

SMART3GD-Grl

for mines and tunnels

The SMART3GD-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 and three relays. Optionally, the SMART3GD-Grl can be equipped with serial RS485 communication.

The stainless steel enclosure has dimensions 145 x 187 x 128 mm. The enclosure has 3 cable entries 3/4" NPT threaded. The SMART3GD-Grl features a 7-segment display for real-time concentration visualization and Hall effect sensors for non-invasive field calibration.

The gas detector can be ATEX marked as follows:

CE 0722 Ex I M2 Ex db I Mb

SMART3GD-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; serial RS485 output (optional)
Maximum dissipated power	5.4 W
Relays contact ratings	1.0 A at 24 Vdc
Optical indications	7-segment display, 5 status LED and 4 intelligent LED, multi-color LED light ring
Acoustic indications	-
Hall effect sensor	Three sensors for calibration by magnet

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
Protection mode	Ex d: Explosion proof enclosure
Dimensions	145 x 187 x 128 mm
Weight	3300 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 60079-0:2018 EN 60079-1:2007
SIL	EN 61508:2010 Parts 1, 2, 3, 4, 5, 6, 7 EN50402:2017

Product codes	ATEX code
S3515ME CH ₄ gas detector with catalytic sensor	ST / LA / E3 / S3
S3912ME CH ₄ gas detector with infrared sensor	ST / LA / E3 / S3
S391102 O ₂ gas detector with electrochemical cell	ST / LA / E3 / S3
S3514CO CO gas detector with electrochemical cell	ST / LA / E3 / S3

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Mechanical drawings

