MAXIMUS MVXHD

HIGH-SPEC EX-PROOF HD CAMERA IN A COMPACT DESIGN

Ex | IP66 | IP67 | IP68 | IP69 | TYPE 4X
TYPE 6P | | | IP

FULL HD 1080P

ONVIF | S
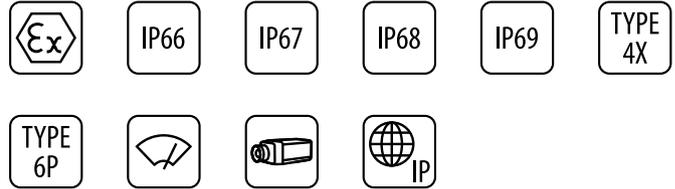
MAXIMUS MVXHD + NXWBS1

DESCRIPTION

The Full HD explosion-protected MAXIMUS MVXHD is perfect 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 Full HD, 1080p, 60fps, MVXHD camera with 10x or 30x motorised zoom lens for easier setup, offers multiple video streams (H.264/AVC or MJPEG) and provides exceptional image quality, picking out every detail in a scene, even in the harshest environmental conditions.

One striking advantage offered by these cameras is their extremely easy and secure "plug and play" installation, with multipolar wiring. These cameras arrive ready to use, avoiding the complex electrical connections that are typical of this type of device.

The housing is compact yet functional and is made entirely out of AISI316L stainless steel. Its resistance to corrosion is not only guaranteed, but is also enhanced by way of polishing processes.

Another important feature of the camera is the extended certification temperature range of -60°C to 65°C, along with a sophisticated cold start system, which allows it to operate in harsh environments as standard.

An equally noteworthy point is that the IP66/IP67/IP68 ratings guarantee the complete protection against harsh weather and submersion in up to 5 metres of water for 2 hours. Moreover, the IP69 rating allows the device to be cleaned with high pressure water jets.

These cameras come with wipers and an explosion-proof washer kit is also available, allowing for flawless, maintenance-free cleaning of the front glass.

The MAXIMUS MVX range of cameras meets every installation need, providing maximum performance and excellent value for money.

The MAXIMUS MVX 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

Ex ATEX | IECEx | EAC Ex | INMETRO | ETL Intertek | LR APPROVED TYPE APPROVAL SCHEME

MAIN FEATURES

Certifications for use in Zones 1 and 2, IIC T5 and T6 Group (Gas) and in Zones 21 and 22, IIIC T100°C and T85°C Group (Dust)

Marine Certification: Lloyd's Register Marine Type Approval

AISI 316L stainless steel construction

External shot peened and electro-polished surfaces

Camera Full HD 1080p, 10x or 30x, 60 frames per second (fps)

Video compression H.264/AVC and MJPEG

Day/night (Auto ICR: automatic removal of IR filter)

Autofocus

Up to 4 simultaneous video streams

1 alarm input and 1 relay output

4m (13ft) / 10m (33ft) preinstalled armoured multipolar cable with cable gland or, alternatively, with 4m (13ft) / 10m (33ft) cable tail (for installation with conduit, conduit sealing fitting and conduit not included)

Integrated wiper

Power supply: 12-24Vdc/24Vac

IP66/IP67/IP68/IP69

TECHNICAL DATA

GENERAL

AISI 316L stainless steel construction

External shot peened and electro-polished surfaces

Silicone O-ring seals

MECHANICAL

Sunshield

Integrated wiper

Unit weight:

- 8.5kg (18.7lb) (housing with 4m (13ft) multi-polar cable shield)
- 12kg (26.5lb) (housing with 10m multi-polar cable shield)

CABLE GLANDS

Cable entry: 1 hole, 3/4", NPT

Cable gland Ex db 3/4"NPT and 4m/10m (13ft/33ft) preinstalled multipolar armored cable or with 4m/10m (13ft/33ft) cable tail (for installation with conduit, conduit sealing fitting and conduit not included)

HOUSING'S WINDOW

Material: Thermally tempered glass

Dimensions: 51x41mm (2x1.6in)

Thick: 12mm (0.47in)

ELECTRICAL

Supply voltage/Current consumption (heating switched on, Ton 15℃±3℃ (59°F ±5°F), Toff 22℃±3℃ (72°F±5°F)):

- 24Vac ±10%, 2.2A, 50/60Hz
- 24Vdc ±5%, 2.2A
- 12Vdc ±5%, 3.5A

Armoured cable:

- external diameter = 20.00 ± 0.50mm (0.79±0.20in)
- diameter under armature = 15.20mm (0.60in)
- colour: Black RAL 9005

Armoured cable composition:

- 3 x 2.5mm^2
- 7 x 0.34mm^2
- 4 x 2 x 0.22mm^2 (cat. 5E)

Cable tail composition:

- 3 x 2.5mm^2, rated external diameter = 8.7mm (0.34in)
- 7 x 0.34mm^2, rated external diameter = 6.4mm (0.25in)
- 4 x 2 x 0.21mm^2, (cat. 5E), rated external diameter = 6.7mm (0.26in)

NETWORK

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

Connector: RJ45

Cable length: 100m max

VIDEO

Video encoder

- Communication protocol: ONVIF, Profile S
- Device configuration: TCP/IPv4-IPv6, UDP/IPv4-IPv6, HTTP, HTTPS, NTP, DHCP, WSDISCOVERY, QoS, DSCP, IGMP (Multicast), SOAP, DNS, SNMP
- Streaming: RTSP, RTCP, RTP/IPv4, Multicast
- Video compression: H.264/AVC, MJPEG
- 2 independent video streams Full HD or 4 independent video streams depending on the configuration
- Image resolution: from FullHD to 352x240 in 18 steps
- Selectable frame rate from 1 to 60 images per second (fps)
- Web Server
- Motion Detection

I/O INTERFACE

I/O alarm board

- Alarm inputs: 1
- Relay outputs: 1 (1A, 30Vac/60Vdc max)

CAMERAS

Day/Night Full HD 10x

Resolution: Full HD 1080p (1920x1080)

Image Device: 1/2.8 type Exmor™ CMOS sensor

Effective Pixels: approx. 2.38 Megapixels

Minimum Illumination, color (ICR-OFF):

- 1.4lx 1/30s 50% (Normal mode)
- 0.35lx, 1/30s, 50% (High sensitivity mode)
- 0.19lx 1/3s 50% (Normal mode)
- 0.05lx, 1/3s, 50% (High sensitivity mode)

Minimum Illumination, B/W (ICR-ON):

- 0.12lx 1/30s 50% (Normal mode)
- 0.03lx, 1/30s, 50% (High sensitivity mode)
- 0.002lx, 1/3s, 30% (High sensitivity mode)

Lens: f=3.8 mm (wide) ~ 38 mm (tele), from F1.8 to F3.4

Zoom: 10x (120x with digital zoom)

Horizontal Viewing Angle: 67° (wide end), 7.6° (tele end)

Minimum object distance: 10mm (wide) ~ 800mm (tele)

Shutter speed: 1/1 to 1/10000 s, 22 steps

White balance: Auto, ATW, Indoor, Outdoor, Outdoor Auto, Sodium vapor lamp (Fix, Auto, Outdoor Auto), One-push, Manual

Gain: Auto/Manual (0 step to 28 step, +2 step/total 15 steps), Max. Gain Limit (6 step to 28 step, +2 step/total 12 steps)

Wide Dynamic Range: On/Off/Visibility enhancer, Light level, Brightness Compensation selection, Compensation level

Focus System: Auto (Sensitivity: Normal, Low), One-push AF, Manual, Focus compensation with ICR On, Interval AF, Zoom trigger AF

Picture Effects: E-flip, Mirror image, Color enhancement

Exposure Control: Auto, EV Compensation, Manual, Priority (Shutter priority, Iris priority), Brightness, Slow AE

S/N Ratio: more than 50dB

Wide-D (wide dynamic range): Yes (130dB)

De-fog: Yes (On/Off)

Backlight Compensation: Yes

Day/Night Full HD 30x

Resolution: Full HD 1080p (1920x1080pixel)

Image Device: 1/2.8 type Exmor™ CMOS sensor

Effective Pixels: approx. 2.38 Megapixels

Minimum Illumination, colour (ICR-OFF):

- 1.4lx, 1/30s, 50 IRE (Normal mode)
- 0.35lx, 1/30s, 50 IRE (High sensitivity mode)
- 0.19lx, 1/3s, 50 IRE (Normal mode)
- 0.05lx, 1/3s, 50 IRE (High sensitivity mode)

Minimum Illumination, B/W (ICR-ON):

- 0.05lx, 1/30s, 50 IRE (Normal mode)
- 0.013lx, 1/30s, 50 IRE (High sensitivity mode)
- 0.002lx, 1/3s, 30 IRE (High sensitivity mode)

Lens: f=4.3 mm (wide) ~ 129.0 mm (tele), from F1.6 to F4.7

Zoom: 30x (360x with digital zoom)

Horizontal Viewing Angle: from 63.7° (wide end) up to 2.3° (tele end)

Minimum object distance: from 10mm (wide) up to 1200mm (tele)

