



## ► PASvisu V1.16.0

**PILZ**  
THE SPIRIT OF SAFETY

Readme-1003811-EN-23



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.

CECE®, CHRE®, CMSE®, INDUSTRIAL PI®, Leansafe®, MYZEL®, PAS4000®, PAS-cal®, PASconfig®, Pilz®, PIT®, PMCprimo®, PMCprotego®, PM Ctendo®, PMD®, 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

## General

This document contains important information, which must be noted. This document also contains details of the changes made in the software tool from one version to the next.

## System requirements



### INFORMATION

Please note:

To install the PASvisu Builder, PASvisu Server and PASvisu Viewer you need administrator rights on the target device.

### PASvisu Builder

Operating system:	64-Bit version of Windows 11
Processor:	Dual Core (2.4 GHz) or desktop equivalent
RAM:	min. 4 GB
Available hard drive space:	Approx. 4 GB
Screen resolution:	min. 1920 x 1080 pixels
Colour quality:	32 Bit
Text size:	Display setting in Windows "Smaller – 100% (default)"
Required software tools:	"CodeMeter" software from WIBU SYSTEMS (is installed automatically with PASvisu Builder)

### PASvisu Server for PC

Operating system:	64-Bit version of Windows 11
Processor:	Dual Core (2.4 GHz) or desktop equivalent
RAM:	Min. 4 GB
Available hard drive space:	Approx. 4 GB
Required software tools:	► "CodeMeter" software from WIBU SYSTEMS (is installed automatically with PASvisu Server) ► Microsoft .NET Framework Version 4.5.2

### PASvisu Server for PMI

The following PMIs support the PASvisu Server:

- PMI v704e
- PMI v707e
- PMI v807
- PMI v812
- PMI v815

## Tool languages

The software tool PASvisu is published in the tool languages German and English.

As soon as translations for the software tool are available, they will be provided within a service pack. You'll find the service pack in the software tool PASupdate or on the Internet under <http://www.pilz.com/support/downloads/>.

The following languages can be provided:

- ▶ French
- ▶ Italian

## Important information

### Security

- ▶ File storage location

By default, the PASvisu Builder saves the project data in the personal user directory, for example: C:\Users\<User name>. Please note that saving to a different path may lead to security restrictions.

- ▶ Unknown publisher during installation

When installing PASvisu, if you see the message that the publisher of the installer is unknown, cancel the installation. In this case, either the tool's install file has been manipulated or the PC's operating system is not up to date.

Remedy: Ensure that the install file originates from Pilz and that the PC's operating system is up to date.

(3665)

### Security incident management

You can reach the Pilz Product Security Incident Response Team (PSIRT) at <https://www.pilz.com/psirt>.

With regard to a Pilz product, this is where you can:

- ▶ Report security vulnerabilities and security incidents
- ▶ Ask questions about security vulnerabilities and security incidents
- ▶ View Security Advisories

### Display of visualisation

Pilz supports the display of the PASvisu project on PCs, PMI v704e, PMI v707e, PMI v807, PMI v812 and PMI v815. Other end devices are possible, but have not been tested.

PMI: The PASvisu Viewer for PMI can be used as the Visu Client.

PC: The PASvisu Viewer for PC or Google Chrome can be used as the Visu Client. Other HTML 5-compatible web browsers are possible, but have not been tested.

### Operation of the PASvisu Server

Pilz supports the operation of the PASvisu Server on PCs, the PMI v704e, PMI v707e, PMI v807, PMI v812 and PMI v815. The possible system layouts are described in the on-line help for the PASvisu Builder.

The PASvisu Server can communicate exclusively with OPC UA Servers and Modbus/TCP Servers.

PMI: If the PASvisu Server is on a PMI, this PMI may also have a local Visu Client. At least one remote Visu Client is supported.

PC: Simultaneous display of the PASvisu project on 5 Visu Clients is supported. Up to 8 Visu Clients are possible, but simultaneous operation of 8 Visu Clients has not been tested.

### **Compatibility for data source "PNOZmulti project"**

Pilz offers a solution for visualisation of an individual PNOZmulti project.

The PNOZmulti project is created using the PNOZmulti Configurator. A PNOZmulti OPC Server or a PVIS OPC Server UA is required for visualisation.

Required version when using the PNOZmulti OPC Server:

- ▶ PNOZmulti Configurator from Version 10.12.0
- ▶ PNOZmulti OPC Server from Version 1.0.0

Required versions when using the PVIS OPC Server UA (no longer recommended):

- ▶ PNOZmulti Configurator from Version 10.12.0
- ▶ PVIS OPC Server UA from Version 2.5.0;
  - At least Version 2.5.1 is required when using the "MSO flex visu" tile;
  - At least Version 2.7.0 is required when using the "Key-in-Pocket sign in list" tile

### **Compatibility for data source "PVIS OPC project"**

Pilz offers a solution for visualisation of several PNOZmulti projects that are combined in a PVIS OPC project.

The PNOZmulti projects are created using the PNOZmulti Configurator. For the PNOZmulti project, the diagnostic configuration must be linked. The diagnostic configuration is then added to a PVIS OPC project in the PVIS OPC Configurator. The PVIS OPC project must be executed on a PVIS OPC Server UA.

Required versions:

- ▶ PNOZmulti Configurator from Version 10.12.0
- ▶ PVIS OPC Configurator from Version 2.1.0
- ▶ PVIS OPC Server UA from Version 2.5.0;
  - At least Version 2.5.1 is required when using the "MSO flex visu" tile;
  - At least Version 2.7.0 is required when using the "Key-in-Pocket sign in list" tile

### **Compatibility for data source "PSS 4000 project"**

Pilz offers a solution for visualisation of PSS 4000 projects. PSS 4000 projects must be built using PAS4000 from Version 1.15.0.

An OPC UA Server must be configured in the project so that the namespace elements file, which is used by the PASvisu Builder, is created during the build process.

### **Compatibility for "PITreader" data source**

Pilz offers a solution for the visualisation of data from a PITreader. The PITreader can also be used for user authentication on the online PASvisu project.

For both these applications, the PITreader must contain an OPC UA Server.

