

VPort P16-2MR Series

EN 50155, 1080P image, infrared IP cameras



Features and Benefits

- 1/3" progressive scan camera with maximum 1920 x 1080 resolution at up to 30 fps
- Built-in IR illuminator and ICR (Infrared Cut Filter Removal) for day & night images
- High quality video imaging with DNR and WDR
- Up to 4 H.264 or MJPEG independent simultaneous video streams
- DynaStream™ for optimized network efficiency
- CBR Pro™ for high image quality in limited bandwidth transmissions
- Supports SDXC (up to 2 TB SD card) for local storage
- 1 built-in microphone for audio input, and 1 digital input for external sensor
- ONVIF support for standardization and interoperability

Certifications



Introduction

The rugged VPort P16-2MR cameras produce Full HD (1920 x 1080) video images and feature 4 H.264/MJPEG video streams, giving them the versatility and ruggedness needed for mobile IP video surveillance applications in a variety of different installations and environments. In addition, the cameras feature vandal-proofing (EN 62262 IK8), a -25 to 55°C or -40 to 70°C (T models) operating temperature, a rugged M12 Ethernet port, PoE power input, a built-in microphone, a digital input, IP66 rain and dust protection, an IR illuminator for day and night image capabilities, and are compliant with the mandatory sections of EN 50155.¹

Specifications

Memory

microSD Slot	SDXC
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Input/Output Interface

Digital Input Channels	1
Digital Inputs	+13 to +30 V for state 1 -30 to +1 V for state 0 Max. input current: 8 mA
Connector	5-pin A-coded male M12 connector with 20 cm cable

Ethernet Interface

PoE Ports (10/100BaseT(X), M12 D-coded 4-pin female connector)	1
Standards	IEEE 802.3af for PoE

Ethernet Software Features

Protocols	TCP/IP, IPv4/IPv6, UDP, HTTP, RTP/RTSP, ARP, UPnP, FTP, TFTP, SMTP, NTP Client, DNS, DDNS, QoS, IGMP v3, ICMP, SNMPv1/v2c/v3, DHCP Opt66/67, HTTPS
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1. This product is suitable for rolling stock railway applications, as defined by the EN 50155 standard. For a more detailed statement, refer to: www.moxa.com/doc/specs/EN_50155_Compliance.pdf

Security Functions

Password	User-level password protection
Filter	IP address
Encryption	HTTPS

Power Parameters

No. of Power Inputs	1
Source of Input Power	PoE (IEEE 802.3af)
Input Current	0.26 A @ 48 VDC

Camera Characteristics

Sensor	1/3-in 1080P progressive scan CMOS
Lens	VPort P16-2MR36M Series: f=3.6mm, F1.6, Diagonal 99°, Horizontal 70°, Vertical 39° VPort P16-2MR42M Series: f=4.2mm, F1.6, Diagonal 82°, Horizontal 62°, Vertical 34° VPort P16-2MR60M Series: f=6.0mm, F1.8, Diagonal 62°, Horizontal 43°, Vertical 24° VPort P16-2MR80M Series: f=8.0mm, F1.6, Diagonal 42°, Horizontal 33°, Vertical 17°
Minimum Illumination	Color: 0.2 lux, at F1.2 (Gain High, 50 IRE, 1/30 sec) B/W: 0.05 lux, at F1.2 (Gain High, 50 IRE, 1/30 sec) Note: 0 lux if IR illuminator is on
Camera Angle	Pan 350°, Tilt 65° (controlled manually)
Day & Night	Auto/Color/BW; ICR control
Synchronization	Internal
White Balance	ATW/AWB
Electronic Shutter	Auto, Fixed (1/30 to 1/25000 sec)
S/N Ratio	Maximum 50 dB (AGC off; DNR on)
ICR Control	Auto (light sensor control) or DI control
IR Illumination	IR LED illuminators, 5-meter (max.) effective distance; On/Off controlled manually (night mode) or by the light sensor
DNR (digital noise reduction)	Built-in 2D/3D DNR
WDR (wide dynamic range)	100 dB
AGC (auto gain control)	2X, 4X, 8X, 16X
Flickerless Control	Automatic, 50 Hz, 60 Hz modes
Image Rotation	Flip, Mirror, 90°, 180°, 270° rotation
Image Setting	Manual tuning with saturation, sharpness, and contrast

