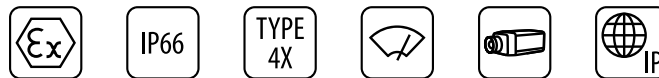# MAXIMUS MPX

EX-PROOF PTZ DAY/NIGHT CAMERA

ONVIF® | S

MAXIMUS MPX

DESCRIPTION

MAXIMUS MPX is an ex-proof PTZ camera that offers a superior image quality and an exceptional precision even in poorly lighted environments. This ex camera is ideal for effective video surveillance and process control in harsh settings where the presence of gases or flammable dust can create a potentially explosive environment. A reality often found in the oil and gas industries or marine and industrial sectors.

The area is always monitored, thanks to the speed and detection accuracy of the target.

Made of AISI 316L stainless steel, which is excellently resistant to UV rays, salt mist and air pollution.

All models are available in Analogue or IP version.

The flexible operator control of pan/tilt/zoom functions allows the video transmission over the local area network (LAN) or over the Internet with the H.264/AVC compression, compatible with ONVIF Profile S.

The Videotec's PTZ ASSISTANT plug-in software supports any VMS with the control of all special functions such as wiper and washer pump.

The WASEX washer kit, with tank and pump controlled by an ex-proof solenoid valve, allows flawless and maintenance-free cleaning of the front glass.

The MAXIMUS MPX series products are Lloyd's Register Type Approval System Test Specification Number 1 certified and therefore can be used in Marine and Offshore applications for environmental categories ENV1, ENV2, ENV3 and ENV5 (eg. passenger ships, open-air decks, closed spaces and technical areas that may be subject to heat generated by other equipment, potentially explosive areas, docking procedures).

CERTIFICATIONS

MAIN FEATURES

Certifications for use in Zone 1 and 2, Group IIC T6 (Gas), and in Zone 21 and 22, Group IIIC T85° (Dust)

Marine Certification: Lloyd's Register Marine Type Approval

Electropolished AISI 316L stainless steel ex-proof PTZ unit

Day/Night camera:

- True Progressive Scan
- High resolution: up to 550 TV Lines
- Advanced image stabiliser (Stable Zoom Mode)
- Day/Night (Auto ICR: automatic removal of IR filter)

Up to 2 simultaneous video streams (IP-based version)

Variable speed: from 0.1°/s up to 100°/s Pan and Tilt

Position accuracy: 0.02°

¾" NPT threaded hole for use of cable glands or conduit

Extremely easy electrical connections directly into the unit, thanks to the explosion-proof inspection box

Integrated wiper

Total control of the auxiliary functions through the Videotec PTZ ASSISTANT (IP-based version)

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

Options

- IP-based control, H.264/AVC and JPEG, 25fps, Full D1 (compatible with ONVIF protocol, Profile S)

TECHNICAL DATA

GENERAL

AISI 316L stainless steel construction

Passivated and electropolished external surfaces

Dynamic positioning control system

Functions: Autopan, Preset, Patrol, Tour (maximum 3), Autoflip

Up to 999 units, addressable by means of dip-switches

MECHANICAL

1 hole 3/4" NPT for cable gland

Zero backlash

Horizontal rotation: 360°, continuous rotation

Vertical rotation: from -90° up to +90°

Horizontal speed (variable): from 0.1° to 100°/s

Tilt speed (variable): from 0.1° to 100°/s

Accuracy of preset positions: 0.02°

12mm (0.47in) thick tempered glass window

Integrated wiper

Unit weight: 27kg (60lb)

ELECTRICAL

Supply voltage/Current consumption
- 230Vac, 0.5A, 50/60Hz
- 24Vac, 5A, 50/60Hz
- 120Vac, 1A, 50/60Hz

Power consumption:
- 120W max

NETWORK

Only for the IP versions of the product:

Ethernet connection: 10BASE-T/100BASE-T

Connector: RJ45

Cable length: 100m max

SERIAL COMMUNICATIONS

Serial communication protocol: AMERICAN DYNAMICS, ERNITEC, PANASONIC, PELCO D, MACRO

Maximum number of presets for serial communication protocol
- MACRO: 250
- ERNITEC: 250
- PANASONIC: 250
- PELCO D: 99
- AMERICAN DYNAMICS: 95

Firmware updating from console in remote mode (PELCO D, MACRO)

Configuration through OSM

Fiber optic connector: ST (standard)

Version uncabled or with MPXCABL:
- 2 half-duplex serial RS-485 interfaces or full-duplex RS-422

