

SMART S-MS

with POP-IR sensor

Designed to meet the toughest industrial standards, the SMART S-MS series gas detectors are used in classified areas (zone 1).

The Point Open Path infrared sensor, POP-IR, is used for the detection of flammable substances. The POP-IR (like the traditional infrared sensor) is not susceptible to poisoning and has a high selectivity. It was developed specifically to keep measurements immune from changes in ambient humidity and has a T90 below 10 seconds, which significantly improves performance compared to traditional infrared sensors. The sensor is housed in the stainless steel head, with a diameter of 47.5 mm.

The detector has a 12-24 Vdc power supply, a 4-20 mA signal output and an RS485 signal.

To adapt to the customer's needs, the SMART S-MS detector has the following customization possibilities:

- Choice of the sensor head based on the gas to be detected
- Choice of transmitter (3-relay board, HART modem)
- Choice of enclosure (aluminium / steel)

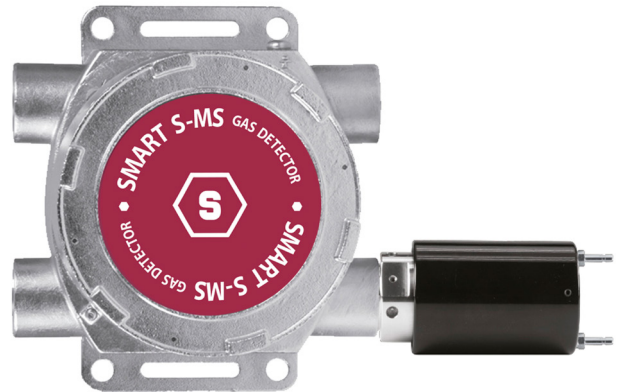
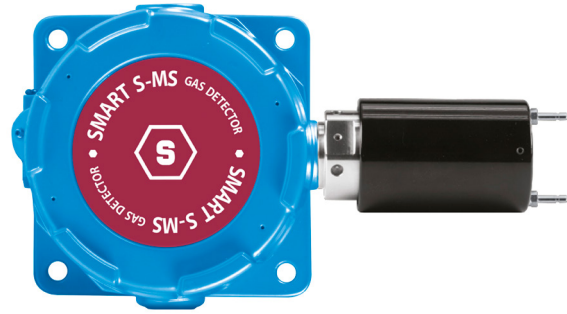
The detector can be ATEX marked in the following ways:

CE 0722 Ex II 2G Ex db op is IIC T6 Gb

The detector is also certified according to the international IECEx scheme and marked:

Ex db op is IIC T6 Gb

SMART S-MS is SIL2 hardware and SIL3 software; with a redundant system also the hardware is SIL3.



Sensor

Application	Industrial areas, ATEX Zone 1
Sensor	Infrared Point Open Path (POP-IR)
Estimated sensor life	> 5 years
Gas detected	Flammable gases
Full scale range	0 - 100% LFL

Electrical parameters

Power supply	12-24 Vdc
Output	Analogue 4-20 mA output; RS485 serial output; 3 relay board (optional); HART modem (optional)
Maximum dissipated power	4.9 W
Relays contact ratings	1.0 A a 24 Vdc
Visual indications	-
Acoustic indications	-
Hall effect sensor	-

Environmental conditions

Storage temperature	-40 / +85°C
Operating temperature	-40 / +60°C
Operating humidity	0-95% RH non-condensing
Operating pressure	800-1200 mbar
Response time	$t_{90} < 10$ s ; $t_{50} < 4$ s (without hydrophobic / dust filter) $t_{90} < 60$ s ; $t_{50} < 10$ s (with hydrophobic / dust filter)

External case

Material	Enclosure: die-cast aluminium with colour and chemically resistant epoxy paint or electropolished SS316 stainless steel Sensor head: SS316 stainless steel
Protection mode	Ex d: Explosion proof enclosure Ex op is: Intrinsically safe optical radiation protection mode
Dimensions	138 x 270 x 120 mm (4A enclosure) 155 x 280 x 109 mm (2S enclosure)
Weight	3300 g (4A enclosure) 4700 g (2S enclosure)
Cable entries	3 x 3/4" NPT
IP grade	IP65

Compliance

EMC	EN 61000-6-3:2007 + A1:2011; EN 50270:2015
ATEX	ATEX directive 2014/34/EU EN IEC 60079-0:2018 EN 60079-1:2014 EN 60079-28:2015
IECEX	IEC 60079-0:2011 IEC 60079-1:2014 IEC 60079-28:2006
SIL	EN 61508:2010 Parts 1, 2, 3, 4, 5, 6, 7 EN 50402:2017

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To order a SMART S-MS detector, the transmitter must be paired with the container and sensor head of the gas of interest.

