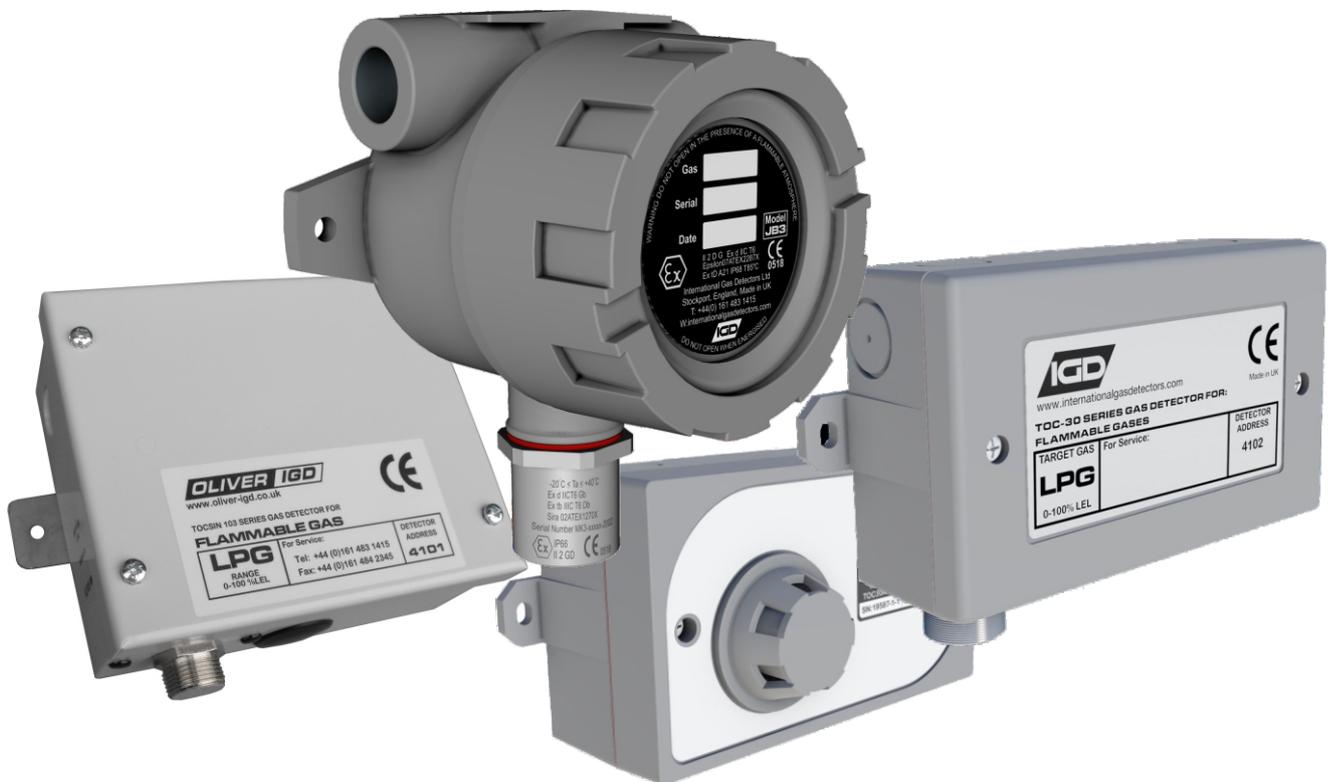


TOCSIN 102, 103 & TOC-30 SERIES PELLISTOR OPERATION MANUAL

REFERS TO MODELS 5131401ATEX, 5137001, TOC-30A-PHC and TOC-31A-PHC



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ANALOGUE OR ADDRESSABLE PELLISTOR FLAMMABLE GAS DETECTOR

The Tocsin 102 and 103 series Pellistors are flammable gas detectors based on well proven catalytic principles. The units can be used either as conventional 3 wire 4-20mA transmitters or as 4 wire addressable modules capable of integration onto an IGD data highway. Either option allows integration with Tocsin 625, 700 and 920 series control panels.

Pellistors are capable of detecting all flammable gases but are usually made sensitive to the particular target gas during calibration. It is therefore important that detectors are correctly installed and calibrated for correct operation.

Siting of the detector should also be carefully considered to take into account air flows, site geometry and the characteristics of the target gas. This instruction manual is intended for use by competent persons who can either demonstrate previous experience and training with gas detection systems or have completed training courses at Oliver IGD Limited. Performance of the system will be a function of how well the system is installed and calibrated.

