



Flamonitec®

BFI AUTOMATION

Technical Information

Compact Flame Detector IFR 400

for oil -, gas- and dual fuel burners for continuous burner operations



1 | Description

The IFR 400 is a compact flame detector specially designed for use in industrial firing systems and forced draught burners for continuous operation. The radial sighting orientation offers the possibility of mounting the flame detector on the side of forced draught burners. Adjustment work is not necessary during commissioning or maintenance due to the processor-controlled 3-channel flame signal evaluation.

Two options are available for the signal output. A relay output for connection to a PLC or the ionisation output for direct connection to a burner controller. The ionisation output makes it possible to replace a poor ionisation monitoring system with an independent flame detector.

The operating states are displayed directly on the IFR 400 by means of an LED. In addition, all information from the IFR 400 can be transferred to a PC and logged via the optional BSTcom readout tool.

2 | Safety Instruction

The IFR 400 is a safety component and must therefore not be opened, modified or misused! In the event of a fall, impact, moisture, wetness or other influences that may cause damage to the flame detector, the unit must be replaced even if there is no apparent damage! Repairs are not permitted!

Before starting any work, the system must be disconnected from the power supply. Before initial commissioning or when replacing the unit, the electrical wiring must be checked!

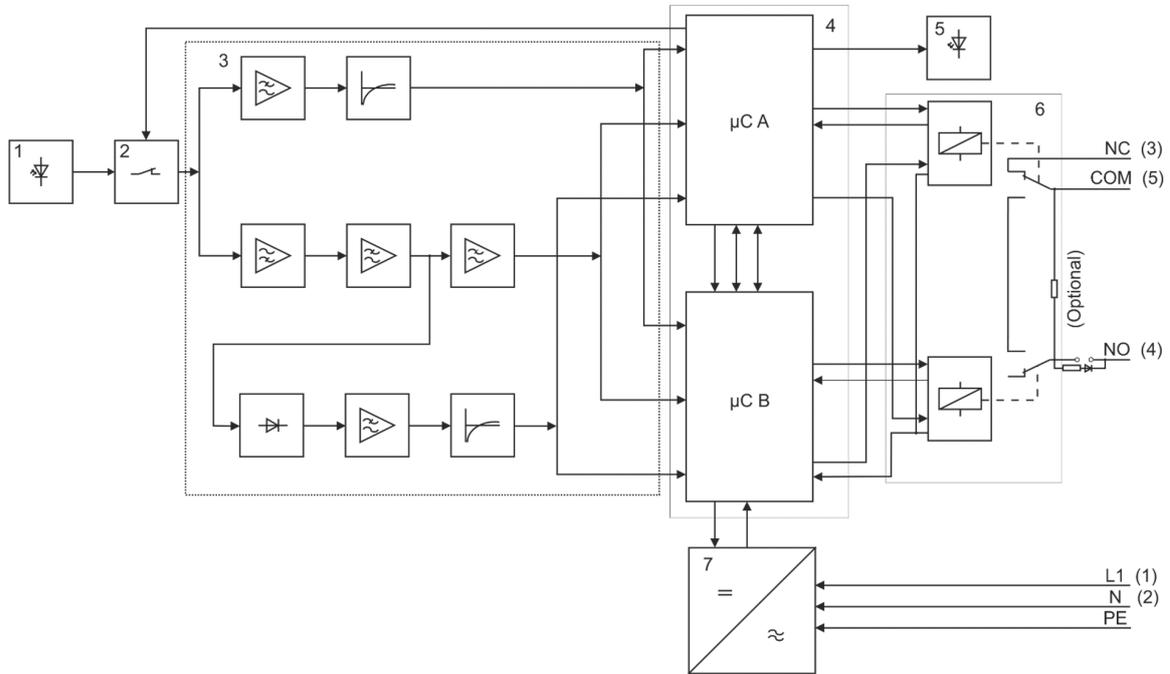
This technical description is only valid in connection with the separately available operating instructions. If you are unsure about any application using this flame detector, please email or call the manufacturer or the authorised distributor.

