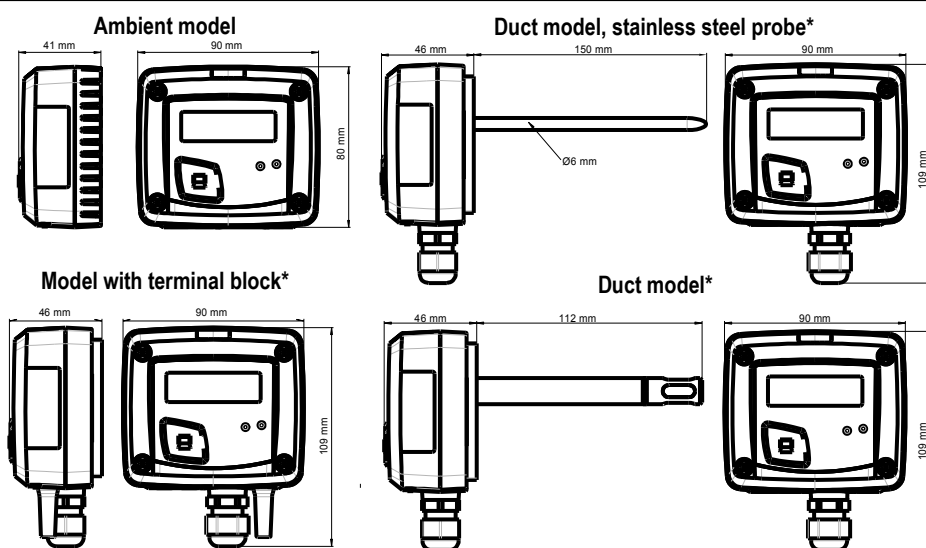


Thermostats TST

KEY POINTS

- Range from 0 to 50 °C (ambient model), from -20 to +80 °C (duct model) and from -100 to 400 °C (modèle avec bornier Pt100 ou CTN)
- RCR relay output 3A/230 Vac, power supply 24 Vac/Vdc
- Visual and audible alarm, red led in front
- ABS V0 IP65 housing (duct and remote model) or IP20 (ambient model)
- "1/4 turn" system mounting with wall-mount plate
- Housing with simplified mounting system

FEATURES OF THE HOUSING



*different probes available as option

Material : ABS V0 as per UL94

Protection :

- duct model and model with terminal block : IP65
- ambient model : IP20

Display : LCD 10 digits. Size : 50 x 17 mm

Height of digits : Values : 10 mm ; Units : 5 mm

Cable gland (duct and terminal block models)
For cables Ø 8 mm maximum

Weight : 162 g

Cable of remote probe : length 2 m and Ø 4.8 mm in PVC

TECHNICAL FEATURES

Units of measurement	°C, °F
Measuring range	From 0 to 50 °C (ambient model), from -20 to +80 °C (duct model) and from -100 to +400 °C (model with terminal block)
Accuracy*	Pt100 : ±0.5 % of reading ±0.5 °C NTC : ±0.3°C (from -40°C to 70°C) ; ±0.5°C outside
Type of sensor	Pt100 or NTC (model with terminal block and stainless steel duct model) NTC (ambient model and duct model)
Response time	1/e (63%) 5 sec. (ambient) 1/e (63%) 20 sec. (airtight)
Resolution	0.1 °C
Type of fluid	Air and neutral gas
Operating temperature	From 0 to +50 °C
Storage temperature	From -10 to +70 °C

*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.

PART NUMBER

To order, just add the codes to complete the part number :

TST	—		—	
		Type of housing		Type of probe
		B : terminal block		I : stainless steel
		A : duct		probe (only for
		S : ambient		duct models)

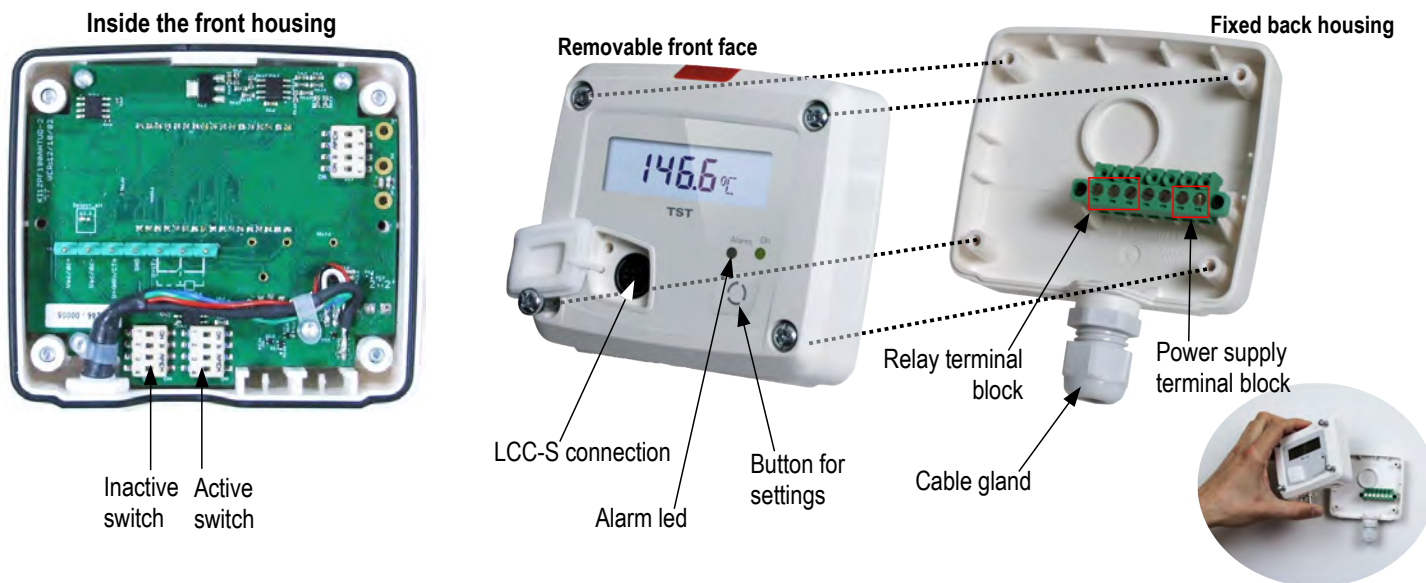
Example : TST-AI

Thermostat with stainless steel duct probe

TECHNICAL SPECIFICATIONS

Output	1 RCR relay 3 A / 230 Vac
Power supply	24 Vac/Vdc $\pm 10\%$
Consumption	2 VA
Relay and alarm status	Red led in front and internal buzzer
Electromagnetical compatibility	EN61326
Electrical connection	Terminal block for cables $\varnothing 0.05$ to 2.5 mm^2
PC communication	USB-mini Din Kimo cable
Environment	Air and neutral gases

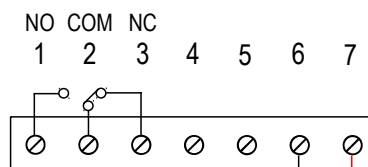
CONNECTIONS



ELECTICAL CONNECTIONS – as per *NFC15-100 standard*

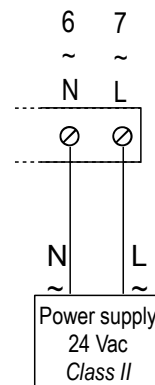


This connection must be made by a qualified technician. **To make the connection, the transmitter must not be energized.**



Power supply
24 Vdc

or



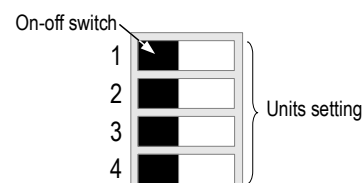
Power supply
24 Vac
Class II

SETTINGS AND USE OF THE TRANSMITTER

> 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.




> Units setting – active switch

To set a unit of measurement, put the on-off switch 4 of the units as shown beside.

