

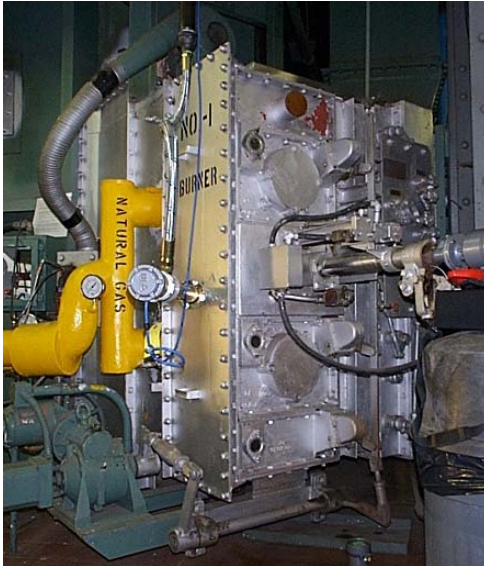
Measure^{IT} Uvisor System

Flame scanner for gas and oil burners

UR450 Mod. 5002 UV flame scanner

Product Data Sheet

(Rev. A)



- **Application:**
 - Wall fired boilers
 - Gas and oil burners
- High sensitive UV tube
- Continuous self-checking
- Rugged detector head for harsh environments:
 - Protection IP66 (NEMA 4X)
 - Hazardous area EEx-d IICT6
- ATEX certified

The UR450 is a self checked detector specifically designed to detect individual burner or pilot flames from gaseous and oil fuels

The UR450 provides a pulse rates signals proportional to the flame strength, significant of the intensity of the UV radiation detected in the primary combustion zone.

The unique algorithm developed in the Uvisor MFD control unit analyzes the flame signal carried from the scanner head, providing reliable detection of the target flame and excellent discrimination against the background and the adjacent burners flame.

The UR450 flame scanner is available with aiming accessories and provision for purging air.

Industrial^{IT}
enabled™

ABB

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UR450 Mod. 5002 UV flame scanner

Product Data Sheet

| TECHNICAL DATA | |
|---------------------------------------|--|
| Sensors | High sensitive UV |
| Spectrum sensitivity | 190 ÷ 280 nm |
| Power consumption | 800 mW DC supplied by Uvisor MFD control units |
| Ambient temperature | Operating: -10 ÷ 100°C (14 ÷ 212 °F) |
| | T6 classified area: Max. 60°C (140 °F) |
| | Storage: -40 ÷ 100°C (-40 ÷ 212 °F) |
| Enclosure | IP66 (NEMA 4X) |
| Classification | EEx-d IIC T6, ATEX category G-D CE type examination Certificate CESI 03 ATEX 151 |
| Dimensions | 165 x 126 x 126 mm |
| Weight | 2.5 kg |
| Air for lens cleaning | From clean ambient |
| Air flow for lens cleaning | 115 l/min. (4 SCFM). Excessive contaminant fuels might require up to 400 l/min. (14 SCFM). |
| Minimum cleaning air pressure | 20 mm H ₂ O (1" W.C.) above the max wind box pressure measured at the "y" connection inlet. |
| Mounting connection | Flanged |
| Cable entry for electrical connection | 3/4" NPT female thread |
| Electrical connections | Standard 4 x 0.55 sq.mm (20 AWG) shielded cable. Recommended max. 300 meters (1000 feet) length. Screw type termination. |
| Compatible amplifier unit | Uvisor MFD series amplifier |
| Approvals | CE ATEX FM - in progress CSA - in progress |

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UR450 Mod. 5002 UV flame scanner Product Data Sheet

