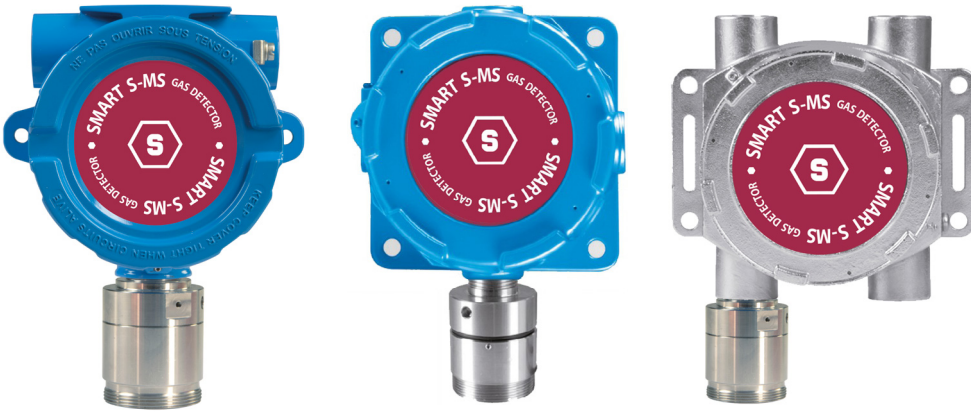


# SMART S-MS

with catalytic sensor



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 flammable substances (% LFL).

The catalytic sensor is used for the detection of flammable substances, which combines excellent linearity up to 100% LFL with fast response times. 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 T5 T100°C Db  
IP65

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

Ex db IIC T5 Gb

Or, if equipped with a dust adapter:

Ex db IIC T5 Gb  
Ex tb IIIC 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	Catalytic pellistor
Estimated sensor life	4 / 5 years
Gas detected	Flammable
Full scale	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	5.4 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 / +65°C *
Operating humidity	20 / 90% RH @40°C *
Operating pressure	80 / 120 kPa *
Air velocity	6 m/s *
Response time	$t_{90} < 60 \text{ s}$ ; $t_{50} < 20 \text{ s}$ *

\* Data tested according to test procedures described in EN 60079-29-1 standard

## 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 EN 60079-29-1:2016
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

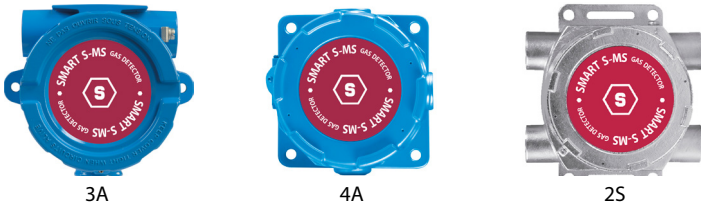
with catalytic sensor

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
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Example: the code SMS3A17-S4003ME is a SMART S-MS detector with the 3A enclosure, the electronics with 3 relay board and HART modem. The sensor head code S4003ME is for methane 0-100% LFL.

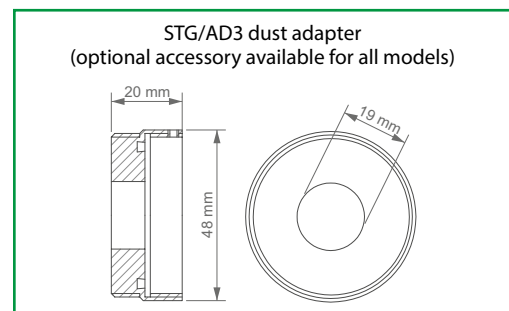
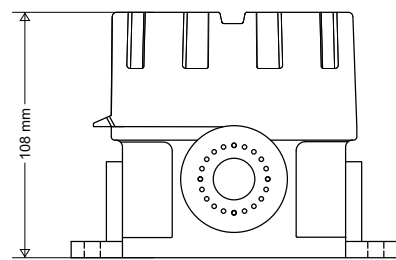
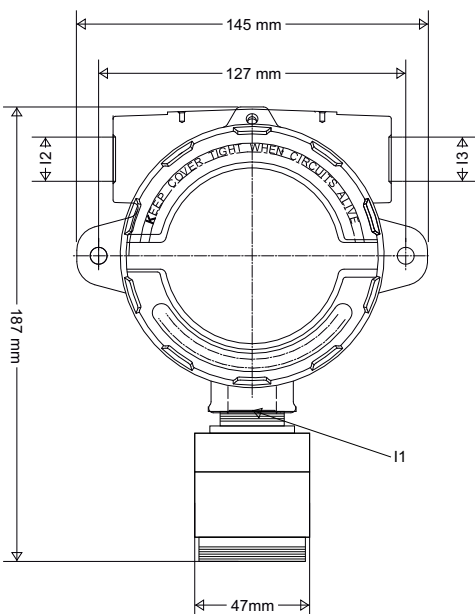