Configurations	$^{\circ}\text{C}$	$^{\circ}\text{F}$
Combinations	1	1
	2	2
	3	3
	4	4

➤ Thresholds 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.

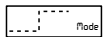
Setting procedure :

• Activate or deactivate an alarm :

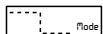
- Press on the button for 3 seconds, “CONF” is displayed then “NEG”, meaning that the relay is in negative security, it is excited during an alarm condition.
- If needed, press quickly on the button to switch the relay in positive security, the relay is de-energized during an alarm condition or a current breaking, “POS” is displayed.
- Press 3 s on the button, “Alarm” screen is displayed with “On” or “Off” blinking (according to the last saved configuration).
- Press quickly on the button, the display changes from “On” (activated alarm) to “Off” (deactivated alarm).
- Press 3 seconds on 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)

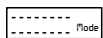
The edge determines the action of the alarm according to the trespassing direction of the threshold(s).



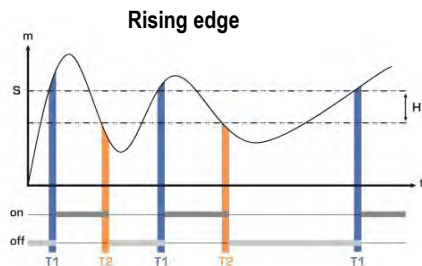
Rising edge (1 threshold) : the alarm goes off when the measurement **exceeds** the threshold and stops when it is **below** the threshold.



Falling edge (1 threshold) : the alarm goes off when the measurement is **below** the threshold and stops when it **exceeds** the threshold.

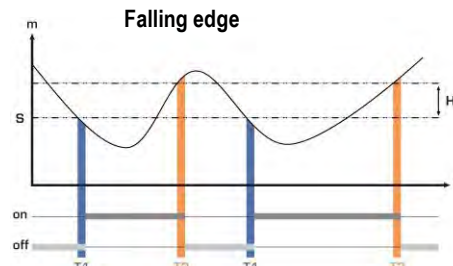


Monitoring (2 thresholds) : the alarm goes off when the measurement is outside the defined low and high thresholds.



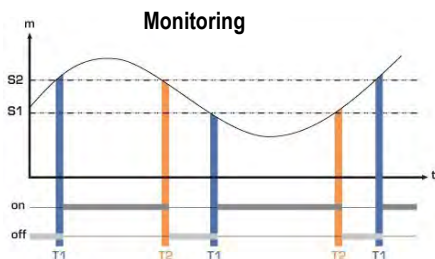
Measurement (m) > Threshold (S) during the time-delay T1 → Alarm activation.

Measurement (m) < Threshold (S) - Hysteresis (H) during the time-delay T2 → Alarm deactivation.



Measurement (m) < Threshold (S) during the time-delay T1 → Alarm activation.

Measurement (m) > Threshold (S) + Hysteresis (H) during time-delay T2 → Alarm deactivation.



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

- Press briefly on 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 70 °C threshold and a 10 °C hysteresis, the instrument will stay in alarm when the measurement will be between 70 and 60 °C.

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 70 °C threshold and a 10 °C hysteresis, the instrument will stay in alarm when the measurement will be between 70 and 80 °C.

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 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.

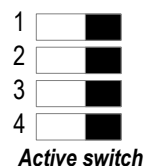
The setting procedure is the same as the rising edge procedure.

The setting of time delays is done, the measurement is displayed.

CONFIGURATION VIA LCC-S SOFTWARE (option)

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

- 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.



The configuration of the parameters can be done either with the DIP switch or via software (you can not combine both solutions).

MOUNTING

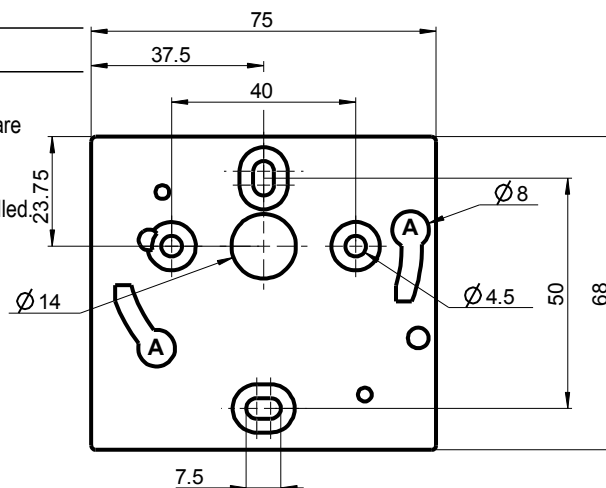
To mount the transmitter, mount the ABS plate on the wall (drilling : Ø6 mm, screws and pins are supplied).

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.



Ambient model has not any fixing plate.

4 fixing holes are inside the back housing. Use them to install the transmitter on the required location.



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.

OPTIONS AND ACCESSORIES

- **KIAL-100A** : Power supply class 2 , 230 Vac input, 24 Vac output
- **LLCC-S** : configuration software with USB cable
- Stanliess steel Pt100 2 or 3 wires probes or NTC probes for duct models and remote models available on request

Manostats

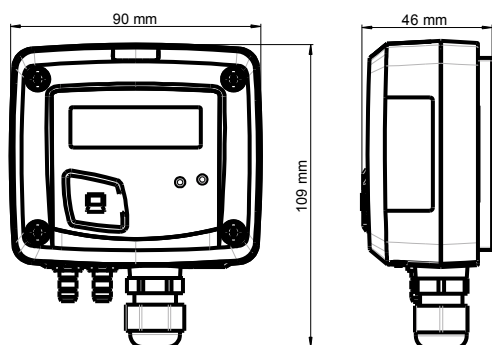
PST

KEY POINTS

- Range from -100/+100 Pa to -2000/+2000 mbar (according to model)
- RCR relay output 3A/230 Vac, power supply 24 Vac/Vdc
- Visual and audible alarm, red led in front
- 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)



FEATURES OF HOUSING



Material : ABS V0 as per UL94

Protection : IP65

Display : LCD 10 digits. Size : 50 x 17 mm

Height of digits : Values : 10 mm ; Units : 5 mm

Connections : Ribbed Ø 6.2 mm (PST11 - PST12 - PST13)
Security Ø 6.2 mm (PST14 - PST15)

Cable gland : for cables Ø 8 mm maximum

Weight : 143 g

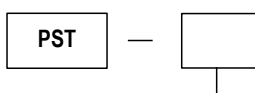
TECHNICAL FEATURES

Unit of measurement	Pa, mmH ₂ O, inWG, mmHG, daPa, kPa, hPa, mbar (PST-11, PST-12, PST-13) mbar, inWG, mmHG, PSI, mmH ₂ O, daPa, hPa, kPa (PST-14, PST-15)
Accuracy*	PST11 : ±1% of reading ±2 Pa ; PST12 : ±1.5% of reading ±3 Pa ; PST113 : ±1.5% of reading ±3 mmH ₂ O PST14 and PST15 : ±1.5% of reading ±3 mbar
Response time	1/e (63%) 0.3 s
Resolution	1 Pa ; 0.1 mmH ₂ O ; 0.01 mbar ; 0.01 inWG ; 0.01 mmHG ; 0.1 daPa ; 0.001 kPa
Autozero	Manual by push-button Automatic by solenoid valve (only on PST11)
Type of fluid	Air and neutral gases
Overpressure tolerated	PST11, PST12 : 21 000 Pa ; PST13 : 69 000 Pa ; PST14 : 1400 mbar ; PST15 : 4100 mbar
Operating temperature	From 0 to +50 °C
Storage temperature	From -10 to +70 °C

*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.

