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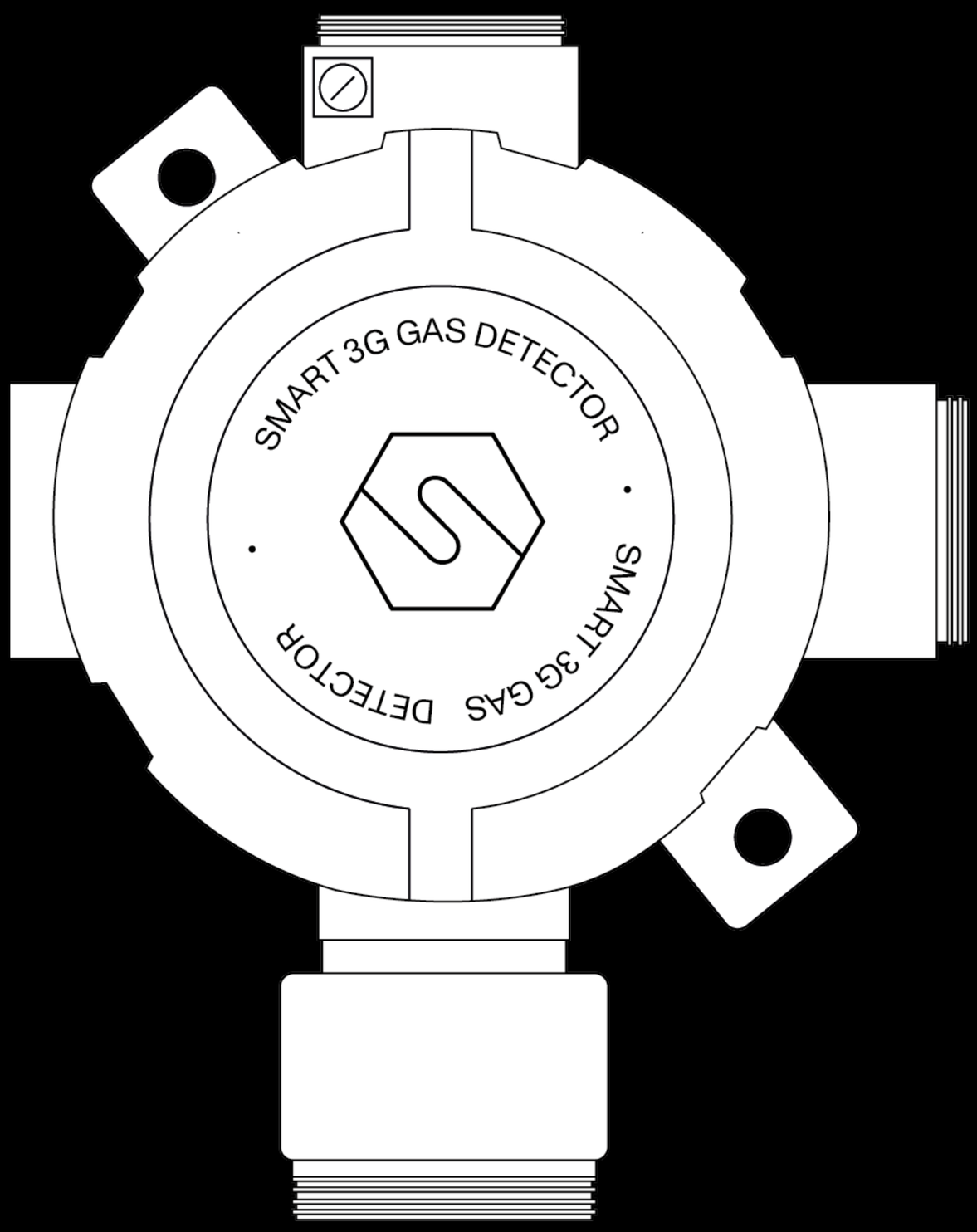
