

# WatchGas Red Line Prime – XDIwin-F1 CARBON DIOXIDE GAS SENSOR

Specification Sheet ref C1622

- ATEX/IECEX explosion proof
- CANbus/ 4~20mA output
- Addressable or standalone
- 3 alarm points
- Robust and weatherproof
- Automatic diagnostic system surveillance and fault monitoring
- 2 alarm relays plus fault relay or 3 alarm relays
- Data logging
- Hyperterminal communications RS232
- Adjustments - non intrusive magnets
- Backlit alpha numeric full status display



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.

## 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.

# WatchGas Red Line Prime – XDIwin-F1

## CARBON DIOXIDE GAS SENSOR

### ELECTRICAL DATA

**Input voltage – 3 wire device**

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

**Output**

4~20mA (selectable as sink or source)

**Fail signal**

4~20mA reduced to 2mA

**Maximum current consumption**

130mA

**Maximum loop resistance in source mode**

250R

**Resolution**

0.15% of span

**Output resolution**

0.02mA

**Maximum offset drift**

± 20uA

**Relays**

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

**Logging**

Intervals - variable time

Rollover/stop

Storage - 2880 readings

**Display**

2 line alpha numeric backlit status display - gas type,  
concentration units, alarm levels, alarm status low/high/  
overrange, inhibit, sensor ID.

### 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 ATEX-IECEx

II 2G Ex db IIC T6...T4 Gb

II 2D 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 – ¾ NPT

**Mounting Detail**

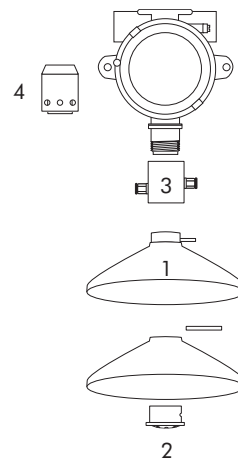
Two M5 (126 mm CRS)

**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



This document is not contractual and the equipment specification may be modified at any time without prior notice.