

FIRE DETECTOR TYPE ED 820

Electronic Devices Ltd, long established in the field of electronic detection and alarm equipment, now has available fully approved equipment which offers a new era in reliability and integrity. Owners and operators of marine vessels can now be assured of a high standard of safety coupled with an after-sales service second to none. Assistance with independent installations allows an economic solution to an evermore costly but necessary requirement reliable fire detectors. Early contact with our design team is advised to avoid expensive mistakes which can easily be prevented.



Control Unit Front Panel Facilities

- 4 zone capability mixed heat, smoke, call points etc.
- Two wire detector circuits, continuous fault monitoring.
- Immediate and delayed fire alarm signals
- Separate alarm and fault accept capability.
- Alarm test button.
- Alarm-voltage free contacts 5A, 240V.
- Fused maintained supply available for external functions.

- Integral automatic emergency power changeover with alarm facility.
- Internal fire audio alarm.
- Internal fault audio alarm.
- Separate 240V Mains Driven Power Supply / Battery Charger allows independent Mains/Emergency Supplies.
- Zener barriers for hazardous area operation are available in separate enclosures.

THE ED820 HOLDS LLOYD'S REGISTER OF SHIPPING, ENV 1, 2, 3, 4 & 5 APPROVALS AND CONFORMS TO IMO/SOLAS REQUIREMENTS.

Approved By:



Approved by Lloyd's Register of Shipping.

D.Tp.

The Department of Transport.



BASEEFA Certified. Intrinsically safe where necessary.



Certificate No. M0344

Quality Assurance to BASEEFA (HSE) Regulations Certificate Number: MO344

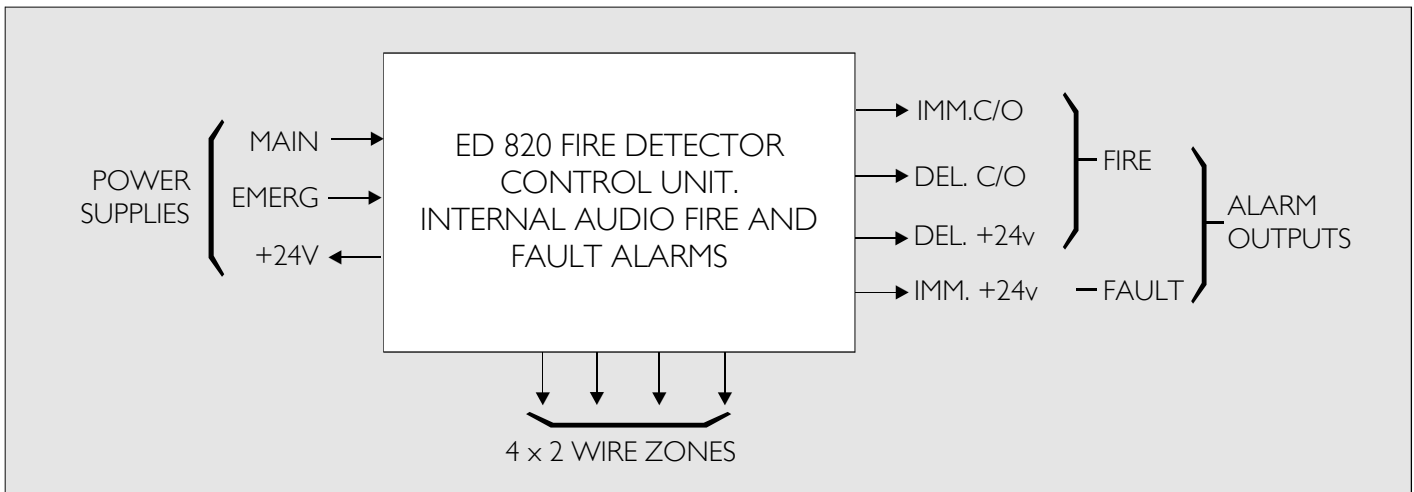
GENERAL

The ED820 was first approved in 1986, and since then many thousands have been fitted worldwide.

The equipment has now become an industry standard because of its

simplicity and reliability. Ease of use and installation coupled with economy and a superb approvals pedigree make the ED820 first choice for all small commercial vessels. The well proven and easily understood conventional system allows simultaneous indication of all zones and utilises a wide range of detector heads making the

equipment particularly useful for retrofitting. Freedom of interference from RFI and a wide supply range capability gives the ED820 an immunity from harsh electrical environments which saves much commissioning time during installation and avoids many "false" alarms thereafter.



