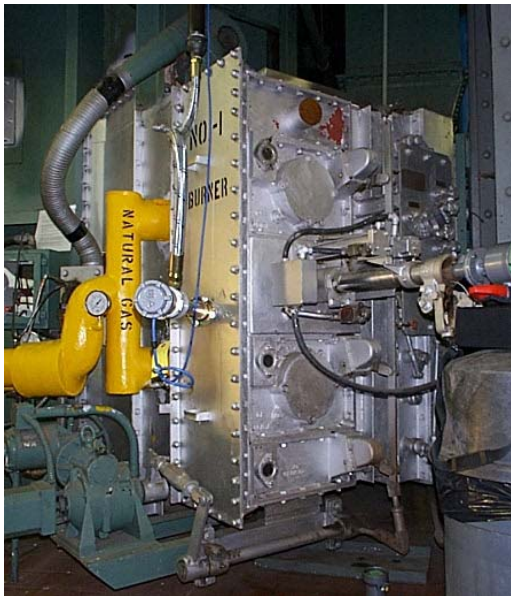
Measure IT Uvisor System

Flame scanner for fuel oil and coal flame

UR600 IR Mod. 1000 flame scanner

Product Data Sheet

(rev. A)



- **Application:**
  - **Wall fired, corner fired and down-shot boilers**
  - **Oil, Orimulsion and pulverized coal burners**
- **PbS sensor to detect flame by infrared (IR) flicker radiation**
- **Continuous self-checking**
- **Rugged detector head for harsh environments:**
  - **Protection IP66 (NEMA 4X)**
  - **Hazardous area EEx-d IICT6**
- **Flexible optical fibre extension allowing max continuous operating temperature at 350°C (662°F).**
- **ATEX certified**

The UR600 IR is a self checked detector specifically designed to detect individual burner flames from atomized oil and pulverized coal fuels.
UR600 IR provides the detector control unit, Uvisor MFD, with a raw flame signal significant of the amplitude and frequency (Flicker) of the infrared radiation detected in the primary combustion zone. The unique algorithm developed in the control unit Uvisor MFD analyzes the flame raw signal carried from the scanner head providing reliable detection of the target flame and excellent discrimination against the background and adjacent burners flames.
The UR600 IR flame scanner is available with accessories for the following installations:

- Direct view with aiming accessories for wall and opposite wall fired utility and industrial boiler.
- Fiber optic flexible extended probe with outer carrier, cooling hose and fitting accessories for corner fired tilting burner boilers.
- Fiber optic rigid extended probe with outer carrier, cooling hose and fitting accessories for large windbox, wall and opposite wall fired utility boilers.

Industrial IT enabled™

ABB

Measure^{IT} Uvisor System

UR600 IR Mod. 1000 flame scanner

Product Data Sheet

TECHNICAL DATA		
Sensor		PbS (Lead Sulphide)
Spectrum sensitivity		0.6 ÷ 3 µm
Power consumption		300 mW DC supplied by Uvisor series control units
Ambient temperature	Operating:	-10 ÷ 80°C (14 ÷ 176 °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		94 x 94 x 172 mm
Weight		1 Kg. (2.2 Lbs)
Air for lens cleaning		From clean ambient
Air flow for lens cleaning		Direct view: 115 l/min. (4 SCFM). Excessive contaminant fuels might require up to 400 l/min. (14 SCFM). Extended probe: 400 l/min. (14 SCFM).
Minimum cleaning air pressure		Direct view: 20 mm H2O (1" W.C.) above the max wind box pressure measured at the "y" connection inlet. Extended probe: 300 mm H2O (12" W.C.) above the max wind box pressure measured at the "y" connection inlet
Maximum fiber optic continuous operating temperature		350°C (662°F)
Mounting connection		1" NPT male thread
Cable entry for electrical connection		1/2" 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 series amplifier
Approvals		CE ATEX FM in progress CSA in progress

