SIEMENS

AlgoRex

Infrared flame detectors

DF1191
DF1192

- **DF1191 Flame detector for simple inside applications**
  - **Detection with one infrared sensor**
- **DF1192 Flame detector for the most demanding application requirements (inside and outside)**
  - **Triple-sensor evaluation: Detection in various wavelengths, microprocessor-controlled signal evaluation**
  - **Selective evaluation of flicker frequency**
  - **Selectable application algorithms**
  - **Excellent immunity to false alarms thanks to a combination of fuzzy logic and Wavelet analysis**
- **Highest resistance to:**
  - **electromagnetic influence**
  - **sunlight and heat radiation**
  - **humidity and corrosion**
- **Directly connectable to Cerberus interactive, AnalogPLUS and collective fire detection systems**
- **Can also be connected to non−Cerberus control units with collective signal evaluation**
- **Wide operating temperature range**

Fire & Security Products

Siemens Building Technologies

Application

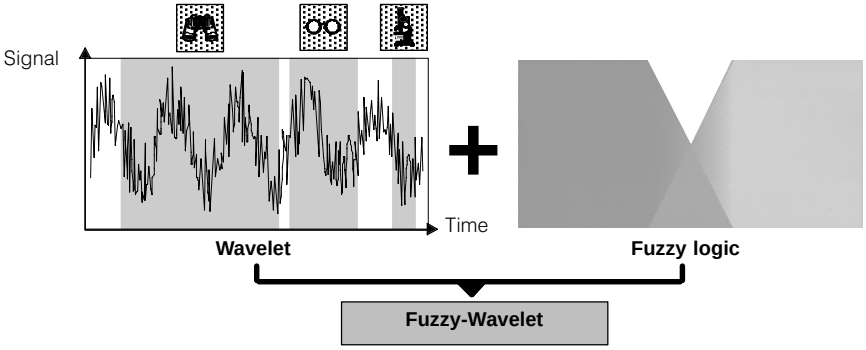
The infrared flame detectors are suitable for the detection of smokeless combustible liquid and gas fires, as well as smoke-forming open fire involving carbonaceous materials as contained in wood, plastics, gases, oil products etc.

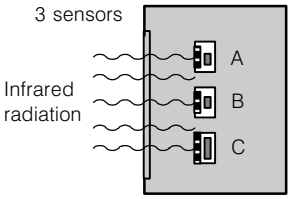
Typical fields of application

Large industrial warehouses	Ships' engine rooms
Hangars for military and civil aircraft	Power plants
Chemicals production plants	Transformer stations
Chemicals stores	Printing works
Oil refineries	Motor test beds
Petrol storage and pump stations	Malls
Arc welding workshops	Wood stores
Ferries and cargo boats	Underground tunnels

Operating principle

Patented signal evaluation





The detection elements of the infrared flame detector consist of two pyroelectric sensors and a silicon photo diode.

- Sensor A: The pyroelectric sensor A reacts to infrared flame gas in the characteristic CO_2 spectral range between 4.0 and 4.8µm.
- Sensor B: The pyroelectric B measures the infrared radiation of sources of interference in the range between 5.1 and 6µm.
- Sensor C: The silicon photo diode measures the solar radiation in the range between 0.7 and 1.1µm.

Triple-sensor evaluation of the DF1192

One sensor measures the hot carbon dioxide in a specific flame wavelength, the two other sensors simultaneously measure the interference radiation in other wavelengths.

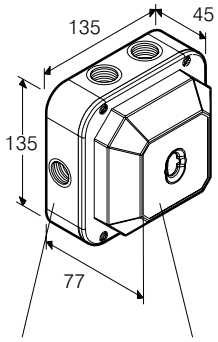
Detection reliability

With intelligent signal processing through fuzzy algorithms and wavelet analysis, the DF1192 achieves excellent detection reliability while maintaining the highest immunity to interference radiation and sunlight.

Emergency activation channel

In order to safeguard against a possible decision emergency, the detector contains an additional emergency activation channel.