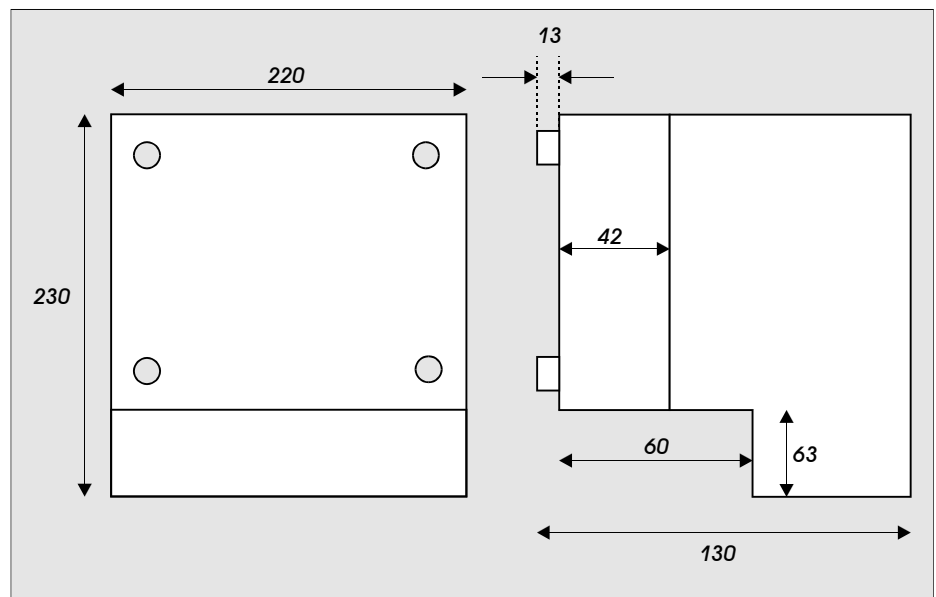
DETECTION HEADS

Any conventional approved heads requiring not greater than 18.5V supply in the standby condition is compatible with the ED820 when fitted with a zone resistor in the range 200-820 ohms. In particular we supply the Apollo S60 range of marine approved detectors which connect 470 ohms across the zone line in the alarmed condition.

CALL POINTS

Although many call points have been approved by various Classification Societies, UK Department of Transport Approval has only been granted to our EDCP and EDCP/W break glass units. In many instances approval has been granted to a lower standard, for example Lloyd's ENV 1, 2 & 3 which excludes both low temperature and salt spray tests thereby making them unsuitable for external use. It is also essential to use call point units which have proper facilities for zone line resistors (as distinct from end of line resistors) thus avoiding unsatisfactory connections in a unit which may be the last line of defence for personnel trapped in various machinery or other spaces.

DIMENSIONS (All dimensions in mm)



AUDIBLE ALARMS

Recent tests have shown the lack of reliability of the traditional fire alarm bell when used on board ships and to avoid failure in service of a crucial part of a fire detection system Electronic Devices Ltd can now offer fully Department of Transport and Lloyd's Register of Shipping Approved, electronic audible alarms. The robust construction of these devices offers

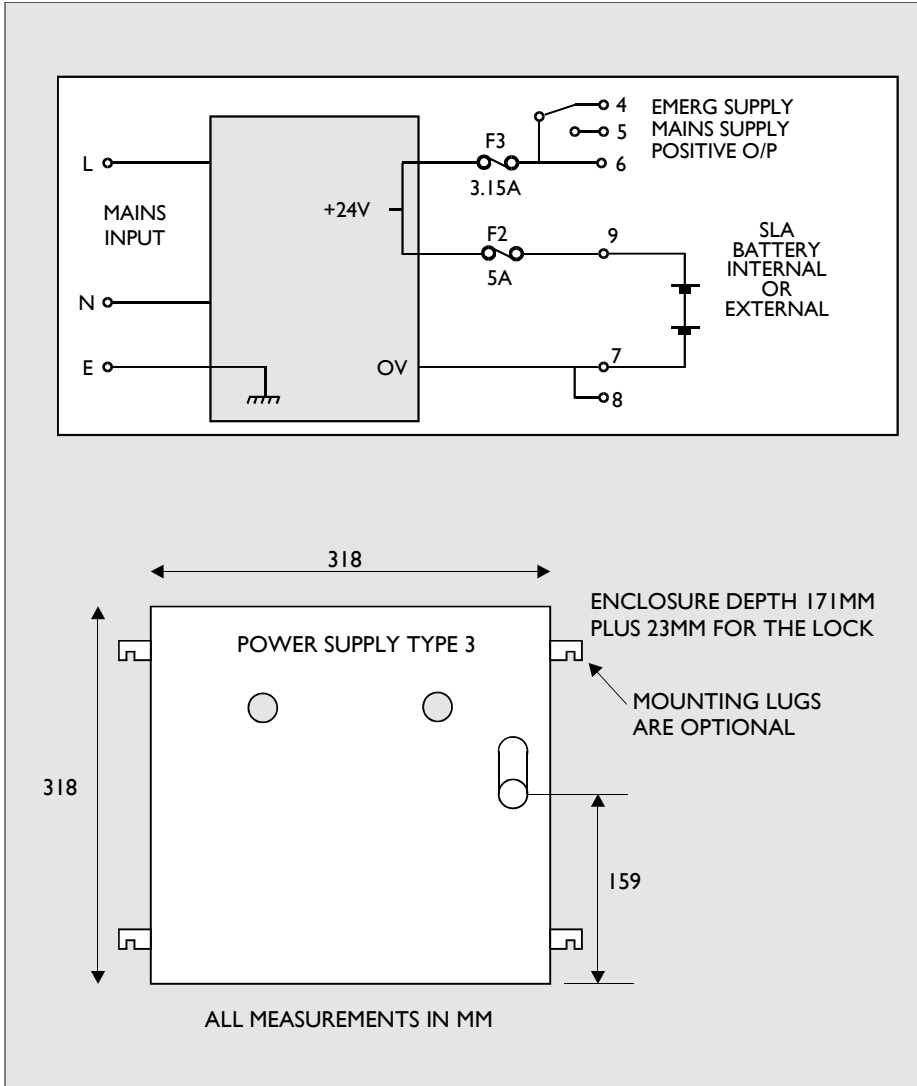
reliability and freedom from alarms due to resonant vibration at particular engine speeds thus making them much more attractive than an unreliable bell. The wide range of user selectable tones allows distinctive sounds to be chosen amongst the multiplicity of alarms prevalent in modern shipboard installations, while low current consumption offers battery back up times under worst case conditions suitable for any installation.

