PERFORMANCE
MADE
SMARTER

# Product manual
# *4512*
# *Bluetooth communication enabler*


Bluetooth®

Available on the iPhone App Store

ANDROID APP ON Google play

ZONE 2

IEC IECEx Zone 2

FM APPROVED ZONE 2 / DIV 2

UK CA

CE

ANATEL

FC

SRRC

IC

TEMPERATURE | I.S. INTERFACES | COMMUNICATION INTERFACES | MULTIFUNCTIONAL | ISOLATION | DISPLAY

No. 4512V103-UK
From serial no.: 221025240

PR electronics

# 6 Product Pillars
# *to meet your every need*

## Individually outstanding, unrivalled in combination

With our innovative, patented technologies, we make signal conditioning smarter and simpler. Our portfolio is composed of six product areas, where we offer a wide range of analog and digital devices covering over a thousand applications in industrial and factory automation. All our products comply with or surpass the highest industry standards, ensuring reliability in even the harshest of environments and have a 5-year warranty for greater peace of mind.

Temperature

Our range of temperature transmitters and sensors provides the highest level of signal integrity from the measurement point to your control system. You can convert industrial process temperature signals to analog, bus or digital communications using a highly reliable point-to-point solution with a fast response time, automatic self-calibration, sensor error detection, low drift, and top EMC performance in any environment.

I.S. Interface

We deliver the safest signals by validating our products against the toughest safety standards. Through our commitment to innovation, we have made pioneering achievements in developing I.S. interfaces with SIL 2 Full Assessment that are both efficient and cost-effective. Our comprehensive range of analog and digital intrinsically safe isolation barriers offers multifunctional inputs and outputs, making PR an easy-to-implement site standard. Our backplanes further simplify large installations and provide seamless integration to standard DCS systems.

Communication

We provide inexpensive, easy-to-use, future-ready communication interfaces that can access your PR installed base of products. All the interfaces are detachable, have a built-in display for readout of process values and diagnostics, and can be configured via push-buttons. Product specific functionality includes communication via Modbus and Bluetooth and remote access using our PR Process Supervisor (PPS) application, available for iOS and Android.

Multifunction

Our unique range of single devices covering multiple applications is easily deployable as your site standard. Having one variant that applies to a broad range of applications can reduce your installation time and training, and greatly simplify spare parts management at your facilities. Our devices are designed for long-term signal accuracy, low power consumption, immunity to electrical noise and simple programming.

Isolation

Our compact, fast, high-quality 6 mm isolators are based on microprocessor technology to provide exceptional performance and EMC-immunity for dedicated applications at a very low total cost of ownership. They can be stacked both vertically and horizontally with no air gap separation between units required.

Display

Our display range is characterized by its flexibility and stability. The devices meet nearly every demand for display readout of process signals and have universal input and power supply capabilities. They provide a real-time measurement of your process value no matter the industry and are engineered to provide a user-friendly and reliable relay of information, even in demanding environments.

# Bluetooth communication enabler 4512

# Contents

# Warning

GENERAL

To avoid the risk of electric shock and fire, the safety instructions of this guide must be observed and the guidelines followed. The specifications must not be exceeded, and the device must only be applied as described in the following.
Prior to the commissioning of the device, this installation guide must be examined carefully.
Only qualified personnel (technicians) should install this device.
If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

**Repair of the device must be done by PR electronics A/S only.**

# Symbol identification

**Triangle with an exclamation mark**: Read the manual before installation and commissioning of the device in order to avoid incidents that could lead to personal injury or mechanical damage.

**The CE mark** proves the compliance of the device with the essential requirements of the EU directives.

**The UKCA mark** proves the compliance of the device with the essential requirements of the UK regulations.

**Ex devices** have been approved according to the ATEX directive / UKEX regulations for use in connection with installations in explosive areas.

The device has an internal, non-removable, rechargeable coin cell battery.
Do not attempt to open the back cover or remove the battery, as you may damage the device.

# Safety instructions

### Receipt and unpacking

Unpack the device without damaging it and check whether the device type corresponds to the one ordered.

### Environment

Avoid direct sunlight, dust, high temperatures, mechanical vibrations and shock, as well as rain and heavy moisture. If necessary, heating in excess of the stated limits for ambient temperatures should be avoided by way of ventilation.
The device must be installed in pollution degree 2 or better.
The device is designed to be safe at least under an altitude up to 2 000 m.
The device is designed for indoor use.
If the equipment is installed within an ultimate enclosure, the inner service temperature of the enclosure corresponds to the ambient temperature of the device.
If the device is operated in an ambient temperature between +55°C and +60°C, the temperature of the device housing may be higher than +60°C. The device must therefore be installed so that it is only accessible to service personnel or users that are aware of the reason for restricted access and the required safety measures at an ambient temperature of +55°C to +60°C.

### Mounting

Only qualified technicians who are familiar with the technical terms, warnings, and instructions in this installation guide and who are able to follow these should connect the device. Only devices which are undamaged and free of moist and dust may be installed. The device may be installed on and supplied by PR electronics 4000 and 9000 series only.

Should there be any doubt as to the correct handling of the device, please contact your local distributor or, alternatively,

**PR electronics A/S**
**www.prelectronics.com**

### Cleaning

When disconnected, the device may be cleaned with a cloth moistened with distilled water.

### Warranty

PR electronics A/S offers a 5-year warranty on this product.

### Liability

To the extent the instructions in this manual are not strictly observed, the customer cannot advance a demand against PR electronics A/S that would otherwise exist according to the concluded sales agreement.

# Mounting / demounting of a PR 4500 communication interface

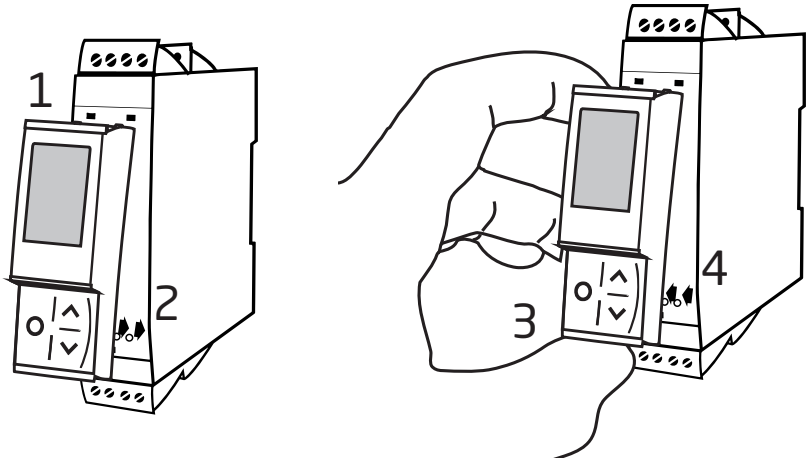
Communication interfaces in the PR 4500 series are detachable displays that can be mounted on a PR 4590 Configmate or all system 4000 / 9000 fronts for programming and signal monitoring.

### Mounting

1: Insert the tabs of the PR 4500 into the holes at the top of the device.
2: Hinge the PR 4500 down until it snaps into place.

### Demounting

3: Push the release button on the bottom of the PR 4500 and hinge the the PR 4500 out and up.
4: With the PR 4500 hinged up, remove from the holes at the top of the device.



# Bluetooth communication enabler
# 4512

- Bluetooth communication between the PR 4000/9000 devices and iOS/Android devices
- Live monitoring of process values and diagnostics on compatible smart devices or directly on the PR 4512
- Advanced data logging and event logging using the built-in real-time clock

**Applications**

- Program devices via Bluetooth using an iOS/Android device running the free PPS app (PR Process Supervisor).
- Use PPS data for preventive maintenance.
- All logged data can be exported in .csv format, for advanced data analysis off-site.
- On-site analysis of real-time process data on an iOS/Android compatible device.
- Off-site analysis of historic process data on a PC using PReset.

**Technical characteristics**

- PR 4512 runs Bluetooth 4.2, and requires a smart device with 4.0 or newer.
- PPS is compatible with iOS and Android devices.
- The PR 4512 automatically detects the device settings on the connected PR 4000 and 9000 device.
- An internal battery energizes the 4512 real-time clock for at least 2 years, should the 4512 remain de-energized.
- Typical data logging capacity is more than 30 days at 1 second intervals.
- Easy to read dot matrix LCD display.
- Fast pairing or safe pairing via two-factor authentication.

