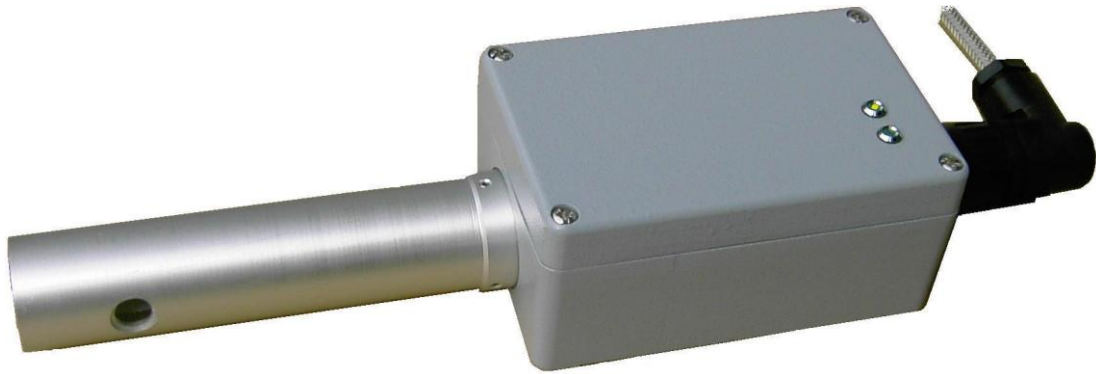


# ISH 100 / 24



CE  
0063

## Technical information

**UV – compact flame controller ISH 100 / 24  
for oil -, gas- and dual fuel burners in the continuous burner  
operations for digital control systems or control boxes with  
external flame detector input**

### Description

The ISH 100 / 24 is a compact flame controller which was developed for single flame combustions, which produce in the visible light spectrum almost no radiation or with very low flame modulation work. The robust housing of the ISH 100 / 24 also allows the use of industrial applications.

The assigned UV-cell ensures that the flame detector doesn't react to background radiations from hot refractory or glowing mixing devices.

About the frequency of blinking LED as a visual indicator is the frequency of the pulse as a function of the dual flame intensity easy to recognize. It is a simple diagnosis directly to the burner possible. This facilitates the adjustment of the ISH 100 / 24 into the flame line. A second LED indicates the status of the output signal of the flame controller.

The plug connection and the flange offer an easy mounting and adjustment of the ISH 100 / 24. The UV-cell is mounted easily to service and can be exchanged without considerable effort.

## Safety Instruction

The ISH 100 / 24 is a safety component, so it is absolutely forbidden to open, to manipulate or to misuse this flame detector! Replace the flame detector in case of any damage, fall, shock, moisture, wetness or influences, which can destroy the flame detector, even though it is not recognizable! Repair works are strictly prohibited! The lid of ISH100 / 24 is only with a special tool (Torx T20) to open.

Before working at the flame detector switch off the power supply. Before first commissioning or replacement of the device check the wiring!



**NOTE: This device is only available in conjunction with control boxes or controls, which realize after a detection of extraneous light before opening the fuel valve and / or a flame-out during burner operation, a permanent locking of the burner.**

## Technical Data

Power supply:	24V DC Consumption max. 220 mA Consumption max. in the shutter-phase 400mA
Output:	potential-free Switch-On delay after Flame On typical 0,5 sec. Switch-Off time after Flame Off < 1 sec. max. switched current 0,5 A max. switched power 30 W max. switched voltage 60 V DC Only for the inputs of measurement and control devices
Current output:	4 – 20 mA (Ra < 500 Ohm)
Optical analysis:	Spectral range 185 – 260 nm
Optical alignment:	radial, left
Operating Temperature:	-20 to +60 °C (Temperatures >50°C reduce the lifetime of the UV-cell)
Average life of the UV-tube:	> 10.000 h
Operating position:	any position
Kind of protection:	IP 65
Protection Class:	I
Protection against electric shock:	DIN EN 60730-2-5
weight:	0,78 kg
max. length of connection cable:	As long as sufficient by dimensioning ensure that the requirements (switching current/voltage) of the connected devices are respected.
Certification:	CE-0063BS1884 DIN CERTCO Reg.-Nr. 5F225/07