POWER SUPPLY

The control unit requires a nominal 24V DC for both Main and Emergency inputs. The fully approved Power Supply Type 3, an optional extra, provides both power supply and charging facilities for the integral sealed lead acid

standby batteries of maximum 24V 12AH capacity. The PSU will accept 110, 120, 220, 240 and 254V 50/60Hz. mains supplies and provide up to 27.6V at 5A.

The maintained supply is used to drive the control unit and associated external audible 24V DC alarms.



HAZARDOUS AREA OPERATION BASEEFA Certificate No. Ex93C2538U

A BASEEFA certified Interface Unit which may include zener barriers and intrinsically safe relays is also available. This facility enables fire zones and alarms to be made intrinsically safe. The Interface Unit is not Department of Transport (Marine Safety Agency) or Lloyd's Register of Shipping Approved, but is provided in a stove enamelled steel enclosure to IP54

protection. All Hazardous area equipment for example detection heads, audible alarms etc. should be certified intrinsically safe to the appropriate gas group, zone, temperature etc. and must be compatible with the relevant zener barriers. Attention is also drawn to the need for cable having the correct electrical parameters of capacitance, inductance and inductance to resistance ratio. These parameters will vary depending on the gas group certification required. For further information contact Electronic Devices Ltd

APPROVALS Lloyd's Register of Shipping Certificate No. 87/0119

The ED820 and Type 3 Power Supply Unit are approved by the UK Department of Transport (Marine Safety Agency). The ED820 is approved to Lloyd's Register of Shipping ENVI, 2, 3, 4 & 5 while the Type 3 Power Supply is approved to ENVI, 2 & 3 standards.

INSULATION RESISTANCE:

Greater than 100 Mohm at 500V and greater than 10 Mohm after humidity, low temperature and salt mist tests (see below).

POWER SUPPLY PERMANENT:

+/- 10% voltage variation, combined with +/- 5% frequency variation.

POWER SUPPLY TRANSIENT:

+/- 20% voltage variation for 1.5

POWER SUPPLY FAILURE:

3 power interruptions with a minimum break time of 30 seconds.

INCLINATION STATIC:

22.5 deg. on either side of the vertical in all planes.

INCLINATION DYNAMIC:

22.5 deg. on either side of the vertical with a roll period of 10 seconds.

VIBRATION:

2-13.2 Hz at +/- 1.5mm displacement.

13-100 Hz at +/- 1.0g acceleration.

100-13 Hz at +/- 1.0g acceleration.

13.2-2 Hz at +/- 1.5mm displacement.

HUMIDITY CYCLIC:

20 to 55 deg. C +/- 2 deg C at 95% RH +/- 5%.

SALT MIST:

Exposure to standard salt solution at 35 deg C, 95% RH for 28 days.

DRY HEAT:

+ 70 deg C.

LOW TEMPERATURE:

- 25 deg C.

HIGH VOLTAGE:

2KV AC.

ELECTRO STATIC DISCHARGE:

8KV direct to enclosure.

ELECTRO MAGNETIC INTERFERENCE

CONDUCTED LF:

10% of input voltage to the fifteenth harmonic, decreasing to 1% at the hundredth harmonic. Input supply frequency 50Hz to 10kHz.

