

# I.S. Plant Rat

## Intrinsically Safe

Toxic/O<sub>2</sub> 4-20 mA 2-Wire Gas Transmitters

"INNOVATORS IN GAS DETECTION"

# BW

Technologies



## Fixed Gas Monitoring Systems

### FEATURES:

The I.S. Plant Rat Transmitter provides continuous monitoring for oxygen or toxic gas hazards in ambient air. Leading the field in accuracy and speed of response, I.S. Plant Rat is engineered to provide the ultimate in flexibility and low maintenance.

- △ Modular engineered design provides the ultimate in flexibility. In the field you can easily change the gas monitored and/or the measuring range, and add a sensor separation kit or a duct mount kit.
- △ Encapsulated, plug-in, electronic modules protect against corrosive environments, moisture invasion and tampering
- △ Direct linear 4-20 mA output for industry standard compatibility
- △ Wide supply voltage range: 12 to 35 volts
- △ Backlit LCD readout (standard)
- △ Eliminate the requirement for hot work permits. I.S. Plant Rat uses low power technology therefore is not capable of igniting in an explosive atmosphere when it forms part of an intrinsically safe installation.
- △ Exterior hinged door for non-intrusive calibration
- △ Calibrate Mode simplifies system start-up and calibration. I.S. Plant Rat features a timed automatic reset to normal operation that ensures system integrity.
- △ Low operating, maintenance and installation costs

### Ordering Information

Transmitter with Sensor, Digital Display and Measuring Range Module

ISPR2-DX(#)	O <sub>2</sub>	ISPR2-DE(#)	C <sub>2</sub> H <sub>4</sub> O
ISPR2-DH(#)	H <sub>2</sub> S	ISPR2-DY(#)	H <sub>2</sub>
ISPR2-DM(#)	CO	ISPR2-DZ(#)	HCN
ISPR2-DS(#)	SO <sub>2</sub>	ISPR2-DL(#)	HCl
ISPR2-DA(#)	NH <sub>3</sub>	ISPR2-DN(#)	NO
ISPR2-DC(#)	Cl <sub>2</sub>	ISPR2 DD(#)	NO <sub>2</sub>
ISPR2-DV(#)	ClO <sub>2</sub>		

Note: # = Measuring Range. To specify see table on back page.

### Accessories and Options

UA-SEP-K2	Sensor Separation Kit
UA-DUC-K2	Sensor Duct Mount Kit
UA-SEP-F5	Flue Vessel Mount Sensor Separation Unit
SG-CAL-1	Splash Guard/Remote Calibration Cup
PB-CAL-1	Process Baffle/Remote Calibration Cup
FRM-1	VDC Field Relay Module
FRM-AC	VAC (110-230) Field Relay Module
E0519K	I.S. Barrier (MTL 787)

### Replacement Sensors

PS-RX01	O <sub>2</sub>	PS-RC01	Cl <sub>2</sub>	PS-RZ01	HCN
PS-RH01	H <sub>2</sub> S	PS-RV01	ClO <sub>2</sub>	PS-RN01	NO
PS-RM01	CO	PS-RE01	C <sub>2</sub> H <sub>4</sub> O	PS-RD01	NO <sub>2</sub>
PS-RS01	SO <sub>2</sub>	PS-RY01	H <sub>2</sub>		
PS-RA01	NH <sub>3</sub>	PS-RL01	HCl		

[www.gasmonitors.com](http://www.gasmonitors.com)

Email: [info@bwt.net](mailto:info@bwt.net)



# I.S. Plant Rat

## 4-20mA 2-Wire Gas Transmitter

The I.S. Plant Rat is powered by a 2-wire loop, providing a direct linear output for industry-standard compatibility.

The I.S. Plant Rat's intrinsically safe design provides the ultimate in flexibility.

Encapsulated electronics provide protection against moisture invasion and corrosive environments. The rugged housing is a composite material that provides RFI/EMI protection.

Plug-in sensor and modular plug-in electronics make it a simple operation to:

- △ Change the gas monitored
- △ Change the measuring range
- △ Add a sensor separation kit
- △ Add a duct mount kit

The I.S. Plant Rat features non-intrusive, one person calibration. Simply open the hinged door to activate calibration mode (auto).

False system alarms are eliminated during setup and calibration.

The transmitter resets to normal operation automatically to ensure system integrity.

Sensors, including oxygen and hydrogen sulfide, are warranted for two years. With greater accuracy, a faster speed of response and a stable zero, the I.S. Plant Rat provides increased reliability and early hazard warning.

