

GUARDIAN FR

FOR REFRIGERANTS



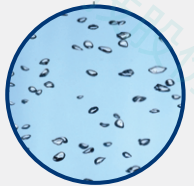
The Guardian range of infrared gas monitors offers near-analyser quality continuous sampling, measurement and display of target gas concentrations at an attractive price.

The 'Guardian FR' monitors provide high accuracy detection and measurement of R-125, R-134a, R-123, R-11, R-12 and R-22 refrigerant where detection levels between 0 –1000ppm by volume are required. (We can also custom-manufacture 'Guardian FR' instruments to measure certain other refrigerant gases - please contact us to discuss your specific requirements.)

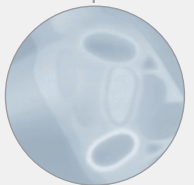
Suitable for a wide variety of applications these wall-mounted monitors can detect gases from sampling points up to 30 metres away, using the integral sampling system.

The proven reputation of these instruments for reliability, accuracy and long-term stability with low maintenance requirements can be attributed to our proprietary dual-wavelength infrared sensor technology and over thirty years of sensor design and manufacturing experience.

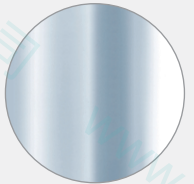
Our Guardian instruments feature a four-digit LCD and alarm set-point controls housed in a tough plastic enclosure that has an IP54 rating against the ingress of particulates and water.



GAS SENSORS



ANALYTICAL INSTRUMENTS



LASERS AND ELECTRO-OPTICS



QUANTUM DIVISION

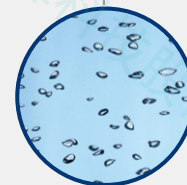




MODEL	Gas	Accuracy*	Stability	Repeatability @ zero	Repeatability @ span
Guardian FR 0-1000pp	refrigerants	+/- 3% of range	+/- 2% of range over 12 months	+/- 1%	+/- 2%
RESPONSE TIME:	T ₉₀ = 30 seconds				
OPERATING TEMPERATURE:	0-40°C				
WARM-UP TIME:	3 minutes (initial), 40 minutes (full specification)				
HUMIDITY:	Measurements are unaffected by 0-95% humidity, non-condensing				
CONTROLS FITTED:	Zero and span adjustment potentiometers Setpoint 1 and setpoint 2 adjustment View setpoint 1 button, view setpoint 2 button Indicator LED and display test button				
BITSWITCH PARAMETERS:	Analogue (current) output: 0 - 20mA or 4 - 20mA Linear or non-linear output Alarm settings: alarm 1 high/low, alarm 2 high/low, alarm 1 normal/latch, alarm 2 normal/latch Buzzer sounds on both alarms or only on alarm 2 low flow warning (flashing lamp) or low flow alarm (audible alarm, LCD displays 'ERR', flashing lamp, etc)				
VISUAL DISPLAY:	Four-digit LCD display Alarm 1 LED, alarm 2 LED Fault LED Low flow/flow fail LED				
RELAY CONTACTS:	Volt-free changeover contacts Resistive load @ 24V DC = 8A Resistive load @ 250V AC = 8A				
PUMP CHARACTERISTICS:	Typical flow rate = 1 litre/ minute Maximum sampling distance = 30 metres				
POWER REQUIREMENTS:	88V - 138V AC or 172V - 276V AC (switch selectable)				
POWER CONSUMPTION:	13 W (typical)				
WEIGHT:	2.5Kg				
DIMENSIONS:	267 x 258 x 148mm				
ENCLOSURE:	IP54 rated				
ELECTRICAL CONFORMITY:	CE marked				
	(*stated accuracy includes calibration gas tolerance of +/- 1%)				

OTHER GUARDIAN MODELS AVAILABLE:

Guardian SP:	Measurement of ppm level CO ₂ and N ₂ O; measurement of % level CO
Guardian Plus:	Measurement of CO ₂ , CH ₄ (ranges from 0-1% to 0-100% by volume)



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