

# MIC Series IP Power Supply

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- ▶ MIC power supply with IVA-enabled, integrated Bosch IP technology provides video and control over IP for MIC550, MIC550IR, and MIC612 cameras.
- ▶ Easy-to-install, IP67-rated enclosure has high tolerance to vibration/shock for both indoor and outdoor installations.
- ▶ Supports optional, user-installed Bosch Ethernet fiber optic.
- ▶ NTCIP and ONVIF conformant encoder; integrates with transportation management devices and provides interoperability with other conformant systems.
- ▶ Local storage on SD or SDHC card (32 GB maximum) for flexible recording options

A full range of MIC Series power supply units (PSUs), with integrated Bosch IP technology and built-in support for NTCIP protocol, provides all connections for power, telemetry and video for MIC Series MIC550, MIC550IR, and MIC612 cameras. These MIC IP PSUs ensure that the cameras can be installed in a variety of locations, including low voltage and mobile applications. They conform to the National Transportation Communications for ITS Protocol (NTCIP) specification. NTCIP conformance ensures that the MIC IP PSU integrates with transportation management devices.

Each power supply has UL, CE, and FCC approval, is rated to IP67, supports 50/60 Hz, and comes in a selection of input voltages. The PSU housing also has slots for optional cards, such as the 8-channel alarm card including washer pump drive (MIC-ALM).

The built-in encoder features DVD-like quality H.264 video, at up to 25/30 images per second, over IP networks. It provides Dual Streaming (two

independently configurable video streams) and bidirectional audio communication in parallel to video, and supports Bosch VCA algorithms.

## Functions

### Intelligence

With built-in video content analysis, the MIC IP PSU reinforces the Intelligence-at-the-Edge concept where edge devices become increasingly intelligent. The MIC IP PSU comes with built-in MOTION+ video motion detection. This motion detection algorithm is based on pixel change and includes object size filtering capabilities and sophisticated tamper detection capabilities.

Bosch offers more advanced video content analysis (VCA) applications with its Intelligent Video Analysis (IVA). An enabled option, it bases the IVA algorithm on digital imaging technology that uses multi-level image analysis of pixel, texture, and motion (trajectory) changes.

### Flexibility

The MIC IP PSU offers unparalleled recording flexibility. Record on network-attached RAID iSCSI storage devices or locally on a user-supplied SD or SDHC card (32 GB maximum). The built-in iSCSI support enables the MIC IP PSU to act as a conventional DVR while streaming high-performance live video across the network.

### Dual Streaming and Dual H.264 Recording

The MIC IP PSU uses Dual Streaming to generate two independent IP video streams per channel if sufficient computational power is available. This allows viewing and recording at two different quality levels to save disk space and bandwidth. On alarm, they can send an e-mail with JPEG images attached. Video can be recorded centrally on iSCSI drives managed by VRM Video Recording Manager and redundantly on the local media.

### Recording Profiles

The MIC IP PSU features a highly flexible recording scheduler, providing up to ten programmable recording profiles and allowing individually assigned camera profiles. With these profiles, you can accelerate the frame rate as well as increase the resolution on alarm, saving recording space during non-alarm periods.

### Access Security

The MIC IP PSU offers various security levels for accessing the network, the unit, and the data channels. As well as password protection with three levels, it supports 802.1x authentication using a RADIUS server for identification. You can secure Web browser access by HTTPS using a SSL certificate that is stored in the unit. For total data protection, each communication channel—video, audio, or serial I/O—can be independently AES encrypted with 128-bit keys, once the Encryption Site License has been applied.

### Viewing

View video on a PC using a Web browser, in the Bosch Video Management System, or integrate it into another video management system. By routing the IP video to a high-performance VIP XD HD video decoder module, you can present the video with ultimate clarity.

### Bosch Video Client surveillance software

The bundled Bosch Video Client software, provided free of charge, offers a user-friendly interface to support easy installation, configuration, and operation of up to 16 cameras. (A license upgrade, sold separately, adds support for up to 64 cameras.) A wizard allows the configuration of multiple cameras simultaneously using an auto detection device. Multiple cameras can be monitored in one screen and video clips on the SD card can be archived and searched in a single application.

### ONVIF conformance

The MIC IP PSU conforms to the ONVIF (Open Network Video Interface Forum) specification which guarantees interoperability between network video products regardless of manufacturer. ONVIF conformant devices are able to exchange live video, audio, metadata and control information. They are automatically discovered and connected to network applications such as video management systems.

### Optional Fiber Optic Kit

Users can install the fiber optic media converter module (sold separately) directly into the power supply box to provide an integrated fiber optic solution.

