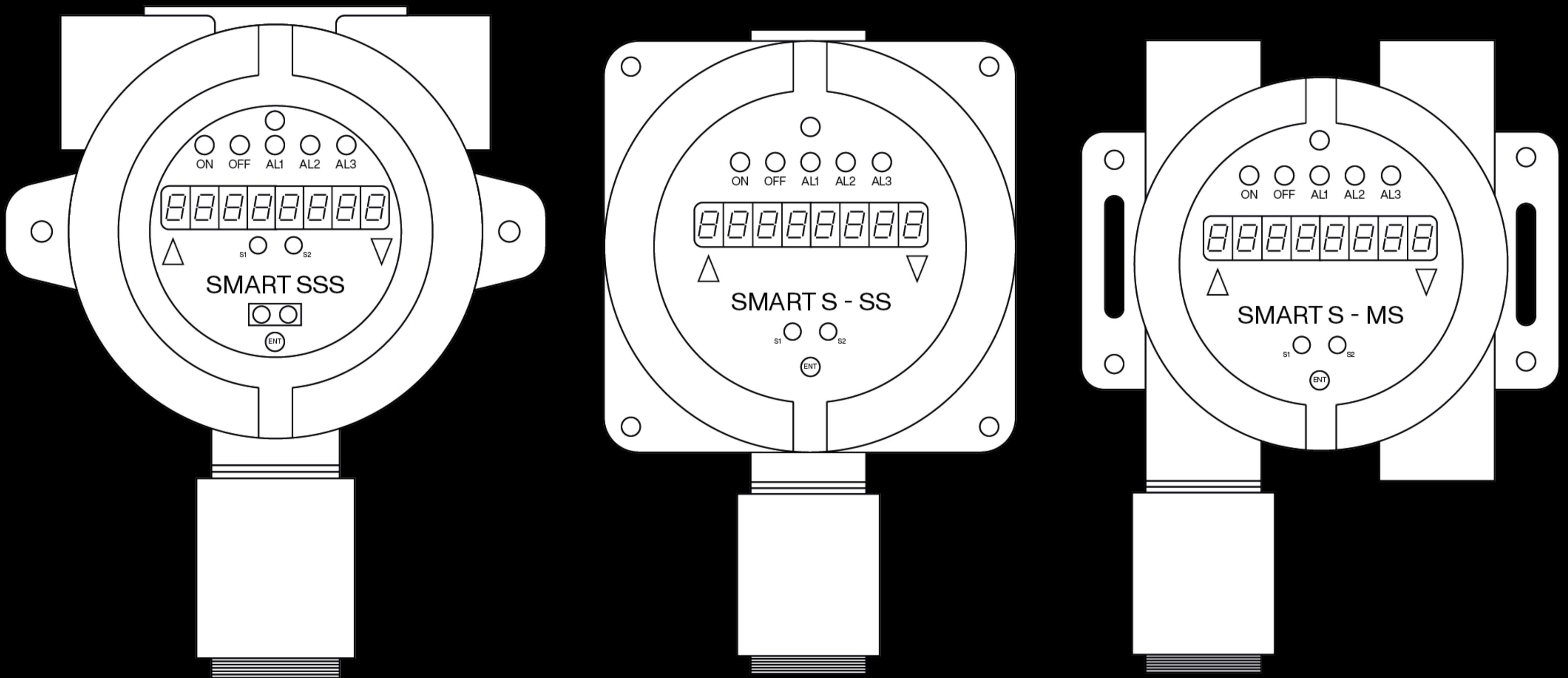


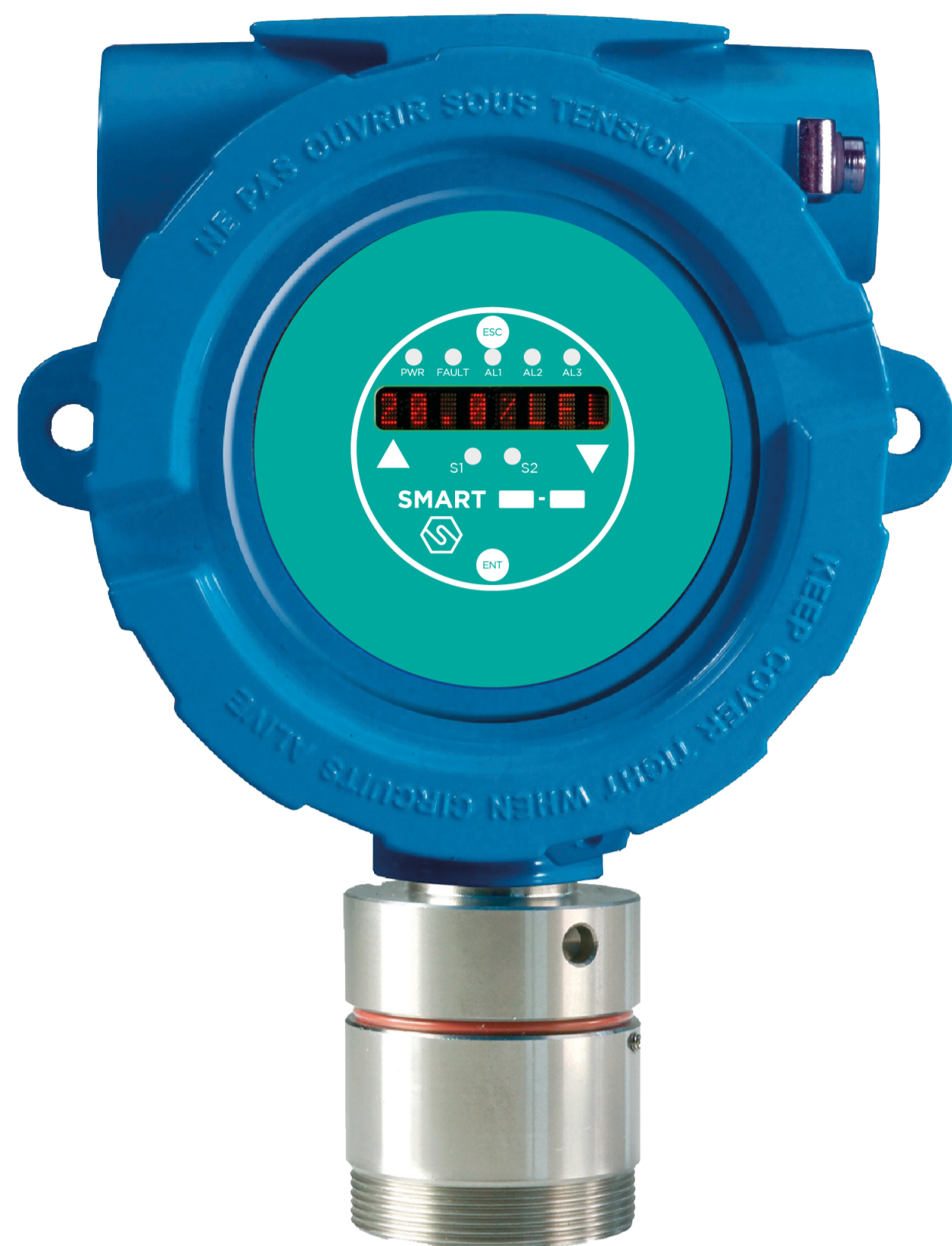
SMART S-SS

with catalytic sensor



Datasheet





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.

The SMART S-SS is equipped with a display (LCD or LED) to monitor the concentration in real time and Hall effect sensors for non-intrusive calibration in the field.

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

- I Choice of the sensor head based on the gas to be detected
- II Choice of transmitter (3-relay board, HART modem)
- III 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

Or, if equipped with a dust adapter:

Ex db IIC T5 Gb
Ex tb IIIC T5 T100°C Db
IP65



SMART S-SS 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 LED or LCD display

Acoustic indications -

Hall effect sensor Three sensors for calibration by magnet

Environmental conditions

Storage temperature -40 / +85°C

Operating temperature -20 / +60°C * (LCD)
-40 / +65°C * (LED)

Operating humidity 20 / 90% RH @40°C *

Operating pressure 80 / 120 kPa *

Air velocity 6 m/s *

Response time $t_{90} < 60$ s ; $t_{50} < 20$ 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 110 mm (3A enclosure)
138 x 200 x 120 mm (4A enclosure)
155 x 210 x 124 mm (2S enclosure)

Weight 1700 g (3A enclosure)
2800 g (4A enclosure)
4200 g (2S enclosure)

