MAXIMUS MHXT

EX-PROOF HOUSING FOR THERMAL CAMERAS

MHXT+MHXWBS

DESCRIPTION

These explosion-proof housings for the MAXIMUS range have been certified and designed to meet the strictest standards regarding installation in potentially explosive environments, i.e. where there is the presence of gas and flammable dusts.

The MAXIMUS range ensures excellent performance for monitoring critical processes in areas that carry a risk of explosion, such as refineries, gas pipelines, oil tankers, offshore platforms, industrial processes, chemical industries, etc.

Equipped with heating, the housing has the same installation and operating temperatures, of between -40° C and + 60° (-40°F / +140°F).

The wiring is made easier thanks to the removable connectors on the circuit board.

The housing can eventually be controlled by VMS through a video encoder with RS485 serial port.

CERTIFICATIONS

MAIN FEATURES

Certifications Ex d for use in Zone 1 and 2, Group IIC (Gas), and in Zone Ex tb 21 and 22 (Dust)

Made of AISI 316L electropolished stainless steel

Germanium window with protection grid

Integrated telemetry receiver

2 threaded holes ¾" NPT for use of cable glands or conduit

Sunshield and heater included

Ambient temperature: from -40°C (-40°F) up to +60°C (140°F)

Power supply: 230Vac, 24Vac or 120Vac

Internal usable area (WxHxL): 80x82x245mm (3.1x3.2x9.6in)

TECHNICAL DATA

GENERAL

AISI 316L stainless steel construction

Passivated and electropolished external surfaces

Silicone O-ring seals

MECHANICAL

2 holes 3/4" NPT for cable entry

Window with protection grid

Sunshield

Unit weight: 16.5kg (36lb)

HOUSING'S WINDOW

Germanium window

- Usable diameter: 56mm (2.2in)
- Thick: 10mm (0.4in)
- External treatment: antiscratch (Hard Carbon Coating - DLC), antireflection
- Internal treatment: antireflection
- Spectral range: from 7.5µm up to 14µm
- Medium transmittance (from 7.5µm up to 11.5µm): 87.3%
- Medium transmittance (from 11.5µm up to 14µm): 67.3%

ELECTRICAL

Supply voltage/Current consumption:

- 230Vac, 0.34A, 50/60Hz
- 120Vac, 0.5A, 50/60Hz
- 24Vac, 2.2A, 50/60Hz

Heater (Ton 15°C±4°C (59°F±7°F), Toff 22°C±3°C (72°F±5°F))

COMMUNICATIONS

Serial interface: 1 RS-485 line, half-duplex

CAMERAS

Compatible cameras:

- Power consumption (assembly, camera and lens): 13W max
- Cameras dimensions/Lenses that can be installed (WxHxL): 80x82x245mm (3.1x3.2x9.6in) max
- Minimum distance between camera and housing's window: 10mm (0.4in)

ENVIRONMENT

For indoors and outdoors installation

Operating temperature/Installation temperature: from -40°C (-40°F) up to +60°C (140°F)

Operating temperature/Installation temperature (MHX2...A-U, in 24Vac and with pre-installed camera by Videotec): from -40°C (-40°F) up to +54°C (129.2°F)

Relative humidity: from 5% up to 95%

CERTIFICATIONS

Electrical safety (CE): EN60950-1, IEC60950-1, EN62368-1, IEC62368-1

Electromagnetic compatibility (CE): EN61000-6-4, EN61000-3-2, EN61000-3-3, EN50130-4, EN55032 (Class A)

RoHS (CE): EN50581

Outdoor installation (CE): EN60950-22, ICE60950-22

IP protection degree (EN/IEC60529): IP66, IP67

Vibration test: EN50130-5, EN60068-2-6

UL certification (UL60950-1, CAN/CSA C22.2 No. 60950-1-07, UL62368-1, CAN/CSA C22.2 No. 62368-1-14): cULus Listed

Electromagnetic compatibility (North America): FCC part 15 (Class A)