Version with MPXCABLARM:
- 1 serial interface RS-485 half-duplex

VIDEO

Analog version:
- 1 video output 75 Ohm 1Vpp (PAL/NTSC)
- 16-character string for zone and preset titling

IP versions of the product:

Video encoder
- Communication protocol: ONVIF, Profile S
- Device configuration: TCP/IPv4-IPv6, UDP/IPv4-IPv6, HTTP, NTP, DHCP, WS-DISCOVERY, QoS, IGMP (Multicast)
- Streaming: RTSP, RTCP, RTP/IPv4
- Video compression: H.264/AVC, MJPEG
- Independent video streams: 2
- Image resolution: from Full D1 (720x576 for PAL, 720x480 for NTSC) to 352x240
- Web Server

I/O INTERFACE

I/O alarm board

Version uncabled or with MPXCABL:
- 5 alarm inputs
- 2 relay outputs (1A 30Vac/60Vdc max)

Version with MPXCABLARM:
- 2 alarm inputs
- 1 relay output (1A 30Vac/60Vdc max)

ENVIRONMENT

For indoors and outdoors installation

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

Relative humidity: from 10% up to 95% (no condensation)

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

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

UL certification (UL60950-1, CAN/CSA C22.2 No. 60950-1-07): cULus Listed (only for 24Vac version)

Electromagnetic compatibility (North America): FCC part 15 (Class A), ICES-003 (Class A)

Level of protection Type (UL50E): 4X (only for 24Vac version)

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)

UL listed for USA (UL 60079-0, UL 60079-1, UL 60079-31), only for 24Vac version

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 for 24Vac version

KCs (Employment and labor department 2016-54)

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

CERTIFICATIONS - MARINE APPLICATIONS

Lloyd's Register Marine Type Approval certification (the 24Vac and 120Vac versions require a filter accessory FM1010):

• Test Specification Number 1 (ENV1, ENV2, ENV3, ENV5)

Electromagnetic compatibility: EN60945

Salty fog resistance: EN60068-2-52

Tested at 70°C (158°F) for 16 hours in compliance with EN60068-2-2

BRACKETS AND ADAPTORS

MPXWBA	AISI 316L stainless steel wall bracket
MPXCW	AISI 316L stainless steel corner adapter module
MPXCOL	AISI 316L stainless steel pole adapter module
MPXWBTA	AISI 316L stainless steel parapet or ceiling mounting bracket

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

MBA1S5A	Explosion-proof communication box in aluminium, 230Vac
MBA2S5A	Explosion-proof communication box in aluminium, 24Vac
MBA3S5A	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
OCTEXBA3/4C	Barrier cable gland in nickel-plated brass 3/4" NPT, armoured 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))
OCABLMPX4	Cabling for MPX/MPXT, 4m (13ft) (unarmoured cable and barrier cable gland): 2 Ethernet cables, 3 power supply wires, 2 coaxial video cables, 15 wires for alarms, relays and telemetry
OCABLMPX10	Cabling for MPX/MPXT, 10m (32.8ft) (unarmoured cable and barrier cable gland): 2 Ethernet cables, 3 power supply wires, 2 coaxial video cables, 15 wires for alarms, relay and telemetry
OCABLMPXARM4	Cabling for MPX/MPXHD, 4m (13ft) (armoured cable and barrier cable gland): 1 Ethernet cable, 3 power supply wires, 1 coaxial video cable, 7 wires for alarms, relay and telemetry
OCABLMPXARM10	Cabling for MPX/MPXHD, 10m (32.8ft) (armoured cable and barrier cable gland): 1 Ethernet cable, 3 power supply wires, 1 coaxial video cable, 7 wires for alarms, relay and telemetry
FM1010	EMC filter for Marine certification

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

PACKAGE

Model Number	Weight	Dimensions (WxHxL)	Master carton
MPX1QVW000A	30.4kg (67lb)	54x31x49cm (21x12x19in)	-

ANALOGUE CAMERAS (DAY/NIGHT)