3 | Technical data

Electrical system, optical system, mechanical system

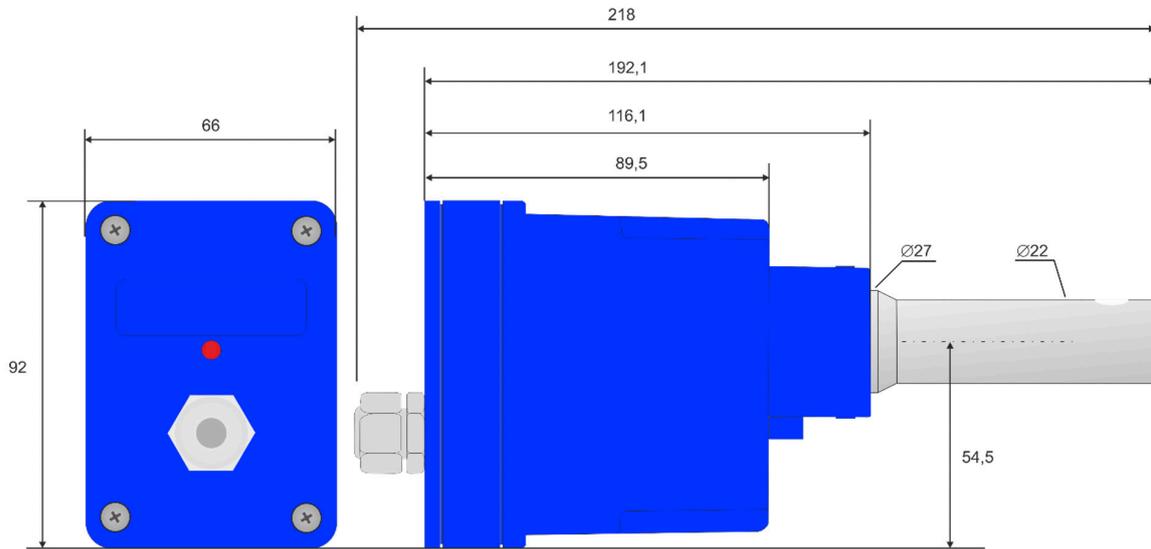
Optical features	350 to 1100 nm
Orientation	radial
Input	230 V AC / 50-60 Hz 120 V AC (optional)
Prefuse	max. 1 A, slow
consumption	max. 50 mA
Operating temperature	-20 °C to +70 °C
Operating position	any position
Kind of protection	IP 65
Protection class	I
Humidity	max. 95% r.H., non-condensing
Electrical connenction	Fixed cable connection, 1.5 m
Restart time	Standard 5s Other times on request
Reaction time Switch-on time Switch-off time	< 1s < 1s
With the sensitive variant the switch-off time changes to:	For installations in accordance with DIN / EN 267 or DIN / EN 676 at the moment of self-checking < 2s
Thresholds Amplitude Pressure Frequency	Off / On / Max. 50 / 100 / 1023 150 / 200 / 900 15 / 20 / 400
Relay output	Floating, potential-free change-over contact max. switching current 0.5 A max. switching power 125 W max. switching voltage 250 V AC

4 | Block diagram IFR 400



Item	Designation
1	Sensor
2	Shutter
3	Preamplifier
4	Signal evaluation
5	Optical output
6	Relay
7	Power supply

