

MAXIMUS MHXT

STAINLESS STEEL EX-PROOF THERMAL CAMERA



CERTIFICATIONS

Made of AISI 316L electropolished stainless steel

Germanium window with protection grid

Thermal cameras:

- Sensor: Uncooled microbolometer (VOx)
- Lenses: 50mm, 35mm, 25mm, 19mm, 13mm or 9mm
- Resolution 320x256 or 640x512
- Image frequency: 8.3Hz or 25Hz

2 3/4" NPT threaded holes for use of cable glands or conduit

Integrated telemetry receiver

Sunshield and heater included

IP66/IP67

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

OPTIONS:

Housing without camera

DESCRIPTION

These explosion-proof cameras of MAXIMUS series have been certified and designed to meet the strictest standards regarding installation in potentially explosive environments, given the presence of gas and flammable dusts.

The MAXIMUS range ensures excellent performance for monitoring critical processes in areas with 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, comprised 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.

The versions MHXT...B, meeting the ATEX and IECEx requirements, mount on the front side a special grid that allows an optimal viewing even with cameras with 9mm and 13mm lens.



MHXT...B



MHXT...B-MHXWBS



MHXT-MHXWBS



TECHNICAL DATA**GENERAL**

AISI 316 stainless steel construction
 Passivated and electropolished external surfaces
 Silicone O-ring seals

MECHANICAL

2 3/4" NPT holes for cable entry
 Material: Germanium
 Dimensions

- Diameter: 56mm (2.2in)
- Thick: 10mm (0.4in)

 External treatment: Antiscratch (Hard Carbon Coating, DLC)
 Internal treatment: Antireflection
 Spectral range: From 7.5µm a 14µm
 Sunshield
 Unit weight: 16.5kg (36lb)

ELECTRICAL

Power supply/Current consumption:

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

 Power absorbed by heating (Ton 10°C±4°C (50°F±7°F), Toff 22°C±3°C (77°F±5°F))

- 230Vac: 60W max
- 120Vac: 40W max
- 24Vac: 30W max

COMMUNICATIONS

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

PROTOCOLS

PELCO D (2400/9600 baud rate)
 VIDEOTEC MACRO (9600/38400 baud rate)
 PELCO is registered trademark.

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

ENVIRONMENT

Indoor/Outdoor
 Operating temperature/Installation temperature: from -40°C (-40°F) a +60°C (140°F)
 Operating temperature/Installation temperature (MHXT2...A-U, in 24Vac and with pre-installed camera): from -40°C (-40°F) a +54°C (129°F)

CERTIFICATIONS

ATEX (only MHXT...B versions):
 EN 60079-0:2012+A11:2013, EN 60079-1:2007, EN 60079-31:2009
 Ⓢ II 2 G Ex d IIC T6 Gb Ta -40°C to +60°C
 Ⓢ II 2 D Ex tb IIIC T85°C Db Ta -40°C to +60°C
 IP66/IP67 (EN60529:1991/A1 2001)
 IECEX (only MHXT...B versions):
 IEC 60079-0 : 2011 Ed 6.0, IEC 60079-1 : 2007-04 Ed 6, IEC 60079-31 : 2008 Ed 1
 Ex d IIC T6 Gb Ta -40°C to +60°C
 Ex tb IIIC T85°C Db Ta -40°C to +60°C
 IP66/IP67 (IEC60529:1991/A1 2001)
 INMETRO (only MHXT...A versions):
 Ex d IIC T6 Gb
 Ex tb IIIC T85°C Db
 Tamb -40°C a +60°C
 IP66/IP67
 cULus Listed, TYPE 4X (only MHXT2...A-U versions, in 24Vac and with pre-installed camera):
 UL listed for USA
 Class I, Zone 1, AEx d IIC T6
 Zone 21, AEx tb IIIC T85°C
 UL listed for Canada
 Class I, Zone 1, Ex d IIC T6
 Class II, Group E, F and G

