UV4 SH

HIGH PERFORMANCE UV FLAME DETECTOR

SUITABLE FOR HYDROGEN FLAME MONITORING

UV4SH is an high performance selected UV detector that can be used for flame detection in gas, oil and mixed burners together with suitable Burner Control Unit or Flame Amplifier Device.
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 phototube, electrons emitted by negative biased electrode can be captured by positive biased electrode, starting an ionization process leading an electric discharge between electrodes producing a current flow.
UV4SH is a compact unit for industrial use, the body is made by thermal isolating material to avoid sensor overheating when applied on the burner head.
When the temperature at peepsight exceed 70°C it's advisable to add a ¾" pipe spacer (up to 40 cm) between the burner and the sensor and apply a cooling filtered air flow to the special connection provided on the side of the probe.
Although UV4SH is blind to sunlight, some discharge lamps produces UV emission that can be detected by the phototube.



SAFETY INFORMATION

Read and understand this manual before installing, operating, or servicing this unit. This unit must be installed according to this manual and local regulations. The drawings may show units without covers or safety shields to illustrate details. Disconnect power supply and follow all usual safety precautions before carrying out any operation on the device. Be sure to reinstall covers or shields before operating any devices.
The device is not user serviceable, a faulty device must be put out of order and sent back for servicing.

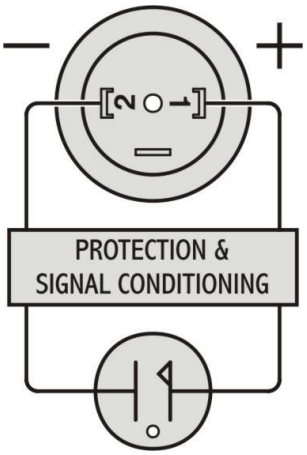
CONTRIVE manufactures products used as components in a wide variety of industrial systems and equipment. The selection and application of products remain the responsibility of the equipment manufacturer or end user.
CONTRIVE accepts no responsibility for the way its products are incorporated into the final system design. All systems or equipment designed to incorporate a product manufactured by CONTRIVE must be supplied to the end user with appropriate warnings and instructions as to the safe use and operation of that part.
Any warnings provided by CONTRIVE must be promptly provided to the end user.

CONTRIVE guarantees for two years from the date of manufacture of its product to replace, or, at its option, to repair any product or part thereof (except fuses and with some limitations for tubes and photocells) which is found defective in material or workmanship or which otherwise fails to conform to the description of its sales order. CONTRIVE makes no warranty of merchantability or any other warranty express or implied. CONTRIVE assumes no liability for any personal injury, property damage, losses, or claims arising from misapplication of its products.

RECEIVING

Please perform the following tasks after receiving the product:

- Inspect the unit for damage. If the product appears damaged upon receipt, contact the shipper immediately.
- If you have received the wrong model or the device does not function properly, contact your supplier.
- Store the product in a dry place, see technical specification for temperature limit.

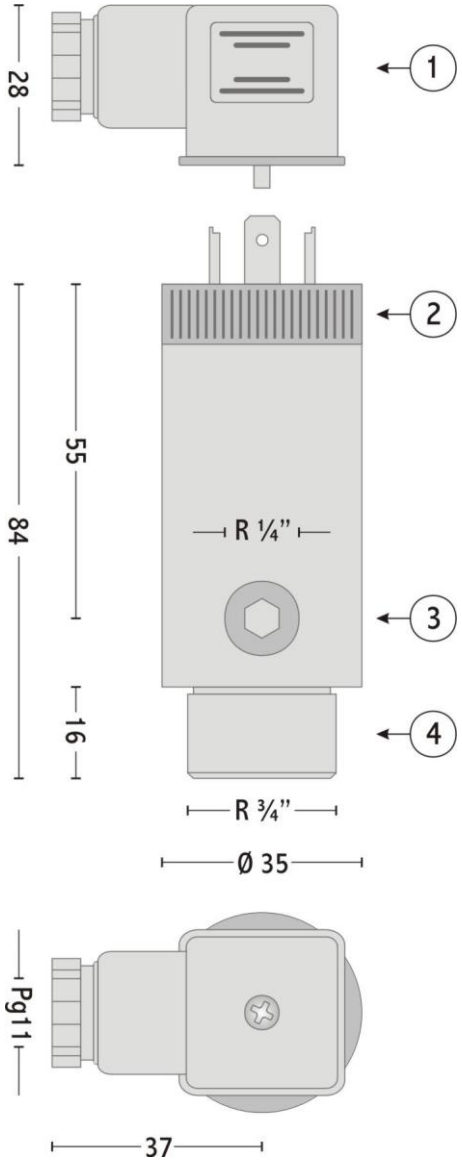


WIRING DIAGRAM

1	POSITIVE TERMINAL USUALLY CONNECTED TO GROUND
2	NEGATIVE TERMINAL USUALLY CONNECTED TO AMPLIFIER INPUT

CONNECTION WITH REVERSED POLARITY DOES NOT DAMAGE THE DETECTOR BUT PRODUCES NO USEFUL FLAME SIGNAL

CLASS II DEVICE
CONNECTION TO PROTECTION GROUND IS NOT REQUIRED



[mm]

