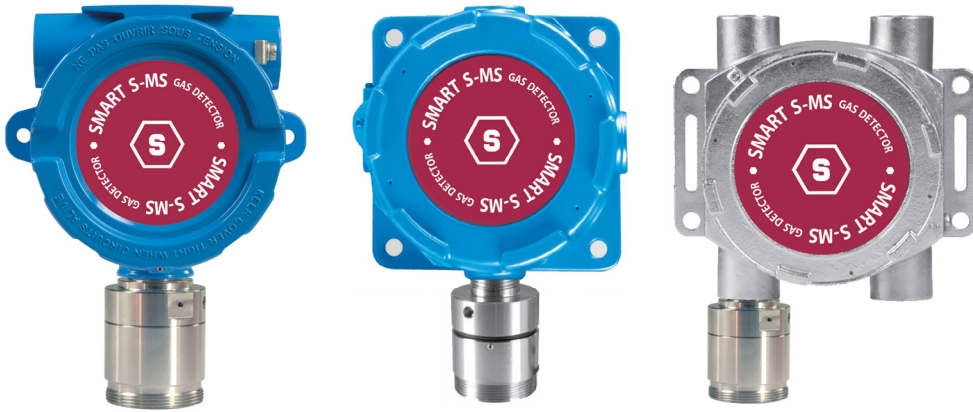


SMART S-MS

with electrochemical cell



Designed to meet the toughest industrial standards, the SMART S-MS series gas detectors are used to detect, in classified areas (zone 1 and, if equipped with the dust adapter, zone 21), the presence of toxic substances (ppm).

For the reading of toxic gases the premium electrochemical cell is used as a sensing element, which is well suited for the detection of substances at low concentrations. The sensor is housed in a 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, number of entrances)

The detector can be ATEX marked in the following ways:

CE 0722 Ex II 2G Ex db IIC T5 Gb

Or, if equipped with a dust adapter:

CE 0722 Ex II 2GD Ex db IIC T5 Gb
Ex tb IIIC T100°C Db
IP65

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

Ex db IIC T5 Gb
Oppure, se munito di adattatore per polveri:
Ex db IIC T5 Gb
Ex tb IIIC T5 T100°C Db
IP65

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 and Zone 21 (if equipped with optional dust adapter)
Sensor	Electrochemical cell
Estimated sensor life	2 / 3 years
Gas detected and range	O ₂ [0-25% Vol], CO [0-100/500/1000 ppm], NH ₃ [0-100/200/1000 ppm], H ₂ S [0-20/50/100 ppm], NO [0 - 100 ppm]; H ₂ [0 - 1000/2000/3000 ppm]

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	5.4 W
Relays contact ratings	1.0 A a 24 Vdc
Visual indications	-
Acoustic indications	-
Hall effect sensor	-

Environmental conditions

Storage temperature	0 / +20°C for a maximum of 6 months
Operating temperature	-30 / +55°C
Operating humidity	15 / 90% RH non-condensing

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 t : Equipment dust ignition protection by enclosure (when equipped with optional dust adapter)
Dimensions	145 x 187 x 108 mm (3A enclosure) 138 x 200 x 120 mm (4A enclosure) 155 x 210 x 124 mm (2S enclosure)
Weight	1500 g (3A enclosure) 2800 g (4A enclosure) 4200 g (2S enclosure)
Cable entries	2 or 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 60079-31:2014
IECEx	IEC 60079-0:2011 IEC 60079-1:2014 IEC 60079-31:2013
SIL	EN 61508:2010 Parts 1, 2, 3, 4, 5, 6, 7 EN 50402:2017

SMART S-MS

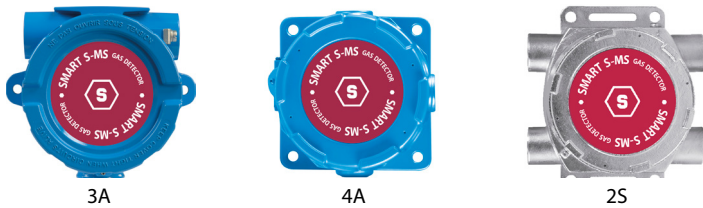
with electrochemical cell

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

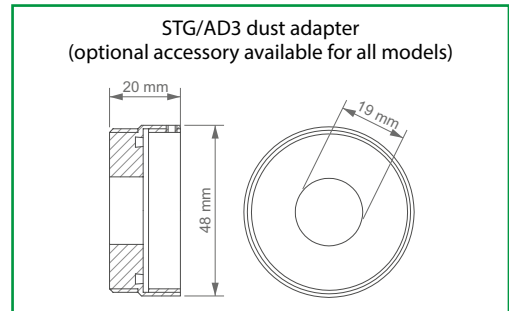
Example: the code SMS3A17-S4005O2 is a SMART S-MS detector with the 3A enclosure, the electronics with 3 relay board and HART modem. The sensor head code S4005O2 is for Oxygen 0-25% Vol.



