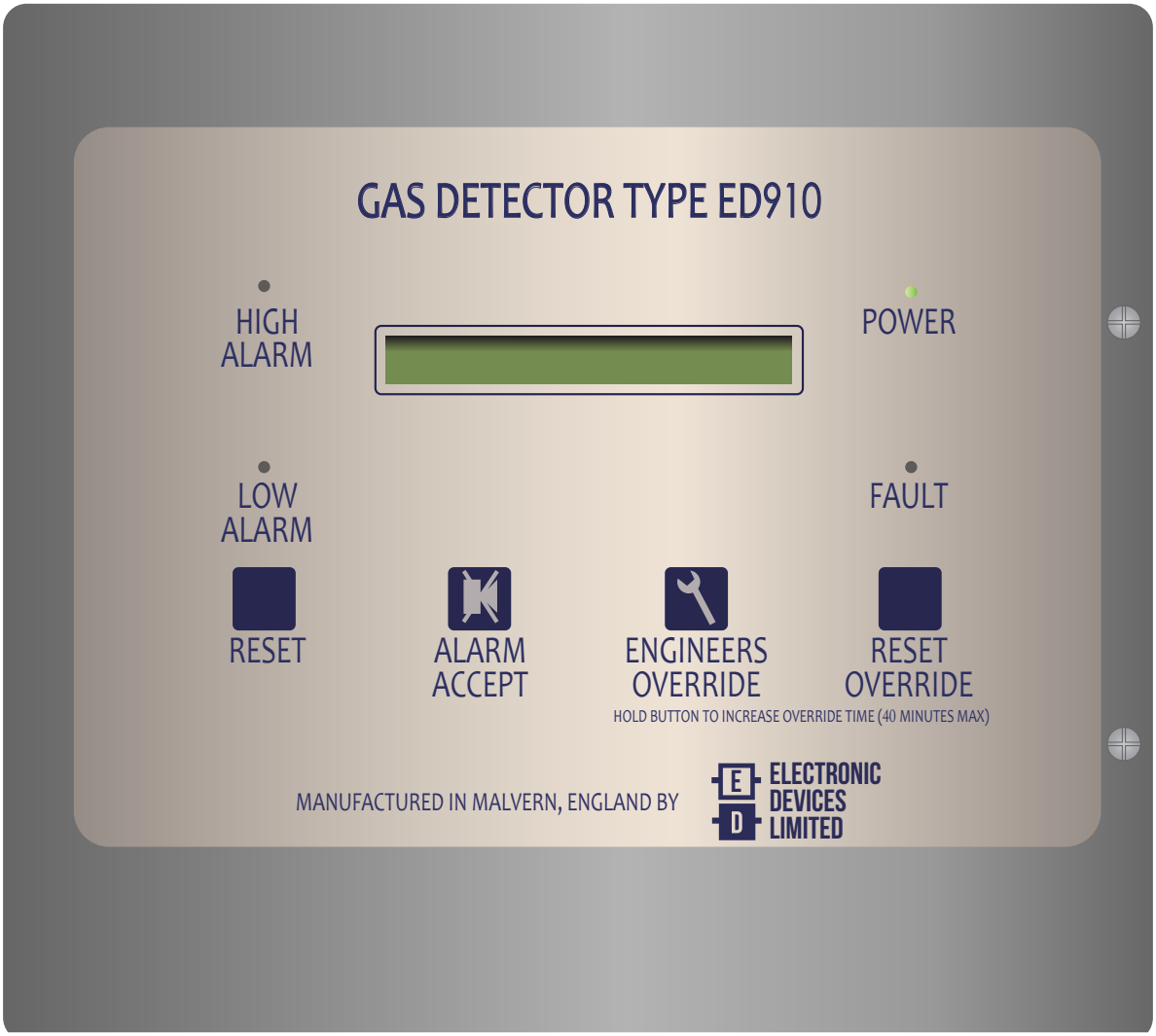
ELECTRONIC DEVICES LTD



ED910

GAS DETECTOR

INSTRUCTION MANUAL

Address: Enigma House, Enigma Business Park, Malvern, Worcestershire, WR14 1GD
Tel: +44 (0)1684 891500 **Fax:** +44 (0)1684 891600
Email: sales@electronic-devices.co.uk **Website:** www.electronic-devices.co.uk

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GENERAL

IMPORTANT: DANGEROUS VOLTAGES ARE PRESENT WITHIN THE MAINS INPUT MODELS PARTICULARLY AT THE INPUT VOLTAGE TERMINALSAND THE NEON INDICATORABOVE THESE TERMINALS. DANGEROUS VOLTAGES MAY ALSO BE PRESENT ON THE ALARM CONTACTS OF ALL MODELS.

