



MODCON

LEADERS IN PROCESS ANALYSIS AND CONTROL



Safety *Solutions*

for *Industrial* Facilities

Infrared and Toxic series

MODEL FGD10A «Series MOD-7100»



The FGD10A-M is an explosion protected ATEX and IECEx (Ex d) certified fixed gas detector for use in potentially explosive atmospheres. It is available with a RS485 output for use with Modbus in the process control industry or with the conventional 4-20mA output. It has an 4 digit LCD display and magnetically operated switches which allow the unit to be calibrated through the display window using the magnetic pen without the need to remove the cover from the unit. This can also be carried out via the Modbus software.

There is a flammable menu for the infrared hydrocarbon sensor which allows for the selection of the specific target gas.

Three control relays are fitted to provide Alarm Level 1, Alarm Level 2 and Fault outputs via individual changeover contacts.

In addition to the 4 to 20 mA analogue, an RS 232 communications output is also provided.

Versions available for the detection of:

- Hydrocarbon Gases - using temperature-compensated infrared sensors.
- Carbon Dioxide - using temperature-compensated infrared sensors.
- Oxygen or Toxic Gases – using electrochemical sensors.
- Flammable gases - using 'Pellistor' technology.

Features

- Competitively priced
- Available in pressure die cast aluminium or stainless steel grade 316
- Relay outputs for 2 alarm levels and fault
- Flammable gas menu
- Event logs for latest alarms and calibration
- Non-intrusive calibration and configuration can be carried out via a magnetic pen
- Compact and lightweight
- Real time clock
- Plug-in replaceable gas sensors
- Wide power supply range of 8 to 24 volts dc
- Industry standard 4 to 20 mA
- Non-display version available – FGD10B

Sensors for gas type measurement:

- Hydrocarbon gases - Infrared Sensor
- Carbon dioxide-Infrared Sensor
- Oxygen and toxic gases are used Electrochemical Sensors
- Flammable gases - measured by solid-state sensor technology "Pellistor"

Gas Sensors Characteristics model MOD-7100

Gas	Sensor Type	Range	Calibration Gas	Concentration	Conversion Factor - If Required	Sensor Warranty
Hydrocarbons	Pellistor	0-100% LEL	CH4	1.486% VOL	N/A	2 Years
Methane	Infrared	0-100% Volume	CH4	99.9% VOL	N/A	5 Years
Methane	Infrared	0-100% LEL	CH4	1.486% VOL	N/A	5 Years
Propane	Infrared	0-100% LEL	PROPANE	1.109% VOL	N/A	5 Years
Pentane	Infrared	< 0.7 % v	PROPANE	1.109% VOL	1.109%Vol = 0.89% vol Pentane= 59% LEL	5 Years
Butane	Infrared	0-100% LEL	PROPANE	1.109% VOL	1.109%Vol = 1.07% vol Butane= 67% LEL	5 Years
Ethane	Infrared	0-100% LEL	PROPANE	1.109% VOL	1.109%Vol = 1.15% Vol Ethane= 46% LEL	5 Years
Ethanol	Infrared	<0.1 % v	CANNOT OFFER AT THIS RANGE			5 Years
Ethylene	Infrared	0-100% LEL	METHANE	2.5% VOL	2.5% Vol = 91% LEL	5 Years
Ethylene Oxide	Infrared	< 2% v	PROPANE	1.109% VOL	1.109%Vol = 1.74% Vol ETO= 58% LEL	5 Years
Hexane	Infrared	< 0.6 %	PROPANE	1.109% VOL	1.109%Vol = 1.0% Vol Hexane= 91% LEL	5 Years
Propylene	Infrared	< 0.5 % v	PROPANE	1.109% VOL	1.109%Vol = 1.67% Vol Propylene= 84% LEL	5 Years
Isopropanol	Infrared	< 30 ppm	CANNOT OFFER AT THIS RANGE			5 Years
Methanol	Infrared	< 20 ppm	CANNOT OFFER AT THIS RANGE			5 Years
Toluene	Infrared	<0.1 % v	CANNOT OFFER AT THIS RANGE			5 Years
Xylene	Infrared	< 60 ppm	CANNOT OFFER AT THIS RANGE			5 Years
O2	Electrochemical	0-25%	O2	21.169% VOL	N/A	2 Years

