

K1550 range hydrogen analyser

Thermal conductivity analysers for hydrogen analysis

- **Single remote sensor**
- **Proven technology from the katharometer experts**
- **Hazardous area options**
- **Ranges from 0 – 5% upwards**
- **Fixed and variable compensation options**
- **Non-depleting remote sensor**

Applications

- **Syngas analysis**
- **Gasification**
- **Fuel cell research**
- **Furnace atmospheres**
- **Reforming gases**
- **Hydrogen mixing**
- **Power generation**



The K1550 range of analysers are ideal for measuring % levels of one gas in a binary or pseudo-binary mixture. For example, air is composed of many gases but in known, fixed ratios, therefore hydrogen in air is a pseudo-binary mixture and can be measured with a K1550 hydrogen analyser.

Hydrogen analysis is well suited to this technique due to the high thermal conductivity of hydrogen. Percentage levels of hydrogen cannot be measured by a convenient dedicated sensor and so Hitech katharometers provide a cost effective analysis solution.

For hazardous area applications use the K1550FX. The sensor is mounted remotely in the hazardous area and connected through an MTL barrier to the electronics unit in a safe area. Alternatively, the electronics unit can be supplied in an EExd enclosure with remote keypad for non-intrusive calibration for full hazardous area use.

A compensation input is available as an option, either fixed or variable via a 4-20mA input. This extends the capability of the analyser to measure the hydrogen content in more complex mixtures. The KG1550 range also features an integral oxygen sensor.

Hydrogen analysers are available with a choice of range. From 0 – 5% at the low end, 0 – 100% full range or 95 – 100% for hydrogen purity applications. Multi-range instruments are sometimes available on request and for specific applications. A completed application questionnaire enables Hitech to provide a custom solution.

Different sample conditioning systems are available, standard or bespoke, according to the process conditions. For corrosive gases a variety of sensor assemblies and fittings according to the specific gas. Eaton are ready to recommend complete systems on receipt of full gas stream specifications.

K1550 hydrogen analyser

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SPECIFICATION

Ranges available

(Depends up on measured/background gas)
 0 - 20%, 80 - 100%, 0 - 100% for most gases
 0 - 5%, for most hydrogen ranges
 Consult Hitech for gas type and range

Stability

<1 % f.s.d./month

Accuracy

±2% f.s.d. depending upon span and gas

Repeatability

<1% f.s.d.

Speed of response

T90: 20 seconds (typ.)

Sample flow

100-300ml/min for optimum performance

Sample pressure

Nominally atmospheric, set by vent pressure

Sample connections

Inlet and outlet: Captive seal compression suitable for 0.25inch (or 6mm) outside diameter tube

Display

LCD 2 or 4 lines of alphanumeric characters

Analogue output

4-20mA
 (User-programmable)

Outputs (alarm)

Two alarms: each user-configurable to OFF, HIGH or LOW

Relay outputs

Rated at 30V ac or dc, 0.5A, normally energised

Ambient operating temperature range

Sensor: -10°C to 40°C
 Electronics: 0°C to 40°C
 (0-90% R.H. non-condensing)

Storage temperature range

-5°C to +55°C
 (0-90% R.H. non-condensing)

Supply Voltage

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

Power consumption

12VA

MOUNTING

Electronics unit

Panel mounting with two clamps

Remote sensor unit

Wall/ bulkhead (optional)

MATERIALS

Enclosure

Glassfibre-reinforced Noryl to IP40 (IP54 locking door option)

Remote sensor

Supplied in IP65 housing with flowmeter and needle valve

K1550FX (HAZARDOUS AREA VERSION)

As above specification but with certified stainless steel sensor block and MTL zener barrier (supplied loose).

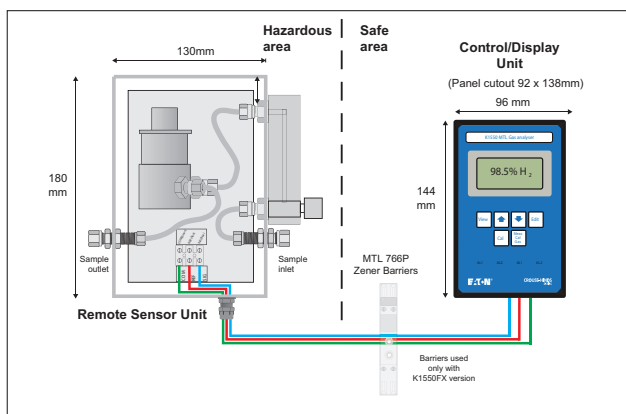
Option

EEx d enclosure for K1550FX electronics unit

ORDERING INFORMATION

Specify	Measured gas	Background gas	Range	Output	Supply voltage	Options
K1550R	Hydrogen	Specify	0 - 100% 0 - 20%	4-20mA	110V or 220V	Compensation input
K1550FX	Hydrogen	Specify	0 - 5% 80 - 100% 95 - 100%			EEx enclosure

DIMENSIONS



K1550FX electronics unit in optional EEx enclosure with remote keypad

APPROVALS (ATEX Directive - Europe) for K1550FX version

Authority	Product/Cert. No.	Standards	Approved for
DEMKO	210 Gas detection head DEMKO02ATEX132848X	EN50014 EN50018	⊕ II 2G EEx d IIB + H ₂ T6 -40°C ≤ T _a ≤ 40°C ⊕ II 2G EEx d IIB + H ₂ T3 -40°C ≤ T _a ≤ 150°C
BASEEFA	MTL766P barrier BAS01ATEX7202	IEC60079-0 IEC60079-11	⊕ II 1GD [EEx ia] IIC T6 -20°C ≤ T _a ≤ 60°C
ISSeP	EEx enclosure ISSeP03ATEX005	EN50014 EN50018 EN50281-1-1	⊕ II 2GD EEx d IIC T6 (85°C) or T5 (100°C)