Your Industrial Ethernet Solutions for Control and Automation

Product Catalog

MTL Instruments

MOXA®

Industrial Media Converters

Industrial Media Converters

IMC-101G	Industrial Gigabit media converter	10-2
IMC-101	Industrial media converter	10-4
IMC-21	Entry-level industrial media converter	10-6

IMC-101G Series

Industrial Gigabit Ethernet to fiber media converter

- 10/100/1000BaseT(X) and 1000BaseSFP slot supported
- Link Fault Pass-Through (LFP)
- Power failure, port break alarm by relay output
- Redundant power input
- -40 to 75°C operating temperature range (T models)
- Certified to operate in hazardous locations

Introduction

The IMC-101G industrial Gigabit media converters are designed to provide reliable and stable 10/100/1000BaseT(X) to SFP media conversion in harsh industrial environments. The IMC-101G's industrial design is excellent for keeping your industrial automation applications running continuously, and each IMC-101G converter comes with a relay output warning alarm to help prevent damage and loss. All IMC-101G models are subjected to a 100% burn-in test, and are available in models that support a standard operating temperature range of 0 to 60°C, and an extended operating temperature range of -40 to 75°C.

Specifications

Technology

Standards: IEEE 802.3 for 10BaseT,
IEEE 802.3u for 100BaseT(X) and 100BaseFX,
IEEE 802.3ab for 1000BaseT(X),
IEEE 802.3z for 1000BaseSX/LX/LHX/ZX

Interface

RJ45 Ports: 10/100/1000BaseT(X)
Fiber Ports: 1000BaseSFP slot
LED Indicators: PWR1, PWR2, FAULT, 10/100M (TP port), 1000M (TP and Fiber port)
DIP Switch: Port break alarm mask, Link Fault Pass-Through, Fiber AN/Force
Alarm Contact: One relay output with current carrying capacity of 1A @ 24 VDC

Power Requirements

Input Voltage: 24 VDC (12 to 45 VDC), redundant inputs
Input Current (@ 24 V): 0.11A
Connection: Removable terminal block
Overload Current Protection: 1.1A
Reverse Polarity Protection: Present

Physical Characteristics

Casing: IP30 protection, metal case
Dimensions (W x H x D): 53.6 x 135 x 105 mm (2.11 x 5.31 x 4.13 in.)
Weight: 630 g
Installation: DIN-Rail mounting, wall mounting (optional kit)

Environmental Limits

Operating Temperature: 0 to 60°C (32 to 140°F),
-40 to 75°C (-40 to 167°F) for T models
Storage Temperature: -40 to 85°C (-40 to 185°F)
Ambient Relative Humidity: 5 to 95% (non-condensing)

Regulatory Approvals

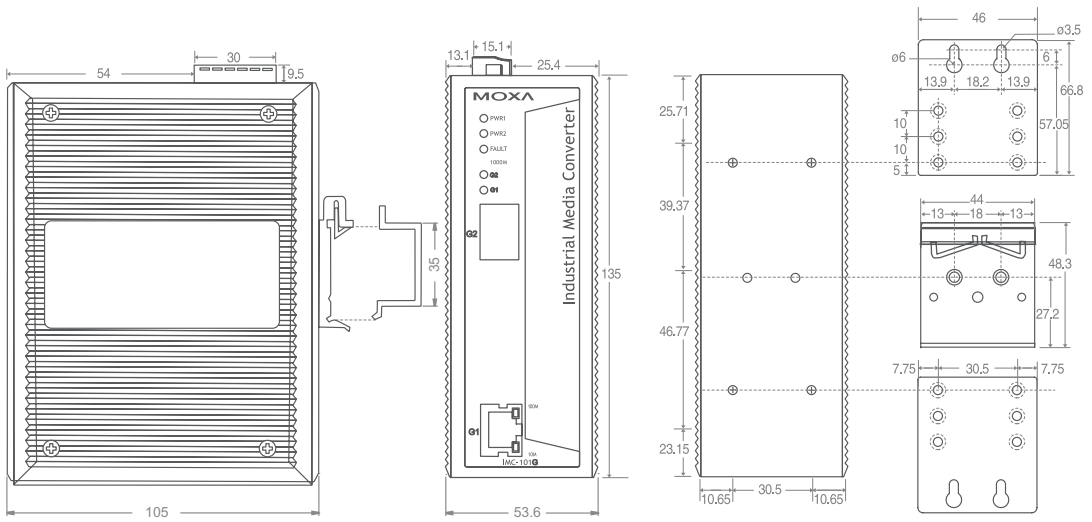
Safety: UL508
EMI: FCC Part 15, CISPR (EN55022) class A
EMS: EN61000-4-2 (ESD), level 3
EN61000-4-3 (RS), level 3
EN61000-4-4 (EFT), level 3
EN61000-4-5 (Surge), level 3
EN61000-4-6 (CS), level 3
EN61000-4-8
EN61000-4-11
Shock: IEC 60068-2-27
Freefall: IEC 60068-2-32
Vibration: IEC 60068-2-6
MTBF: 500,000 hrs
Database: Telcordia (Bellcore), GB

