

# 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 3/4" 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

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): 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)

INMETRO (ABNT NBR IEC 60079-0, ABNT NBR IEC 60079-1, ABNT NBR IEC 60079-31)

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 |
| MBA1SSA     | Explosion-proof communication box in aluminium, IN 230Vac   |
| MBA2SSA     | Explosion-proof communication box in aluminium, IN 24Vac  |
| MBA3SSA     | 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<br>Ⓜ II 2D Ex tb IIIC T85°C Db   | -40°C ≤ Ta ≤ +60°C  | ...B                |
| IECEX                             | Ex db IIC T6 Gb<br>Ex tb IIIC T85°C Db   |                     | ...B                |
| EAC Ex                            | 1Ex d IIC T6 Gb X<br>Ex tb IIIC T85°C Db X   |                     | ...B                |
| INMETRO                           | Ex db IIC T6 Gb<br>Ex tb IIIC T85°C Db   |                     | ...B                |
| KCs                               | Ex d IIC T6<br>Ex tb IIIC T85°C  |                     | ...B                |
| UL listed for USA (only 24Vac)    | Class I, Zone 1, AEx db IIC T6,<br>Zone 21, AEx tb IIIC T85°C<br>Class I, Division 2, Groups A, B, C, and D, T6,<br>Class II, Division 2, Group E, F and G, T6 | -40°C ≤ Ta ≤ +54°C  | ...B-U <sup>1</sup> |
| UL listed for Canada (only 24Vac) | Ex db IIC T6 Gb,<br>Ex tb IIIC T85°C Db<br>Class I, Division 2, Groups A, B, C, and D, T6,<br>Class II, Division 2, Group E, F and G, T6                       |                     | ...B-U <sup>1</sup> |

<sup>1</sup> 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) /<br>+135°C (275°F)   | Unarmoured cable | OCTEXB3/4P    | 17.8 - 20.0mm<br>(0.70-0.79in) | –                                |
|                                  |                                  |                                     | Armoured cable   | OCTEXBA3/4P   | 16.8 - 23.9mm<br>(0.66-0.94in) | –                                |
| Cable gland with gasket          | IECEX/ATEX/EAC Ex                | -60°C / +100°C<br>(-76°F / +212°F)  | Unarmoured cable | OCTEX3/4C     | 13.0 - 20.2mm<br>(0.51-0.79in) | –                                |
|                                  |                                  |                                     | Armoured cable   | OCTEXA3/4C    | 16.9 - 26.0mm<br>(0.66-1.02in) | 11.1 - 19.7mm<br>(0.44 - 0.78in) |
|                                  | ATEX                             | -40°C / +100°C<br>(-40°F / +212°F)  | Unarmoured cable | OCTEX3/4      | 14.0 - 17.0mm<br>(0.55-0.67in) | –                                |
|                                  |                                  |                                     | Armoured cable   | OCTEXA3/4     | 18.0 - 23.0mm<br>(0.71-0.91in) | 14 - 17mm (0.55 - 0.67in)        |
| Plug EX 3/4"NPT                  | IECEX/ATEX/EAC Ex                | -100°C (-148°F) /<br>+400°C (752°F) | –                | OEXPLUG3/4P   | –                              | –                                |
| Conduit sealing fitting          | IECEX-ATEX- c CSA<br>us - EAC Ex | -60°C / +80°C<br>(-76°F / +176°F)   | –                | OCTEXP3/4C    | –                              | –                                |
| Reduction 3/4"<br>NPT x 1/2" NPT | IECEX/ATEX/EAC Ex                | -100°C (-148°F) /<br>+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) /<br>+135°C (275°F)   | Unarmoured cable | OCTEXB1/2P   | 12.5 - 14.0mm<br>(0.5-0.55in)   | –                          |
|                         |                   |                                     | Armoured cable   | OCTEXBA1/2P  | 15.5 - 21.1mm<br>(0.61-0.83in)  | –                          |
| Cable gland with gasket | IECEX/ATEX/EAC Ex | -60°C / +100°C<br>(-76°F / +212°F)  | Unarmoured cable | OCTEX1/2C    | 3.2 - 8.0mm (0.12-0.31in)       | –                          |
|                         |                   |                                     | Unarmoured cable | OCTEXS1/2C   | 6.5 - 11.9mm<br>(0.26 - 0.47in) | –                          |
|                         |                   |                                     | Armoured cable   | OCTEXA1/2C   | 12.5 - 20.5mm<br>(0.49 - 0.8in) | 10 - 14.3mm (0.4 - 0.56in) |
| Plug EX 1/2"NPT         | IECEX/ATEX/EAC Ex | -100°C (-148°F) /<br>+400°C (752°F) | –                | OEXPLUG1/2P  | –                               | –                          |

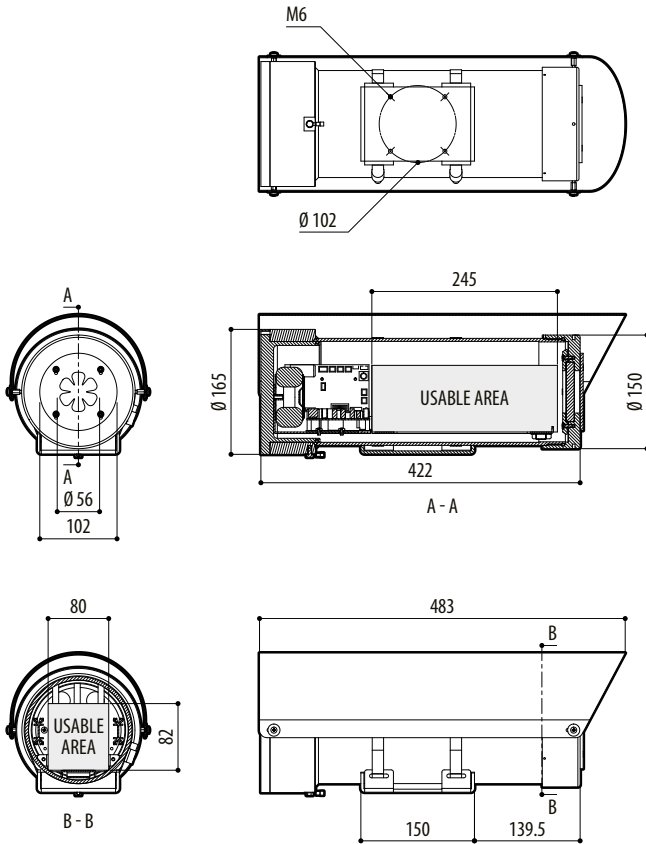
For a correct installation of the MHX/MHXT housing, cable entries and field wiring must be suitable for an operating temperature of at least +30°C above ambient.

## AVAILABLE MODELS

| Model Number | 230Vac | 24Vac | 120Vac | Germanium window for thermal cameras | Sunshield | ATEX / IECEx / EAC EX / INMETRO |
|--------------|--------|-------|--------|--------------------------------------|-----------|---------------------------------|
| MHXT1C000B   | √      | -     | -      | √                                    | √         | √                               |
| MHXT2C000B   | -      | √     | -      | √                                    | √         | √                               |
| MHXT3C000B   | -      | -     | √      | √                                    | √         | √                               |

## TECHNICAL DRAWINGS

The indicated measurements are expressed in millimetres.



MAXIMUS MHXT