Required firmware version: From Version 1.5.01

### **Compatibility between PASvisu Builder and PASvisu Server**

PASvisu projects can only be run on PASvisu Servers if the version of the PASvisu Server matches the version of the PASvisu Builder that was used when the project was created. In other words, if a PASvisu project was created using Version V1.16.0 of the PASvisu Builder, the PASvisu Server must also be Version V1.16.0.

### **Migration of PASvisu projects**

A project that was created using an older PASvisu Builder version will automatically be migrated when opened using a newer PASvisu Builder version.

Once a project has been opened with a newer PASvisu Builder version it may no longer be opened using older PASvisu Builder versions.

### **Renaming projects after download**

If a PSS 4000 project or a PVIS OPC project is used as the data source for the PASvisu project, the following names may no longer be changed once the PASvisu project has been downloaded to the PASvisu Server:

- ▶ Name of the PSS 4000 project
- ▶ Name of the PVIS OPC project and name of the PNOZmulti projects

Otherwise the PASvisu Server cannot access the data on the OPC Server. If project names are changed, the PASvisu project must be synchronised with the data source and the download must be performed again.

### **Visualisation with a PMI v7**

- ▶ Data source

For visualisation on a PMI v7, the "PNOZmulti project" data source must be used in PASvisu Builder. If the OPC UA server integrated on the PMI v7 is not used, and the PMI v7 is only used as a Visu Client, you can use any other data source.

- ▶ Data logging


If data logging is to be used, then a USB stick has to be connected. The USB stick must not be removed during operation.

- ▶ AZERTY keyboard layout

The AZERTY keyboard layout is not supported.  
(3847)

### **Licensing**

Licences are managed in licence containers. They are managed using "CodeMeter" software from WIBU SYSTEMS. This software has been installed together with the PASvisu Builder/PASvisu Server.

PC: If the "CodeMeter" software is installed on a PC, the  icon will be found in the Windows status bar.

Note: When starting the PASvisu Server, if you receive a message that WIBUCM32.dll is missing, then the "CodeMeter" software has been uninstalled and the PASvisu Server can no longer be started. In this case, re-install the PASvisu Server. (2823)

**Licence information**

Source code from third-party manufacturers or open source software has been used for some components. The relevant licence information is available on the Internet on the Pilz homepage.

**Uninstall**

Uninstalling the PASvisu Builder may not delete all tool-related information.

To ensure that all information is deleted, check the following directory paths to identify all related information and delete the required files:

- ▶ C:\ProgramData\Pilz
- ▶ C:\Users\<User name>\Pilz
- ▶ C:\Users\<User name>\AppData\
  - Local\Pilz
  - Roaming\Pilz

## Known problems

### PASvisu Builder

► Tile content is not displayed

When opening a project, sometimes only the borders of some tiles are displayed, and not the tile content. This can happen if the PASvisu project is saved in cloud memory.

Remedy: Save the project on a local drive and open it there.

(3342)

► PASvisu Builder does not start

If the message "Terminating the PASvisu Builder because an internal error occurred (error code: 10)." is displayed when the PASvisu Builder is started, the WebSocket port 40857 may be occupied. If the message is displayed with error code 11, the HTTP port 40856 may be occupied.

Remedy: Make sure that no other service is occupying the ports or change the ports used by the PASvisu Builder. To do this, open the file "PASvisuBuilder.ini" in the directory "C:\ProgramData\Pilz\PASvisu Builder" and change the values for "websocket\_port" and/or "http\_port".

(2838)

► Problem after installing PASvisu Builder

When PASvisu Builder is newly installed and started for the first time, in rare cases it may not be possible to position tiles on pages.

Remedy: Close PASvisu Builder and restart it.

(3207)

► "Slider" tile

The labelling of the start and end value is not displayed correctly if the following formula does not produce an integer:

$$(\text{"End value"} - \text{"Start value"}) / (\text{"Steps per division"} \times \text{"Step size"})$$

Remedy: Change the tile's configuration.

(1879)

► "Slider" tile

If the "Slider" tile is positioned on a page, the start and end value modified and the tile then reduced in size, the scale may disappear.

Remedy: Change the size of the tile immediately after it is positioned and only then change the start and end value.

(3030)

► Display format

In the Page Editor, the display format of the time and date plus the decimal values (decimal point or comma) depends on the tool language, although it should depend on the selected project language.

Note: In the PASvisu Viewer, the display format depends on the selected project language.

(2994)

► Project languages: Edit exported CSV file in Excel

If the exported CSV file is edited using an older version than Excel 2016, only the key combination "Ctrl + S" may be used for saving. Otherwise the file can no longer be imported into the PASvisu Builder.

(3046)



► Display problems

If the display settings in Windows do not match PASvisu Builder's system requirements, there may be problems displaying graphic elements.

Remedy: In the Windows display settings, set a text size of "Smaller – 100% (default)".

### PASvisu Server

► Websocket port

If the websocket port that is configured for the PASvisu Server is already in use by another service, the PASvisu Server does not work, but no error message is issued.

(683)

### Visu Clients

► General

– Entering values

If a Visu variable is configured for a tile's data item and this Visu variable is not assigned a namespace element, then no values can be entered in the tile.

Example: A decimal value tile is configured for data entry and uses a Visu variable without an assigned namespace element as the data item. Another decimal value tile is configured for the data output and uses the same Visu variable. If a value is now entered in the first tile in the Visu Client, it will not be displayed on the second tile.

(571)

– Data logging: Export of data records

When exporting the data records, a CSV file is created. When this file is opened using Microsoft Excel, it can happen that the decimal places in decimal numbers are not recognisable.

Remedy: Open the Excel options (Menu **File** -> **Options**), on the tab **Advanced**, deactivate the option **Use system separators** and select the required separators. You may have to restart Excel.

– Red borders after connection has been interrupted to OPC UA Server

In some cases, the PASvisu Server cannot automatically restore the connection to the OPC UA Server after the connection has been interrupted. The tiles that display the data from the OPC UA Server are then marked with red borders.

Remedy: Switch to another page and then back again.

(3325)

– Displaying the Security ID of the PITreader

The Security ID of the PITreader has the data type UInt64. Variables of this data type cannot be displayed.

Remedy: The Security ID is displayed on the "PITreader Status" tile.