SECTION - GAS DETECTORS

Gas	Sensor Type	Range	Calibration Gas	Concentration	Conversion Factor - If Required	Sensor Warranty
CO2	Infrared	0-5% Volume	CO2	2.040% VOL	N/A	5 Years
CO2	Infrared	0-100% Volume	CO2	99.90%	N/A	5 Years
CO2	Infrared	0-1000ppm	CO2	1007PPM	N/A	5 Years
CO2	Infrared	0-2000ppm	CO2	1007PPM	N/A	5 Years
CO2	Infrared	0-5000ppm	CO2	2501PPM	N/A	5 Years
CO2	Infrared	0-10000ppm	CO2	2501PPM	N/A	5 Years
H2S	Electrochemical	0-100ppm	H2S	25PPM	N/A	2 Years
H2S	Electrochemical	0-2000ppm	H2S	80PPM	N/A	2 Years
H2S	Electrochemical	0-25 ppm	H2S	25PPM	N/A	2 Years
CO	Electrochemical	0-50 ppm	CO	67PPM	N/A	2 Years
CO	Electrochemical	0-1000ppm	CO	468.6PPM	N/A	2 Years
CO	Electrochemical	0-200ppm	CO	67PPM	N/A	2 Years
Cl2	Electrochemical	0-20ppm	CL2	15PPM	N/A	1 year
SO2	Electrochemical	0-20ppm	SO2	15PPM	N/A	1 year
HCL	Electrochemical	0-30ppm	HCL	10PPM	N/A	1 year
NH3	Electrochemical	0-50 ppm	NH3	45.8PPM	N/A	1 year
NH3	Electrochemical	0-1000ppm	NH3	500PPM	N/A	1 year
NH3	Electrochemical	0-1000ppm	NH3	500PPM	N/A	1 year
NH3	Electrochemical	0-100ppm	NH3	45.8PPM	N/A	1 year
HCN	Electrochemical	0-20 ppm				1 year
HCN	Electrochemical	0.5 -1.5 ppm	CANNOT OFFER AT THIS RANGE			1 year
NO2	Electrochemical	0-20ppm	NO2	13.5PPM	N/A	1 year
NO	Electrochemical	0-20 ppm	NO	145PPM	N/A	1 year
H2	Electrochemical	0-1000ppm	H2	897.8PPM	N/A	1 year
H2	Electrochemical	0-4% Volume	H2	1.020% VOL	N/A	1 year

