



FDF221-9, FDF241-9

Sinteso™
Cerberus™ PRO

DA Infrared flame detectors ASA Infrared flame detectors



addressable or collective, conventional *ASAtechnology*™

-
- DA FDF221-9 Flame detector for simple inside applications, detection with one infrared sensor und detection algorithms
 - ASA FDF241-9 Flame detector for the most demanding application (inside and outside), detection with 3 infrared sensors and *ASAtechnology*
 - Excellent immunity to false alarms thanks to a combination of fuzzy logic and Wavelet analysis
 - Event-controlled detection behavior
 - Microprocessor-controlled signal evaluation
 - Two-wire installation for all types of cable
 - Communication via FDnet/C-NET (individual addressing), or collective, conventional signal processing

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 electromagnetic interference (EMB)
- the base housing consists of a robust, glass-fiber reinforced synthetic material
- protected electronics
- built-in alarm indicator (AI)
- integrated line separator
- addressable and collective, conventional signal processing

FDF221-9 DA Infrared flame detector

● **Function**

- 1 infrared sensor with detection algorithms

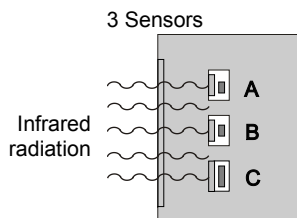
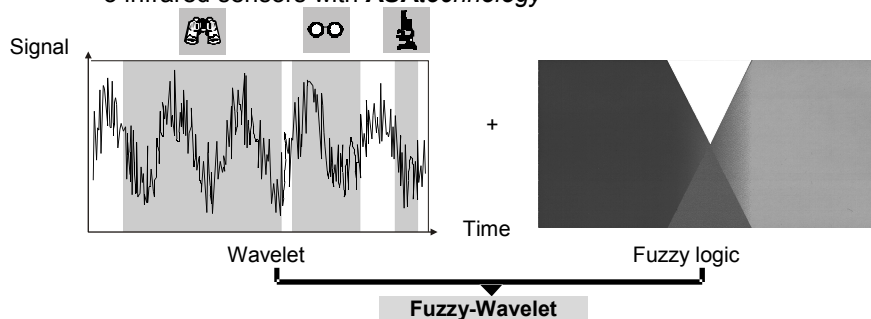
● **Application**

- for simple applications, additional to smoke detectors
- 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.
- only used without source of interference as sun, halogen light, blackbody radiation

FDF241-9 ASA Infrared flame detector

● **Function**

- 3 infrared sensors with **ASA** technology



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:

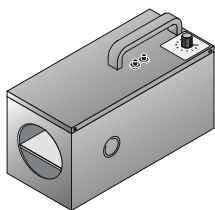
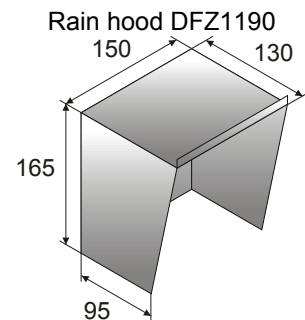
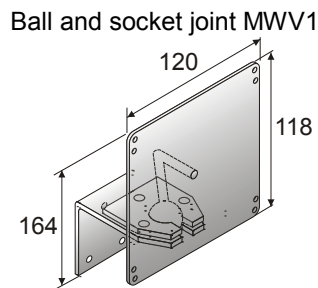
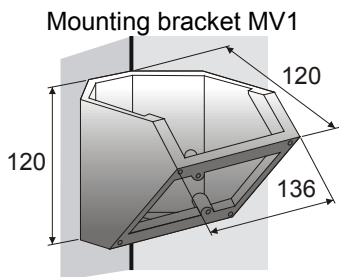
The silicon photo diode measures the solar radiation in the range between 0.7...1.1 μm

- 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 FDF241-9 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**

- Detects smokeless liquid and gas fires as well as smoke-generating open fires resulting from the combustion of carbonaceous materials such as wood, synthetics, gases, oil products, etc.
- | | |
|--|--|
| <ul style="list-style-type: none"> - large industrial warehouses - chemicals production plants - chemicals stores - petrol storage and pump stations - arc welding workshops - ferries and cargo boats - ships' engine rooms - underground tunnels | <ul style="list-style-type: none"> - power plants - transformer stations - printing works - motor test beds - malls - wood stores - hangars for military and civil aircraft |
|--|--|

Accessories

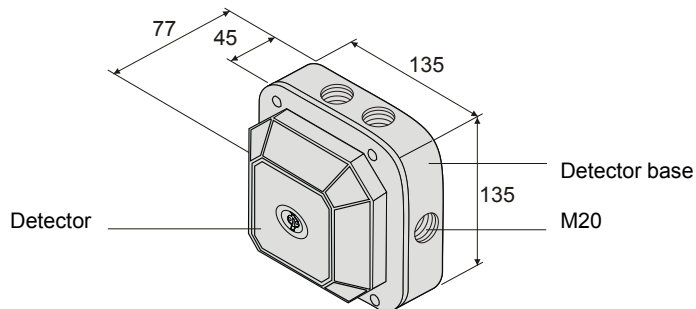


The test lamp LE3 is used to make a performance check on the flame detector at a distance of up to 10 m.