ACCESSORIES

OCTEX3/4C	Cable gland with gasket EX 3/4" NPT, unarmoured cable IECEX-ATEX-GOST
OCTEXA3/4C	Cable gland with gasket EX 3/4" NPT, armoured cable IECEX-ATEX-GOST
OCTEXB3/4C	Barrier cable gland 3/4" NPT, unarmoured cable IECEX-ATEX-GOST
OCTEXBA3/4C	Barrier cable gland 3/4" NPT, armoured cable IECEX-ATEX-GOST
OCTEX3/4	Cable gland with gasket EX 3/4" NPT, unarmoured cable ATEX
OCTEXA3/4	Cable gland with gasket EX 3/4" NPT, armoured cable ATEX
OEXPLUG3/4	Plug EX 3/4" NPT IECEX, ATEX, GOST
USB485	USB-RS485 converter

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	Ball joint in AISI316L stainless steel
NXFWBT	AISI 316L stainless steel parapet mounting bracket

PACKAGE

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

MAXIMUS MHXT - CONFIGURATION OPTIONS					
	Voltage	Certification		Thermal camera	
MHXT	1 230Vac	C IIC -40°C	0 With sunshield	00 Without camera	A INMETRO
	2 24Vac			NO Thermal camera 50mm, 320x256, 7.5-8.3Hz	B ATEX / IECEX
	3 120Vac			NH Thermal camera 50mm, 320x256, 25-30Hz	A-U UL Listed for USA and CANADA ¹
				A0 Thermal camera 35mm, 320x256, 7.5-8.3Hz	
				AH Thermal camera 35mm, 320x256, 25-30Hz	
				B0 Thermal camera 25mm, 320x256, 7.5-8.3Hz	
				BH Thermal camera 25mm, 320x256, 25-30Hz	
				V0 Thermal camera 19mm, 320x256, 7.5-8.3Hz	
				VH Thermal camera 19mm, 320x256, 25-30Hz	
				F0 Thermal camera 13mm, 320x256, 7.5-8.3Hz	
				FH Thermal camera 13mm, 320x256, 25-30Hz	
				C0 Thermal camera 9mm, 320x256, 7.5-8.3Hz	
				CH Thermal camera 9mm, 320x256, 25-30Hz	
				P0 Thermal camera 50mm, 640x512, 7.5-8.3Hz	
				PH Thermal camera 50mm, 640x512, 25-30Hz	
				D0 Thermal camera 35mm, 640x512, 7.5-8.3Hz	
				DH Thermal camera 35mm, 640x512, 25-30Hz	
				E0 Thermal camera 25mm, 640x512, 7.5-8.3Hz	
				EH Thermal camera 25mm, 640x512, 25-30Hz	
				U0 Thermal camera 19mm, 640x512, 7.5-8.3Hz	
				UH Thermal camera 19mm, 640x512, 25-30Hz	
				G0 Thermal camera 13mm, 640x512, 7.5-8.3Hz	
				GH Thermal camera 13mm, 640x512, 25-30Hz	
				H0 Thermal camera 9mm, 640x512, 7.5-8.3Hz	
				HH Thermal camera 9mm, 640x512, 25-30Hz	

1 MHXT...A-U, only versions in 24Vac and with pre-installed camera. Operating temperature -40°C / +54°C (-40°F / 122°F)

3/4" NPT CABLE GLAND SELECTION LAYOUT							
Zone, Gas	Cable gland type	Certification	Operating temperature	Cable	Cable glands part code	Diameter of the external cable	Under armor cable diameter
IIC, Zone 1 or Zone 2 IIB or IIA, Zone 1	Barrier	IECEX/ATEX/GOST	From -60°C (140°F) a +80°C (+176°F)	Not armored	OCTEXB3/4C	From 13mm (0.5in) a 20.2mm (0.8in)	–
				Armored	OCTEXBA3/4C	From 16.9mm (0.7in) a 26mm (1in)	–
IIB or IIA, Zone 2	With gasket	IECEX/ATEX/GOST	From -60°C (140°F) a +100°C (212°F)	Not armored	OCTEX3/4C	From 13mm (0.5in) a 20.2mm (0.8in)	–
				Armored	OCTEXA3/4C	From 16.9mm (0.7in) a 26mm (1in)	From 11.1mm (0.4in) a 19.7mm (0.8in)
		ATEX	From -20°C (-4°F) a +80°C (+176°F)	Not armored	OCTEX3/4	From 14mm (0.6in) a 17mm (0.7in)	–
				Armored	OCTEXA3/4	From 18mm (0.7in) thick glass a 23mm (0.9in)	From 14mm (0.6in) a 17mm (0.7in)

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.

