OCTOGON

MANUAL

PRKA

PRESSURE SENSOR WITH OLED DISPLAY

Operating instructions



Document	Version	Date	Applies to
Operating instructions	V00x	11/2026	PRKA, all ranges, connections and outputs

This manual describes the PRKA pressure sensor with OLED display: safety, technical data, dimensions, pin assignment, installation, switching functions, operation with the two menu levels, maintenance and removal.

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1 About this manual

Read this manual before installing and commissioning the device and keep it available for later use. Device data in this manual refer to the PRKA data sheet.

1.1 Signal words

Safety instructions protect users from dangerous situations and/or prevent material damage. The severity of the potential risk is indicated by the following signal words:

Signal word	Meaning
Danger	Imminent danger to the user. Failure to comply may result in fatal injury.
Warning	Identifiable hazard. Failure to comply may result in fatal injury and in damage to equipment or plant parts.
Caution	Danger. Failure to comply may result in minor injury and in material damage to the sensor (switch) and/or the plant.
Important	Information that is important to the user.

1.2 Versions covered

Feature	Versions
Measuring range	0 … 10 / 60 kPa · 0 … 1 / 2 / 5 / 10 / 25 / 60 / 100 / 160 / 250 / 400 / 600 / 1000 bar · compound –10 … 10 kPa, –60 … 60 kPa, –1 … 1 / 5 / 10 bar
Pressure type	gauge pressure · negative pressure
Thread	G1/4 male, G1/2 male, G1/4 female, NPT1/4 male, R1/4 male, M20 × 1.5 male
Flush diaphragm, up to 100 bar	ceramic: clamp 1.5″ (OD 50.5 mm), M22 × 1.5 male · metal, oil-filled: clamp 1.5″ sanitary or non-sanitary, M20 × 1.5 male, M22 × 1.5 male
Output	two switching outputs + analogue (5-pin) · switching output / IO-Link + analogue (4-pin) · RS485 (4-pin)
Basic type	PS390

2 Safety

2.1 Intended use

The PRKA measures gauge or negative pressure, shows it on an OLED display and provides switching, analogue and IO-Link or RS485 outputs for industrial applications.

Danger Use the device only within the specified application range. The temperature must be within the permissible range. Do not exceed the rated pressure and the rated electrical load. Installation, commissioning and operation must be carried out in accordance with the applicable national and local safety regulations.

2.2 Personnel

The sensor may be set up and operated only by authorised personnel.

Caution Do not put the switch into operation if the sensor itself or the connecting cable is damaged. Do not use sharp or hard objects to operate the keys; they may damage the keys.

Warning The surface of the housing may become very hot at high operating temperatures.

2.3 Disposal

Sensors (switches) must be handled correctly in accordance with national or local regulations for electrical and electronic equipment. Sensors (switches) must not be disposed of with household waste.

3 Product description

3.1 Working principle

A diffused silicon sensor measures the pressure (flush versions: ceramic or oil-filled metal diaphragm). After processing by the electronics, the signal is converted into a standard industrial electrical signal and displayed. The all-metal housing and the OLED display make the device suitable for a wide range of industrial applications. Settings are made with three keys and a menu. The display head can be rotated by 330° for the best viewing angle in any mounting position.

3.2 Display and keys

Element	Function
Output 1 / output 2 signal lamp	switching state of output 1 / output 2
Pressure value	real-time pressure value
Pressure unit	unit of the displayed value
Bar graph with %	percentage of the measuring range
–	previous menu item; decrease value
M	set key: open the menu, open an item, confirm
+	next menu item; increase value

3.3 Technical data

Item	Value
Measuring principle	diffused silicon sensor; flush: ceramic or oil-filled metal
Accuracy	≤ ± 0.5 % F.S.
Linearity	≤ 0.5 % F.S.
Stability (annual drift)	≤ ± 0.3 % F.S.
Switching accuracy	≤ ± 0.5 % F.S.
Analogue output accuracy	≤ ± 0.5 % F.S.
Medium temperature	–20 … +85 °C
Ambient temperature	–20 … +80 °C
Storage temperature	–30 … +80 °C
Case	stainless steel / engineering plastic
Housing	stainless steel 304
Display head	rotatable 330°
Wetted parts	stainless steel 316L / 304
Protection class	IP67
Electrical connection	M12 × 1 connector
Supply voltage	16 … 28 V DC
No-load current	max. 30 mA at 24 V DC
Protection	reverse polarity, overload
Switching output	PNP / NPN switchable, NO / NC selectable
Output current S1, S2	< 500 mA
Response time	< 10 ms
Analogue output	4 … 20 mA
Load	≤ 0.5 kΩ
Communication	IO-Link / RS485
Display	OLED
Shown	pressure value, unit, percentage of range, switching state 1 and 2
Operation	three keys with menu