The product code is composed as follows:

SMS | Enclosure code | Transmitter code | - | Sensor head code

Example: the code SMS4A17-S6002ME is a SMART S-MS detector with the 4A enclosure, the electronics with 3 relay board and HART modem. The sensor head code S6002ME is for methane 0-100% LFL.



4A



2S

Enclosure code

- 4A Aluminium enclosure with four 3/4" NPT conduits
- 2S Stainless steel enclosure with four 3/4" NPT conduits

ATEX code

- ST / 7W / ES / C6
- ST / 8K / ES / C6

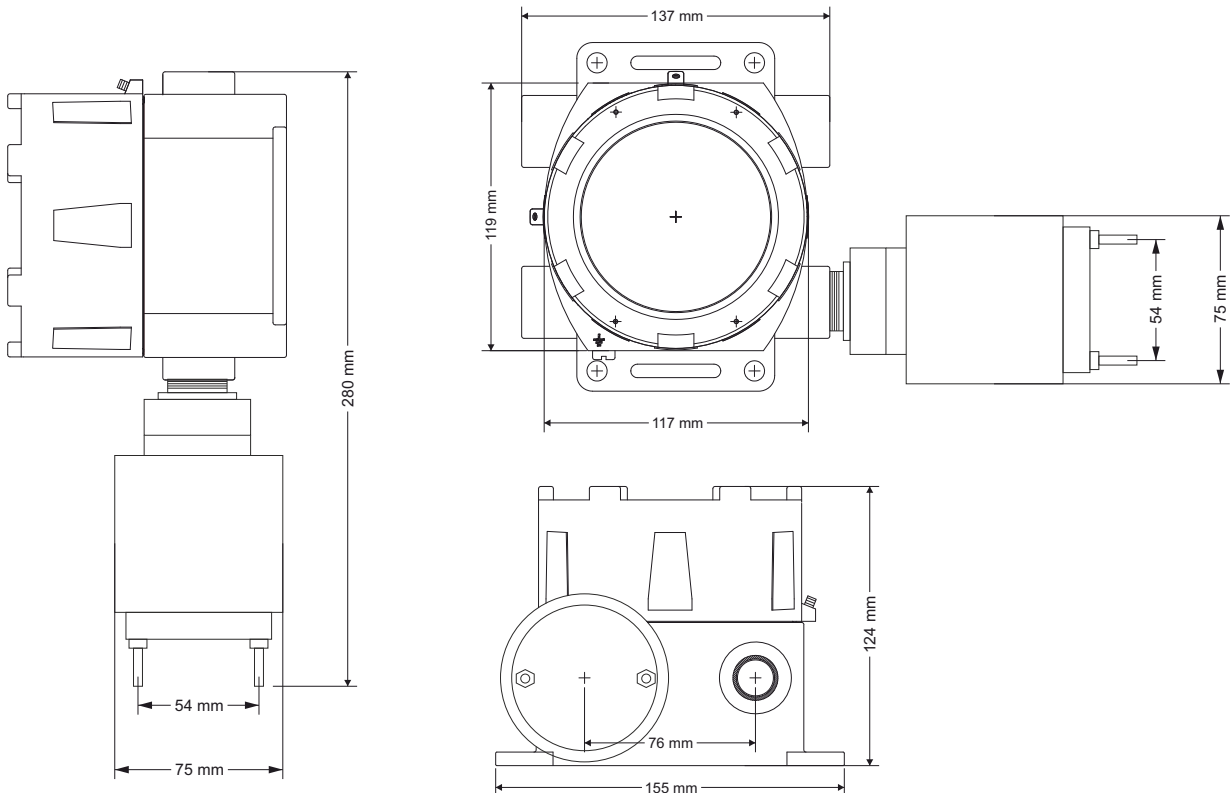
Transmitter code

- 11 Electronics with 1 RS485 + 4-20 mA output
- 13 Electronics with 1 RS485 + 4-20 mA output, 3 relays card
- 17 Electronics with 1 RS485 + 4-20 mA output, 3 relays card, Hart modem

Sensor head code

- S6002ME METHANE sensor head, 0-100% LFL
- S6002PR PROPANE sensor head, 0-100% LFL
- S6002BU BUTANE sensor head, 0-100% LFL
- S6002AT ACETONE sensor head, 0-100% LFL
- S6002EN ETHANE sensor head, 0-100% LFL
- S6002ET ETHYL ALCOHOL sensor head, 0-100% LFL
- S6002EP HEPTANE sensor head, 0-100% LFL
- S6002ES HEXANE sensor head, 0-100% LFL
- S6002IB ISO BUTANE sensor head, 0-100% LFL
- S6002PE PENTANE sensor head, 0-100% LFL
- S6002PP PROPYLENE sensor head, 0-100% LFL

Mechanical drawings SMART S-MS POP-IR with 2S enclosure



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Mechanical drawings SMART S-MS POP-IR with 4A enclosure

