

A dual sensor unit supporting separate analogue 4~20mA and millivolt signal inputs, sensor operation is continuous with alternating displayed gas readings at five second intervals. Function selection and adjustment is accessible via the front membrane panel or laptop connection to J11 USB port.

## Installation

**CONTROL UNIT:** The control unit should be mounted in a position which is accessible and in the field of vision. Mains should be from a fused supply.

**SENSORS:** The positioning of sensors depends upon the type of gas to be monitored and its density with respect to air. See G973

**Heavy Gases** (Propane, Butane) – locate at 15 to 20 cm from floor level.

**Lighter Gases** (Methane, Natural Gas, Ammonia, Hydrogen) – locate at 5 to 10cm from the ceiling.

**Carbon Monoxide** Locate at 1.5 metres above floor level.

All equipment should be mounted away from direct heat and in accordance with its IP rating.

### REFERENCE DOCUMENTS:

C1144 Equipment Installation Guidelines

C1770 Wiring & Terminations for Sensors and Panels

G973 Gas Sensor Locations

C1548 Aspirated Sensor

On power up the unit will be inhibited for a 120 second warm up period displayed as a countdown on the display (this may be overridden by pressing 1), a two sensor unit display readout will alternate at 5 second intervals, each reading may be held or released by pressing 1. To access the main menu press 2 followed by the entry code 231, pressing 1 or 3 will allow travel through the menu and adjustment of settings, pressing 2 enables access into the selected menu field and on completion pressing 2 will confirm your selection.

## Main Menu

- 1 Exit
- 2 CH1 set up (sub menu) press 2 for access
- 3 CH2 set up (sub menu) press 2 for access
- 4 Delay to alarm. 0~255s  
Default setting – 0 seconds
- 5 Latched/unlatched alarms (relay 1&2 cannot be reset when in alarm)  
Default setting – latched
- 6 Exit
- 7 Normally energised/de-energised relays.  
Default settings – de-energised
- 8 LED/relay test
- 9 Factory default settings – restore
- 10 Exit
- 11 Set 4 and 20mA output – calibrate
- 12 Relay 3 operating mode options – duplicate relay 1, 2, 4 or resettable global alarm relay, channel 1/2 relay 1, 2, 3
- 13 Relay 4 operating mode options – fault or resettable global alarm relay, channel 1/2 relay 1, 2, 3
- 14 Relay off delay. 0~255s  
Default setting – 0 seconds
- 15 Exit
- 16 X input – external input to Ov, select text.  
Default setting – flow fail
- 17 Select 4~20mA signal output to follow CH1/CH2 or highest reading.  
Default setting – highest
- 18 Select open collector output – Inhibit indicator or resettable global switch.  
Default setting – inhibit
- 19 User backup (settings)
- 20 Exit
- 20 Screen colour – Green/Blue

## Sub Menu

- 1 Exit
- 2 Enable/disable channel
- 3 Chanel inhibit – auto timeout – 60 minutes
- 4 Zerospan the channel
- 5 CANbus channel address set (Combi)
- 6 Gas range select
- 7 Exit
- 8 Gas type selection
- 9 Alarm level set (A<sub>1</sub>, A<sub>2</sub>, A<sub>3</sub>)
- 10 Display gas reading, decimal point setting
- 11 Dead band setting – off, display only, full signal.  
Default setting – off
- 12 CH2 input only (select mA fault trip level)  
Default setting – 2.5 mA

The 102 may have been supplied without configured sensors (no sensors enabled), in this case the following adjustments should be carried out.

### Channel 1 mV signal sensor (main menu 2)

Sensor supply may be measured between the two sensor voltage test pins SV and TP10, adjust as required using the sensor supply adjustment potentiometer SV, see sensor cell supply table.

The initial sensor zero adjustment is achieved by turning the zero potentiometer RV4 until D9 zero LED just turns green. Test gas should be applied to the sensor and a coarse adjustment made using the gain calibration potentiometer RV3.

### Channel 2 4~20mA signal sensor (main menu 3)

See sensor transmitters Tox/O<sub>2</sub> C1882 Flam C1883

Ensure the sensor is in clean air, measure across test pins TP1/TP2 for a reading of 4mV = 4mA.