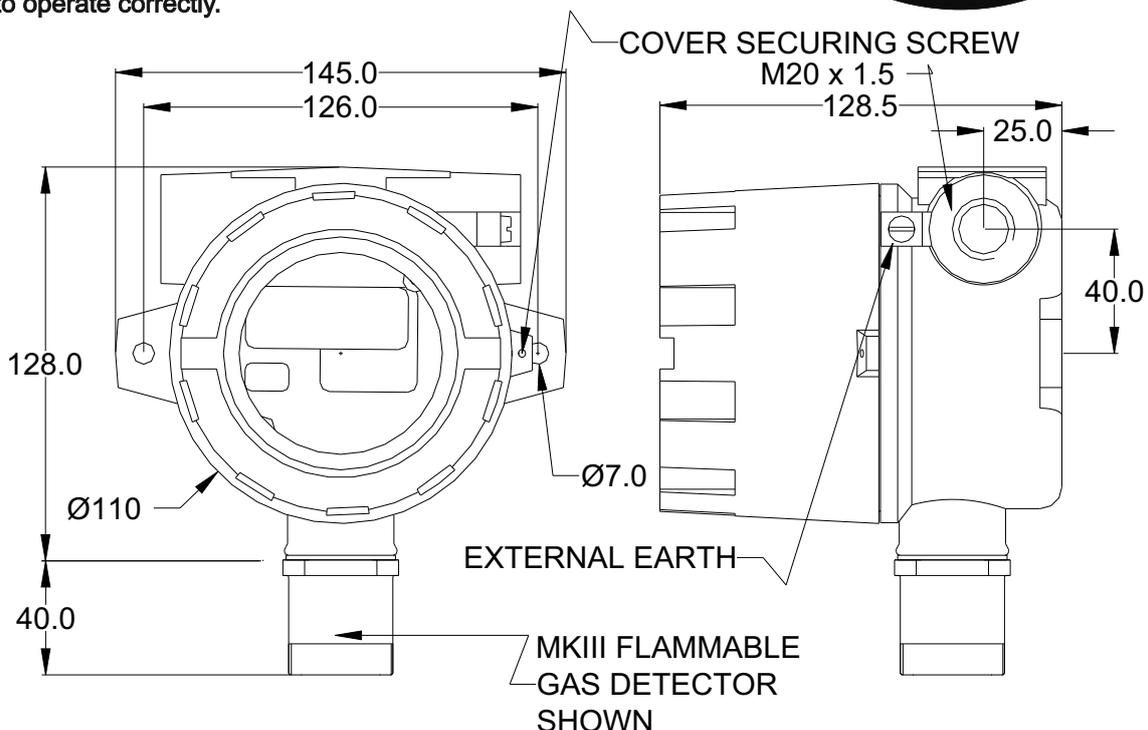
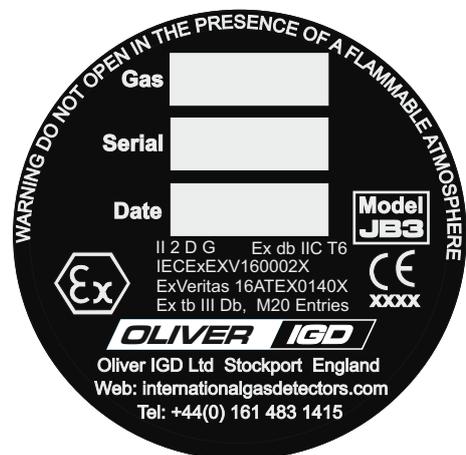
Oliver IGD Limited can help advise on the correct siting and calibration of gas detectors.

ATEX CERTIFIED MODELS

Mounting And Cable Information

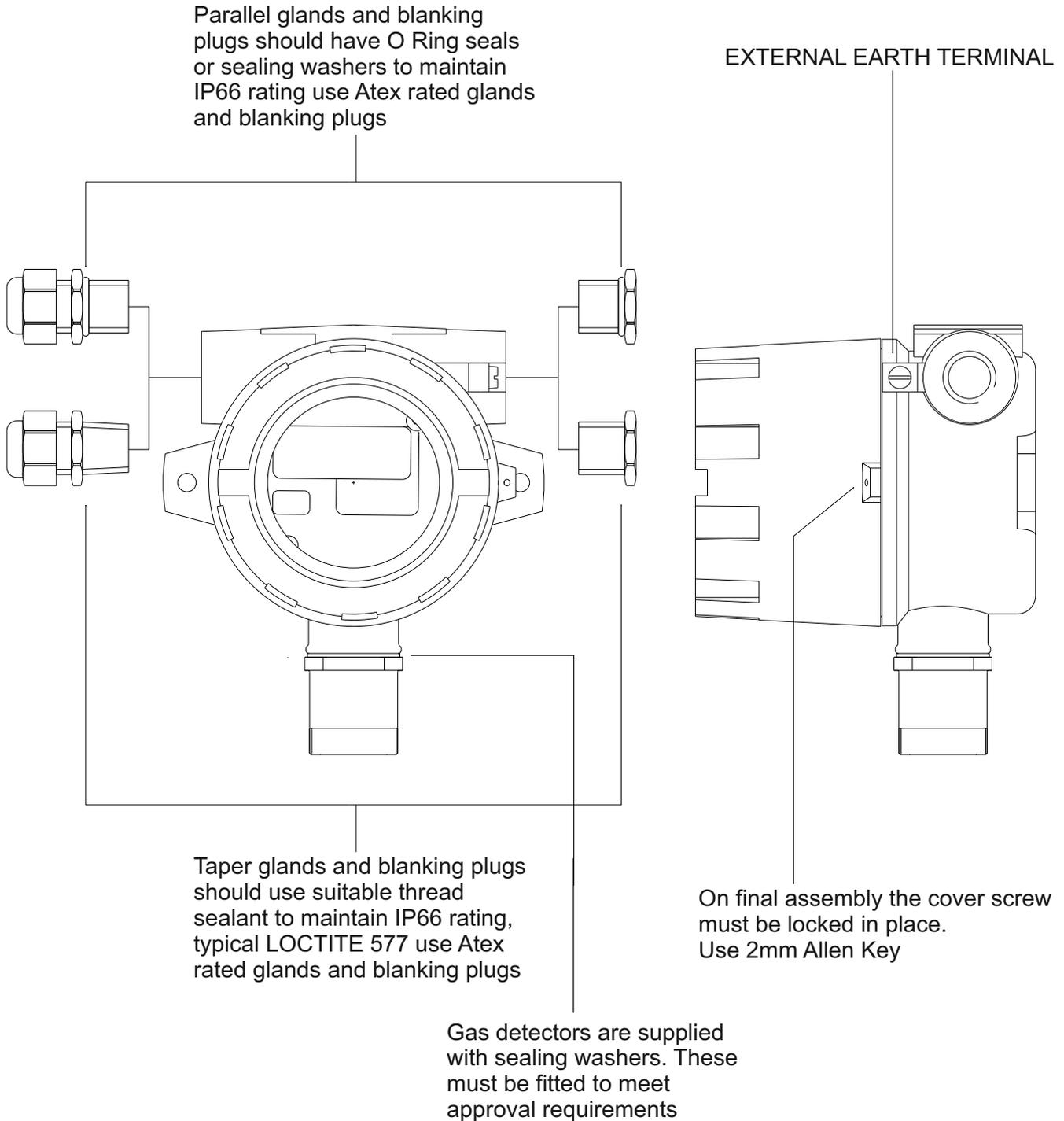
The following information is provided to enable safe installation and operation of the Tocsin 102 Pellistor.