Installation



- 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 correct angle
- ball and socket joint MWV1 for the orientation to an object
- rain hood DFZ1190 protects the detector in outside applications

Dimensions



Technical data

	FDF221-9	FDF241-9
Operating voltage (addressable) (quiescent)	DC 12...33 V	DC 12...33 V
Operating current (addressable) (quiescent)	0.7 mA	0.7 mA
Operating voltage (collective) (quiescent)	DC 14...28 V	DC 14...28 V
Operating current (collective) (quiescent)	0.5 mA	0.5 mA
Alarm indicator (AI) ext. connectable and programmable	2	2
Operating temperature	-25...+70 °C	-35...+70 °C
Storage temperature	-40...+75 °C	-40...+75 °C
Humidity (no heavy condensation of window)	≤95 % rel.	≤95 % rel.
Communication protocol	FDnet/C-NET or collective (with and without current limitation)	FDnet/C-NET or collective (with and without current limitation)
Connection terminals	0.2...1.5 mm ²	0.2...1.5 mm ²
Color	white, ~RAL 9010	white, ~RAL 9010
Protection category EN 60529 / IEC 60529	IP44	IP67
Standards	EN54-10, EN54-17	EN54-10, EN54-17
Approvals		
– VdS	G204009	G204010
– LPCB	126bc/04	126bc/05
QS standards	Siemens Standard SN 36350	
System compatibility		
– FDnet	FS20, AlgoRex, SIGMASYS	
– C-NET	FS720	
System compatibility collective, conventional	CZ10, BC10, FC10, XC10, CS11, FC700A, FC330A, SIGMASYS, BMS, SM80/88/D100	

07  0786	FDF221-9	Siemens Switzerland Ltd, Gubelstrasse 22 CH-6301 Zug, Switzerland Technical data: see doc. 007011
FDF221-9 - Flame detector incl. short-circuit isolator for use in fire detection and fire alarm systems installed in buildings		
305/2011/EU (CPR): EN 54-10 / EN 54-17 ; 2004/108/EC (EMC): EN 50130-4 / EN 61000-6-3 ;		
Declared performance and conformity can be seen in the Declaration of Performance and the EC Declaration of Conformity, which is obtainable via the Customer Support center: Tel. +49 89 9221-8000 or http://siemens.com/bt/download		
DoP No.: 0786-CPR-20371; DoC No.: CED-FDF221-9		
07  0786	FDF241-9	Siemens Switzerland Ltd, Gubelstrasse 22 CH-6301 Zug, Switzerland Technical data: see doc. 007011
FDF241-9 - Flame detector incl. short-circuit isolator for use in fire detection and fire alarm systems installed in buildings		
305/2011/EU (CPR): EN 54-10 / EN 54-17 ; 2004/108/EC (EMC): EN 50130-4 / EN 61000-6-3 ;		
Declared performance and conformity can be seen in the Declaration of Performance and the EC Declaration of Conformity, which is obtainable via the Customer Support center: Tel. +49 89 9221-8000 or http://siemens.com/bt/download		
DoP No.: 0786-CPR-20372; DoC No.: CED-FDF241-9		

Details for ordering

Type	Part no	Designation	Weight
FDF221-9	A5Q00003902	Flame detector (1 Sensor)	0.500 kg
FDF241-9	A5Q00003006	Flame detector (2 Sensors / 1 Photo diode)	0.500 kg
FDFB291	A5Q00003310	Detector base	0.250 kg
–	A5Q00004478	Metal screwed cable gland M20	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

Details about system compatibility see List of compatibility 008331

Siemens Switzerland Ltd
Infrastructure & Cities Sector
Building Technologies Division
International Headquarters
CPS Fire Safety
Gubelstrasse 22
CH-6301 Zug
Tel. +41 41 724 24 24
www.siemens.com/buildingtechnologies

© 2014 Copyright by
Siemens Switzerland Ltd
Data and design subject to change without notice.
Supply subject to availability.

Document no. **007012_m_en_--**
Edition 04.2014

Manual FD20 / FD720
Section 3 / 3