

FGD3 Intrinsically Safe Gas Detector

For Detection of Oxygen, Toxic and Flammable (Hydrocarbon) Gases



- Suitable for use in Zones 1 and 2 hazardous areas
- Metal enclosure available for IR versions
- Digital display of gas reading
- Single operator calibration
- Inbuilt sensor diagnostics
- Industry standard 4 to 20 mA output



Description

The FGD3 series is intrinsically safe for Zone 1 & 2 hazardous areas when used with an appropriate IS supply. Features include a lightweight, flame-retardant case, plug-in sensor options, and easy single-operator calibration. Available in 2 or 3-wire connection depending on sensor type. The optional metal-enclosure for IR versions offers enhanced RFI immunity for use near high power radios.

Specifications

Material	Plastic (ABS and Polycarbonate blending) Metal Version – Cast Aluminium Alloy
Cable entries	1 x M20 or ½" NPT
Dimensions	122 x 122 x 75 mm
Weights	Plastic Version – 660grams Metal Version – 1Kg Weatherguard – 225 grams
Display type	LCD
Gas types	Oxygen Toxic Flammable Note: Infrared sensors have no response to Hydrogen
Operating voltages	8 to 24 volts dc (for 4 to 20 mA signal) (infrared and pellistor versions also require an additional dc supply to power the sensor)
Output signal	0 mA - open circuit 2 mA - fault 4 mA - zero gas 20 mA - full scale gas 22 mA - over-range
Maximum Cable Loop Resistance	Signal - 560 ohms at 24vdc Pellistor Sensor - 19 ohms at 7.5vdc Infrared Sensor - 15 ohms at 7.5vdc
Sensor Type	Electrochemical NDIR Infrared Pellistor (catalytic bead)

Measurement range	Dependent upon sensor type
Response time	Sensor response times vary according to the sensor type.
Measurement resolution	Dependent upon sensor type
IP rating	Enclosure IP66, Sensor IP65
Operating temperature	Varies with sensor type, typically - 20 to +50 °C
Recommended Storage temperature	+10 to +20 °C
Humidity range	Oxygen - 0 to 95% RH non-condensing Toxic - 15 to 90% RH non-condensing typically Infrared - 0 to 95% RH non-condensing Pellistor - 15 to 90% RH non-condensing typically
Operating pressure	Ambient + or - 10%

Intrinsically Safe Output Module Type SS359 Specification

Inputs	14-28V 12-24V	Current Loop Sensor Supply
Temperature	-20°C - +40°C	
Humidity range	0-95% RH non-condensing	
Operating pressure	Ambient + or - 10%	
Internal Resistance	Current Loop	: 270R ± 5%
Source Resistance	Sensor Supply	: 12.0R ± 5%

Intrinsically Safe Outputs

Terminals	Uo	Io	Po
1 & 2	28V	.112A	0.8W
3 & 4	7.5V	.66A	1.24W
Certificate No.	CSANe 23ATEX1066X CSAE 22UKEX1444X		
Code	II (1) G [Ex ia Ga] IIC		

Standard gas types & sensor ranges available		
Gas Type	Sensor Tech	Ranges Available
Ammonia	Electrochemical	0-100ppm 0-1000ppm
Carbon Dioxide	Infrared	0-2% 0-5%
Carbon Monoxide	Electrochemical	0-50ppm 0-100ppm 0-500ppm
Chlorine	Electrochemical	0-20ppm
Hydrogen Cyanide	Electrochemical	0-30ppm
Hydrogen Sulphide	Electrochemical	0-50ppm
Nitrogen Dioxide	Electrochemical	0-20ppm
Oxygen	Electrochemical	0-21%
Sulphur Dioxide	Electrochemical	0-20ppm
VOC	Electrochemical	0-20ppm
Flammable	Infrared & Pellistor	0-100%LEL 0-100%Vol
Hydrogen	Pellistor	0-100%LEL
Hydrogen	Electrochemical	0-100%LEL 0-1000ppm
Nitric Oxide	Electrochemical	0-100ppm

Hazardous Area Certification	
Certificate Numbers	Oxygen & toxic sensors - CSANe22ATEX1207X, CSAE22UKEX1430X Code II 2 G Ex ia IIC T4 Gb (-20°C ≤ Ta ≤ +60°C) Infrared & flammable sensors - CSANe22ATEX1207X, CSAE22UKEX1430X Code II 2 G Ex db ia IIC T4 Gb (-20°C ≤ Ta ≤ +60°C)
Standards	EN IEC 60079-0:2018 EN 60079-1:2014 EN 60079-11:2012
Zones	1 & 2

Intrinsically Safe Output Module Type SS359



Weather Guard

An optional weather guard is available for installations exposed to the atmosphere or contaminants and reduces the possibility of water or other contaminants entering into the gas sensor thereby improving the overall reliability of the gas detector in harsh environments.