CONDUCTED HF:

10 kHz to 50 MHz modulated 30% at 1kHz, with a carrier level of 1V.

SPATIAL RFI:

30 kHz to 500 MHz amplitude modulated 30% at 1 kHz, with an electric field strength of 10 V/m.

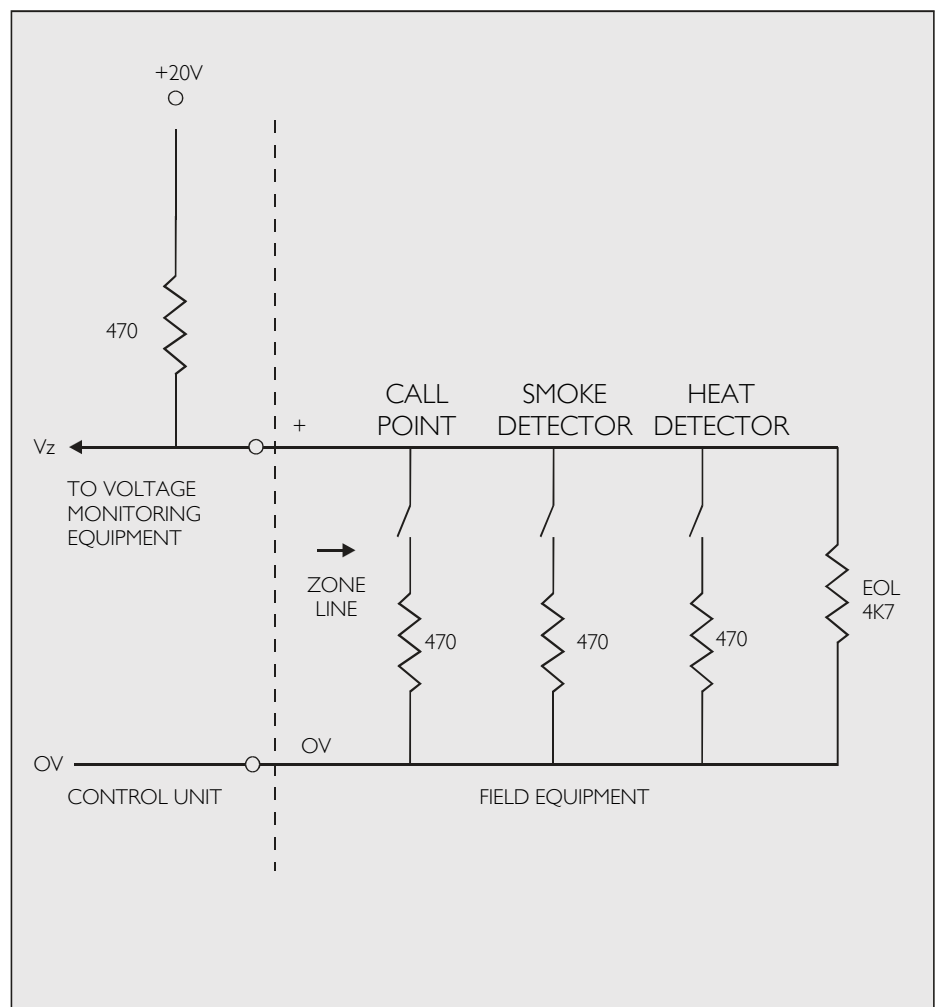
POWER LINE TRANSIENTS:

1 kV amplitude 50 ns width pulses with a rise time of 5ns at a PRF OF 5000 P/S 1 kV amplitude 50 microsec width pulses with a rise time of 1.2 microsec at a PRF of 1 p/s.

CONVENTIONAL FIRE DETECTION - PRINCIPLE OF OPERATION

The diagram below shows the essential principle of the conventional ED 820 Fire Detection System. The Zone line completes a potential divider chain across a stabilised 20V supply. The internal 470 ohm resistor mounted in the control unit is the top half of the divider and in normal operation the end of line 4.7Kohm resistor completes the potential divider so that V_z is at 10/11 of 20 V=18.2V Any detector placed across the line will be electrically equivalent to a

normally open switch with a series 470ohm resistor. If any of the detecting elements operates, the voltage V_z will drop to just below half of the supply which initiates an alarm via the voltage monitoring equipment in the control unit. If the zone line goes open circuit, V_z becomes 20V and an open circuit alarm is given. If the zone line becomes short circuited, V_z drops to 0V and a short circuit alarm is given.



Also available in this range of Fire Detectors are the following models:

ED 320, ED 816 and 832



ENIGMA HOUSE, ENIGMA BUSINESS PARK, MALVERN, WORCESTERSHIRE WR14 1GD ENGLAND.
TELEPHONE : +44 (0) 1684 891500 FACSIMILE: +44 (0) 1684 891600 EMAIL: