KIMO® INSTRUMENTS

PST

Manostats

Range from ±100 Pa to ±2000 mbar (according to model)

Visual and audible alarm, red led in front

Features

- RCR relay output 3A/240 Vac (NC), power supply 24 Vac/Vdc
- ABS V0 IP65 housing
- "¼ turn" system mounting with wall-mount plate

- Housing with simplified mounting system
- Solenoid valve for auto-calibration (only on PST11 model)

Measured parameter

Parameter	Accuracies*	Measuring ranges	Resolution
Pressure	**PST-11:** ±1% of reading ±2 Pa **PST-12:** ±1.5% of reading ±3 Pa **PST-13:** ±1.5% of reading ±3 mmH$_2$O **PST-14 and PST-15:** ±1.5% of reading ±3 mbar	From -100/+100 Pa to -2000/+2000 mbar (according to model)	**PST-11, PST-12 and PST-13:** 1 Pa, 0.1 mmH$_2$O, 0.01 inWG, 0.01 mmHG, 0.1 daPa, 0.001 kPa (0.01 kPa pour le PST-13), 0.01 hPa, 0. 01 mbar **PST-14 and PST-15 :** 1 mbar, 0.1 inWG, 1 mmHG, 0.1 PSI, 1 mmH$_2$O, 1 daPa, 1 hPa, 0.1 kPa

Part number

PST	-	

Measuring range
11: -100/+100 Pa
12: -1000/+1000 Pa

13: -10 000/+10 000 Pa
14: -500/+500 mbar
15: -2000/+2000 mbar

Example: PST – 13
Manostat PST with measuring range from -10000 to +10000 Pa

Technical specifications

Output	1 RCR relay. NO (normally opened): 5A / NC (normally closed): 3A / 240 Vac. Common mode voltage <30 Vac
Alimentation Power supply	24 Vac/Vdc ±10%
Consommation	3 VA
Relay and alarm status	Red led in front and internal buzzer (70 dB at 10 cm)
European directives	2014/30/EU EMC; 2014/35/EU Low Voltage; 2011/65/EU RoHS II; 2012/19/EU WEEE
Electrical connection	Terminal block for cables Ø0.05 to 2.5 mm². Carried out according to the code of good practice
PC communication	USB-mini Din cable
Environment	Air and neutral gases

*All the accuracies indicated in this technical datasheet were stated in laboratory conditions, and can be guaranteed for measurements carried out in the same conditions, or carried out with calibration compensation.

General features

Unit of measurement	**PST-11, PST-12 and PST-13:** Pa, mmH$_2$O, inWG, mmHG, daPa, kPa, hPa, mbar **PST-14 and PST-15:** mbar, inWG, mmHG, PSI, mmH$_2$O, daPa, hPa, kPa
Response time	1/e (63%) 0.3 s
Autozero	Manual by push-button Automatic by solenoid valve (only on PST11)
Type of fluid	Air and neutral gases
Tolerated overpressure	**PST-11, PST-12:** 21 000 Pa; PST-13 : 69 000 Pa; **PST-14:** 1400 mbar; PST-15 : 4100 mbar
Conditions of use (°C/%RH/m)	From 0 to +50°C. In non-condensing condition. From 0 to 2000 m.
Storage temperature	From -10 to +70°C

Features of the housing

Material	ABS V0 as per UL94
Protection	IP20
Display	LCD 10 digits. Size: 50 x 17 mm Height of digits: Values: 10 mm; Units: 5 mm
Weight	143 g

41 mm   90 mm   80 mm

Connections

Inside the front housing

1

2 3

④

Removable front face

345.6 mbar
PST
5
6
7
8

Fixed back housing

9   10

11

1. Solenoid valve (only PST-1)
2. Switchs
3. Switchs
4. Pressure connections
5. Autozero
6. LCC-S software connection
7. Alarm Led
8. Button for settings
9. Relay terminal block
10. Power supply terminal block
11. Cable gland

Electrical connections as per NFC15-100 standard

⚠ **This connection must be made by a qualified and trained technician. To make the connection, the transmitter must not be energized.**

NO: normalement opened
COM: common
NC: normally closed

NO COM NC
1 2 3 4 5 6 7

Power supply 24 Vdc   − +

or

6 7
~ ~
N L

Power supply 24 Vac Class II
N~ L~

Settings and use of the transmitter

To perform an autozero, unplug the 2 pressure connections tubes and press the **"Autozero"** key.