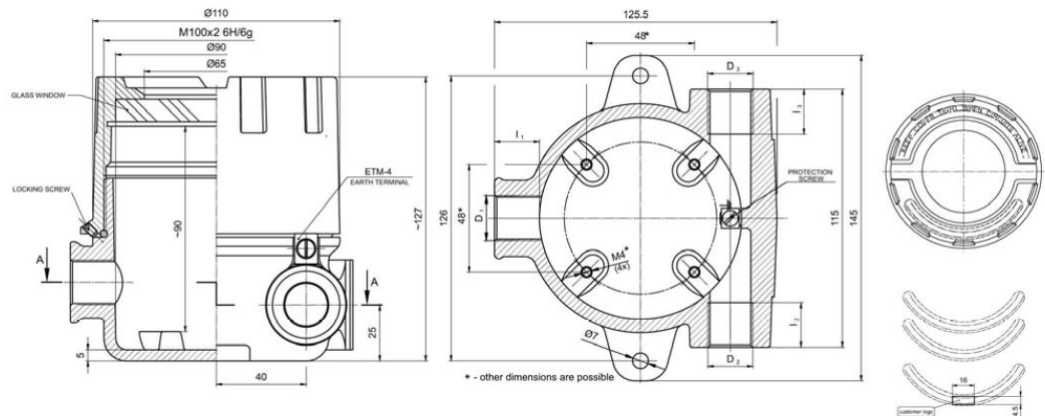
Gas	Sensor Type	Range	Calibration Gas	Concentration	Conversion Factor - If Required	Sensor Warranty
VOC	Electrochemical	0-20ppm	CO	67ppm	Divide by 3.3 = 20.3PM Formalde- hyde	1 year
Benzene	Infrared	0-100% LEL	METHANE	1.5% VOL or 2.5% VOL	1.5% Vol CH4 = 53% LEL Benzene 2.5% Vol CH4 = 75% Ben- zene	5 Years
H2	Pellistor	0-100% LEL	H2	1.020% VOL	N/A	2 Years
Methanol	Infrared	0-100% LEL	PROPANE	1.109% VOL	1.109%Vol = 2.28% Vol Methanol =38% LEL	5 Years
Flammable	Infrared	0-100% LEL	CH4	1.486% VOL	N/A	5 Years
CO2	Infrared	0-5% Volume	CO2	2.040% vOL	N/A	5 Years

PLEASE NOTE:

WITH REGARDS TO THE GAS USED TO CALIBRATE THE SENSORS, IF A DIFFERENT CONCENTRATION THAN THAT LISTED ABOVE IS USED, PLEASE CONTACT US SO THAT WE CAN ADVISE TRUE CORRECTION FACTORS AS IT IS NOT LINEAR

Mechanical Specifications

	Instrument Body – Aluminium Pressure Die Casting or Stainless Steel 316
	Sensor Insert – Stainless Steel Grade 316
Material	IR Sensor Housing – Stainless Steel Grade 303 (Grade 316 available)
	Magnetic Pen – Stainless Steel Grade 316
	Optional Weatherguard – Stainless Steel Grade 304 & Nylon 66
Cable entries	2 x 20mm or ½" NPT or ¾" NPT
	FGD10A Oxygen, Toxic, Pellistor (excluding weatherguard) – 1.75Kg
Weights	FGD10A Infrared 2Kg
	Magnetic Pen – 60 grams
	Weatherguard – 225 grams

Dimensions

IP rating	Enclosure IP68, Sensor IP65
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Hazardous Area Certification

Certificate numbers	IECEX SIR 08.0009X, Code Ex d IIC SIRA 08ATEX1031X, Code Ex d IIC
Standards	IEC 60079-0 : 2004 (Edition 4) IEC 60079-1 : 2007-04 (Edition 6) EN 60079-0 : 2006 EN60079-1 : 2007
Temperature Codes	T4 (Ta -20 to +60 deg C) T5 (Ta -20 to +50 deg C) – not applicable to infrared versions. T6 (Ta -20 to +35 deg C) - not applicable to infrared versions.
Zones	1 & 2

Performance

Gas types	Flammable, Oxygen or Toxic,
Sensor types	NDIR Infrared, Electrochemical , Catalytic or Pellistor
Measurement range	Dependent upon sensor type
Response time	Flammable Gases - typically T90 < 15 sec (CH4) Toxic and Oxygen sensor response times vary according to the sensor type.
Measurement resolution	Flammable gases - 1% LEL or 1% volume. Toxic gases - 0.1ppm for FSD < 50ppm, 1ppm for FSD > 50ppm. Oxygen - 0.1% volume.
Display	4 Digit, 7 segment liquid crystal
Keypad	4-Button magnetically operated
Software	Software configuration provided via LCD display and multifunction keypad