TECHNICAL DATA

SPECTRAL RESPONSE	185 … 260 nm
OPERATING VOLTAGE	200 … 280 VAC
DISCHARGE CURRENT	1 mA
PEAK DISCHARGE CURRENT	30 mA
RECOVERY TIME	2Oµs @ 10% DUTY CYCLE
OPERATING TEMPERATURE	-20 … +90°C
UV TUBE TEMPERATURE	125°C MAX
PROTECTION CLASS	IP65
OPERATING LIFE [1]	> 10.000 hours @ 50°C / 1mA
VIBRATION	0,5 G MAX
RELATIVE HUMIDITY	NON CONDENSING 10 … 90%
MOUNTING POSITION [2]	ANY
WEIGHT	150 g MAX

[1] UP TO 100.000 hours @25°C

[2] DO NOT INSTALL ON TOP IN VERTICAL POSITION WHEN COMBUSTION PRODUCTS CAN FILL THE VOLUME IN FRONT OF THE SENSOR

DIMENSIONS

THERMAL INSULATING CASE Ø 35 x 80 mm

1	DIN43650 – ISO4400 CONNECTOR 2 POLES + EARTH – PG11
2	DIN43650 – ISO4400 SOCKET 2 POLES + EARTH
3	OPTIONAL COOLING CONNECTION ¼“
4	BURNER HEAD CONNECTION ¾”

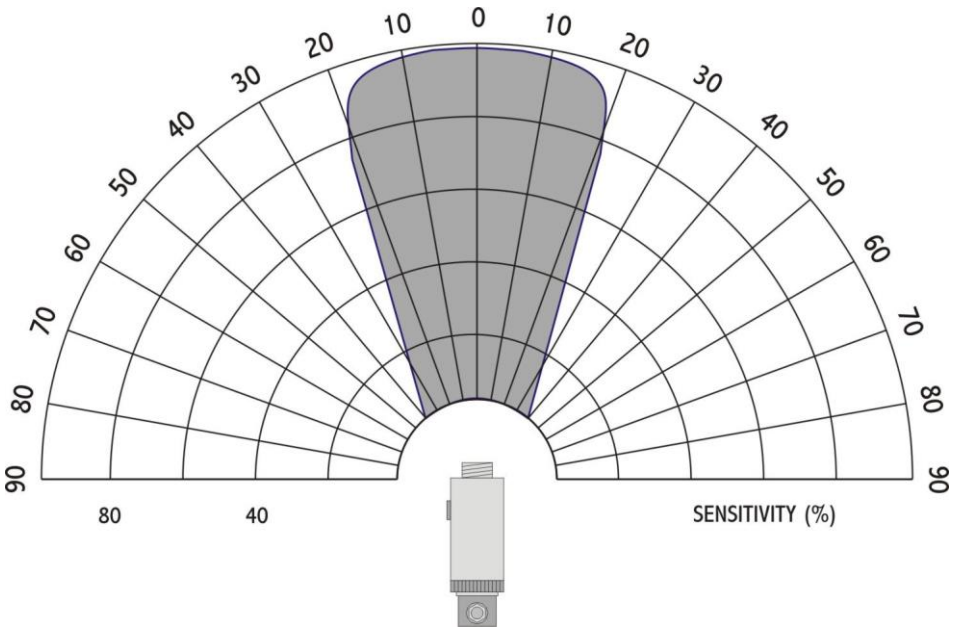
FRONT SIDE OF THE SENSOR IS SEALED WITH EPOXY RESIN
THERE IS NO NEED FOR ADDITIONAL QUARTZ GLASS

NOTICE

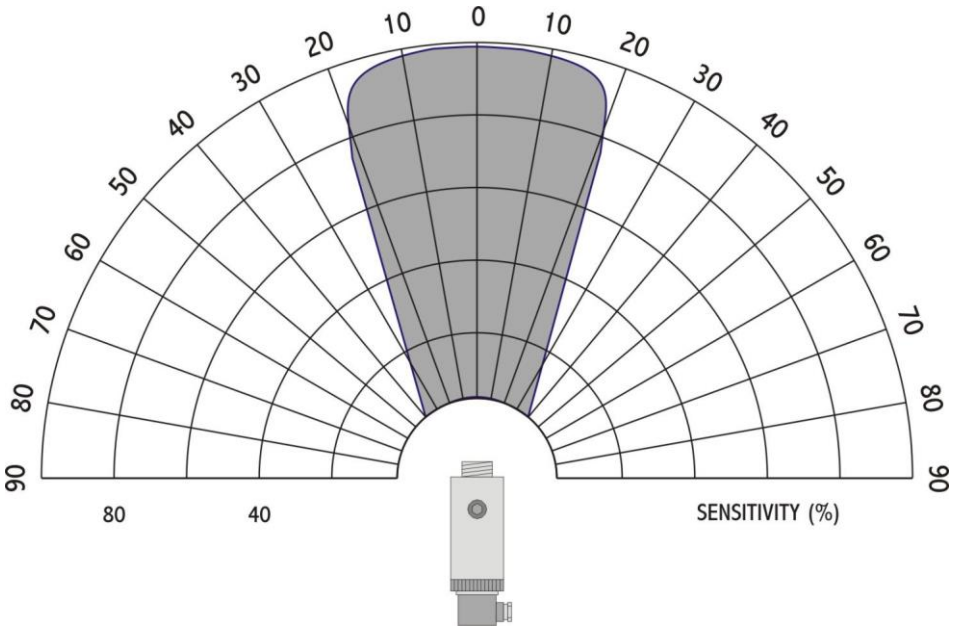
When Contrive products are combined with equipment manufactured by others and/or integrated into systems designed or manufactured by others, the Contrive warranty pertains only to Contrive products and not to any other equipment or to the combined system or its overall performance. Certification invalid or not applicable in such cases.