PART NUMBER

To order, just add the codes to complete the part number :



Measuring range

- 11** : -100/+100 Pa
- 12** : -1000/+1000 Pa
- 13** : -10 000/+10 000 Pa
- 14** : -500/+500 mbar
- 15** : -2000/+2000 mbar

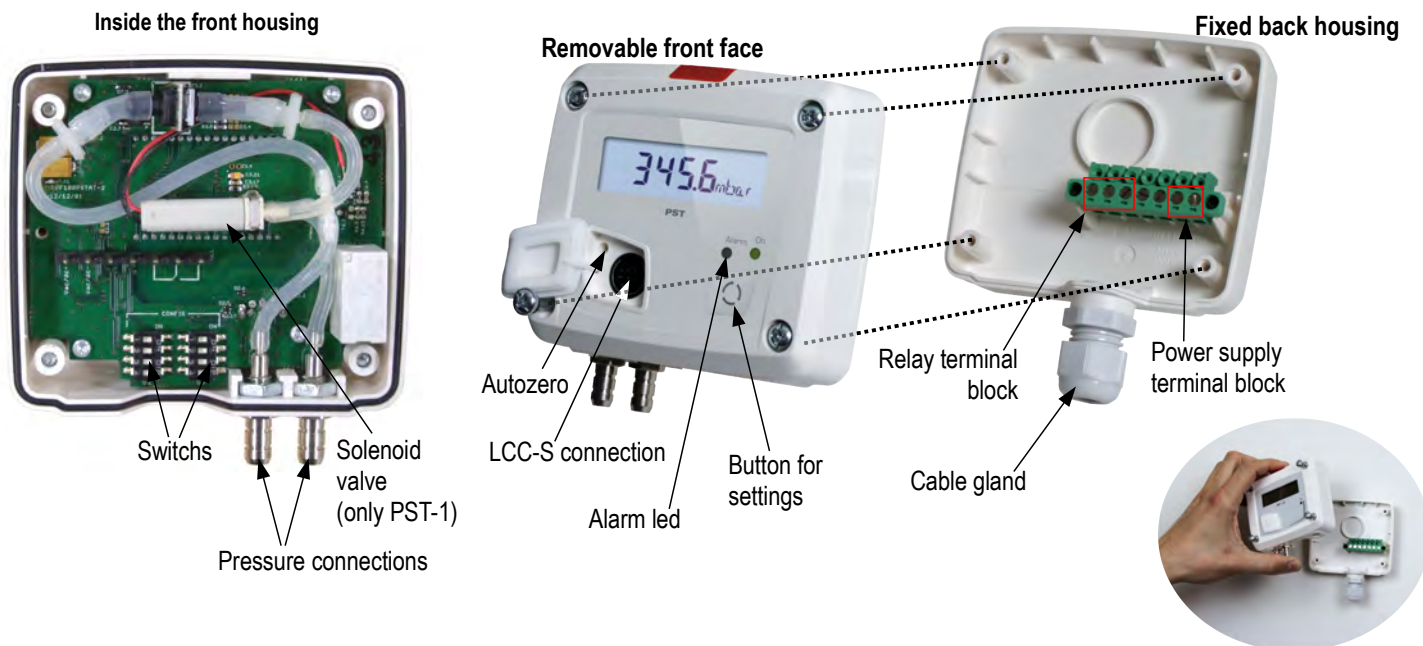
Example :PST – 13

Manostat PST with measuring range -10000 to +10000 Pa

TECHNICAL SPECIFICATIONS

Output	1 RCR relay 3 A / 230 Vac
Power supply	24 Vac/Vdc $\pm 10\%$
Consumption	2 VA
Relay and alarm status	Red led in front and internal buzzer
Electromagnetical compatibility	EN61326
Electrical connection	Terminal block for cables $\varnothing 0.05$ to 2.5 mm^2
PC communication	USB-mini Din Kimo cable
Environment	Air and neutral gases

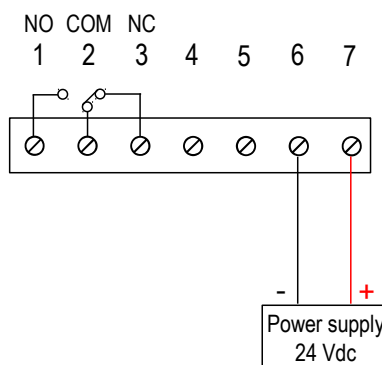
CONNECTIONS



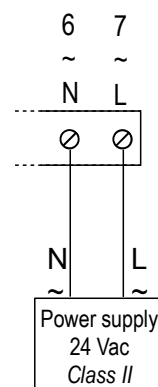
ELECTICAL CONNECTIONS – as per *NFC15-100 standard*



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



or



SETTINGS AND USE OF THE TRANSMITTER

> Autozero

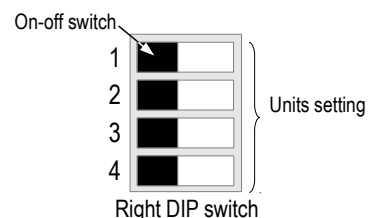
To perform an autozero, unplug the 2 pressure connections tubes and press the **“Autozero”** key. On the PST11 transmitter, it is not necessary to unplug the 2 pressure connection tubes. When an autozero has been performed, **“On”** green light turns off then turns on, and **“autoZ”** is displayed.

> 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.

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	1	1	1	1	1	1	1
	2	2	2	2	2	2	2	2
	3	3	3	3	3	3	3	3
	4	4	4	4	4	4	4	4

PST14, PST15 :

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

Setting procedure :

- Activate or deactivate an alarm :**
 - Press on 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 on the button, “Alarm” screen is displayed with “On” or “Off” blinking (according to the last saved configuration).
 - Press quickly on the button, the display changes from “On” (activated alarm) to “Off” (deactivated alarm).
 - Press 3 seconds on 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.

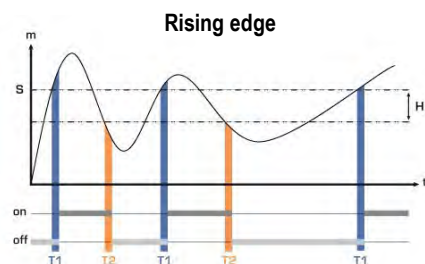
- Set the action of the alarm (rising edge or falling edge)**

The edge determines the action of the alarm according to the trespassing direction of the threshold(s).

Rising edge (1 threshold) : the alarm goes off when the measurement **exceeds** the threshold and stops when it is **below** the threshold.

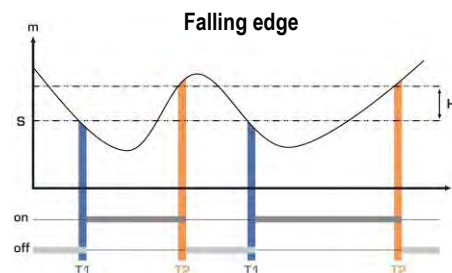
Falling edge (1 threshold) : the alarm goes off when the measurement is **below** the threshold and stops when it **exceeds** the threshold.

Monitoring (2 thresholds) : the alarm goes off when the measurement is outside the defined low and high thresholds.



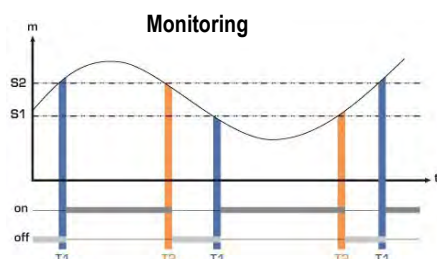
Measurement (m) > Threshold (S) during the time-delay T1 → Alarm activation.

Measurement (m) < Threshold (S) - Hysteresis (H) during the time-delay T2 → Alarm deactivation.



Measurement (m) < Threshold (S) during the time-delay T1 → Alarm activation.

Measurement (m) > Threshold (S) + Hysteresis (H) during time-delay T2 → Alarm deactivation.



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

- Press briefly on 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.

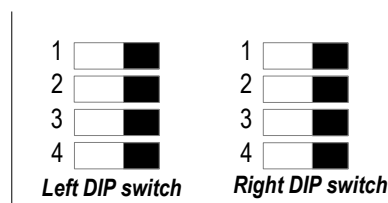
The setting procedure is the same as the rising edge procedure.