### SPECIFICATIONS

**TRANSMITTER:** 2-wire, 4-20 mA intrinsically safe transmitter  
**Power Input:** 12 to 35 volts DC; loop resistance 650 ohms (max) at 24 VDC  
**Output Current:** Normal operation: linear 4-20mA  
**Calibrate Mode:** Steady 4 mA, automatic reset to normal operation  
**Fault Mode:** 3.5 mA signal  
**Current Draw:** 35 mA (max)

**SENSOR:** Plug-in electrochemical cell  
**Humidity:** 5 to 95% RH non-condensing  
**Operating Temperature:** -25 to +35 °C / -13 to +86 °F - NH<sub>3</sub>  
 -40 to +40 °C / -40 to +104 °F - H<sub>2</sub>S  
 -20 to +40 °C / -4 to +104 °F - Other toxics and O<sub>2</sub>  
**Drift:** Zero drift: nominal; span drift: <10% per year  
**Calibration:** Non-intrusive; with auto calibrate mode

Gas Monitoring Specifications	Detectable Accuracy	LCD Increments	Standard Measuring Ranges Available							
			Units	#=1	#=2	#=3	#=4	#=5	#=6	
O <sub>2</sub>	0.1%	0.1%	%v/v	0-25.0%	0-30.0%					
H <sub>2</sub> S	0.25 ppm	1 ppm	ppm	0-100	0-50	0-500	0-20	0-30		
CO	1 ppm	1 ppm	ppm	0-500	0-1000	0-100	0-50	0-200	0-600	
SO <sub>2</sub>	0.5 ppm	1 ppm	ppm	0-100	0-50	0-20	0-10			
NH <sub>3</sub>	0.5 ppm	1 ppm	ppm	0-50	0-100			0-150		
Cl <sub>2</sub>	0.1 ppm	0.1 ppm*	ppm	0-5.0	0-10.0	0-100				
ClO <sub>2</sub>	0.01 ppm	0.01 ppm	ppm	0-5.00	0-1.00					
C <sub>2</sub> H <sub>4</sub> O	0.1 ppm	0.1 ppm*	ppm	0-10.0	0-20.0	0-100				
H <sub>2</sub>	1 ppm	1 ppm	ppm	0-100	0-200	0-800				
HCl	0.1 ppm	0.1 ppm*	ppm	0-10.0	0-20.0	0-100				
HCN	0.1 ppm	0.1 ppm*	ppm	0-20.0	0-50.0	0-100				
NO	0.5 ppm	1 ppm	ppm	0-50	0-100					
NO <sub>2</sub>	0.1 ppm	0.1 ppm	ppm	0-10.0	0-20.0					

\* Note: LCD Increments vary according to the measuring range specified on these units

**DISPLAY:** Large, backlit LCD readout

**PHYSICAL:** Size: 4.7 x 4.7 x 3 in. / 12 x 12 x 7.5 cm

Weight: 1.65 lb. / 750 g

Hinged Door: Secures calibration access

Enclosure: Rugged, Nema 4, RFI/EMI shielded composite material 2-part case with 2 cable ports

**WARRANTY:** Instrument: 2 year non-prorated warranty (NH<sub>3</sub> sensor: 1 year)

Sensors: 2 year full replacement warranty (NH<sub>3</sub> sensor: 1 year)

Life expectancy: Toxics > 3 years; O<sub>2</sub> > 2 years; NH<sub>3</sub> > 1 year

DUE TO ONGOING RESEARCH AND PRODUCT IMPROVEMENT, SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

**RATINGS AND CERTIFICATIONS:**  to both U.S. and Canadian standards  
 (Intrinsically safe with barrier) Class I, Div. 1, Gr. A, B, C, D  
 Class II, Div. 2, Gr. E, F, G

"INNOVATORS IN GAS DETECTION"



For further information:

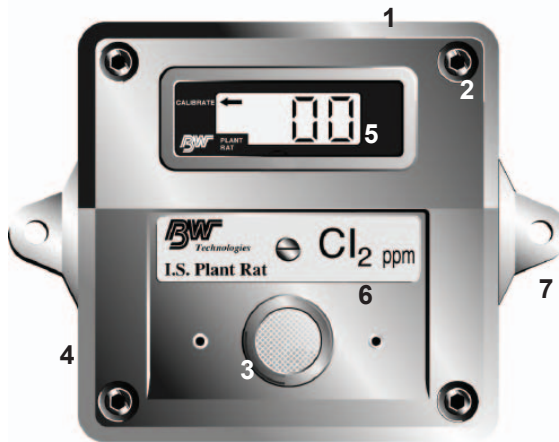
1-888-749-8878 USA  
 1-800-663-4164 Canada  
 +44 (0) 1869 233004 Europe  
 +971-4-8871766 Middle East  
 +011-852-2974-1783 China  
 +65 6873 9813 South East Asia  
 +61-7-3818-8244 Australia

Corporate Headquarters

2840 - 2 Avenue S.E.  
 Calgary, AB, Canada T2A 7X9  
 Phone: +1-403-248-9226  
 Fax: +1-403-273-3708

E-mail: info@bwt.net.com  
 www.gasmonitors.com

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- 1 Inhibited output during calibration prevents false system alarms
- 2 Non-intrusive, one-person calibration
- 3 Intrinsically safe: sensor and electronic modules can be changed or serviced under power
- 4 Faster speed of response ensures early, reliable detection and warning
- 5 Backlit display
- 6 Hinged door protects calibration
- 7 Low maintenance and installation costs

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