



**UV4SH**

**Flame detector**

# UV4

Flame detector

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## Description

UV4SH is a flame sensor to be used with burner control system CFK. It is designed for detection of flame of gas, oil and mixed burner and suitable for industrial plant.

## Features

The core component is a glass bulb filled with gas, containing two electrodes. When appropriate voltage is applied between electrodes, if an ultraviolet electromagnetic radiation hits the bulb, there is a current flow.

The body is made of thermal isolating material so that sensor can be used without additional protection till 70°C. If temperature of peep sight is higher than 70°C, it's advisable to add a pipe spacer and apply cooling air to the connection on the side. When the spacer can not be used or temperature is very high, it is possible to install a quartz glass, available on request.

UV4SH is very sensitive in a small region of ultraviolet spectrum, so it is sensitive to flame of gas and oil, but blind to infrared light or light from sun or tungsten lamps. This sensor is able to detect flame presence with high safety. Picture below give further details about sensor sensitivity and light emission by flame, sun and tungsten lamps.

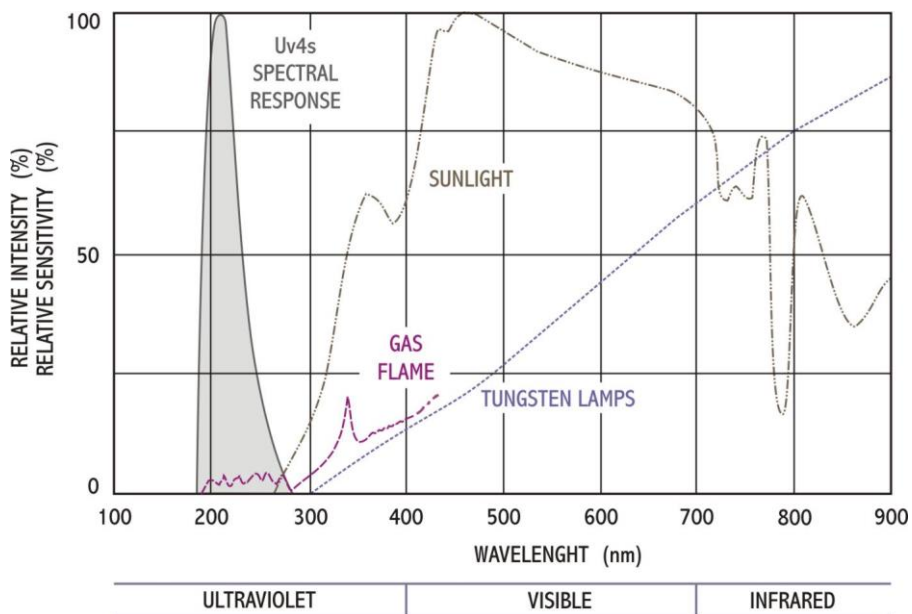


Fig. 1



### WARNING

This control must be installed in compliance with the rules in force.