Cable entries 2 or 3 x 3/4" NPT

IP grade IP65



Compliance

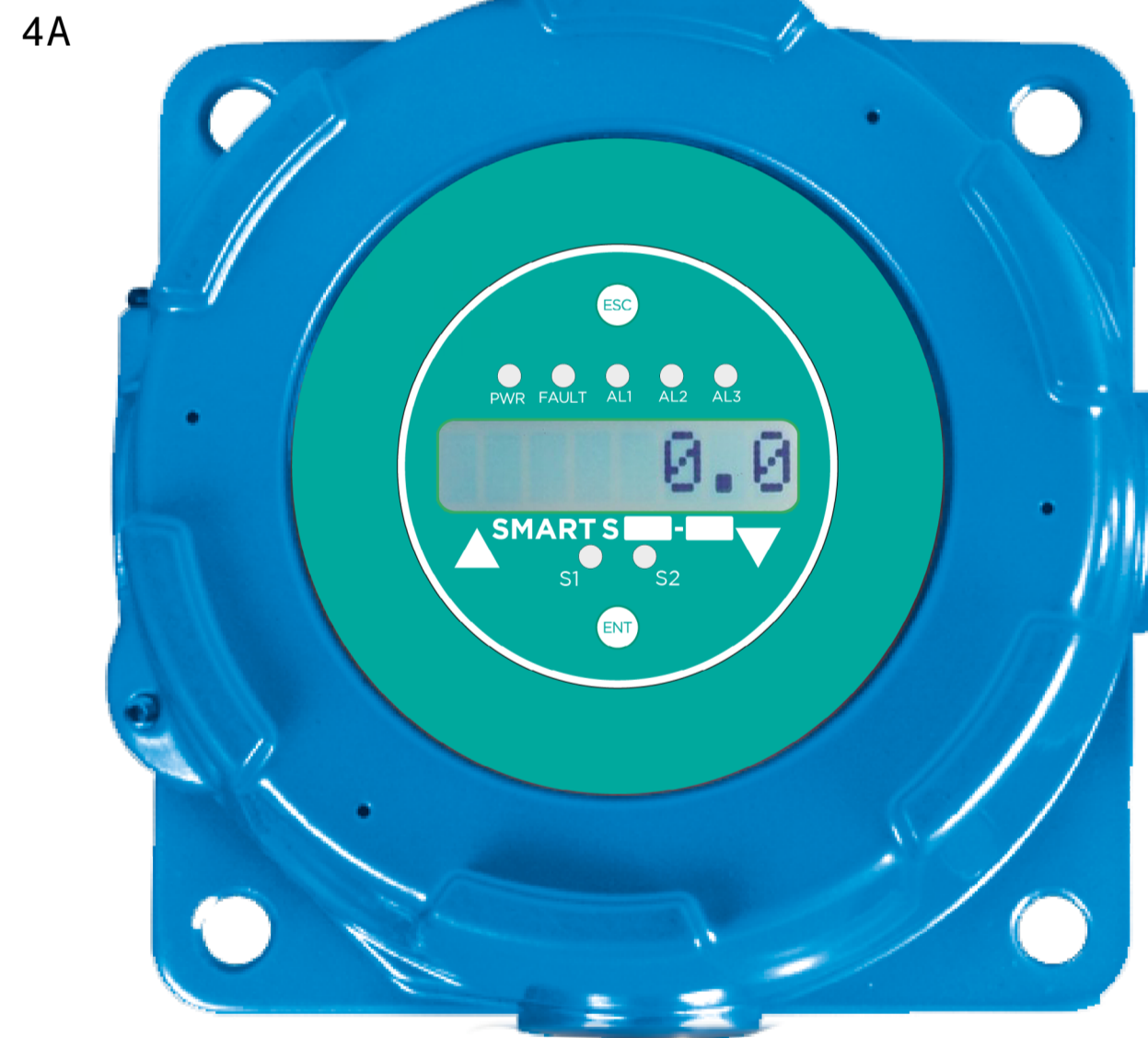
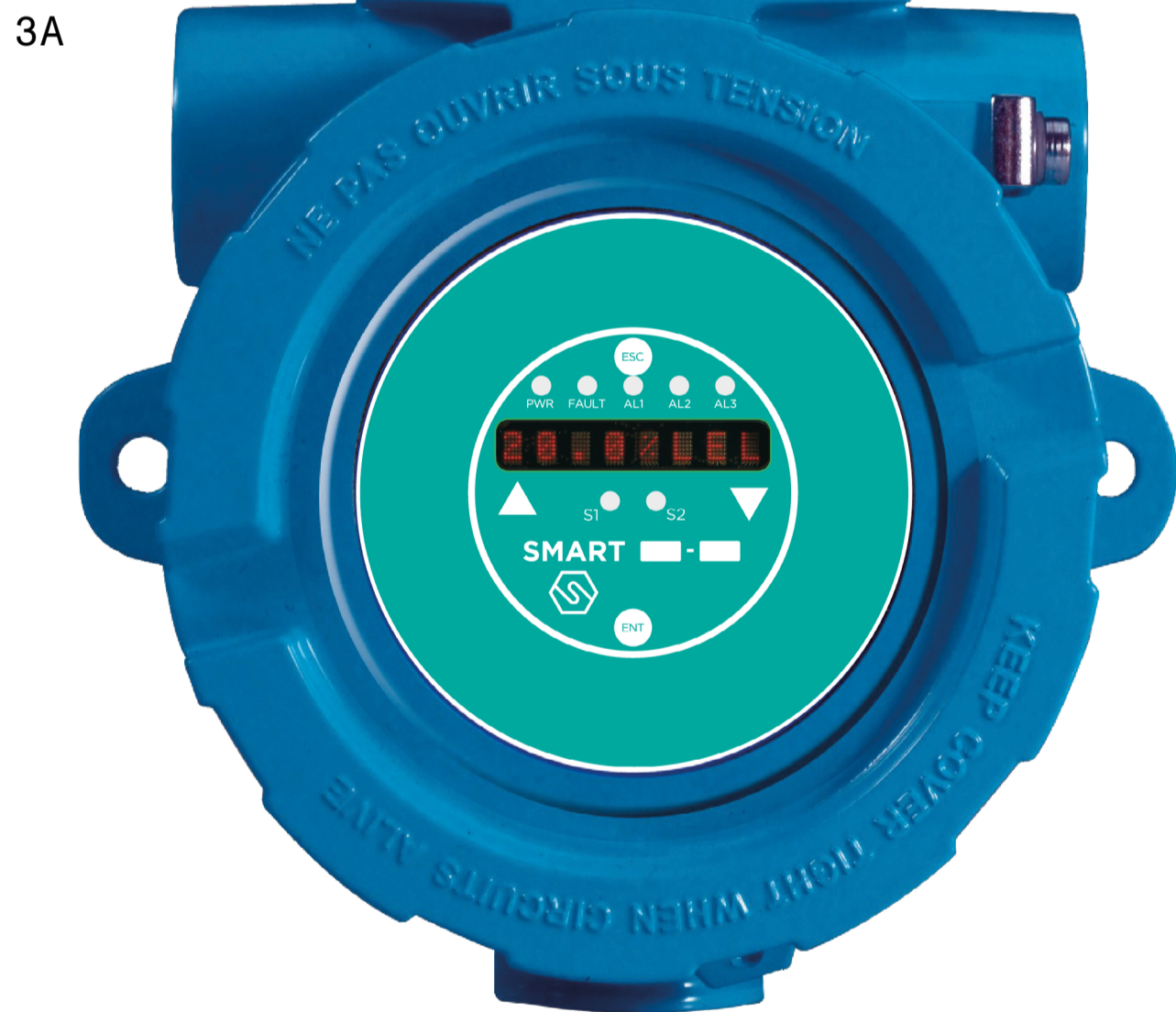
EMC	EN 61000-6-3:2007 + A1:2011; EN 50270:2015
ATEX	Direttiva ATEX 2014/34/UE EN IEC 60079-0:2018 EN 60079-1:2014 EN 60079-31:2014 EN 60079-29-1:2016
IECEX	IEC 60079-0:2011 IEC 60079-1:2014 IEC 60079-31:2013
SIL	EN 61508:2010 Parti 1, 2, 3, 4, 5, 6, 7 EN 50402:2017

To order a SMART S-SS detector, the transmitter must be paired with the container and sensor head of the gas of interest.
The product code is composed as follows:

SSS | enclosure code | transmitter code - sensor head code

Example:

the code SSS3A18-S4003ME is a SMART S-SS detector with the 3A enclosure, the electronics with LED display, 3 relay board and HART modem. The sensor head code S4003ME is for methane 0-100% LFL.



