

# Reliable and *extremely precise* *signal conditioning*

PERFORMANCE  
MADE  
SMARTER



## 4000 series

Multifunctional devices

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

The 4000 series is a unique range of devices capable of accepting a wide range of input types while also offering flexible output options. The multifunctional products cover multiple applications and are easily deployable as your site standard.

**PR**  
electronics

# The best of PR electronics *packed in 8 multifunctional devices*

High performance based on a flexible platform for easy commissioning and maintenance as well as high product reliability

In all aspects of the design, PR electronics has focused on the multifunctionality of the 4000 series. Hence, the product variants cover hundreds of applications, resulting in reduced stock as well as increased flexibility. User-friendly programming via an intuitive display or the smart device PPS app delivers an unprecedented operational experience for the user.

## Power supply



A high degree of flexibility with the universal supply voltage of 21.6...253 VAC / 19.2...300 VDC.

## Communication Interfaces



Click-on display for readout of process values and diagnostics as well as configuration 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.

## High level of isolation



Safe galvanic isolation of 2.3 kVAC provides high noise immunity and prevents ground loops for accurate delivery of the process signal to your control system.

## Over-voltage / polarity protection



All terminals are over-voltage protected (24 VDC), polarity protected and short-circuit protected.



## Why multifunctional devices?

- The ability to meet a wide range of application demands while reducing the number of devices in stock is a major advantage of multifunctional devices.
- Signal conditioning interfaces capable of accepting a wide range of input types while also offering flexible output options.
- Universal power supply accepting all common AC / DC voltage sources.



## Safety functions

For safety-demanding solutions the 4114, 4116, 4179, 4179B, 4184 and 4225 provide the required failure data (SFF and PFD<sub>AVG</sub>) for SIL 2 applications as per IEC 61508 / IEC 61511.



## Easy configuration

Easy installation and commissioning with intuitive front display and smart device PPS app. Save / load your configuration and transfer configuration and data log via e-mail or generic fileshare solutions like OneDrive, GoogleDrive or DropBox.



## EMC performance

Exceptional EMC performance with high immunity, designed to minimize interference and ensure reliable operation in the process industry. Compliant with NAMUR NE21 burst recommendations, it guarantees high accuracy even in harsh EMC environments.



## Mounting

Units can be mounted side by side, horizontally and vertically, without air gap on a standard DIN rail, even at 60°C ambient temperature. Operating temperature range -20...+60°C.



The 4000 series is equipped with many approvals for applications worldwide.