Uvisor UR450 Mod. 5002 UV. Direct view assemblies

UR450 Model 5002 UV DETECTOR HEAD

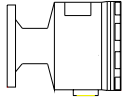


Figure A

UR450 Model 5002 UV with provision for purging air

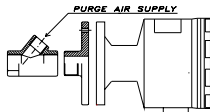


Figure B

UR450 Model 5002 UV with provision for purging air and swivel flange

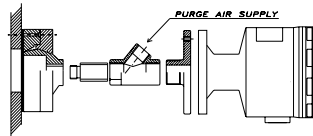


Figure C

UR450 Model 5002 UV with provision for purging air, swivel flange and air plug

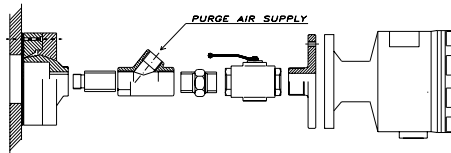


Figure D

Uvisor UR450 Mod. 5002. Accessory

Flexible air hose



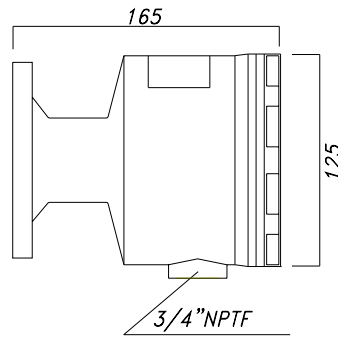
Picture 1

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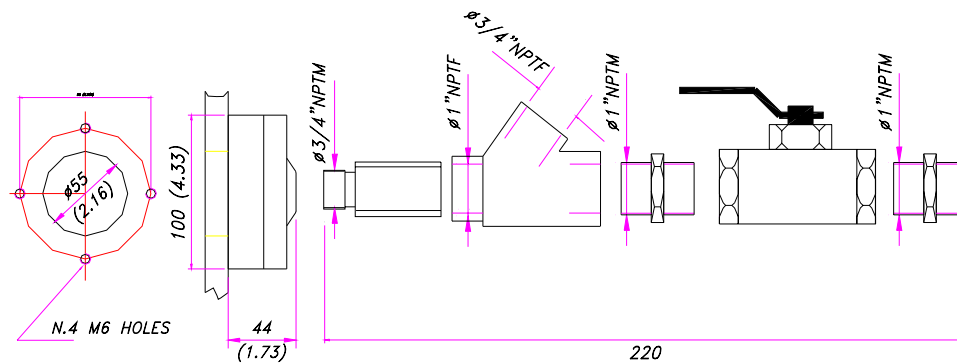
UR450 Mod. 5002 UV flame scanner Product Data Sheet