Enclosure code

3A | Aluminium enclosure with three 3/4" NPT conduits

4A | Aluminium enclosure with four 3/4" NPT conduits

2S | Stainless steel enclosure with four 3/4" NPT conduits

ATEX code

ST / LW / ES / S3

ST / 7W / ES / S3

ST / 8K / ES / S3

Transmitter code

11 Electronics with 1 RS485 + 4-20 mA output, LCD display

12 Electronics with 1 RS485 + 4-20 mA output, LED display

13 Electronics with 1 RS485 + 4-20 mA output, 3 relays card, LCD display

14 Electronics with 1 RS485 + 4-20 mA output, 3 relays card, LED display

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

18 Electronics with 1 RS485 + 4-20 mA output, 3 relays card, Hart modem, LED display

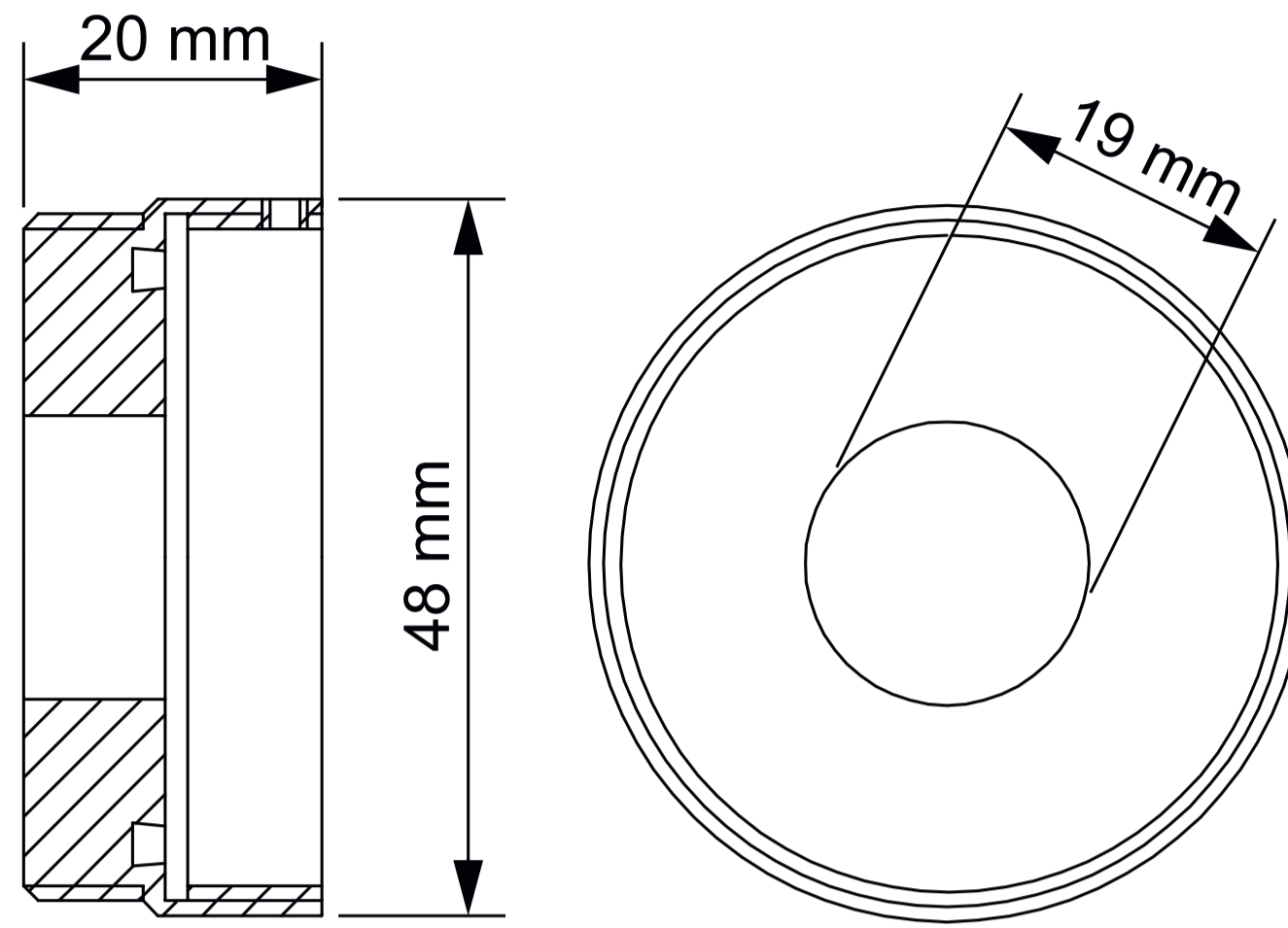


Sensor head code

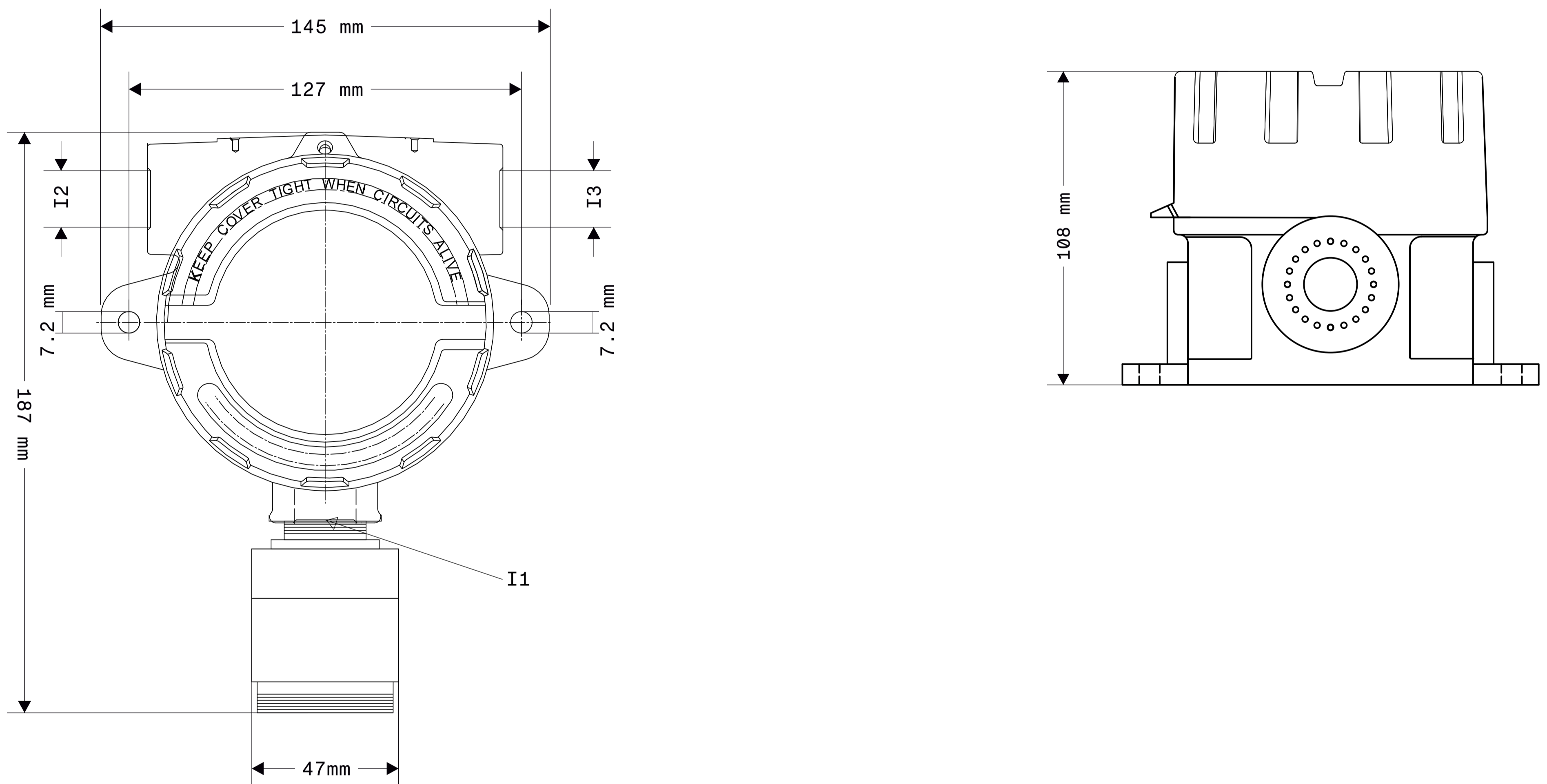
S4003ME	METHANE sensor head, 0-100% LFL
S4003GP	LPG sensor head, 0-100% LFL
S4003PR	PROPANE sensor head, 0-100% LFL
S4003BU	BUTANE sensor head, 0-100% LFL
S4003VB	PETROL VAPOURS sensor head, 0-100% LFL
S4003AT	ACETONE sensor head, 0-100% LFL
S4037AC	ACETYLENE sensor head, 0-100% LFL
S4003AM	AMMONIA sensor 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