Electrical Specifications

Input voltage	8 to 24 volts dc
Input power	5 Watts maximum
Internal fuse	1 Amp antisurge 'Nanofuse'
Relay contact rating	3 Amps, 300 Volts ac
Output Options	4 to 20mA (10 bit resolution)
RS232 output	Communications with PC at 19200 baud
Keypad	4-Button magnetically operated
Software	Software configuration provided via LCD display and multifunction keypad

Accessories

EX d VISUAL ALARM MODEL «MOD-370»

Features



- **Visual** Alarm
- **Audible** Alarm
- **Stainless steel** explosion-proof body
- **Wide** operating temperature range
- **Long service life** and high operational reliability
- **Clearly visible** at the top **LEDs**
- **Compact design** and easy installation
- **Waterproof**, shock-resistant and **corrosion-resistant**

Technical Characteristics

Power supply	12V/24V
Current	<300mA
Audibility of	≥ 85 dB at 1 m
The service life of more than	3 years
frequency	700/950Hz
Operating temperature	-40 ° C to ~ +70 ° C
The light intensity is	2400 ± 200 mcd
Humidity	≤ 95% non-condensing
Material	Stainless steel \ aluminum
Degree of protection	IP66
Type of protection	Exdib II CT6

Mechanical Specifications

Thread entry into the detector	M20
Dimensions	85×50×124mm
Weight	1кг (ss316) 0,5 kg(aluminum body)



Accessories

TECHNICAL DATA SHEET - SOUNDER ALARM «SS367»



Features:

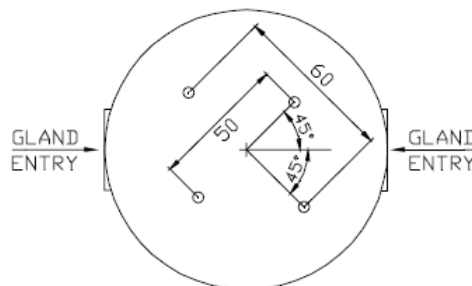
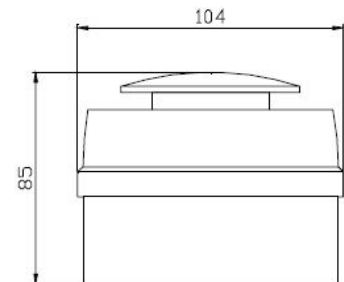
- 9 SELECTABLE TONES
- HIGH IMPACT ABS CASE
- WIDE SUPPLY AND OPERATING TEMPERATURE
- BRIGHT RED FINISH
- OPTIONAL LOOP IN / LOOP OUT

ELECTRICAL SPECIFICATION

Operating Voltage	12V/24V
Supply Current	8mA
Audibility	105dB at 1m
Distance	108m
Frequency	700/950Hz
Operating Temp. Range	-40°C to +55°C

Mechanical Specification

Overall Height	85mm
Overall Diameter	104mm
Fixing Holes	4mm Holes max
Fixing Diameters	50mm or 60mm
Gland Entry	2 x 20mm knockouts



Accessories

TECHNICAL DATA SHEET - VISUAL ALARM (COLOUR RED, AMBER or GREEN) «SS369»

Features:

- EYE CATCHING FLASH RATE, 60FPM
- IMPACT RESISTANT POLYCARBONATE RANGE
- WIDE SUPPLY AND OPERATING TEMPERATURE
- THREE COLOURS AVAILABLE

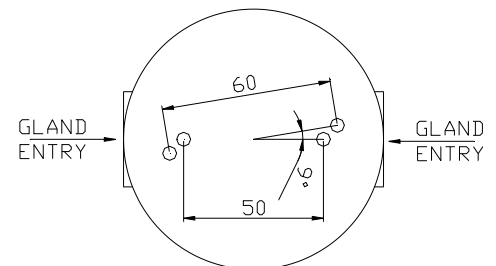
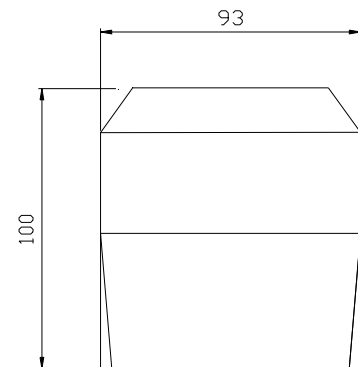


