SIEMENS

AlgoRex
Synova™
Sinteso™
Cerberus™ PRO

DF1101-Ex

Infrared flame detector

Collective/SynoLINE 600
for explosion-hazard areas of zones 1 and 2

- **For inside and outside applications**
- **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 patented fuzzy logic and Wavelet analysis**
- **Highest resistance to**
  - electromagnetic influence
  - sunlight and heat radiation
  - humidity and corrosion
- **Connection to the detection line via the DC1192 input/output module**
  - for galvanic isolation and connection to the collective/SynoLINE 600, interactive or AnalogPLUS/SynoLOOP fire detection systems
- **Connection to the detection line via the transponder FDCIO223**
  - for galvanic isolation and connection to the addressable FDnet/C-NET fire detection system

Building Technologies

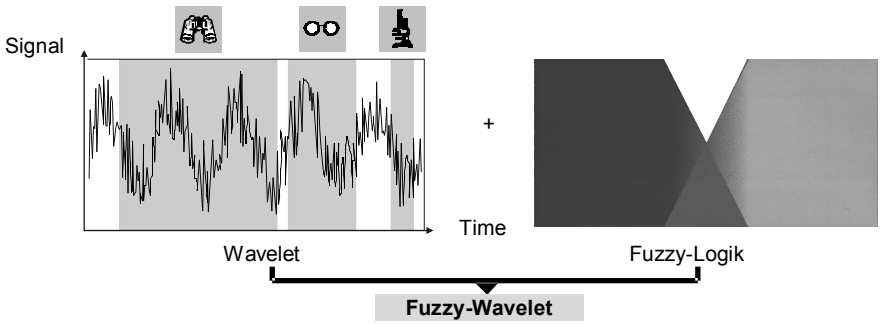
Control Products and Systems

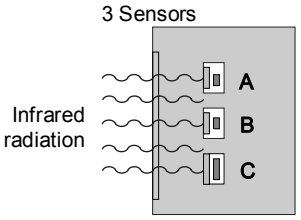
Characteristics

- **Environmental**
- ecologically processing
- recyclable materials
- electronic and synthetic material simple separable
- **Characteristics**
- the detector housing made of aluminum also serves as a screen against electro-magnetic interference (EMB)
- the base housing consists of a robust, glass-fiber reinforced synthetic material
- protected electronics
- built-in alarm indicator (AI)
- collective signal processing
- **Explosion protection category**
- The infrared flame detector DF1101-Ex is designed to the explosion protection category 'Intrinsic safety' Ex i. The standards which cover this are EN50014 (IEC60079-0) und EN50020 (IEC60079-11)

Function

- Patented signal evaluation





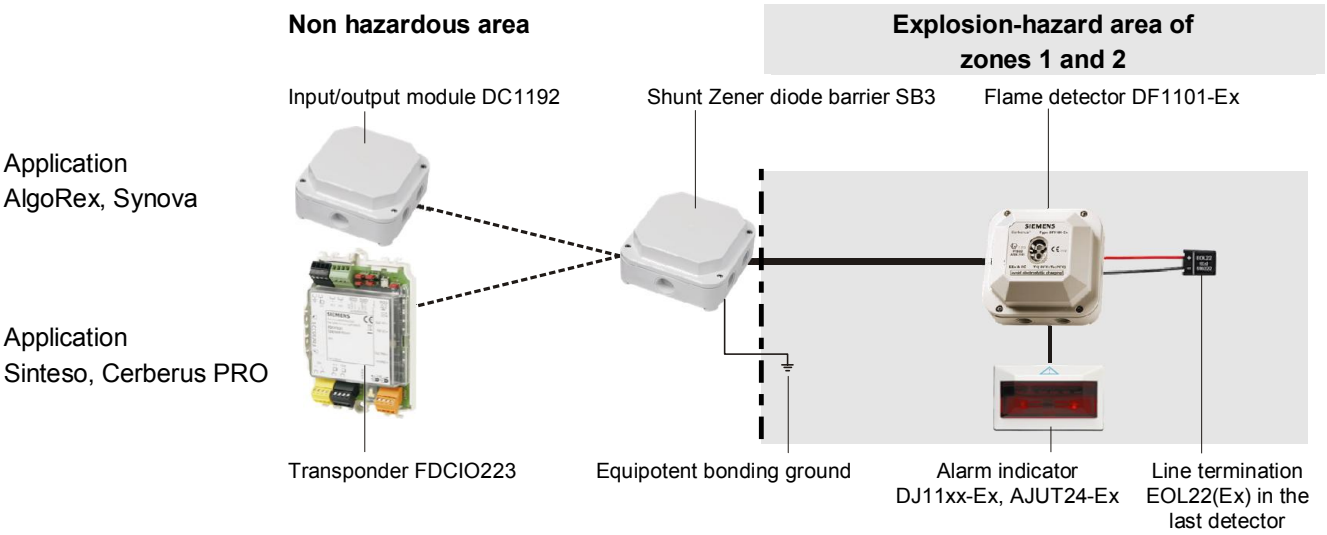
The detection elements of the infrared flame detector consist of two pyroelectric sensors and a silicon photo diode.
Sensor A:
The pyroelectric sensor A reacts to infrared flame gas in the characteristic CO2 spectral range between 4.0…4.8 µm.
Sensor B:
The pyroelectric B measures the infrared radiation of sources of interference in the range between 5.1… 6 µm
Sensor C:
The silicon photo diode measures the solar radiation in the range between 0.7…1.1 µm