On the PST11 transmitter, it is not necessary to unplug the 2 pressure connection tubes.

When an autozero has been performed, **"On"** green light turns off then turns on, and **"autoZ"** is displayed.

- **Configuration**

⚠ **To configure the transmitter, it must not be energized. Then, you can make the settings required, with the DIP switches (as shown on the drawing below). When the transmitter is configured, you can power it up.**

On-off switch

1
2   Units setting
3
4

Active switch

To configure the transmitter, unscrew the 4 screws from the housing then open it. DIP switches allowing the different settings are then accessible.

- **Units setting – right DIP switch**

To set a unit of measurement, put the 1, 2 , 3 and 4 on-off switches as indicated in the table below.

PST11, PST12, PST13:

Configurations	Pa	mmH$_2$O	mbar	inWG	mmHG	daPa	kPa	hPa
Combinations	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4

PST14, PST15:

Configurations	mbar	inWG	kPa	PSI	mmHG	mmH$_2$O	daPa	hPa
Combinations	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4

- **Threshold configuration**

The button ⟳ allows to activate or not an alarm (threshold), to set the action of the alarm (edge), to set the threshold(s) value, to set the time-delay and to acknowledge the alarm.

Working principle:

- By pressing on the button more than 3 seconds, you can validate the setting and go to the next setting.
- By pressing quickly on the button, you can increment a value and scroll down the different option or values.

- **Activate or deactivate an alarm**

- Press the button for 3 seconds, **"CONF"** is displayed then **"NEG"**, meaning that the relay is in negative security, it is excited during an alarm condition.

If needed, press quickly on the button to switch the relay in positive security, the relay is de-energized during an alarm condition or a current breaking, **"POS"** is displayed.

- Press 3 s the button, **"Buzz"** screen is displayed with **"ON"** or **"OFF"** blinking. Briefly press on the button to activate (**"ON"**) or deactivate (**"OFF"**) (according to the last saved configuration) the buzzer during an alarm condition.

- Press 3 s the button, "Alarm" screen is displayed with **"On"** or **"Off"** blinking (according to the last saved configuration).

- Press quickly the button, the display changes from **"On"** (activated alarm) to **"Off"** (deactivated alarm).
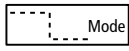
- Press 3 seconds the button to confirm the setting. If the alarm is deactivated, the instrument displays the measurement; if the alarm is activated, the instrument displays the following setting.

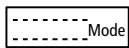- **Set the action of the alarm (rising edge or falling edge)**

The edge determines the action of the alarm according to the trespassing direction of the threshold(s).
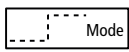
|	
[Mode]	Rising edge (1 threshold): the alarm goes off when the measurement exceeds the threshold and stops when it is below the threshold.
[Mode]	Falling edge (1 threshold): the alarm goes off when the measurement is below the threshold and stops when it exceeds the threshold.
[Mode]	Monitoring (2 thresholds): the alarm goes off when the measurement is outside the defined low and high thresholds.
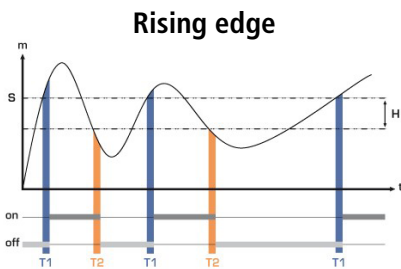
Rising edge

Measurement (m) > Threshold (S) during the time-delay T1: Alarm activation.
Measurement (m) < Threshold (S) - Hysteresis (H) during the time-delay T2: Alarm deactivation.
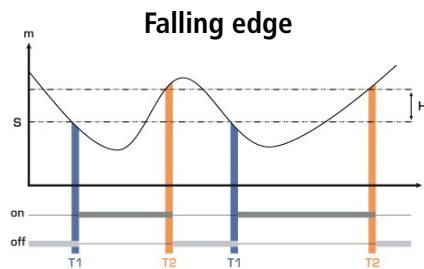
Falling edge

Measurement (m) < Threshold (S) during the time-delayT1: Alarm activation.
Measurement (m) > Threshold (S) + Hysteresis (H) during time-delay T2: Alarm deactivation.

Monitoring
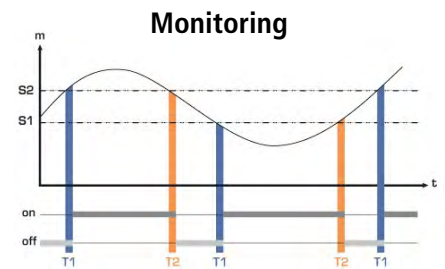
The alarm goes off when the measurement is outside the low and high thresholds.