(3522)

► PASvisu Viewer for PMI

– Japanese keyboard on PMI

The PASvisu Viewer for PMI does not provide a Japanese keyboard.  
(3059)

– Red borders after download

In rare cases, it is not possible to display the variable values after downloading the PSS 4000 project. The tiles are then marked with red borders.

Remedy: Start PMI again.  
(3198)

► PASvisu Viewer for PC

– "Button" tile, "pushbutton" type

The pushbutton does not work on all touchscreens.

Remedy: Make sure that the current driver for the touchscreen is installed.

If this does not help, you can use a set button and reset button instead of the push-button.

(1563)

– Display problems

There may be problems displaying graphic elements.

Remedy: In the Windows display settings, set a text size of "Smaller – 100% (default)".

► HTML 5-compatible web browser

– Google Chrome: Behaviour of touchscreens

The behaviour of the PASvisu project on touchscreens is improved if the following setting is made in Google Chrome:

Enter "Chrome://flags" in the field for the URL address and deactivate the property "Disable touch adjustment".

(2614)

## Changes in Version 1.16.0

### New features

- ▶ Export and import tile groups  
Tile groups can be exported from the tile library and imported into the PASvisu Builder on another PC, for example.
- ▶ Upload project to MYZEL  
The project can be archived on the MYZEL Lifecycle Platform (MLP) from Pilz. It is stored as a digital artefact and is assigned to an asset.
- ▶ Trend line graph  
When the trend line graph is configured, you can select the unit (seconds, minutes, hours, days or years) for the time period to be displayed.
- ▶ Switch project language in the offline project  
The project language can now be switched in the PASvisu Builder toolbar.
- ▶ Data source "PNOZmulti project"  
You can set whether to display the entire namespace when configuring variables or only the data that is actually used in the PNOZmulti project.

### Optimisations

- ▶ "HTML display" tile  
The "HTML display" tile is no longer supported. To open an old project containing this tile, the user must agree to the tile being deleted. If the user does not agree, the project will not be opened.
- ▶ "SafetyEYE Live Video" tile  
The "SafetyEYE Live Video" tile is no longer supported in new PASvisu projects. This tile can continue to be used in PASvisu projects created with a PASvisu Builder Version < 1.16.0.
- ▶ "PVIS OPC project" data source  
The "PVIS OPC project" data source is no longer supported in new PASvisu projects. This data source can continue to be used in PASvisu projects created with a PASvisu Builder Version < 1.16.0.
- ▶ Rotate tile content  
If the tile content is rotated, the size of the content is adjusted to the tile size and no longer truncated.  
(3566)
- ▶ "OPC UA Server" data source  
In some cases, not all namespace elements were displayed if an OPC UA Server from a manufacturer other than Pilz was used as the data source for a PASvisu project. This problem has now been rectified.  
(4045)
- ▶ "PSS 4000 diagnostic list" tile  
The PSS 4000 diagnostic list is now updated correctly in the online project.  
(4152)

- ▶ "Key-in-pocket sign in list" tile  
All Security IDs for transponders are now displayed correctly.  
(3715)
- ▶ "Alarm status" tile  
On PMI 7, the content of the tile is now displayed in the configured tile size. (4159)
- ▶ "PNOZmulti project" data source  
The namespace elements for analogue elements are now displayed in the namespace in the variable editor.  
(3260)
- ▶ Security policies  
The following security policies are outdated and are no longer supported:
  - Basic128Rsa15
  - Basic256
- ▶ Windows 10  
Windows 10 is no longer supported. PASvisu can also be installed on Version 10 of Windows, but this version has not been tested and Pilz does not offer any support for it.
- ▶ Security vulnerabilities  
The following security vulnerabilities have been rectified:

CVE-2025-4609	CVE-2025-11206	CVE-2025-12911	CVE-2026-0899
CVE-2025-6555	CVE-2025-11207	CVE-2025-13042	CVE-2026-0900
CVE-2025-6556	CVE-2025-11208	CVE-2025-13107	CVE-2026-0902
CVE-2025-8578	CVE-2025-11210	CVE-2025-13223	CVE-2026-0904
CVE-2025-8580	CVE-2025-11211	CVE-2025-13224	CVE-2026-0907
CVE-2025-8580	CVE-2025-11212	CVE-2025-13226	CVE-2026-0908
CVE-2025-8582	CVE-2025-11215	CVE-2025-13227	CVE-2026-1504
CVE-2025-8583	CVE-2025-11219	CVE-2025-13228	CVE-2026-1861
CVE-2025-8879	CVE-2025-11458	CVE-2025-13229	CVE-2026-1862
CVE-2025-8880	CVE-2025-11460	CVE-2025-13230	CVE-2026-2313
CVE-2025-8880	CVE-2025-11756	CVE-2025-13630	CVE-2026-2314
CVE-2025-8881	CVE-2025-12036	CVE-2025-13633	CVE-2026-2315
CVE-2025-8882	CVE-2025-12428	CVE-2025-13634	CVE-2026-2316
CVE-2025-8901	CVE-2025-12429	CVE-2025-13635	CVE-2026-2317
CVE-2025-8901	CVE-2025-12430	CVE-2025-13636	CVE-2026-2318
CVE-2025-9132	CVE-2025-12432	CVE-2025-13637	CVE-2026-2320
CVE-2025-9478	CVE-2025-12433	CVE-2025-13638	CVE-2026-2321
CVE-2025-9864	CVE-2025-12434	CVE-2025-13639	CVE-2026-2322
CVE-2025-9866	CVE-2025-12437	CVE-2025-13720	CVE-2026-2323
CVE-2025-10200	CVE-2025-12440	CVE-2025-13721	CVE-2026-2441
CVE-2025-10500	CVE-2025-12441	CVE-2025-13992	CVE-2026-2648
CVE-2025-10501	CVE-2025-12443	CVE-2025-14372	CVE-2026-2649
CVE-2025-10502	CVE-2025-12444	CVE-2025-14765	CVE-2026-2650
CVE-2025-10585	CVE-2025-12446	CVE-2025-14765	CVE-2026-2650
CVE-2025-10890	CVE-2025-12726	CVE-2025-14766	CVE-2026-3061
CVE-2025-10891	CVE-2025-12727	CVE-2025-47809	
CVE-2025-10892	CVE-2025-12905	CVE-2025-52999	
CVE-2025-11205	CVE-2025-12906	CVE-2025-65502	