It is vitally important for correct and safe operation that appropriate cable types and sizes are used and all earth bonding points observed. It is also important to observe all instructions for entry terminations. Failure to follow these instructions may result in a system which may be dangerous or fail to operate correctly.



CUSTOMER SEALING AND EARTHING RESPONSIBILITIES

The Tocsin 102 Pellistor model 5131401ATEX is designed for use in Zone 1 and Zone 2 hazardous areas and is ATEX certified. To maintain compliance it is imperative the installer of the equipment observes the following installation guidelines. Failure to do so could compromise the protection concept of the equipment.



EXTERNAL EARTH	STRANDED CABLE USE	4.0mmSQ CSA	SOLID CORE CABLE USE	6.0mmSQ CSA
INTERNAL EARTH	STRANDED CABLE USE	1.5mmSQ CSA	SOLID CORE CABLE USE	2.5mmSQ CSA

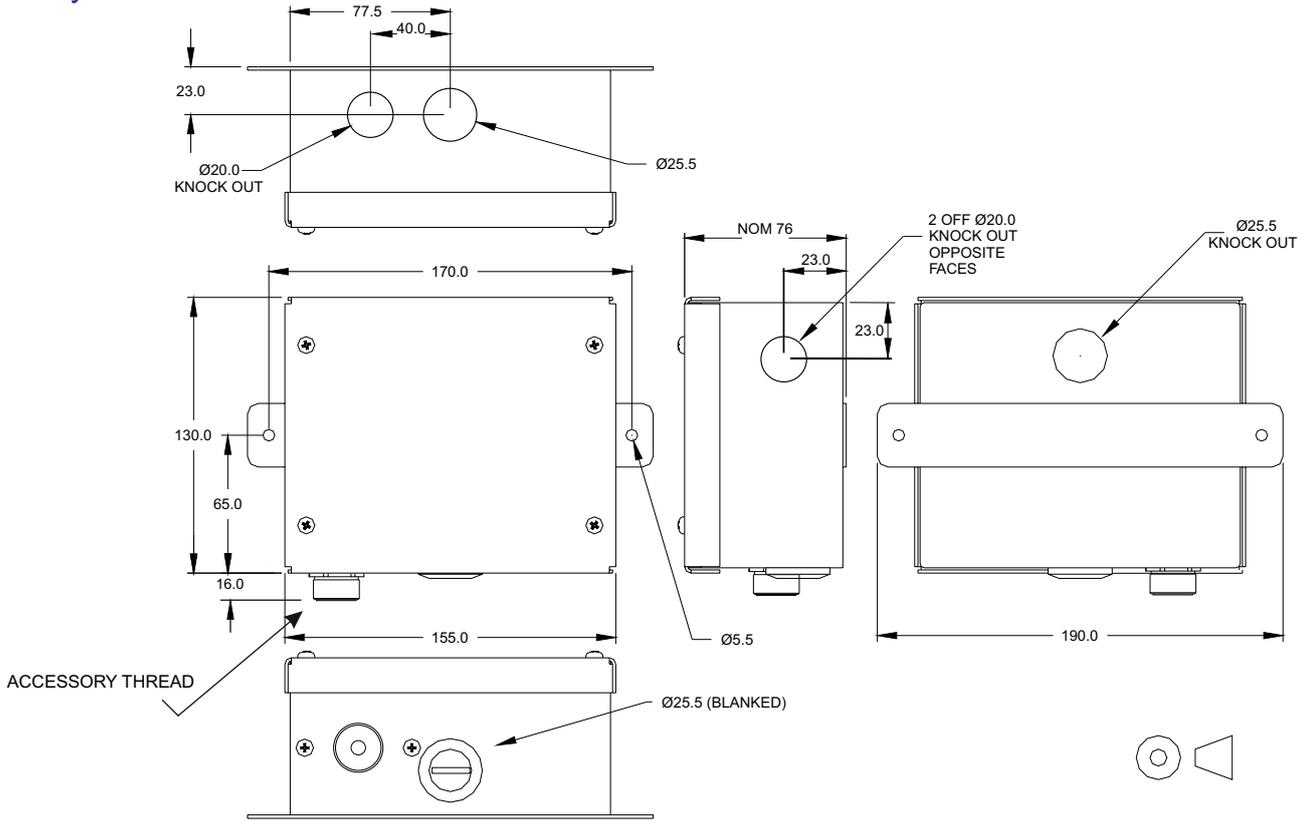
WARNING

Glands and cable must be of a suitable type to match the zone of application of the equipment

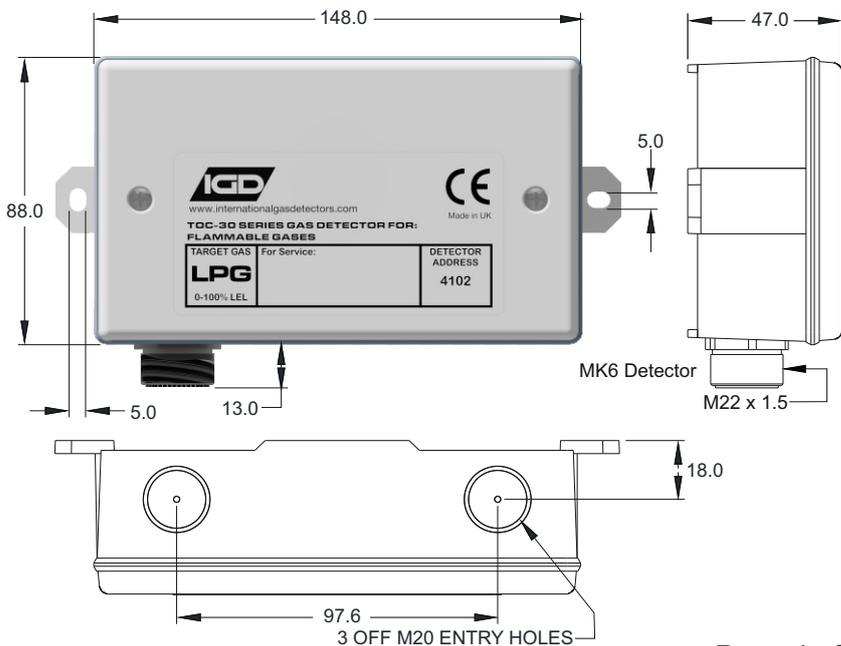
Non ATEX versions with MK6 detectors, Mounting Details

The non-ATEX version, 103 series flammable gas detector is typically fitted in areas that do not require a flameproof gas detector approval. Typical applications would be boiler rooms, school laboratories, commercial kitchens etc. Cabling should have a suitable level of protection for the area into which the detector is fitted and be of a screened type such as CY style cable or FP200 style cable. Cable glands should provide a positive seal to limit ingress from dust and moisture.

