



## System Overview

# Compact Flame Scanner F200K

Sensors and systems for combustion engineering



[www.lamtec.de](http://www.lamtec.de)

# Approvals.



CE 0085

Gas Appliances Directive 2009/142/EC, CE0085



CE 0036

Pressure Equipment Directive 2014/68/EU, CE0036



SIL 3

SIL 3 Confirmation, DIN EN 61508 Parts 2



CSA-C22.2 No. 199

**Class I, Division 2, Group A, B, C, D,  
Hazardous Locations**



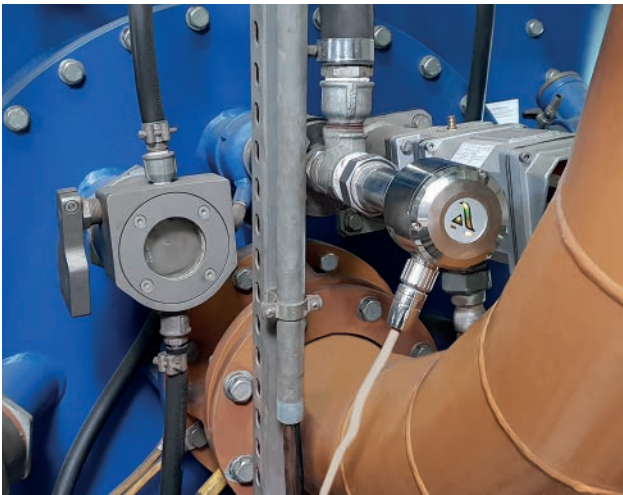
EN 60079, Ex Device Group II Device Category 3,  
IBExU05ATEX  
EX nA nC II T6 X (Zone 2)  
 $-20\text{ }^{\circ}\text{C} \leq Ta \leq +60\text{ }^{\circ}\text{C}$



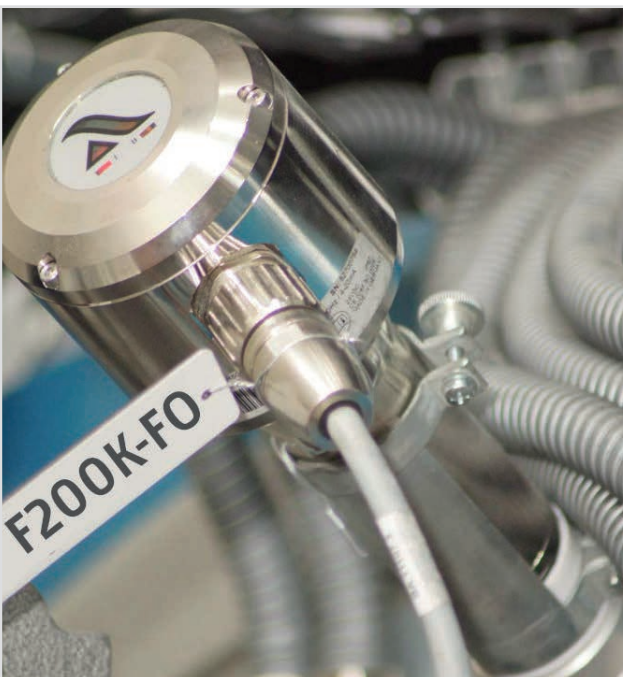
EN 60079, EX Device Group II Device Category 2  
PTB03 ATEX  
II 2 G/D EEx de II C T6 (Zone 1)

# Compact Flame Scanner F200K.

With the F200K, LAMTEC has developed a compact flame scanner that can be used in a number of different areas and for a diverse range of monitoring requirements. With the new generation of flexible compact flame scanners, LAMTEC provides operators of industrial combustion systems and power plants with a state-of-the-art product. As such, the F200K compact flame scanner is capable of tackling monitoring requirements for complex modern burners in a safe, efficient and reliable manner.



The LAMTEC F200K flame scanner in operation.



F200K-FO Fibre Optic implementation

## Advantages:

- Flame monitoring in a compact design
- Integrated flame sensor and switch amplifier
- Three stages for digital flame frequency evaluation
- Two selectable operating modes
- Available with certification for Ex Zone I and II
- Simple operation and adjustment
- No special tools required for the commissioning process
- -40 °C ... + 75 °C (higher temperatures possible, with cooling air housing)
- IP67

## Applications:

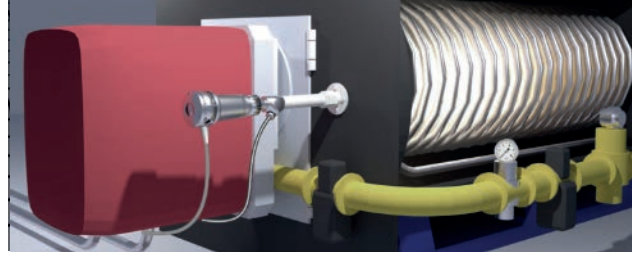
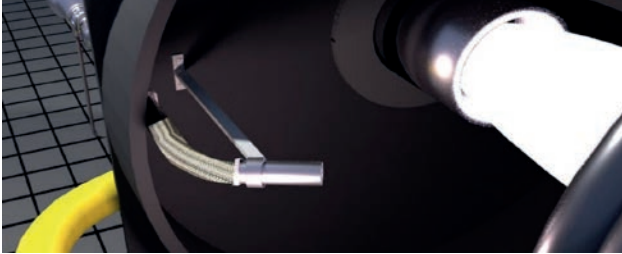
- Combustion systems with and without selection tasks
- Single and multi-fuel burners
- Combustion space monitoring
- Power plants, heating plants, process furnaces, waste combustion-plants, etc.
- Combustion plants with restricted view of the flame