ANGULAR SENSITIVITY

Minimum angular sensitivity for the complete assembly, when installed without limitation on sight window.



HORIZONTAL DIRECTIVITY



VERTICAL DIRECTIVITY

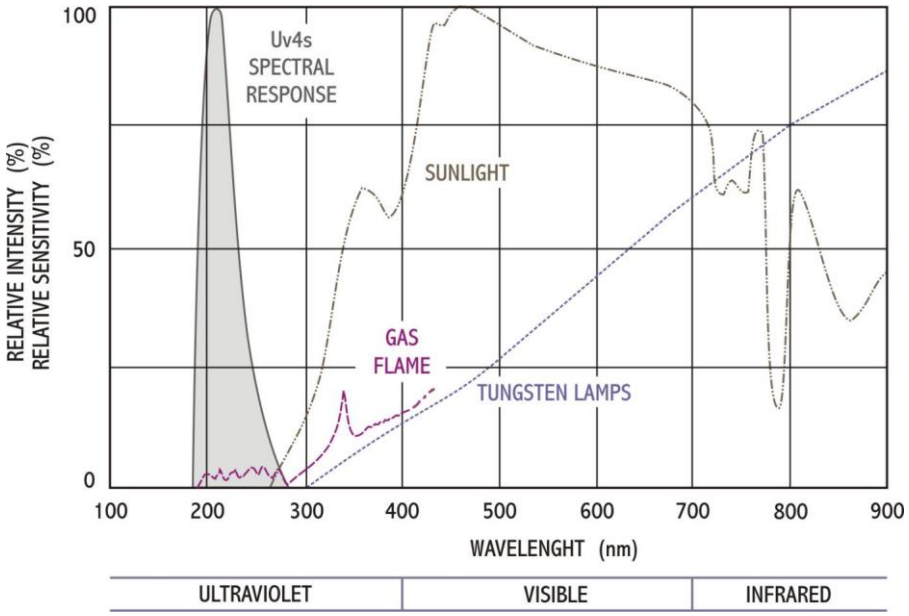
ORDERING GUIDE

1450.00.00 **UV4SH**
UV FLAME SENSOR, COMPLETE UNIT

1450.21.00 **C18211N21**
SPARE CONNECTOR 2 POLE + EARTH WITH PG11 CABLE GLAND

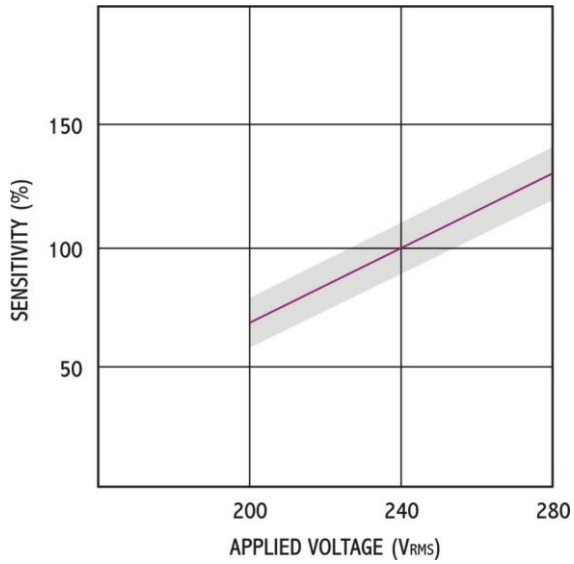
SPECTRAL RESPONSE vs LIGHT SOURCES

UV4SH sensitivity is restricted to a very narrow region of ultraviolet rays, and exhibits no response at all in the visible region. Gas and oil flames produces radiation that can be easily detected by UV4SH. The following diagram shows spectral response of UV4SH and spectral emission for flames, sunlight and lamps.



SENSITIVITY vs SUPPLY VOLTAGE

The flame detector increase his sensitivity with higher operating voltages, the relationship is shown in the above diagram. It's very important to keep the applied voltage within the recommended range to avoid malfunctions and damages.



CONTRIVE S.r.l. I-24040 SUISIO (Bergamo) via Enrico Fermi 18

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