- One sensor measures the hot carbon dioxide in a specific flame wavelength; the two other sensors simultaneously measure the interference radiation in other wavelengths.
- With intelligent signal processing through fuzzy algorithms and wavelet analysis, the DF1101-Ex achieves excellent detection reliability while maintaining the highest immunity to interference radiation and sunlight.
- In order to safeguard against a possible decision emergency, the detector contains an additional emergency activation channel.
- **Application**
- Chemicals production plants, chemicals stores
- Oil refineries
- petrol storage and pump stations
- Natural gas transfer points
- Propane and butane filling installations
- All explosion-hazard areas in which flaming fires involving carbonaceous materials are to be expected

Installation in explosion-hazard areas

Equipment installed in explosion-hazard areas must always comply with local national regulations.

The DC1192/FDCIO223 input/output module and the series-connected SB3 shunt Zener diode barrier are used as a galvanic isolation between explosion-hazard and non hazardous areas.

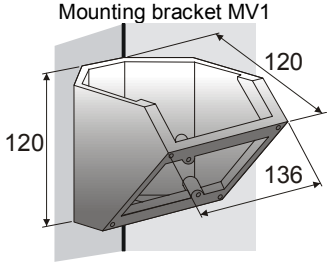


Further details can be found in the documents

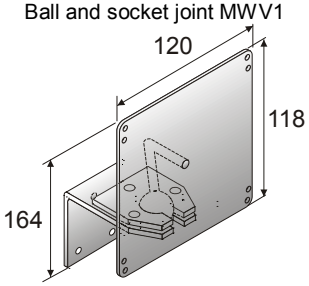
- Fire protection in explosion-hazard areas, document no. 1204
- Input/output module DC1192, document no. 001571
- Transponder FDCIO223, document no. 009168
- Shunt Zener diode barrier SB3, document no. 001222

Accessories

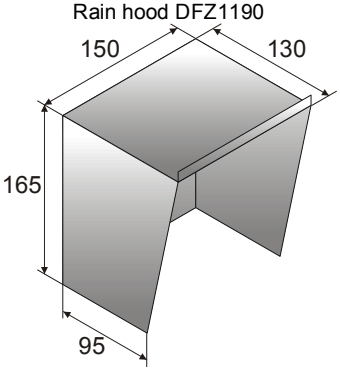
Mounting bracket MV1



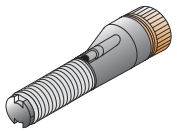
Ball and socket joint MWV1



Rain hood DFZ1190



Test lamp StabexHF

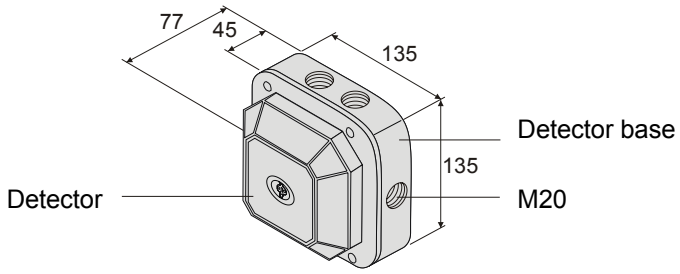


Is used to make a performance check on the flame detector.