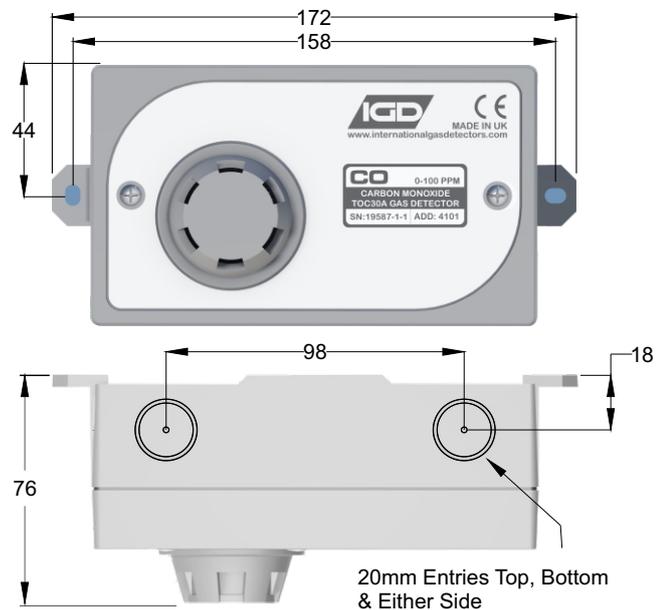
Physical Size TOCSIN 103 Version



Physical Size TOC-31A Version



Physical Size TOC-31A Version



TOCSIN 106P

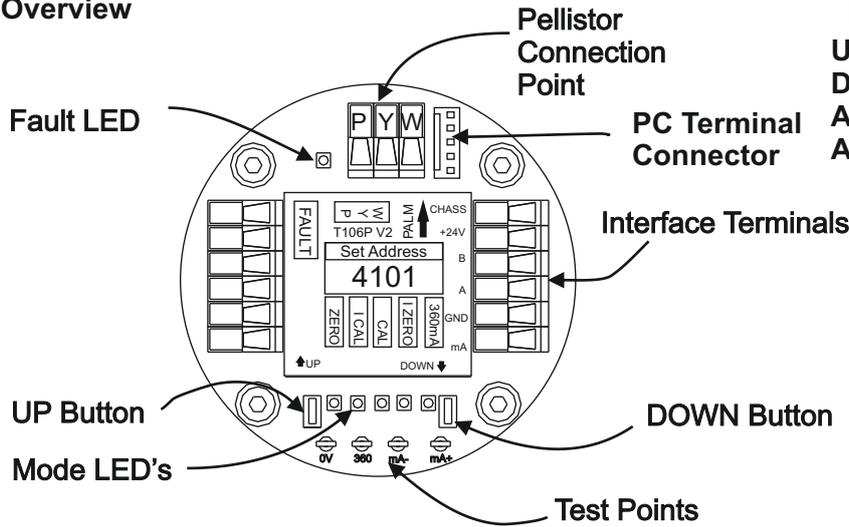
UNIVERSAL PELLISTOR
DRIVE PCB
ANALOGUE OR
ADDRESSABLE OUTPUT

The Oliver IGD universal pellistor drive PCB is designed to take input from a standard pellistor and give either a linear 4-20mA current source output or digital RS485 addressable output.

Status LED's are provided to indicate mode of operation and correct operation through the internal fault detection systems.

Please note that a known calibration gas will be required to calibrate the unit.

