

FIXED GAS DETECTOR

BS-03

The BS-03 is an Infrared Sensor Technology based type gas detector with smart transmitter. The sensor is integrated to the transmitter having digital LCD-LED display. This detector uses high-performance infrared components and micro-control technology, combined with sophisticated SMD process manufacturing. It has good repeatability, temperature and humidity characteristics, as well as long service life and convenient operation.

The output signal of the detector is 4~20mA standard signal with optional **HART**.

Besides Infrared Sensor the BS-03 is also available with Plug in **SMART Sensors** for Point Infrared, VOC's, Toxic's, Oxygen and Catalytic Combustion. These sensors are replaceable type and can be replaced without any special tools.

FEATURES & BENEFITS

Infra-Red Sensor

Double beam infrared technology, dual compensated, Non-Dispersive IR (NDIR) with temperature compensation for excellent stability and minimal drift.

Output Choice

4-20mA
RS-485
HART over 4-20mA (Optional)

Digital Display

LED-LCD Display
No Backlight Required
Can be seen from Wide Distance

RESPCO
Responsive **D**etection



Optics

Dirty Optics warning with correct Operation upto 70-80% for NDIR Sensor.
Easy Cleaning of Mirror or Sensor Replacement

Other Features

Relay outputs for Alarm and Faults
Non-Intrusive Calibration
Intrinsically Safe HART Port (Optional)
Smart Sensor modules for Point IR, Toxics and VOC's

#wecandetect

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SPECIFICATIONS

Dimensions	210mm x 200mm x 105mm	
Weight	< 2 Kg Aluminium / < 6 Kg SS-316	
Enclosure Material	Cast Aluminium Alloy or SS-316	
Sensor Housing Material	SS-316	
Ingress Protection	IP-66	
Cable Entry	Two 1/2" NPT	
Power	18-30VDC < 8W (Sensor with Heated Optics) else < 3W	
Electrical Output	4-20mA Current Sink or Source RS-485 MODBUS RTU HART over 4-20mA Signal	
Display	Main Display: LED-LCD (Red) Indicators: Alarm 1, Alarm 2, Fault	
Relays	2 Configurable Relays (Optional 3 LOW, HIGH, FAULT) 5A@230VAC 5A@30VDC	
Intrinsically Safe HART Port	Optional	
Sampling Method	Natural Diffusion with Chimney Effect	
Working Temperature	-40°C to +70°C	
Working Humidity	0~95% RH (no dew)	
Accuracy	± 1% for 0-100% range (NDIR) ± 1% to ± 2% for 0-100% range (TOXICS) (DEPENDING ON GAS)	
Repeatability	± 2% FSD	
Warm-up Time	NDIR/Catalytic - 120 seconds Toxics - 60 seconds	
Zero Drift	± 2% FSD per year maximum	
Approvals	ATEX - Ex dB IIC T6 Gb PESO	
Testing	EN 60079-0: 2012 EN 60079-1: 2014 SIL2	EN 50270:2015 EN IEC 60079-0:2018, EN 60079-1:2014, EN 60079-29-1:2016, EN 60079-2:2015



SENSOR RANGES

TARGET GAS	RANGE	RESOLUTION	SENSOR TYPE	RESPONSE TIME
CH ₄	0~100% LEL	1% LEL	Catalytic Combustion/ Non-Dispersive IR	T ₉₀ < 30 Sec (Cat) T ₉₀ < 3 Sec (NDIR)
	0~5% VOL	0.01% VOL		
	0~100% VOL	1% VOL		
C ₂ H ₆	0~100% LEL	1% LEL		
H ₂	0~100% LEL	1% LEL	Catalytic Combustion	T ₉₀ < 15 Sec
	0~1000 ppm	1 ppm	Electrochemical	T ₉₀ < 10 Sec
CO ₂	0~5% VOL	0.01% VOL	Non-Dispersive IR	T ₉₀ < 3 Sec
	0~6000 ppm	1 ppm	Non-Dispersive IR	T ₉₀ < 3 Sec
C ₂ H ₁₀	0~100% LEL	1% LEL	Catalytic Combustion/ Non-Dispersive IR	T ₉₀ < 30 Sec (Cat) T ₉₀ < 3 Sec (NDIR)
CO	0~2000 ppm	1 ppm	Electrochemical	T ₉₀ < 10 Sec
	0~1000 ppm	1 ppm	Electrochemical	T ₉₀ < 10 Sec
	0~500 ppm	1 ppm	Electrochemical	T ₉₀ < 10 Sec
H ₂ S	0~100 ppm	1 ppm	Electrochemical	T ₉₀ < 10 Sec
	0~30 ppm	1 ppm	Electrochemical	T ₉₀ < 10 Sec
	0~20 ppm	1 ppm	Electrochemical	T ₉₀ < 10 Sec
O ₂	0~30% VOL	0.1% VOL	Electrochemical	T ₉₀ < 10 Sec
NH ₃	0~100 ppm	1 ppm	Electrochemical	T ₉₀ < 10 Sec
	0~1000 ppm	1 ppm	Electrochemical	T ₉₀ < 10 Sec
SO ₂	0~100 ppm	1 ppm	Electrochemical	T ₉₀ < 10 Sec
Cl ₂	0~20 ppm	0.1 ppm	Electrochemical	T ₉₀ < 10 Sec
VOC	0~1000 ppm	1 ppm	PID	T ₉₀ < 10 Sec
NO ₂	0~100 ppm	1 ppm	Electrochemical	T ₉₀ < 10 Sec
ETO	0~100 ppm	1 ppm	Electrochemical	T ₉₀ < 10 Sec
HCN	0~100 ppm	1 ppm	Electrochemical	T ₉₀ < 10 Sec

Other Sensor Ranges are available on Request

The NDIR Sensor is configurable for C1-C12 Hydrocarbons

RESPO
Responsive Detection



HART
COMMUNICATION PROTOCOL



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