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IR148

Infrared gas monitor that detects toxic and combustible gases and solvents

INTRODUCTION

The Model **IR148** is an infrared gas monitor that detects toxic and combustible gases as well as solvents. It uses infrared sensing technology, allowing accurate measurement of target gas vapors with minimum interference from other vapors.

These sensors have a number of important advantages over the catalytic type. They include a very fast speed of response (typically less than 10 seconds), low maintenance and greatly simplifi ed checking, using the self-checking facility of modern micro-processor controlled equipment. They can also be designed to be unaffected by any known "poisons", they are fail-to-safety (no fault that develops within the device can result in a safety critical situation) and they will operate successfully in inert atmospheres and under a wide range of ambient temperatures, pressure and humidity conditions.

The technique operates on the principle of dual wavelength IR absorption, whereby light passes through the sample mixture at two wavelengths, one of which is set at the absorption peak of the gas to be detected, whilst the other is not.

The Model **IR148** is supplied as a wall mount unit configured for 1, 4 or 8 sampling points measuring down to 1 part per million (ppm). It has two available analog outputs, each which is software selectable between 10% and 100% of full scale: 4-20mA, isolated, current sourcing, and 0-10 VDC. Multiple gas calibrations are available.

TECHNICAL FEATURES

Performance characteristics subject to change, depending on gas to be monitored and full-scale range.

For 0-1000ppm Range:

- Accuracy: 0-100ppm ±2ppm; 100-1000ppm ±10% reading
- Linearity: 0-100ppm linear, 100-1000 ±2% of full scale
- Sensitivity: 2ppm
- Resolution: 1ppm

Reproducibility: ±2ppm over 12 months at specified operating conditions

Response:
Updated reading every 7 seconds

Operating Temperature 0-50°C, 32-122°F

Temperature Effect:
±0.3% per °C of reading

Relative Humidity:
0-99% non-condensing - no effect on reading

Sample Flow Rate:
1.5 liter/minute

Maximum Total Tubing Length:
150f with 1/8" ID
500f with 3/16" ID

Operating Power Requirements:
120VAC ± 10% at 0.56A, or 240VAC; ±10% at 0.3A

Alarm Relays:
3 relays @ 8A resistive

Approvals:
CE approval: EN55011 & EN 50082-2/EN6100-4-2

Outputs:
Analog 4-20mA sourcing (dependent on configuration)
RS23C (standard), RS422 or RS485 (optional module)
Physical Enclosure Information:

- NEMA 4 Dimensions:
  460 x 410 x 180mm (18" x 16 x 7") (H x W x D)
  Weight: 19kg (40lbs)
- 19" Rack Mount Dimensions:
  180 x 450 x 390mm (7" x 175/8 x 151/4") (H x W x D)
  Weight: 9kg (19lbs)

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AVAILABLE RANGES
Not all ranges are available on all the gases listed.

A	Acetone
	Acetonitrile
	Acrylonitrile
	Ammonia
B	Benzene
	Butane
	Butanol
	1,3 Butadiene
	1-Butyl Acetate
C	Carbon Dioxide (Needs humidity in stream)
	Carbon Monoxide (Needs humidity in stream)
	Carbon Tetrachloride
	Chloroform
	Cyclopentane
D	1,2 Dichloroethane
	Diethyl Benzene
	Diethyl Ether (Ethyl Ether)
	Dimethyl Ethylamine
	Difluoromethane
	Dimethylamine
	Dowtherm J
E	Ethane
	Ethanol
	Ethyl Acetate
	Ethyl Benzene
	Ethylene
	Ethylene Oxide
H	Halon 1211
	Halon 1301
	Heptane
	Hexafluoro- 1.3 Butadiene
	Hexafluoropropylene
	Hexane
	Hexene
	HFE 347E
	HFE 7100
I	Isceon 89
	Isopropanol (2-Propanol)
	Isopropyl Alcohol
	Isobutane
	Isopentane
M	Methane
	Methanol
	Methyl Ethyl Ketone (MEK)
	Methyl Fluoride
	Methyl Formate
	Methyl Iodide
	Methyl Isobutyl Ketone (MIBK)
	Methyl Methacrylate
	Methylene Chloride
N	N-Butanol
	N-Hexane
	N-Pentane
	Nitrogen Trifluoride
	Nitrous Oxide (N2O) (Needs humidity in stream)
O	Octafluoro Cyclo Butane
	Octafluoro Cyclo Pentane
P	Pentane
	Perchloroethylene (Tetrachloroethylene)
	Perfluorohexane
	Perfluoromethyl Vinyl Ether (PMVE)
	PF5050
	Phosgene
	Propanal
	Propane
	Propylene Oxide
	Propylene Glycol Methyl Ether Acetate
R	**Refrigerants:**
	R-11
	R-113
	R-114
	R-12
	R-123
	R-124
	R-125
	R-13
	R-134A
	R-141B
	R-142B
	R-143A
	R-152A
	R-218
	R-22
	R-227
	R-23
	R-32
	R-401A (Suva MP 39)
	R-402A (HP 80)
	R-404A (HP 62)
	R-407C (AC 9000)
	R-408A
	R-409A
	R-410A (AZ20)
	R-500
	R-502
	R-507
	R-508B (Suva 95)
S	Solkane 365/227
	Styrene
	Sulphur Hexafluoride (SF6)
T	Tetrafluoroethylene
	Tetra Hydrofuran
	Toluene
	1,1,1 Trichloroethane
	1,1,2 Trichloroethane
	Trichloroethylene
	Triethylamine
V	Vinyl Chloride
	Vinyl Fluoride
X	Xylenes (ortho, meta, para or natural)

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