Infrared Sensor
Flame Detector FL20BX

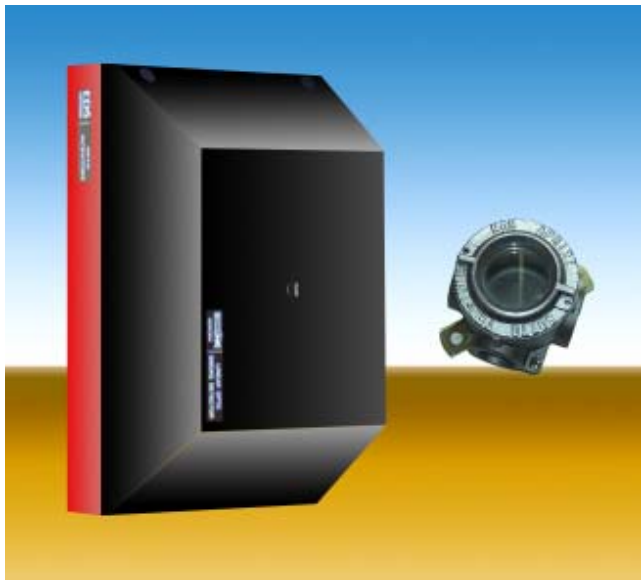
TECHNICAL INFORMATION

APPLICATIONS

- petrol products storehouses (gasoline, diluents, etc.)
- paint storehouses
- paper storehouses
- wood storehouses and silos
- chemical laboratories with flammable gases

TECHNICAL ADVANTAGES

- explosion proof Ex-d optical head
- possibility to install the optical head far from the analizer (over 200m)
- simple installation
- quick response
- unfrequent maintenance
- possibility of remote working test
- high immunity to false alarms
- high immunity to electric noise



The FL20BX flame detector is made of a special light alloy optical head, **separated** from the electronics (Analizer), in explosion proof **Ex-d** CESI certified execution. So the optical head allows the installation in environments where there's an **explosion dangerous atmophere** and where the space available to do the installation is tight.
An important feature is that the optical head can be installed remotely from the analizer (over 200m) allowing an easy and suitable installation.
The detector is able to detect a flame, produced by a fire inside its viewing range, in a few seconds.
This detector is particularly used in environments where a fire could quickly grow like for example storehouses of petrol products, paint, plastic materials, alcohols, etc. and where moreover the installation has to be AD-PE in conformity to the norm CEI 64-2 Table IV for environments of Class 1 Division 1.
The working principle is based on the detection of the infrared radiation emitted by the flame.
The advanced circuitry and components utilized, make the detector very efficient and also highly immune to the false alarms produced by natural phenomenons or inside the protected environment.
The Analizer's container is an autoextinguishing policarbonate box with IP65 protection that is very solid and easy to install.

FUNCTIONING

The FL20BX detector has to be installed so that the zone to be protected results to be inside the viewing range of the optical head. The zone to be protected is continuosly monitored.
An inportant fact is that the optical head is composed by **two type of infrared sensors**, each with a different spectral range. In this way a great working safety is achived and an high false alarm immunity too. Some optical filters are present to let the infrared beam pass through and to block all the other light radiation.
So the detector is unsensible to the sun light, to the lamps light, to the ultraviolet rays and to the X and gamma rays. When a flame grows in the environment to be protected, it generates a powerful infrared radiation that is not constant but variable and pulsing.
The electronics of FL20BX are able to compute the radiation received in terms of amplitude, frequence and time, and if it is recognised as a real flame, the output relay is activated to command eventual acoustic or optical alarms.
The FL20BX is provided with an internal sensitivity control, with a regulation of the response delay and it also contains a special circuit that simulates the flame action and permits to remotely perform a working TEST of the detector.

TECHNICAL DATA

- power supply : 12/24 V dc
- power consumption : 18 mA
- protection against polarity inversion
- max flame detecting distance : 20 m (with a target 20x20 cm flame 20 cm high)
- max distance between the optical head and the analizer: 250m
- optical viewing angle : 120 degrees
- regulation of sensitivity and response delay
- remote test terminals
- output relay : 1 A/ 24 Vcc
- optical head container : Alluminium light alloy - esecution : EEx-d IIB T6 IP65 - conforms to EN50014 - EN50018 - IEC 791- CESI AD 84.132 certification - ATEX certification
- analizer container : policarbonate autoextinguishing box class V0 (UL94, IEC695, IEC707) - protection IP 65 (IEC 529-144)
- immunity to electromagnetic noise : conforms to EN50081-1 EN 50082-1
- dimensions of the head : D=75 H=75 mm
- optical head's weight : 0,3 Kg
- analizer's dimensions : 247x146x114 mm
- analizer's weight : 900 gr

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