## Changes in Version 1.15.1

### Optimisations

► Data source PSS 4000 project

If a PSS 4000 project was used as data source and more than 500 alarms were configured, not all alarms were triggered. This problem has now been rectified.  
(3955)

► Display unit PMI v7

When the PMI v7 is started, the button to start the PMI Manager is now always visible.  
(3730)

► "PSS 4000 diagnostic list" tile

If the user was using a PC or PMI v8 as a display unit and clicked on the "i" on the "PSS 4000 diagnostic list" tile, in some cases no information was displayed. This problem has now been rectified.  
(3989)

► "Recipe" tile

Values that are less than 1 and are in the valid value range can now be entered in the on-line project.  
(3998)

► Security vulnerabilities

The following security vulnerabilities have been rectified:

CVE-2024-42383	CVE-2025-2136	CVE-2025-43715	CVE-2025-6192
CVE-2025-0291	CVE-2025-2137	CVE-2025-4372	CVE-2025-6554
CVE-2025-0444	CVE-2025-2476	CVE-2025-4664	CVE-2025-6555
CVE-2025-0445	CVE-2025-2783	CVE-2025-5063	CVE-2025-6556
CVE-2025-0611	CVE-2025-3066	CVE-2025-5064	CVE-2025-6558
CVE-2025-0612	CVE-2025-3071	CVE-2025-5067	CVE-2025-6965
CVE-2025-0995	CVE-2025-3072	CVE-2025-5068	CVE-2025-7656
CVE-2025-0999	CVE-2025-3073	CVE-2025-5280	CVE-2025-7657
CVE-2025-1006	CVE-2025-3074	CVE-2025-5281	CVE-2025-8010
CVE-2025-1914	CVE-2025-3619	CVE-2025-5283	CVE-2025-8011
CVE-2025-1919	CVE-2025-4050	CVE-2025-5419	CVE-2025-8292
CVE-2025-1920	CVE-2025-4051	CVE-2025-5958	
CVE-2025-1921	CVE-2025-4052	CVE-2025-5959	
CVE-2025-2135	CVE-2025-4096	CVE-2025-6191	

## Changes in Version 1.15.0

### New features

- ▶ Data source "PNOZmulti project"  
The data can now also be supplied from a PNOZmulti OPC Server.
- ▶ Trustworthy projects  
The user is warned about potentially non-secure content in the project and can decide whether or not they trust the project.
- ▶ User-defined page size  
The user can now configure the page size individually (not for PMI v7).
- ▶ Configure font sizes  
The user can configure the font sizes that are used for the tiles.
- ▶ Customise buttons  
The appearance of buttons on tiles is determined by the style sheet, but the following properties can be customised:
  - Colour of the button that is operated
  - Colour of the button with active focus
- ▶ Graphics for recipe data sets  
A graphic can be configured for each recipe data set. The graphic can be used on the "Recipe" tile to select a recipe data set (not on a PMI v7).  
The graphics can be configured in the offline project in recipe management, or in the on-line project on the "Recipe" tile, if the "Manage recipes" type was selected for the tile.

### Optimisations

- ▶ Security vulnerabilities  
The following security vulnerabilities have been rectified:

CVE-2021-42262	CVE-2024-2886	CVE-2024-5846	CVE-2024-7532
CVE-2021-42577	CVE-2024-2887	CVE-2024-5847	CVE-2024-7535
CVE-2023-2905	CVE-2024-3156	CVE-2024-6100	CVE-2024-7536
CVE-2023-6508	CVE-2024-3157	CVE-2024-6101	CVE-2024-7550
CVE-2023-6702	CVE-2024-3159	CVE-2024-6102	CVE-2024-7965
CVE-2023-6703	CVE-2024-3169	CVE-2024-6103	CVE-2024-7966
CVE-2023-6704	CVE-2024-3170	CVE-2024-6290	CVE-2024-7969
CVE-2023-6705	CVE-2024-3174	CVE-2024-6292	CVE-2024-7970
CVE-2023-6706	CVE-2024-3515	CVE-2024-6293	CVE-2024-7971
CVE-2023-7024	CVE-2024-3516	CVE-2024-6772	CVE-2024-7972
CVE-2024-0222	CVE-2024-4058	CVE-2024-6773	CVE-2024-7973
CVE-2024-0223	CVE-2024-4060	CVE-2024-6774	CVE-2024-7975
CVE-2024-0224	CVE-2024-4558	CVE-2024-6775	CVE-2024-7976
CVE-2024-0225	CVE-2024-4761	CVE-2024-6776	CVE-2024-8193
CVE-2024-0517	CVE-2024-4947	CVE-2024-6779	CVE-2024-8194
CVE-2024-0518	CVE-2024-4948	CVE-2024-6989	CVE-2024-8198
CVE-2024-0519	CVE-2024-4949	CVE-2024-6990	CVE-2024-8362
CVE-2024-0807	CVE-2024-5274	CVE-2024-6991	CVE-2024-8636
CVE-2024-1283	CVE-2024-5830	CVE-2024-6999	CVE-2024-8638
CVE-2024-1284	CVE-2024-5831	CVE-2024-7001	CVE-2024-9120
CVE-2024-1670	CVE-2024-5832	CVE-2024-7003	CVE-2024-9121
CVE-2024-2173	CVE-2024-5833	CVE-2024-7018	CVE-2024-9122
CVE-2024-2625	CVE-2024-5834	CVE-2024-7019	CVE-2024-9123
CVE-2024-2883	CVE-2024-5837	CVE-2024-7022	CVE-2024-9602
CVE-2024-2884	CVE-2024-5838	CVE-2024-7024	CVE-2024-9603
CVE-2024-2885	CVE-2024-5841	CVE-2024-7255	CVE-2024-45490



## Changes in Version 1.14.1

### Optimisations

The following security vulnerabilities have been rectified:

- CVE-2022-44729
- CVE-2022-44730
- CVE-2023-3935
- CVE-2023-4863
- CVE-2023-5217
- CVE-2023-5218
- CVE-2023-6345
- CVE-2023-6346
- CVE-2023-6347
- CVE-2023-6350
- CVE-2023-6351
- CVE-2023-34188
- CVE-2023-45795
- CVE-2023-45796

You'll find the security advisories under [www.pilz.com/security](https://www.pilz.com/security).