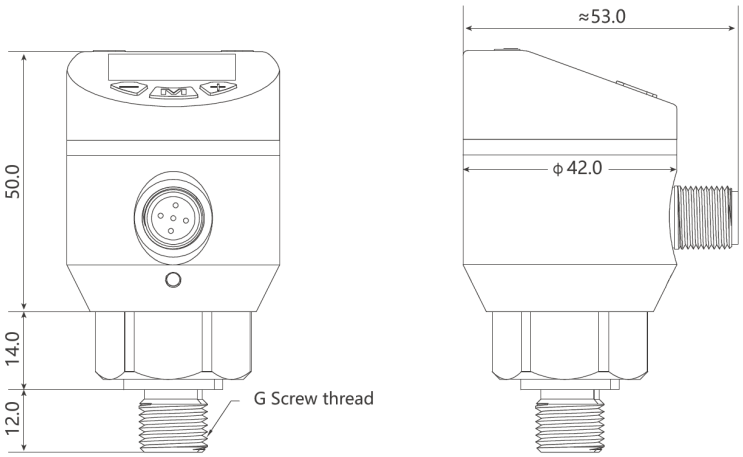
3.4 Pressure resistance

Measuring range	Max. overload pressure	Min. damage pressure
1 · 2 · 5 bar	× 5	× 6
10 · 16 · 25 bar	× 3	× 4
60 · 100 · 160 bar	× 2	× 3
250 · 400 bar	× 1.5	× 2
600 bar	× 1.3	× 1.6

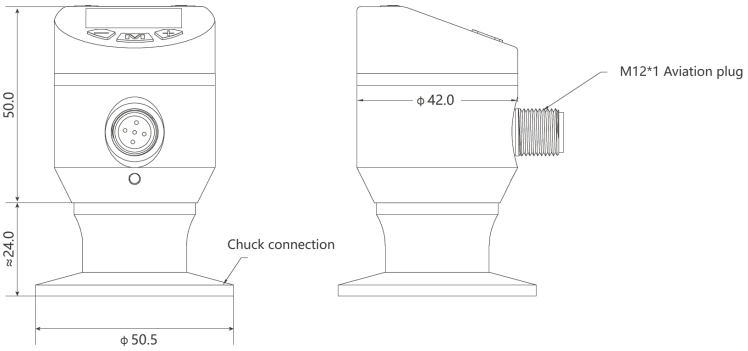
4 Dimensions

Dimensions in mm. G = process thread.

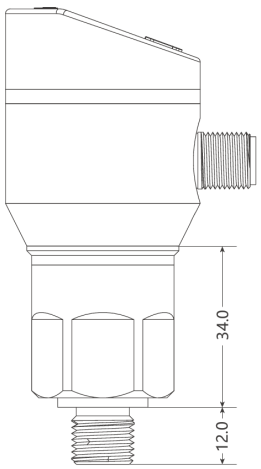
4.1 Threaded version < 600 bar



4.2 Clamp connection



4.3 Version ≥ 600 bar



5 Pin assignment M12 × 1

Pin · wire	Two switching outputs + analogue (5-pin)	Switching output / IO-Link + analogue (4-pin)
1 · BN brown	supply +	supply +
3 · BU blue	supply –	supply –
4 · BK black	OUT1: switching PNP (default) / NPN	OUT1: switching PNP (default) / NPN · IO-Link
2 · WH white	OUT2: switching PNP (default) / NPN	OUT2: analogue 4 … 20 mA (default) or switching PNP / NPN
5 · GY grey	OUT3: analogue 4 … 20 mA (default)	–

5.1 RS485 version (4-pin)

Pin · wire	Function
1 · BN	supply +
3 · BU	supply –
4 · BK	RS485 B
2 · WH	RS485 A

Protocol and registers of the RS485 interface and the IO-Link device description are not part of this manual; please ask.