UR600 IR Mod. 1000 flame scanner
Product Data Sheet

Uvisor UR600 IR Mod. 1000. Direct view assemblies

UR600 IR Mod. 1000 – DETECTOR HEAD

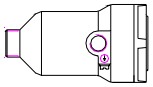


Figure A

UR600 IR Mod. 1000 – with provision for purging air

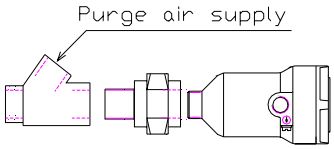


Figure B

UR600 IR Mod. 1000 – with provision for purging air and swivel flange

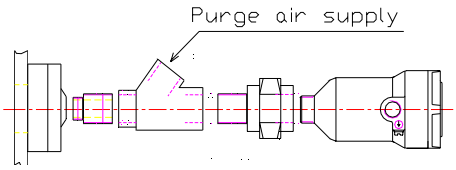


Figure C

UR600 IR Mod. 1000 – with provision for purging air, swivel flange and isolation valve

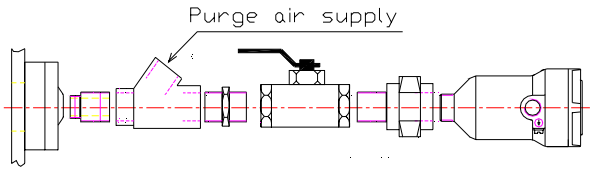


Figure D

Picture 1

Uvisor UR600 IR Mod. 1000. Accessories

UR600 Detector head cooling cylinder

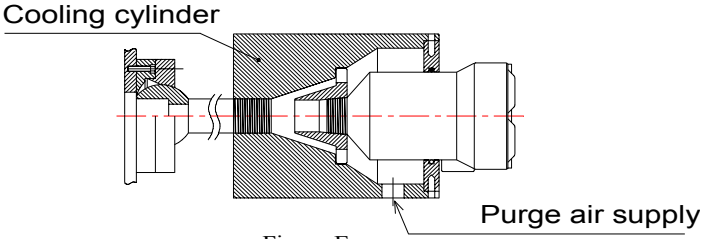


Figure E

Flexible air hose

Picture 2

Uvisor UR600 IR Mod. 1000. Fibre optic assemblies

Legend
1. Uvisor UR600 IR Mod. 1000. Detector head
2. Inner carrier
3. Flexible outer carrier
4. Guide collar

Accessories
A. Flexible air hose. L=1200, size 1"
B. Counter flange

FLEXIBLE PROBE APPLICATION

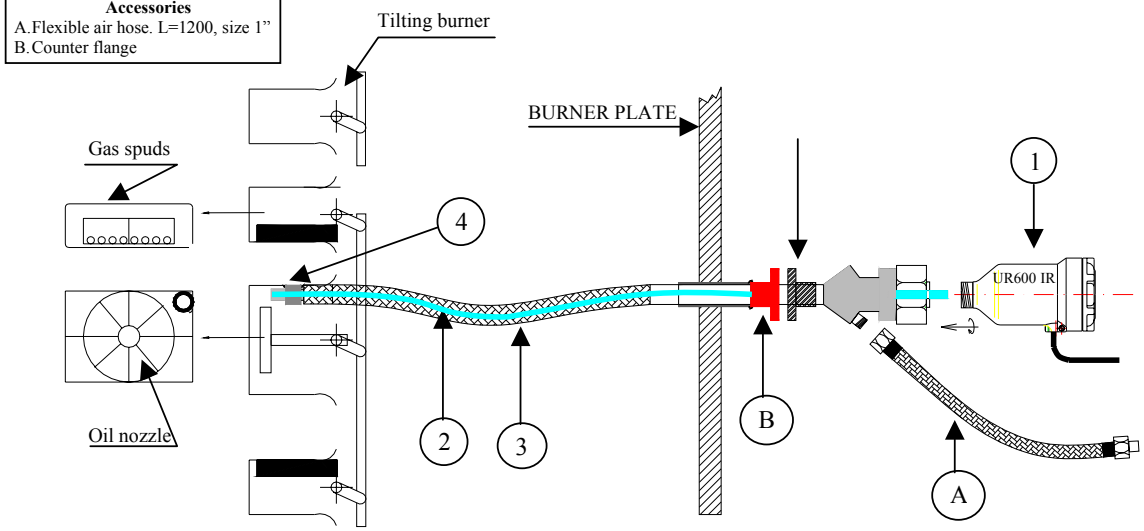


Figure F

RIGID PROBE APPLICATION

Legend
1. Uvisor UR600 IR Mod. 1000. Detector head
2. Inner carrier
3. Rigid outer carrier
4. Guide collar