## Technical specifications

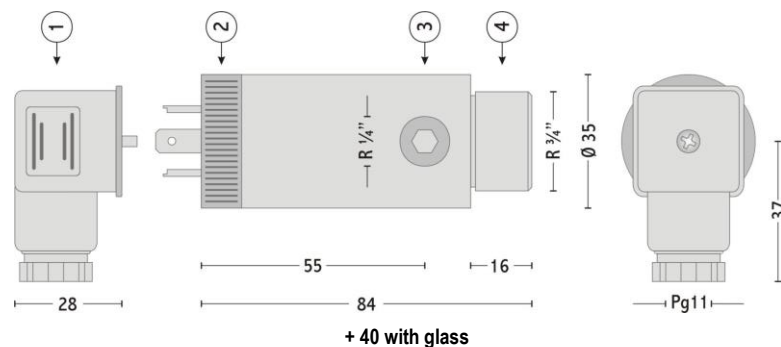
Tab. 1

<b>Spectral Response</b>	185 ... 260 nm
<b>Operating voltage</b>	200 ... 280 VAC Higher is the voltage, higher is sensor sensitivity. It is very important that operating voltage is always within range above, to avoid malfunctions and damages.
<b>Discharge current (Peak current)</b>	1 mA (peak 30 mA)
<b>Recovery time</b>	20 $\mu$ s @ 10% Duty Cycle
<b>Operating temperature</b>	-20 ... +90°C
<b>UV sensor temperature</b>	125°C MAX
<b>Protection class</b>	IP65
<b>Operating life</b>	> 10.000 hours @ 50°C / 1 mA <sup>1</sup>
<b>Vibration</b>	0,5 g MAX
<b>Relative humidity</b>	10 ... 90% (NON CONDENSING)
<b>Mounting position</b>	ANY <sup>2</sup>
<b>Weight</b>	0,15 Kg

Note 1: operating life is strictly connected with operating temperature: it is advisable to always substitute the sensor after 10.000 h, in some applications the substitution can be necessary in shorter time.

Note 2: do not install on top of burner in vertical position because combustion products can dirty the sensor. Choose mounting position so that sensor can see only flame of burner, not the ignition spark or flame of other burners and dirty can not accumulate on sensor. Connecting pipes of sensor and burner shall not be reflective inside.

### Dimensions:

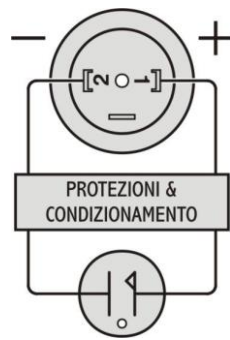


**1 e 2** Plug and socket DIN 43650 – ISO4400 2 poles + ground – Pg11

**3** Connection 1/4" for cooling air (filtered), if necessary

**4** Burner Head Connection 3/4"

## Wiring diagram:



### 1 Positive terminal

Usually connected to Ground

### 2 Negative terminal

Usually connected to Flame Input of burner control (CFK - terminal 10)

In case of reversed connection, the sensor is not damaged, but flame is not detected.

### Class II device

Connection to protection ground is not required.

Fig. 3

## Optional

The detector can be supplied with an additional protective quartz glass. In this case, for cooling air, the connection in the additional joint shall be used. The quartz glass and its joint can be added later too.

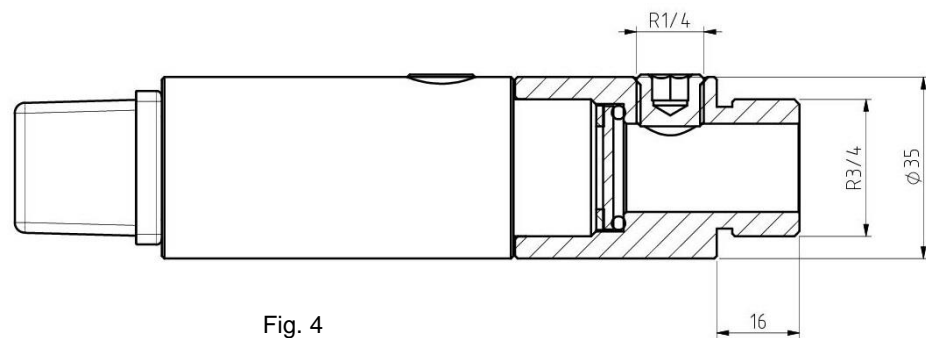


Fig. 4

## Ordering Information

Tab. 2

	<b>UV4SH</b>
<b>Product type</b>	
<b>UV4SH flame sensor</b>	
<b>Version</b>	
_ Standard	
<b>.V with protective glass</b>	

## Standards and approvals

UV4SH has been tested with burner control CFK on the basis of the norm EN 298. The detector can work with other device (see Tab.1 for features), but no warranty can be made in this case.

Quality management system certified in accordance with EN ISO 9001.

The information in this document contains general descriptions of technical options available and based on current specifications. ELETTROMECCANICA DELTA S.p.A. reserves the right to update or make any technical changes without prior notice.

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