## Fuels:

- Gas
- Oil
- Coal
- Biomass
- Dusty fuels
- Special fuels
- Hydrogen

**F200K-FO with Fibre Optic**

- For use on boiler systems with limited view of the flame
- Use at high temperatures in the normal growing range of a flame monitor and up to 350 °C



**Product description.**

Typ	Spectrum	Viewing angle	Preferred application / fuels
F200K1 UV-2 F200K2 UV-2 (Ex)	210 ... 380	ca. 8°	<ul style="list-style-type: none"> <li>■ Oil</li> <li>■ Gas</li> <li>■ Special gases such as refinery gases, blast furnace gases and hydrogen</li> <li>■ Special applications in combination with fibre optics</li> </ul>
F200K1 UV-3 F200K2 UV-3 (Ex)	210 ... 380	ca. 8°	<ul style="list-style-type: none"> <li>■ Special fuels with high intensity and high selection requirements</li> </ul>
F200K1 IR-1 F200K2 IR-1 (Ex)	1200 ... 2800	ca. 60°	<ul style="list-style-type: none"> <li>■ Oil, gas, wood and coal fired furnaces with a high level of flue-gas recirculation</li> <li>■ Yellowish waste gases without UV radiation or with shielding of the UV spectrum by water vapour and dust</li> </ul>
F200K1 IR-2 F200K2 IR-2 (Ex)	850 ... 1200	ca. 50°	

Design options	F200K1	F200K2... (Ex)
Sensitivity range	One sensitivity range Six stages	Two sensitivity ranges, increased sensitivity in range II, can be switched externally, six stages per range
Frequency range	10 ...190 Hz *	10/20/30 ... 190 Hz*, can be adjusted on the device
* Additional versions for lower threshold frequencies also available on request		

Auxiliary energy, input	
Supply voltage	24 VDC ± 20%, protection rating III
Power consumption	4 W

Remote range switch-over (F200K2 only), floating contact, can be switched via power supply

**Highlights:**

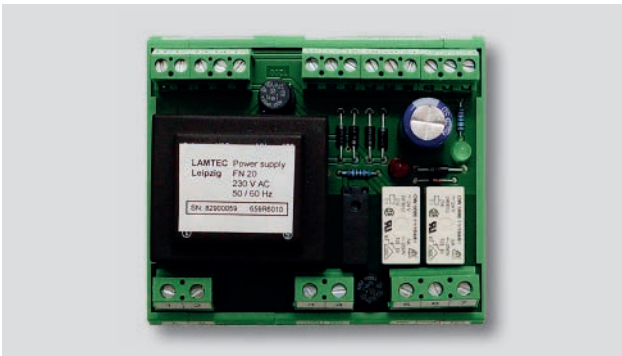
- Two operating modes
- Operating modes can be selected externally
- Operating modes can be switched during operation
- Graduated frequency ranges

# Accessories.

## FN20 power pack

The FN20 power pack enables the F200K compact flame scanner to be connected to a mains AC voltage. It is intended for use with top hat rail assembly but can also be delivered for attachment to a mounting plate upon request.

The FN20 power pack includes an output relay adjusted for connecting the F200K compact flame scanner to 230 V or 115 V mains AC voltage. It must be installed in a way that enables it to attain an IP40 protection rating. The FN20 power pack is also available in an optional IP65 case.



FN20 for top hat rail assembly FN20 in the connection housing with FSB connector, not shown.

## Connecting cable


- Connecting cables are available in 3, 5 and 10 metre lengths.
- Standard LiYcY cable, temperature range of -40 ... +80 °C (inactive) silicone cable, temperature range -40 ... +150 °C
- For special ambient conditions, the silicone cable can also be supplied with a stainless steel metal protected tube
- IP67



Connecting cable

## FG21 + FG24 connection housing

LAMTEC offers two versions of the FG2X connection housing:

- FG21 with four screwed cable glands
- FG24 Ex-II for use in explosive environments, with four screwed cable glands
-  II 3G EX nA II T4 Gc X.
- IP66



FG21

## FHXX and FVXX adjustable holder

You will find a complete overview of the holders and cooling-air housings (also with extended air outlet) for LAMTEC flame scanners in the document „Flame Monitoring Systems and Accessories“ (DLT7673).



Adjustable holder

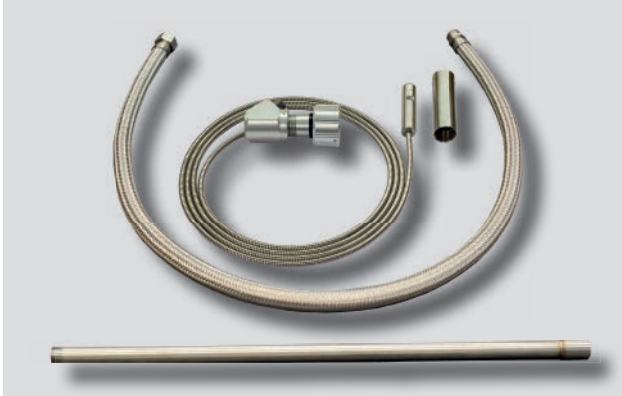
## Fibre Optic

### Available versions:

- Rigid Protective Housing - FOR
- Flexible Protective Housing - FOF

### Available lengths:

- FOR 1.0 m to 10 m / 0.5 m graduation
- FOF 1.5 m to 10 m / 0.5 m graduation



Fibre Optic Systems

## Flame-scanner testing device

You can use the FFP30 to test that your flame scanner is working properly. The testing device simulates a variable flame frequency. The testing device is screwed onto the flame scanner, and the IR or UV beam activated via a rocker switch. The F200K must be set to an adequate sensitivity to detect the flame simulation. It is designed to test all flame scanners from LAMTEC.



Flame-scanner testing device





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