Video Interface

Video Compression	H.264 (ISO/IEC 14496-10) or MJPEG
Video Output	via Ethernet
Video Streams	4 independent H.264 or MJPEG video streams

Video Resolution and FPS (frames per second)	NTSC		PAL		
	Size	Max. FPS	Size	Max. FPS	
	QCIF	176 x 112	30	176 x 144	25
	CIF	352 x 240	30	352 x 288	25
	VGA	640 x 480	30	640 x 480	25
	4CIF	704 x 480	30	704 x 576	25
	Full D1	720 x 480	30	720 x 576	25
	SVGA	800 x 600	30	800 x 600	25
	HD	1280 x 720	30	1280 x 720	25
	WXGA	1280 x 800	30	1280 x 800	25
Full HD	1920 x 1080	30	1920 x 1080	25	
Video Viewing	DynaStream™ support for changing the video frame rate automatically CBR Pro™ for good image quality in limited bandwidth transmissions 3 privacy mask areas provided Adjustable image size and quality Timestamp and text overlay OSD (On Screen Display) position adjustable Maximum of 5 simultaneous unicast connections, 50 multicast clients				
Audio Interface					
Audio Format	Mono, PCM (G.711) AAC				
Audio Inputs	1 x built-in microphone				
Camera Software Development					
Video Standards	ONVIF Profile S				
Camera Alarm Software Features					
Intelligent Video	Camera tampering detection				
Video Motion Detection	3 independently configurable areas				
Shock Detection	Built-in G sensor				
Scheduling	Daily repeat timing schedule				
Imaging	JPEG snapshots for pre/trigger/post alarm images				
Custom Alarms	HTTP event servers for setting customized alarm actions				
Email/FTP Messaging	Automatic transfer of stored images via email or FTP as event-triggered actions				
Pre-Alarm Buffer	50 MB video buffer for JPEG snapshot images				
Video Recording	Event recordings stored on the SD card				
Software Requirements					
Memory Size	2 GB				
Operating System	Windows 7 or above				
Browser	Internet Explorer 9.x or above				
Multimedia	DirectX 9.0C or above				

Physical Characteristics

Housing	IP66 rain and dust protection Metal housing, PC dome cover IK8 vandal resistant protection
Dimensions	125 x 125 x 120.7 mm (4.92 x 4.92 x 4.8 in)
Weight	890 g (1.96 lb)
Installation	Panel mounting
Protection	-CT models: PCB conformal coating

Environmental Limits

Operating Temperature	Standard Models: -25 to 55°C (-13 to 131°F) Wide Temp. Models: -40 to 70°C (-40 to 158°F)
Storage Temperature (package included)	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)
Ingress Protection	IEC 60529, IP66
Salt Spray Test	ASTM-B117
Vandal Resistance	EN 62262, IK8
Altitude	2000 m

Standards and Certifications

EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF
Freefall	IEC 60068-2-31
Railway Fire Protection	EN 45545-2
Safety	UL 60950-1
Shock	IEC 60068-2-27, IEC 61373, EN 50155
Vibration	IEC 60068-2-64, IEC 61373, EN 50155
Railway	EN 50155 (complies with a portion of EN 50155 specifications)