*Please check Moxa's website for the most up-to-date status.

Warranty

5 years (see www.moxa.com/warranty for details)

Dimensions (unit = mm)



Side View DIN-Rail Kit Front View Rear View Mounting Kit

Ordering Information

- **IMC-101G:** Industrial 10/100/1000BaseT(X) to 1000BaseSX/LX/LHX/ZX media converter, 0 to 60°C
- **IMC-101G-T:** Industrial 10/100/1000BaseT(X) to 1000BaseSX/LX/LHX/ZX media converter, -40 to 75°C

* IMC-101G series supports 1 1000BaseSFP slot. Please see page 2-23 for the product information of SFP-1G series Gigabit Ethernet SFP modules.

Optional Accessories

- **DR-4524:** 45W/2A DIN-Rail 24 VDC power supply, 85 to 264 VAC input
- **DR-75-24:** 75W/3.2A DIN-Rail 24 VDC power supply, 85 to 264 VAC input
- **DR-120-24:** 120W/5A DIN-Rail 24 VDC power supply, 88 to 132 VAC/176 to 264 VAC input by switch
- **WK-46:** Wall mounting kit
- **RK-4U:** 4U-high 19” rack mounting kit

IMC-101 Series

Industrial 10/100BaseT(X) to 100BaseFX media converter

- 10/100BaseT(X) auto-negotiation and auto-MDI/MDI-X
- Link Fault Pass-Through (LFP)
- Power failure, port break alarm by relay output
- Redundant power inputs
- -40 to 75°C operating temperature range (T models)
- Certified to operate in hazardous locations (Class 1, Div. 2/Zone 2)

Introduction

The IMC-101 industrial media converters provide industrial grade media conversion between 10/100BaseT(X) and 100BaseFX (SC/ST connectors). The IMC-101's reliable industrial design is excellent for keeping your industrial automation applications running continuously, and each IMC-101 converter comes with a relay output warning alarm to help prevent damage and loss. The IMC-101 media converters are certified for harsh industrial environments, such as in hazardous locations (Class 1, Division 2/Zone 2, DNV, and GL Certification), and comply with FCC, UL, and CE standards. The IMC-101 series is available with models that support an operating temperature of 0 to 60°C, and an extended operating temperature of -40 to 75°C. All IMC-101 series are subjected to a 100% burn-in test.

Specifications

Technology

Standards: IEEE 802.3 for 10BaseT,
IEEE 802.3u for 100BaseT(X) and 100BaseFX

Interface

RJ45 Ports: 10/100BaseT(X)

Fiber Ports: 100BaseFX (SC/ST connectors)

LED Indicators: PWR1, PWR2, FAULT, 10/100M (TP port), 100M (Fiber port), FDX/COL (Fiber port)

DIP Switch: 100BaseFX Full/Half duplex selection, port break alarm mask

Alarm Contact: One relay output with current carrying capacity of 1A @ 24 VDC

Optical Fiber

	100BaseFX		
	Multi Mode	Single Mode	Single Mode, 80 km
Wavelength	1300 nm	1310 nm	1550 nm
Max. TX	-10 dBm	0 dBm	0 dBm
Min. TX	-20 dBm	-5 dBm	-5 dBm
RX Sensitivity	-32 dBm	-34 dBm	-34 dBm
Link Budget	12 dB	29 dB	29 dB
Typical Distance	5 km [a] 4 km [b]	40 km [c]	80 km [d]
Saturation	-6 dBm	-3 dBm	-3 dBm

a. 50/125 µm, 800 MHz*km fiber optic cable
b. 62.5/125 µm, 500 MHz*km fiber optic cable
c. 9/125 µm, 3.5 PS/(nm*km) fiber optic cable
d. 9/125 µm, 19 PS/(nm*km) fiber optic cable