Shutter speed: 1/1 to 1/10000 s, 22 steps

White balance: Auto, ATW, Indoor, Outdoor, Outdoor Auto, Sodium vapor lamp (Fix, Auto, Outdoor Auto), One-push, Manual

Gain: Auto, Manual, Gain Limit (from 3dB up to 43dB, steps: 3dB)

Wide Dynamic Range: On/Off/Visibility enhancer, Light level, Brightness Compensation selection, Compensation level

Focus System: Auto (Sensitivity: Normal, Low), One-push AF, Manual, Focus compensation with ICR On, Interval AF, Zoom trigger AF

Picture Effects: E-flip, Mirror image, Color enhancement

Exposure Control: Auto, EV Compensation, Manual, Priority (Shutter priority, Iris priority), Brightness, Slow AE

S/N Ratio: more than 50dB

Wide-D (wide dynamic range): Yes (130dB)

De-fog: Yes (On/Off)

Backlight Compensation: Yes

ENVIRONMENT

For installation indoors and outdoors

Operating temperature:

- Cold start from -40°C (-40°F) up to +65°C (149°F)
- Running from -50°C (-58°F) up to +65°C (149°F)

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

CERTIFICATIONS

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

Electromagnetic compatibility (CE): EN601000-6-4, 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, IP68 (2 hours, 5m (16ft)), IP69

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), ICES-003 (Class A)

Level of protection Type (UL50E): 4X, 6P

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 + Errata 1, ABNT NBR IEC 60079-1 + Errata 1, ABNT NBR IEC 60079-31)

ETL listed for USA (UL 60079-0, UL 60079-1, UL 60079-31), cable tail versions

ETL listed for Canada (CAN/CSA-C22.2 NO. 60079-0, CAN/CSA-C22.2 NO. 60079-1, CAN/CSA-C22.2 NO. 60079-31), cable tail versions

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

CERTIFICATIONS - MARINE APPLICATIONS

Lloyd's Register Marine Type Approval certification (only if used with the filter accessory FM1010):

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

Electromagnetic compatibility: EN60945

Salty fog resistance: EN60068-2-52

Tested at 70° for 16 hours in compliance with EN60068-2-2

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
MBA1S5A	Explosion-proof communication box in aluminium, 230Vac
MBA2S5A	Explosion-proof communication box in aluminium, 24Vac
MBA3S5A	Explosion-proof communication box in aluminium, 120Vac
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))
FM1010	EMC filter for Marine certification

BRACKETS AND ADAPTORS

NXWBS1	AISI 316L stainless steel wall bracket with joint
MHXWFWCA	AISI316L stainless steel ball joint
NXFWBT	AISI 316L stainless steel parapet mounting bracket
NXCOL	AISI 316L stainless steel pole adapter module
NXCW	AISI 316L stainless steel corner adapter module

PACKAGE

Model Number	Weight	Dimensions (WxHxL)	Master carton
MVXHD2F0WAZ00A	12.5kg (28lb)	60x30x60cm (24x12x24in)	-

MAXIMUS MVX RANGE - CERTIFICATIONS AND MARKINGS (VERSIONS WITH ARMOURED CABLE)

Certification	Marking	Ambient temperature
ATEX	Ⓔ II 2 G Ex db IIC T5 Gb Ⓔ II 2 D Ex tb IIIC T100°C Db IP66/IP68	-60°C ≤ Ta ≤ +65°C
	Ⓔ II 2 G Ex db IIC T6 Gb Ⓔ II 2 D Ex tb IIIC T85°C Db IP66/IP68	-60°C ≤ Ta ≤ +55°C
IECEX	Ex db IIC T5 Gb Ex tb IIIC T100°C Db IP66/IP68	-60°C ≤ Ta ≤ +65°C
	Ex db IIC T6 Gb Ex tb IIIC T85°C Db IP66/IP68	-60°C ≤ Ta ≤ +55°C
INMETRO	Ex db IIC T5 Gb Ex tb IIIC T100°C Db IP66/IP68	-60°C ≤ Ta ≤ +65°C
	Ex db IIC T6 Gb Ex tb IIIC T85°C Db IP66/IP68	-60°C ≤ Ta ≤ +55°C
EAC Ex	Ex II 2G Ex db IIC T5 Gb Ex II 2D Ex tb IIIC T100°C Db IP66/IP68	-60°C ≤ Ta ≤ +65°C
	Ex II 2G Ex db IIC T6 Gb Ex II 2D Ex tb IIIC T85°C Db IP66/IP68	-60°C ≤ Ta ≤ +55°C

MAXIMUS MVX RANGE - CERTIFICATIONS AND MARKINGS (CABLE TAIL VERSIONS, FOR INSTALLATION WITH CONDUIT)

