

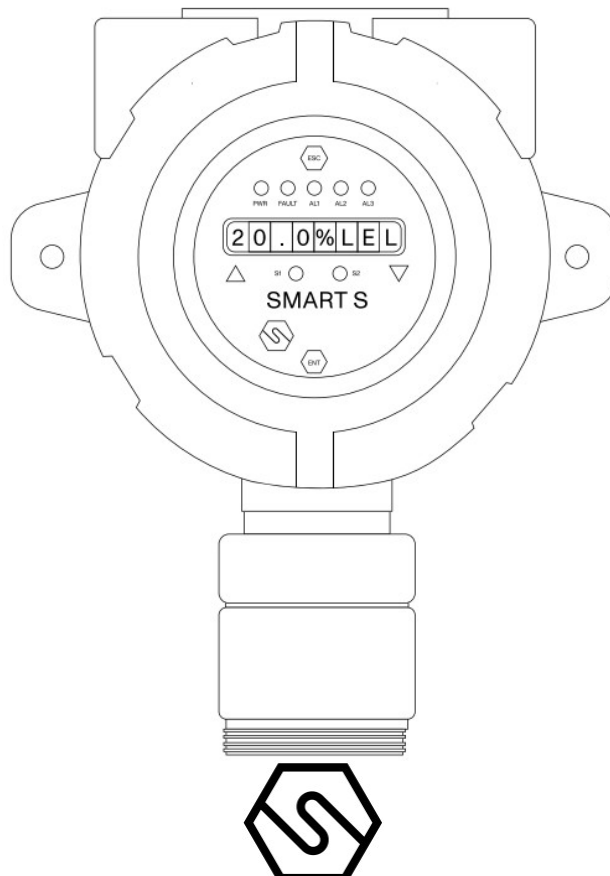


sensitron SMART S Series Gas Detectors Instruction Manual

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sensitron
A Halma Company
SMART S
Quick Guide



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SMART S Series Gas Detectors

Short installation manual

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This manual is a short installation guide for gas detectors of SMART S series. The reading of the main manual of the gas detector is recommended. SMART S-SS gas detectors are equipped with a display board, while SMART S-MS not. Both can be equipped with a board for HART communication.



Identification labels

Each gas detector has two labels:

I ATEX label, with detector marking

II Detector's label, with serial number, adjustment gas and other information


Example of ATEX label to be filled

Sensitron S.r.l. ITALY Viale della Repubblica, 48 – 20010 Cornaredo (MI) ST/[1]/[2]/[3] Ex db IIC [4] Gb [5] & Ta & [6] CESI yy ATEX nnnX WARNING: Do not open when energized Thread [8]	 0722  II 2 G Vmax 27,6 Vdc Pmax [7] Year YYYY
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1. Enclosure module
2. Electronic type
3. Sensor head
4. Temperature class
5. Tmin
6. Tmax
7. Maximum power

8. Entries thread

Example of gas detector label to be filled

 sensitron		
Gas detector: [part number] SN:[serial number]		
F.S.: [full scale value]	Gas: [gas]	<div>QR code</div>
Volt: 12-24 Vdc	Adj. with: [gas]	
Date: YYYY/MM	Curr: [current]	
Line: [product line]	Output: [output type]	
CESI nn ATEX nnnX		

Link

	Technical manual for detectors of flammable gas with certified performance	http://www.sensitron.it/MT/P/_MTEX3567_SMART_S_FLAMMABLE_ZONE_1.pdf
	Technical manual for detectors of toxic gas	http://www.sensitron.it/MT/P/_MTEX3770_SMART_S_TOXIC_ZONE_1.pdf
	Technical manual for IECEx gas detectors	http://www.sensitron.it/MT/P/_MTEX4720_SMART_S_FLAMMABLE_ZONE_1_IECEx.pdf
	Technical manual for detectors for marine environment	http://www.sensitron.it/MT/P/_MTEX4899_SMART_S-MS_MED.pdf
	Technical manual for intrinsically safe detectors	http://www.sensitron.it/MT/P/_MTEX4985_SMART_S-IS_TOXIC_ZONE_1.pdf

Accessories manual links

	
Display board	3 relays board
http://www.sensitron.it/MT/P/_MT3771_DISPLAY_SMART_S.pdf	http://www.sensitron.it/MT/P/_MT3678_ST3REL.pdf
	
HART module	Calibration keypad-Display LED
http://www.sensitron.it/MT/P/_MT4583_HART.pdf	http://www.sensitron.it/MT/P/_MT4508_ST3-CKD+.pdf
	
Calibration keypad-Display OLED	Calibration keypad -Display LED
http://www.sensitron.it/MT/P/_MT4564_ST3-CKD-OLE.pdf	http://www.sensitron.it/MT/P/_MT894_GAS_TEST_KIT.pdf
	
Remote head kit (5 m)	Remote head kit (25 m)
http://www.sensitron.it/MT/P/_MT3825_ST.R5M.pdf	http://www.sensitron.it/MT/P/_MT3788_ST.R25M.pdf

Installation site prearrangement

At the mounting and installation phase be sure all safety precautions have been considered. Always consider how important it is the correct positioning of gas detectors to get the optimum response.

