at least 2.5 mm. The wall thickness may be maximum 5 mm.
- ▶ To avoid a build-up of heat, a distance of a 10 cm/3.94" should be maintained all round the system.
- ▶ Note the information given for the ambient and operating temperatures in the [Technical details](#)  46].
- ▶ IP65 protection can only be guaranteed when
 - the device's fixing screws are tightened with a torque of 1 Nm
 - the gasket is not damaged
 - the mounting position is vertical (the Pilz logo has to be at the bottom)
 - the wall thickness is at least 2.5 mm.

6.4 Installation

6.4.1 PMI v704e

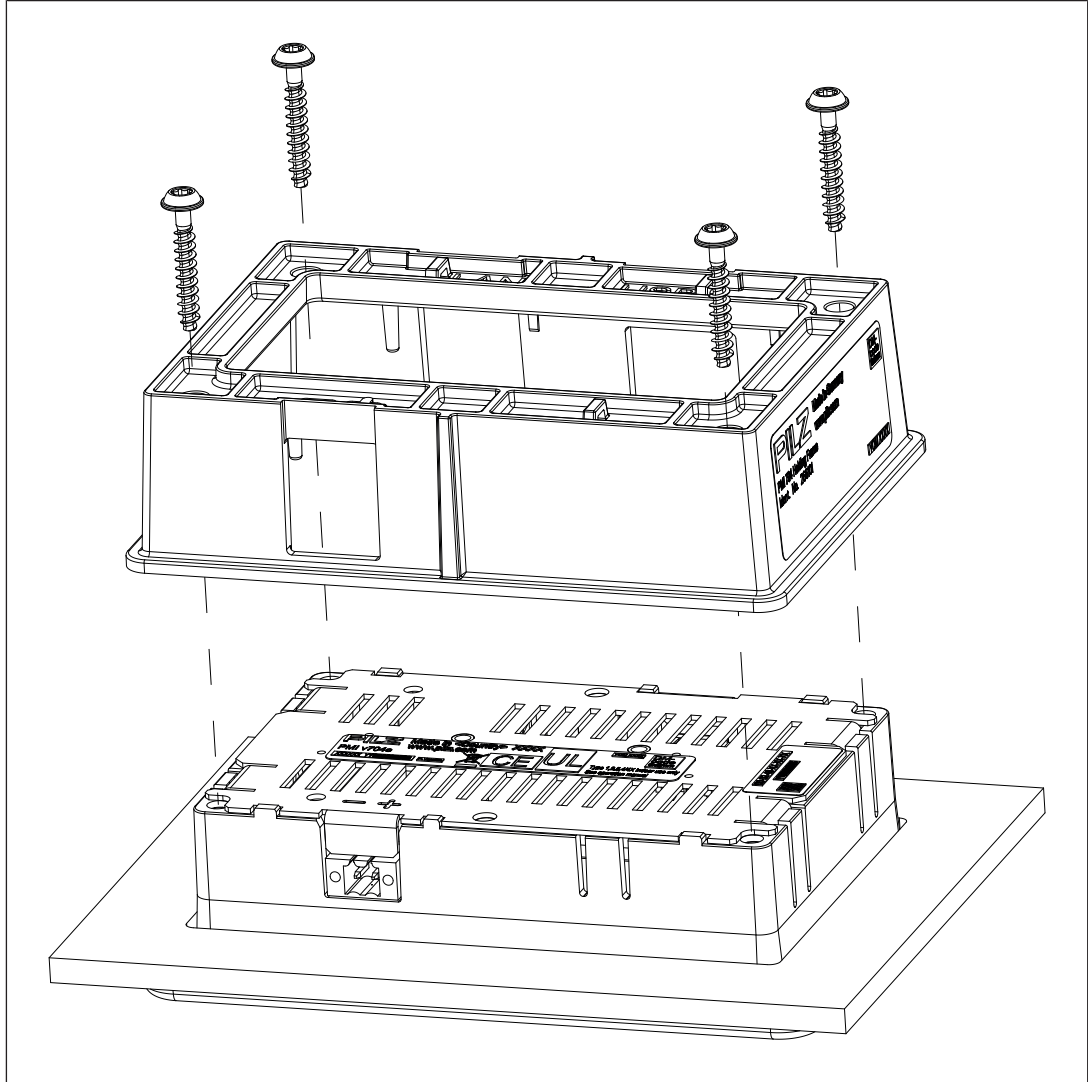


Fig.: Installing PMI v704e

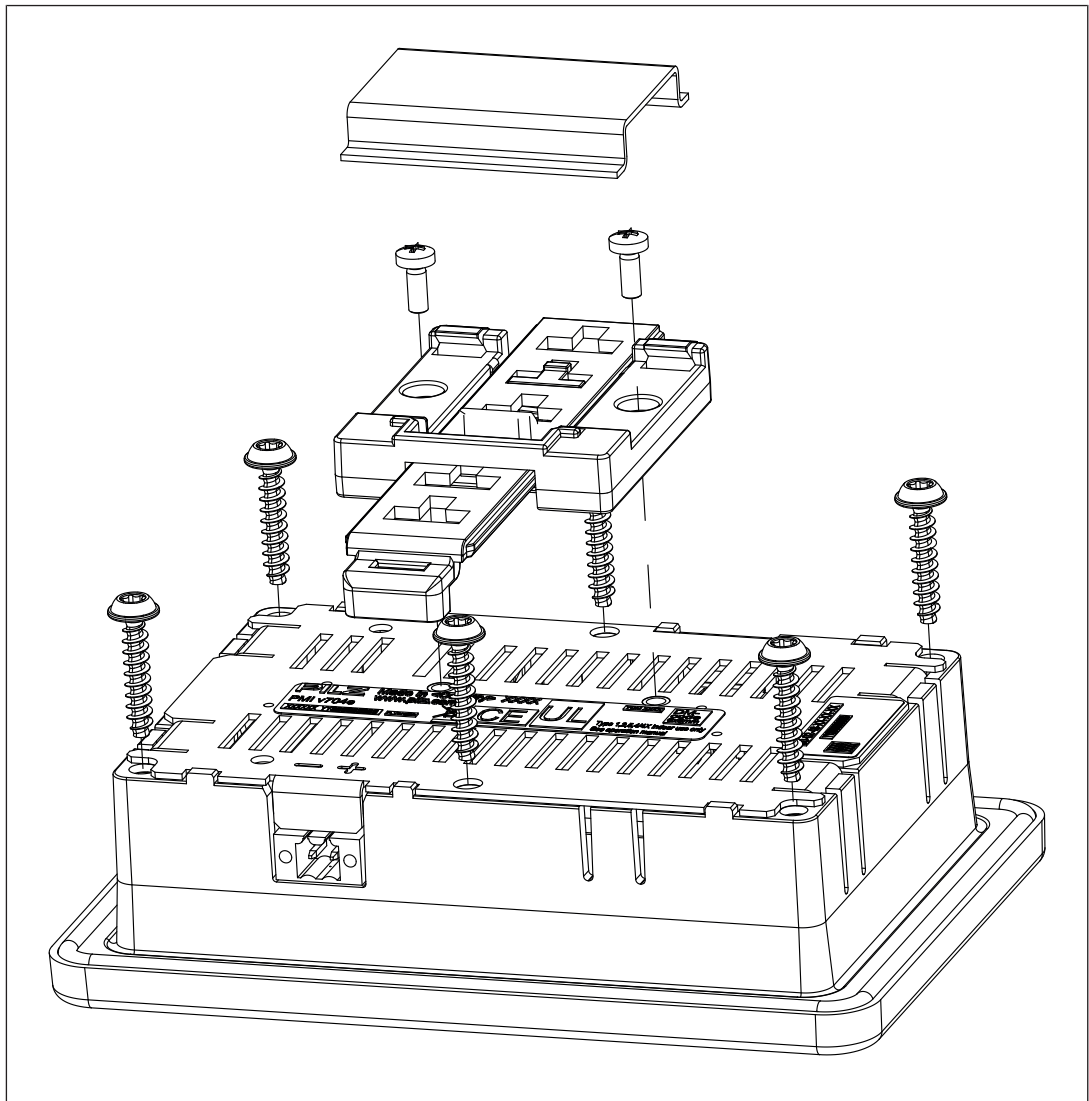


Fig.: Installing PMI v704e with top hat rail

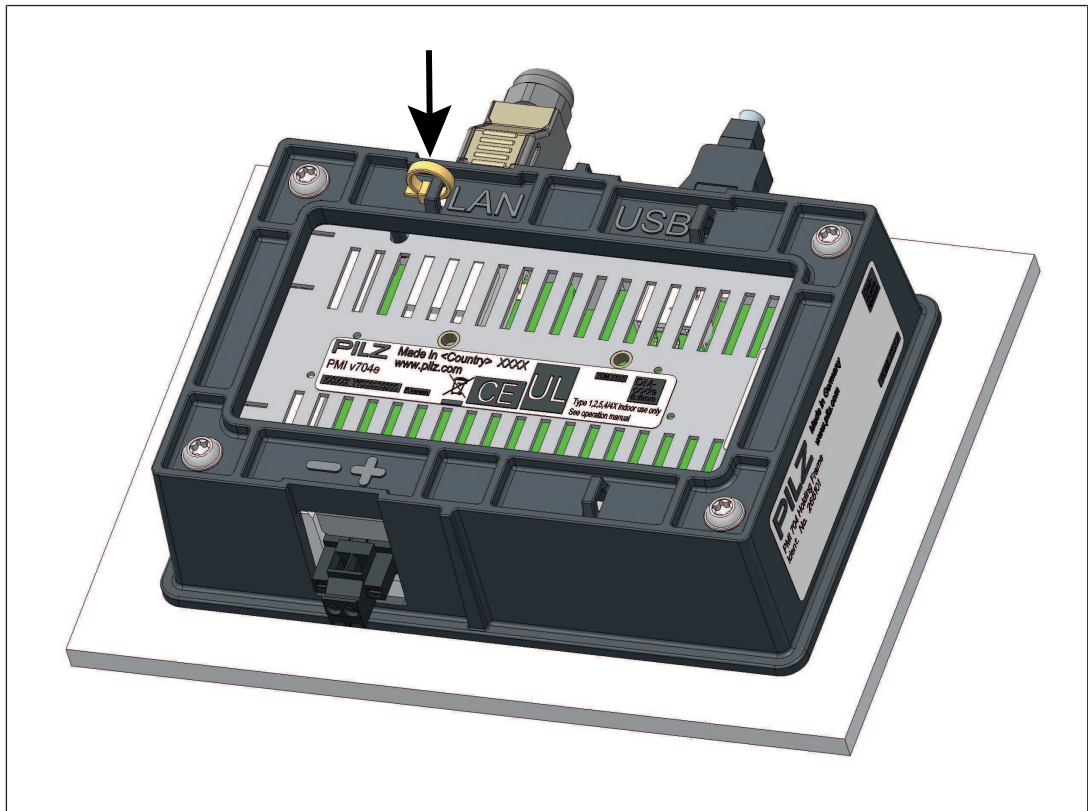


Fig.: Strain relief for Ethernet and USB cables PMI v704e

6.4.2

PMI v707e

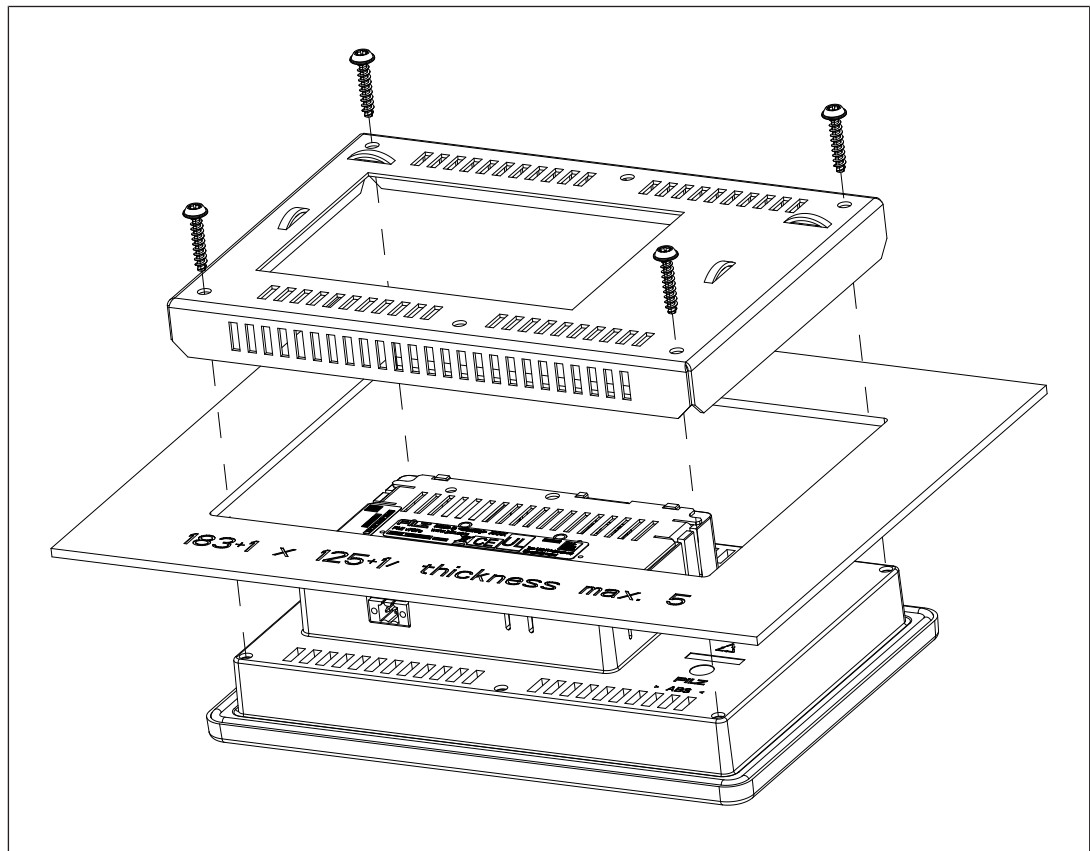


Fig.: Installing PMI v707e

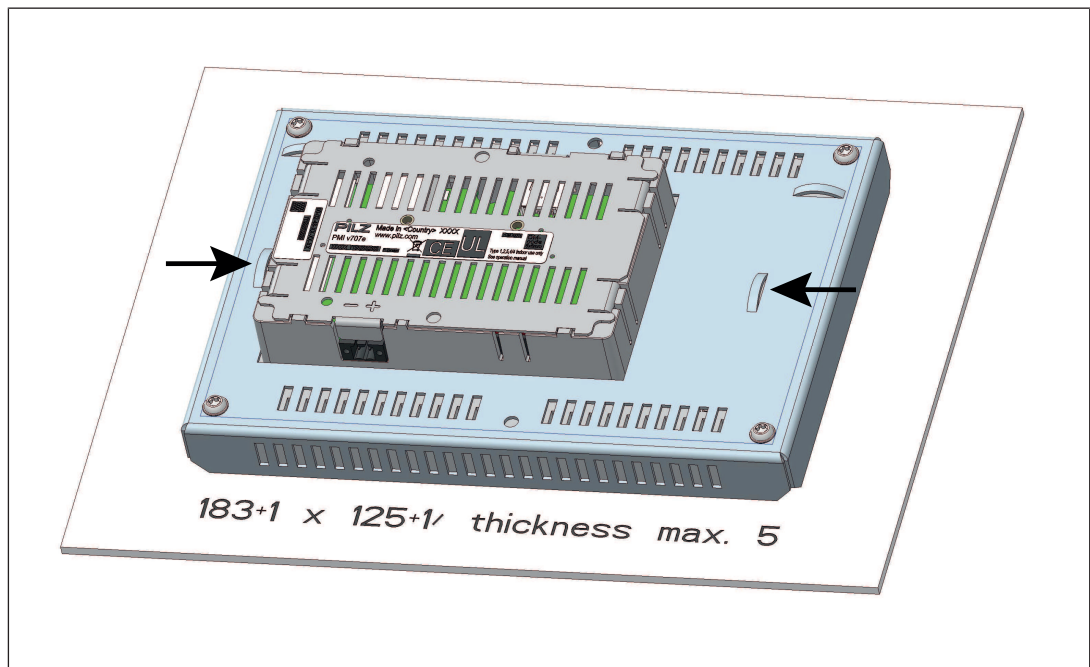


Fig.: Strain relief for Ethernet and USB cable PMI v707e

7 Wiring

7.1 General wiring guidelines

- ▶ Electrical or electronic components which could cause interference (contactors, thyristors, relay coils and solenoid valve coils) should be physically separate from data lines.
We recommend you use a sheet metal (MU metal) bulkhead between both areas.
- ▶ Data lines and power lines should be laid separately to avoid capacitive and inductive interference (recommended minimum distance = 10 cm/3.94")
- ▶ Shielded data lines should also be laid in a different cable duct to the main power cables.
- ▶ Power cables should be as short as possible.
- ▶ Power cables should be twisted pair cables.
- ▶ Use only a max. length of 3 m for the USB cable, to guarantee reliable data transfer.
- ▶ UL requirement: The power supply must comply with the regulations for extra low voltages with safe electrical separation (SELV, PELV) in accordance with UL 61010-2-201 (IEC 61010-2-201:2013).
- ▶ UL requirement: Only use copper wiring that will withstand 60/75°C for the supply voltage; maximum torque setting: 0.5-0.6 Nm.

