

SYSTEM 3000 / 4000

FLAME SCANNER

3.31

TECHNICAL DESCRIPTION

EDITION : TB 3.31-SZ1

Flame Scanner 3.31

- Selective Monitoring of Gas- and Oil Flame
- TÜV and DIN-DVGW approved
- Fail-Safe, Self-Monitoring 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 high power combustion chambers. The possibility to safely apply an extraordinary wide range of gaseous and liquid fuels, even when adding absorbing

means such as flue gas or water vapour, serves as basis for the application in low-NO_x conditions.

This evidences, that this scanner is most suited for the use in large steam generators and in industrial firings with complicated individual flame detection or with very different flame radiation. Increased availability demand also leads to an increased use in one-burner installations of any size.

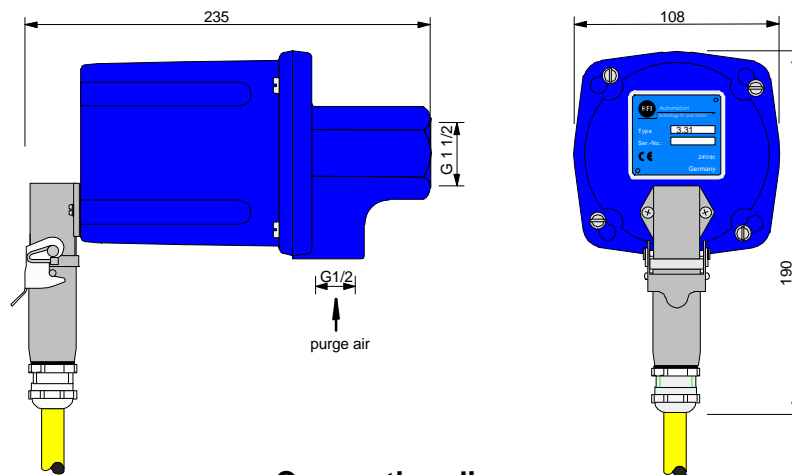
Function

The flame scanner **3.31** 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; C₂). 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 application of a wide-band UV-semi-conductor element, which enables the evaluation of modulated

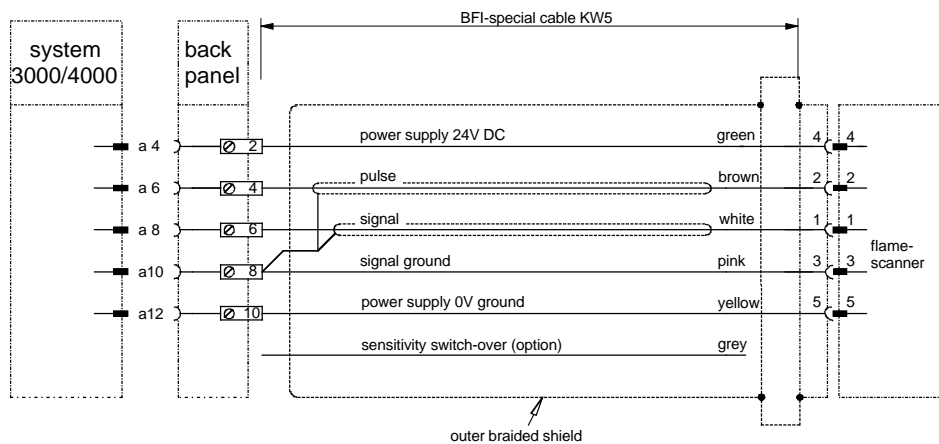
UV-radiation, in difference to the usual small band tubes which are subject to wear.

To achieve a precision tuning of discrimination and flame evaluation, a sensitivity tuning enables the attenuation of the flame signal for the adaptation to the specific fuel radiation. The variable modulation filter has the effect, that the typical high frequent flame radiation of the primary combustion zone is evaluated only. 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-semi-conductor, adjustable sensitivity, selective modulation filter.

Spectral sensitivity	270 to 420 nm
Viewing angle	3°
Self-monitoring	fully electronic, 1* per second
Operating voltage	24 V DC, inner electrical isolation
Current consumption	max. 100mA
Operating temperature range	-20 to +70 °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 ³ /h
or	
Purging air pressure	0,02 bar over combustion chamber inner pressure
Weight	approximate 1kg
Part no.	S 506.2

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

Edition: 07/98, Right of technical modifications reserved.