Please note: The PMI v7 is not affected by the security vulnerabilities, therefore there is no new version of the PASvisu server and the PASvisu viewer for PMI v7. Version 1.14.0 of PASvisu server for PMI v7 is compatible with version 1.14.1 of PASvisu Builder.

## Changes in Version 1.14.0

### New features

#### ► New "Key-in-Pocket sign in list" tile

Tile for displaying the sign in list for an access point of a Key-in-Pocket system. The tile shows how many users are currently signed into the sign in list. In addition, a graphic can be used to highlight whether the sign in list is empty or whether users are signed in. The content of the sign in list is displayed by clicking on the tile.

By assigning access rights it is possible to determine which operators of the online project can open the sign in list, view all the content in the sign in list and manage the transponder details (first names, surnames and telephone numbers of the transponder owners).

### Optimisations

#### ► Security

##### – Authentication on the online project

When a new project is created, the ***Authentication on the project is required*** option is enabled automatically.

##### – Authentication via password

You can configure whether the user themselves must enter the user name during authentication (default setting) or whether they can select the user name from a list. If the user name can be selected from a list, this reduces security because all user names are exposed.

##### – Data source PSS 4000 project

The following security policies are now also supported:

Basic256-Sha256

Aes128-Sha256-RsaOaep

Aes256-Sha256-RsaPss

##### – Security vulnerabilities

Several non-critical security vulnerabilities have been rectified.

#### ► "HTML display" tile

The tile can now also be used to open the web application on a PITreader. To display the web application, forms, modals, scripts and downloads must be allowed in the tile properties.

#### ► Windows 8

Windows 8 is no longer supported. PASvisu can also be installed on Version 8 of Windows, but this version has not been tested and Pilz does not offer any support for it.

## Changes in Version 1.13.0

### New features

#### ► Tile groups

Multiple tiles and shapes that are repeatedly used together can be saved as a tile group. The tile group will then be available in the tile library under the "Tile groups" category.

#### ► Data logging

##### – New "data log display" tile

Tile for displaying the records from a data log in a table. The logging rule for which the data log is to be displayed can be selected in the online project. In the online project you can also select which variables are to be displayed (maximum 5 variables) and the time period for which the records are to be displayed.

##### – Variables of the STRING data type

Variables of the STRING data type with maximum 255 characters can be recorded. The number of characters is configurable.

##### – Display names for Visu variables

A display name for each Visu variable can be entered in the variable editor. When data logging, the display name can be used to identify the variable in the data log.

##### – Variable identification in the data log

The identification that is to be used for the variables in the data log can be configured for each logging rule. The following options are available: name of the Visu variable, namespace element/address or display name.

#### ► Life bit on the PASvisu Server

When data from the visualisation is to be processed in a data source, e.g. when an operation in the data source is ended via a button in the visualisation, then the data source should know whether the connection to the PASvisu Server is working correctly or has been broken. The life bit on the PASvisu Server serves this purpose.

The life bit is a variable of the BOOLEAN data type, whose value is toggled every 500 ms. This variable can be monitored in the data source. If the value of the variable no longer changes, then the connection to the PASvisu Server is broken.

Use of the life bit is optional. No life bit can be configured for the data source "PASmotion project".

### Optimisations

#### ► PASvisu Viewer for PMI: User management

When the PMI was restarted, changed passwords were reset to the default passwords and newly created users were deleted. This problem has now been rectified. (3496)

#### ► PASvisu Viewer: Shapes

In some cases, the positions of shapes were changed when switching pages. This problem has now been rectified. (3533)

#### ► Security vulnerabilities

Several non-critical security vulnerabilities have been rectified.

## Changes in Version 1.12.0

### New features

- ▶ New data source: PITreader  
A PITreader that contains an OPC UA Server can be configured as a data source. Data from the OPC UA Server can be visualised and the PITreader can be used for user authentication on the online PASvisu project.
- ▶ New "PITreader status" tile  
Tile for displaying the status information of a PITreader and/or the transponder.
- ▶ Authentication with PITreader  
If the security measures "Authentication on the online project" and/or "Access protection for tiles" are used, a user must log in to the project. When logging in, the user can now use a PITreader for authentication.
- ▶ Windows 11  
Installation and operation of the PASvisu Builder, PASvisu Server and PASvisu Viewer on Windows 11 is supported.

### Optimisations

- ▶ PASvisu Viewer for PMI: "PSS 4000 diagnostic list" tile  
In rare cases, "Information" status was displayed for a message, although the actual status was "Error". This problem has now been rectified.  
(3227)
- ▶ Security vulnerability  
The following security vulnerabilities have been fixed:
  - "zip-slip" attacks on the PASvisu Server were possible. This vulnerability has now been fixed.Please refer to the guidelines in the security advisory "2022-002" (document number 1006472). You'll find the security advisory under [www.pilz.com/security](https://www.pilz.com/security).

## Changes in Version 1.11.0

### New features

- ▶ New tile "HTML display"  
This tile is used to display websites whose URLs begin with "http" or "https".  
The tile is available for PC and PMI v8 display units.
- ▶ "Linear/radial gauge" tile  
It is possible to change the width of the bar and the colour of the bar/pointer.
- ▶ "MSO flex visu" tile  
The "MSO flex visu" tile has a version. The version can be displayed in the online project.
- ▶ Data source "OPC UA Server"  
SHA-2 is supported with the data source OPC UA Server.