7.1.1 Shielding

- ▶ Connect the network cable shields with low impedance to earth.
- ▶ Use shielded data lines only.
- ▶ Use equipotential bonding cables.
- ▶ Perform a potential isolation.
- ▶ Data line shielding should be connected to a cable shield bus bar.
- ▶ The connection between the cable shield bus bar and the control cabinet/system should be as short as possible and with low impedance.
- ▶ Fasten the braided screening to the bus bar over a largest surface area as possible (e.g. with metal hose clips or polyurethane (PU) cable clips).

7.1.2 Measures to protect against interference voltages

- ▶ Wire-up inductive loads (e.g. contactor coils, relay coils and solenoid valve coils) using suppression elements (e.g. RC networks). This is particularly important if these inductive loads are very close to the power supply or are fed from the same supply.
- ▶ If strong magnetic fields are present, we recommend you use a bulkhead separator, i.e. metal sheet (MU-metal).

7.2 Connecting the unit

7.2.1 Supply voltage

The connection for the 24 V DC supply voltage is located on the side of the housing.

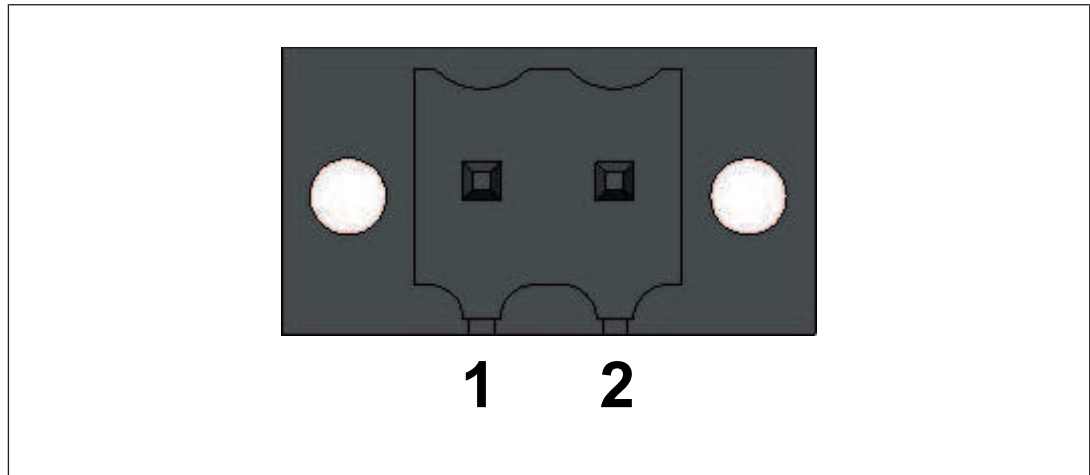


Fig.: Layout of supply voltage connector

- ▶ 1: + 24 V DC
- ▶ 2: 0 V

UL requirement: Use a 24 VDC power supply (isolating source).

7.2.2 Connection example

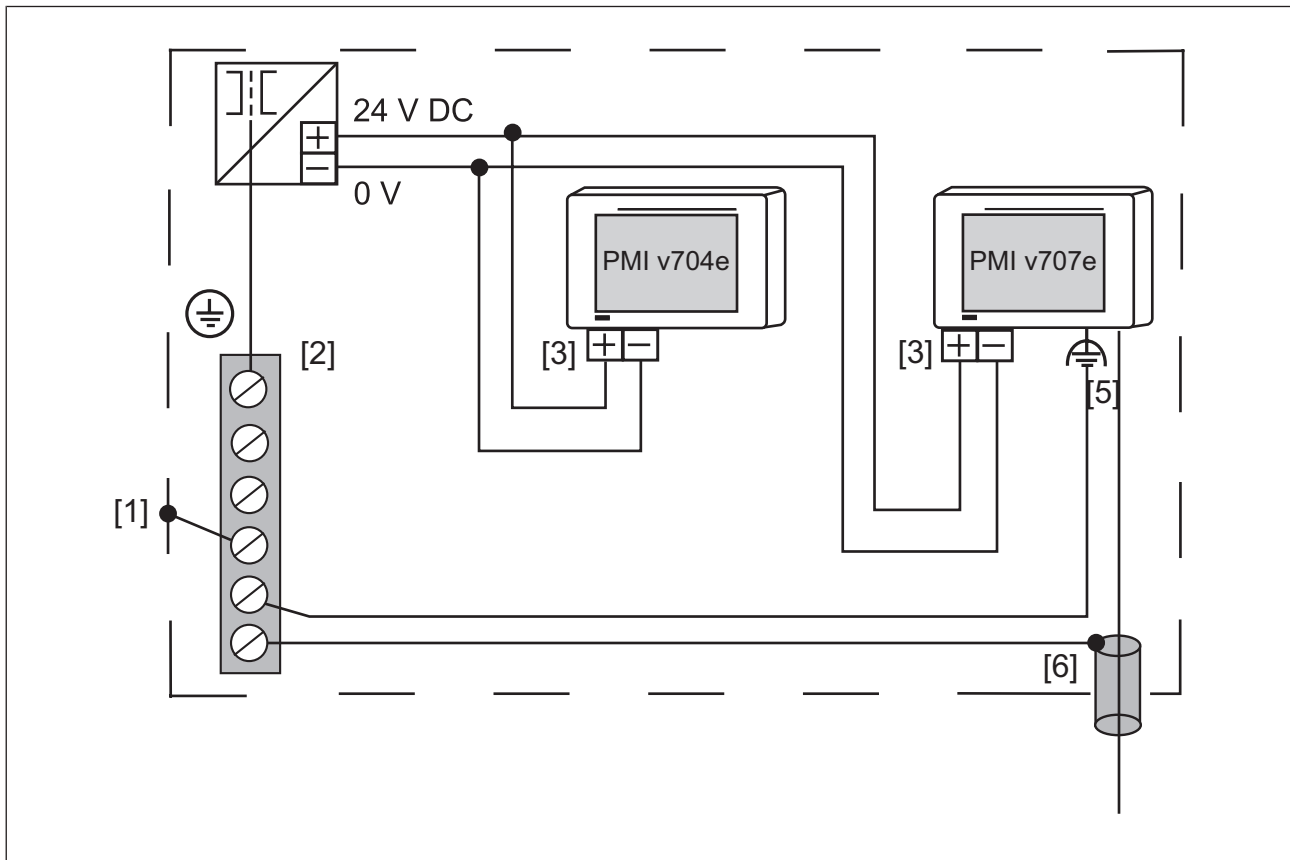


Fig.: Connection example

7.2.3 USB socket

The USB socket (screen/housing) is connected directly (not capacitive) to ground (GND). If a GND connection is to be created to a remote point (e.g. via an USB-RS485 converter or similar), an unlimited and possibly damaging equalising current can flow over the shield. In this case, the interface should be galvanically isolated.

8 Commissioning

Behaviour after switch-on

There may be a delay of several seconds between switch-on and the unit being ready for operation.

8.1 Setup of the device with the PMI Manager



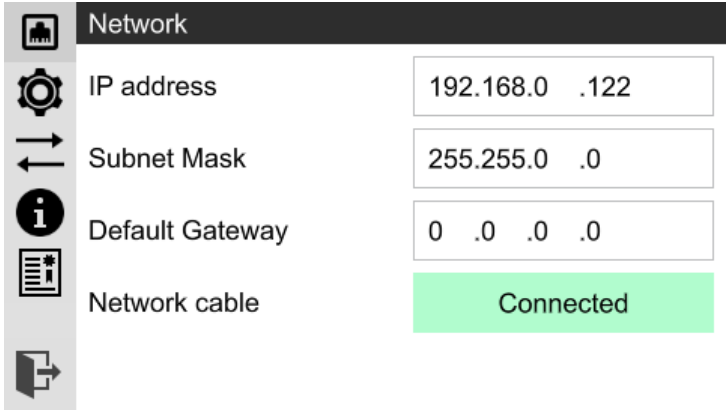
After starting the PMI, you can make basic settings for the device in the PMI Manager. To



do this, click on the button within 5 seconds.
The interface is only available in English.