The ED910 is a fixed installation gas detector control unit which is available in four models:

- ED910 Semiconductor
- ED910 Head electronics (4-20mA)
- ED910 Head electronics (0.2-1.0V or 0.4-2.0V)
- ED910 Oxygen Monitor

Each model is available for either:

- 24VDC
- 100/120VAC 50/60Hz
- 220/240VAC 50/60Hz

The model type and voltage must be specified prior to manufacture.

INSTALLATION

THE EQUIPMENT MUST NOT BE MODIFIED IN ANY WAY AND MUST BE INSTALLED AND SERVICED BY COMPETENT PERSONNEL ONLY. IF IN DOUBT CONSULT ELECTRONIC DEVICES LTD (01684) 891500

Control Unit: The unit should be mounted in a convenient position for the operator away from possible mechanical damage or ingress of moisture and allowing the enclosure to swing open for ease of calibration etc.

N.B. If the only suitable position is exposed to dust or moisture then consideration should be given to having the enclosure to I.P.54 standards or above. Contact Electronic Devices Ltd.

The enclosure is opened by releasing the two screws on the right hand side of the enclosure and is secured to a wall or bulkhead by four screws or bolts at the rear of the enclosure. Sufficient cable should be allowed so as the enclosure can swing open on its hinges.

CONNECTIONS

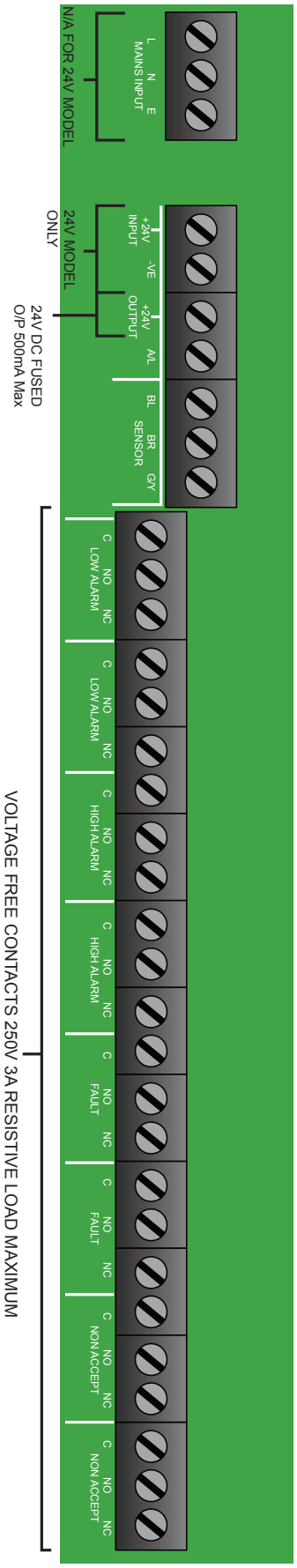
Connections are made using the following terminals, please note all models must be earthed.

It should be ensured that any peripheral devices connected do not take more than 500mA current consumption at any time as this could damage the ED910.

Alarm Output Functions: The ED910 has two sets of voltage free contacts each for low alarm, high alarm and fault. In addition two sets of “Non Alarm Accept” contacts are available for low or high alarm (factory set for high alarm).

Engineers Override: The override can be activated by pressing and holding down the override button. The override time increments by 10 minute, the longer the button is pressed, to a maximum of 40 minutes. During this time the internal sounder operates but all other outputs are disabled.
To end the override period early press and hold down the reset override button.

It is important to note that all alarm outputs should be checked periodically.



DIMENSIONS

Note: 34cm minimum depth needed to allow for hinged door opening

ED910 SEMICONDUCTOR CALIBRATION INSTRUCTIONS

Suitable for the connection of semiconductor gas sensors manufactured by Electronic Devices Ltd. e.g.

a) EDP1B uncertified, EDF1B flameproof or EDS1B Intrinsically Safe via Barrier.
Suitable for the detection of flammable gases such as Ammonia, Butane, Propane and some toxic gases, for more gases see list available.

b) EDP2B uncertified, EDF2B flameproof or EDS2B Intrinsically Safe via Barrier.
Suitable for the detection of flammable gases such as Methane and some toxic gases, for more gases see list available.

c) EDP3B uncertified, EDF3B flameproof or EDS3B Intrinsically Safe via Barrier.
Suitable for the detection of most Freons such as R22.

d) EDP3B fig uncertified, EDF3B fig flameproof or EDS3B fig Intrinsically Safe via Barrier.
Suitable for the detection of most Freons such as R11, R12, R143A, R134A etc.