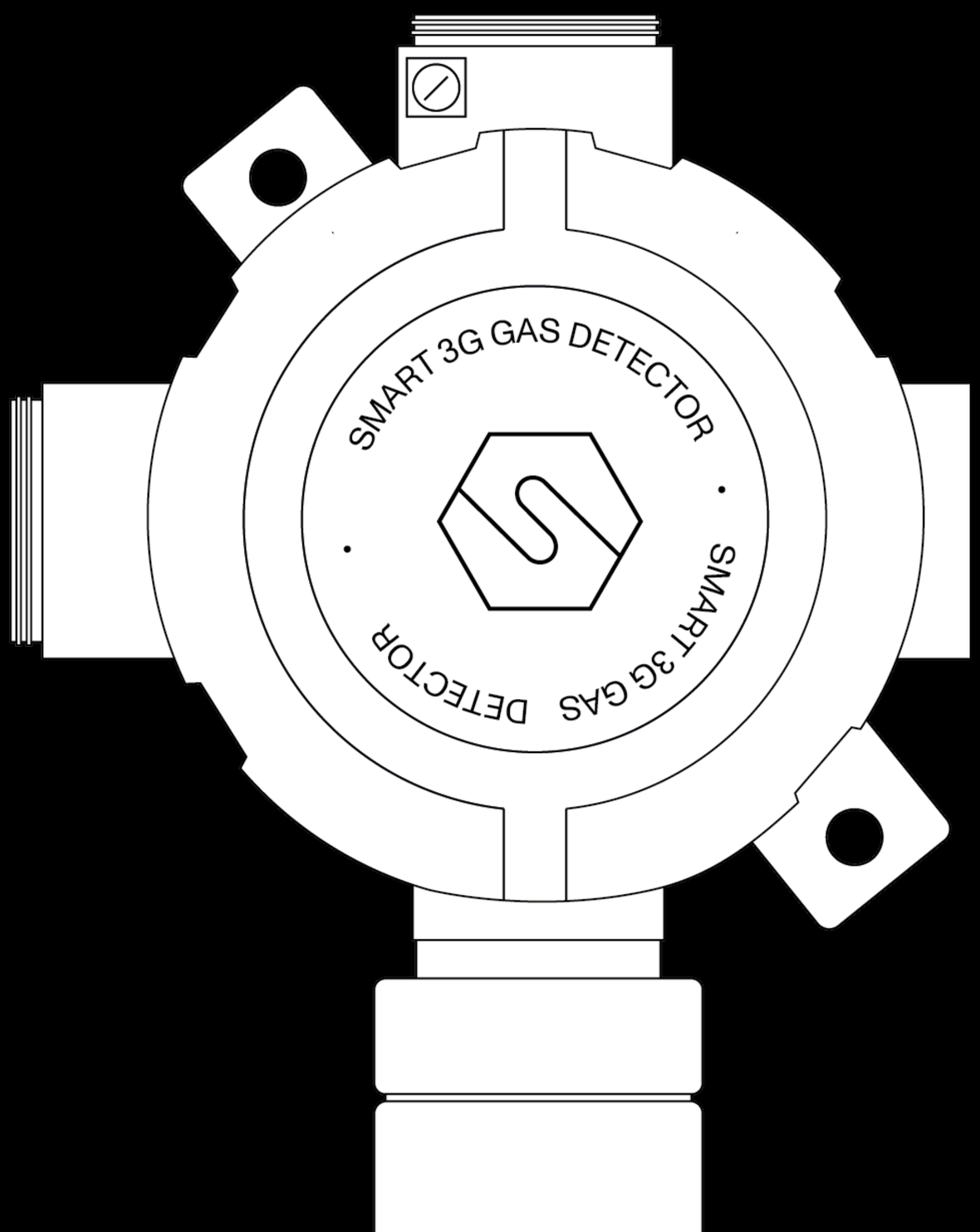
# SMART3G-C2

