

RED LINE PRIME – XDI-F1

CARBON DIOXIDE INFRA RED GAS SENSOR

- UKEX / ATEX / IECEx explosion proof
- CANbus/ 4~20mA output
- Addressable or standalone
- 3 alarm points
- Robust and weatherproof
- Automatic diagnostic system surveillance and fault monitoring
- Optional 2 alarm relays plus fault relay or 3 alarm relays
- Data logging
- Hyperterminal communications RS232



The Red Line Prime sensor uses proven non-dispersive single beam dual-wave length infrared principles to detect and monitor the presence of gases. This non-poisoning sensing technique relies on the target gas having a unique well-defined absorption signature. This is used to identify the presence of the target gas and is highly specific. Using a suitable infrared source, an analysis of the optical absorption through the gas allows the concentration of the target gas to be determined. All sensor driving is internal to the transmitter and full fault monitoring of the sensor and transmitter is continuous.

General Data

This information relates to the device operating continuously. The device may be calibrated for other gases.

Carbon Dioxide Sensor

Operation – continuous diffusion NDIR (dual wave-length)

Measuring Ranges	Prime 2	0~2000 ppm
		0~5000 ppm
		0~2% volume
		0~5% volume
		0~10% volume
	Prime 3	0~100% volume

Accuracy ± 5% F.S.D

Warm up time to zero < 30 seconds

Response time to target gas T90 < 35 seconds

Long term zero drift ± 5% F.S.D

The 4~20mA output provides a fault indication by reducing the output to below 2mA, with the recovery from fault condition being automatic.

ELECTRICAL DATA

Input voltage – 3 wire device

18 to 35V DC – 24v DC nominal
(polarity protected)

Output

4~20mA (link selectable as sink or source)

Maximum current consumption

130mA

Maximum loop resistance in source mode

250R

Resolution

0.15% of span

Output resolution

0.02mA

Maximum offset drift

± 20uA

Over-range output

21.3mA (typical)

Fail signal

4~20mA reduced to 2mA

Fail indicator

Open collector output to 0V

Relays – Optional

Low / high / fault alarms S.P.C.O. 0.5A @30v DC

Logging

Intervals – variable time

Rollover/stop

Storage – 2880 readings

ENVIRONMENTAL DATA

IP64 + water shield IP65
with hydrophobic screen IP66

Operating Conditions

5 to 95% RH non-condensing

Temperature

–15 ~ +55°C – safe area use

for hazardous area use see temperature ranges on C1227

(Ex certification summary)

Storage Conditions

0 ~ 99% RH non-condensing

–20 ~ +60°C

MECHANICAL DATA

Certification

Explosion Proof UKEX, ATEX, IECEx

II 2GD

Ex db IIC T6...T4 Gb

Ex tb IIIC T85°C...T135°C Db

Replaceable plug in sensor

In-situ

Sensor accessory mounting thread

33mm Ø 1.25 pitch – 6 full threads

Enclosure – Type XDI

Aluminium alloy – optional stainless steel

Gas Sensor – Type F1

Stainless steel – 316 S16

Weight

3.95Kg

Cable Entry

One – 20 mm 1.5 pitch

Options 25 mm – 3/4 NPT

Mounting Detail

Two M5 (126 mm CRS)

Approximate dimensions-terminal enclosure

126 mm dia. 83 mm deep

Accessories:

1. Collector Cone + universal fitting
2. Universal Fitting
(Test Gas Applicator Spray Deflector)
3. Flow Block – nylatron
3. Flow Block – stainless steel
4. Water Shield – stainless steel
- Duct Mount Kit
- Detector head Weather Shield
- F1 sensor Thermal Jacket

