

SYNERGY
TECHNOLOGIES

TX-100Exd-IR

Hydro Carbon / Carbon Dioxide / Nitrous Oxide
SMART GAS TRANSMITTER WITH OR WITHOUT DISPLAY



Features

- Requires only a DC power supply test gas to enable full sensor evaluation.
- High resolution 12 bit A-D converter
- PC software provides data logging facility
- Pushbutton operation and onboard LCD for simple set-up and calibration
- 4-20mA analog output, 10 bit, with current limit and polarity protection
- Data collection mode and RS232 data output facility remote monitoring and data logging
- Polarity protected input single 12-30V DC, 70mA DC supply
- Enclosure IP 65, Exd IIA & IIB

Synergy TX-100 Exd - IR uses Gold Series range of infrared sensors. Requiring only a DC power supply and embedded software necessary to drive the sensor to extract the signals and convert them into a linearised analog output proportional to gas concentration.

DESCRIPTION OF OPERATION

The circuitry provides a regulated, 4Hz. square-wave drive to the sensor's lamp. The resulting signals from the sensor's Detector and Reference outputs are amplified to a suitable level and processed by the A/D converter. Using the program appropriate to the type of sensor selected by the user, the microcontroller uses the signals from the sensor to provide a linearised drive to the analog output circuit.

There are 4 pushbuttons and a 4 digit display on TX-100 Exd-IR detector. These enable the user to select from the following options. :

Sensor type select i.e. Carbon Dioxide, Methane etc.

• Sensor zero mode • Sensor span mode • Analog Output zero model • Analog Output span mode • Run mode : Display indicates gas concentration level • Data observation mode : Display cycles between Detector, Reference and Temperature readings • Refer to the operating manual supplied with the module for further details.

PREMIER HYDROCARBON SENSORS			SPECIFICATION	
GAS TYPE	SENSOR RANGE	COMMENTS		
METHANE	0 – 5% volume	Fully characterised for methane. Linear factor available for toluene (0 – 1.1% vol.) and acetic acid (0 – 4% vol.) no span temperature compensation	Operating Voltage Range:	12 to 30V DC
METHANE	0 – 100% volume	Fully characterised for methane	Operating Current:	Constant current operation, current range 75 – 85mA
PROPANE	0 – 2% volume	Fully characterised for propane. Linear factor available for isopropanol (0–2% vol.) and methanol (0–5.5% vol.) no span temperature compensation	Methane measuring range:	0 – 5% volume up to 0 – 100% volume for other ranges chart below
PROPANE	0 – 100% volume	Fully characterised for propane	Hydrocarbon measuring range	0 – 100% LEL equivalent
PROPYLENE	0 – 2% volume	Fully characterised for propylene	Resolution:	1% of measuring range for readings above 50% of range, 0.5% of measuring range for readings below 50% of range
BUTANE	0 – 2% volume	Fully characterised for butane	Warm up time:	To final zero ± 2% FSD : 1 minute @20°C (68°F) ambient
PENTANE	0 – 2% volume	Fully characterised for pentane	Response Time T90:	<30s @20°C (68°F) ambient
HEXANE	0 – 1% volume	Sensor output linearised for hexane, no span temperature compensation	Zero Repeatability:	± 1% FSD @20°C (68°F) ambient
ETHYLENE	0 – 3% volume	Sensor output linearised for ethylene, no span temperature compensation	Span Repeatability:	± 2% FSD @20°C (68°F) ambient
ETHANE	0 – 3% volume	Fully characterised for ethane	Long term zero drift:	± 1% FSD per month @20°C (68°F) ambient, (max ± 3% FSD per year)
ETHYLENE OXIDE	0 – 3% volume	Fully characterised for ethylene oxide	Operating temperature range:	-20°C to +50°C (-4°F to 122°F)
ETHANOL	0 – 5% volume	Sensor output linearised for ethanol, no span temperature compensation	Temperature performance:	± 10% of reading up to 50% FSD, ± 15% of reading from 50% to 100% FSD, or 2% FSD whichever is greater over the range -20°C to +50°C (-4°F to 122°F)
METHYL BROMIDE	0 – 25,000 ppm	Sensor output linearised for methyl bromide, no span temperature compensation	Storage temperature range:	-20°C to +50°C (-4°F to 122°F)
CARBON DIOXIDE	0 – 1000 ppm	20 ppm from 0 to 500 ppm, then 40 ppm up to FSD	Humidity range:	0 to 95% RH non-condensing.
N2O	0 – 1000 ppm upto 0 to 1%	± 40 ppm from 0 to 100 ppm FSD ± 100 ppm from 0 to 1% FSD	Digital signal format:	8 data bits, 1 stop bit, no parity. 2.8V logic level
			Standard baud rates:	38,400, 19,200, 9600
			User configurable parameters:	Zero output voltage FSD output voltage Positive or negative going output Sensor 'zero' function Sensor 'span' function
			MTBF:	> 5 years
			Weight :	1.5 kg (opp.)