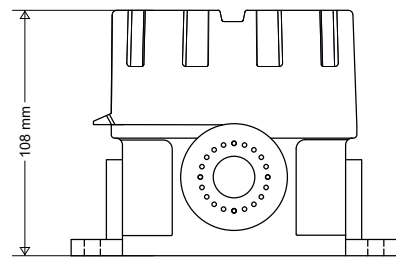
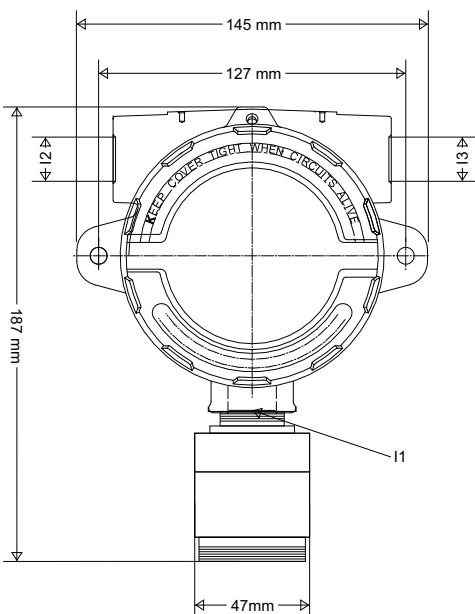
Enclosure code	ATEX code
3A Aluminium enclosure with three 3/4" NPT conduits	ST / LB / ES / S3
4A Aluminium enclosure with four 3/4" NPT conduits	ST / 7W / ES / S3
2S Stainless steel enclosure with four 3/4" NPT conduits	ST / 8K / ES / S3

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	
S4005O2	OXYGEN (O ₂) sensor head, 0-25% Vol.
S4166CO	CARBON MONOXIDE (CO) sensor head, 0-100 ppm
S4006CO	CARBON MONOXIDE (CO) sensor head, 0-500 ppm
S4021CO	CARBON MONOXIDE (CO) sensor head, 0-1000 ppm
S4022AM	AMMONIA (NH ₃) sensor head, 0-100 ppm
S4007AM	AMMONIA (NH ₃) sensor head, 0-200 ppm
S4008AM	AMMONIA (NH ₃) sensor head, 0-1000 ppm
S4009HS	HYDROGEN SULPHIDE (H ₂ S) sensor head, 0-50 ppm
S4028HS	HYDROGEN SULPHIDE (H ₂ S) sensor head, 0-20 ppm
S4029HS	HYDROGEN SULPHIDE (H ₂ S) sensor head, 0-100 ppm
S4010NO	NITRIC OXIDE (NO) sensor head, 0-100 ppm
S4089H2	HYDROGEN (H ₂) sensor head, 0-1000 ppm
S4168H2	HYDROGEN (H ₂) sensor head, 0-2000 ppm
S4169H2	HYDROGEN (H ₂) sensor head, 0-3000 ppm



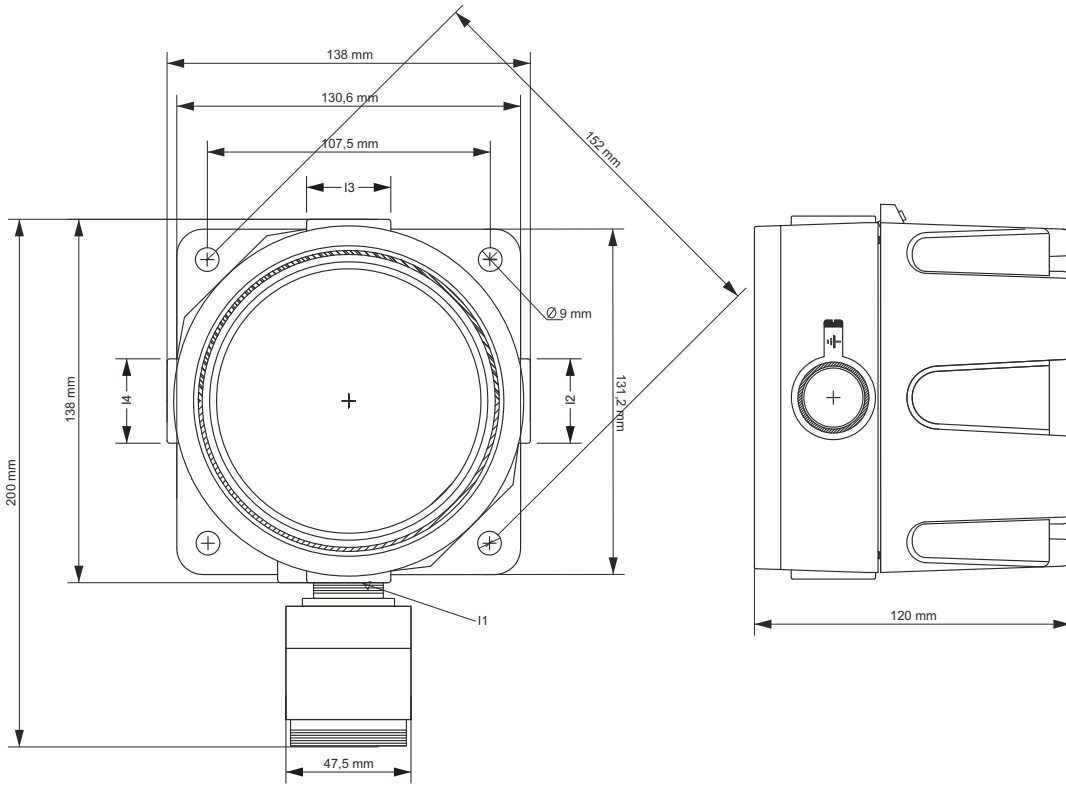
Mechanical drawings SMART S-MS with 3A enclosure



SMART S-MS

with electrochemical cell

Mechanical drawings SMART S-MS with 4A enclosure



Mechanical drawings SMART S-MS with 2S enclosure