*From this point on all further /future fine adjustments and settings may be made through the menus.*

## SPECIFICATION

### Sensor Inputs

(CH1) Bridge type direct 3 wire detector mV signal  
(Catalytic, IR, PID, Semiconductor, E stop)  
(CH2) 4~20mA analogue transmitter signal – source  
(Catalytic, Electrochemical, IR, PID, Semiconductor, E stop)

Supply Volts	Internal Sensor	Remote Sensor	Aspirated Sensor
24vDC	CH1 + CH2	CH1 + CH2	CH1 (+ CH2 remote)
Mains	CH1	CH1 + CH2	-
Mains double box	CH1 + CH2	CH1 + CH2	CH1 or CH2 (+ CH remote)

### Mains Version

100~240v AC 50/60 Hz

**DC Version** 24v nominal 18-30v DC

**Power** 4w

### Outputs – see menu options

Alarms 1, 2, 3, Fault relays – S.P.C.O.  
Relay contacts rated 3A/230v AC  
CANbus – see Combi alarm system  
4~20mA analogue output sink/source  
Internal mains power supply 24vDC @1.2A,  
500mA available to end user  
Y output 100mA o/c, resettable

### Logging

Intervals – Variable time,  
Rollover / stop  
Storage – 2,880 readings  
Access – laptop USB (J11) [GDS website terminal download](#)

### Display Indication

Power Green/Blue  
Alarms 1, 2, 3 Red  
Fault Amber  
Display 2 line alphanumeric

### Audible Alarm

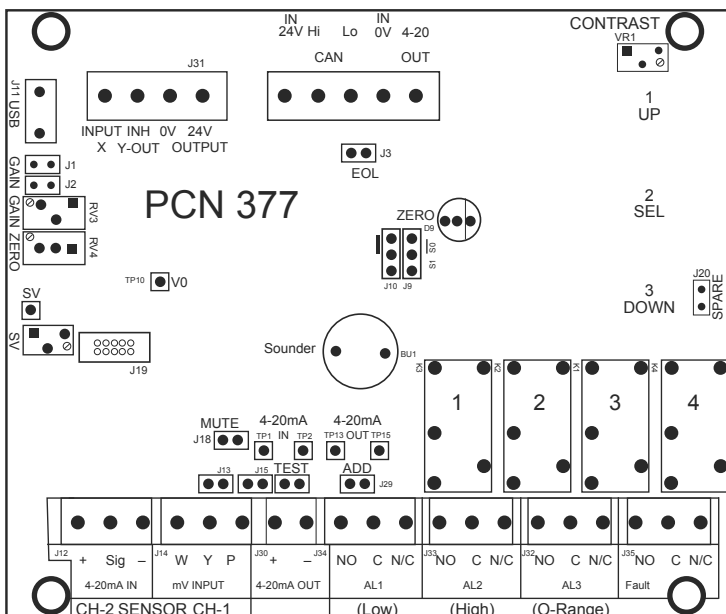
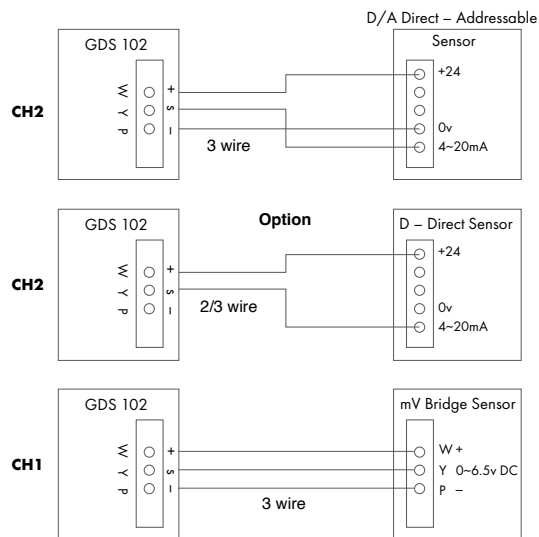
Gas/Fault mutable: 85dB@10cm

### Environmental

Operating temperature: -15 to +50°C  
Storage temperature: -5 to +55°C  
Humidity: 5–95% RH non condensing  
Protection: IP64, IP66 over housing option

### Sensor Cable

3 core standard, 2 core option for electrochemical transmitters  
1mm<sup>2</sup> screened – 500m



### Sensor Cell Supply Table

CAT300A	2v/300mA	SEM-2	4v/170mA
CAT165	2.5v/175mA	PID	6.5v
F6-170	2.5v/175mA	GDS PRIME	4v/70mA
SEM-1	5v/170mA	CAT100	2v/100mA

### Options

J3 CANbus – EOL – see Combi  
J13/15 For Semiconductor sensors  
J9/10 Sink/Source 4~20mA output  
J1/2 Gain – factory set  
J18 Sounder mute jumper  
J19 HyperTerminal setup 4800 baud  
J29 Address change enable – see Combi

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

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