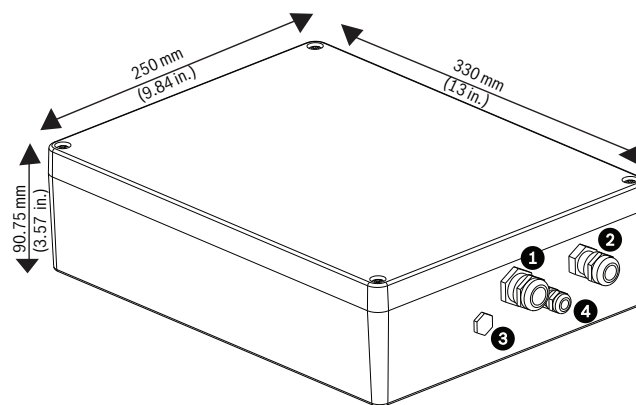
### Easy Upgrade

Remotely upgrade the MIC IP PSU via IP whenever new firmware becomes available. This ensures up-to-date products, thus protecting investment with little effort.

### Certifications and approvals

Electromagnetic Compatibility (EMC)	Complies with FCC Part 15 and ICES-003 regulations, EN 50130-4 and EN 55022:2006 inc AL: 2007, EN 61000-3-2:2006, EN 61000-3-3:1995,
Product Safety	Complies with UL, CSA Standards, and CE regulations including IEC Standards and c-UL 60950-1 & 22 or latest versions.
Ingress Protection Rating	IP67
Other	RoHS; ONVIF compliant (encoder)

### Installation/configuration notes



*Dimensional Drawing*

- 1 Cable gland (1/2 in.) for composite cable (for analog connections)
- 2 Cable gland (M16) for RJ45 / Fiber cable

- 3 Blanking plug for optional cable gland (M12) for:
  - alarms (for non-thermal cameras)
  - switched video output (for thermal cameras)
- 4 Cable gland (M12) for optional washer drive

## Technical specifications

### Electrical

Model	Voltage / Power @ 50/60 Hz	Applicable Cameras
Non-IR IP Power Supply Units		
MIC-IP-PS-24	Input: 24 VAC ± 10% Consumption: 2.0 A	MIC550, MIC612
MIC-IP-PS-115	Input: 115 VAC ± 10% Consumption: 400 mA	
MIC-IP-PS-230	Input: 230 VAC ± 10% Consumption: 200 mA	
IR IP Power Supply Units		
MIC-IPIR-PS-24	Input: 24 VAC ± 10% Consumption: 3.3 A	MIC550IR
MIC-IPIR-PS-115	Input: 115 VAC ± 10% Consumption: 750 mA	
MIC-IPIR-PS-230	Input: 230 VAC± 10% Consumption: 350 mA	

### Mechanical

<b>Dimensions (L x W x H)</b>	330 mm x 250 mm x 90.75 mm (13 in. x 9.84 in. 3.57x in.)
Form Factor (four screw holes)	11.19 mm (0.44 in.)
Weight	Non-IR PSUs: 7.21 kg (15.9 lb) IR PSUs: 7.3 kg (16.1 lb)
Material	Powder-coated cast aluminum, rated IP67
Color	RAL 9010 (Pure White) with sand finish
Optional add-ons (each sold separately)	MIC-ALM (8-input alarm card) MIC-WKT (washer pump kit) MIC-WKT-IR (washer pump kit with integrated four-input alarm terminal for IR models) VG4-SFPSCKT Fiber Optic Ethernet Media Converter Kit

### User Connections

Alarm Inputs/Outputs	
- Non-IR, without expansion card	Supports 1 tamper input.
- Non-IR, with expansion card	Supports 8 inputs, 2 outputs.
- IR models	Supports 4 inputs.

### Environmental

Operating Temperature	<ul style="list-style-type: none"> <li>• Non-IR models: -40 °C to +60 °C (-40 °F to +140 °F)</li> </ul>
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	<ul style="list-style-type: none"> <li>• IR models: -40 °C to +50 °C (-40 °F to +122 °F)</li> </ul>
Storage Temperature	-40 °C to +65 °C (-40 °F to +149 °F)
Cold Start	-30 °C (Requires 30-minute warm-up period after applying power before operation.)

### Software Control

Camera Setup/ Control	Via Internet Explorer Web browser version 7.0 or later or BVMS
Software Update	Firmware upload

### Network

Storage	One (1) SD card slot (for an SD or an SDHC card, user-supplied) with card capacity up to 32 GB
Standards	H.264 (ISO/IEC 14496-10), M-JPEG, JPEG
Streaming	A total of four (4) independent streams: <ul style="list-style-type: none"> <li>• Two (2) individually configurable H.264 streams at 4CIF/D1 resolution,</li> <li>• One (1) H.264, I-frame only stream (suitable for recording)</li> <li>• One (1) M-JPEG stream at 4CIF/D1 resolution</li> </ul>
GOP Structure	IP, IBP, IBBP
Data Rate	9.6 kbps to 6 Mbps
Overall IP Delay	240 ms