	Day/Night 36x	
	PAL	**NTSC**
Optical zoom	36x	
Wide Dynamic Range (ON, OFF, Auto)	✓	
True progressive SCAN	✓	
Digital image stabilisation	✓	
White balance	Auto, ATW, Indoor, Outdoor (Fix/Auto), Sodium Vapor Lamp (Fix/Auto), Manual	
High horizontal resolution	Up to 550 TV Lines	
Day/Night (Auto ICR)	✓	
Image Device	1/4" EXView HAD CCD	
Number of effective Pixels	~ 440000 pixel	~ 380000 pixel
Min. Lighting Colour (IR-Cut Filter = OFF) (Interlace Mode)	1.4Lux / 1/50s 0.1 Lux / 1/3s	1.4Lux / 1/60s 0.1 Lux / 1/4s
Min. Lighting B/W (Interlace Mode)	0.01 Lux / 1/3s	0.01 Lux / 1/4s
"Shutter Time" automatic increase to improve the night surveillance	✓	
S/N ratio	More than 50dB	
AE control	Automatic, Shutter priority, Diaphragm priority, Brightness priority and Manual	
Back light compensation	On/Off	
Spherical masking (3D) of Privacy zones with automatic upgrade	✓	
Privacy Zone Masking	On/Off (24 positions)	
Maximum number of masking blocks to be displayed	8	
Resolution of masking blocks	160x120 HxV	
Masking	Up to 15 different masking types: 14 colour types or mosaic	
Focusing system	Auto (Sensitivity: Normal, Low), Trigger PTZ, Manual	
"Smart" lens control	Automatic Lens Reset	
High Zoom and Wide Horizontal Field of View Capability	✓	
Optical zoom	36x, f=3.4 (wide) to 122.4mm (tele) / F1.6 to F4.5	
Digital Zoom	12x (432x with optical zoom)	
Horizontal field of view	57.8 degrees (wide) to 1.7 degrees (tele)	
Minimum object distance	10mm (0.4in) (wide) to 1500mm (59.1in) (tele)	
Shutter speed	1/1 ÷ 1/10000s	

SELECTION DIAGRAM FOR 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)	–
		-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)	–
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	–	–

SELECTION DIAGRAM FOR 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)	–
		-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)	–
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)	–
		-60°C / +80°C (-76°F / +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 / +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	–	–

MAXIMUS MPX - CERTIFICATIONS AND MARKINGS

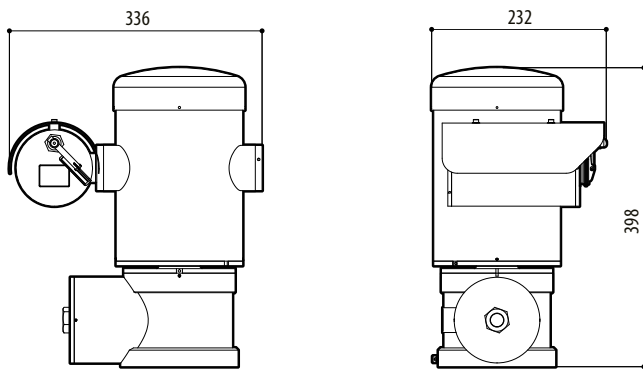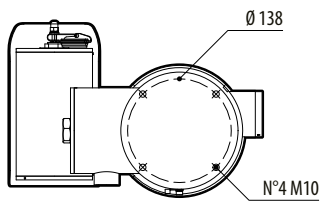| Certification	Marking
ATEX	Ⓔ II 2G Ex db IIC T6 Gb Ta -40°C to +60°C Ⓔ II 2D Ex tb IIIC T85°C Db Ta -40°C to +60°C IP66
IECEx	Ex db IIC T6 Gb Ta -40°C to +60°C Ex tb IIIC T85°C Db Ta -40°C to +60°C IP66
EAC EX	Ex II 2G Ex db IIC T6 Gb Ta -40°C to +60°C Ex II 2D Ex tb IIIC T85°C Db Ta -40°C to +60°C IP66
INMETRO	Ex db IIC T6 Gb -40°C ≤ Ta ≤ +60°C Ex tb IIIC T85°C Db -40°C ≤ Ta ≤ +60°C IP66
KCs	Ex d IIC T6 Ex tb IIIC T85°C -40°C ≤ Ta ≤ +60°C
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, Group A, B, C and D, T6 Class II, Division 2, Group F and G, T6
UL listed for Canada (only 24Vac)	Ex db IIC T6 Gb Ex tb IIIC T85°C Db Class I, Division 2, Group A, B, C and D, T6 Class II, Division 2, Group F and G, T6

MAXIMUS MPX - CONFIGURATION OPTIONS

	Voltage		Day/Night camera							Video Output		
MPX	**1**	230Vac	**P**	Day/Night camera 36x optical zoom lens, PAL	**V**	With alarm board	**W**	With wiper	**0**	**0**	Analog control	**00A**
	2	24Vac	**N**	Day/Night camera 36x optical zoom lens, NTSC						**Z**	IP H.264/AVC, Protocol ONVIF Profile S	
	3	120Vac										

Not all combinations are possible.

TECHNICAL DRAWINGS

The indicated measurements are expressed in millimetres.

Ø 138

N°4 M10

336

232

398

MAXIMUS MPX