Level of protection Type (UL50E): 4X

CERTIFICATIONS - EXPLOSION-PROOF APPLICATIONS

ATEX (EN 60079-0+A11, EN 60079-1, EN 60079-31)

IECEx (IEC 60079-0, IEC 60079-1, IEC 60079-31)

EAC EX (TR CU 012/2011)

KCs (Employment and labor department 2016-54)

UL listed for USA (UL 60079-0, UL 60079-1, UL 60079-31) (only versions in 24Vac with pre-installed camera by Videotec)

UL listed for Canada (CAN/CSA-C22.2 NO. 60079-0, CAN/CSA-C22.2 NO. 60079-1, CAN/CSA-C22.2 NO. 60079-31) (only versions in 24Vac with pre-installed camera by Videotec)

For further details on certifications and markings, consult the relevant table.

ACCESSORIES

MBX1MAA	Explosion-proof communication box in stainless steel, IN 230Vac, with EMC filter for marine certification
MBX2MAA	Explosion-proof communication box in stainless steel, IN 24Vac, with EMC filter for marine certification
MBX3MAA	Explosion-proof communication box in stainless steel, IN 120Vac, with EMC filter for marine certification
MBA1S5A	Explosion-proof communication box in aluminium, IN 230Vac
MBA2S5A	Explosion-proof communication box in aluminium, IN 24Vac
MBA3S5A	Explosion-proof communication box in aluminium, IN 120Vac
OCTEX3/4C	Cable gland in nickel-plated brass with gasket EX 3/4" NPT, unarmoured cable IECEX-ATEX-EAC Ex
OCTEXA3/4C	Cable gland in nickel-plated brass with gasket EX 3/4" NPT, armoured cable IECEX-ATEX-EAC Ex
OCTEXB3/4P	Barrier cable gland in nickel-plated brass EX 3/4" NPT, unarmoured cable IECEX-ATEX-EAC Ex
OCTEXBA3/4P	Barrier cable gland in nickel-plated brass EX 3/4" NPT, armoured cable IECEX-ATEX-EAC Ex
OCTEX3/4	Cable gland in nickel-plated brass with gasket EX 3/4" NPT, unarmoured cable ATEX
OCTEXA3/4	Cable gland in nickel-plated brass with gasket EX 3/4" NPT, armoured cable ATEX
OCTEXB1/2C	Barrier cable gland in nickel-plated brass EX 1/2" NPT, unarmoured cable IECEX-ATEX-EAC Ex
OCTEXB1/2P	Barrier cable gland in nickel-plated brass EX 1/2" NPT, unarmoured cable IECEX-ATEX-EAC Ex
OCTEXBA1/2P	Barrier cable gland in nickel-plated brass EX 1/2" NPT, armoured cable IECEX-ATEX-EAC Ex
OCTEX1/2C	Cable gland in nickel-plated brass EX 1/2" NPT, unarmoured cable IECEX-ATEX-EAC Ex
OCTEXS1/2C	Cable gland in nickel-plated brass EX 1/2" NPT, unarmoured cable IECEX-ATEX-EAC Ex
OCTEXA1/2C	Cable gland in nickel-plated brass EX 1/2" NPT armoured cable IECEX-ATEX-EAC Ex
OCTEX1/2-3/4P	Cable glands reduction in nickel-plated brass Ex 3/4" - 1/2" NPT IECEX-ATEX-EAC Ex
OCTEXP3/4C	Conduit cable gland nickel-plated brass 3/4" NPT IECEX-ATEX- c CSA us - EAC Ex (operating temperature: from -60°C (-76°F) up to +80°C (+176°F))
OEXPLUG1/2P	Plug EX 1/2" NPT IECEX-ATEX-EAC Ex
OEXPLUG3/4P	Plug EX 3/4" NPT IECEX-ATEX-EAC Ex
USB485	USB-RS485 converter

For further details about cable glands part numbers, please refer to the relevant table.

