GasSens

Modular Gas Detector

PortaSens III D16Gas LeakDetector

OVERVIEW

Locating the source of gas leaks can be a challenge, especially in plant areas with multiple potential leak sources. Ammonia refrigeration piping, ozone generator skids and hazardous gas piping systems are just a few of the applications where identifying exact leak sites is difficult.

The Badger Meter PortaSens III D16 portable leak detector is ideal for locating leak sources or simply for measuring gas concentrations in the workplace. With a built-in sampling pump and inlet wand, sample is drawn from precise locations where leaks may occur. Areas around valve packing, flanges, compression fittings and other system components are easily checked to find the higher gas levels that exist near the leak site.

Figure 1: PortaSens III

The PortaSens III is physically similar to its predecessor, the PortaSens II, which has been in service for the past 15 years. The internals of the instrument have been completely redesigned with a modern USB computer interface, a color touch-screen display, and improved pump control. As with the original, the D16 detector has the ability to measure a wide variety of gases by simply inserting the appropriate sensor for that gas. The D16 can use any of over 60 different sensor modules, providing nearly unmatched flexibility.

Sensors can be changed quickly and easily without the need for calibration. Sensors used in the PortaSens III are H-Series smart sensor modules. Each sensor module is actually a sensor, amplifier and memory module in one compact package.

Because of this design, sensor modules can be calibrated independently and simply plugged into any detector for immediate use.

When installed in a detector, calibration data is loaded into the microprocessor so that no adjustments are needed. The result is that a detector can, for example, go from phosgene measurement to ammonia measurement in less than one minute.

FEATURES

- Interchangeable “Smart Sensors” for gas flexibility
- New IR sensors for methane and carbon dioxide
- Internal sample pump and external sampling wand
- One-hand pistol grip design
- NiMH D cell rechargeable battery or alkaline cell
- Easy to read back-lit color graphics LCD
- Instantaneous and timed-sampling modes of operation
- Visual and audible alarms
- Internal 4 GB datalogger with USB output

SMART SENSORS

The basic PortaSens II detector does not include sensor modules. Because the D16 is designed to accept any Badger Meter smart sensor module, you can select one or more sensors from the *“Available Sensors” on page 2*. Each sensor module is factory calibrated at the time of shipment and is ready to use by plugging it into the receptacle in the D16 manifold. Each module can be used for logging data over the minimum and maximum ranges indicated.

Figure 2: Smart sensor

Badger Meter

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Product Data Sheet

AVAILABLE SENSORS

00-1000	Br2, 0...1/5 ppm	00-1025	AsH3, 0...10/200 ppm
00-1001	Br2, 0...5/200 ppm	00-1026	B2H6, 0...500/2000 ppb
00-1002	Cl2, 0...1/5 ppm	00-1027	B2H6, 0...10/200 ppm
00-1003	Cl2, 0...5/200 ppm	00-1028	GeH4, 0...500/2000 ppb
00-1004	ClO2, 0...1/5 ppm	00-1029	GeH4, 0...10/200 ppm
00-1005	ClO2, 0...5/200 ppm	00-1030	H2Se, 0...500/2000 ppb
00-1359	ClO2, 200/1000 ppm	00-1031	H2Se, 0...10/200 ppm
00-1425	ClO2, 0...1/5 ppm (low Cl2)	00-1032	PH3, 0...500/2000 ppb
00-1006	F2, 0...1/5 ppm	00-1033	PH3, 0...10/200 ppm
00-1007	F2, 0...5/200	00-1034	PH3, 0...200/2000 ppm
00-1008	O3, 0...1/5 ppm	00-1035	SiH4, 0...10/200 ppm
00-1009	O3, 0...5/200 ppm	00-1036	I2, 0...1/5 ppm
00-1358	O3, 200/1000 ppm	00-1037	I2, 0...5/200 ppm
00-1163	O3, 500/2000 ppb	00-1038	Acid Gas, 0...10/200 ppm
00-1010	NH3, 0...50/500 ppm	00-1039	ETO, 0...20/200 ppm
00-1011	NH3, 0...500/2000 ppm	00-1040	HCOH, 0...20/200 ppm
00-1012	CO, 0...50/1000 ppm	00-1349	HCOH, 500/2000 ppm
00-1013	H2, 0...1/10%	00-1042	H2O2, 0...10/100 ppm
00-1041	H2, 0...500/2000 ppm	00-1169	H2O2, 200/2000 ppm
00-1014	O2, 0...5/25%	00-1043	Alcohol, 0...50/500 ppm
00-1015	COCl2, 0...1/5 ppm	00-1044	Alcohol, 0...500/2000 ppm
00-1016	COCl2, 0...5/100 ppm	00-1057	C2H2, 0...200/2000 ppm
00-1017	HCl, 0...10/200 ppm	00-1181	NOX, 0...50/500 ppm
00-1018	HCN, 0...10/200 ppm	00-1450	DMA, 100/200 ppm
00-1019	HF, 0...10/200 ppm	00-1455	HBr, 10/200 ppm
00-1020	H2S, 0...10/200 ppm	00-1516	HC Sensor – *Consult Factory*
00-1021	H2S, 200/1000 ppm	00-1517	CH3COOH, 100/500 ppm
00-1022	NO, 0...50/500 ppm	00-1518	PAA Vapor, 1/5 ppm
00-1023	NO2, 0...10/200 ppm	00-1519	PAA Vapor, 10/100 ppm
00-1024	SO2, 0...10/500 ppm	00-1883	IR CH4, 0...20/100% LEL
00-1025	AsH3, 0...500/2000 ppb	00-1884	IR CO2, 0...0.2/1.5%

NOTE: X/XX for each sensor indicates minimum and maximum data logging ranges for that sensor.

NOTE: 00-1883 LEL CH4 sensor also responds to many other hydrocarbons. Response to other hydrocarbons is not 1:1 with CH4.

SPECIFICATIONS

Range	Dependent on sensor module used
Display	Backlit, touch-sensitive color graphics LCD
Accuracy	Sensor dependent but generally ± 5% of value (limited by cal. gas)
Sensitivity	Typically 0.1...1% of sensor module range
Output	USB transfer of stored gas values
Memory	4 GB (millions of data points)
Storage Interval	Programmable from 1...60 minutes
Alarms	Three concentration alarms (caution, warning, and danger with adjustable setpoints). Low flow and low battery alarms displayed on LCD and indicated by audible beeper.
Power	Rechargeable NiMH D cell battery runs about 10 hours continuously. Two D cells supplied with unit. Alkaline D cell battery may also be used.
Charger	2-Cell charger, 100-240V AC input
Operating Temperature	–13...131° F (–25...55° C)
Humidity	0-95% non-condensing
Detector Material	Glass-filled polycarbonate
Size	3.5 (W) × 9 (H) × 5.5 (D) in. (89 × 229 × 140 mm)
Shipping Weight	7 lb (3.2 kg)
Environmental	RoHS compliant
CE Certifications	2014/35/EU – Low voltage directive 2014/30/EU – Electromagnetic compatibility

CE

ORDERING INFORMATION

#00-1876 D16 PortaSens III

PortaSens III gas detectors are supplied in a padded carrying case for easy storage and transport. An extra battery is provided plus space for up to two sensor keepers, which means up to eight extra sensors ready for immediate use.

The following components are standard.

- PortaSens III gas detector
- Spare filters
- 10 in. Teflon lined sampling wand
- Flow meter
- USB cable
- Spare NiMH D cell battery
- NiMH battery charger
- Sensor keeper
- Calibration tee fitting

Figure 3: D16 carrying case

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