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on the examination of a gas burner control system
according to DIN EN 298 and DIN EN 61508 parts 1 – 7

Date: 2010-01-29

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Test Laboratory: TÜV SÜD Industrie Service GmbH
Abteilung Feuerungs- und Wärmetechnik
DVGW-Prüfstelle

Subject of Test: Gas burner control system
type **PFU 7xx**

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Ordering Company: Elster GmbH
D-49504 Lotte (Büren)

Basis of Test: DIN EN 298:2004-01,
DIN EN 61508:2002, parts 1 – 7
Directive 2009/142/EC

The document consists of
2 pages

Test Report: No. C-F 1423-00/10 dated 2010-01-29

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The tests have been performed with positive results.
The results in detail, the evaluation of the results and the conclusions out of
the results are described in the above mentioned test report.
An excerpt from the test report is printed on the reverse.

The test results refer exclusively
to the units under test.

Feuerungs- und Wärmetechnik

Johannes Steiglechner



Headquarter: München
Trade Register: München HRB 96 869

Supervisory Board:
Dr.-Ing. Manfred Bayerlein (Chairman)
Board of Management:
Dr. Peter Langer (Spokesman)
Dipl.-Ing. (FH) Ferdinand Neuwieser

Telefon: +49 89 51 90 - 1027
Telefax: +49 89 51 90 - 3307
E-mail feuerung@tuev-sued.de
www.tuev-sued.de/is

TUV®

TÜV SÜD Industrie Service GmbH
Feuerungs- und Wärmetechnik
Ridlerstraße 65
80339 München
Germany



Industrie Service

Type designation	PFU 7xx
Models	PFU 760 PFU 780
Firmware release	FW02AB
Software version	μ CA, checksum file 08EF _H / checksum info 16A5 _H μ CB, checksum file 585A _H / checksum info 6404 _H

The gas burner control system fulfils the requirements of DIN EN 298:2004-01+Ber.1:2006.

Corresponding to article 3 of Directive 2009/142/EC of the European Parliament and of the Council of 30.11.2009 (Gas Appliances Directive), the gas burner control system fulfils the essential requirements according to annex I.

In combination with a UV flame sensor type UVS... the gas burner control system is suitable for flame detection and control of gas burners with non-permanent operation.

In combination with an ionisation flame probe or with the UV flame sensor type UVD 1 the gas burner control system is suitable for flame detection and control of gas burners with permanent operation.

In combination with an ionisation flame sensor the gas burner control system also fulfils the applicable requirements of DIN EN 61508: 2002, parts 1–7 for safety integrity level **SIL 3** (high demand or continuous mode).

The evaluation according to DIN EN 61508:2002, parts 1–7 resulted in the following safety parameters: Probability of a dangerous failure **PFH = $13,4 \cdot 10^{-9} 1/h$** ;
Safe failure fraction **SFF = 99,2 %**.

The gas burner control system is suitable to be used as single device for safety instrumented functions (SIF) according to DIN EN 61511-1 up to **SIL 3** (high demand or continuous mode).

According to EN ISO 13849-1:2006, table 4, the gas burner control system is suitable to be used as single device for safety functions up to Performance Level **PL e**.

The gas burner control system fulfils the requirements for flame safeguards of combustion systems in industrial thermo processing equipment according to DIN EN 746-2:1997-05.

The conditions listed below have to be considered:

- After installation in the appliance the class of protection of the gas burner control system and its flame detector shall be a minimum of IP 40 – or IP 54 for use in the open air – according to EN 60529.
- Control and monitoring of the combustion air flow as well as pre-purge of the combustion chamber and of the subsequent flue gas ducts shall be provided by an external protective system.
- After set-up and modification of safety related parameters the safety functions of the burner control system shall be validated with the application.
- Adequate information about proper location, mounting, installation, putting into service, operation and maintenance of the gas burner control system shall be included into the installation and operating instructions of the gas burner or appliance in an official language of the country in which it is to be used.