BRACKETS AND ADAPTORS

MHXWBS	AISI 316L stainless steel wall bracket
MPXCW	AISI 316L stainless steel corner adapter module
MPXCOL	AISI 316L stainless steel pole adapter module
MHXWFWCA	AISI 316L stainless steel ball joint
NXFWBT	AISI 316L stainless steel parapet mounting bracket

PACKAGE

Model Number	Weight	Dimensions (WxHxL)	Master carton
MHXT	19kg (42lb)	58x34x22cm (23x13.4x8.7in)	-

ELECTRICAL RATING

Supply voltage	Max peak electrical ratings (comprising the max power dissipation of the end user camera/lens and heater)	Maximum power dissipation for end user fitted camera/lens
230Vac	0.34A, 50/60Hz, 80W	13W
120Vac	0.5A, 50/60Hz, 60W	13W
24Vac	2.2A, 50/60Hz, 53W	13W
12Vdc	2.8A, 34W	13W

MAXIMUS MHXT - CERTIFICATIONS AND MARKINGS

Certification	Marking	Ambient temperature	Product Nr. Ending
ATEX	Ⓔ II 2G Ex db IIC T6 Gb Ⓔ II 2D Ex tb IIIC T85°C Db	-40°C ≤ Ta ≤ +60°C	…B
IECEX	Ex db IIC T6 Gb Ex tb IIIC T85°C Db		…B
EAC Ex	1Ex d IIC T6 Gb X Ex tb IIIC T85°C Db X		…B
KCs	Ex d IIC T6 Ex tb IIIC T85°C		…B
UL listed for USA (only 24Vac)	Class I, Zone 1, AEx db IIC T6, Zone 21, AEx tb IIIC T85°C Class I, Division 2, Groups A, B, C, and D, T6, Class II, Division 2, Group E, F and G, T6	-40°C ≤ Ta ≤ +54°C	…B-U[1]
UL listed for Canada (only 24Vac)	Ex db IIC T6 Gb, Ex tb IIIC T85°C Db Class I, Division 2, Groups A, B, C, and D, T6, Class II, Division 2, Group E, F and G, T6		…B-U[1]

[1] MHXT2…B-U, UL Certifications only for 24Vac versions and with pre-installed camera by Videotec. Operating temperature -40°C / + 54°C (-40°F / 129.2°F)

CABLE GLANDS AND ACCESSORIES 3/4" NPT

Type	Certification	Operating temperature	Cable	Model Number	Diameter of the external cable	Under armor cable diameter
Barrier cable gland	IECEX/ATEX/EAC Ex	-60°C (-76°F) / +135°C (+275°F)	Unarmoured cable	OCTEXB3/4P	17.8 - 20.0mm (0.70-0.79in)	–
			Armoured cable	OCTEXBA3/4P	16.8 - 23.9mm (0.66-0.94in)	20mm (0.79in) max
Cable gland with gasket	IECEX/ATEX/EAC Ex	-60°C (-76°F) / +100°C (+212°F)	Unarmoured cable	OCTEX3/4C	13.0 - 20.2mm (0.51-0.79in)	–
		-60°C (-76°F) / +80°C (+176°F)	Armoured cable	OCTEXA3/4C	16.9 - 26.0mm (0.66-1.02in)	11.1 - 19.7mm (0.44 - 0.78in)
	ATEX	-40°C (-40°F) / +100°C (+212°F)	Unarmoured cable	OCTEX3/4	14.0 - 17.0mm (0.55-0.67in)	–
			Armoured cable	OCTEXA3/4	18.0 - 23.0mm (0.71-0.91in)	14 - 17mm (0.55 - 0.67in)
Plug EX 3/4"NPT	IECEX/ATEX/EAC Ex	-100°C (-148°F) / +400°C (+752°F)	–	OEXPLUG3/4P	–	–
Conduit sealing fitting	IECEX-ATEX- c CSA us - EAC Ex	-60°C (-76°F) / +80°C (+176°F)	–	OCTEXP3/4C	–	–
Reduction 3/4" NPT x 1/2" NPT	IECEX/ATEX/EAC Ex	-100°C (-148°F) / +400°C (+752°F)	–	OCTEX1/2-3/4P	–	–