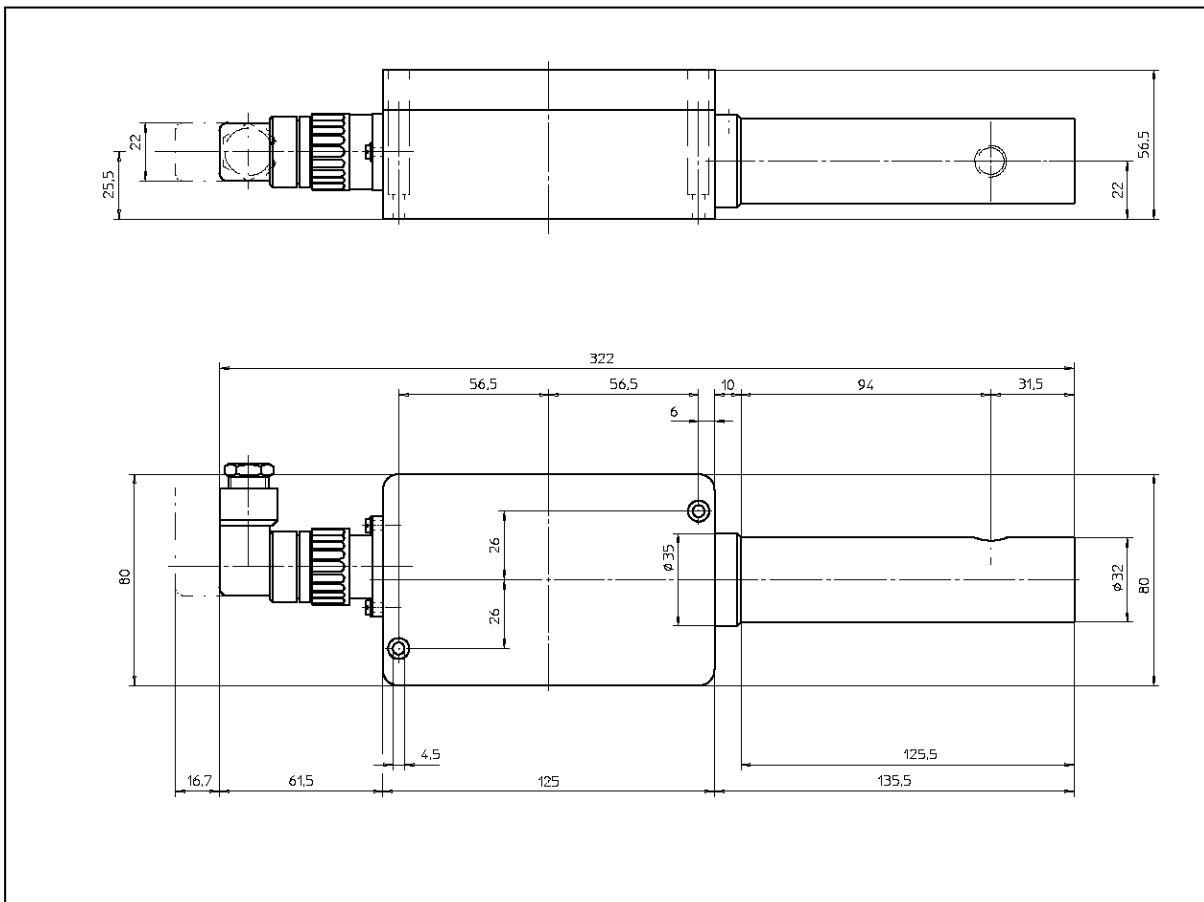
## Mounting instructions

The ISH 100 / 24 should be mounted close to the flame with straight alignment. The compact flame detector should be mounted with the sliding flange ISH or another suitable holder. Fix the detector with the holder. About the sliding flange, the depth of immersion of the ISH 100 / 24 can be adjusted according to the required position in the burner housing.

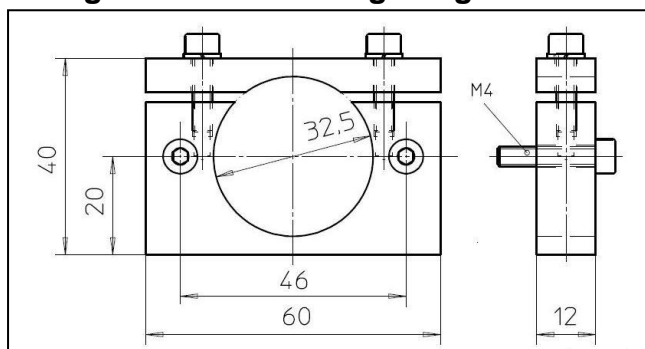
The angle of view, especially with sight tubes, must be of appropriate dimensions to avoid any reduction of flame radiation. Protect the sensor against other light sources.

To avoid any disturbance, do not align the detector direct to the ignition spark. Breakdowns during pre-ventilation procedure may occur. The max. length of the connection must be in accordance with the technical data. Install the detector connection cable with most possible distance to the ignition cable.

