

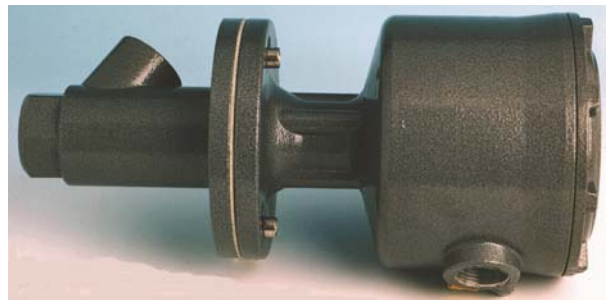
# Measure<sup>IT</sup> Uvisor System

Flame scanner for gas and oil burners

## UR450 Mod. 5002 UV flame scanner

### Product Data Sheet

(Rev. B)



- **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<sup>IT</sup>**  
enabled™

**ABB**

# Measure<sup>IT</sup> Uvisor System

## UR450 Mod. 5002 UV flame scanner

### Product Data Sheet

TECHNICAL DATA	
Sensors	High sensitive UV tube
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 <sub>2</sub> 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: FMRC 7610 CSA: CAN/CSA-C22.2 No 199 CAN/CSA E60730-1 (for software)

# Measure<sup>IT</sup> Uvisor System

## UR450 Mod. 5002 UV flame scanner Product Data Sheet

### Uvisor UR450 Mod. 5002 UV. Direct view assemblies

UR450 Model 5002 UV DETECTOR HEAD

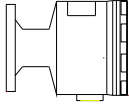


Figure A

UR450 Model 5002 UV with provision for purging air

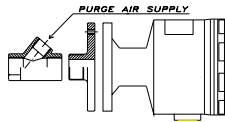


Figure B

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

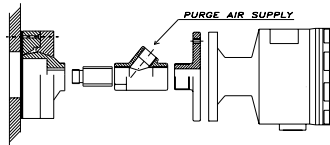


Figure C

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

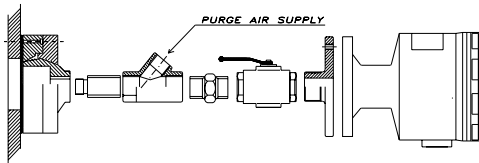


Figure D

### Uvisor UR450 Mod. 5002. Accessory

Flexible air hose



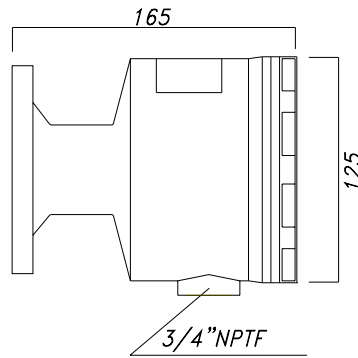
Picture 1

# Measure<sup>IT</sup> Uvisor System

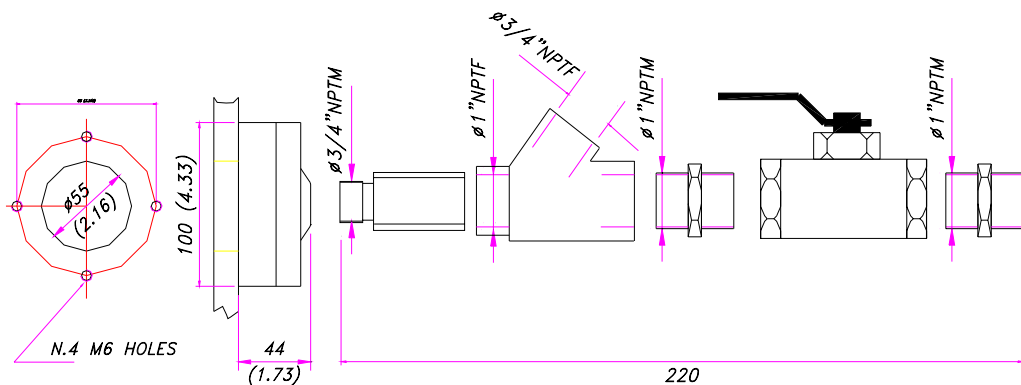
## UR450 Mod. 5002 UV flame scanner Product Data Sheet

