

XDI-XDIwin – 15/30J

TOXIC/OXYGEN SENSOR



General Data Sheet: 204D1C Issue Tv3

Technical Sheet
ref C894

Power Supply

15 to 30vDC 24v nominal

Outputs

2 wire 4~20mA output only

3 wire 4~20mA output +

4 wire CANbus

Relays Low alarm SPCO
High alarm SPCO 0-5A @ 30v DC
Fault alarm SPCO

Inhibit option during servicing

Logging Intervals - variable time
Roll over/stop
Storage - 2,880 readings

Requires RS232 lead
PC or laptop (dedicated)
Hyperterminal (download from GDS website)

Set up procedure:

Direct 4~20mA 2/3 wire (no processor)

New sensors are supplied ready to connect to a system with all jumpers inserted. This procedure shows how to recalibrate as part of routine maintenance or cell replacement.

The first part is to set up the 4-20mA section which is produced by the CELL circuit. Note some cells take time to stabilise. If used as 2 or 3 wire then only steps 1 to 5 are required.

1. Connect the cell to terminal J2 and use +24V, 0V and 4~20mA connections on terminal J10 for 3 wire (or +24V and 4~20mA for 2 wire - see note)
2. Measure voltage across test pins AG to Vo and adjust reading to zero mV using offset potentiometer
3. Measure the output current mV=mA at test pins TP1/TP2 and adjust reading to 4mV using 4mA pot
4. Apply span gas to cell and adjust 20mA pot to give correct mV reading at test pins TP1/TP2. NOTE: at 50% span gas, the mV reading at TP1/TP2 should be 12mV and the voltage across test pins AG and Vo should not exceed 1 volt so that 100% of range is achievable.
5. Remove the span gas and re-adjust 4mA pot to 4mV if required.

Command

A = Set CAN address

G = Select gas type

Z = Zero

S = Span

D = Enter calibration date

Y = Toggle auto zero

H = Set high alarm

L = Set low alarm

O = Set over range alarm

P = List command

X = Exit calibration mode

\$ = Initialise this sensor

Use

Sets the CAN address

Select the gas type from a list

Press when no gas on sensor to give zero

Use when calibration gas applied,
H and L change reading

Enter the calibration date

Auto zero is ON or OFF, small drift is cleared

Sets the high alarm threshold

Sets the low alarm threshold

Sets the over range alarm threshold

List these commands on screen

Exit this PC mode

Use on new PCB to set gas type to Flam

4 wire CANbus / 3 wire 4~20mA with processor communication

6. With power applied ensure that MPU led is flashing and the CAN led is on or flashing.
 7. Connect RS232 pod to J3 connector and to a PC running HyperTerminal at 4800 baud. Ensure jumper J29 is fitted before programming.
 8. The terminal output screen shows continuous data output/commands and allows input from the PC keyboard. Pressing 'C' enters calibration mode
 - a. Press 'SHIFT \$' to initialise the sensor and reset to default "Flam 100% LEL" setting.
 - b. Then press 'G' to change the gas type to match the cell being used.
- NOTE:** the range of the new gas has a default value but can be changed by pressing 'R'.
- c. Press 'A' to change the address of this sensor if required
 - d. Press 'N' to select the number of decimal places to 1 or 2, (ie: dp=1 or dp=2)
 - e. With no gas applied and 4mV measured at test pins TP8/TP9 press 'Z' to zero the gas reading/see note.
 - f. Then apply span gas and press 'S' to enter span mode, obtain correct mV reading for test gas used by adjusting 20mA pot. The displayed reading can be made HIGHER by pressing 'H' or lower by pressing 'L'
 - g. Pressing 'SPACE BAR' will exit the span mode
 - h. Press 'V' to view log of sensor readings if required
 - i. Pressing 'X' will exit the calibration mode.

Note: Oxygen cells only use the P+ and Y terminals J2. To adjust for "zero" it is normal practice to disconnect 1 wire from the cell and adjust the 4mA pot for a 4mV reading across test pins TP8/TP9 FOR 3 wire sensors, or for 2 wire sensors use TP1/TP2. When the cell is reconnected in air at 20.8% oxygen the span can be adjusted for 17.3mV reading across the same test pins using 20mA pot.

If an LCD option is fitted then calibration and other settings using magnets instead of a PC can be achieved - see over.

U = Alarm direction

R = Range

N = Decimal points

E = Edit user gas text

B = Toggle deadband

F = Toggle fault Input

= Normally energised

V = View gas log

C = Clear gas log

I = Log interval

Sets rising or falling alarms

Allows a change in maximum value

Toggles between 1 and 2 decimal places

Choose gas description

Deadband of 2.5% can be on or off

External fault input contact can be disabled

Low /high alarm relays and fault relay can be made normally energised

From current log, display how many historical readings to display, up to 2880

Set all 2880 log readings to 0.00

Choose how many seconds between each log reading and whether the log will roll over or stop at 2880 (60 second interval and 2880 readings = 48 hours)

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