ELECTRICAL SPECIFICATION

Operating Voltage	20-30Vdc
Supply Current	90mA average
Power Rating	2.1W
Flash Energy Rating	1.0J
Operating Temperature Range	-20°C to +55°C

Mechanical Specification

Overall Height	100mm
Base Height	48mm
Overall Diameter	93mm
Fixing Holes	5mm Holes max
Fixing Diameters	50mm or 60mm
Gland Entry	2 x 20mm knockouts



Accessories

TECHNICAL DATA SHEET - VISUAL / AUDIBLE STATUS INDICATION PANEL «SS366»

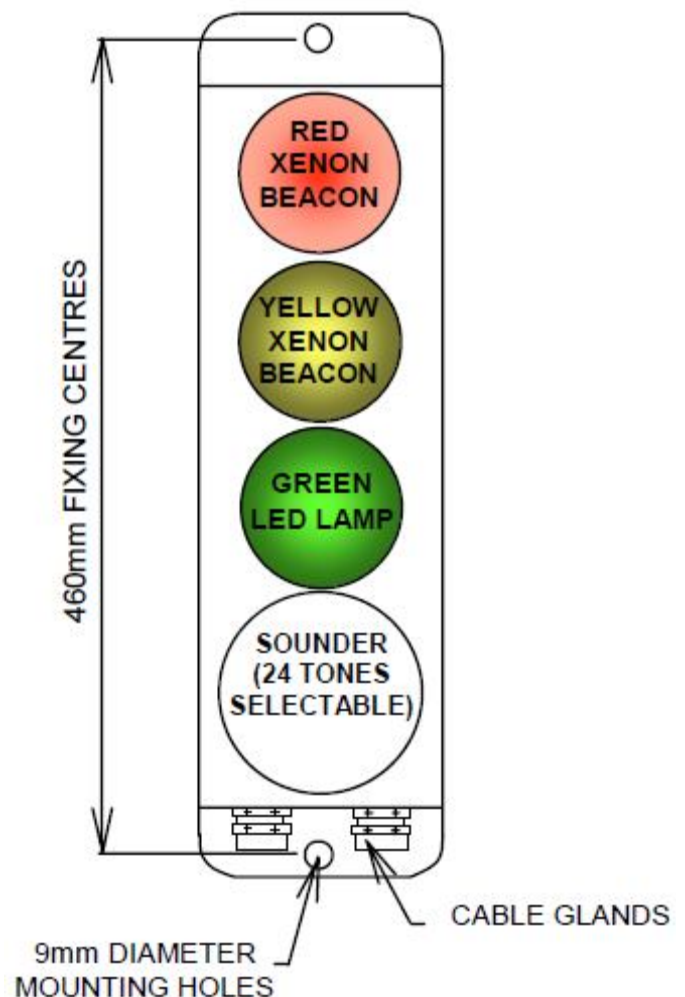


Electrical Specification

Operating Voltage	24V D.C.
Supply Current: Red / Yellow Xenon's	105mA MAX.
Green LED Lamp	40mA MAX.
Sounder	25mA MAX.
Sounder Output level @ 1m (Depending on tone)	79-107dB(A) ± 3dB.

Mechanical Specification

Overall dimensions:	480mm Long x 102mm Wide x 130mm Deep.
Weight:	Approximately 3.5Kg.
Cable entries	2 off M20 Compression glands. Cable size: 8mm Diameter maximum.
Configuration	Common negative supply, independent positive supply to each lamp and the sounder.





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