**Mounting / installation / programming**

- Mounting in Zone 2 / Div 2.
- The 4512 can be moved from one device to another. The individual system 4000/9000 device configuration of a transmitter can be saved and downloaded to subsequent transmitters.
- Programmed parameters can be protected by a user-defined password.
- When mounted on devices that are installed upside down, a menu selection rotates the 4512 display 180 degrees and reverses the up/down button functions.
- All data, including configuration, data log and event log from a PR 4000 / 9000 device can be transferred to a PC using the PR 4590.

## Order

| Type | Description |
|---|---|
| **4512** | Bluetooth communication enabler |
| **4590** | ConfigMate interface |

## Electrical specifications

**Environmental conditions:**

Operating temperature . . . . . -20°C to +60°C
Storage temperature . . . . . -20°C to +85°C
Humidity. . . . . < 95% RH (non-cond.)
Protection degree . . . . . IP20 when installed
Installation in pollution degree 2 / overvoltage category II.

**Mechanical specifications:**

Dimensions (HxWxD) . . . . . 73.2 x 23.3 x 26.5 mm
Dimensions (HxWxD) w/ 4000/9000 unit . . . . . 109 x 23.5 x 131 mm
Weight approx. . . . . 30 g

**Common specifications:**

Supply voltage . . . . . 6.5...20 V supplied from host 4000 / 9000 device
Max. required power . . . . . 0.15 W

| | |
|---|---|
| Extended EMC immunity: | |
| NAMUR NE 21, A criterion, burst . . . . . | No loss of communication |

Internal battery back-up (for real-time clock) . . . . . 2 years (@ 25°C)
Calibrated real-time clock accuracy . . . . . <±60 s/year @ 25°C
Bluetooth communication . . . . . BLE 4.2
Bluetooth radio . . . . . Class 2

**Data logging:**

Memory . . . . . 100 MB
Capacity . . . . . > 2.75 million data points[1]
Data retention, without power. . . . . ~ 10 years

**Observed authority requirements:**

**Directives:**

EMC. . . . . 2014/30/EU & UK SI 2016/1091
ATEX . . . . . 2014/34/EU & UK SI 2016/1107
RoHS . . . . . 2011/65/EU & UK SI 2012/3032
RED. . . . . 2014/53/EU & UK SI 2017/1206

**Standards:**

Standard for Safety . . . . . ANSI/ISA 61010-1 : 2004

1 Consult www.prelectronics.com/4512 "Supplementary documentation" for device specific capacity.

**Bluetooth:**

| | |
|---|---|
| Europe, CE | 117-37823-1 |
| US, FCC | ID QoQBGM111 |
| Canada, IC | 5123A-BGM111 |
| Japan, MIC | R 209-J00192 |
| Korea, KC | MSIP-CRM-BGT, BGM111 |
| China, SRRC, CMIIT-ID | 2018DJ6574 |
| Brazil, Anatel | 06541-18-11723 |
| Peru, MTC | T-251621-2018 |
| Singapore, IMDA | N1861-20 |
| Australia, RCM | 42 004 182 772 |
| Malaysia, SIRIM QAS | RAHY/63M/1020/S(20-4544) |

Please find an updated list of countries who have approved the use of 4512 at:
www.prelectronics.com/4512-bluetooth-approvals/

**Approvals:**

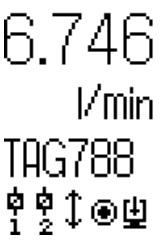
**Ex / I.S.:**

| | |
|---|---|
| ATEX | DEKRA 13ATEX0098 X |
| IECEx | DEK 13.0026 X |
| FM, US | FM18US0268X |
| FM, CA | FM18CA0129X |
| UKEX | DEKRA 21UKEX0167X |

# Display layout

By default, the PR 4512 enters monitor mode for process surveillance. With the front keys or the PPS application, the 4512 can enter programming or simulation mode.

**Layout for 3000/4000 and 9000 series products (in monitor mode)**

<table>
<tr><td rowspan="4">PR 3000 / 4000</td><td>Line 1 shows the scaled process value.</td><td rowspan="4"> 
</td></tr>
<tr><td>Line 2 shows the selected engineering unit.</td></tr>
<tr><td>Line 3 shows analog output value or TAG no.</td></tr>
<tr><td>Line 4 shows status for relay, communication, data logging and e.g. signal trending.</td></tr>
<tr><td rowspan="3">PR 9000</td><td>Line 1 shows status for input channel/-s</td><td rowspan="3"> 
</td></tr>
<tr><td>Line 2 and 3 show analog output value / digital output status / analog input value / TAG no. where appliable or alternating values.</td></tr>
<tr><td>Line 4 shows status for relay, communication, data logging and e.g. signal trending.</td></tr>
</table>

# Operating the function keys / display

### In general

When using the PR 4512 for configuration of a PR 4000 or PR 9000 device, you will be guided through all parameters and can choose the settings which fit the application. For each menu there is a scrolling help text which is automatically shown in line 3 on the display.

Configuration is carried out by use of the 3 function keys:

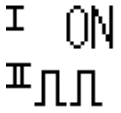
- ⌃ will increase the numerical value or choose the next parameter
- ⌄ will decrease the numerical value or choose the previous parameter
- OK will save the chosen value and proceed to the next menu

When configuration is completed, the display will return to the default state (monitor). Pressing and holding OK will return to the previous menu or return to the default state without saving the changed values or parameters.

If no key is activated for 1 minute, the display will return to the default state without saving the changed values or parameters.

For device-specific programming menus, please refer to the user manual for each device, e.g. PR 4116.

### 4512 display icons explained

| | | |
|---|---|---|
| PR 3000 / 4000 |  | Relay status (relay energized). Icon with 1 or 2 blinking indicates delayed relay action (programmable on/off delay). |
| |  | Arrow up/down indicates process value is trending higher/lower. |
| |  | Circular indicator confirms display-to-host communication. |
| |  | Data logger icon. Blinking when data logging is in progress. Steady with data present, but data logging not active. |
| PR 9000 |  | Relay status (Relay energized]. Icon with 1 or 2 blinking indicates delayed relay action (programmable on/off delay). |
| |  | Arrow up/down indicates process value is trending higher/lower. |
| |  | Circular indicator confirms display-to-host communication. Steady dot indicates device is SIL-locked; blinking dot indicates non SIL-locked device. |
| |  | Data logger icon. Blinking when data logging is in progress. Steady with data present, but data logging not active. |
| |  | Checkmark indicates input OK or '!' for error condition / device error on channel input. |
| |  | One or two channels:<br>ON indicates that the relay / digital output is energized.<br>OFF = not energized.<br>The pulse icon indicates input frequency above 1 Hz.<br>Device faults are displayed in channel 1 status.<br>Device or sensors fault messages e.g. CA.BR (cable break) are device-dependent; please consult device manual for a complete list of applicable error codes. |

## 4512 functions

The PR 4512 gives access to a number of functions which can be reached by answering "Yes" to the menu point "ADV.SET" (see "4512 settings - routing diagram" on page 12).

### Two factor authentication

When pairing the PPS device with PR 4512, a physical acknowledgement on the 4512 unit is required to complete pairing (activation of the OK button). Two factor authentication is disabled by default.

### Log functionality

By selecting the "LOG.INT" menu item, it is possible to set the log interval in seconds. Valid selections are 1...9999 s.
You can also choose to reset the stored log in the menu item "LOG. DEL".
The logging function exits automatically, if the PR 4512 is detached. If the PR 4512 is placed back on the same device, the logging will continue. In the event of a power outage, logging will resume when power is restored.

### Display orientation

The menu item "ORIEN" allows the user to rotate the display 180 degrees for correct operation with upside down mounting of the device.

### Memory

The memory available for data logging is 100 MB. When the memory is full, the oldest data will be overwritten.

### SIL and PR 4512 / PPS

As of PR 4512 hardware serial number 211065001, shipped from January 2021, you can engage data logging via the front display while the 9000 device is SIL-enabled (SIL-locked).

There is no support for enabling SIL mode for 9000 series devices from within the PPS application or for accessing a SIL-enabled device for monitoring via the PPS. An attempt to access a SIL-enabled device from the PPS application returns the error code 'SIL-enabled, access not possible!'.