Power Requirements

Input Voltage: 24 VDC (12 to 48 VDC), redundant inputs
Input Current (@ 24 V): 0.16A
Connection: Removable terminal block
Overload Current Protection: 1.1A
Reverse Polarity Protection: Present

Physical Characteristics

Casing: IP30 protection, metal case
Dimensions (W x H x D): 53.6 x 135 x 105 mm (2.11 x 5.31 x 4.13 in.)
Weight: 630 g
Installation: DIN-Rail mounting, wall mounting (optional kit)

Environmental Limits

Operating Temperature: 0 to 60°C (32 to 140°F),
-40 to 75°C (-40 to 167°F) for T models
Storage Temperature: -40 to 85°C (-40 to 185°F)
Ambient Relative Humidity: 5 to 95% (non-condensing)

Regulatory Approvals

Safety: UL508, UL60950-1, CSA C22.2 No. 60950-1, EN60950-1
Hazardous Location:
UL/cUL Class1, Division 2, Groups A, B, C, and D;
ATEX Class1, Zone 2, Ex nC IIC (IMC-101-M-ST and IMC-101-S-SC-80 pending)
Maritime: DNV, GL
EMI: FCC Part 15, CISPR (EN55022) class A
EMS: EN61000-4-2 (ESD), level 3
EN61000-4-3 (RS), level 3
EN61000-4-4 (EFT), level 3

EN61000-4-5 (Surge), level 3
EN61000-4-6 (CS), level 3
EN61000-4-8
EN61000-4-11

Shock: IEC 60068-2-27
Freefall: IEC 60068-2-32

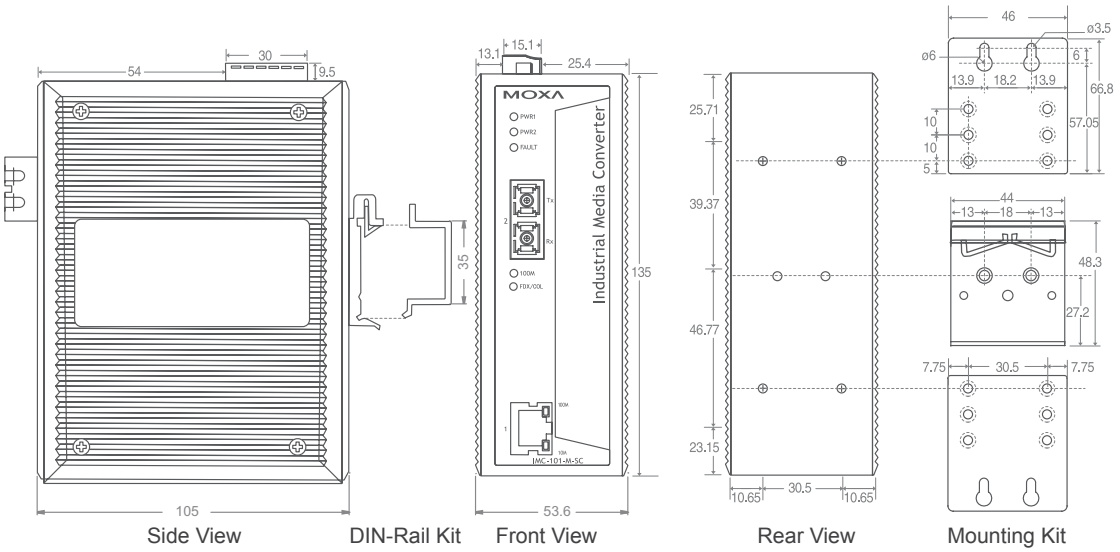
Vibration: IEC 60068-2-6
MTBF: 401,000 hrs
Database: MIL-HDBK-217F, GB 25°C

*Please check Moxa's website for the most up-to-date status.