THERMAL CAMERAS AVAILABLE (RESOLUTION 320X256)												
	Lens 50mm		Lens 35mm		Lens 25mm		Lens 19mm		Lens 13mm		Lens 9mm	
	PAL	NTSC	PAL	NTSC	PAL	NTSC	PAL	NTSC	PAL	NTSC	PAL	NTSC
Image sensor	Uncooled VOx microbolometer		Uncooled VOx microbolometer		Uncooled VOx microbolometer		Uncooled VOx microbolometer		Uncooled VOx microbolometer		Uncooled VOx microbolometer	
Resolution	320x256	320x240	320x256	320x240	320x256	320x240	320x256	320x240	320x256	320x240	320x256	320x240
Pixel dimensions	25µm		25µm		25µm		25µm		25µm		25µm	
Spectral response - long wave infrared (LWIR)	from 7.5µm to 13.5µm		from 7.5µm to 13.5µm		from 7.5µm to 13.5µm		from 7.5µm to 13.5µm		from 7.5µm to 13.5µm		from 7.5µm to 13.5µm	
Internal shutter (only for sensor compensation)	Video stop < 1sec.		Video stop < 1sec.		Video stop < 1sec.		Video stop < 1sec.		Video stop < 1sec.		Video stop < 1sec.	
Digital Detail Enhancement (DDE)	✓		✓		✓		✓		✓		✓	
Digital Zoom	2x, 4x		2x, 4x		2x, 4x		2x, 4x		2x, 4x		2x, 4x	
Image updating frequency	8.3fps	7.5fps	8.3fps	7.5fps	8.3fps	7.5fps	8.3fps	7.5fps	8.3fps	7.5fps	8.3fps	7.5fps
Image updating high frequency	25fps	30fps	25fps	30fps	25fps	30fps	25fps	30fps	25fps	30fps	25fps	30fps
Scene range (High Gain)	-40°C ÷ +160°C (-40°F ÷ +320°F)		-40°C ÷ +160°C (-40°F ÷ +320°F)		-40°C ÷ +160°C (-40°F ÷ +320°F)		-40°C ÷ +160°C (-40°F ÷ +320°F)		-40°C ÷ +160°C (-40°F ÷ +320°F)		-40°C ÷ +160°C (-40°F ÷ +320°F)	
Scene range (Low Gain)	-40°C ÷ +550°C (-40°F ÷ +1022°F)		-40°C ÷ +550°C (-40°F ÷ +1022°F)		-40°C ÷ +550°C (-40°F ÷ +1022°F)		-40°C ÷ +550°C (-40°F ÷ +1022°F)		-40°C ÷ +550°C (-40°F ÷ +1022°F)		-40°C ÷ +550°C (-40°F ÷ +1022°F)	
Horizontal field of view	9°		13°		18°		24°		34°		48°	
Vertical field of view	7°		10°		14°		18°		26°		37°	
F-number	F/1.2		F/1.2		F/1.1		F/1.25		F/1.25		F/1.25	
Thermal sensitivity (NEΔT)	< 50mK a f/1.0		< 50mK a f/1.0		< 50mK a f/1.0		< 50mK a f/1.0		< 50mK a f/1.0		< 50mK a f/1.0	
Person (detection / recognition / identification)	1125m / 290m / 145m (3691ft / 951ft / 476ft)		800m / 200m / 105m		590m / 148m / 75m		450m / 112m / 56m (1476ft / 367ft / 184ft)		300m / 74m / 37m (984ft / 243ft / 121ft)		205m / 52m / 26m (673ft / 171ft / 85ft)	
Auto (detection / recognition / identification)	3100m / 810m / 415m (10171ft / 2657ft / 1361ft)		2250m / 590m / 290m (7382ft / 1936ft / 951ft)		1650m / 430m / 215m (5413ft / 1411ft / 705ft)		1280m / 330m / 165m (4199ft / 1083ft / 541ft)		840m / 215m / 108m		590m / 150m / 74m	