Accessories
A. Flexible air hose. L=1200, size 1"
B. Counter flange

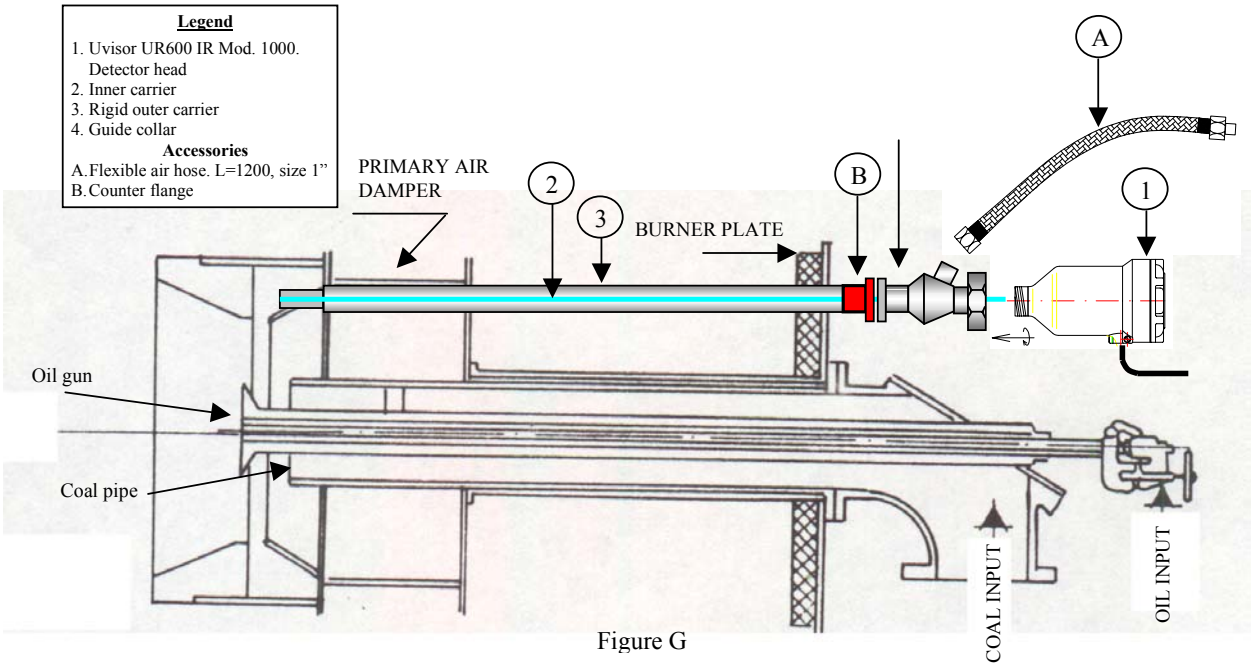
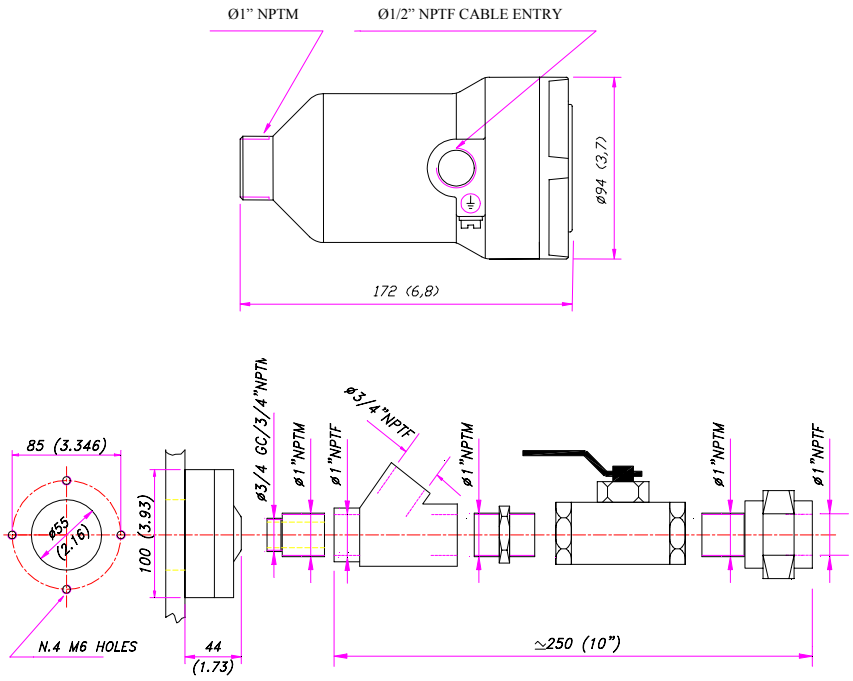