MTBF

Time	997,474 hrs
Standards	Telcordia SR332

Warranty

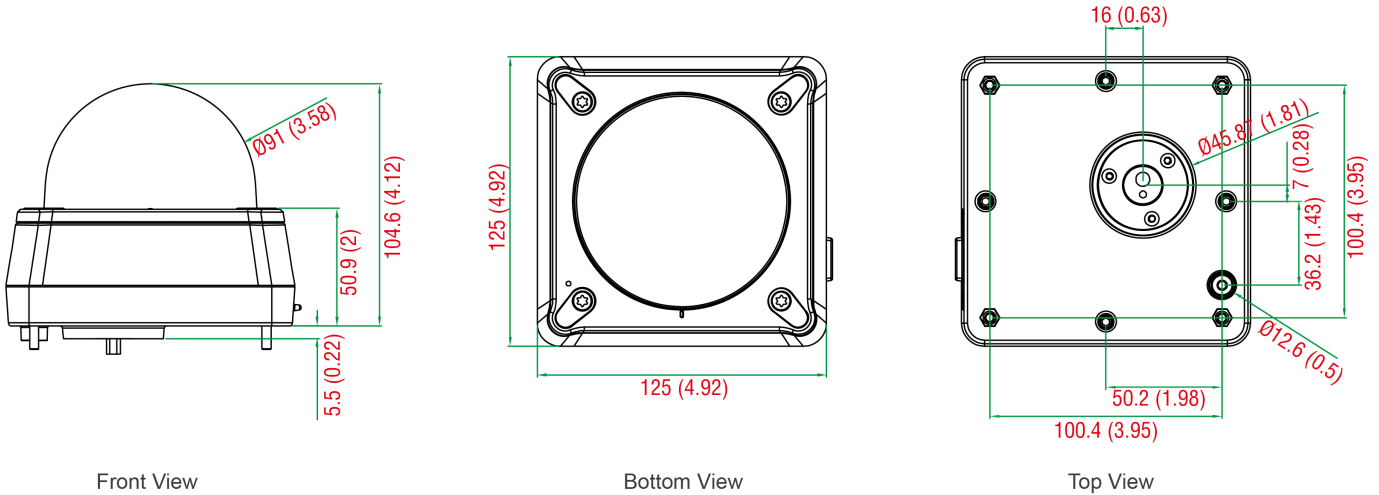
Warranty Period	5 years Note: Limited warranty on moving parts; see Moxa's online warranty policy for details.
Details	See www.moxa.com/warranty

Package Contents

Device	1 x VPort P16-2MR Series camera
Installation Kit	1 x sticker 1 x L-type Torx screwdriver 4 x indented hexagonal head tapping screws, nuts, gaskets, and spring washers
Documentation	1 x document and software CD 1 x quick installation guide 1 x warranty card

Dimensions

Unit: mm (inch)



Front View

Bottom View

Top View

Ordering Information

Model Name	Lens	Local Storage	Operating Temp.	Conformal Coating
VPort P16-2MR36M	3.6 mm	microSD slot, SDXC interface	-25 to 55°C	-
VPort P16-2MR42M	4.2 mm	microSD slot, SDXC interface	-25 to 55°C	-
VPort P16-2MR60M	6.0 mm	microSD slot, SDXC interface	-25 to 55°C	-
VPort P16-2MR80M	8.0 mm	microSD slot, SDXC interface	-25 to 55°C	-
VPort P16-2MR36M-T	3.6 mm	microSD slot, SDXC interface	-40 to 70°C	-
VPort P16-2MR42M-T	4.2 mm	microSD slot, SDXC interface	-40 to 70°C	-
VPort P16-2MR60M-T	6.0 mm	microSD slot, SDXC interface	-40 to 70°C	-
VPort P16-2MR80M-T	8.0 mm	microSD slot, SDXC interface	-40 to 70°C	-
VPort P16-2MR36M-CT	3.6 mm	microSD slot, SDXC interface	-25 to 55°C	✓
VPort P16-2MR42M-CT	4.2 mm	microSD slot, SDXC interface	-25 to 55°C	✓
VPort P16-2MR60M-CT	6.0 mm	microSD slot, SDXC interface	-25 to 55°C	✓
VPort P16-2MR80M-CT	8.0 mm	microSD slot, SDXC interface	-25 to 55°C	✓

Model Name	Lens	Local Storage	Operating Temp.	Conformal Coating
VPort P16-2MR36M-CT-T	3.6 mm	microSD slot, SDXC interface	-40 to 70°C	✓
VPort P16-2MR42M-CT-T	4.2 mm	microSD slot, SDXC interface	-40 to 70°C	✓
VPort P16-2MR60M-CT-T	6.0 mm	microSD slot, SDXC interface	-40 to 70°C	✓
VPort P16-2MR80M-CT-T	8.0 mm	microSD slot, SDXC interface	-40 to 70°C	✓

Accessories (sold separately)

Camera Mounting Kits

VP-FMK1	Flush-mounting kit for the VPort P16
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