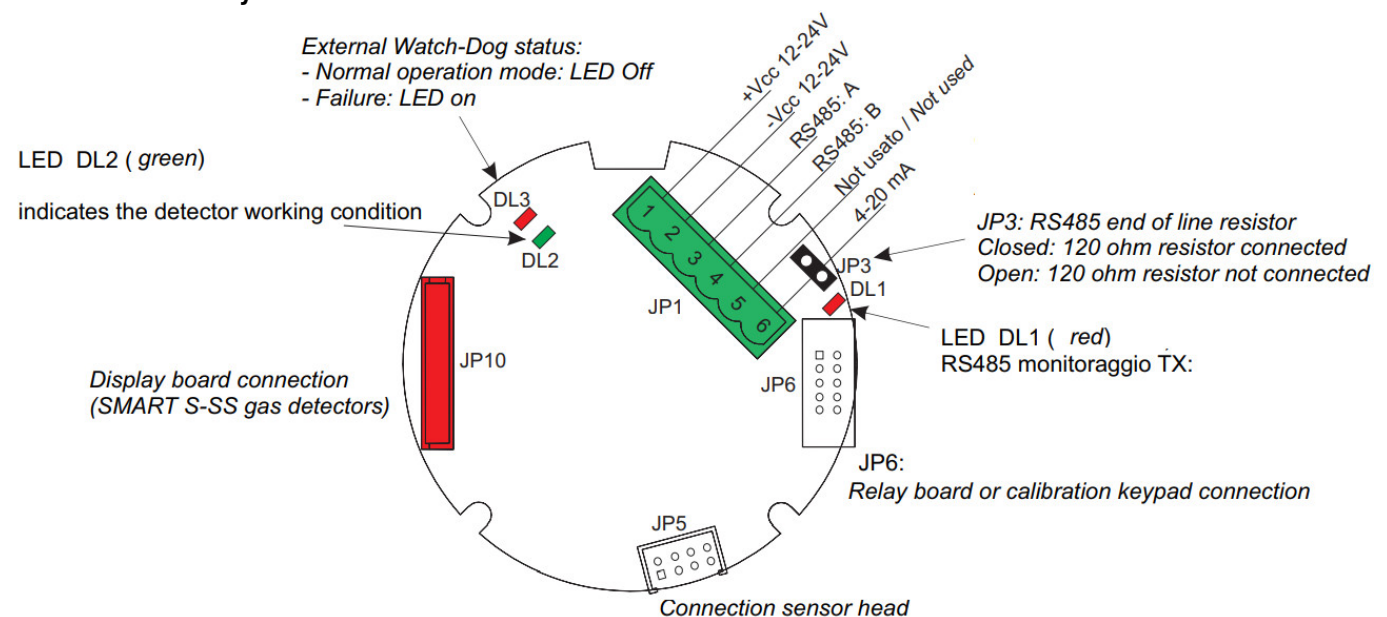
- Be careful never to install gas detectors close to air intakes or fans causing strong air currents.
- Be sure the detectors are attached to a firm base to prevent vibration that can damage them, producing unreliable results.
- Although the electronics comply with the electromagnetic compatibility rules, it is advised to keep the detectors at a distance from any radio frequency senders (such as radio links or similar).
- Please be also sure that detectors are placed in a convenient location for future maintenance and calibration requirements.
- All of the gases lighter than air (Methane, Hydrogen, Ammonia) tend to spread upwards; the detector should be placed at 30 cm from the ceiling in order to maximise the effectiveness of the detection.
- All of the gases heavier than air (LPG, Butane, Petrol Vapours) tend to spread downwards; the detector should be placed at 30 cm from the floor.

