

IS320 Series ATEX **Certified Safe-Area** **I.S. Trip Amplifiers**



The **ISFR320/P** is a flame probe trip amplifier for use with probes such as the Elcontrol IS/FE3.

The **ISIR320/P** is an infrared flicker trip amplifier for use with infrared flame scanners such as the Elcontrol IS/VH32P.

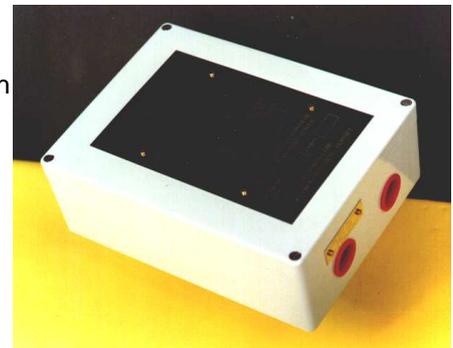
Both variants are housed in an IP65 rated plastic enclosure for safe-area use, dimensions: 200 mm x 150 mm x 75 mm deep.

The units are certified to the appropriate British and European standards for electrical apparatus for use in potentially hazardous atmospheres:

EN 60079-0 : 2012 (General Requirements)
EN 60079-11 : 2012 (Protection by Intrinsic Safety, 'i')

Certification:

II (1) G [Ex ia Ga] IIC, -20°C ≤ T_a ≤ +70°C
Certificate ref: BAS02ATEX7020



ISxR320/P



Operational Description

ISFR320 Flame Probe Variant:

This unit is designed to work with an insulated probe rod introduced into the periphery of the flame envelope, in association with an adjacent instrument earth. As the flame probe connection is intrinsically safe, any standard type of flame rod can be used, provided it is fitted with a cover, and the body work has an external earth bonding connection (of at least 6 mm² csa). The probe should be installed in accordance with BS EN 60079-14 : 2008. The Elcontrol IS/FE3 suits these requirements.

The principle of operation of the ISFR unit is that of 'flame rectification'. The flame rod and earth connections provide a crude diode effect to AC current flowing through the ionised gases within the flame. When this diode effect is sensed by the unit, the output relay is energised. A simple short circuit of the flame rod to earth will not simulate this diode effect and give a false flame signal. The unit provides a signal strength output in the form of a 0 - 10 mA current loop.

Operational Description

ISIR320 Infrared Variant:

This unit is primarily designed to work with an Infrared flame scanner. The scanner should have an external earth bonding connection (of at least 6 mm² csa), and be installed in accordance with BS EN 60079-14 : 2008. The Elcontrol IS/VH32 suits these requirements.

The principal of operation of the ISIR unit is that of 'flame flicker'. There are fluctuations in the infrared radiation emitted by the flame being monitored, due to the combustion process. When IR signals in appropriate frequency bands are detected by the unit, the output relay is energised.

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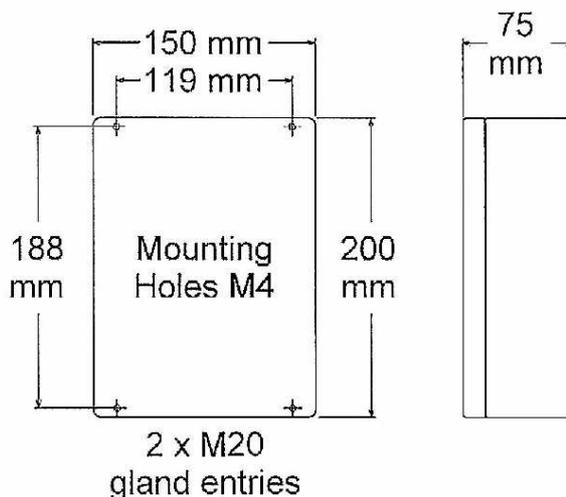
The electronics of the unit are designed to attenuate the mains frequency components, which may be picked up as 'hum' on the signal input lead to the unit, guarding against a false flame signal. The unit provides a signal strength output in the form of a 0 - 10 mA current loop.

As an alternative to the Infrared viewing head, the unit may also operate using a flame probe, as would be used with the flame rectification variant. In this form, the unit responds to the variations in the conductivity of the flame due to the combustion process. This technique is not as effective as flame rectification, however it may be useful, especially if 24V DC operation of the electronics is required.

Supply Voltages:

ISFR variants:	110V or 240V AC 50/60 Hz
ISIR variants:	110V or 240V AC 50/60 Hz, 24V DC
Power consumption:	Typically less than 8 VA

Casework Dimensions:



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