Status Scientific Controls

gas detection technology...

FGD3-IR Series Intrinsically Safe Gas Detectors – For Infrared Detection of Flammable (Hydrocarbon) Gases

Hazardous Area Certificate Number

BAS 01ATEX2300

II 2 G Ex iad IIC T4 Gb (-20^{O}C<Ta<+60^{O}C)

Zones 1 and 2

Optional Weatherguard

Features

- Totally poison resistant alternative to pellistors sensors
- Competitively priced
- Marine version available
- Optional weatherguard
- Single operator calibration
- Inbuilt sensor diagnostics
- Minimum 5-year sensor life
- Plug-in replaceable sensors
- Digital display of gas reading
- 3 wire connection
- Industry standard 4 to 20 mA output

****Note - Infrared Gas Detectors cannot be used for detection of Hydrogen.**

Description

The FGD 3 Infrared Flammable (Hydrocarbon) Gas Detector incorporates the latest generation of compact sensors incorporating infrared technology for the accurate detection of Flammable gas concentrations over various ranges up to 100% volume. The detectors use the industry standard 4-20mA current loop to convey the gas levels detected to a control unit. This means that under zero gas conditions 4mA is drawn from the supply, and under full scale gas conditions 20mA is drawn from the supply. The current varies linearly for gas levels between zero and full scale. The detector heads use a three-wire connection comprising a current loop pair that provides the power required by the detector head electronics, and a third connection to provide power for the infrared sensor and its associated circuitry.

TYPICAL GASES DETECTED

METHANE
PROPANE
BUTANE
ETHANE
PENTANE
HEXANE
OCTANE
ETHANOL
IPA
SOLVENTS

A marine version of the FGD3 is also available. This version is housed in a cast aluminium enclosure to provide higher RFI immunity where high power portable radios are used in the close confines of a vessel. The enclosure is plated and painted in order to withstand the harsh salt spray environment of the marine industry. The digital display is fitted with a sliding stainless steel front cover which remains over the display window when not being viewed thereby maintaining the RFI shielding properties of the enclosure during normal operation.

An optional weather guard is available for installations exposed to the atmosphere or contaminants and is also suitable for use in other areas where hosing down takes place. The weather guard 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. The weather guard is attached with tamperproof screws to ensure that it is not inadvertently removed.

EASTERN ENERGY SERVICES PTE. LTD.
METERING AND INDUSTRIAL PRODUCTS

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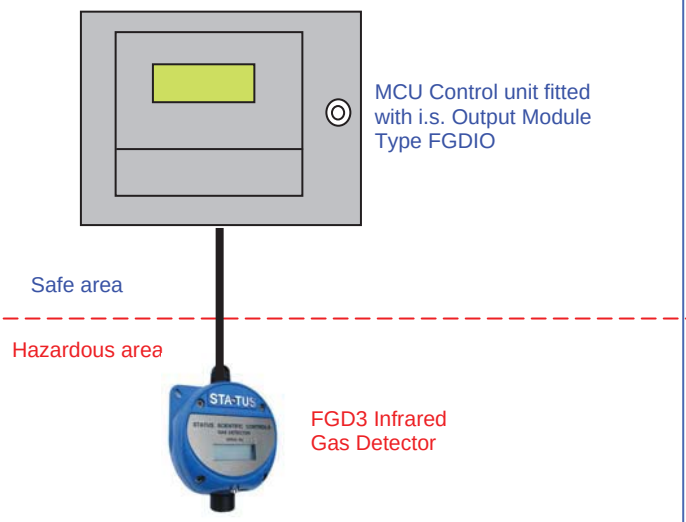
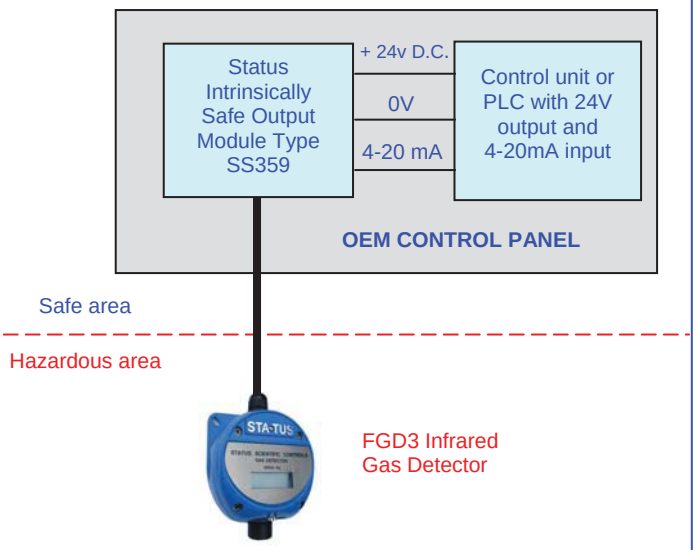
TYPICAL INSTALLATION USING STATUS SCIENTIFIC CONTROLS MCU CONTROL UNIT



TYPICAL INSTALLATION USING AN OEM CONTROL PANEL



The Intrinsically Safe Output Module shown below provides the necessary interface between a non-intrinsically safe, mains powered system (as shown above, right) and an FGD3 Infrared Gas Detector. Note that an intrinsically safe earth must be connected to the module to ensure safety.

Intrinsically Safe Output Module Type SS359
Specification

Inputs	14-28vDC 12-24V	Current Loop Sensor Supply		
Temperature	-20 - +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 3 & 4	28V 7.5V	.112A .66A	.8W 1.24W
Certificate No.	Baseefa 03ATEX0590X			
Code	II (1) G [EEx ia] IIC			
Zones	1 or 2			

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Specification

Material	:	Plastic (ABS and Polycarbonate blending) Marine Version – Cast Aluminium Alloy
Cable entry	:	1 x M20 or ½" NPT
Dimensions	:	122 x 122 x 75 mm
Weights	:	Plastic Version (excluding weatherguard) – 660grams Marine Version (excluding weatherguard) – 1Kg Weatherguard – 225 grams
Display type	:	LCD
Gas Types	:	Hydrocarbons including Methane (Note: Infrared sensors have no response to Hydrogen)
Operating voltages	:	8 to 28V dc (for 4 to 20 mA signal) 5.8 to 7.5V dc (for sensor supply)
Output Signal	:	0mA - open circuit 2mA - fault 4mA - zero gas 20mA - full scale gas 22mA - over-range
Max. Cable Loop Resistance	:	Signal - 640 ohms at 24vdc Sensor - 15 ohms at 7.5vdc
Sensor Type	:	NDIR Infrared
Measurement range	:	0-100% LEL (5% vol CH_4) *or* 0-100% vol. CH_4
Response time	:	T_{90} < 30 sec (Methane)
Measurement Resolution	:	1% LEL or 1% Vol
IP rating	:	Enclosure IP66, Sensor IP65
Operating Temperature	:	- 20 to +50 ^{o}C
Storage temperature	:	- 20 to +50 ^{o}C
Humidity Range	:	0 to 95% RH non-condensing
Operating Pressure	:	Ambient + or - 10%

Hazardous Area Certification

Certificate Number	:	BAS 01ATEX2300, Code II 2G Ex iad IIC T4 Gb (-20^{O}C<Ta<+60^{O}C)
Standards	:	EN 60079-0:2009 EN 60079-1:2007 EN 60079-11:2007
Zones	:	1 & 2

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