The setting of time delays is done, the measurement is displayed.

CONFIGURATION VIA LCC-S SOFTWARE (option)

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.



The configuration of the parameters can be done either with the DIP switch or via software (you can not combine both solutions)

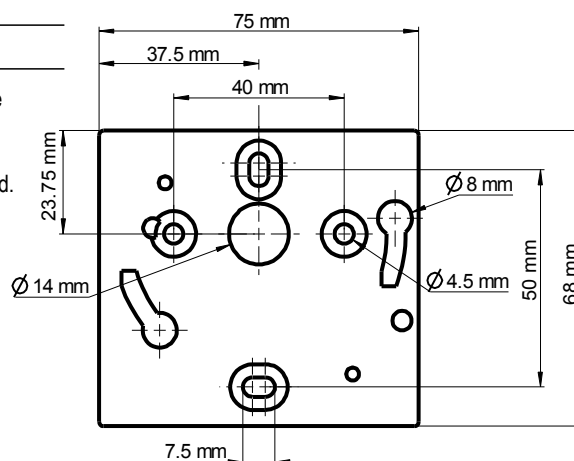
MOUNTING

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.

OPTIONS AND ACCESSORIES

- **KIAL-100A** : Power supply class 2 , 230 Vac input, 24 Vac output
- **LCC-S** : configuration software with USB cable
- Connection tube
- Connection fittings
- Through-connections
- Straight connections
- Spherical coupling nut

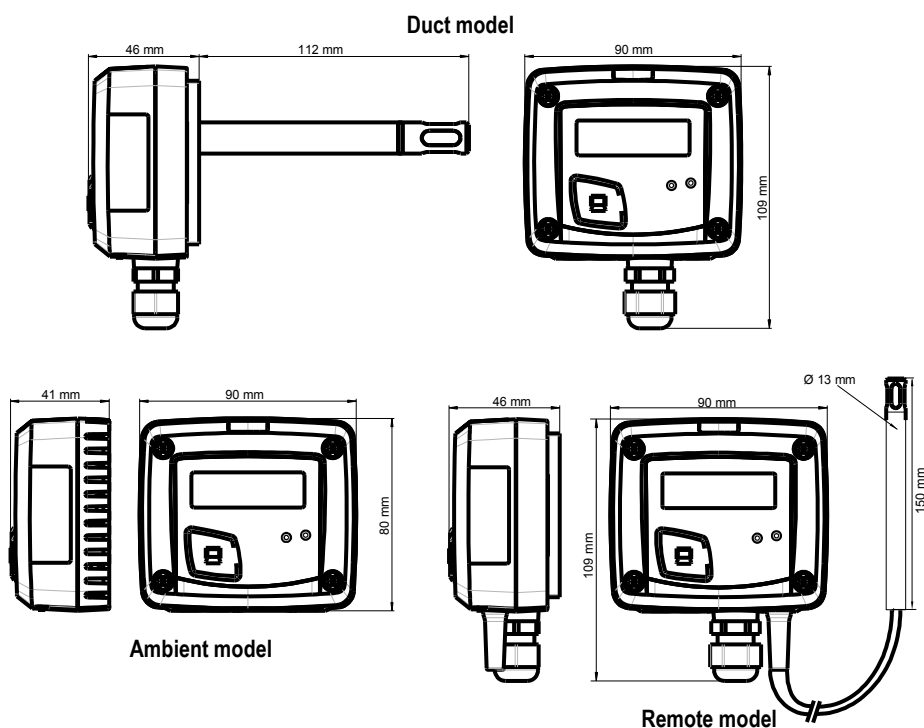
Hygrostat HST

KEY POINTS

- Measuring range from de 5 to 95%HR and from 0 to 50 °C (ambient model) or from -20 to +80 °C (duct and remote model)
- RCR relay output 3A/230 Vac, power supply 24 Vac/Vdc
- Visual and audible alarm, red led in front
- ABS V0 IP65 housing (duct and remote model) or IP20 (ambient model)
- Alternating display of humidity and temperature
- "¼ turn" system mounting with wall-mount plate
- Housing with simplified mounting system



FEATURES OF THE HOUSING



Material

ABS V0 as per UL94

Protection

IP65 (duct and remote models)
IP20 (ambient model)

Display

LCD 10 digits. Size : 50 x 17 mm
Alternating display of humidity and temperature

Height of digits

Values : 10 mm
Units : 5 mm

Cable gland (duct and remote models)

For cables Ø 8 mm maximum

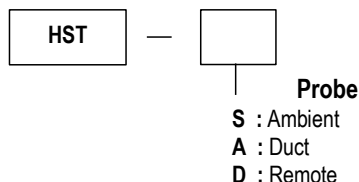
Weight

124 g (ambient model) ; 135 g (duct and remote models)

Cable of remote probes : length 2 m and Ø 4.8 mm in silicone

PART NUMBER

To order, just add the codes to complete the part number :



Example : HST – A
Hygrostat HST with duct probe

TECHNICAL FEATURES IN TEMPERATURE

Measuring range	Ambient model : from 0 to 50 °C Duct and remote model : from -20 to +80 °C
Accuracy*	CMOS : ± 0.4 % of reading ± 0.3 °C NTC : ± 0.3 °C (from -40 °C to 70 °C) ; ± 0.5 °C outside
Unit of measurement	°C / °F
Response time	1/e (63%) 15 s
Type of sensor	Ambient model : CMOS Duct and remote models : NTC
Resolution	0.1 °C
Type of fluid	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.

TECHNICAL FEATURES IN HUMIDITY

Measuring range	from 5 to 95% RH
Accuracy**	$\pm 1.5\%$ HR (if $15^{\circ}\text{C} \leq T \leq 25^{\circ}\text{C}$) on duct and remote models $\pm 2\%$ HR (if $15^{\circ}\text{C} \leq T \leq 25^{\circ}\text{C}$) on ambient model
Drift linked to temperature	$\pm 0.04 \times (T-20)$ %RH (if $15^{\circ}\text{C} \leq T \leq 25^{\circ}\text{C}$)
Unit of measurement	% RH
Response time	1/e (63%) 4 s
Type of sensor	Ambient model : CMOS Duct and remote models : capacitive
Resolution	0.1% RH
Factory adjustment uncertainty	$\pm 0.88\%$ RH
Type of fluid	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.

As per NFX 15-113 and the *Charter 2000/2001 HYGROMETERS*, GAL (Guaranteed Accuracy Limit) which has been calculated with a coverage factor value of 2 is $\pm 2.58\%$ RH between 18 and 28 °C on the measuring range from 3 to 98% RH. Sensor drift is less than 1% RH/year.

