Honeywell

Midas® Sensor Cartridge Specifications

Perfluoro Compounds (PFC Group)
MIDAS-E-XCF, MIDAS-S-XCF

Gas Measured	Hexafluorobutadiene (C_4F_6)
Cartridge Part Number	MIDAS-S-XCF 1 year standard warranty MIDAS-E-XCF 2 year extended warranty
Sensor Technology	3 electrode electrochemical cell
Measuring Range	C_4F_6 0 – 40ppm
Minimum Alarm 1 Set Point	5ppm
Lower Detection Limit	2ppm
Linearity	< ± 20% of measured value
Repeatability	< ± 10% of measured value
Resolution	0.2ppm
Response Time $t_{62.5}$	≤ 45 seconds
Sensor Cartridge Life Expectancy	≥ 12 months under typical application conditions
Operating Temperature	0°C to +40°C (32°F to 104°F)
Effect of Temperature	
Zero	< ± 0.03ppm / °C
Sensitivity	< ± 0.4% of measured value / °C
Operating Humidity	10 to 90% RH
Effect of Humidity	
Zero	< ± 0.01ppm / % RH
Sensitivity	< ± 1% of measured value / % RH
Operating Pressure	90 – 110kPa
Effect of Position	No effect in typical application
Long Term Drift	
Zero	No Drift
Sensitivity	< 15% of measured value / year
Calibration Gas	Hydrogen Fluoride (HF)
Bump Test Gas	Chlorine (Cl_2)
Warm Up Time	< 20 minutes
Storage Temperature	+5°C to +25°C (+41°F to +77°F)

The sensor data listed is based on ideal test environment; observed performance may vary based on the actual monitoring system and the sampling conditions employed.

Separate Pyrolyzer module (MIDAS-T-NP1) required with the PFC sensor cartridge to detect C4F6, C5F8, CH2F2 or SF6 by thermal breakdown. To maintain stated performance, it is recommended to is in 50 – 104ºF(10 - 40ºC) and the humidity is in 30 – 70 %RH.

Otherwise, more frequent bump testing or calibration will be required to confirm working specifications. Do not use Freon filter to measure C4F6, C5F8 and SF6. Use of the ventilated Midas top cover (MIDAS-A-039) is recommended.

Find out more
www.honeywellanalytics.com
Korea Tel: +82 (0)2 6909 0300
Singapore Tel: +65-65803776
Australia Tel: +61-3-94642770
Japan Tel: +81-3-6730-7320
India Tel: +91-124 4752700

Other Detectable Gases

The following additional gases can be detected with this sensor cartridge. Sensor performance and characteristics will be representative of the data as tabulated above. Consult the Technical Manual to set up the Midas® transmitter with the designated identification code for each of the following gas types.

Detectable Gas	Chemical Formula	Measuring Range
Hexafluorobutadiene	C_4F_6	0 - 40ppm
Octofluorocyclopentene	C_5F_8	0 - 40ppm
Difluoromethane	CH_2F_2	0 - 120ppm
R134a	$C_2H_2F_4$	0 - 1000ppm
Hexafluoroisobutylene	$C_4H_2F_6$	0 - 40ppm

Cross Sensitivities

Each Midas® sensor is potentially cross sensitive to other gases and this may cause a gas reading when exposed to other gases than those originally designated. The table below presents typical readings that will be observed when a new sensor cartridge is exposed to the cross sensitive gas (or a mixture of gases containing the cross sensitive species)

Gas Measured	Chemical Formula	Concentration Applied(ppm)	Reading (ppm C_4F_6)
Arsine	AsH_3	1	0
Carbon Monoxide	CO	2000	0
Chlorine	Cl_2	4.8	5
Diborane	B_2H_6	0.5	-2.3
Hydrogen	H_2	20000	0
Hydrogen Chloride	HCl	2	2.8
Hydrogen Fluoride	HF	2	3.1
Hydrogen Sulfide	H_2S	1	-0.6
Iso Propanol	C_3H_7OH	500	0
Methanol	CH_3OH	500	0
Nitrogen Dioxide	NO_2	10	2
Phosphine	PH_3	1	-0.6
Nitrogen Trifluoride	NF_3	10	4.7
Sulfur Dioxide	SO_2	5.7	5
Perfluoroether	HFE		Yes
Hydrofluorocarbon, Perfluorocarbon	HFC/PFC		Yes

Interference differs from cartridge to cartridge and over cell life. It is not recommended to calibrate with cross sensitivity factors. The target gas should be used for calibration.

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