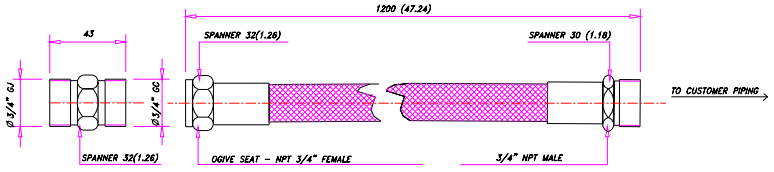
Figure G

Uvisor UR600 IR Mod. 1000. Dimensional Diagram

UR600 IR Mod. 1000 – DETECTOR HEAD

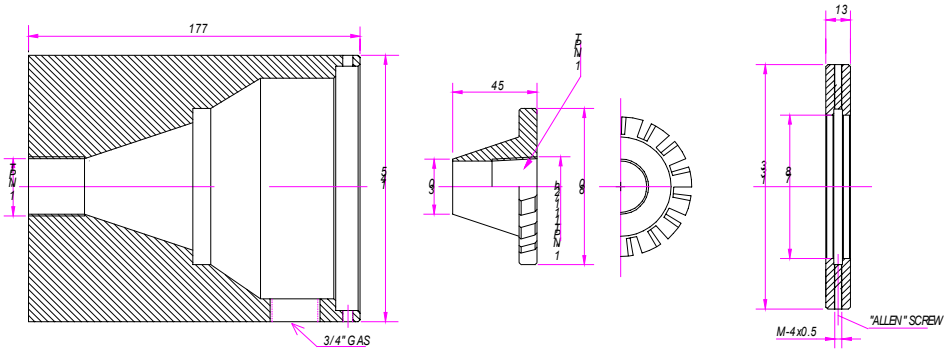


Purging air flexible hose



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

UR600 Detector head cooling cylinder



Uvisor UR600 IR Mod. 1000. Fiber optic dimensional diagram

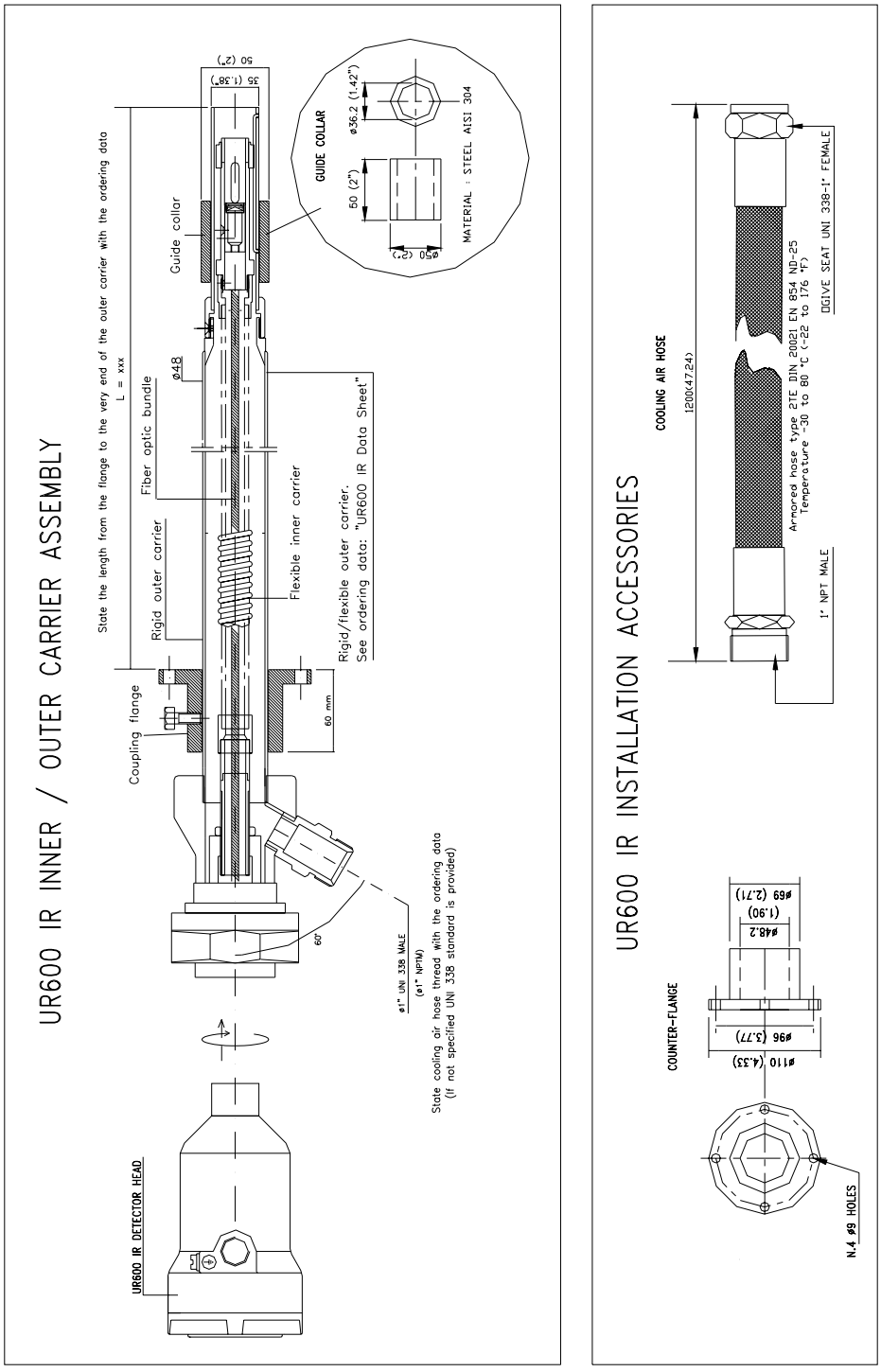


Figure H

Uvisor UR600 IR Mod. 1000. Electrical Connections

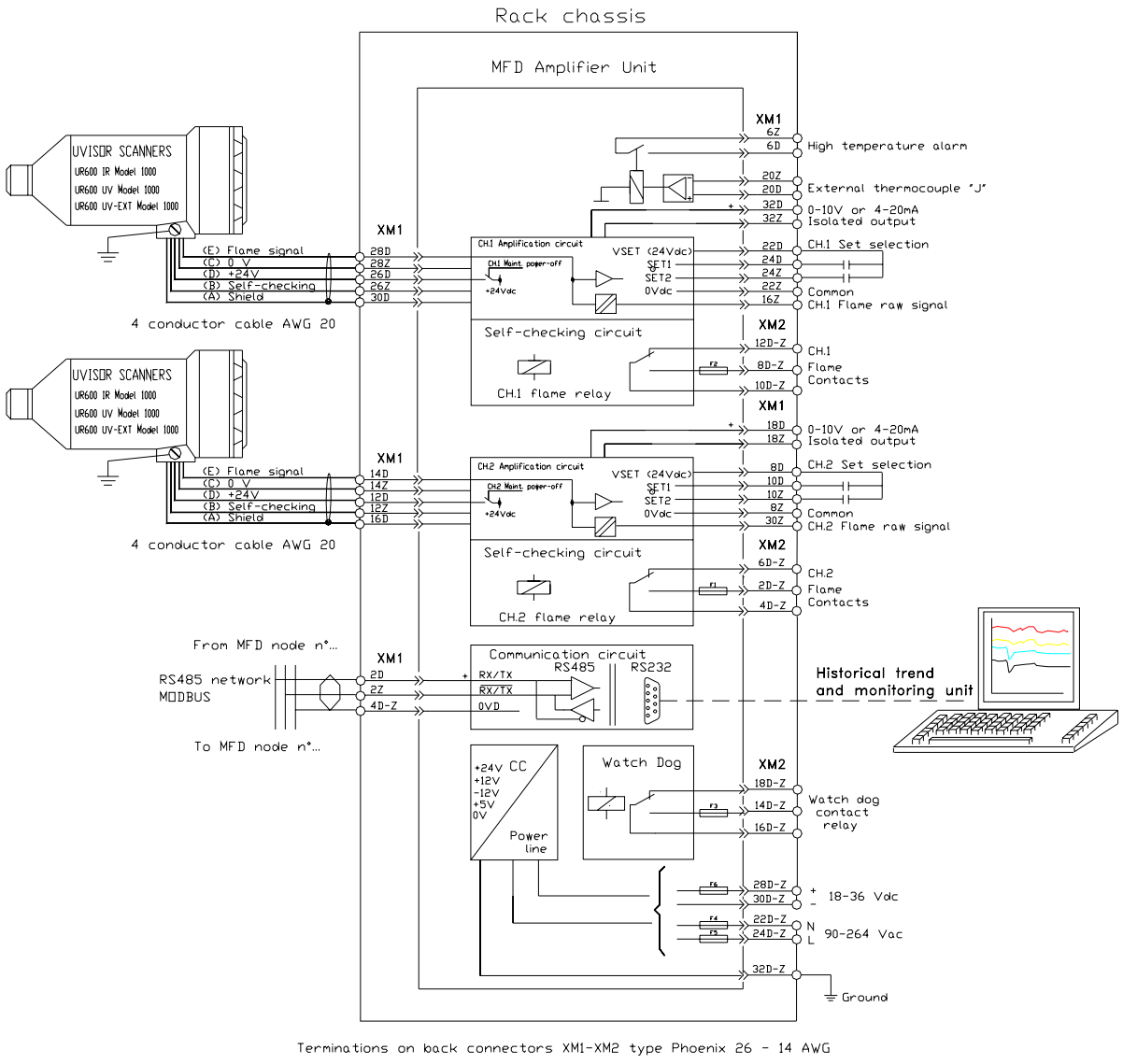


Fig. L. Uvisor MFD connection with two Uvisor scanners type UR600 IR mod. 1000

FLAME SCANNERS APPLICATION TABLE

