

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 **Detection**



HART
COMMUNICATION PROTOCOL



Optics

Heated Optics NDIR Sensor
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

✉ Info@respoproducts.com

D-595, Kamla Nagar, Agra - 282 004 IN

Factory Address : A-29, EPIP, UPSIDA Industrial Area, Shastripuram, Sikandra, Agra 282 007

Toll Free : 1800 180 73776 | **T :** +91 562 2881590

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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 dews)
Accuracy	± 1% for 0-100% range (NDIR) ± 1% to ± 2% for 0-100% range (TOXICS) (DEPENDENT 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

The NDIR Sensor is configurable for C1-C12 Hydrocarbons

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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	Catalytic Combustion	T ₉₀ < 15 Sec
H ₂	0~100% LEL	1% LEL		
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

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