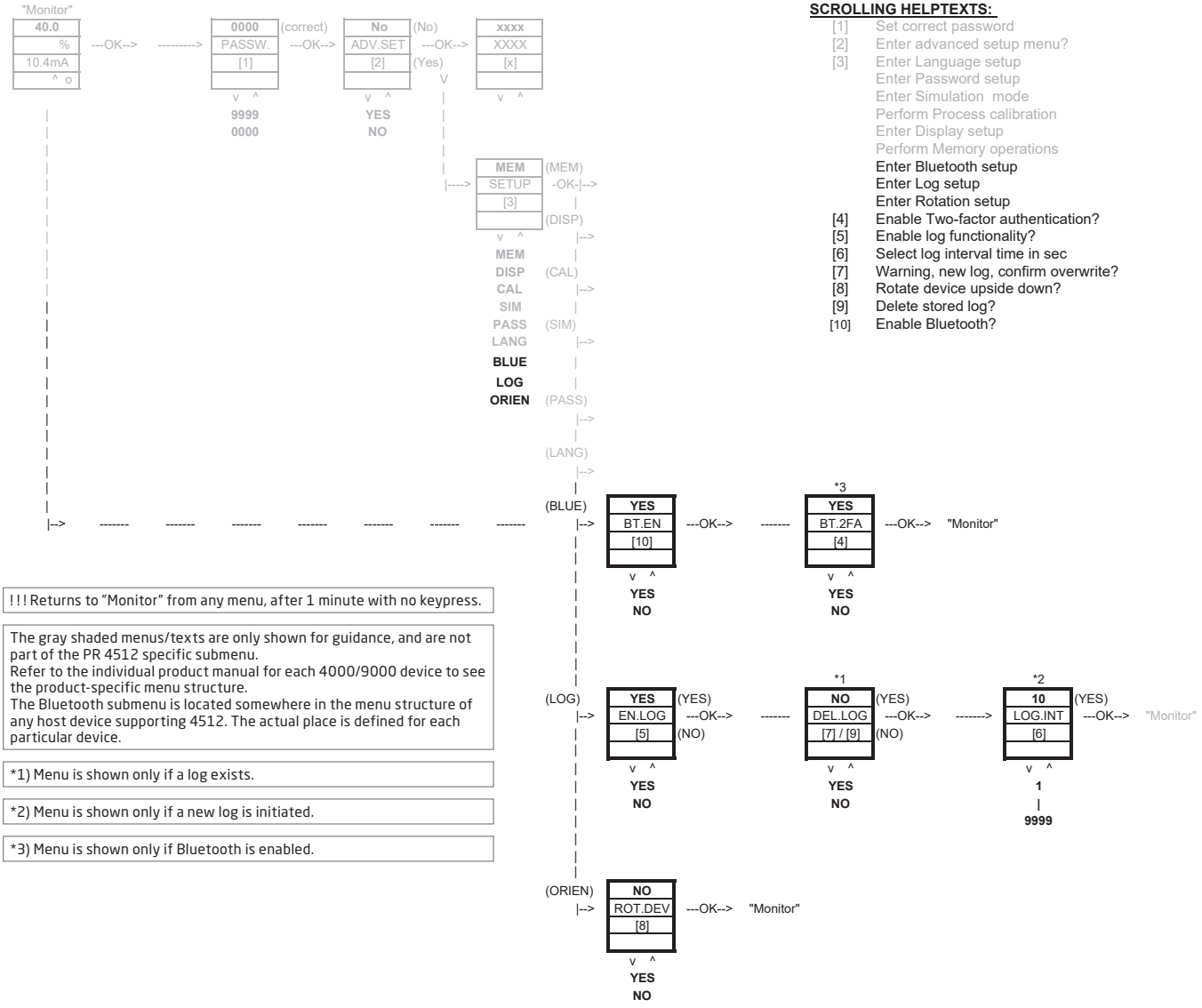
### Bluetooth enable / disable

For customers with an IT security policy that prevents Bluetooth devices in production environments, it is possible to disable Bluetooth while still benefitting from the data logging capabilities. This feature has been implemented on PR 4512 devices with serial number from 201556001, shipped from August 2020.

**Error Scenarios and help texts**

| Conditions | Scrolling help text | Solution |
|---|---|---|
| 4512 has been without power until the battery is fully discharged.<br>The RTC now needs to be synchronized. | RTC synchronization required. | Connect a smart device to the 4512 and synchronize.<br>The error message will disappear when the synchronization is OK. |
| 4512 has a log in progress and is moved to a new host. | New host detected, move 4512 back to previous host or press OK to stop log. | Move the 4512 back to the previous host or press OK.<br>Both actions will remove the error message.<br>The log will still be available in the memory of the 4512, but the device will not continue logging.<br>Use PR 4590 or the PPS app to read out the log, before moving 4512 to a new host. |
| 4512 has a log in progress and the user changes the host configuration. | Configuration change detected, log has been stopped. | If the configuration is changed while logging, the log is stopped immediately.<br>A MEM-SAVE is also considered a configuration change, and thus stops data logging.<br>Press OK to acknowledge that the log has been stopped in order to remove the error message.<br>The log will still be available in the memory of the 4512, until a new log is started.<br>Use PR 4590 or the PPS app to read out the log, before starting a new log. |

# 4512 settings - routing diagram




**SCROLLING HELPTEXTS:**

- [1] Set correct password
- [2] Enter advanced setup menu?
- [3] Enter Language setup
  Enter Password setup
  Enter Simulation mode
  Perform Process calibration
  Enter Display setup
  Perform Memory operations
  Enter Bluetooth setup
  Enter Log setup
  Enter Rotation setup
- [4] Enable Two-factor authentication?
- [5] Enable log functionality?
- [6] Select log interval time in sec
- [7] Warning, new log, confirm overwrite?
- [8] Rotate device upside down?
- [9] Delete stored log?
- [10] Enable Bluetooth?

!!! Returns to "Monitor" from any menu, after 1 minute with no keypress.

The gray shaded menus/texts are only shown for guidance, and are not part of the PR 4512 specific submenu.
Refer to the individual product manual for each 4000/9000 device to see the product-specific menu structure.
The Bluetooth submenu is located somewhere in the menu structure of any host device supporting 4512. The actual place is defined for each particular device.

*1) Menu is shown only if a log exists.

*2) Menu is shown only if a new log is initiated.

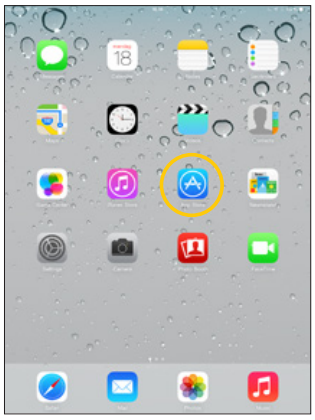
*3) Menu is shown only if Bluetooth is enabled.

# PR Process Supervisor - PPS app

The PR electronics 'PR Process Supervisor' - PPS - app enables remote data logging, programming and error diagnostics of PR 4000/9000 devices mounted with the 4512 Bluetooth communication enabler.
The app shows live data directly from a smart device. It is designed for technical and maintenance staff as well as plant operators. All that is required to get started is to download the free app, and you have a user friendly interface for monitoring and programming of installed PR devices.

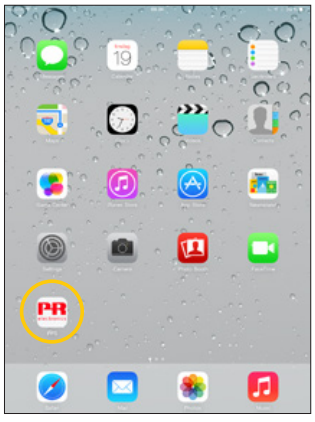
## App download

If you have already downloaded the PR electronics PPS app from either the Apple App store (IOS) or Google Play (Android), check for updates that will add the Bluetooth communication options.[2]
If you will be downloading the PR electronics PPS app for the first time, follow the instructions for IOS below. The Android download process will be similar.



Go to the App store or scan the QR code (the code works for both IOS and Android).


Search for "PR electronics PPS", and install the free application.



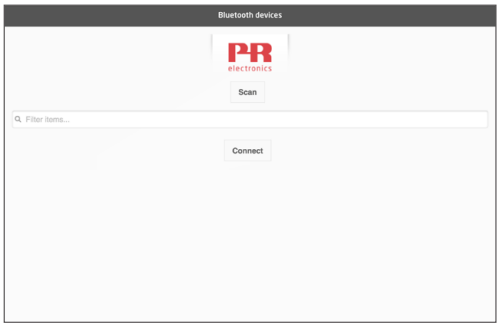
Tap the newly created PPS icon.