### Resolution (Horizontal x Vertical, PAL/NTSC)

- 4CIF/D1	704 x 576/480 (50/60 ips) <small>Depending on picture content and movement</small>
- CIF	352 x 288/240 (50/60 ips <sup>4</sup> )
Ethernet	10-Base T/100 Base-TX, auto-sensing, half/ full duplex, RJ45
Protocols	RTP, Telnet, UDP, TCP, IP, HTTP, HTTPS, FTP, DHCP, IGMP V2/V3, ICMP, ARP, SMTP, SNTP, SNMP v3, RTSP, 802.1x, iSCSI, DynDNS, UPnP, IP v4/6, QoS, SSH, SSL
Encryption	TLS 1.0, SSL, AES (license option)
NTCIP Protocols	
- CCTV Camera Control	NTCIP 1205
- Application Layer	SNMP per NTCIP 1101:1996 & NTCIP 2301
- Transport/Network Layers	TCP/IP per NTCIP 2202:2001
- Sub-network Layer	PMPP (Point to Multi-Point Protocol) per NTCIP 2101:2001 & NTCIP 2102:2003
Audio	1 x 3.5mm stereo socket
- Standard	G.711, 8 kHz sampling rate L16, 16 kHz sampling rate

- Signal-to-Noise Ratio	>50 dB
- Audio Streaming	Full Duplex / Half Duplex

### Fiber Optic Kit

Description	Fiber Optic Ethernet Media Converter kit (sold separately and user-installed inside the power supply enclosure) See the datasheet for the VG4-SFPSCKT Fiber Optic Ethernet Media Converter Kit for technical specifications and other product details.
Data Interface	Ethernet
Data Rate	10/100 Mbps IEEE 802.3 Compliant Full Duplex or Half Duplex Electrical Port Full Duplex Optical Port
Compatible Receiver	CNFE2MC

### Ordering information

#### MIC IP Power Supply 115 VAC

115 VAC, 50/60 Hz, IP-enabled power supply for MIC Series cameras  
Order number **MIC-IP-PS-115**

#### MIC IP Power Supply 230 VAC

230 VAC, 50/60 Hz, IP-enabled power supply for MIC Series cameras  
Order number **MIC-IP-PS-230**

#### MIC IP Power Supply 24 VAC

24 VAC, 50/60 Hz, IP-enabled power supply for MIC Series cameras  
Order number **MIC-IP-PS-24**

#### MIC IP IR Power Supply 115 VAC

115 VAC, 60 H, IP-enabled power supply for MIC Series cameras with Infrared Illuminators  
Order number **MIC-IPIR-PS-115**

#### MIC IP IR Power Supply 230 VAC

230 VAC, 50/60 Hz, IP-enabled power supply for MIC Series cameras with Infrared Illuminators  
Order number **MIC-IPIR-PS-230**

#### MIC IP IR Power Supply 24 VAC

24 VAC, 50/60 Hz, IP-enabled power supply for MIC Series cameras with Infrared Illuminators  
Order number **MIC-IPIR-PS-24**

### Accessories

#### MIC Cable 2M

2 meter (6.56 ft) composite cable with plug for power, data and video for MIC Series cameras  
Order number **MIC-CABLE-2M**

#### MIC Cable 10M

10 meter (32.81 ft) composite cable with plug for power, data and video for MIC Series cameras  
Order number **MIC-CABLE-10M**

#### MIC Cable 20M

20 meter (62.62 ft) composite cable with plug for power, data and video for MIC Series cameras  
Order number **MIC-CABLE-20M**

#### MIC Cable 25M

25 meter (82.02 ft) composite cable with plug for power, data and video for MIC Series cameras  
Order number **MIC-CABLE-25M**

#### MIC Thermal Cable 2M

2 meter (6.56 ft) composite cable with plug for power, data and video for MIC Series thermal cameras  
Order number **MIC-THERCBL-2M**

#### MIC Thermal Cable 10M

10 meter (32.81 ft) composite cable with plug for power, data and video for MIC Series thermal cameras  
Order number **MIC-THERCBL-10M**

#### MIC Thermal Cable 20M

20 meter (62.62 ft) composite cable with plug for power, data and video for MIC Series thermal cameras  
Order number **MIC-THERCBL-20M**

#### MIC Thermal Cable 25M

25 meter (82.02 ft) composite cable with plug for power, data and video for MIC Series thermal cameras  
Order number **MIC-THERCBL-25M**

#### MIC-ALM Alarm and Washer Pump Drive Card

8 Input alarm and washer pump drive card for PSU (Not for IR PSU)  
Order number **MIC-ALM**

#### MIC-WKT Washer Kit

Washer kit for non infrared MIC models (includes washer pump drive card, washer nozzle and mounting brackets for wall and 4 in. PCD base)  
Order number **MIC-WKT**

#### MIC-WKT-IR Washer Kit

Washer kit for infrared power supplies only (includes washer nozzle and mounting brackets for wall or 4 in. PCD base)  
Order number **MIC-WKT-IR**

#### VG4-SFPSCKT Fiber Optic Ethernet Media Converter Kit

Ethernet media converter video transmitter/data receiver fiber optic kit  
Order number **VG4-SFPSCKT**

### Software Options

#### MVC-FIVA4-ENC1

IVA 4.xx/5.xx VCA software license for single channel encoder (e-license)  
Order number **MVC-FIVA4-ENC1**

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