

SYSTEM 3000 / 4000 COMPACT FLAME CONTROLLER

FIBRE OPTIC TECHNIQUE

TECHNICAL DESCRIPTION

EDITION: TB LWL-SZ1

Fibre optic technique

- Temperatures up to 200°C
- Alternative to Ex-housings
- Small, very robust type of construction
- Protection IP 68

Application

The fibre optic flame scanner series is an extension to the flame monitoring and evaluation systems **3000/4000** whilst maintaining full, compatibility. A fibre optic flame scanner consists of a robust probe, SKL, which is coupled to an optoelectronic converter, O/E-converter through a flexible length of fibre optical cable.

The compact and robust probe can withstand high temperatures and strong vibration. The system is therefore ideally suited for installations where the mounting and cooling of a conventional flame scanner is difficult or impossible. The monitoring of gas turbines is a good example of this.

The probe has internal optics which project a field of view of 2.7° onto the glass fibre bundle. The assembly can withstand ambient temperatures of up to 200° C (for short time periods even up to 300°C). The probe and cable are delivered together as a sealed unit. The radiation sensitive end of the probe has a 1"-thread counterpiece so that it can be fixed onto a sight tube without the fibre optic cable being twisted.

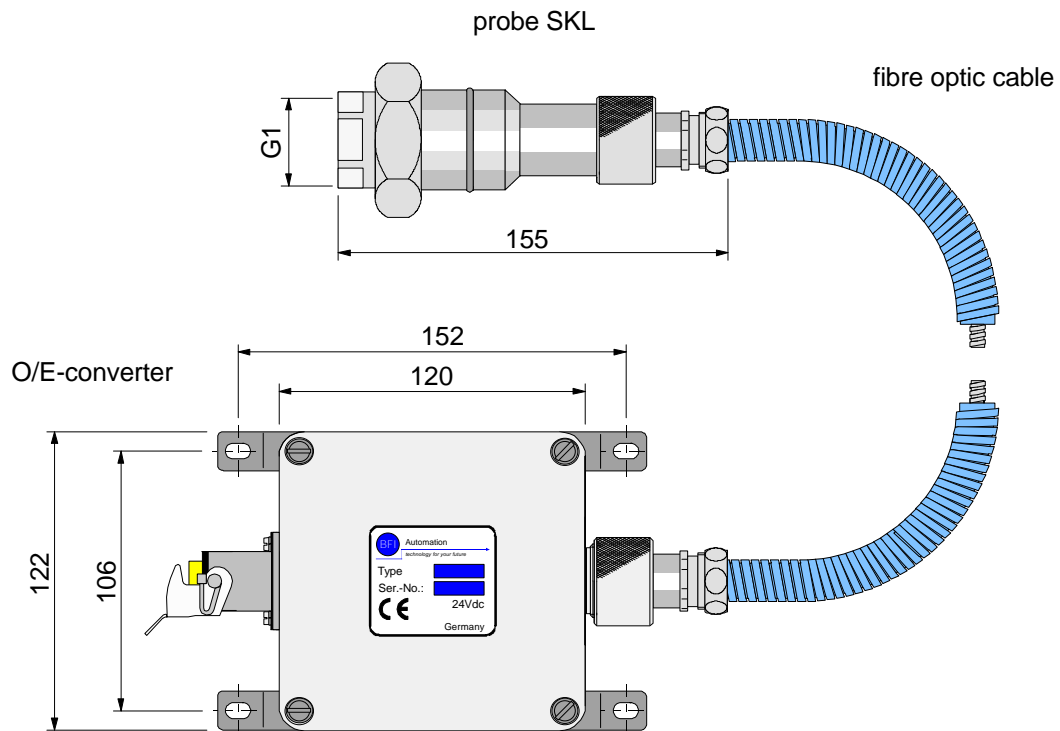
Different types of fibre optic cable with radiation transmission in the ultraviolet and visible or visible and infrared spectral ranges are availa-

ble. Therefore, the scanner can be configured to monitor the flame in the regions maximum emission or best selectivity depending on the fuel being used. The glass fibre bundle is shielded by a silicon insulation which is in turn protected by a flexible steel cladding. The cable is water- and dustproof, as well as being resistant to acids and high temperatures.

The length of the fibre optic cable depends on the local installation and is confectioned accordingly. As there is some loss of radiation intensity, we recommend the use of length between two and five meters. Longer cables are possible, but especially for ultraviolet detectors tests should be run beforehand to ensure that no problems will develop.

In the optoelectronic converter, the radiation falls on a detector which delivers an electric signal. A detector with a sensitivity range optimized for the type of fuel to be monitored is used. The following electronics is similar to that of the standard scanners. The converter is designed to be connected to the **3000/4000** flame amplifier modules.

Dimension



Technical data

Spectral transmission of the IR/VIS-fibre optic:	430.- 2.400 nm
Spectral transmission of the UV/VIS- fibre optic:	260 - 1.200 nm
Fibre optic cable diameter::	approximate 10 mm
Cable length:	optional: 2m to 5m (max. 10m)
Minimum curvature radius:	>30mm
Ambient temperature:	up to 200°C (briefly 300°C max.)
Sight tube thread:	ISO 228 G1
Protection:	probe IP 68, O/E- converter IP 65