PCB Overview

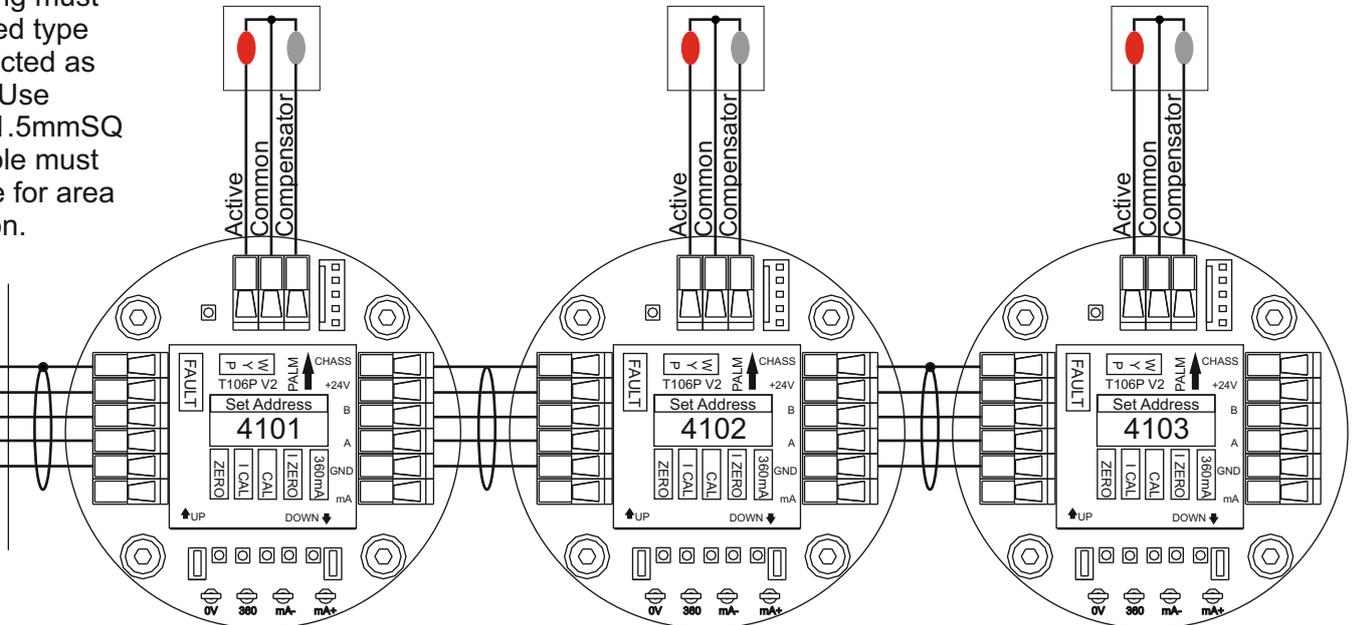


Addressable Mode Connection Diagram

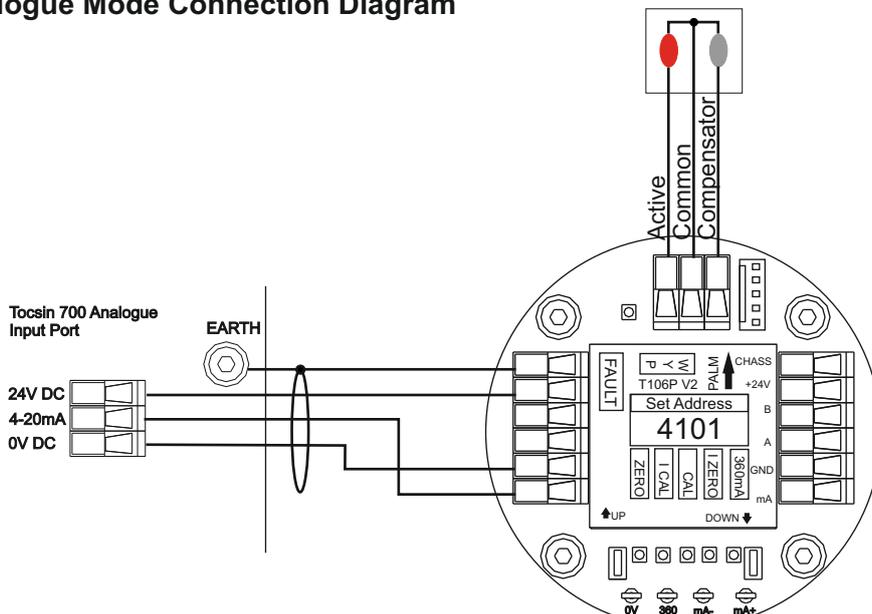
Note cabling must be screened type and connected as indicated. Use minimum 1.5mmSQ cable. Cable must be suitable for area of operation.

Tocsin 700 or 900
Addressable I/O
Port

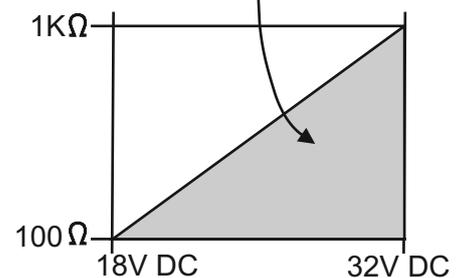
EARTH
24V DC
B
A
DV



Analogue Mode Connection Diagram

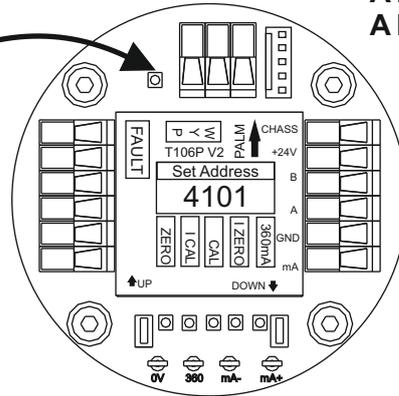


4-20mA Allowable
Operating Region

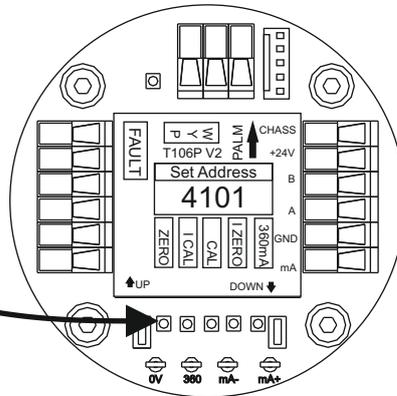