Enclosure code	ATEX code
3A Aluminium enclosure with three 3/4" NPT conduits	ST / LB / ES / S3
4A Aluminium enclosure with four 3/4" NPT conduits	ST / 7W / ES / S3
2S Stainless steel enclosure with four 3/4" NPT conduits	ST / 8K / ES / S3

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	
S4003ME	METHANE sensor head, 0-100% LFL
S4003GP	LPG sensor head, 0-100% LFL
S4003PR	PROPANE sensor head, 0-100% LFL
S4003BU	BUTANE sensor head, 0-100% LFL
S4003VB	PETROL VAPOURS sensor head, 0-100% LFL
S4003AT	ACETONE sensor head, 0-100% LFL
S4037AC	ACETYLENE sensor head, 0-100% LFL
S4003AM	AMMONIA sensor head, 0-100% LFL
S4003CP	CYCLOPENTANE sensor head, 0-100% LFL
S4003EN	ETHANE sensor head, 0-100% LFL
S4003AE	ETHYL ACETATE sensor head, 0-100% LFL
S4003ET	ETHYL ALCOHOL sensor head, 0-100% LFL
S4003EL	ETHYLENE sensor head, 0-100% LFL
S4003EP	HEPTANE sensor head, 0-100% LFL
S4003ES	HEXANE sensor head, 0-100% LFL
S4003H2	HYDROGEN sensor head, 0-100% LFL
S4003IB	ISO BUTANE sensor head, 0-100% LFL
S4002P8	JP8 sensor head, 0-100% LFL
S4003MT	METHYL ALCOHOL sensor head, 0-100% LFL
S4003MK	METHYL ETHYL KETONE (MEK) sensor head, 0-100% LFL
S4003PE	PENTANE sensor head, 0-100% LFL
S4003PP	PROPYLENE sensor head, 0-100% LFL
S4003PN	PROPYL ALCOHOL sensor head, 0-100% LFL
S4003ST	STYRENE sensor head, 0-100% LFL
S4003TO	TOLUENE sensor head, 0-100% LFL
S4003XI	XYLENE sensor head, 0-100% LFL

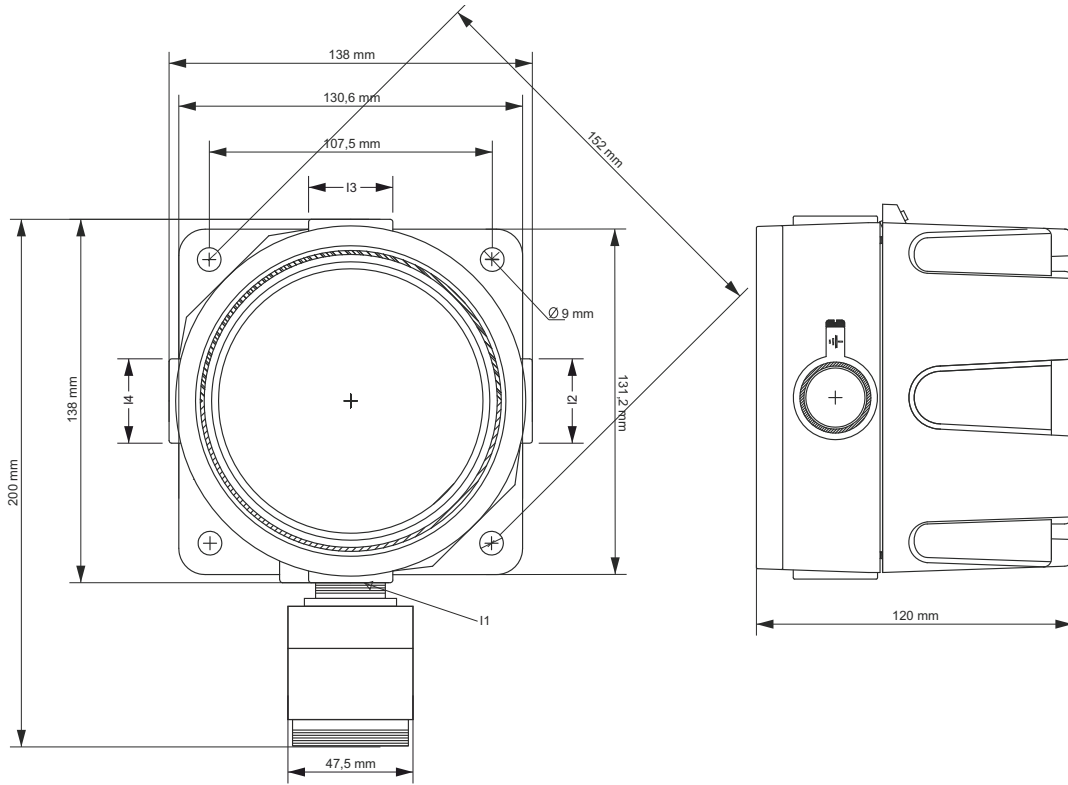
## Mechanical drawings SMART S-MS with 3A enclosure



# SMART S-MS

with catalytic sensor

## Mechanical drawings SMART S-MS with 4A enclosure



## Mechanical drawings SMART S-MS with 2S enclosure