2 Please consult app release notes for latest status of supported devices.

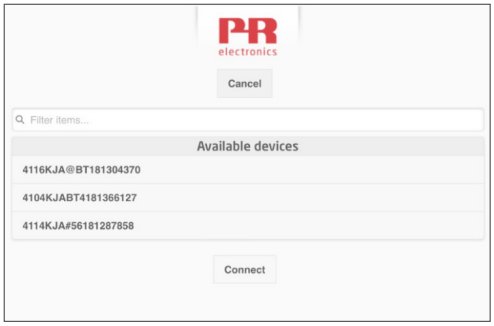
## Connection and configuration

1. Start the PPS app.

2. Perform “Scan” and discover products in the Bluetooth range with PR 4512 installed.




3. In order to identify a specific product in the app, each product may be configured with an individual TAG number. If needed, perform “filter items” to select specific product types, e.g. all “PR 4116”.
4. Select the desired device and click ‘Connect’.

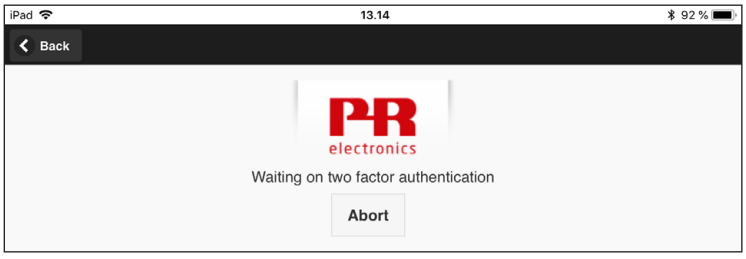



5 When a specific product is selected in the PPS, the display on the corresponding PR 4512 device will flash, indicating that connection has been established.

## Pairing options

a) Two-factor authentication - BT.2FA (disabled as default):
   1. The display on the corresponding PR 4512 device will flash.
   2. Confirm that the right device has been selected by pushing the OK button on the 4512.

Note: When password is enabled on PR 4512, the PPS will prompt the user to type in password when pairing.




b) Fast pairing:
   1. Deactivate two factor authentification through the PR 4512 menu (see page 12).
   2. Bluetooth devices in the vicinity of the smart device are automatically discovered.
   3. Select the desired device.
   4. The display on the corresponding PR 4512 device will flash.

Note: As long as a Bluetooth connection is running, the active 4512 device wil be flashing.

### Time adjustment

The internal clock in the PR 4512 uses Coordinated Universal Time (UTC). When connecting to a smart device, the clock will automatically show local time.
If the internal clock has drifted by > 2 minutes, a warning will appear on the smart device prompting you to adjust the time.

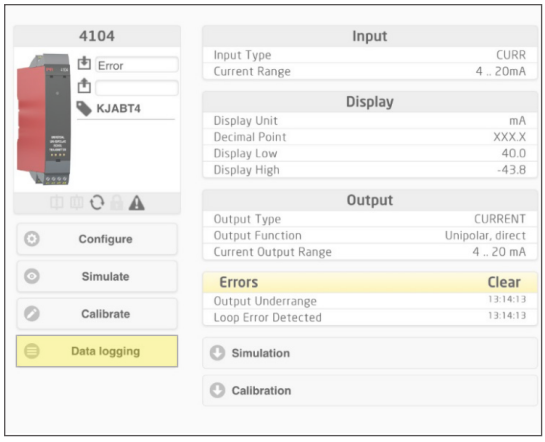
### Process simulation

If a process simulation is performed using the PPS app, the device will return to normal operation state when the connection between the PPS app and the 4512 is terminated.

### Data logging set-up

Opening screen for start-up of data logging:

1. Select "Data logging" in the left-hand side.

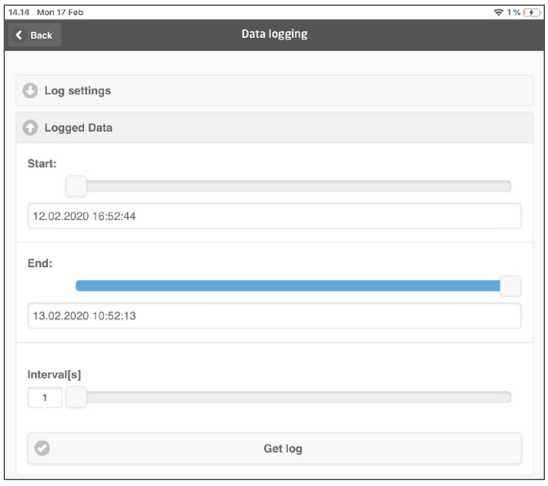



2. Select the data logging interval.
   Valid selections are 1...9999 sec.


3. Use the down-arrow to change 'NO' to 'YES' and enable logging.
4. Click Send.

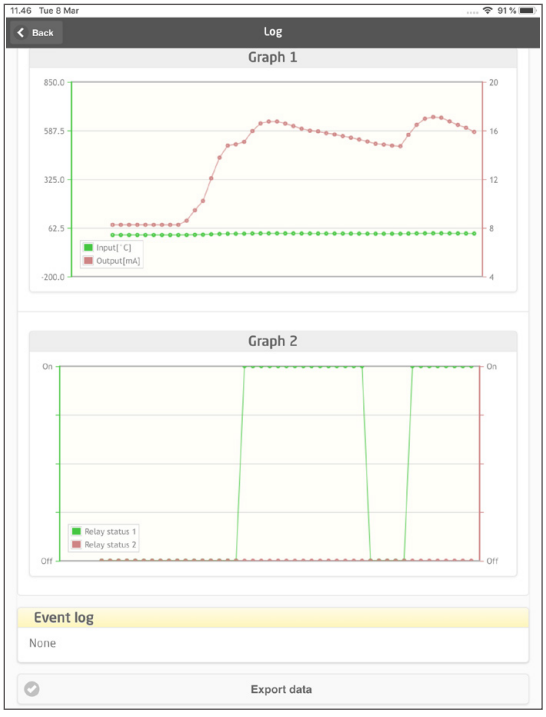
## Analysis of logged data, event logging and export

1. Select the period and interval to transfer to the smart device and click the “Get log” button.

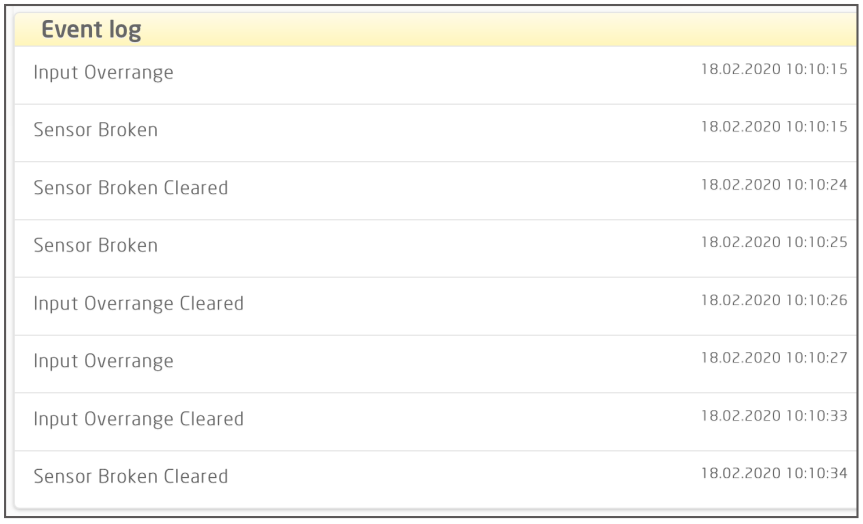



Note: Export intervals must be a multiple of the logged interval. If datalogging is done with 5 sec. intervals, valid export intervals are 5, 10, 15,...9995.