TECHNICAL SPECIFICATIONS

Output

1 RCR relay 3 A / 230 Vac

Power supply

24 Vac/Vdc ± 10 %

Consumption

2 VA

Relay and alarm status

Red led in front and internal buzzer

Electromagnetical compatibility

EN61326

Electrical connection

Terminal block for cables $\varnothing 0.05$ to 2.5 mm²

PC communication

USB-mini Din Kimo cable

Environment

Air and neutral gases

Operating temperature of the housing

From 0 to 50 °C

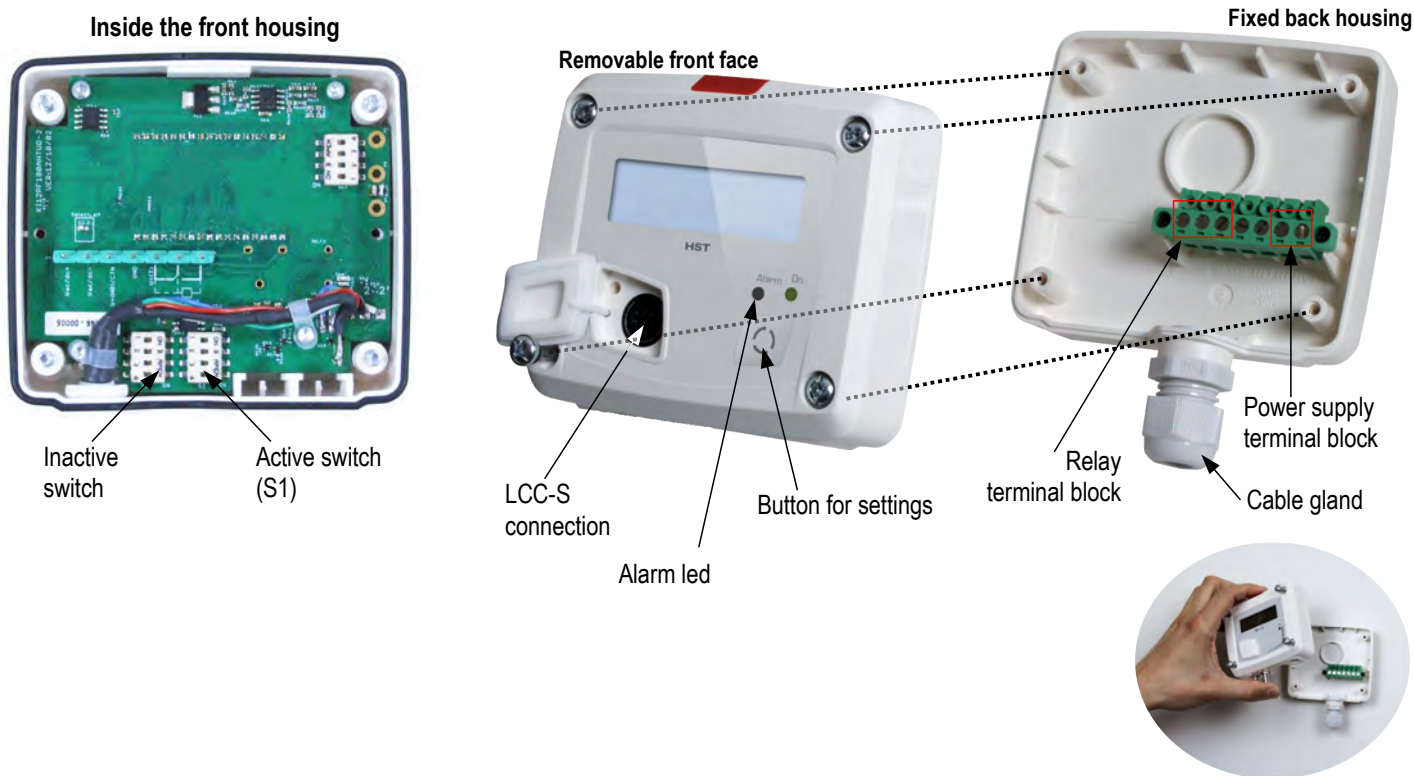
Operating temperature of the probe

From -20 to +80 °C

Storage temperature

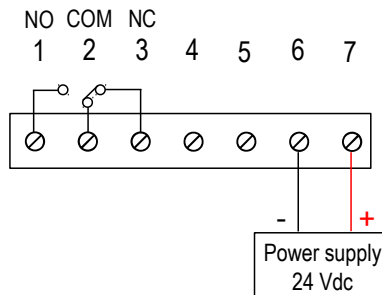
From -10 to +70 °C

CONNECTIONS

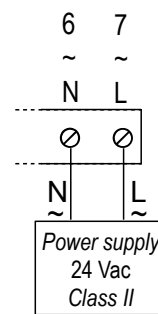




This connection must be made by a qualified technician. **To make the connection, the transmitter must not be energized.**



or



SETTINGS AND USE OF THE TRANSMITTER

> Configuration

It is possible to set the unit of the transmitter either by switch and/or via software.

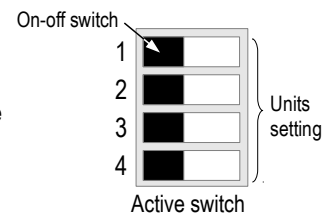


To configure the transmitter, it must not be energized. Then, you can make the settings required, with the DIP switches (as shown on the drawing below). When the transmitter is configured, you can power it up.

- **Configuration by switch** : to configure the transmitter, unscrew the 4 screws from the housing then open it.



Please follow carefully the combinations beside with the DIP switch. If the combination is wrongly done, the following message will appear on the display of the transmitter "CONF ERROR". In that case, you will have to unplug the transmitter, place the DIP switches correctly, and then power the transmitter up.



> Units setting – active switch

To set a unit of measurement, put the on-off switch 4 of the units as shown beside.

Configurations	°C	°F
Combinations	1	1
	2	2
	3	3
	4	4

SETTINGS AND USE OF THE TRANSMITTER

> 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 :

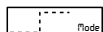
- By pressing on the button more than 3 seconds, you can validate the setting and go to the next setting.
- By pressing quickly on the button, you can increment a value and scroll down the different option or values.

Setting procedure :

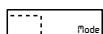
- **Activate or deactivate an alarm :**
 - Press on the button for 3 seconds, "CONF" is displayed then "NEG", meaning that the relay is in negative security, it is excited during an alarm condition.
 - If needed, press quickly on the button to switch the relay in positive security, the relay is de-energized during an alarm condition or a current breaking, "POS" is displayed.
 - Press 3 s on the button, "Alarm" screen is displayed with "On" or "Off" blinking (according to the last saved configuration).
 - Press quickly on the button, the display changes from "On" (activated alarm) to "Off" (deactivated alarm).
 - Press 3 seconds on 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)**

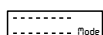
The edge determines the action of the alarm according to the trespassing direction of the threshold(s).



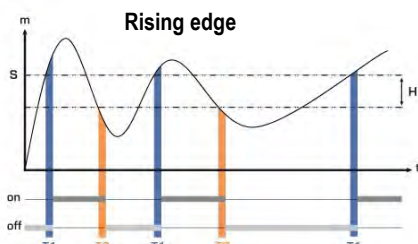
Rising edge (1 threshold) : the alarm goes off when the measurement **exceeds** the threshold and stops when it is **below** the threshold.



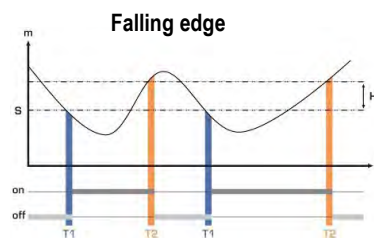
Falling edge (1 threshold) : the alarm goes off when the measurement is **below** the threshold and stops when it **exceeds** the threshold.



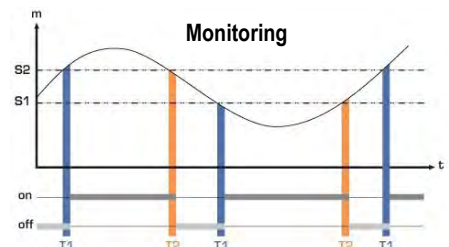
Monitoring (2 thresholds) : the alarm goes off when the measurement is outside the defined low and high thresholds.



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



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



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

- Press briefly on 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 50%RH threshold and a 10%RH hysteresis, the instrument will stay in alarm when the measurement will be between 50 and 40%RH.

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%RH threshold and a 10%RH hysteresis, the instrument will stay in alarm when the measurement will be between 100 and 110%RH.

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.

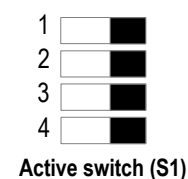
The setting of time delays is done, the measurement is displayed.

CONFIGURATION VIA LCC-S SOFTWARE (option)

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

- 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.

The configuration of the parameters can be done either with the DIP switch or via software (you can not combine both solutions)



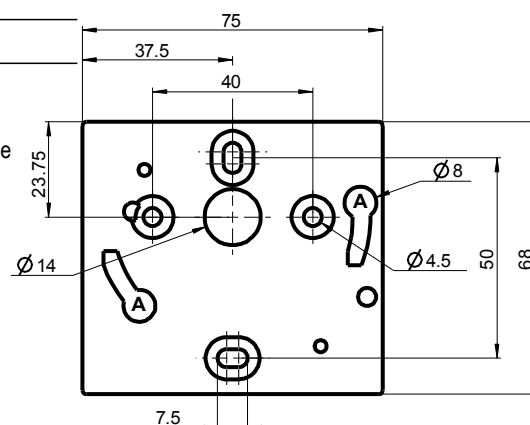
MOUNTING

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.



