

SMART3GC-Grl

for mines and tunnels

The SMART3GC-Grl gas detector is designed to be installed in mines, tunnels and ATEX areas classified as Group I.

The sensing element is housed in the stainless steel head. Depending on the gas to be detected, the gas detector can be equipped with a catalytic sensor, an infrared sensor or an electrochemical cell.

The gas detector has a 12-24 Vdc power supply and a standard 4-20 mA 3-wires output. Optionally, the SMART3GD-Grl can be equipped with serial RS485 communication and three relays.

The stainless steel enclosure has dimensions 145 x 187 x 108 mm. 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

SMART3GC-Grl is SIL2 hardware and SIL3 software; with a redundant system also the hardware is SIL3.



Sensor

Application	Mines, tunnels and ATEX areas classified as Group I
Sensing element	Catalytic, Infrared and Electrochemical cell
Predicted sensor lifetime	Catalytic sensor: 4 / 5 years Infrared sensor: >5 years Electrochemical cell: 2/3 years
Gas detected	Methane [0 - 100% LFL]; Oxygen [0 - 25% Vol]; Carbon monoxide [0 - 500ppm]

Electrical data

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

Environmental conditions

Storage temperature	With catalytic and infrared sensor: -40 / +85°C With electrochemical cell: 0 / +20°C (up to 6 months)
Operating temperature	With catalytic and infrared sensor: -20 / +60°C With electrochemical cell: -20 / +50°C
Operating humidity	With catalytic and infrared sensor: 0 / 95% RH With electrochemical cell: 15 / 90% RH

External case

Material	Enclosure: stainless steel Sensor head: stainless steel SS316
Protection mode	Ex d: Explosion proof enclosure
Dimensions	145 x 187 x 108 mm
Weight	2800 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 EN IEC 60079-0:2012 EN 60079-1:2007
SIL	EN 61508:2010 Parts 1, 2, 3, 4, 5, 6, 7 EN50402:2017

Product codes

ATEX code

S3914ME	CH ₄ gas detector with catalytic sensor	ST / LI / E3 / S3
S3916ME	CH ₄ gas detector with infrared sensor	ST / LI / E3 / S3
S3915O2	O ₂ gas detector with electrochemical cell	ST / LI / E3 / S3
S3913CO	CO gas detector with electrochemical cell	ST / LI / E3 / S3

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Mechanical drawings