CABLE GLANDS AND ACCESSORIES 1/2" NPT

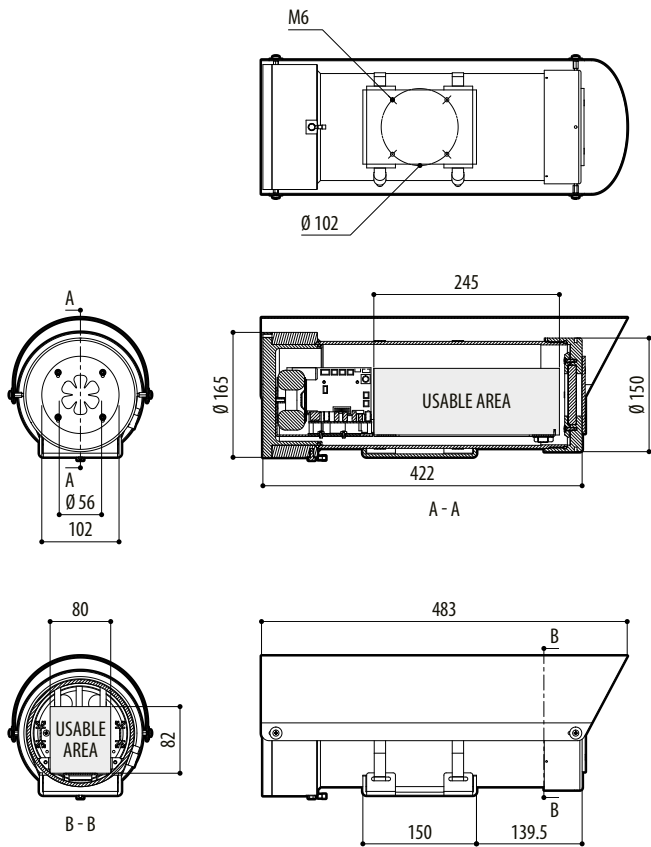| Type	Certification	Operating temperature	Cable	Model Number	Diameter of the external cable	Under armor cable diameter
Barrier cable gland	IECEX/ATEX/EAC Ex	-60°C (-76°F) / +135°C (+275°F)	Unarmoured cable	OCTEXB1/2P	12.5 - 14.0mm (0.5-0.55in)	–
			Armoured cable	OCTEXBA1/2P	15.5 - 21.1mm (0.61-0.83in)	14mm (0.6in) max
Cable gland with gasket	IECEX/ATEX/EAC Ex	-60°C (-76°F) / +100°C (+212°F)	Unarmoured cable	OCTEX1/2C	3.2 - 8.0mm (0.12-0.31in)	–
			Unarmoured cable	OCTEXS1/2C	6.5 - 11.9mm (0.26 - 0.47in)	–
			Armoured cable	OCTEXA1/2C	12.5 - 20.5mm (0.49 - 0.8in)	10 - 14.3mm (0.4 - 0.56in)
Plug EX 1/2"NPT	IECEX/ATEX/EAC Ex	-100°C (-148°F) / +400°C (+752°F)	–	OEXPLUG1/2P	–	–

For a correct installation of the MHX/MHXT housing, cable entries and field wiring must be suitable for an operating temperature of at least +30°C above ambient.

AVAILABLE MODELS

Model Number	230Vac	24Vac	120Vac	Germanium window for thermal cameras	Sunshield	ATEX / IECEX / EAC Ex / KCs
MHXT1C000B	√	–	–	√	√	√
MHXT2C000B	–	√	–	√	√	√
MHXT3C000B	–	–	√	√	√	√

TECHNICAL DRAWINGS

The indicated measurements are expressed in millimetres.

MAXIMUS MHXT