

# MAXIMUS MHX

EX-PROOF HOUSING



MHX+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  $-40^{\circ}\text{C}$  and  $+60^{\circ}\text{C}$  ( $-40^{\circ}\text{F}$  /  $+140^{\circ}\text{F}$ ).

In the version with wiper, MHX is equipped with an integrated telemetry receiver that allows, through the RS485 serial interface, to receive data from the remote control for the activation of the wiper / washer and for switching an eventual external illuminator.

The wiring is made easier thanks to the removable connectors on the circuit board. The control board, with removable connectors, is also equipped with an input for the wiper activation through a dry contact.

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

2 threaded holes  $\frac{3}{4}$ " NPT for use of cable glands or conduit

Integrated telemetry receiver for version with wiper

Sunshield and heater included

Power supply: 230Vac, 24Vac or 120Vac

Ambient temperature: from  $-40^{\circ}\text{C}$  ( $-40^{\circ}\text{F}$ ) up to  $+60^{\circ}\text{C}$  ( $140^{\circ}\text{F}$ )

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

Options:

- Wiper

## 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  
Sunshield  
Unit weight: 16.5kg (36lb)

### HOUSING'S WINDOW

Tempered window glass

- Usable diameter: 75mm (3.0in)
- Thick: 12mm (0.47in)

### 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  
Addressable units: Up to 31, via dip-switch  
Protocols:

- PELCO D: 2400baud, 9600baud
- VIDEOTECH MACRO: 9600baud, 38400baud

*PELCO is registered trademark.*

*The product may be interfaced with devices not manufactured by VIDEOTECH. It is possible that the interface protocols have changed or are in a different configuration from earlier tested units by VIDEOTECH. VIDEOTECH recommends a test prior to installation. VIDEOTECH will not be liable for any installation costs or lost revenues in the event a compatibility problem will occur.*

### I/O INTERFACE

Version with wiper

- Remote wiper activation: 1 input, dry contact NO
- Day/Night camera status: 1 input
- Wash system activation relay: 1 output, 60Vdc max or 30Vac max, 1A
- Illuminator activation relay: 1 output, 60Vdc max or 30Vac max, 1A

## 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**

WASEX2T4AT	Tank 10l (2.6gal) with integrated manual pump controlled by ATEX certified solenoid valve, delivery head up to 20m (66ft) max, IN 24Vac/Vdc
WASEX2T4GOR	Tank 10l (2.6gal) with integrated manual pump controlled by EAC EX certified solenoid valve, delivery head up to 20m (66ft) max, IN 24Vac/Vdc
WASEX2T4IN	Tank 10l (2.6gal) with integrated manual pump controlled by INMETRO certified solenoid valve, delivery head up to 20m (66ft) max, IN 24Vac/Vdc
MBX1MAA	Explosion-proof communication box in stainless steel, 230Vac
MBX2MAA	Explosion-proof communication box in stainless steel, 24Vac
MBX3MAA	Explosion-proof communication box in stainless steel, 120Vac
MBA155A	Explosion-proof communication box in aluminium, 230Vac
MBA255A	Explosion-proof communication box in aluminium, 24Vac
MBA355A	Explosion-proof communication box in aluminium, 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
OCTEXB3/4C	Barrier cable gland in nickel-plated brass 3/4" NPT, unarmoured 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
OCTEXBA3/4C	Barrier cable gland in nickel-plated brass 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
MHX	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 MHX - CERTIFICATIONS AND MARKINGS		
Certification	Marking	Product Nr. Ending
ATEX	⊕ II 2G Ex db IIC T6 Gb ⊕ II 2D Ex tb IIIC T85°C Db Ta -40°C to +60°C	...A
IECEX	Ex db IIC T6 Gb Ex tb IIIC T85°C Db Ta -40°C to +60°C	...A
EAC Ex	Ex II 2G Ex db IIC T6 Gb Ex II 2D Ex tb IIIC T85°C Db, Ta -40°C to +60°C, IP66/IP67	...A
INMETRO	Ex db IIC T6 Gb Ex tb IIIC T85°C Db Ta -40°C a/to +60°C	...A
KCs	Ex d IIC T6 Ex tb IIIC T85°C	...A
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	...A-U <sup>1</sup>
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	...A-U <sup>1</sup>

<sup>1</sup> 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 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 / +80°C (-76°F / +176°F)	Unarmoured cable	OCTEXB1/2C	3.0 - 8.0mm (0.12-0.31in)	–
			Unarmoured cable	OCTEXB1/2P	12.5 - 14.0mm (0.5-0.55in)	–
			Armoured cable	OCTEXBA1/2P	15.5 - 21.1mm (0.61-0.83in)	–
Cable gland with gasket	IECEX/ATEX/EAC Ex	-60°C / +100°C (-76°F / +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	–	–