## With catalytic sensor




Datasheet

SMART3G-C2 gas detector is designed to meet industrial requirements; the enclosure is explosion proof and can be installed in ATEX Zone 1 and, when equipped with dust adapter, in Zone 21. The sensing element is placed in the stainless steel head. Sensitron has developed two type heads with different dimensions: the model “Type head 2” has a 40 mm diameter, the “Type head 3” version has a 48 mm diameter. The pellistor sensors employed for the flammable gas detection show an excellent output linearity up to 100% LEL and fast time of response. The gas detector has a 12-24 Vdc power supply and a standard 4-20 mA 3-wires output. Optionally, the SMART3G-C2 can be equipped with serial RS485 communication and a 1 or 3 relays board. The aluminium enclosure has dimensions 120 x 162 x 90 mm when equipped with type head 2, 120 x 184 x 90 mm when the head type 3 is used. The enclosure has 3 cable entries 3/4” NPT threaded.

The gas detector can be ATEX marked as follows:
CE 0722 Ex II 2G Ex db IIC T5 Gb

Or, when equipped with dust adapter:
CE 0722 Ex II 2GD Ex db IIC T5 Gb
Ex tb IIIC T100°C Db
IP65

The gas detector is IECEx compliant and can be marked as follows:
Ex db IIC T5 Gb

Or, when equipped with dust adapter:
Ex db IIC T5 Gb
Ex tb IIIC T100°C Db
IP65

SMART3G-C2 is SIL2 hardware and SIL3 software; with a redundant system also the hardware is SIL3.

| Sensor | |
|---|---|
| Application | Industrial area, ATEX Zone 1 and Zone 21 (when equipped with dust adapter, optional) |
| Sensing element | Catalytic |
| Predicted sensor lifetime | 4 / 5 years |
| Gas detected | Flammable gas |
| Full scale | 0 - 100% LFL |

| Electrical data | |
|---|---|
| Power supply | 12-24 Vdc |
| Output | Analogue 4-20 mA output; 1 or 3 relay board (optional); serial RS485 output (optional) |
| Maximum dissipated power | 5.4 W |
| Relays contact ratings (optional board) | 1.0 A at 24 Vdc |
| Optical indications | - |
| Acoustic indications | - |
| Hall effect sensor | - |

| Environmental conditions | |
|---|---|
| Storage temperature | -40 / +85°C |
| Operating temperature | -40 / +60°C * with type head 3<br>-20 / +60°C * with type head 2<br>codes with -HT have Tmax=70°C |
| Operating humidity | 20 / 90% RH @40°C * |
| Operating pressure | 80 / 120 kPa * |
| Air velocity | 6 m/s * |
| Time of response | $t_{90}$ < 60 s ; $t_{50}$ < 20 s * |

* Data tested with tests described in EN 60079-29-1 standard

| External case | |
|---|---|
| Material | Enclosure: aluminium pressure die-casting with epoxy paint chromating and chemically resistant<br>Sensor head: stainless steel |
| Protection mode | Ex d : Explosion proof enclosure<br>Ex t : Equipment dust ignition protection by enclosure (when equipped with dust adapter, optional) |
| Dimensions | With type head 2: 120 x 162 x 90 mm<br>With type head 3: 120 x 184 x 90 mm |
| Weight | With type head 2: 1050 g<br>With type head 3: 1250 g |
| Cable entries | 3 x 3/4” NPT |
| IP grade | IP65 |