Design



Base
DFB1190

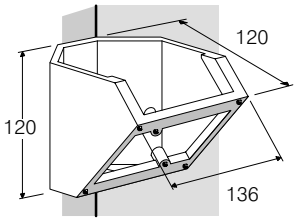
Flame detector
DF1191 / DF1192

The two-component, enamelled, aluminium housing contains the sensors, the evaluating electronics and the programming switch and also shields the detector from electromagnetic interference (EMI).

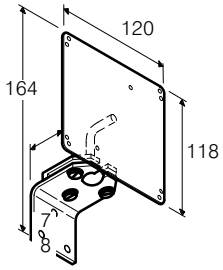
The base comprises a robust, glassfibre-reinforced, plastic housing which provides the required isolated installation of the detector.
The base contains:
- screwless terminals
- chokes to protect against EMI
- a plug attachment for the detector
- six M20x1.5 cable entry possibilities.

The base is required when the wiring is being installed. The flame detector is inserted in the base shortly before commissioning.
The flame detector is connected by being plugged into the base.

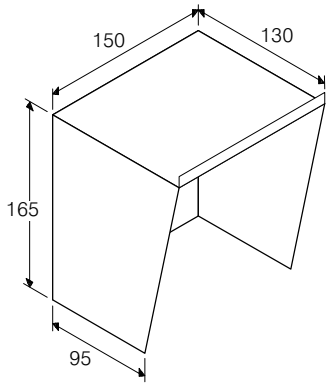
Accessories



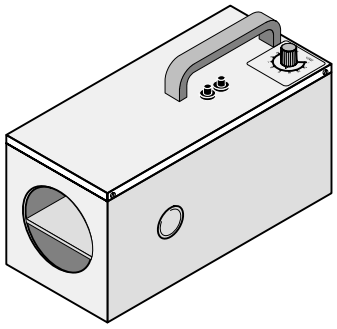
The MV1 mounting bracket is used to fix the flame detector at the correct angle.



The MWV1 ball and socket joint is used to line up the flame detector with the object to be monitored.

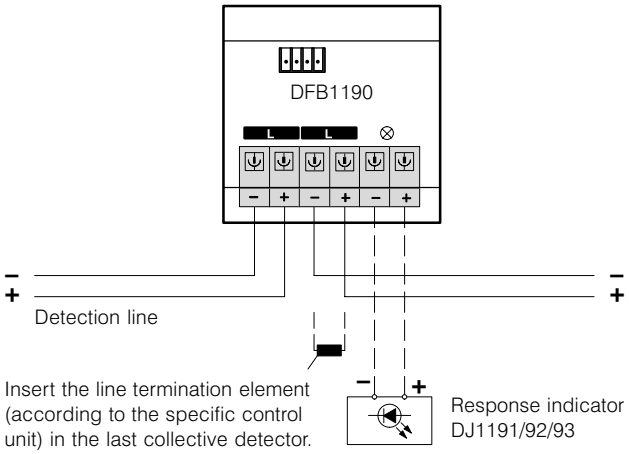


The DFZ1190 rain hood protects the detector in outside applications.



The LE3 test lamp is used to make a performance check on the flame detector at a distance of up to 10m (see product data sheet LE3, e252).

Connection



Technical data

	DF1191	DF1192
Operating temperature	–25 ... +70°C	–35 ... +70°C
Storage temperature	–40 ... +75°C	–40 ... +75°C
Humidity	≤100%, no heavy condensation of window	≤100%, no heavy condensation of window
Protection category (IEC60529)	IP44	IP67
Terminals	0.2 ... 2.5mm^2 (AWG 24 ... 15)	0.2 ... 2.5mm^2 (AWG 24 ... 15)
Colour	pure white, ≈RAL9010	pure white, ≈RAL9010
Standards	EN54-10 conforms with CE	EN54-10 conforms with CE
Compatibility	Compatible with all Cerberus low voltage control units with interactive, AnalogPLUS and collective signal evaluation.	

Details for ordering

Type	Part no	Designation	Weight
DF1191	516659	Infrared flame detector	0.500kg
DF1192	516662	Infrared flame detector	0.500kg
DFB1190	516536	Base	0.250kg
–	A5Q00004478	Screwed cable gland M20x1.5	0.035kg
DFZ1190	530266	Rain hood	0.640kg
MV1	395045	Mounting bracket	0.285kg
MWV1	367484	Ball and socket joint	0.860kg