Initial Power Up

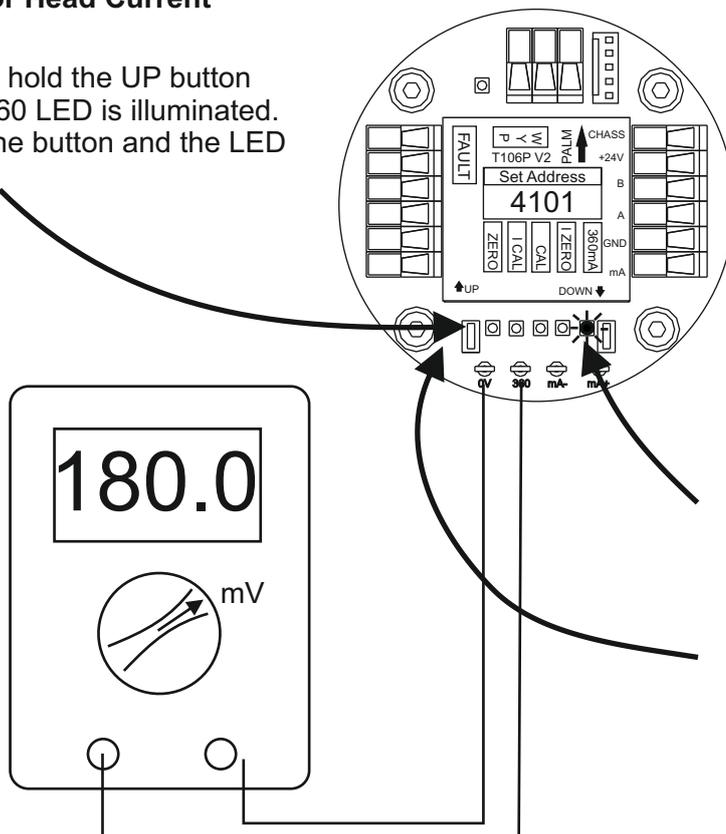
With power applied the FAULT LED will flash quickly to indicate the software version then flash more slowly (once per second) during warm up (60 Seconds). Warm up can be bypassed by pressing either button. In normal operation the FAULT LED will be off.

**Addressable Operation After Warm Up**

After warm up the fault LED should be off AND ZERO led on. If valid serial commands are received by the 103P then the ZERO LED will flash as commands are transmitted.

