

GAS 101 – Single Point Gas Alarm

Operation

A fixed single point alarm unit that meets the requirements for continuous economic and reliable monitoring of gas levels in a wide range of environments from commercial premises through to heavy industrial applications that may require hazardous area sensing. The GDS101 may be utilised as a standalone unit or as an addressable sensor forming part of the GDS Combi CANbus addressable network system and therefore offering the features of our most advanced system.

Typical monitor locations are – public buildings, boiler plant rooms, swimming pools, water treatment works, H&V control systems, manufacturing and process plants.

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.

HEAVY GASES (LPG, Propane, Butane, Refrigerant Gases) – locate at 15 to 20 cm from the floor.

LIGHTER GASES (Methane, Natural Gas, Town Gas) – 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.

Initial Set-up Procedure

Having terminated all cables switch on the power and wait for the 1 minute stabilisation period to complete, this is indicated by the power and inhibit indicator changing from flashing to a steady state, a reduced power mode feature is activated one hour following any operator activity, this state is indicated by a screen power reduction of approximately 50%, pressing any button will return the screen to full display.

The alarm panel may have been supplied without a sensor and a customer supplied device is to be used, in this case the following adjustments should be carried out. Adjust jumpers as follows:

For 24DC (+ sig -) 4~20mA sensor devices connect jumpers J5/11 Position A, J12 Off, J14 link B.

For catalytic sensors (W Y P) J5/11 Position B, J12 On, J14 Link A.

(Caution reset link J14 to position A before connecting the sensor as damage will occur requiring sensor replacement).

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

Test pins TP6/TP7 may be used to check 4~20mA sensor input signals 4mV = 4mA.

Measuring across TP8/TP9 will allow the 4~20mA output signal to be checked 4mV = 4mA. Output for pellistor (flammable) can be adjusted using 4+20mA pots.

Changes to gas type and range can be made by connecting GDS RS232 pod to J3 and using a PC running hyper terminal at 4800 baud.

The hyper terminal output screen shows continuous data output/ commands and allows input from the PC keyboard pressing 'C' enters calibration mode, 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 adjusted by pressing 'R'.

For catalytic sensors course zero adjustment is achieved by turning the zero potentiometer (10 turn) until the zero LED just turns off.

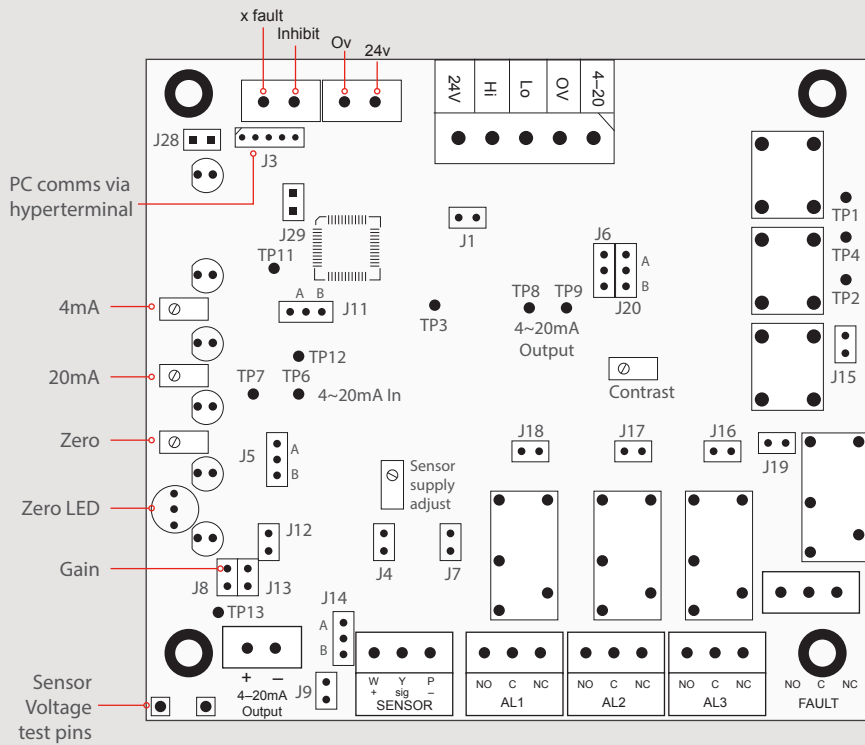
Access to the Menu

The GDS101 is supplied with factory set default settings which may be re-adjusted from the front screen and push buttons:

Press 2 to access the menu followed by 231, menu entry will be at level 5 (Exit), pressing 1 or 3 will enable travel through the sub menus 1–9 and adjustment of settings, pressing 2 enables access into each sub menu and on completion pressing 2 will confirm your selection and move to the next setting.

1. Zero/Span – In clean air Zero display – apply test gas at the peak reading and adjust the span.
2. Alarm Levels – 3 alarm levels. Pressing 1+3 together will cycle through rising and falling alarms and latched (L) or unlatched (U) (auto reset) relays in following order (↑) L, (↑) U, (↓) U, (↓) L. Default setting latched.
3. Alarm Delay – Time to alarm in seconds (default setting 2 seconds) maximum 255 seconds.
4. Inhibit Alarm – Isolate alarm functions – maintenance and test periods. Second part of this menu allows YES/NO selection of sounder alert for alarm A1.
5. Exit Press 2 – Entry and Exit point of menu.
6. L.C.D Brightness – Adjustment of display brightness.
7. L.E.D/Relay Test – Turns indicators and relays ON.
8. Auto Zero – Use only when very low alarm levels are required (<10% of scale).
9. Sensor Address – Used when connecting to a GDS Combi system.
- A. 4~20mA output adjust (Tox/O₂ only). Pressing 1 or 3 will allow for output to be adjusted to 4mA and 20mA as measured on test pins 8+9.
- B. To set A1 alarm relay to become a global sounder relay with a 10min time delay after alarm condition ends. Press 1 to active or press 3 to deactivate.
- C. To delay relay deactivation after alarm condition has ceased, press 2 to cycle through alarms A1,A2 and A3. when the required alarm is displayed press 1 to increase the delay and 3 to decrease the delay.





- J1 CANbus – EOL – see Combi
- J4/7 For Semiconductor sensors
- J5/11 Sensor (B–catalytic A–4~20mA)
- J6/20 Sink/Source 4~20mA output
- J8 Gain – factory set
- J9 Normally fitted 4~20mA out
- J12 Bridge fault enable fit for catalytic sensor
- J13 See J8
- J14 Sensor supply selector
 - A for catalytic sensor
 - B for 4~20mA sensor
- J15 Sounder mute
- J16 N/E – A3 relay link on
- J17 N/E – A2 relay link on
- J18 N/E – A1 relay link on
- J19 N/E – fault relay link on
- J28 Reset processor
- J29 Address change enable – see Combi

SPECIFICATION

Mains Version

230/115v AC 50/60 Hz

DC Version 24v DC ± 15%

Power 4w

Outputs

Alarms 1, 2, 3 relays – S.P.C.O. ND (NE option)
 Fault Relay – S.P.C.O. ND (NE option)
 normally latched (unlatched option)
 Relay contacts rated 3A/230v AC
 CANbus – see Combi alarm system
 4~20mA analogue output

Sensor Cell Supply Table

CAT300A	2v/300mA		CAT335C	2.5v/335mA
CAT170A	2v/175mA		THE300A	2v/300mA
SEM-1	5v/170mA		SS10	2v/175mA
SEM-1	4v/170mA	Ammonia	CAT335A	2.5v/335mA
GDS PRIME	4v/70mA		CAT335B	2.5v/335mA
F6-170	2v/175mA		CAT100A	2v/100mA

Indicators

Power Green L.E.D
 Alarms 1, 2, 3 Red L.E.D's
 Fault Amber L.E.D
 Display 2 line alpha-numeric

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 IP65

Sensor Cable

3 core 1.5mm screened → 1.5km