### Optimisations

- ▶ Login  
When logging in to the online project and the PASvisu Server, after 5 failed login attempts the login is blocked for 1 minute before you can try again.
- ▶ Default directory  
The default directory for application data (e.g. certificates) on a PC or PMI v8 is now "C:\Users\<User name>\AppData\Local\Pilz\PASvisu". Some application data (e.g. installation logs) is still stored under "C:\programdata\Pilz\PASvisu".
- ▶ Windows 8 and 10, 64 Bit  
Installation and operation of the PASvisu Builder, PASvisu Server and PASvisu Viewer are only supported on the 64 Bit version of Windows 8 or 10.  
PASvisu Server and PASvisu Viewer can be installed and operated on the 32 Bit version, but this version has not been tested and Pilz does not offer any support for it. The PASvisu Builder can no longer be installed on the 32 Bit version.
- ▶ CodeMeter Runtime  
Version 7.21a of the CodeMeter Runtime from WIBU-SYSTEMS AG is now installed with the software tool PASvisu. The CodeMeter Runtime is used to manage the licences. The CodeMeter Runtime security has been optimised.
- ▶ Session timeout  
When a session timeout was configured in Version 1.10.0, it was only monitored when user management was also configured. This problem has now been rectified.  
(3377)
- ▶ PMI v7: USB sticks  
All types of USB sticks are now recognised on a PMI v7.  
(3359)

## Changes in Version 1.10.0

### New features

- ▶ New "PASscope" tile  
Tile to display the PASscope tool. The PASscope tool is a PC-based oscilloscope. This oscilloscope function can be operated for different PASMotion devices (controllers and servo amplifiers).
- ▶ New data sources
  - Modbus/TCP  
Data from Modbus/TCP connections to any devices can be visualised. The PASvisu Server must always be the connection Client.
  - PASMotion project  
A PASMotion project can be used as a data source for the "PASscope tile". Individual variables from the PASMotion project cannot be visualised.
- ▶ Enhanced security support
  - https connections  
Communication between PASvisu Server and PASvisu Builder, PASvisu Client and the configuration tool of the PASvisu Server is via https connections. The connections are encrypted asymmetrically. X.509 certificates are used.
  - Authentication on the online project  
Configuration can be such that a user needs to log in to the online project in order to obtain access to the online project. If authentication on the online project is activated, data on the PASvisu Server is also protected against unauthorised access.
  - Authentication on the PASvisu Server  
Configuration can be such that a user needs to log in to the PASvisu Server in order to obtain access to the PASvisu Server. Login is required when downloading a project in the PASvisu Builder and when configuring the PASvisu Server in the configuration tool of the PASvisu Server.
- ▶ User management: Target page after login  
For each user it is possible in user management to configure the target page that is to be opened after the user has logged in to the online project.
- ▶ New PMIs  
PASvisu projects can now be displayed on the PMI v807 and PMI v815, plus it is possible to install the PASvisu Server.

### Optimisations

- ▶ Windows 7  
Windows 7 is no longer supported. PASvisu can also be installed on Version 7 of Windows, but this version has not been tested and Pilz does not offer any support for it.
- ▶ CodeMeter Runtime  
Version 7.10a of the CodeMeter Runtime from WIBU-SYSTEMS AG is installed now with the software tool PASvisu. The CodeMeter Runtime is used to manage the licences. In older versions of the CodeMeter Runtime there were several security vulnerabilities, see security advisory "WIBU CodeMeter Runtime" (document number 1005485).

► "PSS 4000 device status" tile

In projects created using PASvisu Builder Version 1.9.0, the "PSS 4000 device status" tile was not displayed correctly. This problem has now been rectified.

► Start page on the PC and PMI v8

In rare cases, the start page was not displayed when opening the online project on a PC or PMI v8. This problem has now been rectified.

## Changes in Version 1.9.0

### New features

- ▶ New "MSO flex visu" tile

Tile for selecting modes of safe operation. The tile is part of the system MSO flex visu. The system comprises:

- Authentication system PITreader
- Safety controller to evaluate and activate the selected operating mode e.g. PNOZmulti or the safety controller from the automation system PSS 4000
- Operator terminal (HMI) with the MSO flex visu tile for selecting and displaying the operating mode

Details of the system can be found in the System Description MSO flex visu.

- ▶ Undo and redo

In the page editor it is possible to undo and redo actions.

- ▶ Add variables

Visu variables can be highlighted in the variable editor and added directly to a recipe or logging group.

- ▶ PMI v812 is supported

PASvisu projects can now be displayed on the PMI v812, plus it is possible to install the PASvisu Server.

### Optimisations

- ▶ PMI v507 and PMI v512 are no longer supported.

- ▶ Graphics

Graphics in ICO format are no longer supported.  
(3261)

- ▶ Filters in tables

When a table is filtered by text and then you press "Ctrl + A", only the filtered rows are now highlighted, as expected.  
(3266)



## Changes in Version 1.8.0

### New features

- ▶ Multiple data sources  
Data from multiple data sources can be visualised with a PASvisu project. For example, two PNOZmulti projects and a PSS 4000 project can be visualised together.
- ▶ Alarms  
A graphic can be configured for each alarm; this is displayed in the details in the alarm list.
- ▶ Creating multiple Visu variables  
In the variable editor it is now possible to create multiple Visu variables at once. In the tree, highlight one or more namespace elements/addresses, right-click on the highlight and select **New Visu variables**.
- ▶ Recipes  
It is possible to configure the number of decimal places that are to be displayed for the setpoint and actual value in the online project. The actual value read back from the controller will be rounded to this number of decimal places. When the setpoint is compared with the actual value, the rounded value is used in the comparison.
- ▶ "Data logging" tile  
When exporting, it is now possible to state the time period for which the data is to be exported.
- ▶ Align and distribute tiles and shapes  
Tiles and shapes can now be aligned or distributed together. Previously these operations could be applied only to tiles or only to shapes.
- ▶ Value range of identifiers  
The value range for the page identifier and the identifier for recipe data sets has been changed from 1 ... 9999 to 1 ... 1000000.
- ▶ "PSS 4000 diagnostic list" and "PSS 4000 diagnostic log" tiles  
The name of the corresponding PSS 4000 project can now be displayed on the tile.

## Changes in Version 1.7.0

### New features

#### ► Recipes

Recipes can be created.

A recipe combines data, which can be used to set parameters for a machine, for example.

The data sets are configured in the offline project. In the online project, the "Recipe" tile can be used to write the individual data sets to the controller. It is also possible to change the values, create new data sets and read the controller's current values into a data set. The system variable "WriteRecipeDataSet" can also be used to trigger the writing of a data set to the controller. In this way, for example, the PSS 4000 project can determine which of a recipe's data sets is to be used.

#### ► Variable values for the position and size of tiles

Visu variables can also now be entered for the tile properties x-position, y-position, width and height.

#### ► Variable values for the position and size of shapes

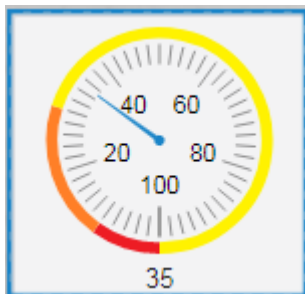
Visu variables can also now be entered for the properties X1, Y1, X2 and Y2.