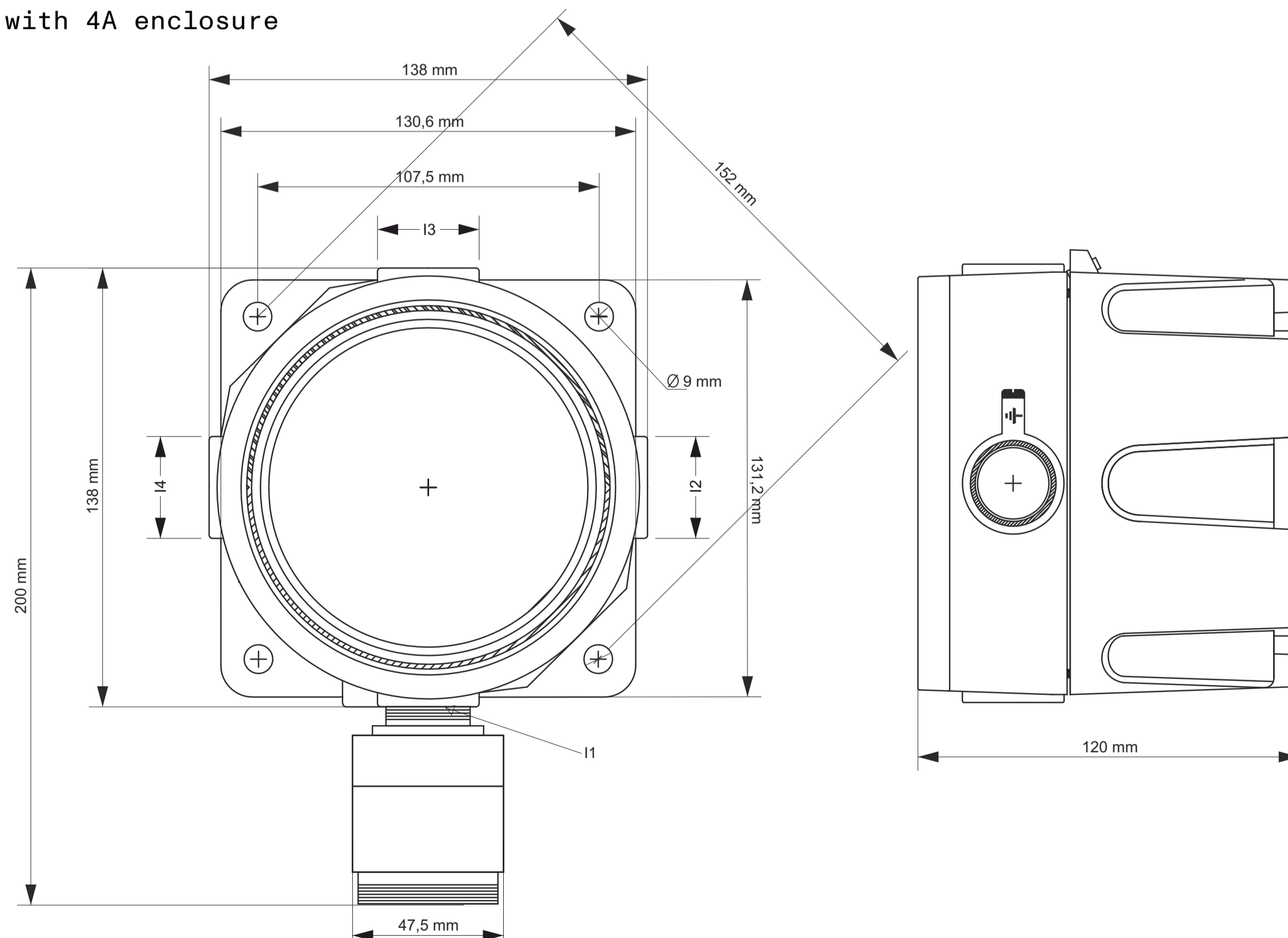
STG/AD3 dust adapter
(optional accessory available for all models)



Mechanical drawings SMART S-SS with 3A enclosure

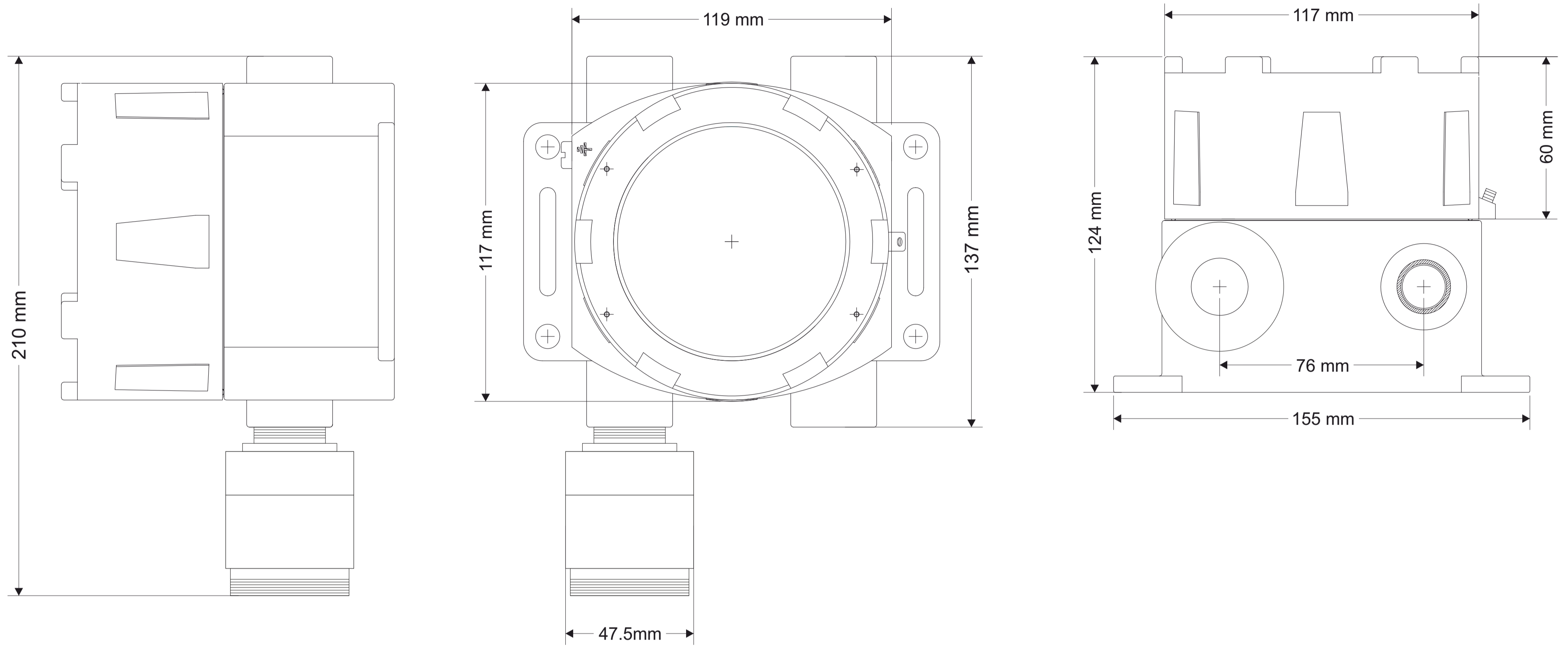


Mechanical drawings SMART S-SS with 4A enclosure





Mechanical drawings SMART S-SS with 2S enclosure



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