Uvisor UR450 Mod. 5002 UV. Dimensional Diagram

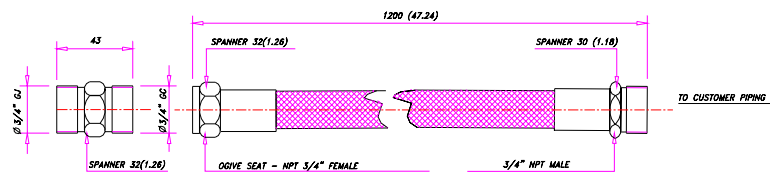
UR450 Model 5002 UV DETECTOR HEAD



Swivel flange and purging air provision



Purging air flexible hose

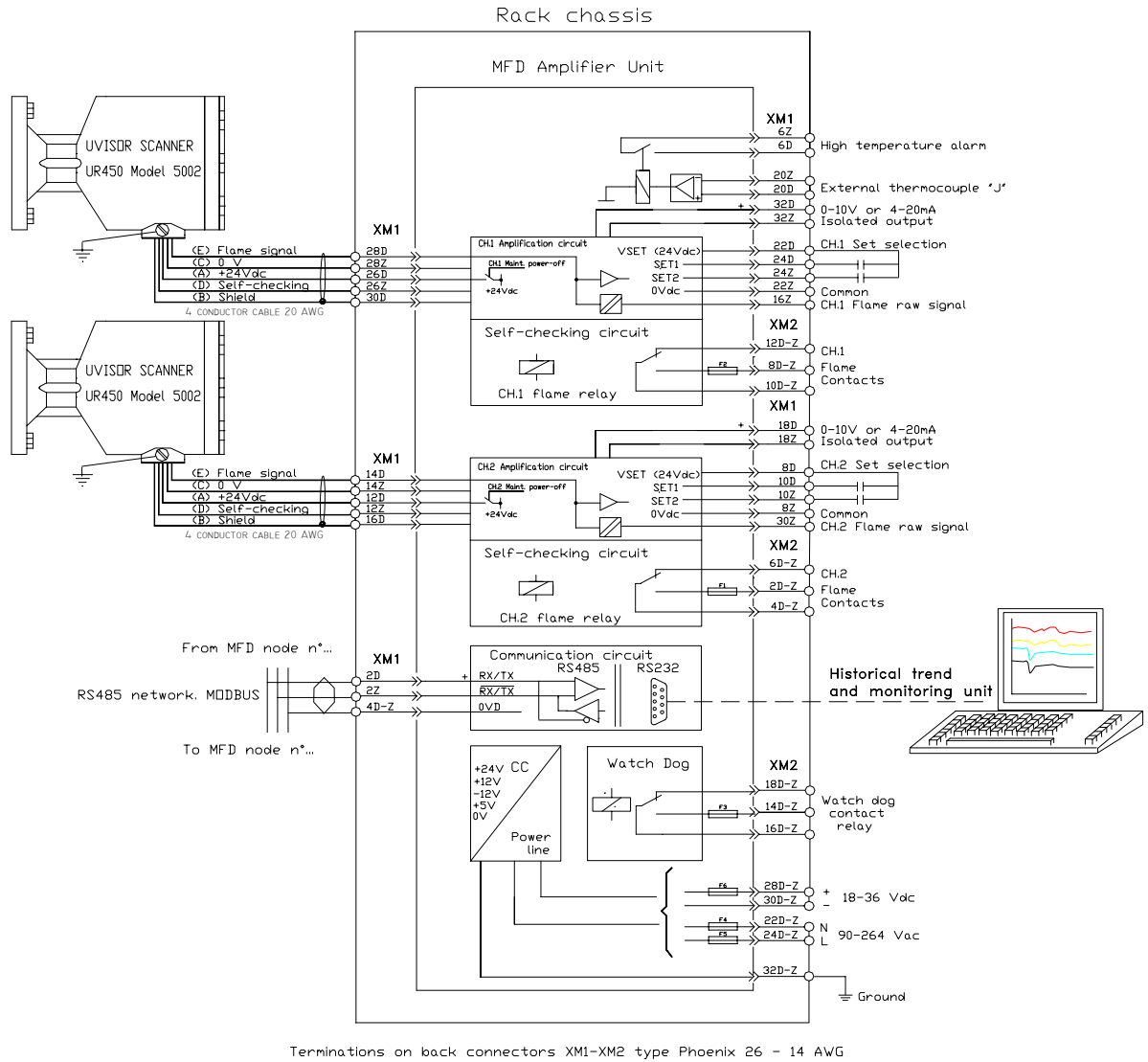


Armored hose type 2TE DIN 2021 EN854 ND-19 Temperature -30 to 80°C (-22 to 176°F)

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UR450 Mod. 5002 UV flame scanner Product Data Sheet

Uvisor UR450 Mod. 5002 UV. Electrical Connections



Uvisor MFD connection with two Uvisor scanners type UR450 Mod. 5002 UV

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FLAME SCANNERS APPLICATION TABLE

| Fuel Scanners | Gas (Hydrogen, Propane, NG) | | Oil (Heavy Oil - steam atom) | | Low NOx Pulverized Coal | | | Gas/Lfo Pilot | Gas Turbi ne | Notes |
|-------------------------------|-----------------------------------|-----|---------------------------------|-----|----------------------------|-----|-----|------------------|--------------------|--|
| | W.F | T.F | W.F | T.F | W.F | T.F | D.S | | | |
| UR600 IR | | | | | | | | | | Stable signal and excellent target flame discrimination in wall fired boiler multi burner installations. Conventional Lfo pilots and F.O. starting burner can also be supported. Whenever separate scanners for main burner and pilot are required, ABB recommend to approach it with "Two-System-in One" (2) |
| UR600 IR w. FO | | | | | | | | | | Stable signal and acceptable target flame discrimination in corner fired tilting burner installations. ABB recommend to approach opposite burner pair flame scanner equipment with "Two-System-in One" (2) |
| UR450 | | | | | | | | | | Stable signal and excellent target flame discrimination in wall fired boiler multi burner installations. Conventional Lfo/gas pilots can also be supported. Whenever separate scanners for main burner and pilot are required, ABB recommend to approach it with "Two-System-in One" (2) |
| UR600 UV | | | | | | | | | | Stable signal and acceptable target flame discrimination in wall fired boiler multi burner installations. Conventional Lfo pilots and F.O. starting burner can also be supported. Whenever separate scanners for main burner and pilot are required, ABB recommend to approach it with "Two-System-in One" (2) |
| UR600 UV-EXT w. FO | | | | | | | | | | Stable signal and acceptable target flame discrimination in corner fired tilting burner installations. ABB recommend to approach opposite burner pair flame scanner equipment with "Two-System-in One" (2) |
| UR460 UVIR DV (1) | | | | | | | | | | Stable signal and excellent target flame discrimination in wall fired boiler multi burner installations. |
| UR460 UVIR ER/EF w. FO (1) | | | | | | | | | | Stable signal and acceptable target flame discrimination in corner fired tilting burner installations. |

Abbreviation and symbols:

W.F → Wall fired boilers
D.S → Down Shot boilers

T.F → Tangential fired boilers
w.FO → With fiber optic extension

¹ Only when Specifications call for "DUAL SENSOR"

² Uvisor MFD takes advantage of the individual channel "Maintenance power-off" utility to control two (2) scanner head independently. Individual channel flame relay and flame signal strength analogue output are provided for the Burner Management System and visualization.

Acceptable performance
 Good performance
 Excellent performance

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ORDERING DATA

Purchase order must specify the full model number for each component of the system.

| PRODUCT NAME | PART NUMBER | ORDERING CODE | DESCRIPTION |
|---|--------------------------|------------------------|---|
| Measure^{IT} Uvisor UR450 Mod. 5002 UV | EC-BOM-G009HLA002 | 84531-S-3250003 | Detector head. (Figure A) |
| DIRECT VIEW ASSEMBLIES | | 84531-S-3250004 | Detector head including: <ul style="list-style-type: none">▪ Provision for purging air. (Figure B) |
| | | 84531-S-3250005 | Detector head including: <ul style="list-style-type: none">▪ Provision for purging air▪ Swivel flange. (Figure C) |
| | | 84531-S-3250006 | Detector head including: <ul style="list-style-type: none">▪ Provision for purging air▪ Swivel flange▪ Isolation valve (Figure D) |
| DIRECT VIEW OPTION | | 84410-S-0400000 | Air hose $\frac{3}{4}$ " (Picture 1) |



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