6 Installation

Caution Avoid vibration and violent shocks during transport. Even if the housing of the sensor (switch) is not damaged, internal components may break and cause failure.

Danger Install sensors (switches) only in systems that do not exceed the maximum pressure Pmax (see type label). Install sensors (switches) only when the system is de-energised and depressurised (electrical, hydraulic/pneumatic).

- Make sure that the system is depressurised before installing or removing the sensor.
- Connect the sensor to the selected process connection.
- Tighten fully; recommended tightening torque 25 … 35 N·m (on the hexagon of the process connection).
- In critical applications (such as violent vibration or shocks) the pressure connection can be mechanically decoupled with a miniature hose.

7 Switching functions

When the pressure rises above or falls below the set switching limits (SP, rP), the switching state of the output changes. The following switching functions can be selected (menu **OUT1 Set** / **OUT2 Set**):

Function	Menu value	Description
Hysteresis function, normally open	**H-NO**	The output switches at the switch point SP and switches back at the reset point rP. The difference SP – rP is the hysteresis.
Hysteresis function, normally closed	**H-NC**	as above, output inverted
Window function, normally open	**W-NO**	The output is switched while the pressure is within the window between rP and SP.
Window function, normally closed	**W-NC**	as above, output inverted

- Hysteresis function: first set the switch point SP, then the reset point rP. If SP is changed again, the hysteresis changes with it.
- Window function: the width of the window is set by the difference between SP and rP; SP = upper limit value, rP = lower limit value.

8 Operation

8.1 Navigation

– In the main display, press **M** to open the level 1 menu.
– In the menu lists, **–** moves to the previous item and **+** to the next item; **M** opens the selected item.
– In a value screen, **–** decreases and **+** increases the value; **M** confirms and returns to the list.
– **menu 2 set**: **M** opens the level 2 menu; **+** returns to the main display. From the last item **BG colour**, **+** also returns to the main display.

8.2 Level 1 menu

Menu	Function
SP1 Set	switch point of output 1
rP1 Set	reset point of output 1
SP2 Set	switch point of output 2
rP2 Set	reset point of output 2
P-LRV	lower range limit
P-URV	upper range limit
menu 2 set	open the level 2 menu

8.3 Level 2 menu

Menu	Function
Factory Reset	factory data reset: after opening, the display shows **5S**; a long press of 5 seconds restores the factory settings
OUT1 Set	output mode of output 1: **W-NC**, **W-NO**, **H-NO**, **H-NC** (chapter 7)
OUT2 Set	output mode of output 2: **W-NC**, **W-NO**, **H-NO**, **H-NC**
ds1 set	switching delay of output 1 (s)
dr1 set	reset delay of output 1 (s)
ds2 set	switching delay of output 2 (s)
dr2 set	reset delay of output 2 (s)
unit set	pressure unit: Bar, KPa, Psi, Mpa
PNP/NPN Set	switching output PNP or NPN
F-L-data	historical minimum
F-H-data	historical maximum
P-PACE	filter damping
Low press cut	low pressure cut-off
A0-Mode	analogue output (**4-20 ma**)
d-p-set	decimal places
Digit colour	colour of the main value
BG colour	background colour of the main display

9 Maintenance, cleaning and removal

9.1 Maintenance and cleaning

Sensors (switches) do not require maintenance.

Warning Periodically check whether the switch is working properly. If the switch does not work properly, stop the operation immediately.

Caution Unsuitable cleaning agents may damage the switch.

The following cleaning agents can be used to clean polycarbonate: mild soap or detergent, isopropyl alcohol. Rinse with water immediately after cleaning. Do not leave cleaning agent on the surface of the product. Do not clean the product in high heat or in direct sunlight.

The following cleaning agents are known to affect the integrity of polycarbonate components and must not be used:

- ZEP Fast 505, Pinesol, Formula 409
- halogenated solvents (benzene, gasoline, acetone or carbon tetrachloride)
- strong alkalis
- methyl ethyl ketone
- abrasive substances

9.2 Removal

Danger Remove the switch only when it is depressurised and de-energised (electrical, hydraulic/pneumatic). Disconnecting the switch from pressure and power supply must be performed by trained or instructed personnel in accordance with the state of the art.

Warning The surface of the housing may become very hot at high operating temperatures.