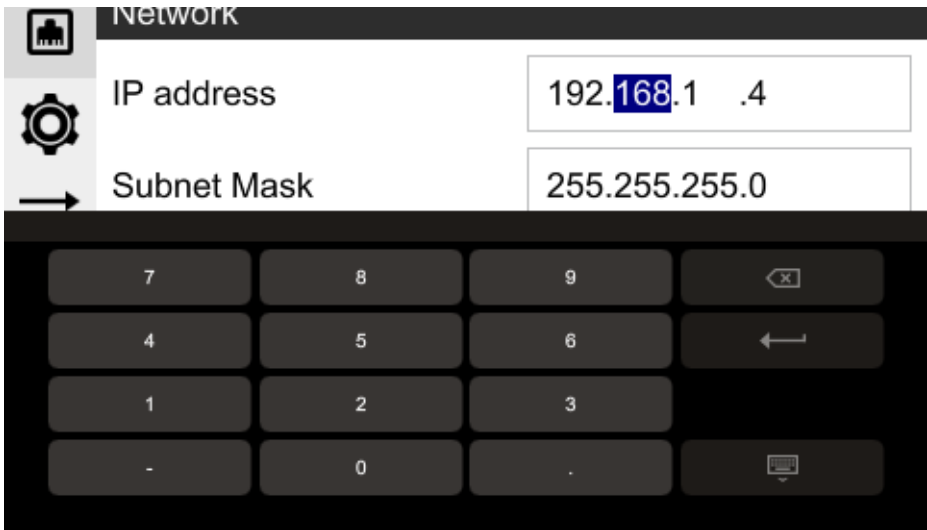
8.1.1 Network settings

After starting, the following view will open where you can configure all the required network settings:



The screenshot shows a 'Network' settings screen with a sidebar containing icons for a factory, settings, arrows, information, a list, and a document. The main area has four rows: 'IP address' with the value '192.168.0 .122', 'Subnet Mask' with '255.255.0 .0', 'Default Gateway' with '0 .0 .0 .0', and 'Network cable' with a green 'Connected' button.

► When you click on a field, a key field will open for entering the address.

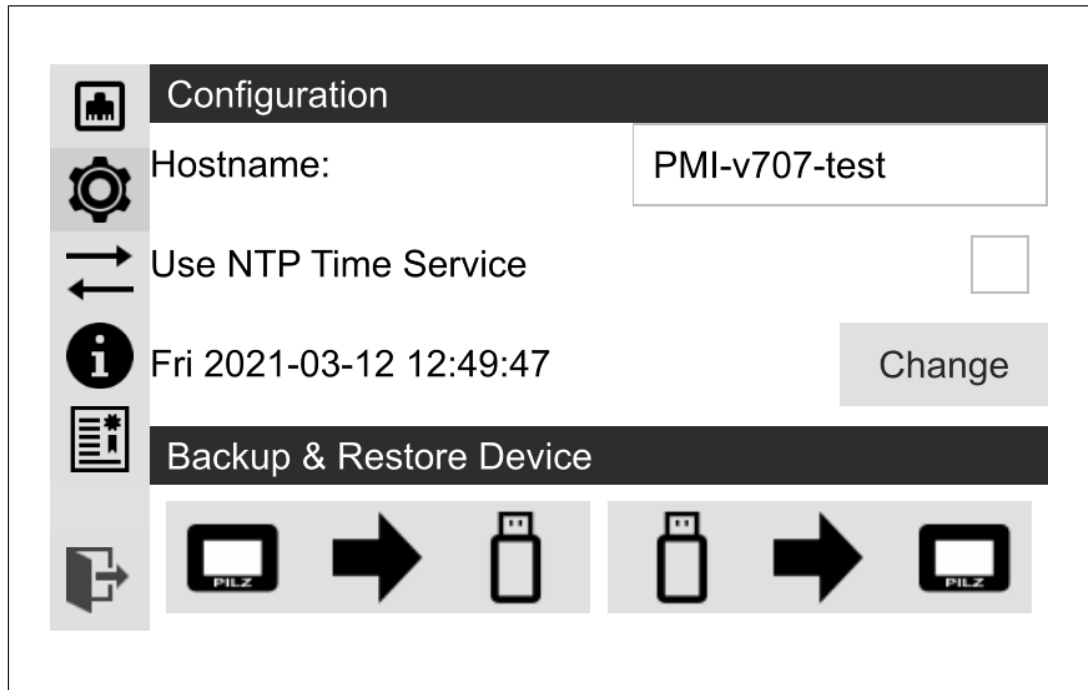


This screenshot shows the same 'Network' settings screen, but with a numeric keypad overlay. The 'IP address' field is active, showing '192.168.1 .4' with '168' highlighted in blue. The 'Subnet Mask' field shows '255.255.255.0'. The keypad has buttons for digits 0-9, a decimal point, a backspace key, and a left arrow key.

8.1.2 Configuration and Backup & Restore of the device

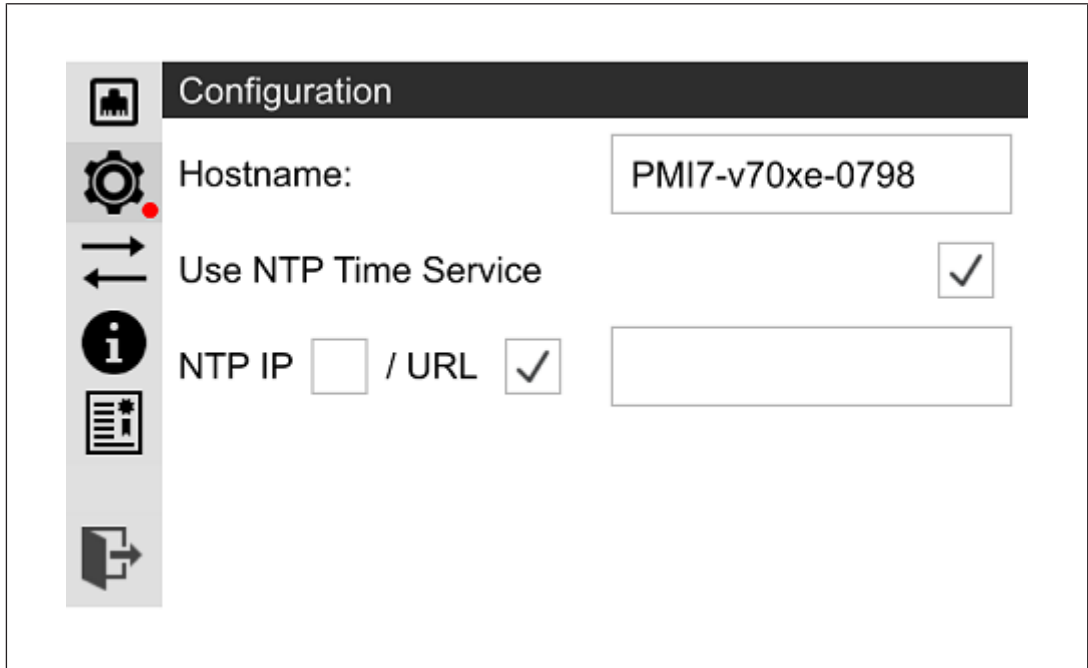


In the sidebar, click on the  button to make further settings. The following view will open:



Configuration

- ▶ The host name is entered automatically and can be changed.
- ▶ You can use a time server. To do this, click on the empty field behind "Use NTP Time Service".
You can select whether you want to enter an IP address in IPv4 format or a URL (e.g. the address of the German metrology institute PTB is "ptbtime1.ptb.de").



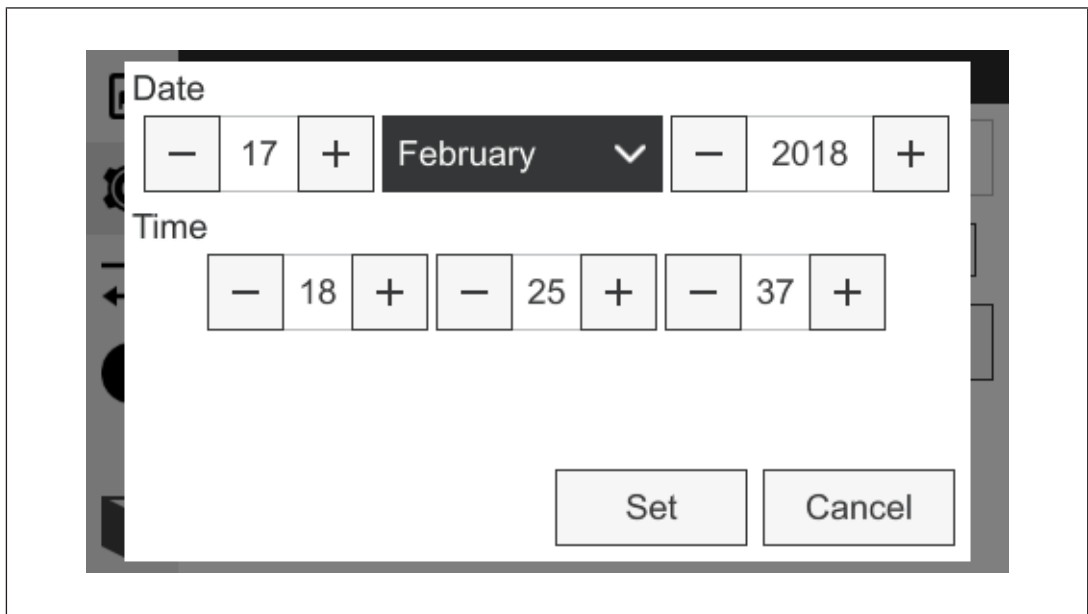
The screenshot shows the 'Configuration' menu with a sidebar containing icons for Home, Settings, Network, Information, and Exit. The main content area has the following fields:

- Hostname:** A text box containing 'PMI7-v70xe-0798'.
- Use NTP Time Service:** A checkbox that is checked.
- NTP IP / URL:** A section with two radio buttons. The 'URL' button is selected. To the right of the radio buttons is an empty text box for entering the IP or URL.