Installation

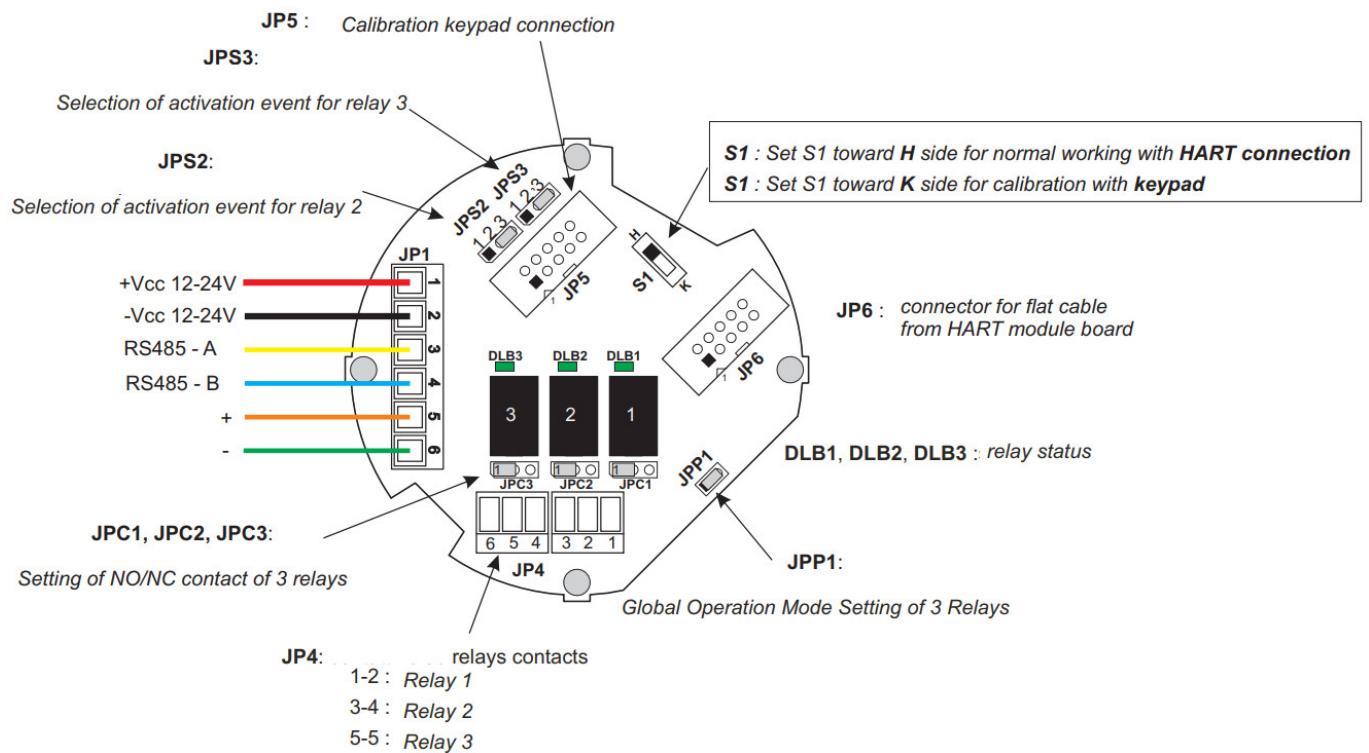
CORRECT POSITIONING MODE:

The gas detector is always to be mounted with the sensing element placed downward. For no reasons at all the enclosure can be drilled. Wall mount the detectors by employing the existing holes. Exd detectors come complete with wall fixing brackets.

Detector circuit layout without HART module:



Detector circuit layout equipped with HART module:



- Relay 1 is not programmable and it associated to FAULT and external watchdog status.
- Relays 2 and 3 are programmable, as default they are associated to alarm 2 and 3.
- Alla relays as default condition have the contacts normally closed (NC) and they are set as normally energized.

Testing and use

POWER ON

When the detector is powered on, the green LED on the motherboard starts blinking at slow intermittent. Output current is nearly 2 mA. After 2 minutes and finished the warmup step, the output current is 4.0mA. Once the warm-up phase is over, the detector can work correctly, although the optimal performances will be achieved after two hours. Should the detector be provided with display, please refer to the additional technical handbook MT3771.

TESTING

Detectors are factory calibrated for the specific gas required by the customers. Future adjustment of the preset calibration can be carried out by employing the calibration keypad. Testing should be carried out by using a gas mixture in the appropriate range, along with our calibration kit.

USE

The detector works autonomously and automatically. Once adequately connected, no further operations are required. The flashing green LED on the motherboard indicates the detector's working condition as detailed in the main manual.

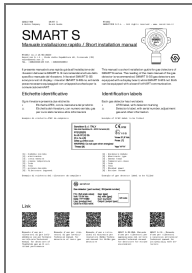
Maintenance

Within the European Union Countries, bump testing and calibration procedures of gas detectors are required by strict regulations and detailed in the IEC EN 60079-29-2. This norm gives guidance on the selection, installation, use and maintenance of gas detectors intended for use in industrial and commercial applications. The standard requires calibration and bump testing as well as recording of the performed checks and it defines that all gas detectors should undergo periodical operational testing according to the manufacturer's specifications. Test results should be recorded into a suitable book to be shown to the Authority in case of inspection.

Contacts

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Documents / Resources



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SMART S-SS, SMART S-MS, SMART S Series Gas Detectors, SMART S Series, Gas Detectors, Detectors

References

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