## Compliance

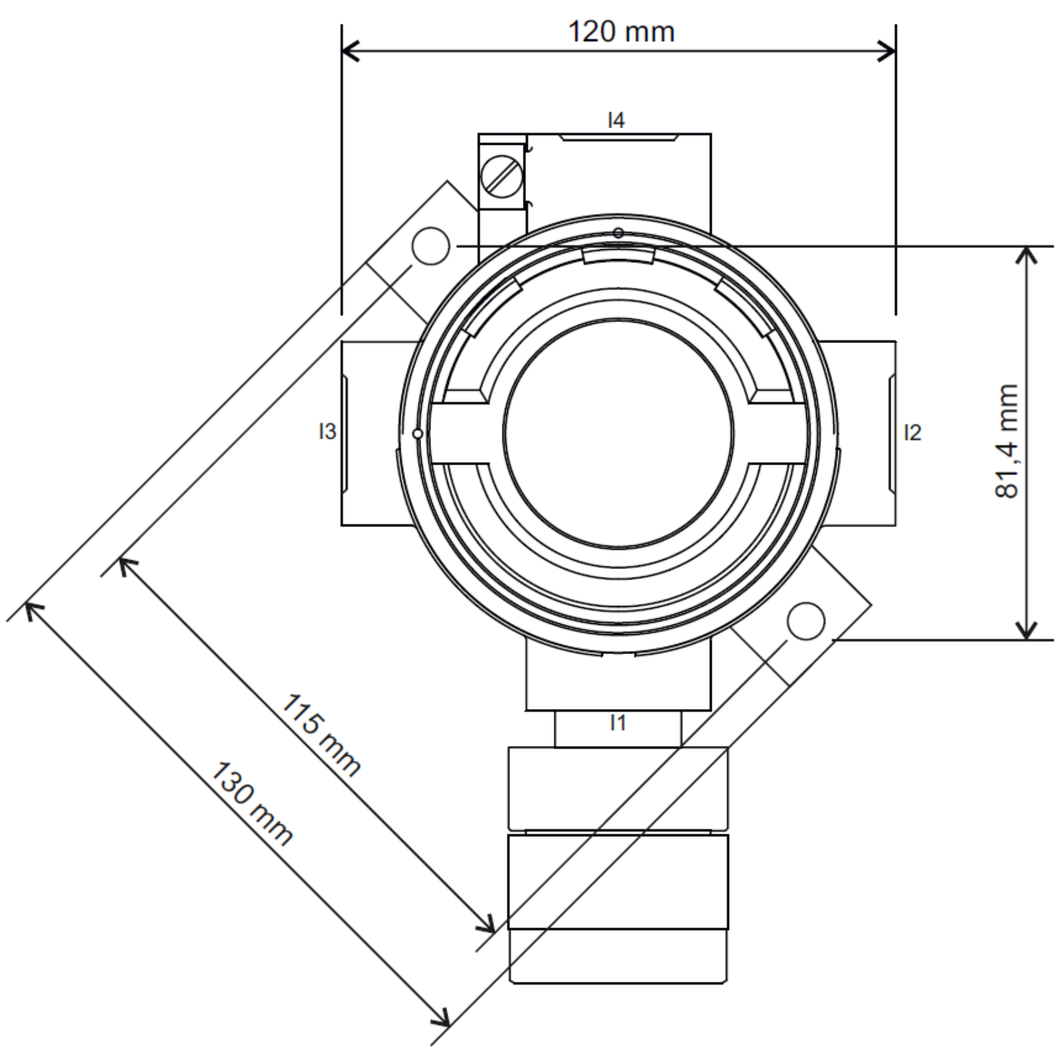
| | |
|---|---|
| EMC | EN 61000-6-3:2007 + A1:2011;  EN 50270:2015 |
| ATEX | ATEX directive 2014/34/EU<br>EN IEC 60079-0:2018<br>EN 60079-1:2014<br>EN 60079-31:2014<br>EN 60079-29-1:2016 |
| IECEx | IEC 60079-0:2011<br>IEC 60079-1:2014<br>IEC 60079-31:2013 |
| SIL | EN 61508:2010 Parts 1, 2, 3, 4, 5, 6, 7<br>EN50402:2017 |