Ambient model does not have any mounting plate.
4 fixing holes are present inside the back housing. Use them to install the transmitter on the required location.



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.

OPTIONS AND ACCESSORIES

- | | | |
|--|--|--|
| • KIAL-100A : Power supply class 2 , 230 Vac input, 24 Vac output | • Stainless steel sliding fittings | • Stainless steel connections |
| • LCC-S : configuration software with USB cable | • PC cable gland | • Wall-mount plate for humidity remote probe |
| | • ABS connection with connection gland | |

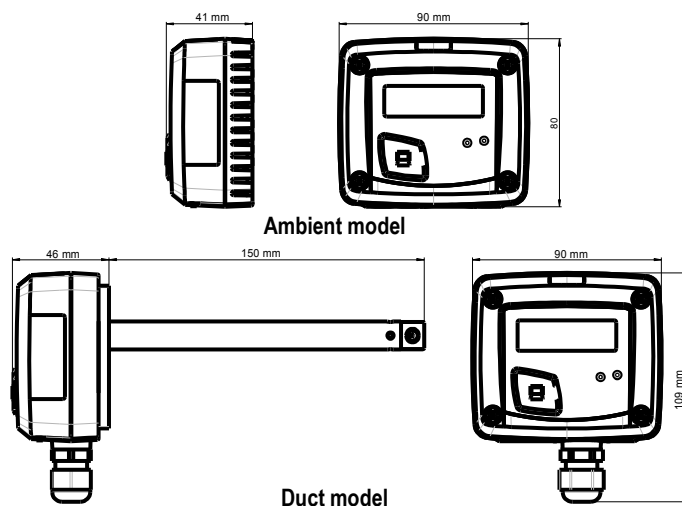
CO stats COST

KEY POINTS

- Range from 0 to 500 ppm
- RCR relay output 3A/230 Vac, power supply 24 Vac/Vdc
- Visual and audible alarm, red led in front
- ABS V0 IP65 housing (according to the model)
- "1/4 turn" system mounting with wall-mount plate
- Housing with simplified mounting system



FEATURES OF HOUSING



Material : ABS V0 as per UL94

Protection :

- duct model : IP65
- ambient model : IP20

Display : LCD 10 digits. Size : 50 x 17 mm

Height of digits : Values : 10 mm ; Units : 5 mm

Cable gland (only for duct model) : For cables Ø 8 mm maximum

Weight : 138 g (ambient model) ; 150 g (duct model)

TECHNICAL FEATURES

Unit of measurement	ppm
Measuring range	From 0 to 500 ppm
Accuracy*	±3 ppm or 3% of the reading value
Type of sensor	Electrochemical sensor
Response time	T63 = 35 s
Resolution	0.1 ppm
Type of fluid	Air and neutral gas
Operating temperature	From 0 to +50 °C
Storage temperature	From -10 to +70 °C

*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.

PART NUMBER

To order, just add the codes to complete the part number :

COST —

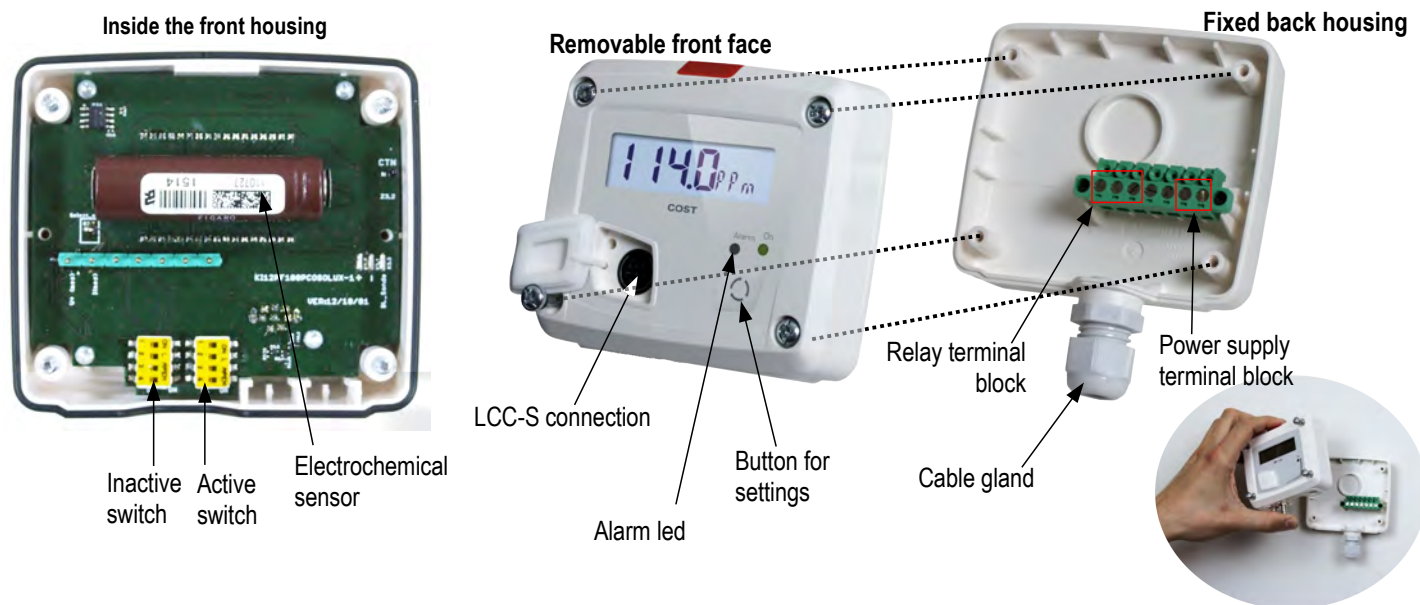
Type of probe
A : duct
S : ambient

Example : COST-A
CO stat with duct probe

TECHNICAL SPECIFICATIONS

Output	1 RCR relay 3 A / 230 Vac
Power supply	24 Vac/Vdc $\pm 10\%$
Consumption	2 VA
Relay and alarm status	Red led in front and internal buzzer
Electromagnetical compatibility	EN61326
Electrical connection	Terminal block for cables $\varnothing 0.05$ to 2.5 mm^2
PC communication	USB-mini Din Kimo cable
Environment	Air and neutral gas

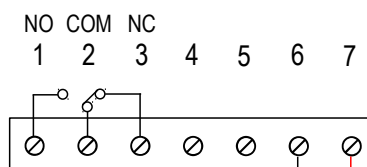
CONNECTIQUES



ELECTICAL CONNECTIONS – as per *NFC15-100 standard*

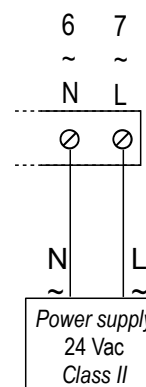


This connection must be made by a qualified technician. **To make the connection, the transmitter must not be energized.**




Power supply
24 Vdc

or



SETTINGS AND USE OF THE TRANSMITTER

Thresholds 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.

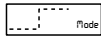
Setting procedure :

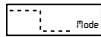
• Activate or deactivate an alarm :

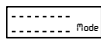
- Press on the button for 3 seconds, “CONF” is displayed then “NEG”, meaning that the relay is in negative security, it is excited during an alarm condition.
- If needed, press quickly on the button to switch the relay in positive security, the relay is de-energized during an alarm condition or a current breaking, “POS” is displayed.
- Press 3 s on the button, “Alarm” screen is displayed with “On” or “Off” blinking (according to the last saved configuration).
- Press quickly on the button, the display changes from “On” (activated alarm) to “Off” (deactivated alarm).
- Press 3 seconds on 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.