- ▶ The local time will automatically be adopted as the system time.

Change

Click on the **Change** button to change the date or time. Enter the time in 24 hour format "hh:mm:ss".



The screenshot shows a 'Date' and 'Time' configuration dialog. The 'Date' section has three groups of controls: a day selector (17), a month dropdown (February), and a year selector (2018). The 'Time' section has three groups of controls: hours (18), minutes (25), and seconds (37). At the bottom right are 'Set' and 'Cancel' buttons.

Backup & Restore Device

You can save a backup copy of the device configuration and the PASvisu application on a USB stick. Diagnostic information for Pilz technical support is also saved there. You can also perform a restore, i.e. transfer a backup copy from a USB stick to the device. To restore, only one backup copy may be saved on the USB stick.

The buttons for Backup & Restore are only visible when a USB stick is inserted.



INFORMATION

Backup & Restore is possible only within the same firmware version and the same device type.

8.1.3 Settings for the PASvisu server

In the sidebar, click on the  button to make further settings for the PASvisu server.

► Remote Server

Enter the IP address of the PASvisu Server in IPv4 format.

Default setting:

IP Address: 127.000.000.001

Server HTTP port: 40856

Server WS port: 40857

PASvisu Server			
	Remote Server	Server Authentication	Data Logging
	IP address	127.0 .0 .1	
	HTTP port	40856	
	WebSocket port	40857	
			

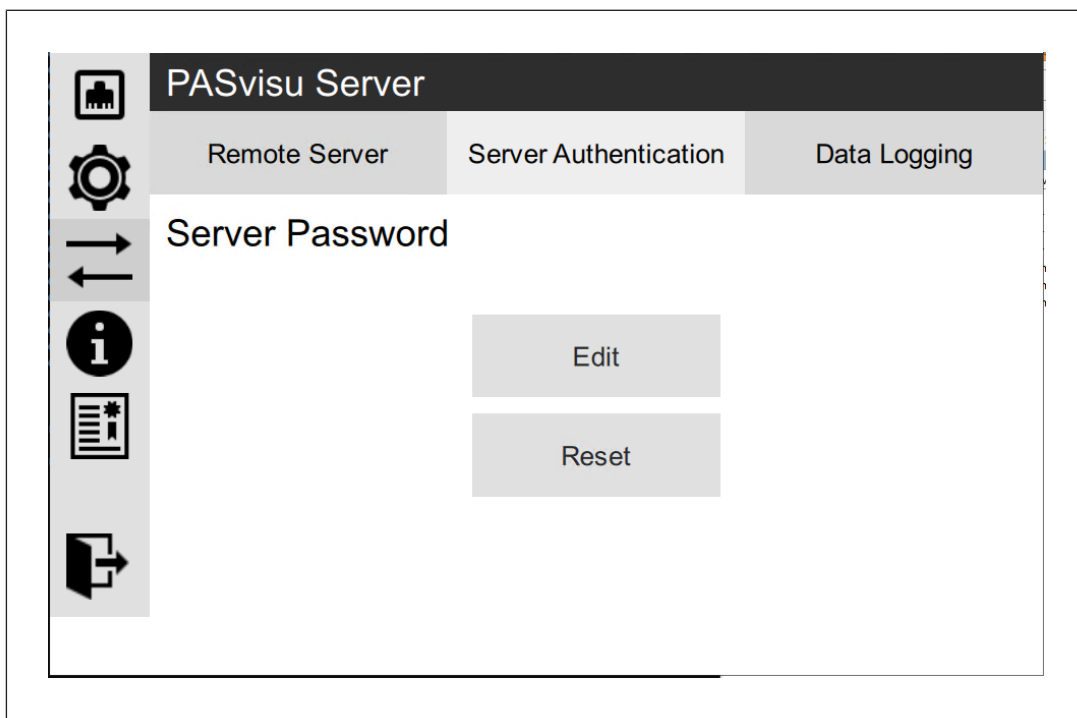
► Authentication on the PASvisu Server

The system can be configured so that a user has to log in to the PASvisu Server in order to gain access to the PASvisu Server. Login is required for the following actions:

- Download a project in the PASvisu Builder
- Configuration of the PASvisu Server in the PASvisu Server configuration tool

The authentication can protect the PASvisu Server from unauthorised access. This protection is only effective against unintended or random misuse.

You can deactivate the authentication by deleting the password.



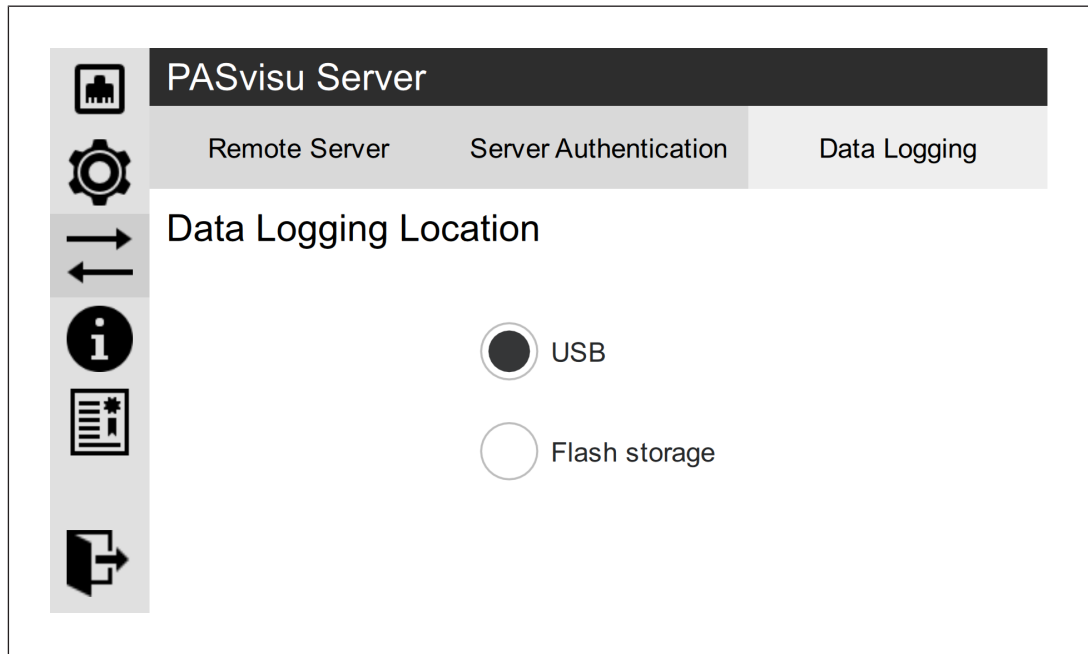
NOTICE

For security reasons we recommend that you activate the authentication to protect the PASvisu Server from unauthorised access.

► Data Logging

You can set whether data logging is to be

internal  or external (USB stick, default setting) .

**NOTICE**

With external data logging, the USB stick must not be removed during operation.

**INFORMATION**

With internal data logging, the lifetime of the Flash memory in PMI v7 is reduced.

8.1.4 Third-party manufacturer licence information



In the sidebar, click on the  button to display the third-party licence information.








About

PASvisu v1.10.0 (visu/Release_v_1_10_0 62)

PMI Firmware Version: 01.04.00.20210414T123416-1.10.0

Technical support - Telephone support round the clock!

Technical support is available from Pilz round the clock. We provide this service beyond our business hours free of charge.