2. The available log information is shown.



3. The event log indicates the error code, date and time of each event and when it was cleared.



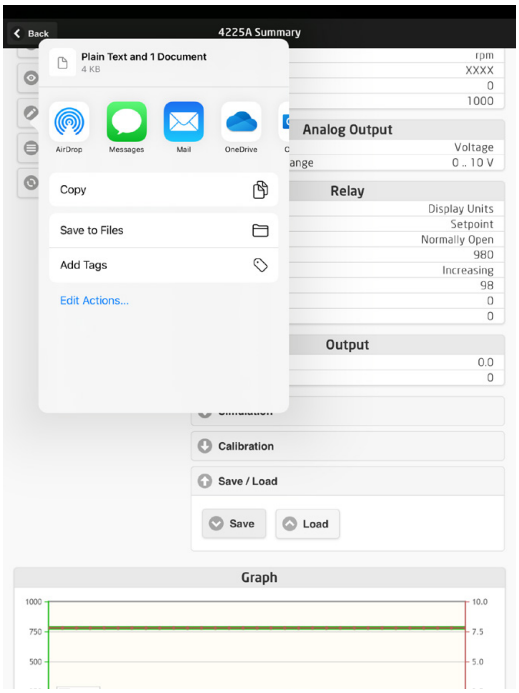

4. If the logged data needs to be transferred to a PC, click the “Export data” button.
   The export will generate a dataset with two different file formats, a CSV file with the extension *.CSV for generic use and a file with the extension *.PRESET for easy import to PR PReset.

For a detailed description of the error codes, see the section “Error indications” in the individual 4000/9000 series product manual.

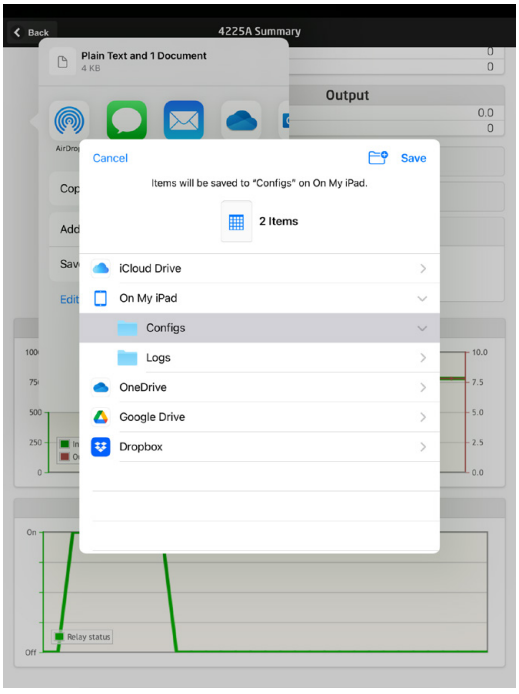
### Configuration management via PPS Save / Load function

The PPS Save and Load function allows you to Save and Load a configuration to and from the PPS app. The file formats saved are .PReset compatible with PReset as of version 10.0 and .csv for easy import into your preferred program for further processing.

1. To save the configuration press “save” and now you have the option to store the configuration locally on your smart device or forward the configuration via you preferred method.

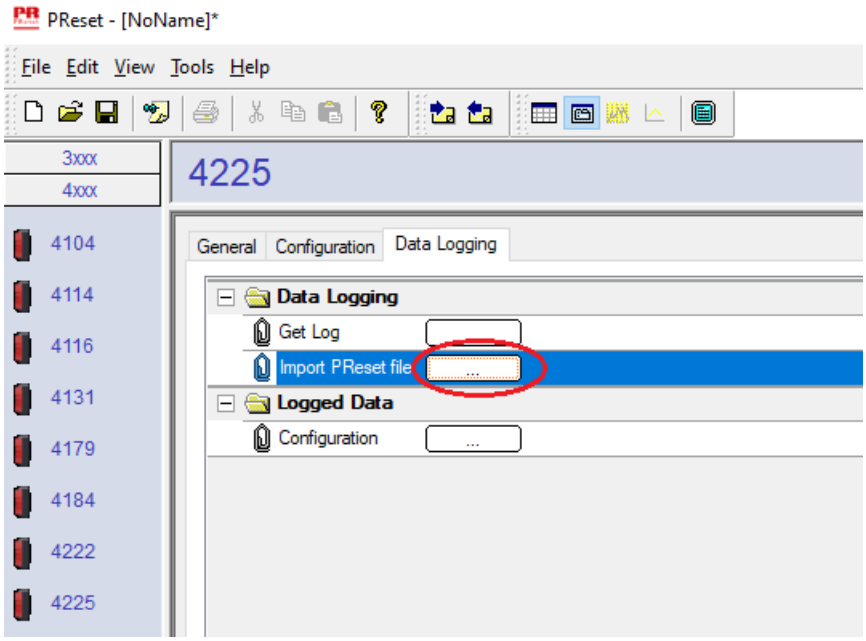



2. To save locally or expand your available options, press “Save to files”.

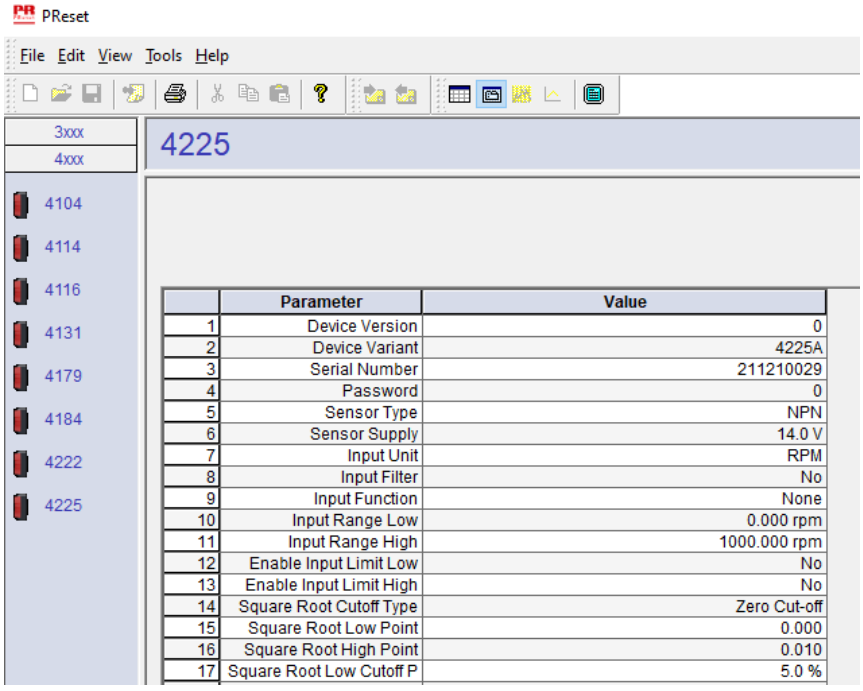



The PPS app supports standard methods of exchanging files, including email, Microsoft OneDrive, DropBox and Google Drive. Two files, .PReset and .csv, will be stored /exchanged.

The .PReset configuration file can be opened from PReset, selecting the “Datalogging” tab and then “Import PReset file”.




Selecting ‘Logged Data’ - ”Configuration”, you can now review your .PReset configuration file.

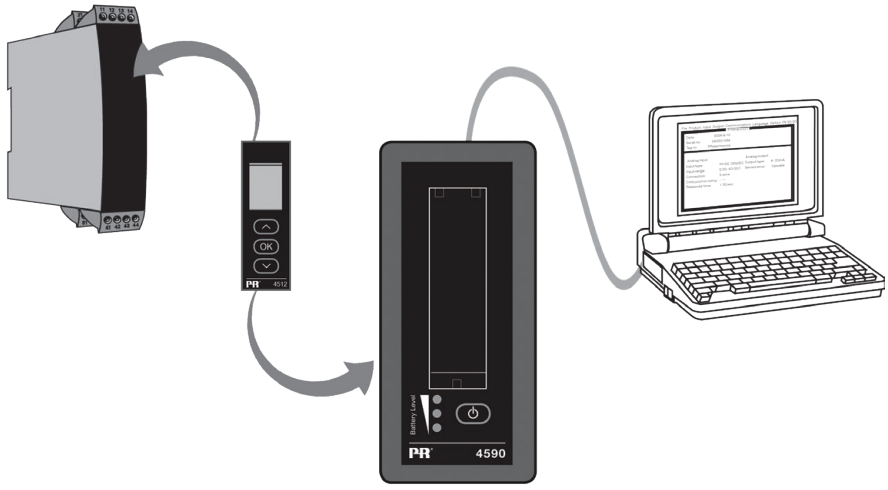



| | Parameter | Value |
|---|---|---|
| 1 | Device Version | 0 |
| 2 | Device Variant | 4225A |
| 3 | Serial Number | 211210029 |
| 4 | Password | 0 |
| 5 | Sensor Type | NPN |
| 6 | Sensor Supply | 14.0 V |
| 7 | Input Unit | RPM |
| 8 | Input Filter | No |
| 9 | Input Function | None |
| 10 | Input Range Low | 0.000 rpm |
| 11 | Input Range High | 1000.000 rpm |
| 12 | Enable Input Limit Low | No |
| 13 | Enable Input Limit High | No |
| 14 | Square Root Cutoff Type | Zero Cut-off |
| 15 | Square Root Low Point | 0.000 |
| 16 | Square Root High Point | 0.010 |
| 17 | Square Root Low Cutoff P | 5.0 % |

