



### **T100 Toxic Gas Detector**

- **2-wire, 4-20mA Transmitter**
- **Plug-in electrochemical sensor**
- **Built-in ZERO & SPAN controls**
- **One person calibration**
- **SMD electronic circuitry**
- **Enhanced RFI and EMI resistance**
- **Cost effective with high performance**
- **Works with most 4-20mA controllers**
- **Calibration gas ampoules available**
- **Certified to CENELEC EEx ia IIC T4**



The T100 is a 4-20mA 2-wire transmitter can measure a wide range of gases and is housed in a rugged, compact metallic enclosure. It incorporates advanced SMD electronics and a 3 electrode 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.

Gas diffusing to the sensor electrode reacts at the surface of the electrode either by oxidation (e.g. CO, H<sub>2</sub>S, SO<sub>2</sub>, NO, H<sub>2</sub>, HCN, HCl, O<sub>2</sub>, C<sub>2</sub>H<sub>4</sub>O, NH<sub>3</sub>) or by reduction (NO<sub>2</sub>, O<sub>3</sub> and Cl<sub>2</sub>). Reactions are catalysed by specially developed electrode materials and are designed to be specific to the gas being sensed.

### **CGS500 Combustible Gas Detector**

- **Temperature compensated**
- **Low drift**
- **Improved poison resistance**
- **Long life**
- **Fast response time**
- **Rugged stainless steel sensor**
- **Detects combustible gases and solvents**
- **Many accessories available**
- **Certified ATEX EEx d IIC T6**



The CGS500 combustible gas sensor has been designed to measure concentrations of combustible gases in the range 0-100% LEL. The CGS500 is fitted in an Ex'e' certified junction box

Each sensor contains two thermocatalytic beads. Combustible gases will oxidise on the surface of the active bead while the reference bead compensates for changes in temperature, pressure etc. Each bead consists of a coil of fine platinum wire surrounded by an alumina based substrate containing a catalyst.

An electric current is passed through the bead which raises the temperature to a level where oxidation will occur. The catalyst reduces the temperature at which oxidation occurs, thus prolonging the life of the bead and resulting in much lower power consumption.

## T100 Specifications

Supply voltage	Nominal 24Vdc (operates from 12Vdc to 30Vdc)
Supply current	Normal: 4mA, full-scale 20mA
Ec-cell operating life in air at S.T.P.	2 years
Preconditioning Requirements	1 Hour (24 hours for HCl, C <sub>2</sub> H <sub>4</sub> O, NO & NH <sub>3</sub> )
Storage life at 0 to 20°C	6 months
Operating temperature range	-10° to +40°C (H <sub>2</sub> S, -40°C to +40°C)
Operating pressure range	Ambient ± 10%
Effect of operating pressure on accuracy	»0.05% signal per mm Hg
Operating RH range	15% to 90% non-condensing
Position sensitivity	None
Drift, S.T.P. continuous duty in air	<2% Full Scale per month
CENELEC approval	EEEx ia IIC T4 (Certificate No. Ex 99E2035)
Size	W: 75mm, D: 58mm, H: 80mm (excluding sensor)
Weight	400g
Electromagnetic Conformance (EMC)	Complies with EN50081 and EN50082
Enclosure material	Durable aluminium ALSi12, magnesium content <0.4%, finished in stove enamel gray RAL7001, rated IP65. (Marine grade version available to special order)

## Available gases and ranges

To cover a wide range of applications, a variety of ranges are available. The following table shows the available gases along with the minimum and maximum full-scale range for that gas. The maximum T90 response time is also shown (in seconds).

Gas	CO	H <sub>2</sub> S	SO <sub>2</sub>	NO	NO <sub>2</sub>	H <sub>2</sub>	Cl <sub>2</sub>	HCN	HCl	NH <sub>3</sub>	O <sub>3</sub>	C <sub>2</sub> H <sub>4</sub> O	O <sub>2</sub>
Min FSD (ppm)	50	5	5	10	5	500	5	50	5	50	3	20	5%
Max FSD (ppm)	4%	1000	2000	1500	200	2000	250	200	100	200	5	100	25%
T90 Response	25	30	15	10	35	30	100	100	120	100	150	140	12

## CGS500 Specifications

Operating Voltage	2.05V
Operating Current (standard version)	300mA
Operating Current (poison resistant version)	300mA
Detection Range	0-100% LEL
T90 Response Time	Typically <15 seconds
Stabilisation Time	1 minute
Preconditioning Time	1 Hour
Operating Temperature Range	-40°C to +40°C
Mounting Thread	M25 X 1.5mm
Accessory Thread	M42 X 1.5mm
Weight	750g (junction box and sensor)
Size of junction box (excluding sensor)	75mm X 80mm X 58mm
Electromagnetic Conformance (EMC)	Complies with EN50081 and EN50082
ATEX certification	EEExd IIC T6 (Certificate No. BAS00ATEX2246X)

### Wiring details

<b>Red wire</b>	Active bead
<b>Grey wire</b>	Junction
<b>Black wire</b>	Reference bead

### Available accessories with M42 thread

<b>Splashguard</b>	C13038
<b>Flow adapter</b>	C13055
<b>Gas applicator</b>	C13063
<b>Filter adapter</b>	C13113
<b>Collecting cone</b>	C13089

**Monicon Technology Ltd**  
 Riverside Industrial Estate  
 Tuam Road  
 Galway  
 Ireland

**Tel:** +353 91 752884  
**Fax:** +353 91 752886  
**e-mail:** sales@monicon.com  
**web-site:** www.monicon.com