Hotline: +49 711 3409-222
E-Mail: support@pilz.com
Internet: www.pilz.com

Legal information

8.1.5 Certificates



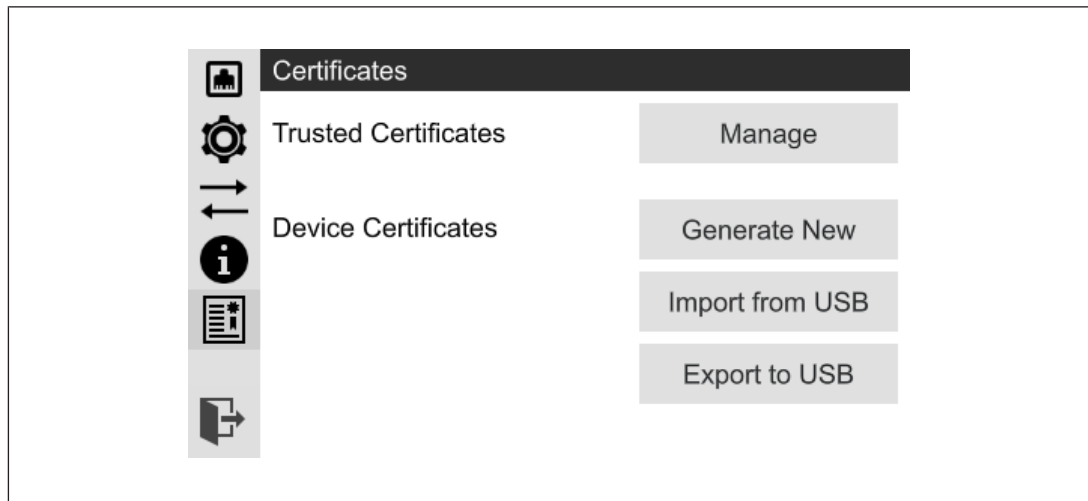
Click on the  button to manage certificates.

Communication between PASvisu Server and PASvisu Builder, PASvisu Client and the PASvisu Server configuration tool is via http connections. The connections are encrypted asymmetrically. X.509 certificates are used (see also PASvisu Online help).

When the PASvisu Server is launched for the first time, a private key and a default certificate are created for the PASvisu Server. If you change the IP address of the PMI or the host name, you will need to generate new keys and certificates. You can have the PASvisu Server create a new private key and a new default certificate at any time. If you want to use a proprietary certificate instead of the default certificate, you can load it from the USB stick into the PMI.

8.1.5.1 Trust and reject certificates

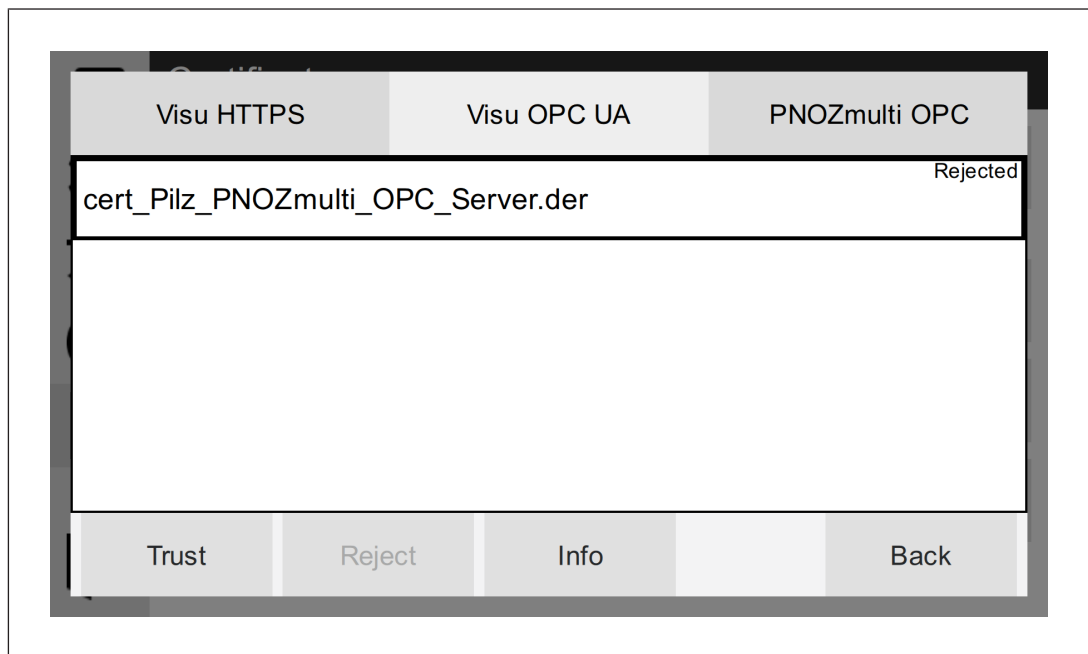
- If you click on **Manage**, you have the option to reject or trust certificates.



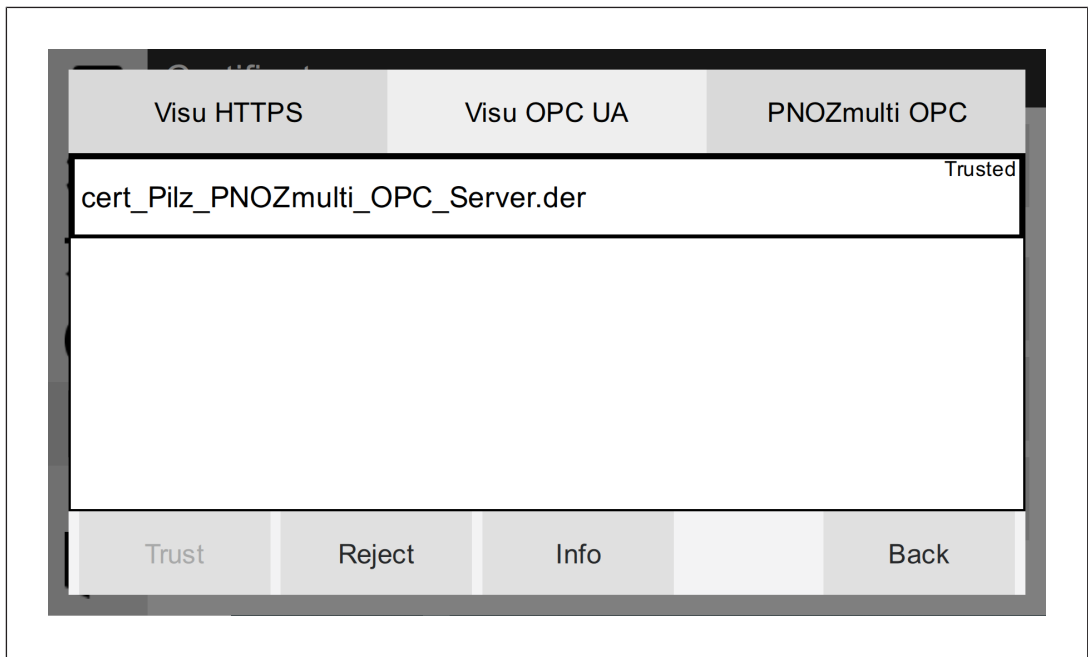
NOTICE

Only trust certificates whose origin you know.
The content of the certificate should match the content of the certificate on the device from which it comes. It is sufficient just to compare the finger-prints.

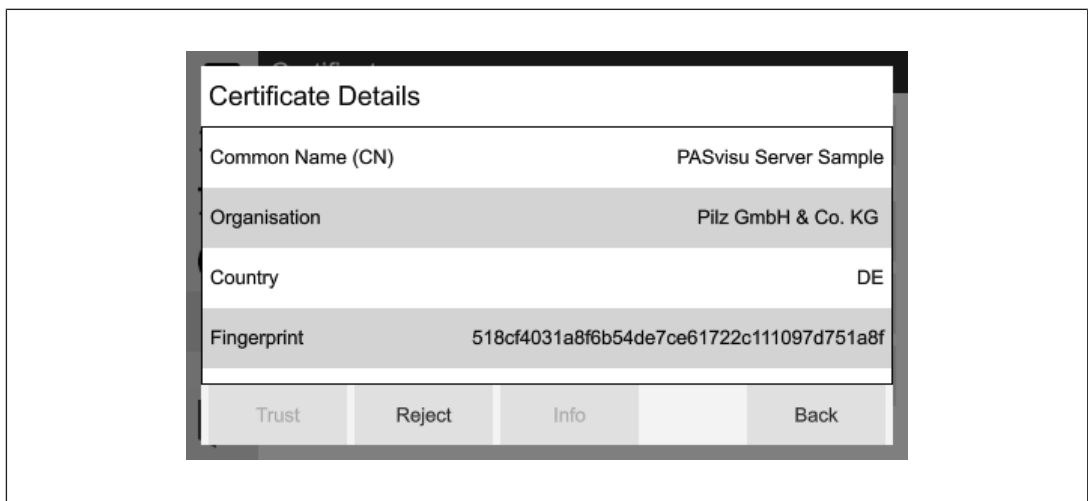
- By default, new certificates are classed and marked as "Rejected".



- If you wish to trust a certificate, select the certificate and click on **Trust**. The certificate is marked as "Trusted".



- Select a certificate and click on **Info** button to receive detailed information.

