

# G1010 series oxygen analysers

Electrochemical cell analysers for oxygen

- Proven technology from gas analyser experts
- ppm or % O<sub>2</sub> levels
- Hazardous area options
- Choice of cells for different applications
- Remote or integral sensor
- Choice of sample systems



## Applications

- Nitrogen generators
- Inert gas systems
- Air separation
- Furnace atmospheres
- Biogas
- Gloveboxes
- Gasification
- Packaging

The **G1010 oxygen analysers** have numerous applications in processes requiring the precise measurement of oxygen level. In ppm or % levels, safe areas or hazardous ones, in various process conditions and in differing backgrounds there is a G1010 configuration right for your needs. Options include a choice of outputs, AC or DC versions, alternative oxygen cells or sample conditioning.

**Oxygen is measured in a wide variety of processes, to confirm its presence or absence.** The most common application however is measuring oxygen as an 'impurity' in other gases, e.g. nitrogen generators. Oxygen is required in aerobic processes and also in situations that require user intervention, e.g. to ensure that it is safe to enter a chamber for maintenance work. Some processes will only run efficiently in the absence of oxygen, e.g. furnace atmospheres; others just require a low level of oxygen for safety reasons, e.g. inert gas blanketing.

**Different electrochemical cells are available to suit the application.** The standard 'N' cell has a broad range from high ppm to 50% oxygen. The 'L' cell is designed for accuracy at low ppm levels, it will also work at % levels (with a shorter lifetime). The 'E' cell is designed for use in % levels of oxygen in the presence of mildly acidic gases, e.g. carbon dioxide, while the 'H' cell is perfect for low ppm oxygen applications where hydrogen is present. Hitech will be pleased to advise on which cell is most suitable for an application.

## A choice of configuration is available.

The most convenient and economic is a standard analyser with the cell mounted on the rear. Alternatively, there is a remote sensor housing complete with flowmeter and valve. Where cable lengths and/or hazardous area conditions are an issue, the transmitter can be located in the sensor housing.

**Different sample conditioning systems** are available, standard or bespoke, according to the process conditions. Filters, pumps and regulators can all be incorporated to deliver the sample in the correct condition. Bypass flow systems enable longer distances from process to analyser to be achieved. Hitech engineers are ready to recommend the right system for you on receipt of the full gas stream specification.

**For hazardous area applications** the sensor may be mounted remotely in the hazardous area and safely connected via an MTL zener barrier to the electronics unit in the safe area. Alternatively the electronics unit can be supplied in an EExd enclosure.

## SPECIFICATION

### Oxygen cell compatibility

Cell type	Suitable for background gas types
N	N <sub>2</sub> , Ar, He
E	N <sub>2</sub> , Ar, He, CO <sub>2</sub> , CH <sub>4</sub> , CO and H <sub>2</sub>
L	N <sub>2</sub> , Ar, He
H	N <sub>2</sub> , Ar, He, H <sub>2</sub>

### Stability

<2 % reading/month or 1ppm, whichever is greater

### Sample flow

100 – 300ml/min optimum  
1000ml/min maximum

### Sample temperature range

-5°C to +40°C  
RH <100% (non-condensing)

### Sample pressure

Atmospheric (determined by vent pressure) for quoted accuracy

### Sample connections

Inlet and outlet: 1/4" bulkhead compression fittings suitable for 0.25inch (or 6mm) o.d. tube

### Speed of response

T90: varies according to sensor and concentration - typically  
3s at % levels, 20s at ppm levels

### Analogue Outputs

0-5V (min load 10kohms) or  
4-20mA (max load 300ohms)

Isolation: max 30Vac, 70Vdc

#### G1010/G1010R/G1010X

User programmable

#### G1010Tx/G1010TxX

Fixed  
(refer to manual for full details)

### Alarm Outputs

2 alarms, user programmable  
Volt free, crossover contacts

### Ambient operating range

0°C to +40°C,  
RH <80% (non-condensing)