Calibration procedure: Ensure that the sensor has been energised at the correct input voltage for at least 24 hours, with the gas sensor in clean air, before attempting this procedure. This procedure must be carried out by competent personnel only.

1. Immerse sensor in a known concentration of the target gas in the range of 20-60% of full scale, preferably at one of the alarm points.
2. Rotate the potentiometer VR4 (closest to TP3) until the correct reading is displayed on the front panel display (clockwise increases sensitivity).
3. The low and high alarm points are factory set but can be adjusted using VR7 and VR8 respectively. It is important that these levels are only adjusted whilst the display is reading the correct concentration for the alarm being adjusted.
4. If after 24 hours in clean air the display is not reading zero contact Electronic Devices Ltd.

ED910 HEAD ELECTRONICS (4-20MA) CALIBRATION INSTRUCTIONS

Designed to accept 4-20mA input from sensor head electronics type EFM/C, EFM/P, EFM/S or EDN manufactured by Electronic Devices Ltd. Some gas sensors require head electronics for correct operation such as Electrochemical Cell Sensors or Catalytic (Pellistor) Sensors. See list of gases for sensor types available.

Calibration procedure: adjustment of calibration is carried out at the head electronics not at the ED910. See data sheet supplied with head electronics.

Low and high alarm points can be achieved after successful calibration as follows: The low and high alarm points are factory set but can be adjusted using VR7 and VR8 respectively. It is important that these levels are only adjusted whilst the display is reading the correct concentration for the alarm being adjusted.

If after 24 hours in clean air the display is not reading zero contact Electronic Devices Ltd.

ED910 HEAD ELECTRONICS (0.2-1.0V OR 0.4-2.0V) CALIBRATION INSTRUCTIONS

Designed to accept 0.2-1.0Vdc or 0.4-2.0Vdc input from sensor head electronics type EDS/C or EDS/P manufactured by Electronic Devices Ltd. Some gas sensors require head electronics for correct operation such as Electrochemical Cell Sensors or Catalytic (Pellistor) Sensors. See list of gases for sensor types available.

Calibration procedure: Ensure that the sensor has been energised at the correct input voltage for at least 24 hours, with the gas sensor in clean air, before attempting this procedure. This procedure must be carried out by competent personnel only.

Once this procedure has been successfully achieved, any adjustment thereafter should be carried out at the head electronics module, i.e. single man calibration using data sheet provided with head electronics

1. Ensure the zero light is illuminated on the head electronics module, and the sensor is in “clean air”.
2. Adjust the Variable Resistor VR3 on the ED910 fully clockwise and then anti-clockwise, until the front panel display just reads “Zero”.
3. Set the output of the head electronics module to a predetermined point e.g. 50% FSD or 100% FSD by the use of calibration gas or a dummy sensor.
4. Adjust the Variable Resistor VR4 (closest to TP3) on the ED910, until the front panel display reads the correct concentration e.g. either 50% FSD or 100% FSD. .
5. Recalibrate the head electronics and sensor at the head electronics using the separate calibration instructions.

ED910 OXYGEN MONITOR CALIBRATION INSTRUCTIONS

Designed to accept the two core Oxygen sensor type EDP 6/02 sensor head manufactured by Electronic Devices Ltd. This sensor and hence the ED910 has a range of 0-30% oxygen.

Calibration procedure: Ensure that the sensor has been energised for at least 24 hours, with the gas sensor in clean air, before attempting this procedure. This procedure must be carried out by competent personnel only.

1. Ensure ED910 is operating within the designed operating voltage range.
2. Immerse sensor in required concentration for A1 alarm (for example 18.5% Oxygen) and allow to settle.
3. Adjust VR4 (closest to TP3) until 18.5% (or required concentration used) is displayed on the front panel meter.
4. Ensure the A1 alarm and connected sounders/beacons operate.
5. Immerse sensor in required concentration for A2 alarm (for example 23% Oxygen) and allow to settle, ensuring correct level is displayed on the front panel meter.
6. Ensure the A2 alarm and connected sounders/beacons operate.
7. In normal Air concentration ensure the panel meter displays 21% Oxygen.
8. The Fault output can be tested by disconnecting the sensor.
9. Test all alarm outputs function correctly.