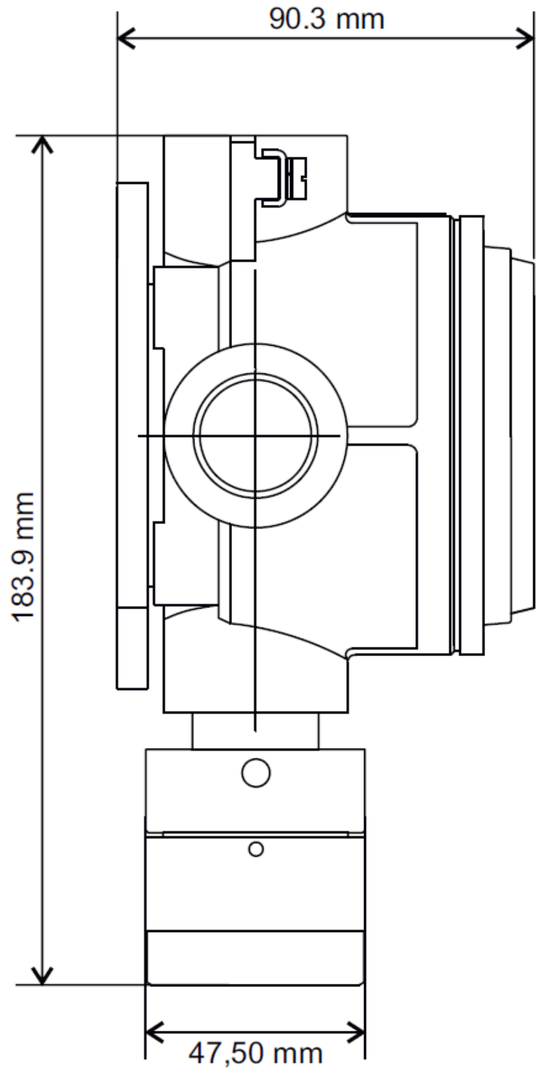
| Product codes | | Codice ATEX |
|---|---|---|
| S2097ME | Methane gas detector, 12-24 Vdc | ST / L  / E3 / S2 |
| S2097GP | LPG gas detector, 12-24 Vdc | ST / L  / E3 / S2 |
| S2097PR | Propane gas detector, 12-24 Vdc | ST / L  / E3 / S2 |
| S2097BU | Butane gas detector, 12-24 Vdc | ST / L  / E3 / S2 |
| S2097VB | Petrol vapours gas detector, 12-24 Vdc | ST / L  / E3 / S2 |
| S2097AA | Acetic acid gas detector, 12-24 Vdc | ST / L  / E3 / S2 |
| S2097AT | Acetone gas detector, 12-24 Vdc | ST / L  / E3 / S2 |
| S2097AB | Butyl acetate gas detector, 12-24 Vdc | ST / L  / E3 / S2 |
| S2097BT | Butyl alchol gas detector, 12-24 Vdc | ST / L  / E3 / S2 |
| S2097CE | Ciclohexane gas detector, 12-24 Vdc | ST / L  / E3 / S2 |
| S2097CP | Ciclopentane gas detector, 12-24 Vdc | ST / L  / E3 / S2 |
| S2097EN | Ethane gas detector, 12-24 Vdc | ST / L  / E3 / S2 |
| S2097AE | Ethyl acetate gas detector, 12-24 Vdc | ST / L  / E3 / S2 |
| S2097ET | Ethyl alcohol gas detector, 12-24 Vdc | ST / L  / E3 / S2 |
| S2097EE | Ethyl ether gas detector, 12-24 Vdc | ST / L  / E3 / S2 |
| S2097EL | Ethylene gas detector, 12-24 Vdc | ST / L  / E3 / S2 |
| S2097EP | Heptane gas detector, 12-24 Vdc | ST / L  / E3 / S2 |
| S2097ES | Hexane gas detector, 12-24 Vdc | ST / L  / E3 / S2 |
| S2097H2 | Hydrogen gas detector, 12-24 Vdc | ST / L  / E3 / S2 |
| S2097IB | Isobutane gas detector, 12-24 Vdc | ST / L  / E3 / S2 |
| S2097IT | Iso butyl alcohol gas detector, 12-24 Vdc | ST / L  / E3 / S2 |
| S2097IN | Iso pentane gas detector, 12-24 Vdc | ST / L  / E3 / S2 |
| S2097IP | Iso propyl alcohol gas detector, 12-24 Vdc | ST / L  / E3 / S2 |
| S2097MT | Methyl alcohol gas detector, 12-24 Vdc | ST / L  / E3 / S2 |
| S2097MK | Methyl ethil ketone gas detector, 12-24 Vdc | ST / L  / E3 / S2 |
| S2097NN | Nonane gas detector, 12-24 Vdc | ST / L  / E3 / S2 |

