

SYSTEM 3000 / 4000

**FLAME SCANNER**

**3.32**

TECHNICAL DESCRIPTION

EDITION: TB 3.32-SZ1

# Flame Scanner

## 3.32

- Selective Monitoring of Gas-, Oil- and Coal Flame
- TÜV and DIN-DVGW approved
- Fail-Safe, Self-Monitoring
- Sensitivity Switch-Over
- Complete Electronic Construction
- UV-Integral Procedure
- Type of Protection IP 65
- Approved in acc. to DIN-DVGW and DIN-CERTCO

### Application

In connection with a flame detector of the **3000** or **4000** line, the flame scanner **3.31** forms a complete flame monitoring system and meets the safety requirements for steam generators in acc. to TRD.

The flame monitoring system **3000/4000** is tested and approved in accordance to EN 230 and EN 298.

The main application for this fully electronic UV-flame scanner is the gas and oil flame detection for the selective burner monitoring in combustion

chambers with high power density under extreme low-NO<sub>x</sub> conditions. An external sensitivity switch-over also permits the monitoring of powdered-coal firings simply by the adaption to the different firing conditions. The allocation of a much higher reinforcement during the cold-start phase would be a further possibility.

This evidences, that this scanner is mainly suited for use in large steam generators and in industrial firings with complicated individual flame-detection or with very different fuel radiation.

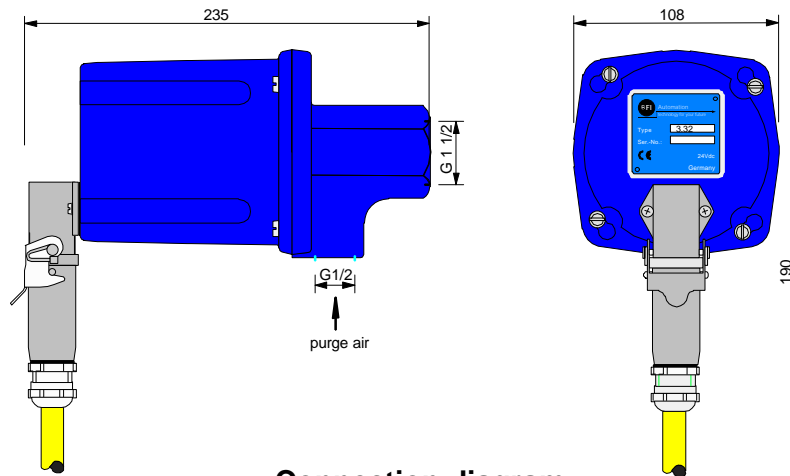
### Function

The flame scanner **3.32** utilizes a new concept of the UV-flame radiation analysis. A photo element senses the modulated UV-radiation released during the fuel pyrolyzation. The intensity of flame depends on the concentration and modulation of the chemoluminescent radiation of the free radicals.(OH, CN, CH, C<sub>2</sub>). This procedure bases on the chemical combustion process thus achieving a flame detection and selective burner monitoring which was not possible before. It furthermore supplies valuable information for the flame evaluation. This technology bases on the appli-

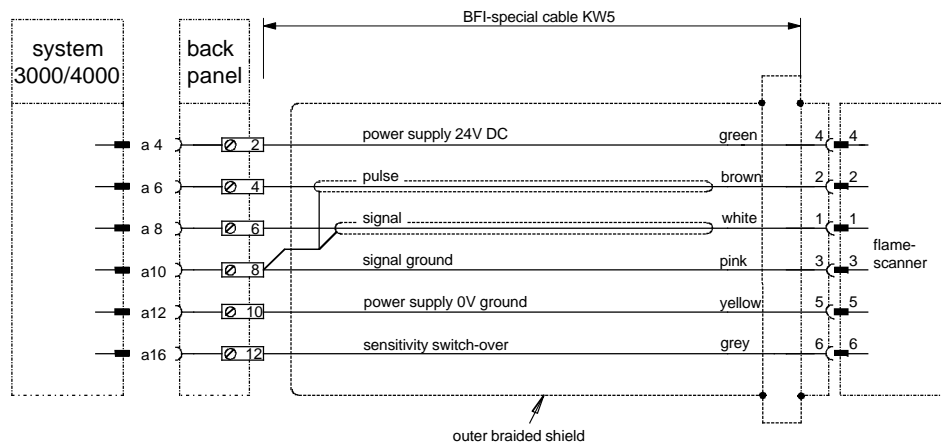
cation of a wide-band UV-semi-conductor element, which enables the evaluation of modulated UV-radiation, in difference to the usual small band tubes which are subject to wear.

To achieve a precision tuning of discrimination and flame evaluation even with different fuels, a dual channel adjustable sensitivity tuning enables the attenuation of the flame signal for the adaption of the specific fuel radiation. Further function modes transfer rated digital signals to the flame amplifier.

### Dimensions



### Connection diagram



### Technical Data

Self-monitoring for the fail-safe function control accordance to EN 230, EN 298. Conforms to the requirement of DIN VDE 0116 and TRD 411 to 414, approved accordance to DIN-DVGW and DIN CERTCO.  
 UV-semiconductor, two adjustable sensitivities with remote adaption, selective modulation filter.

Spectral Sensitivity 270 to 420 nm  
 Viewing Angle 3°  
 Self-monitoring full electronic, 1\* per second

Operating voltage 24 V DC, inner electrical isolation  
 Current consumption max. 100mA  
 Operating temperature range -20 bis +60 °C  
 Electric connection dust-proof plug connector  
 Protection IP 65  
 Length of cable max. 1000m (KW 5)

Sight tube connection 1" internal thread. ISO 228  
 Purging air connection 1/2" internal thread. ISO 228  
 Purging air quantity 10 Nm<sup>3</sup>/h  
 or  
 Purging air pressure 0,02 bar over the combustion chamber inner pressure  
 Weight approximate P 1kg  
 Part no.. S 506.3

This flame scanner is also available in an Ex-casing or in LWL-technique.

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