- Press briefly the button to select the trespassing direction then press the button more than 3 seconds to validate this direction and set the thresholds.

- **Set the threshold(s) value**

The first digit blinks, it corresponds to the positive (0) or negative (-) setting of the threshold value. Press briefly on the button to select the sign for the threshold value. Press on the button more than 3 seconds to validate.

The second digit blinks, press briefly on the button to scroll the numbers. Press the button more than 3 seconds to validate.

Repeat the process until the last digit to configure the threshold value, validate the threshold and go to the following setting.

If the monitoring edge has been selected, the transmitter displays the setting of the second threshold.

- **Set the hysteresis**

The hysteresis is only for the rising edge and the falling edge modes.

In rising edge mode, the hysteresis allows to the transmitter to stay in alarm when the measurement is between the threshold and the threshold minus the hysteresis.

Ex: for a 100 Pa threshold and a 10 Pa hysteresis, the instrument will stay in alarm when the measurement will be between 100 and 90 Pa.

In falling edge mode, the hysteresis allows to the transmitter to stay in alarm when the measurement is between the threshold and the threshold plus the hysteresis.

Ex: for a 100 Pa threshold and a 10 Pa hysteresis, the instrument will stay in alarm when the measurement will be between 100 and 110 Pa.

The first digit blinks, set it pressing the button briefly several times then press on the button more than 3 seconds to set the following digit.

Once the hysteresis is set, press the button more than 3 seconds to validate and set the time-delays.

- **Set the time-delay 1 and the time-delay 2 (600 seconds maximum)**

- In rising edge mode, the time-delay 1 corresponds to the time lag before the alarm goes off when the threshold has been reached. The time-delay 2, corresponds to the time lag before the alarm stops when the measurement is lower than the threshold minus the hysteresis.

Setting procedure: "Time 1" for the time-delay 1 is displayed then the time in second. The first digit blinks, press briefly on the button and scroll the figures. Press on the button more than 3 seconds to validate. Repeat the process until the last digit to set the time-delay 1 value (from 0 to 600 s) and validate. **"Time 2"** is displayed the time in second. Repeat the process to set the time-delay 2.

- In falling edge mode, the time-delay 1 corresponds to the time lag before the alarm goes off when the threshold has been reached. The time-delay 2, corresponds to the time lag before the alarm stops when the measurement is lower than the threshold plus the hysteresis.

The setting procedure is the same as the rising edge procedure.

- In monitoring mode, the alarm of the transmitter goes off when the measurement is below the lower threshold and higher the high threshold. The time-delay 1 corresponds to the time lag before the alarm goes off when the measurement is below the lower threshold and higher the high threshold. The time-delay 2 corresponds to the time lag before the alarm stops when the measurement is between the lower and higher thresholds.

The setting procedure is the same as the rising edge procedure.

Configuration via LCC-S software (optional)

The software allows to set the alarms, the thresholds, and the time-delay of the manostats.

- To access the configuration via software:
    - Set the DIP switches as shown beside.
    - Connect the cable of the LCC-S to the connection of the transmitter.
- Please refer to the user manual of the LCC-S to make the configuration.

1
2
3
4
Active switch

⚠ **The configuration of the parameters can be done either with the DIP switch or via software (you can not combine both solutions). Switch off the sensor before settings process.**

Mounting

To mount the transmitter, mount the ABS plate on the wall (drilling: Ø6 mm, screws and pins are supplied). Insert the transmitter on the fixing plate (see A on the drawing beside). Rotate the housing in clockwise direction until you hear a "click" which confirms that the transmitter is correctly installed.

⚠ **Once the transmitter is installed and powered up, please make an autozero to guarantee the correct working of the transmitter in any position.**

Maintenance

Please avoid any aggressive solvent. Please protect the transmitter and its probes from any cleaning product containing formalin, that may be used for cleaning rooms or ducts.

Precautions for use

Please always use the device in accordance with its intended use and within parameters described in the technical features in order not to compromise the protection ensured by the device.

Accessories

Name	Reference
Power supply class 2, 230 Vac input, 24 Vac output	KIAL-100A
Configuration software with USB cable	LCC-S
Connection tubes	-
Connection fittings	-
Through-connections	
Straight connections	-
Spherical coupling nut	-

ⓘ Only the accessories supplied with the device must be used.

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