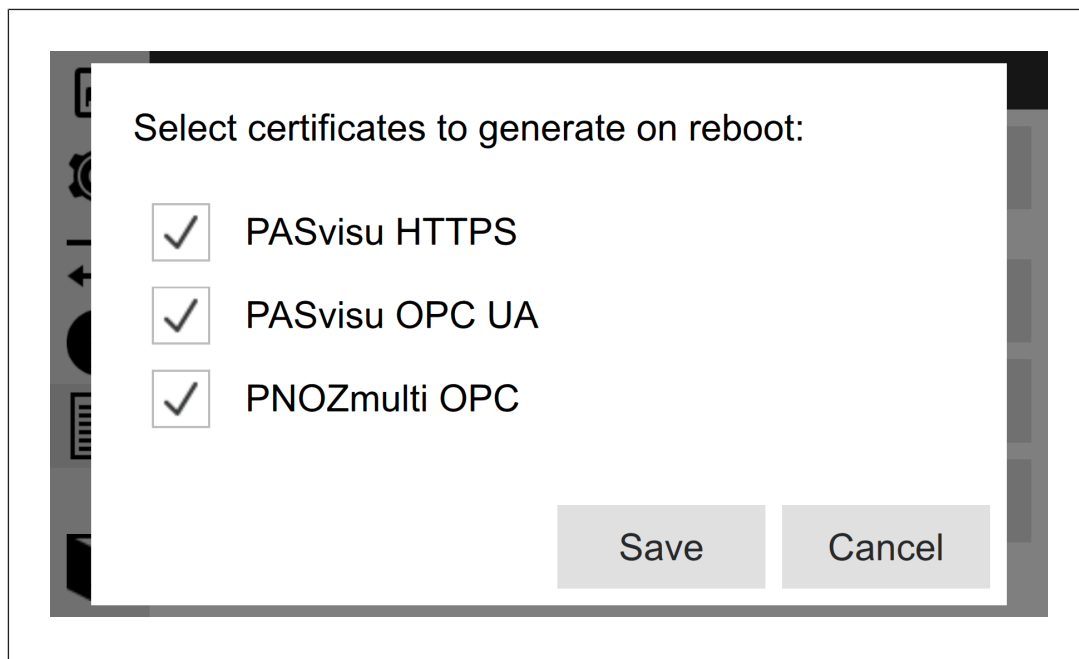


8.1.5.2 Generate, export and import certificates

You have the following options under **Device Certificates**:

► **Generate New**

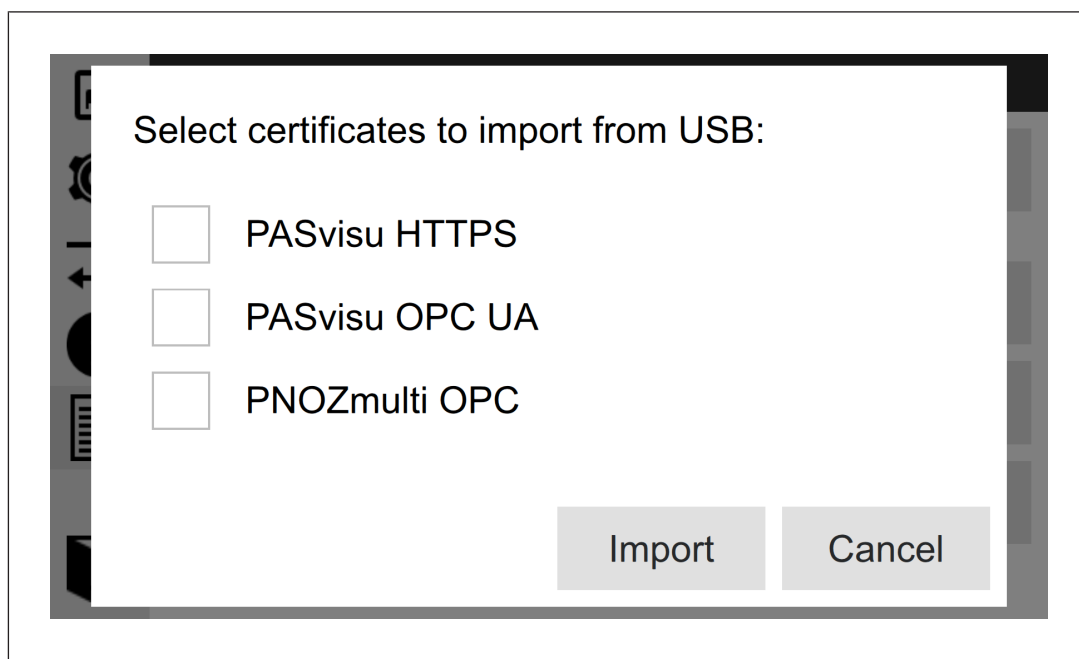
If you change the IP address of the PMI or the host name, you will need to generate new keys and certificates. You can select which certificates are to be generated, then the device reboots.



► **Import from USB**

This button is only activated if a USB stick is inserted.

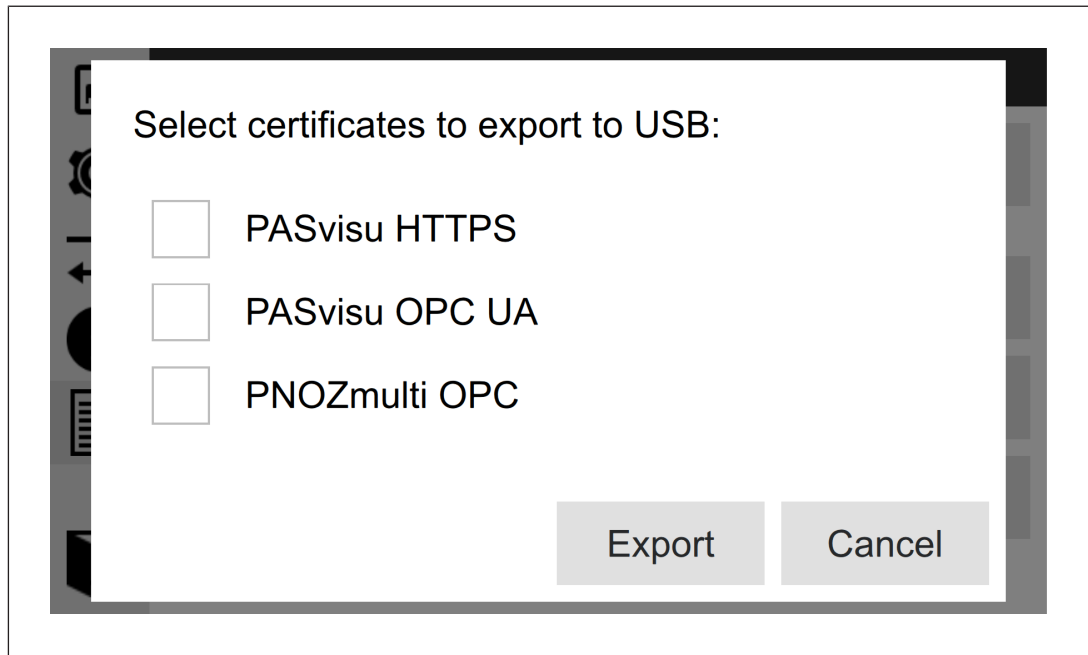
You can select which certificates are to be imported from the USB stick.



► **Export to USB**

This button is only activated if a USB stick is inserted.

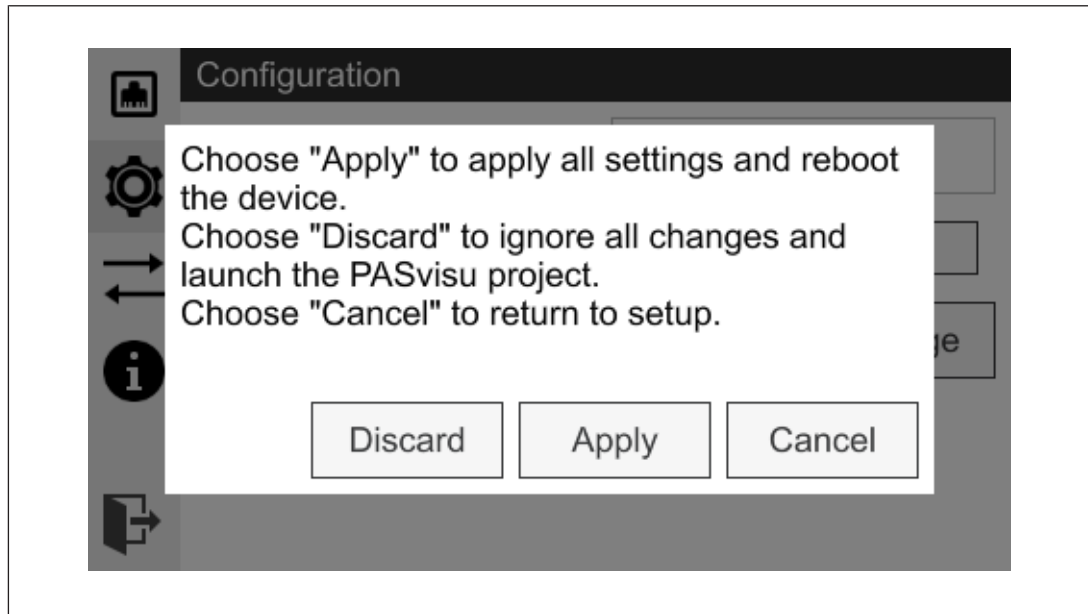
You can select which certificates are to be stored on the USB stick.