#### ► Icons for the status tiles

With the "Emergency stop status" tile, you can replace the default icon for the element/block with one of your own graphics. The same applies for the following tiles: "Light curtain status", "Safety gate status", "Two-hand pushbutton status", "Foot switch status", "Enabling switch status" and "Output with feedback loop status".

#### ► "Linear/radial gauge" tile

With the radial gauge it is now possible to configure the angle for the start value and end value. As a result it is also possible to implement scales up to 360 degrees.



#### ► "Static text" tile

This tile can also now be used to enter text. A prerequisite is that the data source must support write access to namespace elements/addresses of the STRING data type. This is not the case with PNOZmulti projects and PSS 4000 projects.

#### ► "PVIS event list" and "PVIS event log" tile

If several languages are available in the PVIS OPC project, the operator can now select the display language for the event list and event log in the online project. Previously only one language was displayed.

## Optimisations

- Licensing of PASvisu projects

PASvisu projects no longer need to be licensed. PASunits are no longer needed.  
(It is still necessary to license the runtime environment.)

## Changes in Version 1.6.0

### New features

► New data source: PNOZmulti project

If you wish to create the visualisation for an individual PNOZmulti project, the PNOZmulti project can be used directly as a data source, without the circuitous route via the PVIS OPC project. When downloading the PASvisu project the required data is not only downloaded to the PASvisu Server but also to the OPC UA Server. The PVIS OPC Configurator does not have to be used.

► Trend line graph

The tile has been completely revised.

Up to 10 lines can be displayed in a graph now. Each line represents a variable. Only variables which are logged using the Data logging can be displayed.

The tile is configured in the offline project, however, in the online project it can be adapted very dynamically to the current requirements. The following changes are possible at runtime:

- Selection of the displayed variables
- Colour and label of the lines
- Time period to be displayed
- Value range of the Y axis

In the online project, the representation of the lines can be paused and it can be scrolled forward and backward on the time axis.

In the online project, click on the tile so that the menu for performing actions is displayed.

► Lock/unlock of tiles and shapes

Tiles and shapes may be locked, so that they can no longer be moved. Their properties can still be edited.

► Font size

The font size can now be configured for the following tiles:

- Alarm log
- Alarm list
- PVIS event list
- PVIS event log
- PSS 4000 Diagnostic list
- PSS 4000 Diagnostic log

► Visualisation on PMIs

PASvisu projects can now be displayed on the following PMIs, plus it is possible to operate the PASvisu Server:

- PMI v704e
- PMI v707e

The possible system layouts are described in the online help for the PASvisu Builder.

## Changes in Version 1.5.0

### New features

#### ► Data logging

The PASvisu Server can log the values of variables.

There are three different methods of data logging:

- Periodic data logging

The values of the variables are stored at configurable intervals (polling interval).

If required, a variable can be used to activate and deactivate data logging.

- Data logging on data change

At configurable intervals (polling interval), a check is carried out to see whether the value of a certain variable has changed. If this is the case, the values of the variables are stored.

If required, a variable can be used to activate and deactivate data logging.

- Triggered data logging

Recording of the variable values is triggered by a boolean variable. The values are recorded and stored when the value of the variable switches from FALSE to TRUE.

The "Data logging" tile is used to access the stored data.

#### ► User management

- In the online project you can now also create new users or delete users.

- In user management, the language in which the project will be displayed as soon as the user logs on can be assigned to each user. Should users wish to use a different language, they can switch the language. The language setting is stored separately for each Visu Client.

#### ► New tile "PDF button"

Tile used to open a PDF file. The PDF file is displayed in the program that is defined as the default program for PDF files on the Visu Client device.

The PDF file can be imported into the project or the PDF file is linked to the project via a URL address.

This tile is suitable for the PASvisu Viewer PC. The tile is displayed in the PASvisu Viewer PMI, but the PDF file cannot be opened.

#### ► Draw shapes

Lines, rectangles and ellipses can be drawn on pages and page templates.

#### ► Align and distribute tiles

Several tiles can be selected and then aligned or distributed.

#### ► Change properties of several elements

If several tiles are selected, tile properties will only display the properties which are available for all tiles. These properties can be changed simultaneously for all selected tiles.

The same applies for the properties of several shapes, pages, page templates and logging groups. All selected elements must be of the same type, i.e. tiles and shapes may not be selected simultaneously.

#### ► "Button" tile: Display feedback

The state of a variable can be displayed on the "Button" tile. For example, if the button is used to open a valve, the variable can provide information as to whether the valve has actually opened.

- ▶ "PVIS event log"  
The log can be exported.

## Optimisations

- ▶ Opacity of tiles  
The property "Opacity" can now also be controlled via a variable.
- ▶ Download manager  
The dialogue box with all the download settings is now in the **Modules** menu and no longer in the **Target** menu. The corresponding button can now be found on the far right of the toolbar.

## Changes in Version 1.4.0

### New features

#### ► Alarms

Alarms can be created and displayed.

Alarms are used to monitor values of variables. For example, if the value of a variable is greater than a fixed value or the value of another variable, an alarm message is displayed. It is possible to configure whether an alarm message must be acknowledged by the operator. A log shows when an alarm message arrives, when it is acknowledged and when it is cleared. The alarm log can be exported.

The following tiles are used to display the alarms:

- "Alarm log"
- "Alarm list"
- "Alarm status"

#### ► Visualisation of PNOZmulti projects

Visualisation of PNOZmulti projects is supported. The following tiles are available for PNOZmulti:

- "PVIS event log"  
Tile for displaying and exporting the event log
- "PVIS event list"  
Tile for displaying the event list
- Status tiles  
The tiles "E-STOP status", "Light curtain status", "Safety gate status", "Two-hand pushbutton status", "Foot switch status", "Enabling switch status" and "Output with feedback loop status" can be used to visualise the corresponding elements of the PNOZmulti project.

There is read access to the inputs and outputs in the PASvisu project, as well as to the virtual inputs and outputs of a PNOZmulti. There is also write access to the virtual inputs.