### Time adjustment

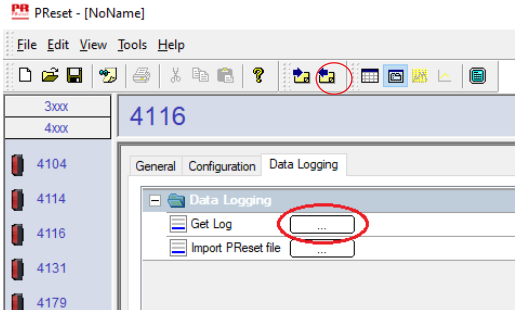
The internal clock in the PR 4512 uses Coordinated Universal Time (UTC). When connecting to PReset, the clock will automatically show local time.
If the internal clock has drifted by > 2 minutes, a warning will appear in PReset prompting you to adjust the time.

### Detailed analysis of logged data

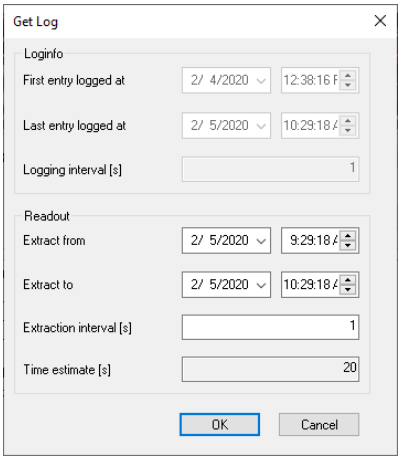



Use the PR 4590 ConfigMate to transfer logged data in the PR 4512 to PReset for analysis.

1. In PReset, click on the "Receive" icon.
2. Select the tab "Data Logging"
3. Click "Get Log".



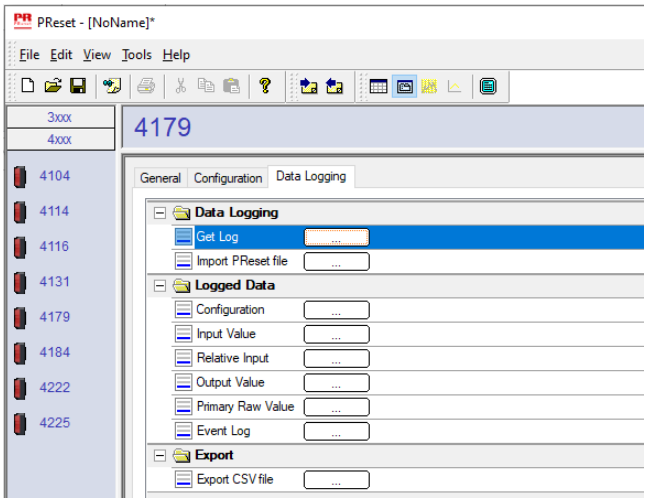

4. In the following window, select the "start time", "end time" and "interval".



Note: Time estimate [s] is automatically calculated and indicates the data transfer time to PReset.
Note: Export intervals must be a multiple of the logged interval. If datalogging is done with 5 sec. intervals, valid export intervals are 5, 10, 15,...9995.

5. Click "OK" to transfer the data into PReset.

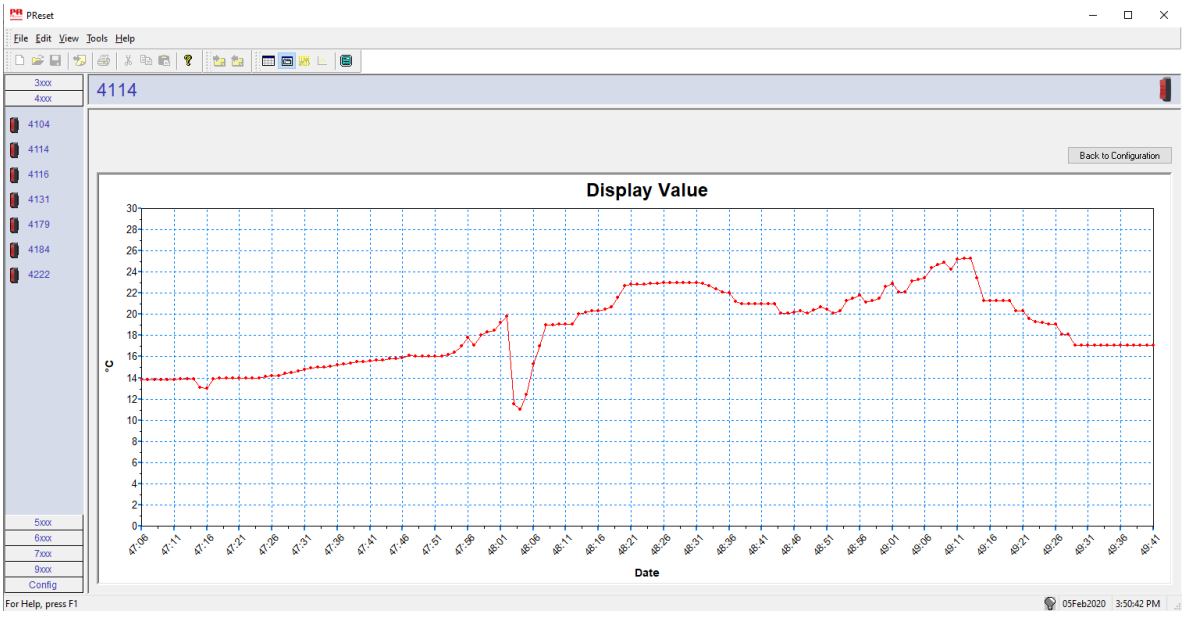
6. The following window opens:




7. Click the box next to each log (e.g. Display Value) to view logged data as a graph.
8. By clicking the box next to "Export as CSV", all logged data will be exported as a .csv file.

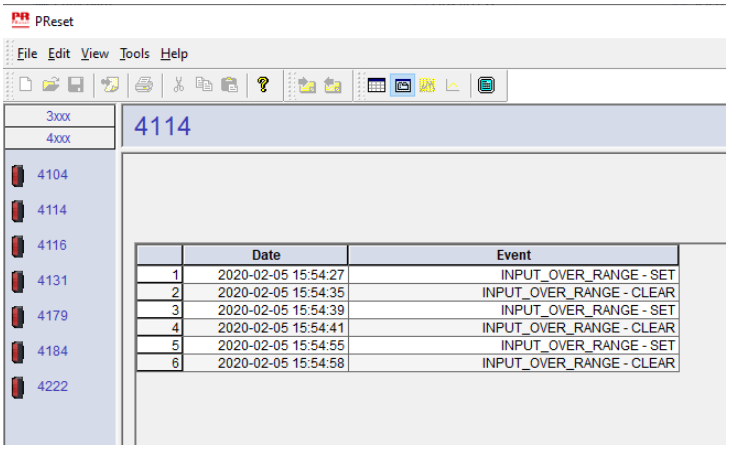
## Data logging

The below example shows the graph for display value. Other options are Relative PV, Output Value and Primary Raw Values.



## Event log

The below example shows an event log in PReset for a PR 4114.
The event log indicates date and time for the occurrence of the event and for when it was cleared.