**Setting Pellistor Head Current**

Press and hold the UP button until the 360 LED is illuminated. Release the button and the LED will flash.



With the LED flashing connect a multimeter as indicated to read the pellistor head current. Note the meter will read half the head drive current. Use the UP - DOWN buttons to increase or decrease the set point. (Fault LED flashes on every button press.)

For MK3 and MK5 IGD pellistors set to 180mV +/- 2mV.

For MK6 and Type B IGD Pellistors set to 85mV +/- 3mV

Note the preset head operating point will be indicated on the 106 label

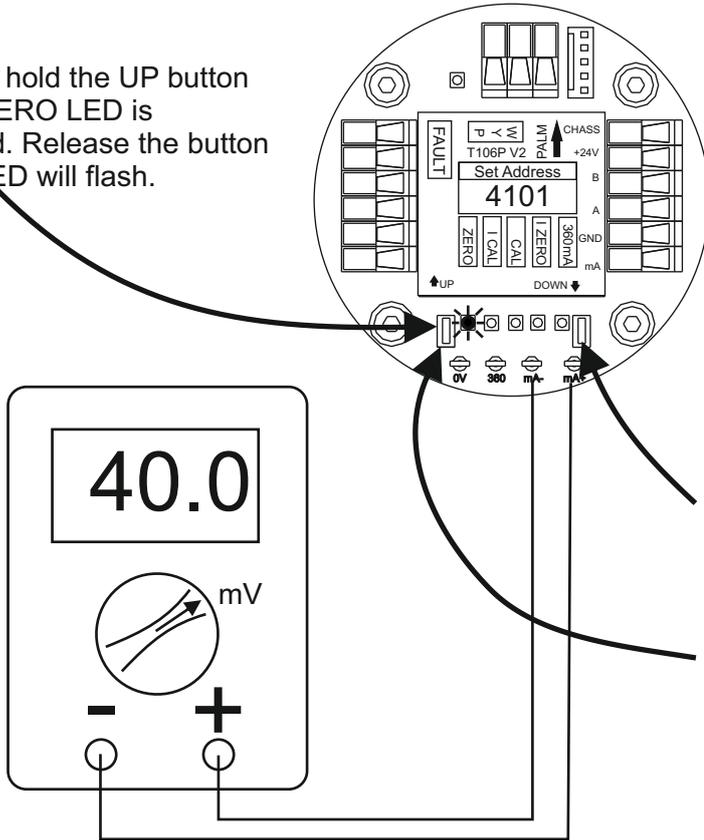
Press and hold either button until the LED goes off to return to normal operation.

TOCSIN 106P

UNIVERSAL PELLISTOR
DRIVE PCB
ANALOGUE OR
ADDRESSABLE OUTPUT

Setting Zero

Press and hold the UP button until the ZERO LED is illuminated. Release the button and the LED will flash.



With the LED flashing connect a multimeter as indicated to read the zero mA output. Note: T106P switches an internal resistor between mA and GND to enable local mA measurements for addressable and analogue units.

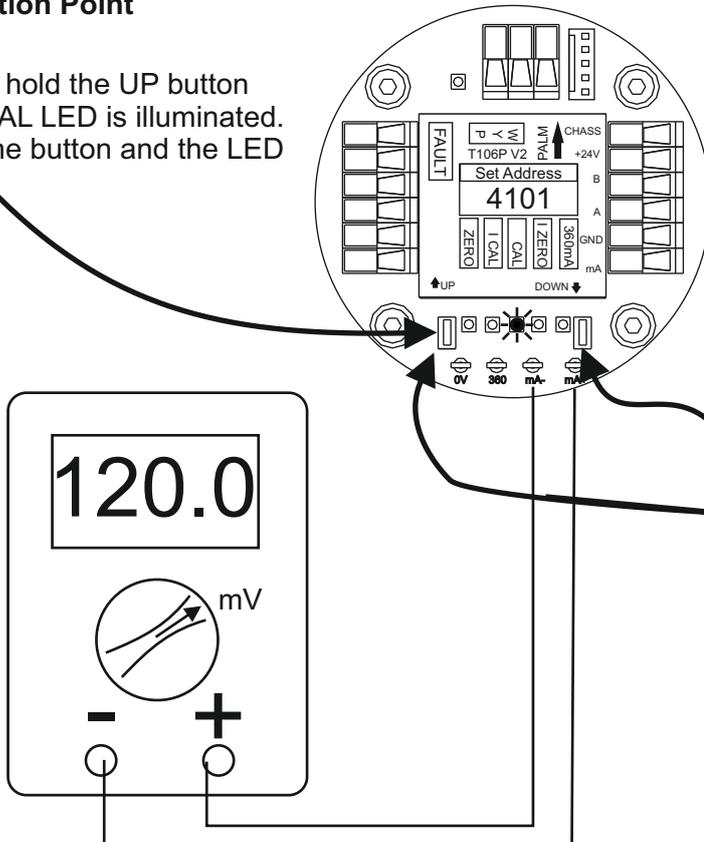
Use the UP - DOWN buttons to increase or decrease the set point.

Note that 4mA (zero) is indicated on the meter as 40.0mV +/- 1mV.

Press and hold either button until the LED goes off to return to normal operation.

