Features

· *Microprocessor based*
· *4-20mA Analogue Output*
· *Voltage free relay contacts*
· *RS485 digital interface*
· *Alphanumeric dot-matrix display*
· *"One Person" calibration*
· *Gel based electrochemical sensor*
· *Standalone operation*

The Monicon T80 is a high quality, self contained, toxic gas sensor that offers a host of sophisticated features to provide fast, reliable warnings against exposure to dangerous concentrations of toxic gases such as CO, SO_2, H_2S, NH_3, O_3, NO, NO_2, HCl, HCN, Cl_2, and oxygen.

The T80 will operate as a standalone instrument or in conjunction with a controller or a computer. It is housed in an attractive, compact enclosure and may be configured or calibrated by one person.

The gas concentration is indicated on a rugged 8-character alphanumeric display which also indicates instrument status.

The T80 is fully user programmable and is easily calibrated by one person. All user variables are stored in non-volatile memory (EEPROM) and retained indefinitely even during total power failure.

Typical Applications for the T80

· *Boiler houses*
· *Car Parks*
· *Food processing*
· *Paint manufacture*
· *Chemical Processing*
· *Ventilation Systems*
· *Laboratories*
· *Schools & Colleges*
· *Greenhouses*
· *Refrigeration*

The T80 is a 4-20mA, 3-wire transmitter. It is housed in a rugged, compact metallic enclosure. It incorporates advanced SMT electronics and an amperometric electrochemical sensor based on micro fuel cell technology, designed to be maintenance free and inherently stable.

The sensor uses the highly successful capillary diffusion barrier technology, resulting in a low temperature coefficient and a direct response to concentration, relatively unaffected by pressure. The use of electrodes based on fuel cell technology gives a high reserve of activity which results in long term stability. The sensor is a small plug-in component and is easily replaced in minutes when it becomes depleted.

Gas diffusing to the sensor electrode reacts at the surface of the electrode by reduction (or by oxidation for some sensors). Reactions are catalysed by specially developed electrode materials and are designed to be specific to the gas being sensed.

The unit is calibrated or user-programmed by means of on-board pushbutton switches. The operator is then guided through a variety of options by a user-friendly menu. The CPU constantly verifies system operation. In the unlikely event of a fault, the operator is alerted with a helpful diagnostic display.

Block Diagram of Electrochemical cell gas detector
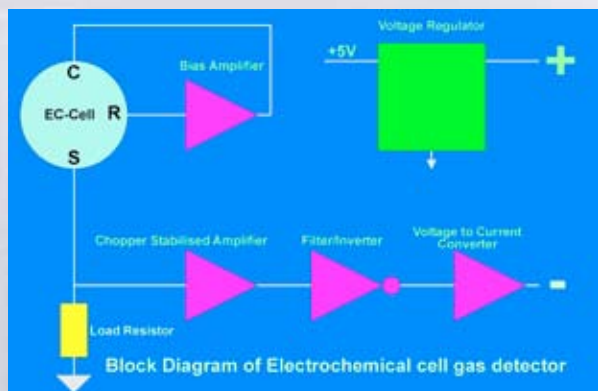
T80 Specifications

Supply voltage	*Nominal 24Vdc (operates from 20Vdc to 35Vdc)*
Power consumption	*2W nominal, 2.3W maximum*
Circuit protection	*Electronic current limiter, 1.5A auto-reset*
Transient Protection	*PCB mounted, 3 Joule, Metal Oxide Varistor*
Analogue output	*4-20mA current source referenced to 0V*
Analogue output load	*100 Ohms typical, 500 Ohms maximum*
Operating temperature	*-20˚C to +40˚C*
Storage temperature	*-40˚C to +50˚C*
Humidity range	*10%RH to 90%RH (Non-condensing)*
Preconditioning Requirements	*Operational: 30 seconds, Specification: 60 minutes*
Full-Scale range display	*0-3, 0-5, 0-25, 0-50, 0-100, 0-250 (depends on gas and sensor)*
Response time (T90)	*Depends on sensor, e.g. <30 seconds for CO*
Drift, S.T.P. continuous duty in air	*<3% over three months at 20˚C (depends on sensor)*
Linearity	*±5%*
Repeatability	*±2%*
Resolution	*1%*
Recommended Calibration Interval	*6 months (depending on application)*
Weight	*1.5Kg (including sensor)*
RS485 operating mode	*Slave mode, half duplex, polled*
Max. units on RS485 loop	*100*
RS485 comm parameters	*1200-N-8-1*
RS485 error checking	*1 byte checksum*
Unit interrogation time	*400mS*
Relay contacts	*SPST, NO, 230V @ 1A each for A1 & A2*
Option setting	*Digital setting (all options fitted as standard and user selectable)*
Alarm setting	*Digital setting (fully adjustable between 10% and 90% of full scale)*
Alarm types	*Energised/de-energised. Enrichment/deficiency. User selectable*
Recommended calibration flow rate	*500mL per minute*
Mounting holes	*4 holes, diam 5mm, spaced 145mm horizontally, 63mm vertically*
User variable storage	*Non-volatile RAM (EEPROM)*
Electromagnetic Conformance (EMC)	*Complies with EN50081 and EN50082*
Cable gland entry	*M20 x 1.5*
Terminations	*Detatchable, PCB mounted terminal blocks to accept 1.5mm^2 cable*
Enclosure	*Epoxy coated aluminium. Size W: 160mm H: 100mm D: 60mm*
Literature supplied	*24-page detailed instruction manual with wiring diagram*
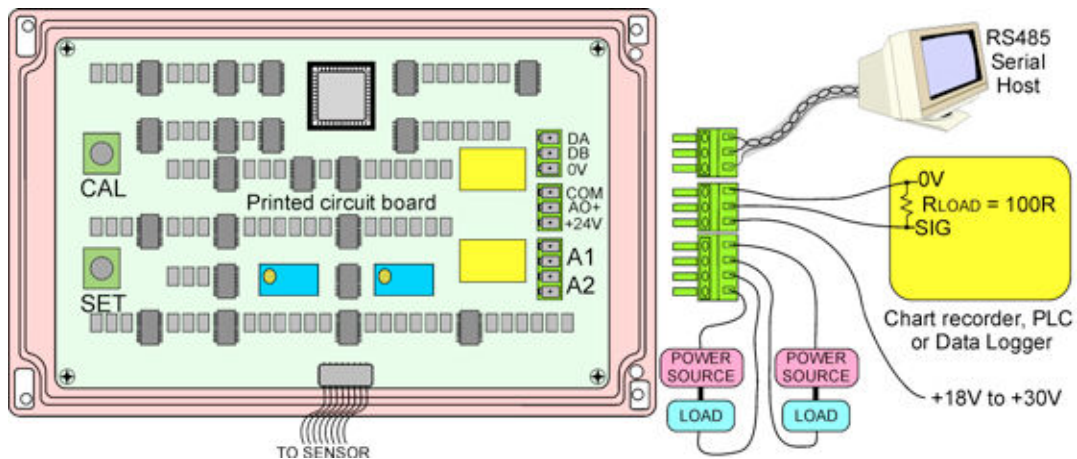
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