| Product codes | | Codice ATEX |
|---|---|---|
| S2097PE | Pentane gas detector, 12-24 Vdc | ST / L / E3 / S2 |
| S2097PP | Propylene gas detector, 12-24 Vdc | ST / L / E3 / S2 |
| S2097PN | Propyl alcohol gas detector, 12-24 Vdc | ST / L / E3 / S2 |
| S2097TM | Tri-methylbenzene gas detector, 12-24 Vdc | ST / L / E3 / S2 |
| S2097TO | Toluene gas detector, 12-24 Vdc | ST / L / E3 / S2 |
| S2097XI | Xylene gas detector, 12-24 Vdc | ST / L / E3 / S2 |
| S2151AC | Acetylene gas detector, 12-24 Vdc | ST / L / E3 / S3 |
| S2155AA | Acetic acid gas detector, 12-24Vdc | ST / L / E3 / S3 |
| S2155AM | Ammonia gas detector, 12-24 Vdc | ST / L / E3 / S3 |
| S2155BZ | Benzene gas detector, 12-24 Vdc | ST / L / E3 / S3 |
| S2155OE | Ethylene oxide gas detector, 12-24 Vdc | ST / L / E3 / S3 |
| S2154P8 | JP8 gas detector, 12-24 Vdc | ST / L / E3 / S3 |
| S2155ST | Styrene gas detector, 12-24 Vdc | ST / L / E3 / S3 |
| S2155AV | Vinyl acetate gas detector, 12-24 Vdc | ST / L / E3 / S3 |
| S2155AF | Formaldehyde gas detector, 12-24 Vdc | ST / L / E3 / S3 |
| S2155CO | Carbon monoxide gas detector, 12-24Vdc | St / L / E3 / S3 |