# PR 4500 series *Communication interfaces*

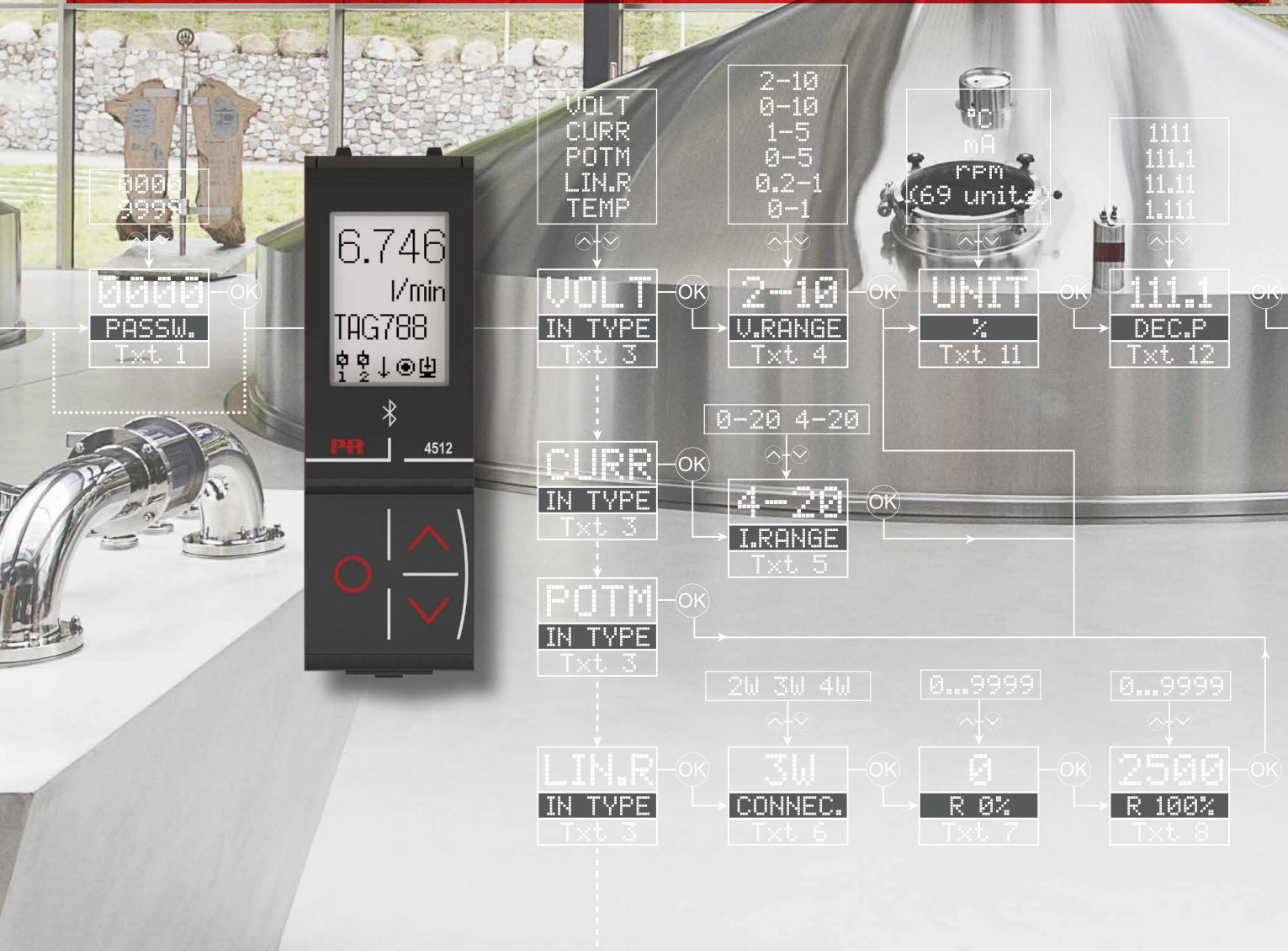
Your preferred communication tool for easy programming and data logging

## Program, monitor and troubleshoot

The 4500 series of detachable communication interfaces provides easy local operator programming of all parameters available for your 4000 series device. The circular menu is intuitive and easy to navigate with the 8 language scrolling help text for individual steps in the menu.

Status indicators and process value for daily operation and clear text communication for sensor error and device fault provide valuable information when troubleshooting.

For fast commissioning and fixing an intermittent issue with a sensor, the simulation feature comes in handy, manually overriding process or output value.

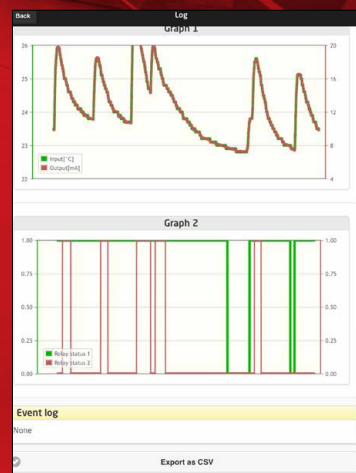
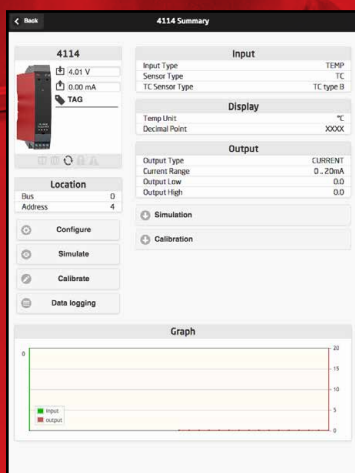




# 4512 Bluetooth *communication enabler*

The PR 4512 Bluetooth communication enabler provides programming, monitoring, diagnostics, and data logging on new and existing PR 4000 series transmitters. The free PPS app provides intuitive programming of all device parameters conveniently from your preferred smart devices, available on IOS & Android platforms.

- Visualization of process value trend and relay status
- Data logging for more than 30 days down to 1 second intervals
- On-site data analysis from PPS app and off-site analysis on your PC with PReset software
- Export of configuration and data log
- Simulation of process value and relay status
- Increase Bluetooth safety with two-factor authentication
- Realtime clock for log file timestamps and battery backup





# Customer case

## *Lyonnaise des Eaux*

### Wastewater lift station surveillance and management - the easier, more cost-efficient, and more flexible way

Lyonnaise des Eaux in Montgeron (Ile-de-France, France), decided to renovate its lift station cabinets - getting a much simpler, more cost-efficient setup with remote access to transmitter data and programming - along with the ability to tele-monitor the water level in pumping stations via secure network....