Setting Calibration Point

Press and hold the UP button until the CAL LED is illuminated. Release the button and the LED will flash.



With the LED flashing connect a multimeter as indicated to read the CAL mA output.

Use the UP - DOWN buttons to increase or decrease the set point.

Note that 12mA (mid scale or 50% LEL) is indicated on the meter as 120.0mV +/-1mV

Press and hold either button until the LED goes off to return to normal operation.

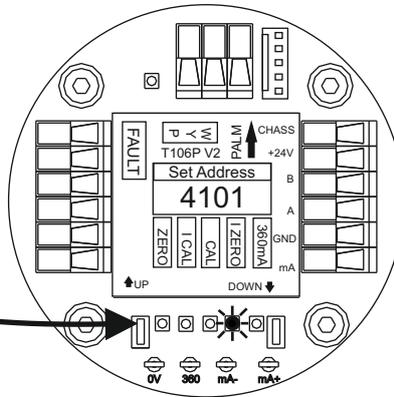
Note: Known calibration gas must be flowed to the detector head at the correct flow rate during calibration. If in doubt check with the pellistor manufacturer.
For IGD Pellistors use 0.5-1L/min

These two options relate to early versions pre 2015

OPTION 3 | ZERO (INSTANTANEOUS ZERO)

Setting Instantaneous Zero

Press and hold the UP button until the I ZERO LED is illuminated. Release the button and the LED will flash.



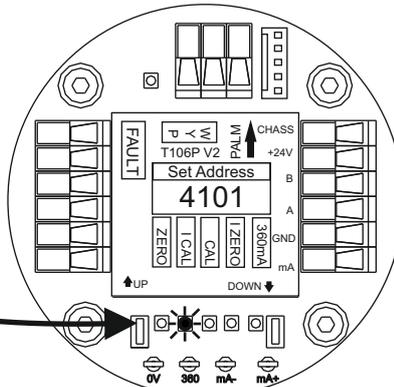
Ensure zero gas has been flowing passed head for enough time for the reading to stabilise (minimum of 60 seconds). Press and hold either button until LED goes off, then release. LED's will then flash in turn for 5 seconds during zero. The unit will then automatically return to normal operation.

Notes: 1. The internal zero pot is also adjusted, this is needed if a new pellistor is fitted.
2. The cal needs to be re-checked (due to possible changes in zero pot.)

OPTION 4 | CAL (INSTANTANEOUS CAL)

Setting Instantaneous Cal

Press and hold the UP button until the I CAL LED is illuminated. Release the button and the LED will flash.



Ensure cal gas has been flowing passed head for enough time for the reading to stabilise (minimum of 60 seconds). Press and hold either button until LED goes off, then release. LED's will then flash in turn for 5 seconds during zero. The unit will then automatically return to normal operation.

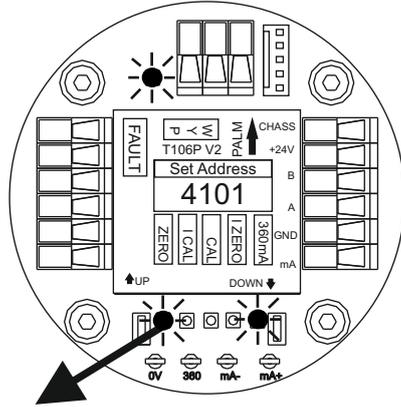
Notes: 1. The calibration gas used has to be the same as the last calibration.
2. The internal gain pot is also adjusted, this is needed if a new pellistor is fitted.
3. The zero needs to be re-checked (due to possible changes in gain pot.)

TOCSIN 106P

UNIVERSAL PELLISTOR
DRIVE PCB
ANALOGUE OR
ADDRESSABLE OUTPUT

Press and hold the DOWN button until the FAULT LED is illuminated. Release the button and fault LED will flash and the address currently set will be illuminated on the bottom three LED's.

Setting The Unit Address



Address Combinations Which Can Be Set without Using An IGD Configuration Terminal

Use the UP and DOWN buttons to alter the address set as indicated in the table below.

Press and hold either button until the fault LED goes off to return to normal operation.

ZERO	I ZERO	CAL	I CAL	360mA	
					4100
☀					4101
	☀				4102
☀	☀				4103
		☀			4104
☀		☀			4105
	☀	☀			4106
☀	☀	☀			4107
			☀		4108
☀			☀		4109
	☀		☀		4110
☀	☀		☀		4111
		☀	☀		4112
☀		☀	☀		4113
	☀	☀	☀		4114
☀	☀	☀	☀		4115
				☀	4116
☀				☀	4117
	☀			☀	4118
☀	☀			☀	4119
		☀		☀	4120
☀		☀		☀	4121
	☀	☀		☀	4122
☀	☀	☀		☀	4123
			☀	☀	4124
☀			☀	☀	4125
	☀		☀	☀	4126
☀	☀		☀	☀	4127
		☀	☀	☀	4128
☀		☀	☀	☀	4129
	☀	☀	☀	☀	4130
☀	☀	☀	☀	☀	4131

It is possible to set other address combinations by connecting the unit to an IGD configuration terminal. This should only be undertaken by trained technicians and is beyond the scope of this manual.