### Power

110-120V or 220-240V AC, 50/60Hz or  
24V DC

### Enclosure details

G1010 Glass fibre reinforced, Noryl panel mount

Net weight: 1.0 kg

Dimensions (mm) 96w x 96h x 196d

### Options

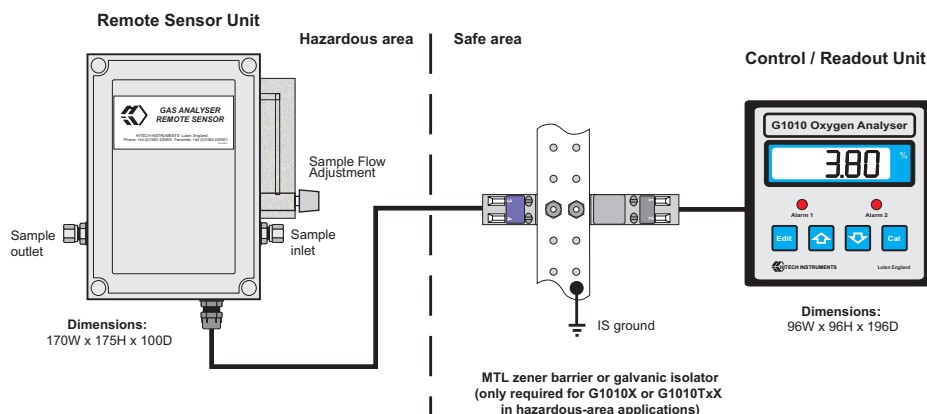
- IP55 lockable transparent door
- EExd electronics enclosure
- MTL galvanic isolator\*

\* As an alternative to standard zener barrier

## ORDERING INFORMATION

Analyser	Cell Type	Measurement range	Description
G1010	N	100 ppm to 50%	Auto-ranging display with cell mounted on rear of electronics.
G1010	E	0.1% to 100%	
G1010	H	10 ppm to 10%	
G1010	L	1 ppm to 10%	
G1010R	N	100 ppm to 50%	Auto-ranging display with remote IP65 cell enclosure, which includes a flowmeter and flow control valve. Maximum sensor cable length is 3 metres. Sensor cable for H & L cells must not exceed 1 metre.
G1010R	E	0.1% to 100%	
G1010R	H	10 ppm to 10%	
G1010R	L	1 ppm to 10%	
G1010X	N	100 ppm to 50%	Auto-ranging display with remote IP65 cell enclosure which includes a flowmeter and flow control valve. Zener barrier supplied loose. Maximum sensor cable length is 3 metres. Remote sensor suitable for installation in a hazardous area. Sensor cable for H & L cells must not exceed 1 metre.
G1010X	E	0.1% to 100%	
G1010X	H	10 ppm to 10%	
G1010X	L	1 ppm to 10%	
G1010Tx	N	0 to 5000 ppm, 5.00% or 25% range option	Panel mounted electronics with remote IP65 cell enclosure, which includes a 4-20mA transmitter, a flowmeter and flow control valve. Suitable for sensor cable lengths > 3 metres. (Measurement range must be specified).
G1010Tx	E	0 to 5%, 25%, 100% range option	
G1010Tx	H	0 to 500ppm or 5000 ppm range option	
G1010Tx	L	0 to 50 ppm, 500ppm or 5000 ppm range option	
G1010TxX	N	0 to 5000 ppm, 5.00% or 25% range option	Panel mounted electronics with remote IP65 cell enclosure which includes an IS 4-20mA transmitter, a flowmeter and flow-control valve. Zener barrier supplied loose. Remote sensor suitable for mounting in a hazardous area with cable lengths > 3 metres. (Measurement range must be specified).
G1010TxX	E	0 to 5%, 25% or 100% range option	
G1010TxX	H	0 to 500ppm or 5000 ppm range option	
G1010TxX	L	0 to 50 ppm, 500ppm or 5000 ppm range option	

### Remote sensor option



The given data is only intended as a product description and should not be regarded as a legal warranty of properties or guarantee. In the interest of further technical developments, we reserve the right to make design changes.