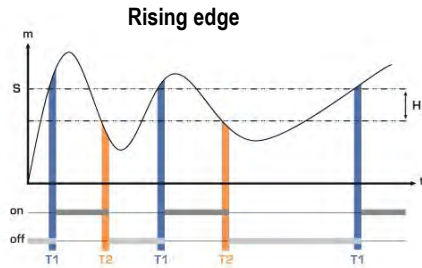
• Set the action of the alarm (rising edge or falling edge)

The edge determines the action of the alarm according to the trespassing direction of the threshold(s).

 Rising edge (1 threshold) : the alarm goes off when the measurement **exceeds** the threshold and stops when it is **below** the threshold.

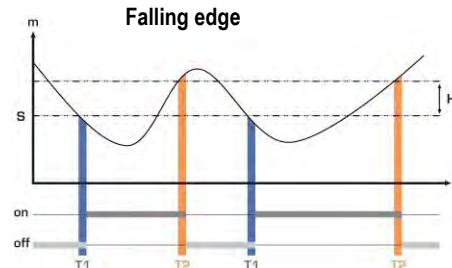
 Falling edge (1 threshold) : the alarm goes off when the measurement is **below** the threshold and stops when it **exceeds** the threshold.

 Monitoring (2 thresholds) : the alarm goes off when the measurement is outside the defined low and high thresholds.



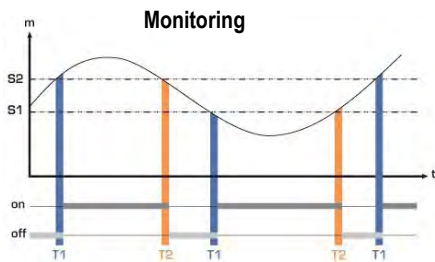
Measurement (m) > Threshold (S) during the time-delay $T1$ → Alarm activation.

Measurement (m) < Threshold (S) - Hysteresis (H) during the time-delay $T2$ → Alarm deactivation.



Measurement (m) < Threshold (S) during the time-delay $T1$ → Alarm activation.

Measurement (m) > Threshold (S) + Hysteresis (H) during time-delay $T2$ → Alarm deactivation.



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

- Press briefly on 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 ppm threshold and a 10 ppm hysteresis, the instrument will stay in alarm when the measurement will be between 100 and 90 ppm.

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 ppm threshold and a 10 ppm hysteresis, the instrument will stay in alarm when the measurement will be between 100 and 110 ppm.

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 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.

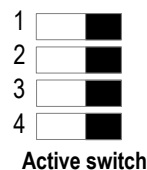
The setting procedure is the same as the rising edge procedure.

The setting of time delays is done, the measurement is displayed.

CONFIGURATION VIA LCC-S SOFTWARE (option)

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

- 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.



The configuration of the parameters can be done either with the DIP switch or via software (you can not combine both solutions)

MOUNTING

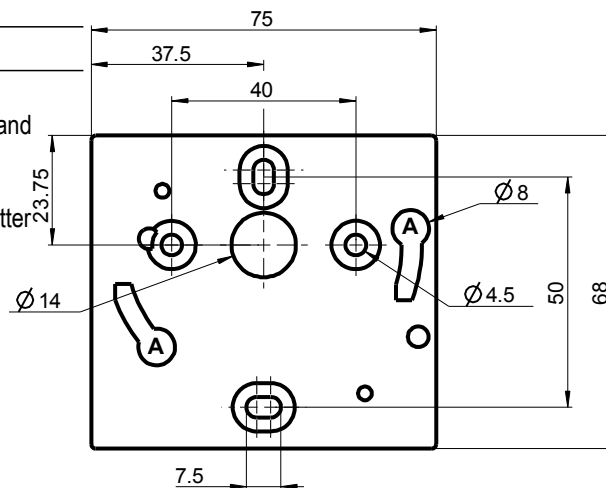
To mount the transmitter, mount the ABS plate on the wall (drilling : Ø6 mm, screws and pins are supplied).

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.



Ambient model has not any fixing plate.

4 fixing holes are inside the back housing. Use them to install the transmitter on the required location.



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.

OPTIONS AND ACCESSORIES

- **KIAL-100A** : Power supply class 2 , 230 Vac input, 24 Vac output
- **LCC-S** : configuration software with USB cable

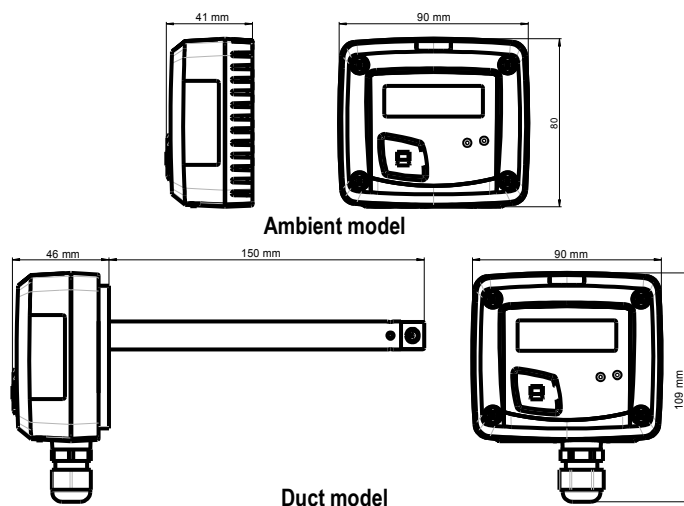
CO₂ stats CO2ST

KEY POINTS

- Range from 0 to 5000 ppm
- RCR relay output 3A/230 Vac, power supply 24 Vac/Vdc
- Visual and audible alarm, red led in front
- ABS V0 IP65 housing (according to the model)
- "1/4 turn" system mounting with wall-mount plate
- Housing with simplified mounting system



FEATURES OF HOUSING



Material : ABS V0 as per UL94

Protection :

- duct model : IP65
- ambient model : IP20

Display : LCD 10 digits. Dimensions : 50 x 17 mm

Height of digits : Values : 10 mm ; Units : 5 mm

Cable gland (only for duct model) : for cables Ø 8 mm maximum

Weight : 138 g (ambient model) ; 150 g (duct model)

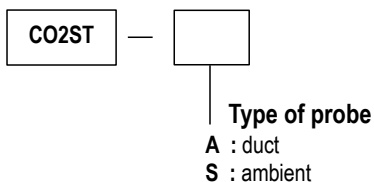
TECHNICAL FEATURES

Unit of measurement	ppm
Measuring range	From 0 to 5000 ppm
Accuracy*	±3 % of reading or ±50 ppm
Type of sensor	Infra-red sensor
Response time	T63 = 30 s
Resolution	1 ppm
Type of fluid	Air and neutral gases
Operating temperature	From 0 to +50 °C
Storage temperature	From -10 to +70 °C

*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.