Fuel / Scanners	Gas (Hydrogen, Propane, NG)		Oil (Heavy Oil - steam atom)		Low NOx Pulverized Coal			Gas/Lfo Pilot	Gas Turbine	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
T.F → Tangential fired boilers
D.S → Down Shot 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

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 UR600 IR Mod. 1000	**EC-BOM-G009HLA101**	**84531-S-3270000**	Detector head. (Figure A)
DIRECT VIEW ASSEMBLIES		**84531-S-3270011**	Detector head including: ▪ Provision for purging air. (Figure B)
		84531-S-3270012	Detector head including: ▪ Provision for purging air ▪ Swivel flange. (Figure C)
		84531-S-3270013	Detector head including: ▪ Provision for purging air ▪ Swivel flange ▪ Isolation valve (Figure D)
DIRECT VIEW OPTION		**84410-S-0400000**	Air hose ¾" (Picture 2)
		84410-S-3270000	Cooling cylinder (Figure E)
EXTENDED ASSEMBLIES		**84531-S-3340000**	Detector head including: ▪ Inner fiber optic carrier ▪ Outer flexible guide pipe ▪ Collar ▪ Coupling flange (Figure F)
		84531-S-3350000	Detector head including: ▪ Inner fiber optic carrier ▪ Outer rigid guide pipe ▪ Collar ▪ Coupling flange (Figure G)
EXTENDED OPTIONS		**84410-S-0400001**	Air hose 1" (Figure H)
		84410-S-0400002	Counter flange (Figure H)

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