Certification	Marking	Ambient temperature
ATEX	Ⓔ II 2 G Ex db IIC T5 Gb Ⓔ II 2 D Ex tb IIIC T100°C Db IP66/IP68	-50°C ≤ Ta ≤ +65°C
	Ⓔ II 2 G Ex db IIC T6 Gb Ⓔ II 2 D Ex tb IIIC T85°C Db IP66/IP68	-50°C ≤ Ta ≤ +55°C
IECEX	Ex db IIC T5 Gb Ex tb IIIC T100°C Db IP66/IP68	-50°C ≤ Ta ≤ +65°C
	Ex db IIC T6 Gb Ex tb IIIC T85°C Db IP66/IP68	-50°C ≤ Ta ≤ +55°C
INMETRO	Ex db IIC T5 Gb Ex tb IIIC T100°C Db IP66/IP68	-50°C ≤ Ta ≤ +65°C
	Ex db IIC T6 Gb Ex tb IIIC T85°C Db IP66/IP68	-50°C ≤ Ta ≤ +55°C
EAC Ex	Ex II 2G Ex db IIC T5 Gb Ex II 2D Ex tb IIIC T100°C Db IP66/IP68	-50°C ≤ Ta ≤ +65°C
	Ex II 2G Ex db IIC T6 Gb Ex II 2D Ex tb IIIC T85°C Db IP66/IP68	-50°C ≤ Ta ≤ +55°C
Hazardous Location America	Class I Zone 1 AEx db IIC T5 Gb Class I Div 2 Group A,B,C&D T5 Zone 21 AEx tb IIIC T100°C Db Class II Div 2 Group E,F&G T100°C	-50°C ≤ Ta ≤ +65°C
	Class I Zone 1 AEx db IIC T6 Gb Class I Div 2 Group A,B,C&D T6 Zone 21 AEx tb IIIC T85°C Db Class II Div 2 Group E,F&G T85°C	-50°C ≤ Ta ≤ +55°C
Hazrdous Location Canada	Ex db IIC T5 Gb Class I Div 2 Group A,B,C,D T5 Ex tb IIIC T100°C Db Class II Div 2 Group E, F and G T100°C	-50°C ≤ Ta ≤ +65°C
	Ex db IIC T6 Gb Class I Div 2 Group A,B,C,D T6 Ex tb IIIC T85°C Db Class II Div 2 Group E, F and G T85°C	-50°C ≤ Ta ≤ +55°C

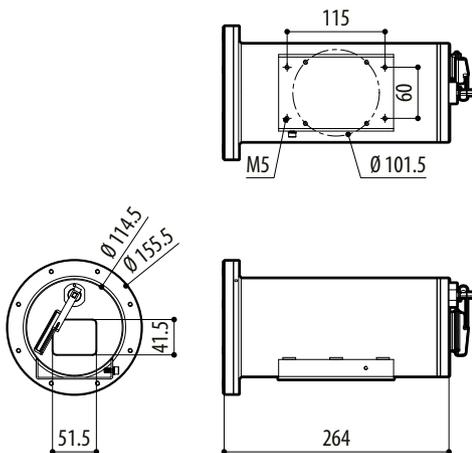## MAXIMUS MVXHD - CONFIGURATION OPTIONS WITH CABLE GLAND AND SHIELDED CABLE

		Voltage		Camera			Connections		Video Output		Models		
MVXHD	2	12-24Vdc/ 24Vac	G0	Day/Night camera 10X zoom, FullHD	W	With wiper	A	Cable gland Ex d 3/4" NPT and 4m (13ft) armored cable	Z	IP H.264/AVC control, Protocol ONVIF Profile S	00	T5 -60°C/+65°C	A
			F0	Day/Night camera 30X zoom, FullHD			B	Cable gland Ex d 3/4" NPT and 10m (33ft) armored cable			02	T6 -60°C/+55°C	

MAXIMUS MVXHD - CONFIGURATION OPTIONS WITH CABLE TAIL (FOR INSTALLATION WITH CONDUIT, CONDUIT SEALING FITTING AND CONDUIT NOT INCLUDED)

		Voltage		Camera			Connections		Video Output		Models		
MVXHD	2	12-24Vdc/ 24Vac	G0	Day/Night camera 10X zoom, FullHD	W	With wiper	F	4m (13ft) cable tail	Z	IP H.264/AVC control, Protocol ONVIF Profile S	01	T5 -50°C/+65°C	A
			F0	Day/Night camera 30X zoom, FullHD			G	10m (33ft) cable tail			03	T6 -50°C/+55°C	

TECHNICAL DRAWINGS

The indicated measurements are expressed in millimetres.

MAXIMUS MVXHD