#### **Need for a flexible multifunctional transmitter for lift station water level monitoring.**

Lyonnaise des Eaux's team in Montgeron - a city situated in the southern Paris region - provides service for several lift stations for the local wastewater system. The team decided to install the PR 4116 universal transmitter for water level monitoring at the individual stations. They needed a transmitter that could be used to program the pumps as well as indicate relay failure for practically every installation. The 4116 offered both functionalities.



In addition, the 4116 was chosen for easy installation into the existing cabinets, the five-year warranty, simple programming, and fair price.

#### **Simplifying wiring and renovating cabinets ten years later**

The team found that some of the stations needed renovation. The pumping station probes were reacting to contact with litter and rain water, triggering the pumps to stop. Arnaud CHAMBON of Lyonnaise des Eaux decided on PR multifunctional transmitters and communication enablers for the renovation project:

"We needed to renovate but certainly also to simplify the cabinets at the Rue de Paris at Villeneuve St Georges. In one cabinet we had twenty PR 4116 and 4510 and in another cabinet we had an additional fifteen", Mr. Chambon explains and continues: "We replaced the existing probes with piezo probes and replaced the modules in the cabinets with a new set of PR 4116 universal transmitters with 4511 communication enablers clicked onto the front. The pumps were controlled by the PR modules using threshold and hysteresis functionality. This gave us a simpler and much more cost-efficient set-up... with less wiring."

"...Now - without wiring, we have remote access to the data transmitted by the 4116 and we can program the modules as well. We have also saved on installation costs."

#### **Lyonnaise des Eaux**

Products used:

**4116 Universal transmitter**  
**4510 Display / programming front**  
**4511 Communication enabler**

# Product *specifications*

A multifunctional converter for every need

		4104	4114	4116	4131	4179	4184	4222	4225
INPUT	mA	●	●	●	●		●	●	
	Active and passive	●	●	●	●		●	●	
	AC current and AC voltage					●			
	3-wire mA	●					●	●	
	V	●	●	●	●		●	●	
	Bipolar current and voltage	●					●		
	Pt100: 2-,3- and 4-wire		●	●	●			●	
	TC types: B...W5, LR		●	●	●			●	
	Potentiometer		●	●	●		●	●	
	Linear resistance		●	●	●			●	
	Frequency: PNP, NPN, TTL, 0...100 kHz								●
OUTPUT	Relay outputs: 250 VRMS / 2 A			●	●	● <sup>4</sup>			● <sup>2</sup>
	mA	●	●	●		● <sup>5</sup>	●		● <sup>3</sup>
	Active and passive	●				● <sup>5</sup>	●		● <sup>3</sup>
	V	●	●	●		● <sup>5</sup>	●		● <sup>3</sup>
	Bipolar current and voltage	●				● <sup>5</sup>	●		● <sup>3</sup>
	Buffered voltage						●		● <sup>3</sup>
	Frequency: PNP, NPN, TTL <sup>1</sup>							●	●

1: Dedicated TTL output only for 4222    2: 4225A: 1 x relay, 4225B: 2 x relay    3: 4225A and 4225C version only  
4: 4179B only    5: 4179 only

PR 4500 communication interfaces		4510	4511	4512
FEATURE	Backlit dot matrix display	●	●	●
	Scrolling help text - 8 languages	●	●	●
	Password protection	●	●	●
	Configuration save / load	●	●	●
	Bluetooth for PPS app			●
	Data logging memory			●
	Modbus RTU interface		●	
	Ex / ATEX zone 2 approval	●	●	●

**Benefit today from  
PERFORMANCE MADE SMARTER**

PR electronics is the leading technology company that specializes in making industrial process control safer, more reliable and more efficient. Since 1974 we have been dedicated to perfecting our core competence of innovating high-precision technology with low power consumption. This dedication continues to set new standards for products that communicate, monitor and connect our customers' process measurement points to their process control systems.

Our innovative, patented technologies are derived from our extensive R&D facilities and our thorough understanding of our customers' needs and processes. We are guided by principles of simplicity, focus, courage and excellence, enabling some of the world's greatest companies to achieve PERFORMANCE MADE SMARTER.