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 / +80°C (-76°F / +176°F)	Unarmoured cable	OCTEXB3/4C	13.0 - 20.2mm (0.51-0.79in)	–
			Armoured cable	OCTEXBA3/4C	16.9 - 26.0mm (0.66-1.02in)	–
			Unarmoured cable	OCTEXB3/4P	17.8 - 20.0mm (0.70-0.79in)	–
			Armoured cable	OCTEXBA3/4P	16.8 - 23.9mm (0.66-0.94in)	–
Cable gland with gasket	IECEX/ATEX/EAC Ex	-60°C / +100°C (-76°F / +212°F)	Unarmoured cable	OCTEX3/4C	13.0 - 20.2mm (0.51-0.79in)	–
			Armoured cable	OCTEXA3/4C	16.9 - 26.0mm (0.66-1.02in)	11.1 - 19.7mm (0.44 - 0.78in)
	ATEX	-40°C / +100°C (-40°F / +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 / +80°C (-76°F / +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	–	–

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	Wiper	Sunshield	ATEX / IECEX / EAC EX / INMETRO
MHX1CS000A	√	-	-	-	√	√
MHX1CW000A	√	-	-	√	√	√
MHX2CS000A	-	√	-	-	√	√
MHX2CW000A	-	√	-	√	√	√
MHX3CS000A	-	-	√	-	√	√
MHX3CW000A	-	-	√	√	√	√

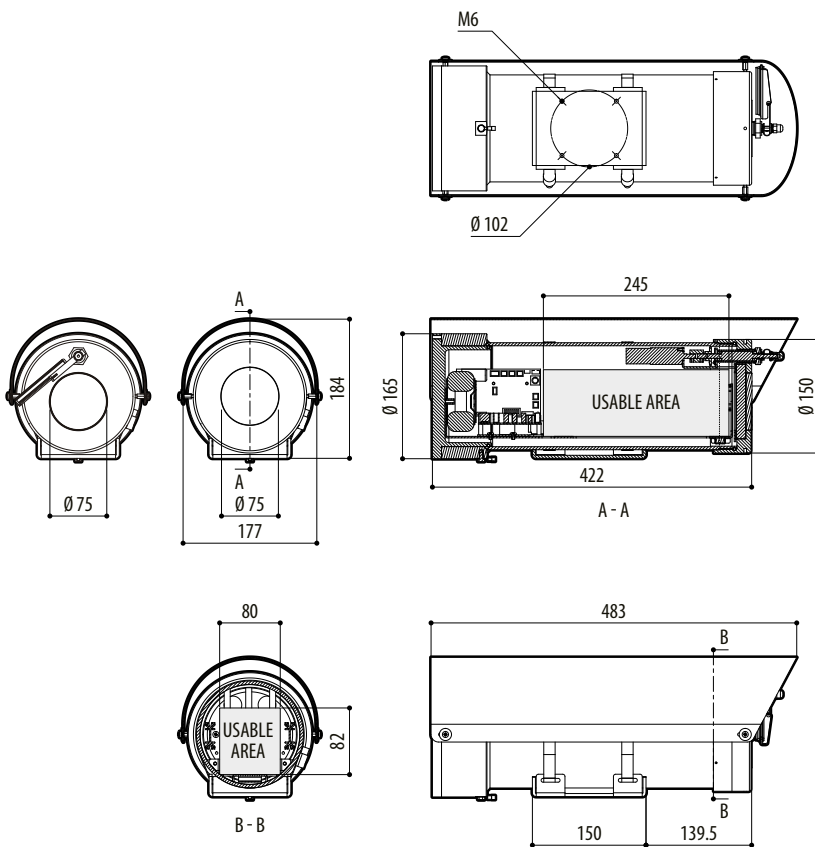
## MAXIMUS MHX - CONFIGURATION OPTIONS

	Voltage	Certification	Options		Day/Night camera 10x	
<b>MHX</b>	<b>1</b> 230Vac	<b>C</b> IIC -40°C	<b>S</b> Without wiper	<b>0</b> With sunshield	<b>00</b> Without camera	<b>A</b> ATEX / IECEX / INMETRO
	<b>2</b> 24Vac		<b>W</b> With wiper			<b>A-U</b> UL Listed for USA and CANADA <sup>1</sup>
	<b>3</b> 120Vac					

<sup>1</sup> MHX2...A-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)

## TECHNICAL DRAWINGS

The indicated measurements are expressed in millimetres.



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