### Uvisor UR450 Mod. 5002 UV. Dimensional Diagram

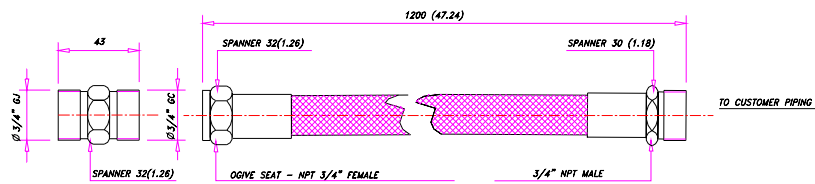
#### UR450 Model 5002 UV DETECTOR HEAD



#### Swivel flange and purging air provision



#### Purging air flexible hose

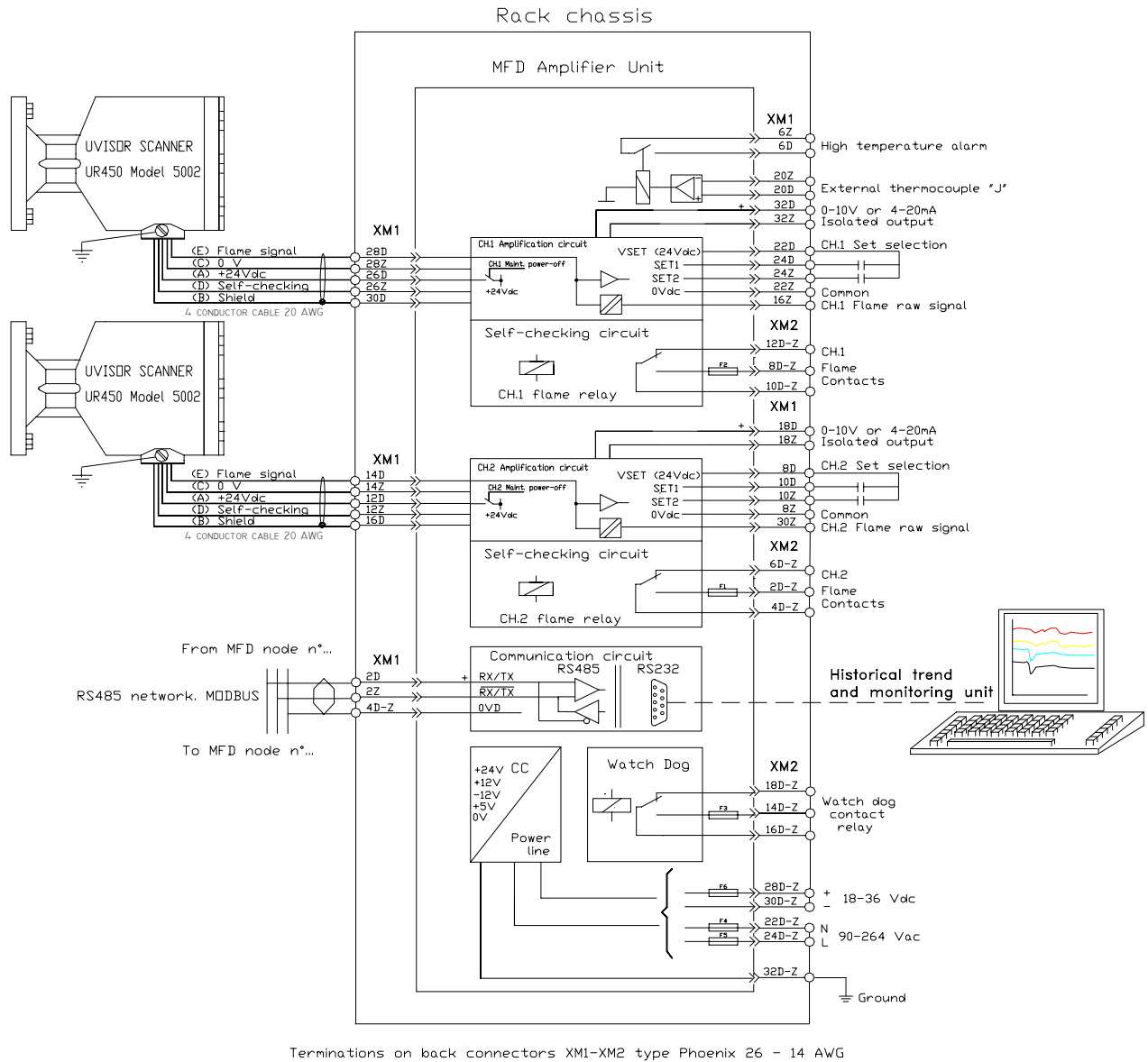


Armored hose type 2TE DIN 2021 EN854 ND-19 Temperature -30 to 80°C (-22 to 176°F)

# Measure<sup>IT</sup> Uvisor System

## 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

# Measure<sup>IT</sup> Uvisor System

## UR450 Mod. 5002 UV flame scanner Product Data Sheet

**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

<sup>1</sup> Only when Specifications call for "DUAL SENSOR"

<sup>2</sup> 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

# Measure<sup>IT</sup> Uvisor System

## UR450 Mod. 5002 UV flame scanner

Product Data Sheet

Printed in Italy

### ORDERING DATA

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

PRODUCT NAME	PART NUMBER	ORDERING CODE	DESCRIPTION
Measure <sup>IT</sup> Uvisor UR450 Mod. 5002 UV	EC-BOM-G009HLA002	84531-S-3250003	Detector head. (Figure A)
DIRECT VIEW ASSEMBLIES		84531-S-3250004	Detector head including: ▪ Provision for purging air. (Figure B)
		84531-S-3250005	Detector head including: ▪ Provision for purging air ▪ Swivel flange. (Figure C)
		84531-S-3250006	Detector head including: ▪ Provision for purging air ▪ Swivel flange ▪ Isolation valve (Figure D)
DIRECT VIEW OPTION		84410-S-0400000	Air hose 3/4" (Picture 1)



For additional information contact:  
**ABB Energy Automation, SpA**  
 Via Hermada 6  
 16154 Genova  
 ITALY  
 uvisor@it.abb.com

The Industrial<sup>IT</sup> word mark and all above-mentioned product names in the form XXXXXXIT are registered or pending trademarks of ABB

EC-DOC-G009DS002-B -- Product Data Sheet