

# GUARDIAN SP

FOR CO<sub>2</sub>, CO, OR N<sub>2</sub>O



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 SP' range of instruments provides high accuracy detection and measurement of CO<sub>2</sub>, where detection levels between 0-1000ppm and 0-5000ppm by volume are required, measurement of CO, where detection levels of between 0-1% and 0-100%\*\* are required and measurement of N<sub>2</sub>O, in the range 0-1000ppm.

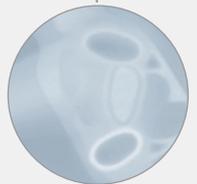
Suitable for a wide variety of applications these wall-mounted monitors can detect gases from sampling points up to 30 metres away, using the integral sampling system.

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.

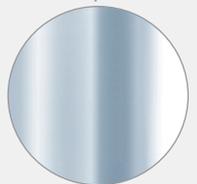
Our Guardian instruments feature both a four-digit LCD and alarm set-point controls and are housed in a tough plastic enclosure that has an IP54 rating against the ingress of particulates and water.



GAS SENSORS



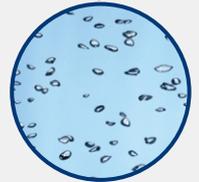
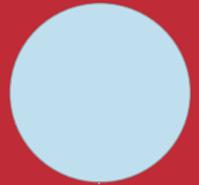
ANALYTICAL INSTRUMENTS



LASERS AND ELECTRO-OPTICS



QUANTUM DIVISION



MODEL	Gas	Accuracy*	Stability	Repeatability @ zero	Repeatability @ span
Guardian SP (0-1000ppm)	CO <sub>2</sub>	+/- 5.5% of range	+/- 180ppm over twelve months	+/- 0.9%	+/- 4.5%
Guardian SP (0-5000ppm)	CO <sub>2</sub>	+/- 2.5% of range	+/- 2% of range	+/- 0.3%	+/- 1.5%
Guardian SP (0-3%)***	CO	+/- 2.5% of range	+/- 2% of range	+/- 0.3%	+/- 1.5%
Guardian SP (0-5%)***	CO	+/- 2.5% of range	+/- 2% of range	+/- 0.3%	+/- 1.5%
Guardian SP (0-10%)***	CO	+/- 2.5% of range	+/- 2% of range	+/- 0.3%	+/- 1.5%
Guardian SP (0-30%)***	CO	+/- 2.5% of range	+/- 2% of range	+/- 0.3%	+/- 1.5%
Guardian SP (0-100%)***	CO	+/- 2.5% of range	+/- 2% of range	+/- 0.3%	+/- 1.5%
Guardian SP (0-1000ppm)	N <sub>2</sub> O	+/- 2% of range	+/- 360ppm	+/- 20ppm	+/- 90ppm
RESPONSE TIME:	T <sub>90</sub> = 30 seconds				
OPERATING TEMPERATURE:	0-40°C				
WARM-UP TIME:	3 minutes (initial), 40 minutes (full specification)				
HUMIDITY:	Measurements are unaffected by 0-99% relative 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 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 Plus:	Measurement of CO <sub>2</sub> , CH <sub>4</sub> ( ranges from 0-1% to 0-100% by volume)
Guardian FR:	Measurement of refrigerants (HCFC/HFC/Freons) at ppm level

\*\*Guardian SP instruments are not certifiable for use where risk of fire or explosion exists. During operation prolonged exposure to high levels of flammable gases may lead to the creation of an explosive mixture within the Guardian plus enclosure. Additional measures must be taken by the user to prevent this hazard occurring.

\*\*\*Carbon Monoxide has toxic effects, even at low concentrations. Additional precautions should be taken to avoid the toxic effects on this gas.