## Dimension

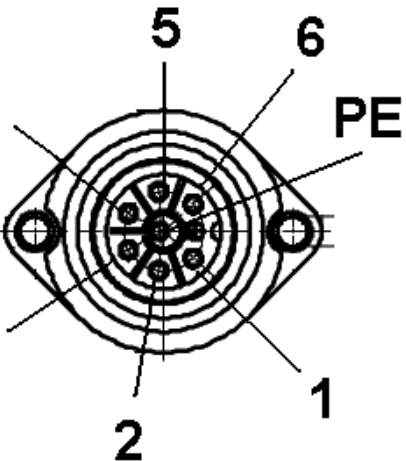
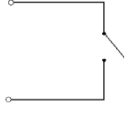
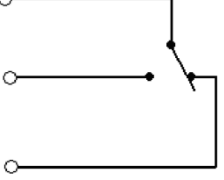
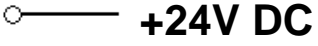
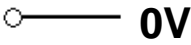
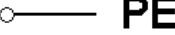


## Fitting Dimension sliding flange



all dimensions in mm

## Connector Diagram ISH 100 / 24

Allocation socket/plug-in	PIN	wire-number *	Education power output	Education changeover contact
	1	1 (white)		
	2	2 (brown)		
	3	3 (pink)	GND	
	4	4 (green)		
	5	5 (yellow)		
	6	6 (grey)	4 – 20 mA	free
	PE	green / yellow		

\* On request is a special EMC shielded cable available. Therefore, the cable colors are in brackets.

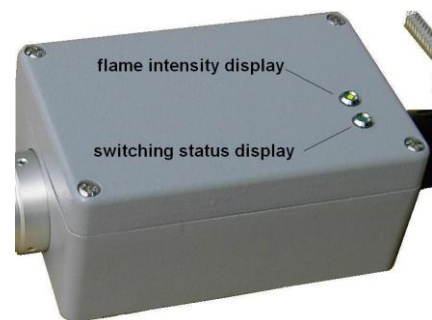
The standard version of the ISH 100 / 24 contains a power output to display the signal intensity (4-20mA). Optionally, instead the power output with NO contact, is obtainable the execution with a changeover contact.

### Note to the current output 4-20mA

To visualize or remote display of flame intensity is a current output of 4-20mA available, not for security purposes. The current output has no galvanic isolation and cannot touch.

### Switching-and flame intensity display

A simple diagnosis is right on the flame scanner possible. Two LEDs at the flame detector ISH 100 / 24 signalize the position of the flame relay contact and the intensity of the flame signal. The frequency of flashing green LED provides information on the flame signal intensity - increasing frequency flashing means higher intensity of the flame signal. The yellow LED shows the output of the flame relay. When closed flame relay the LED is ON.



## Commissioning and Maintenance

The installation and commissioning must be done by qualified personnel only. Before energising the ISH 100 / 24 please check the cable and wiring connections are in accordance to the diagram and instructions given above. For good maintenance which will ensure trouble free operation of the ISH 100 / 24; please keep the sight glass clean by wiping with a soft dry clean cloth.

**Warning:** Do not use any kind of cleaning sprays or fluids.

During commissioning and after any cleaning maintenance, the flame detector should be checked, as the UV-cell is subject to a natural ageing process and towards the end of its life span it is prone to malfunction.

To check that the flame detector is sound we recommend the following procedures be followed:-

- Start the burner with the fuel supply closed-off or remove the flame detector from its mounting flange and cover the UV-cell using a soft cloth to avoid touching the glass lens. The control box will lock-out at the end of the safety time due to absence of a flame signal.
- Remove the flame detector from its mounting flange. Start the burner while exposing the flame detector to an external UV radiation source such as a cigarette lighter flame, or a small gas flame (n.b. electric room lighting or a torch is inadequate). The burner control box must go to lock-out due to detecting an extraneous light source either immediately or at the end of the air pre-purge cycle, depending on the type/model of the control box.
- Close off the fuel supply or remove flame detector from its mounting flange and cover the UV-cell using a soft cloth when the burner is in the "run" position. The control box must go immediately to lock-out resulting in the burner shutting down.

If any of these safety checks do not function as described i.e. they should always result in burner shutdown and control box lock-out; then it is essential to replace the UV-cell of the ISH 100 / 24. For safety and trouble free burner operation, we recommend that the UV-cell should be replaced after every 10,000 hours of burner operation or approximately every 30months for a burner operating on an average of 10 hours per day.

## Type overview

Article	Version	Part.-No.
Flame detector ISH 100 / 24	radial, left	611352323210
Flame detector ISH 100 / 24s	radial, left, Education changeover contact	611352323220
Connecting cable ISH with right-angle connector	Length of 1800mm	561313041800
Connecting cable ISH with right-angle connector	Length of 3000mm	561313043000
Connecting cable ISH	Special lengths on request	

## Disposal information

The flame detector is equipped with electrical and electronic components and must be disposed separately from household waste. Please follow your local authority regulations for electrical component waste disposal.



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Edition E 05/2008

**We reserve the right to make up-dates and technical modifications to this publication.**