Design

- easy installation of the housing on stable, vibration-free surfaces; the detector is only inserted after installation check, shortly before commissioning
- 6 threads M20 for screwed cable glands
- connection via two-wire installation with the control unit
- ext. alarm indicator connectable
- pluggable connection between flame detector and base
- mounting bracket MV1 for room surveillance to fix the detector at the right inclination angle
- ball and socket joint MWV1 for the orientation to an object
- rain hood DFZ1190 for outside applications

Dimensions



Technical data

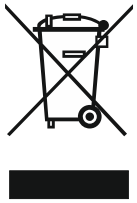
Operating voltage	DC 16…28 V
Operating current (quiescent)	0.5 mA
Alarm indicator (AI) ext. connectable and programmable	2
Operating temperature	-35…+70 °C
Storage temperature	-40…+75 °C
Humidity	≤95 % rel. (no heavy condensation of window)
Connection factor KMK	6
Connection terminals	0.2…2.5 mm^2
Color	white, ~RAL 9010
Protection category EN 60529/IEC 60529	IP67
Standards – for flame detector – for explosion-hazard areas	 EN54-10 EN 50014 (IEC 60079-0), EN 50020 (IEC 60079-11)
Ex classification	II 2 G Ex ib IIC T4 (-35 °C ≤Ta ≤70 °C)
Approvals	VdS G299085, PTB 02 ATEX 2161, LPCB 126bb/01
Compatibility	– By using the DC1192 input/output module and SB3 shunt Zener diode barrier it is compatible with fire detection system control units with collective/SynoLINE600, interactive or AnalogPLUS/SynoLOOP signal evaluation. – By using the FDCIO223 transponder and SB3 shunt Zener diode barrier it is compatible with fire detection system control units with FDnet/C-NET signal evaluation.

08 CE 0786	**DF1101-Ex**	Siemens Schweiz AG; Theilerstrasse 1a CH-6300 Zug Technical data: see doc. **001673**
DF1101-Ex - Flame detector for use in fire detection and fire alarm systems installed in buildings.		
305/2011/EU (CPR): EN 54-10 ; 2014/30/EU (EMC): EN 50130-4 / EN 61000-6-3 ; 2014/34/EU (ATEX): EN 60079-0 / EM 60079-11		
The declared performance and conformity can be seen in the Declaration of Performance (DoP) and the EU Declaration of Conformity (DoC), which is obtainable via the Customer Support Center: Tel. +49 89 9221-8000 or http://siemens.com/bt/download		
DoP No.: 0786-CPR-20497; DoC No.: CED-DF1101-Ex		

Details for ordering

Type	Part no	Designation	Weight
DF1101-Ex	BPZ:5166750001	Infrared flame detector	0.500 kg
DFB1190	BPZ:5165360001	Base	0.250 kg
–	A5Q00004478	Screwed cable gland M20 x 1.5	0.039 kg
MV1	BPZ:3950450001	Mounting bracket	0.285 kg
MWV1	BPZ:3674840001	Ball and socket joint	0.860 kg
DFZ1190	BPZ:5302660001	Rain hood	0.640 kg
Stabex HF	BPZ:4620910001	Test lamp	0.250 kg

Disposal



The device is considered an electronic device for disposal in accordance with the European Guidelines and may not be disposed of as domestic garbage.

- Dispose of the device through channels provided for this purpose.
- Comply with all local and currently applicable laws and regulations.

Issued by
Siemens Switzerland Ltd
Building Technologies Division
International Headquarters
Theilerstrasse 1a
CH-6300 Zug
Tel. +41 58 724 24 24
www.siemens.com/buildingtechnologies