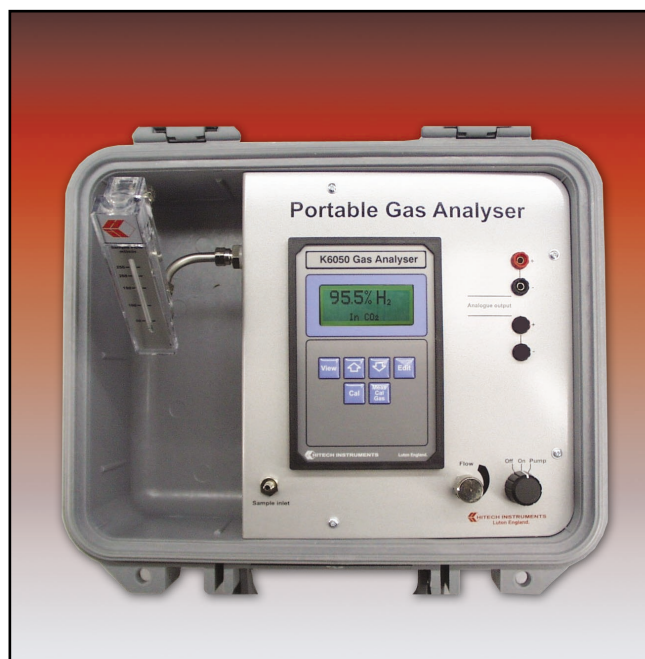


K6050 portable alternator purge gas monitor



Features

- ◆ **Minimises costly downtime**
- ◆ **Rugged and portable**
- ◆ **Minimises useage of the purge gas**
- ◆ **Reliable, simple to use**
- ◆ **Weatherproof to IP67**



Application

Modern turbogenerators, as used in power stations, produce a great deal of heat which must be dissipated. The preferred coolant is hydrogen gas which has a cooling capacity of around seven times that of ambient air. It is essential that the hydrogen remains uncontaminated by air leakage or a potentially explosive gas mixture can result. Air in-leakage also increases the viscosity of the hydrogen and therefore its friction with the rotor, increasing the losses within the system.

Before either filling with hydrogen or re-filling with air, it is necessary to use an inert intermediary gas to avoid creating a flammable mixture. Carbon Dioxide (CO₂) is the gas most commonly used for this. Thus, for filling the turbogenerator, air is first purged from the system with CO₂ and then the CO₂ is purged out with hydrogen.

The Alternator Purge Gas Monitor measures all stages of the hydrogen filling and air re-filling processes as well as the hydrogen purity during normal operation.

Principle of Operation

The Alternator Purge Gas Monitor uses the proven measuring principles found in Hitech's Model K850 analyser which uses a katharometer.

In construction the katharometer comprises two chambers, each with an identical thermal conductivity sensor. One chamber is sealed and is filled with a reference gas and the other receives the sample gas. The difference in thermal conductivity of the reference and sample gases is translated into a concentration figure by the microprocessor circuitry within the electronics unit.

The inherent stability of this system and, its almost perfect temperature compensation, make the instrument one of the most accurate available.

System Description

The analyser is supplied in a robust waterproof case with rechargeable battery power supply, which offers 6 hours of continuous operation. Continuous operation is possible by running the unit connected to the a.c. power supply.

The integral pump, needle valve and flow meter are used to control the sample through the analyser during the monitoring of alternator gases.

The K6050 will display any of the following ranges, which are user-selectable through its keypad:

0 to 100% CO₂ in Air
0 to 100% H₂ in CO₂
90 to 100% H₂ in Air

A large LCD display shows measured values and also displays messages and prompts for the menu driven configuration and simple calibration routines.

SPECIFICATION

Display

Dot-matrix LCD showing two or four lines of alphanumeric characters

Ranges

0 to 100% CO₂ in Air
0 to 100% H₂ in CO₂
90 to 100% H₂ in Air

Accuracy

±1% of span (typically)

Resolution

0.1% Hydrogen ranges
0.5% CO₂ in Air

Speed of response (typical)

T₉₀ < 5secs.

Sample connections

Compression fitting suitable for 0.25 inch (6mm) OD tubing

Sample pressure

Pump off: +5bar G maximum
Pump on: -100mb G minimum

Sample flow

100 to 300ml/min for optimum performance

Sample temperature

-10 to +60°C (non-condensing)

Outputs

0 to 1V analogue

Ambient temperature

-5°C to +40°C

Battery capacity

6 hours

Battery charges - supplied

Mains: 110/240V ac
Vehicle cigarette lighter: 12V dc

Case

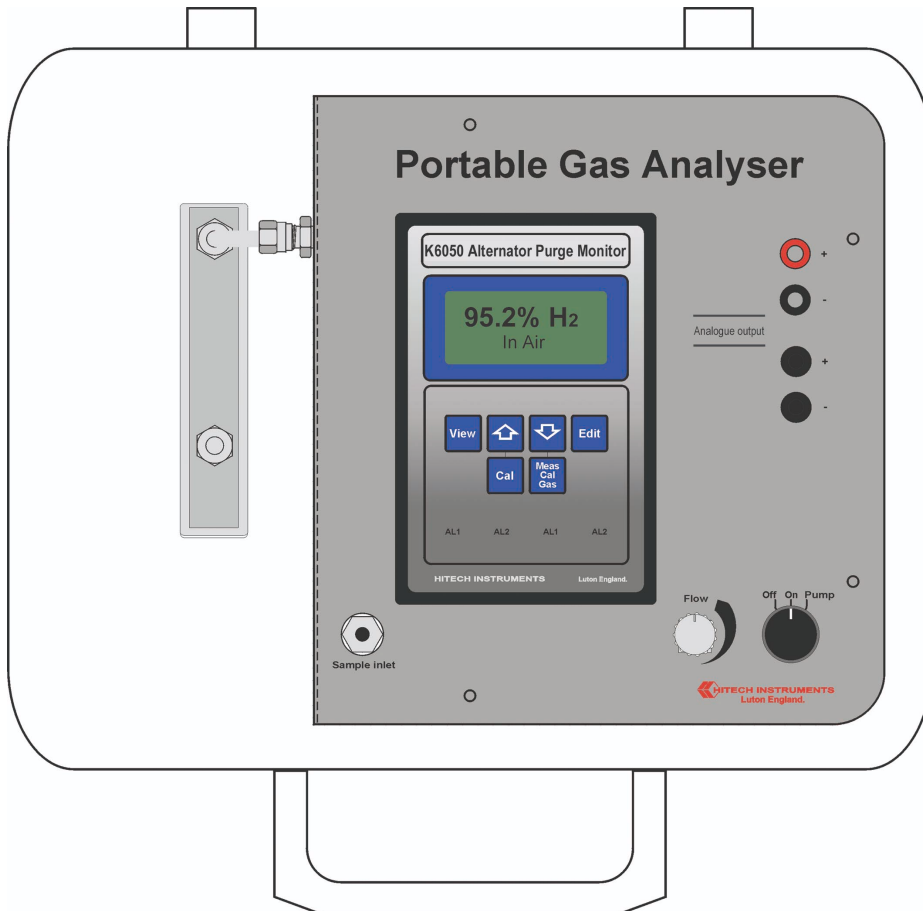
Tough co-polymer resin with carrying handle

Dimensions

338mm wide x 295mm deep x 162mm high with handle parked in forward position

Weight

5.2kg approximately



In keeping with a policy of continuous development, Hitech Instruments Ltd reserves the right to change any part of this specification without notice

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