PART NUMBER

To order, just add the codes to complete the part number :

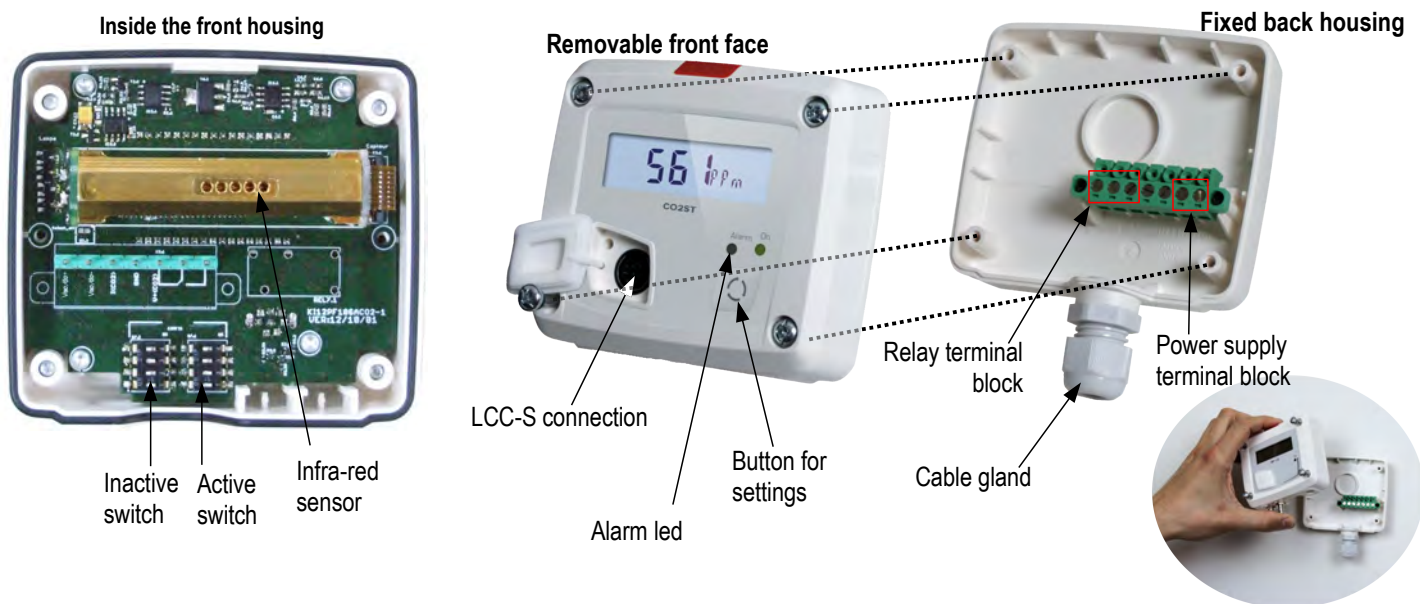


Example : CO2ST-A
CO stat with duct probe

TECHNICAL SPECIFICATIONS

Output	1 RCR relay 3 A / 230 Vac
Power supply	24 Vac/Vdc $\pm 10\%$
Consumption	2 VA
Relay and alarm status	Red led in front and internal buzzer
Electromagnetical compatibility	EN61326
Electrical connection	Terminal block for cables $\varnothing 0.05$ to 2.5 mm^2
PC communication	USB-mini Din Kimo cable
Environment	Air and neutral gases

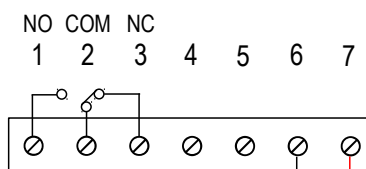
CONNECTIONS



ELECTICAL CONNECTIONS – as per *NFC15-100 standard*

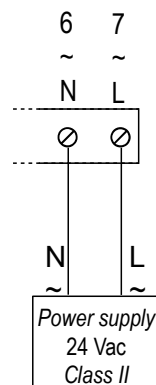


This connection must be made by a qualified technician. **To make the connection, the transmitter must not be energized.**



Power supply
24 Vdc


or



Power supply
24 Vac
Class II

SETTINGS AND USE OF THE TRANSMITTER

> Thresholds 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.

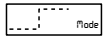
Setting procedure :

• Activate or deactivate an alarm :

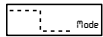
- Press on the button for 3 seconds, “CONF” is displayed then “NEG”, meaning that the relay is in negative security, it is excited during an alarm condition.
- If needed, press quickly on the button to switch the relay in positive security, the relay is de-energized during an alarm condition or a current breaking, “POS” is displayed.
- Press 3 s on the button, “Alarm” screen is displayed with “On” or “Off” blinking (according to the last saved configuration).
- Press quickly on the button, the display changes from “On” (activated alarm) to “Off” (deactivated alarm).
- Press 3 seconds on 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)

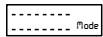
The edge determines the action of the alarm according to the trespassing direction of the threshold(s).



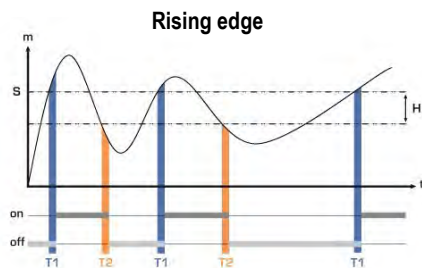
Rising edge (1 threshold) : the alarm goes off when the measurement **exceeds** the threshold and stops when it is **below** the threshold.



Falling edge (1 threshold) : the alarm goes off when the measurement is **below** the threshold and stops when it **exceeds** the threshold.

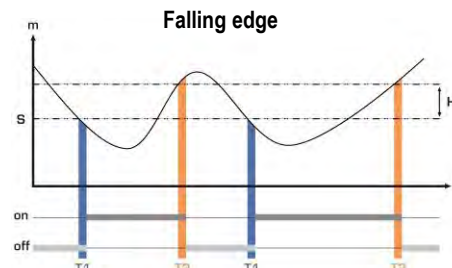


Monitoring (2 thresholds) : the alarm goes off when the measurement is outside the defined low and high thresholds.



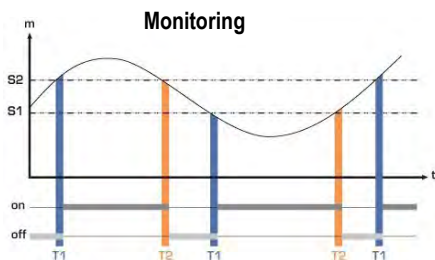
Measurement (m) > Threshold (S) during the time-delay T1 → Alarm activation.

Measurement (m) < Threshold (S) - Hysteresis (H) during the time-delay T2 → Alarm deactivation.



Measurement (m) < Threshold (S) during the time-delay T1 → Alarm activation.

Measurement (m) > Threshold (S) + Hysteresis (H) during time-delay T2 → Alarm deactivation.



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

- Press briefly on 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 1000 ppm threshold and a 100 ppm hysteresis, the instrument will stay in alarm when the measurement will be between 1000 and 900 ppm.

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 1000 ppm threshold and a 100 ppm hysteresis, the instrument will stay in alarm when the measurement will be between 1000 and 1100 ppm.

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 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.

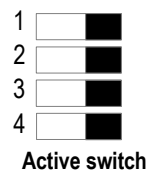
The setting procedure is the same as the rising edge procedure.

The setting of time delays is done, the measurement is displayed.

CONFIGURATION VIA LCC-S SOFTWARE (option)

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

- 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.



The configuration of the parameters can be done either with the DIP switch or via software (you can not combine both solutions)

MOUNTING

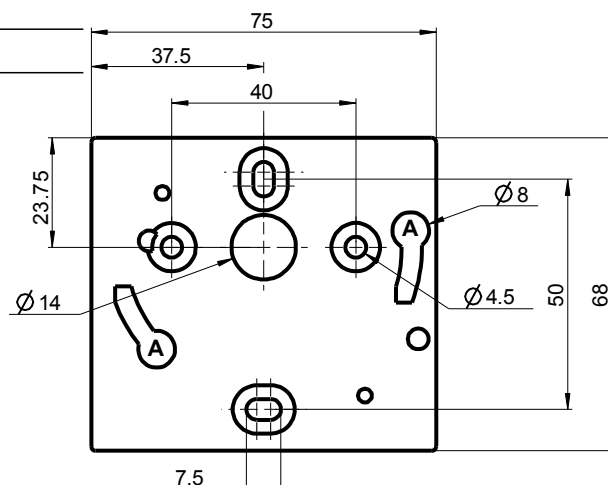
To mount the transmitter, mount the ABS plate on the wall (drilling : Ø6 mm, screws and pins are supplied).

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.



Ambient model has not any fixing plate.

4 fixing holes are inside the back housing. Use them to install the transmitter on the required location.



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.

OPTIONS AND ACCESSORIES

- **KIAL-100A** : Power supply class 2 , 230 Vac input, 24 Vac output
- **LCC-S** : configuration software with USB cable