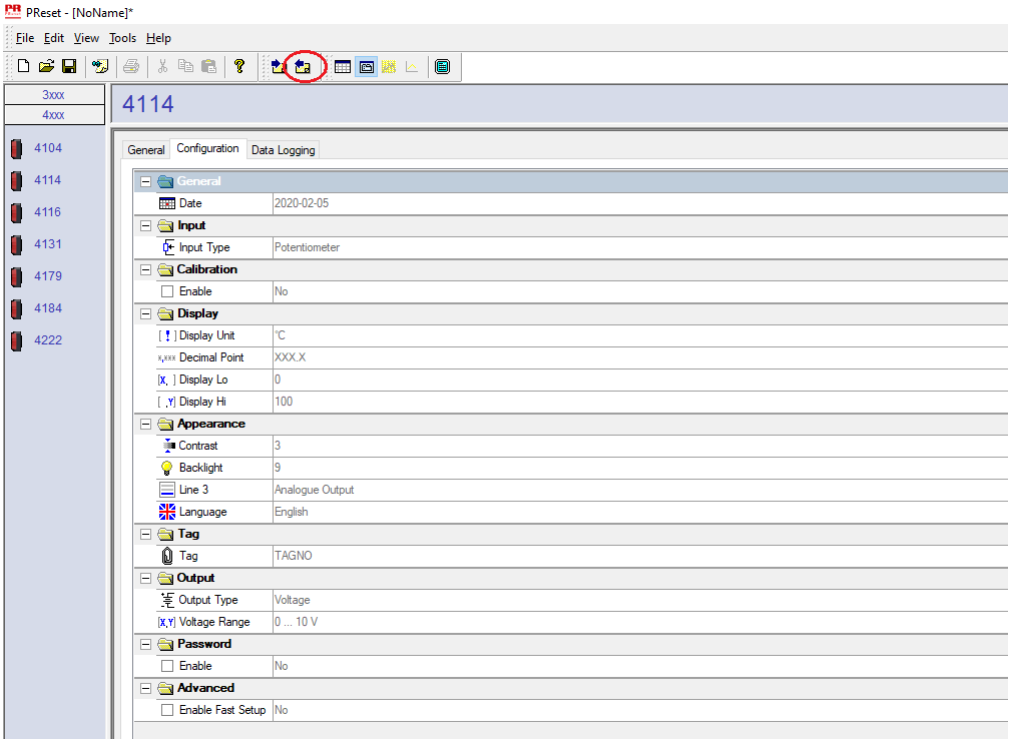

| | Date | Event |
|---|---|---|
| 1 | 2020-02-05 15:54:27 | INPUT_OVER_RANGE - SET |
| 2 | 2020-02-05 15:54:35 | INPUT_OVER_RANGE - CLEAR |
| 3 | 2020-02-05 15:54:39 | INPUT_OVER_RANGE - SET |
| 4 | 2020-02-05 15:54:41 | INPUT_OVER_RANGE - CLEAR |
| 5 | 2020-02-05 15:54:55 | INPUT_OVER_RANGE - SET |
| 6 | 2020-02-05 15:54:58 | INPUT_OVER_RANGE - CLEAR |

For a detailed description of the error codes, see the section “Error indications” in the individual 4000/9000 series product manual.

## Import of configuration from 4512 memory

Using the ‘Save mem’ function for the 4512 you can retrieve the stored configuration via 4590 ConfigMate.

1. Click on the “Receive” icon.
2. Select the tab “Configuration”.




It is possible to save and load your configuration as a .cfg file via PReset selecting “File” and “Save” / “Open”.

# ATEX/UKEX Installation drawing 4500QA01-V2R0

| | |
|---|---|
| Ex Certificates | DEKRA 13ATEX0098 X<br>DEKRA 21UKEX0167X |
| Standards: | EN IEC 60079-0<br>EN 60079-7 |
| Marking: | II 3G Ex ec IIC T5 |

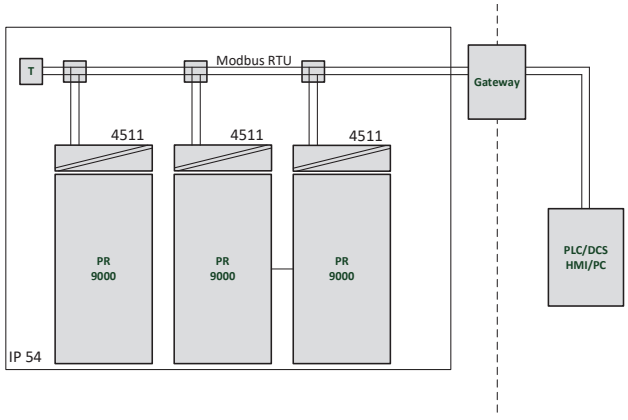
Temperature range -20°C ≤ Ta ≤ +60°C

# ATEX/UKEX Installation Instructions

For safe installation of the 4500 series of products the following must be observed.

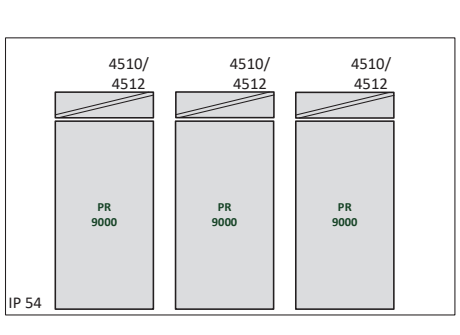
Hazardous Area
II 3G Ex IIC

Unclassified Area



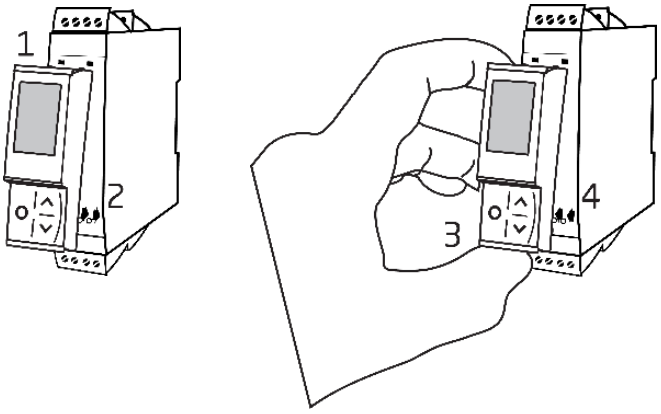

Hazardous Area
II 3G Ex IIC

Unclassified Area



**General installation instructions**

Year of manufacture can be taken from the first two digits in the serial number.
For safe Ex installation the following must be observed: The device must be installed by qualified personnel who are familiar with the national and international laws, directives and standards that apply to this area.
To prevent ignition of the explosive atmospheres do not separate connectors when energized and an explosive gas mixture is present.
To avoid the risk of explosion due to electrostatic charging of the enclosure, do not handle the units unless the area is known to be safe, or appropriate safety measures are taken to avoid electrostatic discharge.




Mounting of PR 4500 communications interface:

1. Insert the tabs of the PR 4500 into the slots at the top of the device.
2. Hinge the PR 4500 down until it snaps into place.

Demounting of the PR 4500 communication interfaces:

3. Push the release button on the bottom of the PR 4500 and hinge the PR 4500 out and up.
4. With the PR 4500 hinged up, remove from the slots at the top of the device.

**Specific Conditions of Use**

- The equipment shall only be used in an area of not more than pollution degree 2, as defined in EN IEC 60664-1.
- The devices must be installed in a suitable enclosure providing a degree of protection of at least IP54 according to EN IEC 60079-0, taking into account the environmental conditions under which the equipment will be used.
- Transient protection shall be provided that is set at a level not exceeding 140% of the peak rated voltage value at the supply terminals to the equipment.

# IECEx Installation drawing 4500QI01-V2R0

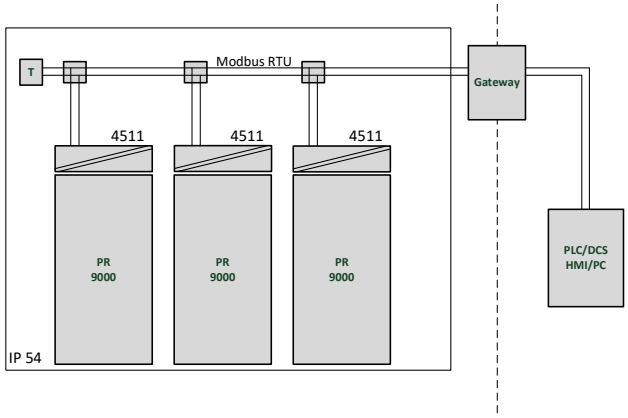
| | |
|---|---|
| Ex Certificates | IECEx DEK 13.0026X |
| Standards: | IEC 60079-0<br>IEC 60079-7 |
| Marking: | Ex ec IIC T5 Gc |

Temperature range -20°C ≤ Ta ≤ +60°C

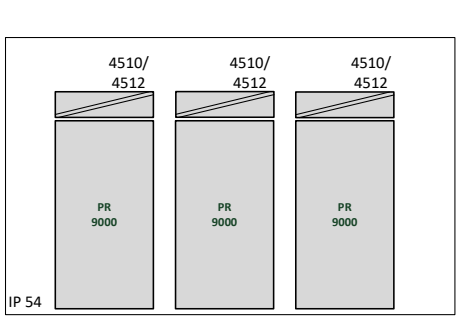
# IECEx Installation Instructions

For safe installation of the 4500 series of products the following must be observed.