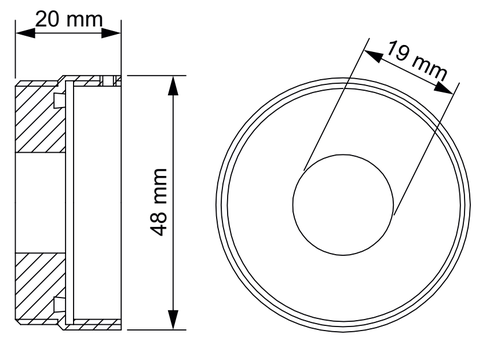
Mechanical drawings

ATEX code ST / L / E3 /S3

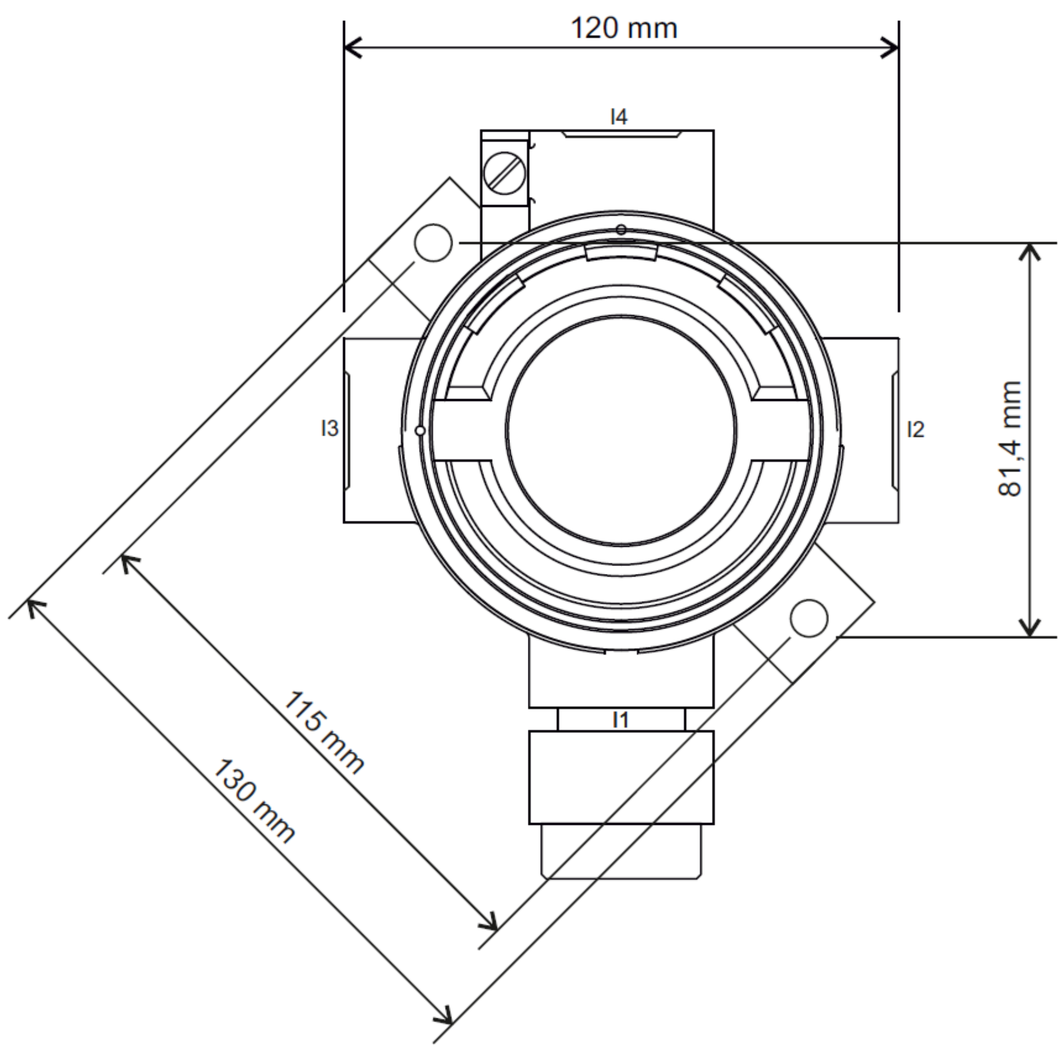


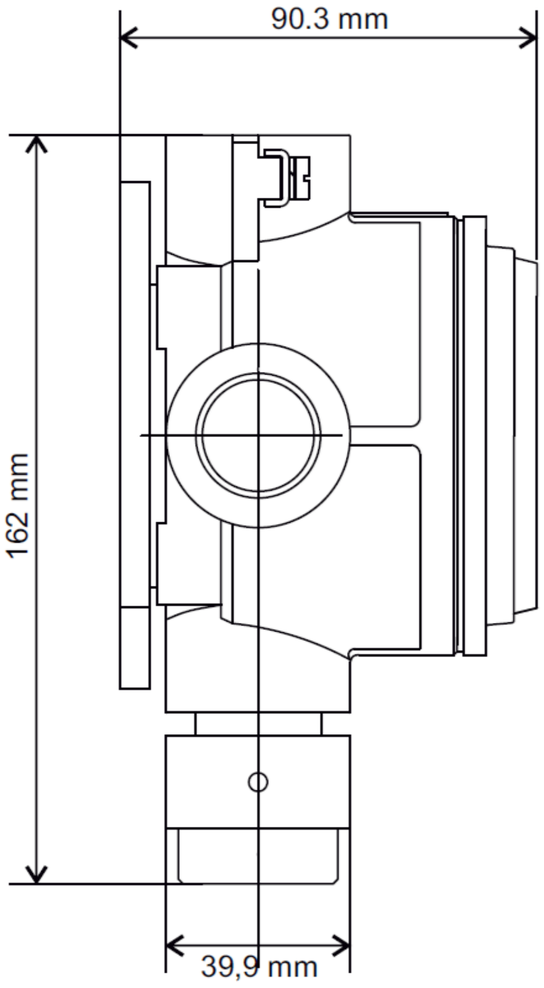




STG/AD3
Dust adapter

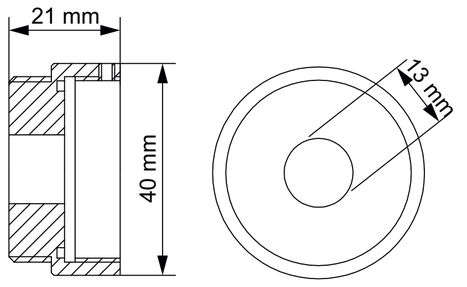



ATEX code ST / L / E3 /S2




STG/AD2
Dust adapter



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