A PVIS OPC project is required in order to visualise PNOZmulti projects. A PVIS OPC project may contain one or more PNOZmulti projects.

#### ► Place tiles over each other

Tiles may overlap or fully cover each other.

#### ► Page template

The entire page can be configured as a page template. There are no longer any page template areas, which are reserved for the page template.

#### ► New tile "SafetyEYE Live Video"

The new tile "SafetyEYE Live Video" is used to display the image from a SafetyEYE Live Video Server.

#### ► Tile "PSS 4000 diagnostic log"

The diagnostic log can be exported.

## Optimisations

### ► OPC UA Server

PASvisu exclusively supports the OPC UA Server. It is no longer possible for the PASvisu Server to communicate with a PSS 4000 OPC Server classic.



## Changes in Version 1.3.1

### Optimisations

#### ► PASvisu Viewer for PC

- User management on tiles

Even if a tile was protected by the user management, all users were able to enter values in the tile. This problem occurred only in version 1.3.0 and it has now been rectified.

(3064)

#### ► PASvisu Viewer for PMI

- Tile "PSS 4000 diagnostic log"

In version 1.3.0 the time stamp in the diagnostic log was not displayed. This problem has now been rectified.

(3065)

## Changes in Version 1.3.0

### New features

- ▶ OPC UA Server  
Data from OPC UA Servers can now be visualised. This may be an OPC UA Server from Pilz or from another manufacturer.
- ▶ Project languages  
It is now easier to create project languages. All texts are now visible in the project language editor and can be edited and translated there. However, the texts can also be exported to a TXT or CSV file for translating.
- ▶ Grid size can be set  
The required grid size can now be set on each page.  
Positioning of the tiles can be more flexible as a result and the tile size can also be set at will.
- ▶ "Decimal value" tile  
Values can now also be displayed in "Scientific format", e.g. "1.234E+1".
- ▶ Windows 10  
Operation of the PASvisu Builder and of the PASvisu Server under Windows 10 is supported.

### Optimisations

- ▶ On-screen keyboard  
Whether an on-screen keyboard is to be displayed for data entry in the online project can now be configured centrally in the project-wide properties. The setting is no longer made in the tile properties.
- ▶ "Slider" tile  
Operation of the slider is now identical in the PASvisu Viewer for PC and PASvisu Viewer for PMI. To adjust it you can either drag the slider or click on the scale.  
(2996)
- ▶ Alphanumeric keyboard in the PASvisu Viewer  
The PASvisu Viewer for PMI now also has an alphanumeric keyboard.  
(2998)

## Changes in Version 1.2.0

### New features

- ▶ Visualisation on PMIs

PASvisu projects can now be displayed on the following PMIs, plus it is possible to install the PASvisu Server:

- PMI v507
- PMI v512

The possible system layouts are described in the online help for the PASvisu Builder.

- ▶ Licensing of the runtime environment

If the PC on which the PASvisu Builder is installed has an Internet connection and the PC is also connected to the device on which the PASvisu Server is installed, then the runtime environment can now be licensed using the PASvisu Builder.

### Optimisations

- ▶ "Increment/decrement" tile

If the endless loop option is selected, then incrementing will continue with the start value once the end value is reached.

Example: 0 -> 5 -> 10 -> 15 -> **20 -> 0** -> 5 -> 10...

## Changes in Version 1.1.0

### New features

- ▶ Project languages  
Project languages can be used to create a project in several languages.
- ▶ New tiles
  - Administration  
The administration tile can be used in the online project to open a dialogue box, in which the users' passwords can be changed. The system time of the Visu Host device can also be changed.
  - NUMBER button  
Tile for entering a value of the NUMBER data type
  - Switch language  
Tile for switching between project languages
- ▶ System variables  
System variables provide system information and/or enable intervention into the system behaviour. The following system variables have been introduced:
  - ActivePage  
The system variable contains the page identifier of the last page requested by the PASvisu Server.
  - SetPage  
When a page identifier is written in the system variable, the corresponding page is opened on all Visu Clients.
- ▶ User may change his own password online  
Depending on the configuration, the user is permitted to change his own password in the online project. This happens on the login/logout tile.
- ▶ Pop-up windows in the PASvisu Viewer  
Pop-up windows containing messages can now be moved.
- ▶ Tile: Decimal value  
A variable can also now be used at runtime to determine whether the tile is to be used only to output values or also to enter values.

### Optimisations

- ▶ Default ports on the PASvisu Server  
The default HTTP port on the PASvisu Server has been changed from "8081" to "40856".  
The default WebSocket port on the PASvisu Server has been changed from "45454" to "40857".
- ▶ "Date and time" tile  
The warning "The "Data item" tile property must be configured" was issued even if the time of the Visu Client was to be displayed on the tile. This fault has now been rectified.  
(2392)

► Grey window

With certain actions (e.g. when saving the project under a different name, when opening a project or when creating a new project), a grey window could be displayed. This fault has now been rectified.

(2285)

► "PSS 4000 device project" tile

The check sum "FS project" is now also displayed on the tile. This is the check sum "FS project" for the online project.

(2913)

# 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 3390

## 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 460866

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

+49 711 3409-222

support@pilz.com

## Reporting security vulnerabilities or security incidents

If you would like to report a security vulnerability or a security incident in connection with a Pilz product, please contact our **Pilz Product Security Incident Response Team (PSIRT)**.

You can reach us at: [www.pilz.com/psirt](http://www.pilz.com/psirt)

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.



[www.pilz.com/facebook](http://www.pilz.com/facebook)



[www.pilz.com/linkedin](http://www.pilz.com/linkedin)



[www.pilz.com/xing](http://www.pilz.com/xing)



[www.pilz.com/youtube](http://www.pilz.com/youtube)



1003811-EN-23, 2026-04 Printed in Germany  
© Pilz GmbH & Co. KG, 2024

CECE, CHRE, CMSE®, IndustrialPI®, Leansafe®, MYZEL®, PAS4000®, PAScale®, PASconfig®, Pilz®, PIIT®, PMCPrimo®, PMCProtego®, PMCTendo®, PMD®, PMV®, PNOZ®, Primo®, PSEN®, 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](http://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](mailto:info@pilz.com), Internet: [www.pilz.com](http://www.pilz.com)

**PILZ**  
THE SPIRIT OF SAFETY