

HIGH TEMPERATURE CAMERA

sonda^{tec} high temperature camera housing

Water and air cooled high temperature vision systems



SON01XX

SONDATEC 1.0

Operational description

SONDATEC housing series have been developed to allow the use of television camera in high temperature environments, as glass process, cement industry, iron&steel plant and boiler. These high-temperature camera systems provide clear, crisp images of the combustion process in boilers, furnaces, kilns, incinerators and other combustion chambers. With the real-time image provided, operators and engineers can monitor the proper flow of fuel and raw materials, reduce emissions, reduce fuel consumption, speed up boiler light off, and improve safety.

SONDATEC housings are available in different lengths from 300mm up to 4000mm, with diameters equal to 101.6mm. They are typically endowed with axial vision and they can allow diagonal angles of vision up to 105°.

Depending on the behaviour of the chemicals involved in the process, SONDATEC camera housing should be made by special stainless steels, high-resistance alloys or by using superficial protections.

SONDATEC camera housings employ triple-wall laminar flow for efficient water cooling of the camera and allow operation in temperatures up to 2200°C (≈4000°F). Otherwise a special air cooled system allows operation in temperatures up to 700°C (≈1300°F).

SONDATEC housings are “pressurised”: an integral compressed air system supplies clean air (or appropriate gas) for cooling and particulate removal from the lens. In such a way the lens doesn’t require any expensive protection glass, crystal and protection porthole. A constant supply of clean air is essential for proper camera operation and protection: GFATEC series represent an effective filtration system able to remove contaminants and to provide high quality clean air in industrial environments.

SONDATEC housing is designed to be mounted either directly through the wall of a furnace or by using OUTEK series, a wall fixing medium endowed with a protective shutter type “porthole” that increases safety and easy maintenance.

If it is requested a penetration inside the furnace, SONDATEC housing may be provided with retraction devices, INTEC series: in case of system failure, or failure of the cooling supply, the retraction device automatically removes the housing from the furnace and seals the furnace porthole.



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HIGH TEMPERATURE CAMERA

Technical specification

Dimensions

Diameter:	101.6 mm
Length:	from 350 mm to 700 mm (other on request)
Angle of vision:	axial, max horizontal 105°
Camera:	Colour or B/N CAMTEC series
Electric connections:	multipolar Connector MIL_STD or with armoured flexible tube

Water cooling

Connection:	1/2" M BSPP
Temperatures IN:	35°C max
Temperatures OUT:	$\Delta T = 15^\circ\text{C}$ max (3*)
Flow:	from 4 l/min to 16 l/min (1*)
Pressure entry:	from 2 bar to 6 bar (2*), maximum 8 bar
Quality:	pH 6-8, suspensions max 10 mg/l

Air for cooling and cleaning lens

Connection:	3/8" M BSPP (other on request)
Temperature IN:	40°C
Consumption:	around 3 Nm ³ /h (3*)
Pressure entry:	from 1 bar to 3 bar, maximum 4 bar (3*)
Quality:	Instrumental Air ISO 8573-1 Classe 1.7.2

Available models

SON01X301	AISI316L stainless steel, length: 350mm, able for working to 2200°C
SON01X302	as SON01X301 but completed with flange for coupling to the VOD
SON01X331	AISI304 stainless steel, length: 350mm, able for working to 1100°C, air cooled only.
SON01X701	as SON01X301 but 700 mm length
SON01X702	as SON01X302 but 700 mm length
SON01X711	Hastelloy C276, length: 700 mm, able for working to 2200°C
SON01X720	as SON01X720 but made by FE510

Accessories

SON01F0__	Wall furnace mounting flange adaptor
SON01H000	Wall mounting bracket
JBX003	Junction box for video and power supply
CAB11X3--	Water, air and power control cabinet
GFA13X__	Compressed air filter unit with pressure regulator and manometer
TCOXHT0001	Special cable for <180°C temperature

Correlated products

CAM12X__	CamTec high temperature television camera
INT02X__	intec retraction device
OUT03X__	Wall fixing medium OUTEC series endowed with protection shutter, pneumatic cylinder

Notes

- (1*) Data are indicative and depend on process' temperature and application. 16 l/min is referred to temperature >2000°C.
- (2*) Data are indicative and depend on process' temperature and application. 6 bar is referred to application with positive inclination of the housing relative to horizontal plane.
- (3*) Data are indicative and depend of process' temperature and application. For more information, please contact our engineers.