Hazardous Area Unclassified Area

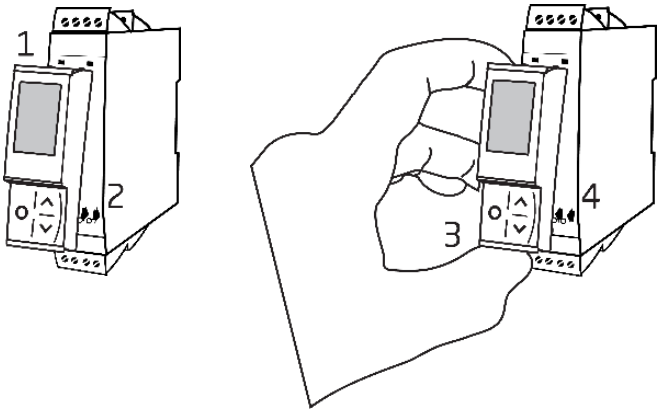



Hazardous Area Unclassified Area



**General installation instructions**

Year of manufacture can be taken from the first two digits in the serial number.
For safe Ex installation the following must be observed: The device must be installed by qualified personnel who are familiar with the national and international laws, directives and standards that apply to this area.
To prevent ignition of the explosive atmospheres do not separate connectors when energized and an explosive gas mixture is present.
To avoid the risk of explosion due to electrostatic charging of the enclosure, do not handle the units unless the area is known to be safe, or appropriate safety measures are taken to avoid electrostatic discharge.




Mounting of PR 4500 communications interface:

1. Insert the tabs of the PR 4500 into the slots at the top of the device.
2. Hinge the PR 4500 down until it snaps into place.

Demounting of the PR 4500 communication interfaces:

3. Push the release button on the bottom of the PR 4500 and hinge the PR 4500 out and up.
4. With the PR 4500 hinged up, remove from the slots at the top of the device.

**Specific Conditions of Use**

- The equipment shall only be used in an area of not more than pollution degree 2, as defined in EN IEC 60664-1.
- The devices must be installed in a suitable enclosure providing a degree of protection of at least IP54 according to EN IEC 60079-0, taking into account the environmental conditions under which the equipment will be used.
- Transient protection shall be provided that is set at a level not exceeding 140% of the peak rated voltage value at the supply terminals to the equipment.

# FM Installation drawing 4500QF01-V1R0

| | |
|---|---|
| FM Certificates | FM22US0014X<br>FM22CA0009X |
| Standards: | See Certificate |
| Marking: | CL I Div 2 GP A,B,C,D T5<br>CL I Zone 2 AEx/Ex ec IIC T5 Gc |

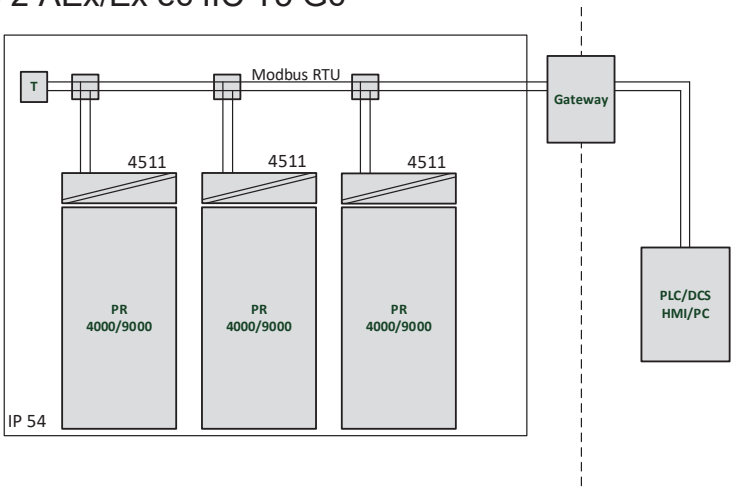
Temperature range -20°C ≤ Ta ≤ +60°C

# AEx/Ex ec Installation Instructions

For safe installation of the 4500 series of products the following must be observed.

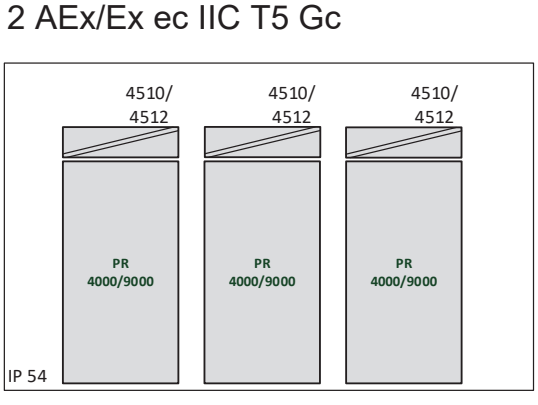
Hazardous Area
CL I Div2 GP A,B,C,D
CL I Zone 2 AEx/Ex ec IIC T5 Gc

Unclassified Area



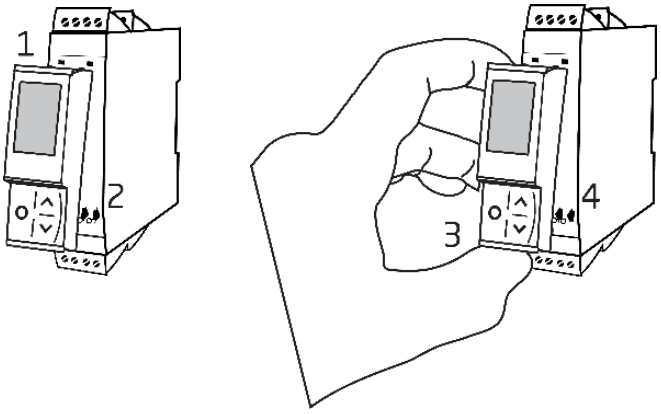

Hazardous Area
CL I Div2 GP A,B,C,D
CL I Zone 2 AEx/Ex ec IIC T5 Gc

Unclassified Area



**General installation instructions**

Year of manufacture can be taken from the first two digits in the serial number.
For safe Ex installation the following must be observed: The device must be installed by qualified personnel who are familiar with the national and international laws, directives and standards that apply to this area.
To prevent ignition of the explosive atmospheres do not separate connectors when energized and an explosive gas mixture is present.
To avoid the risk of explosion due to electrostatic charging of the enclosure, do not handle the units unless the area is known to be safe, or appropriate safety measures are taken to avoid electrostatic discharge.




Mounting of PR 4500 communications interface:

1. Insert the tabs of the PR 4500 into the slots at the top of the device.
2. Hinge the PR 4500 down until it snaps into place.

Demounting of the PR 4500 communication interfaces:

3. Push the release button on the bottom of the PR 4500 and hinge the PR 4500 out and up.
4. With the PR 4500 hinged up, remove from the slots at the top of the device.

**Specific Conditions of Use**

**Class 1, Division 2**

In Class I, Division 2 installations, the subject equipment shall be mounted within a tool-secured enclosure which is capable of accepting one or more of the Class I, Division 2 wiring methods specified in the National NEC or CEC.

**Class 1, Zone 2**

- The equipment shall be installed within an enclosure that provides a minimum ingress protection of IP54 in accordance with ANSI/UL 60079-0 or CSA C22.2 No. 60079-0.
- The equipment shall only be used in an area of at least pollution degree 2, as defined in IEC 60664-1.
- Transient protection shall be provided that is set at a level not exceeding 140% of the peak rated voltage value at the supply terminals to the equipment.

# Document history

The following list provides notes concerning revisions of this document.

| Rev. ID | Date | Notes |
|---|---|---|
| 100 | 2002 | Initial release of the product. |
| 101 | 2103 | Menu structure updated.<br>SIL & Bluetooth functionality updated. |
| 102 | 2222 | Routing diagram updated.<br>Icon description added.<br>Save/Load function added.<br>ATEX and IECEx approvals updated - Ex na changed to Ex ec.<br>UKEX approval added. |
| 103 | 2414 | ATEX and IECEx installation drawings updated - reference to PR 4000 devices removed. |

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