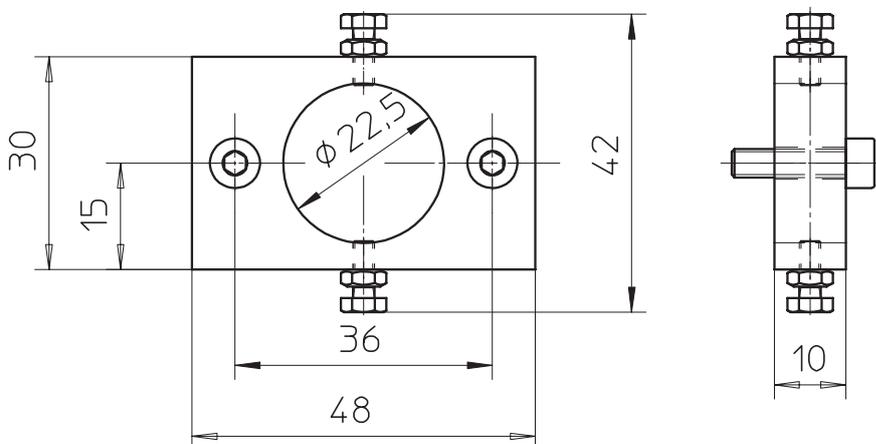
5 | Dimensions



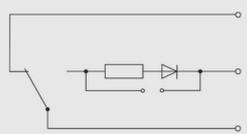
All dimensions in mm

6 | Mounting flange IFR

The mounting flange allows the detector to be held and adjusted in a suitable position to view the flame. 2 Skt screws on the narrow sides of the flange are used for fastening to the flame detector itself. By means of two cyl. screws, the IFR mounting flange can be fastened to the burner housing.



7 | Connection diagram IFR 400

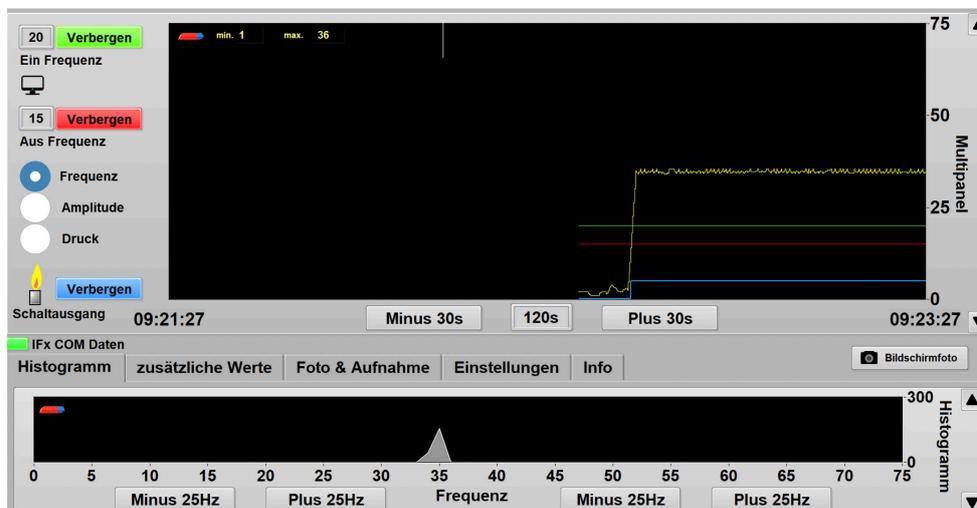
Internal connection diagram AC/DC	Cable No.	Connection
L	1	L
N	2	N
	3	NC
	4	NO
	5	Com
PE	PE	PE

8 | Mounting instructions

The IFR 400 should be mounted as close as practical to the flame and on the same axis. The flame detector is compact and should be mounted with the IFR mounting flange or other suitable holder. Fix the flame detector in the holder taking care to protect the sensor from other light sources. To avoid any problems at start-up; please avoid alignment of the flame detector with the ignition spark electrode.

9 | Readout unit IFx-Com for software BST-Com

It is also possible to read out and analyze all data and values of the IFR 400 via software. Data logs and screenshots can also be saved easily. More details can be found in the description of the BST-Com software.



10 | Overview of the flame detectors IFR 400 and available additional components

Type	Description	Part-No.
Compact Flame Detector IFR 400 / 230, sensitive *, fixed connection cable 1.5 m	230 V AC	6015-0060-01
Compact Flame Detector IFR 400 / 230, sensitive * Ionization, fixed connection cable 1.5m	230 V AC	6015-0060-04
Mounting flange IFR		6550-0170-00
Readout unit IFx-Com with 1.5 m cable, for software		6040-4833-00
Readout unit IFx-Com with 3 m cable, for software		6040-4833-03

*For systems according to DIN/EN 267 or DIN/EN 676, the switch-off time at the moment of the self-test is < 2s.



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Disposal information

The flame detector is equipped with electrical and electronic components and must be disposed separate from household waste. Follow the local and actual regulations for waste disposal.



All data are without guarantee and refer to the product group. Product specific information is contained in the operating instructions. We reserve the right to make technical changes. | © BFI Automation Mindermann GmbH 2024/19

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