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## CONFIRMATION

on the examination of an independent flame detector device  
according to DIN EN 298 and DIN EN 61508-2

**Test Laboratory** TÜV SÜD Industrie Service GmbH  
Abteilung Feuerungs- und Wärmetechnik  
Prüfbereich Sicherheits-, Kontroll-  
und Regeleinrichtungen

**Subject of Test** Independent flame detector device  
Type **F200K**

**Ordering Company** LAMTEC Leipzig GmbH & Co. KG  
D-04425 Taucha (b Leipzig)

**Basis of Test** DIN EN 61508-2:2011-02,  
DIN EN 298:2012-11

**Test Report no.** C-F 1104-06/15 dated 2015-09-25  
C-F 1104-07/16 dated 2016-10-19

The results in detail, the evaluation of the results and the conclusions out of the results are described in the above mentioned test reports. Excerpts from these test reports and from the test documentation are printed on the reverse.

Feuerungs- und Wärmetechnik

Johannes Steiglechner

Date: 2016-10-19

Our reference:  
IS-TAF-MUC/ku

Order no. 2329640

Document:  
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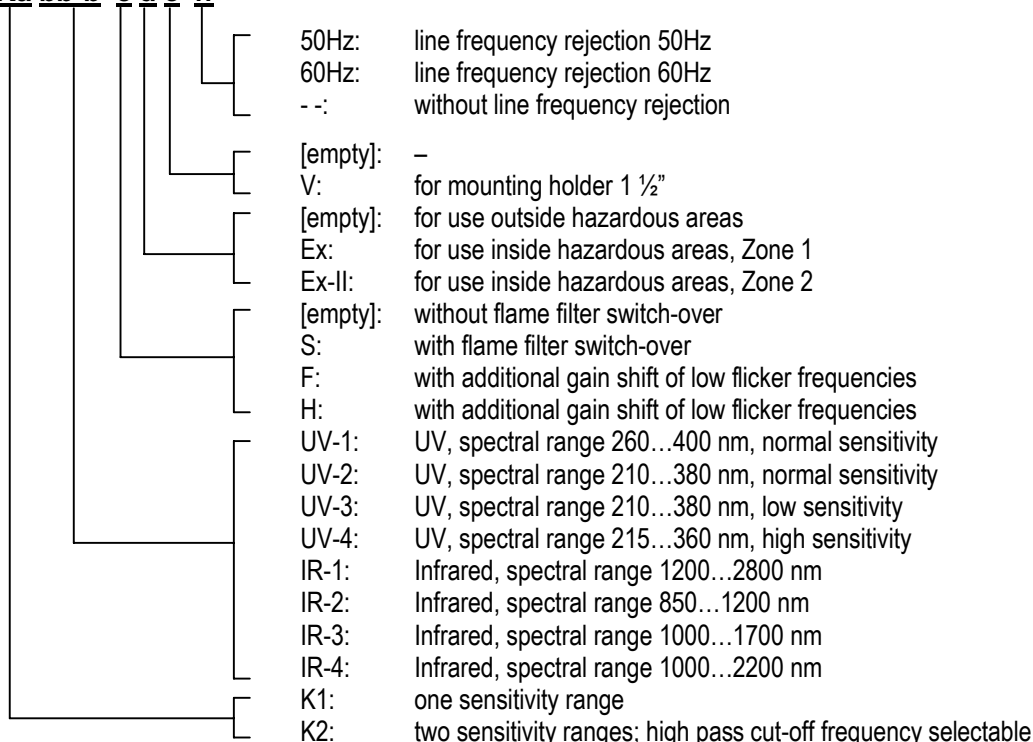
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**Models F200Ka bb-b c d e ff**



The independent flame detector device type F200K is suitable for flame detection of burners and combustion systems for gaseous, liquid or solid fuels with permanent operation.

As a single device the independent detector device also conforms to the applicable technical requirements of DIN EN 61508-2:2011-02 for safety functions up to safety integrity level **SIL 3**.

The following safety parameters have been determined:

Probability of a dangerous failure (high demand / continuous mode)	PFH <sub>D</sub> = 1,2·10 <sup>-9</sup> 1/h
Probability of a dangerous failure (low demand mode)	PFD <sub>avg</sub> = 5,1·10 <sup>-5</sup>
Safe failure fraction	SFF ≥ 96,5 %
Average diagnostic coverage	DC <sub>avg</sub> ≥ 90,9 %

These parameters have been calculated under the assumption of a Mean Time to Restoration MTTR= 8 hours, a Diagnostic Test Interval T<sub>2</sub>= 120 seconds, and a Proof Test Interval T<sub>1</sub>= 10 years, which is equivalent to the specified life time of the independent flame detector device.

The independent flame detector device is capable to be used as single device for safety instrumented functions (SIF) according to DIN EN 61511-1 up to safety integrity level **SIL 3**.

According to DIN EN ISO 13849-1:2016-06, table 3, the independent flame detector device is capable to be used as single device for safety related control functions (SRCF) up to performance level **PL e** (Cat. 3).

The independent flame detector device also fulfils the applicable requirements of DIN EN 746-2 for flame detection in industrial thermo processing equipment.

The conditions mentioned in test report no. C-F 1104-06/16 dated 2016-10-19 shall be considered during installation, commissioning and operation.