8.1.6 Exit PMI Manager



In the sidebar, click on the  button to exit the PMI Manager. The following view will then open:



- ▶ Click on "Apply" to confirm all the entries and reboot the device.
- ▶ Click on "Discard" to reject the changes and launch the PASvisu project.
- ▶ Click on "Cancel" to return to the settings.

Further information on PASvisu can be found in the PASvisu online help.

9 Firmware update

The firmware of the PMI v704e/v707e can be updated.

An update package can be downloaded to the device from the download area on the Pilz website.

The update is performed via a USB stick.

If you wish to update the firmware, proceed as follows:

1. Download the update package and unpack it in the root directory of a USB stick that has been formatted with FAT32.
2. Plug the USB stick into the PMI v704e/v707e and start the PMI v704e/v707e.
3. The **Firmware update** window will appear. Please note that the PASvisu project is deleted during a firmware update. Click **Yes** to start the firmware update or **Cancel** to cancel the firmware update.
4. If you click **Yes** a window will appear, stating that the device must not be switched off during the firmware update and that the USB stick must not be removed. Click **Continue**.
5. Once the firmware has been successfully updated a window will appear, stating that the USB stick must be removed in order to restart the PMI v704e/v707e. Remove the USB stick and click **Continue**.
6. The PMI v704e/v707e will restart.



INFORMATION

From firmware version 1.2.0 it is not possible to downgrade to a firmware version <1.2.0. It is possible to downgrade from firmware Version 1.2.2 to 1.2.0, for example.



INFORMATION

From hardware version 1.1 it is not possible to downgrade to an earlier firmware version. The hardware version 1.1 cannot be downgraded to the firmware version 1.3.0, for example.



NOTICE

Please note that a Firmware downgrade creates the risk of again opening up safety gaps that are already known and that were closed by a firmware update.

10 Care and Maintenance

10.1 Cleaning the touchscreen

Clean the unit's touchscreen at regular intervals. Use a damp cloth to do this.



NOTICE

Make sure the unit is switched off before cleaning it. This prevents you from accidentally triggering functions when you touch the touchscreen.

Cleaning agents

Only use water and washing-up liquid or window cleaner to dampen the cloth. Never use aggressive solvents or abrasive cleaning agents.

11 Technical details

Where standards are undated, the 2018-01 valid editions apply.

General	266704	266707
Certifications	CE, EAC, UKCA, cULus Listed	CE, EAC, UKCA, cULus Listed
Operating system	Linux	Linux
Electrical data	266704	266707
Supply voltage		
Voltage	24 V	24 V
Kind	DC	DC
Voltage tolerance	-10 %/+10 %	-15 %/+20 %
Output of external power supply (DC)	2 W	3 W
Max. output of external power supply (DC)	4 W	6 W
Display	266704	266707
Display type	TFT	TFT
Display diagonal	11 cm	18 cm
Display resolution	480 x 272	800 x 480
Display colour depth	262144	262144
Touchscreen	Capacitive	Capacitive
CPU	266704	266707
Processor clock speed	800 MHz	800 MHz
Working memory (RAM)	512 MB	512 MB
Real-time clock	Yes	Yes
USB interface	266704	266707
Number of USB Hosts	1	1
Type of USB host interface	USB 2.0 Type A	USB 2.0 Type A
Ethernet interface	266704	266707
Transmission rate	100 MBit/s	100 MBit/s
Environmental data	266704	266707
Ambient temperature		
in accordance with the standard	EN 60068-2-14	EN 60068-2-14
Temperature range	0 - 50 °C	0 - 50 °C
Storage temperature		
in accordance with the standard	EN 60068-2-1/-2	EN 60068-2-1/-2
Temperature range	-25 - 60 °C	-25 - 60 °C
Climatic suitability		
in accordance with the standard	EN 60068-2-78	EN 60068-2-78
Humidity	90 % r. h. at 40 °C	90 % r. h. at 40 °C
Condensation during operation	Not permitted	Not permitted

Environmental data	266704	266707
EMC	EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-6-2, EN 61000-6-4	EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-6-2, EN 61000-6-4
Vibration		
in accordance with the standard	EN 60068-2-6	EN 60068-2-6
Frequency	10 - 150 Hz	10 - 55 Hz
Acceleration	1g	1g
Shock stress		
in accordance with the standard	EN 60068-2-27	EN 60068-2-27
Acceleration	15g	15g
Duration	11 ms	11 ms
Protection type		
in accordance with the standard	EN 60529	EN 60529
Housing	IP20	IP20
in accordance with UL	1,2,5	1,2,5
Front	IP65	IP65
Mechanical data	266704	266707
Dimensions		
Height	95 mm	142 mm
Width	135 mm	200 mm
Depth	36,3 mm	50,3 mm
Weight	435 g	925 g

12 Supplementary data

12.1 Network data

Protocol	Direction	Transport protocol	Port no.	Can be deactivated	Time-critical	Description
OPC Server UA Stack	In	TCP	4862	Yes Default: active	No	X.509 certificate. Signed and encrypted in OPC UA Client.
PVIS PNOZm Online	Out	TCP	9000	Yes Default: active	No	
Syslog	Out	UDP	512	Yes Default: active	No	Default: "localhost"
Local Discovery Server (mDNS)	Out	UPD	5253	Yes Default: active	No	
PASvisu web-socket	In/out	TCP	40856, 40857, 40858	Yes Default: active	No	Transport protection by TLSv1.2. Access to the user interface via user name and password. The server is authenticated via an X.509 certificate.
PASvisu server client	Out	TCP	502, 4890	No	No	
Simple Network Time Protocol (client)	Out	UDP	123	No	No	No safety measures implemented

13 Order reference

13.1 Product

Product type	Features	Order no.
PMI v704e	Operator terminal, 480 x 272 pixel resolution, capacitive touchscreen	266 704
PMI v707e	Operator terminal, 800 x 480 pixel resolution, capacitive touchscreen	266 707

13.2 Accessories

Product type	Features	Order no.
DIN rail adapter TSH 35	DIN top hat rail TSH 35	266 103

Support

Technical support is available from Pilz round the clock.

Americas

Brazil

+55 11 97569-2804

Canada

+1 888 315 7459

Mexico

+52 55 5572 1300

USA (toll-free)

+1 877-PILZUSA (745-9872)

Asia

China

+86 400-088-3566

Japan

+81 45 471-2281

South Korea

+82 31 778 3300

Australia and Oceania

Australia

+61 3 95600621

New Zealand

+64 9 6345350

Europe

Austria

+43 1 7986263-444

Belgium, Luxembourg

+32 9 3217570

France

+33 3 88104003

Germany

+49 711 3409-444

Ireland

+353 21 4804983

Italy, Malta

+39 0362 1826711

Scandinavia

+45 74436332

Spain

+34 938497433

Switzerland

+41 62 88979-32

The Netherlands

+31 347 320477

Türkiye

+90 216 5775552

United Kingdom

+44 1536 462203

**You can reach our
international hotline on:**

+49 711 3409-222

support@pilz.com

Pilz develops environmentally-friendly products using ecological materials and energy-saving technologies. Offices and production facilities are ecologically designed, environmentally-aware and energy-saving. So Pilz offers sustainability, plus the security of using energy-efficient products and environmentally-friendly solutions.



CECE®, CHRE®, CMSE®, INDUSTRIAL P®, Leansafe®, Myzel®, PAS4000®, PAScal®, PASconfig®, Pilz®, PIT®, PMCPrimo®, PMCProtego®, PMCTendo®, PMD®, PM®, PNOZ®, Primo®, PSN®, PSN®, PSS®, PVS®, SafetyBUS p®, SafetyNET p®, THE SPIRIT OF SAFETY® are registered and protected trademarks of Pilz GmbH & Co. KG in some countries. We would point out that product features may vary from the details stated in this document, depending on the status at the time of publication and the scope of the equipment. We accept no responsibility for the validity, accuracy and entirety of the text and graphics presented in this information. Please contact our Technical Support if you have any questions.

We are represented internationally. Please refer to our homepage www.pilz.com for further details or contact our headquarters.

Headquarters: Pilz GmbH & Co. KG, Felix-Wankel-Straße 2, 73760 Ostfildern, Germany
Telephone: +49 711 3409-0, E-Mail: info@pilz.com, Internet: www.pilz.com

PILZ
THE SPIRIT OF SAFETY