THERMAL CAMERAS AVAILABLE (RESOLUTION 640X512)												
	Lens 50mm		Lens 35mm		Lens 25mm		Lens 19mm		Lens 13mm		Lens 9mm	
	PAL	NTSC	PAL	NTSC	PAL	NTSC	PAL	NTSC	PAL	NTSC	PAL	NTSC
Image sensor	Uncooled VOx microbolometer		Uncooled VOx microbolometer		Uncooled VOx microbolometer		Uncooled VOx microbolometer		Uncooled VOx microbolometer		Uncooled VOx microbolometer	
Resolution	640x512	640x480	640x512	640x480	640x512	640x480	640x512	640x480	640x512	640x480	640x512	640x480
Pixel dimensions	17µm		17µm		17µm		17µm		17µm		17µm	
Spectral response - long wave infrared (LWIR)	from 7.5µm to 13.5µm		from 7.5µm to 13.5µm		from 7.5µm to 13.5µm		from 7.5µm to 13.5µm		from 7.5µm to 13.5µm		from 7.5µm to 13.5µm	
Internal shutter (only for sensor compensation)	Video stop < 1sec.		Video stop < 1sec.		Video stop < 1sec.		Video stop < 1sec.		Video stop < 1sec.		Video stop < 1sec.	
Digital Detail Enhancement (DDE)	✓		✓		✓		✓		✓		✓	
Digital Zoom	2x, 4x		2x, 4x		2x, 4x		2x, 4x		2x, 4x		2x, 4x	
Image updating frequency	8.3fps	7.5fps	8.3fps	7.5fps	8.3fps	7.5fps	8.3fps	7.5fps	8.3fps	7.5fps	8.3fps	7.5fps
Image updating high frequency	25fps	30fps	25fps	30fps	25fps	30fps	25fps	30fps	25fps	30fps	25fps	30fps
Scene range (High Gain)	-40°C ÷ +160°C (-40°F ÷ +320°F)		-40°C ÷ +160°C (-40°F ÷ +320°F)		-40°C ÷ +160°C (-40°F ÷ +320°F)		-40°C ÷ +160°C (-40°F ÷ +320°F)		-40°C ÷ +160°C (-40°F ÷ +320°F)		-40°C ÷ +160°C (-40°F ÷ +320°F)	
Scene range (Low Gain)	-40°C ÷ +550°C (-40°F ÷ +1022°F)		-40°C ÷ +550°C (-40°F ÷ +1022°F)		-40°C ÷ +550°C (-40°F ÷ +1022°F)		-40°C ÷ +550°C (-40°F ÷ +1022°F)		-40°C ÷ +550°C (-40°F ÷ +1022°F)		-40°C ÷ +550°C (-40°F ÷ +1022°F)	
Horizontal field of view	12.4°		18°		25°		32°		45°		69°	
Vertical field of view	9.9°		14°		20°		26°		37°		56°	
F-number	F/1.2		F/1.2		F/1.1		F/1.25		F/1.25		F/1.4	
Thermal sensitivity (NEΔT)	< 50mK a f/1.0		< 50mK a f/1.0		< 50mK a f/1.0		< 50mK a f/1.0		< 50mK a f/1.0		< 50mK a f/1.0	
Person (detection / recognition / identification)	1500m / 380m / 190m (4921ft / 1247ft / 623ft)		1140m / 280m / 142m (3740ft / 919ft / 466ft)		820m / 210m / 104m		570m / 144m / 72m		390m / 95m / 47m (1280ft / 312ft / 154ft)		250m / 63m / 31m (820ft / 207ft / 102ft)	
Auto (detection / recognition / identification)	3900m / 1060m / 540m (12795ft / 3478ft / 1772)		3000m / 800m / 200m (9843ft / 2625ft / 656ft)		2200m / 580m / 290m (7218ft / 1903ft / 951ft)		1550m / 400m / 200m (5085ft / 1312ft / 656ft)		1080m / 275m / 140m (3543ft / 902ft / 459ft)		720m / 175m / 88m	