Warranty

5 years (see www.moxa.com/warranty for details)

Dimensions (unit = mm)



Ordering Information

- **IMC-101-M-SC:** Industrial 10/100BaseT(X) to 100BaseFX media converter, multi mode, SC connector, 0 to 60°C
- **IMC-101-M-ST:** Industrial 10/100BaseT(X) to 100BaseFX media converter, multi mode, ST connector, 0 to 60°C
- **IMC-101-S-SC:** Industrial 10/100BaseT(X) to 100BaseFX media converter, single mode, SC connector, 40 km, 0 to 60°C
- **IMC-101-S-SC-80:** Industrial 10/100BaseT(X) to 100BaseFX media converter, single mode, SC connector, 80 km, 0 to 60°C
- **IMC-101-M-SC-T:** Industrial 10/100BaseT(X) to 100BaseFX media converter, multi mode, SC connector, -40 to 75°C
- **IMC-101-M-ST-T:** Industrial 10/100BaseT(X) to 100BaseFX media converter, multi mode, ST connector, -40 to 75°C
- **IMC-101-S-SC-T:** Industrial 10/100BaseT(X) to 100BaseFX media converter, single mode, SC connector, 40 km, -40 to 75°C
- **IMC-101-S-SC-80-T:** Industrial 10/100BaseT(X) to 100BaseFX media converter, single mode, SC connector, 80 km, -40 to 75°C

Optional Accessories

- **DR-4524:** 45W/2A DIN-Rail 24 VDC power supply, 85 to 264 VAC input
- **DR-75-24:** 75W/3.2A DIN-Rail 24 VDC power supply, 85 to 264 VAC input
- **DR-120-24:** 120W/5A DIN-Rail 24 VDC power supply, 88 to 132 VAC/176 to 264 VAC input by switch
- **WK-46:** Wall mounting kit
- **RK-4U:** 4U-high 19" rack mounting kit

IMC-21 Series

Entry-level industrial 10/100BaseT(X) to 100BaseFX and 10BaseT to 10BaseFL media converter

- Multi mode, single mode with SC or ST fiber connector
- Link Fault Pass-Through (LFP)
- Power inputs: 12 to 45 VDC, 18 to 30 VAC (47-63 Hz)
- -10 to 60°C operating temperature range
- DIP Switch to select FDX/HDX/10/100/Auto/Force

Introduction

The IMC-21 series are entry-level 10/100BaseT(X) to 100BaseFX and 10BaseT to 10BaseFL media converters designed to provide reliable and stable operation in harsh industrial environments. The IMC-21 is a cost-effective solution that runs on either a 12 to 45 VDC power input or 18 to 30 VAC power input. The IMC-21 can operate reliably in temperatures ranging from -10 to 60°C, and the rugged hardware design ensures that your Ethernet equipment can withstand demanding industrial conditions. The IMC-21 is easy to mount on a DIN-Rail or in distribution boxes.

Specifications

Technology

Standards: IEEE 802.3 for 10BaseT,
IEEE 802.3u for 100BaseT(X) and 100BaseFX,
IEEE 802.3x for Flow Control

Interface

RJ45 Ports:

- IMC-21-M-SC, IMC-21-M-ST, IMC-21-S-SC: 10/100BaseT(X)
- IMC-21-M-ST-FL: 10BaseT

Fiber Ports:

- IMC-21-M-SC, IMC-21-M-ST, IMC-21-S-SC: 100BaseFX (SC/ST connectors)
- IMC-21-M-ST-FL: 10BaseFL (ST connector only)

LED Indicators:

- IMC-21-M-SC, IMC-21-M-ST, IMC-21-S-SC: Power, 10/100M (TP port), 100M (fiber port), FDX/COL (fiber port)
- IMC-21-M-ST-FL: Power, LNK/ACT (fiber port), LNK/ACT (TP port)

DIP Switch:

- IMC-21-M-SC, IMC-21-M-ST, IMC-21-S-SC:
  - 10/100M (TP port), Half/Full mode (TP and FX ports), Force/Auto mode (TP port), Link Fault Pass-Through (LFP)
- IMC-21-M-ST-FL:
  - MDI/MDI-X (TP port), Half/Full mode (TP port)

Optical Fiber

Distance: 10BaseFL: 2 km, 820 nm
100BaseFX (Multi mode): 5 km, 1300 nm
100BaseFX (Single mode): 40 km, 1310 nm

Min. TX Output: 10BaseFL: -16 dBm
100BaseFX (Multi mode): -20 dBm
100BaseFX (Single mode): -5 dBm

Max. TX Output: 10BaseFL: -7 dBm
100BaseFX (Multi mode): -14 dBm
100BaseFX (Single mode): 0 dBm

RX Sensitivity: 10BaseFL: -34.1 dBm
100BaseFX (Multi mode): -34 to -30 dBm
100BaseFX (Single mode): -36 to -32 dBm

Power Requirements

Input Voltage: 12 to 45 VDC, 18 to 30 VAC (47-63 Hz)
Power Consumption (@ 24 V): 0.15A
Connection: Removable 3-contact terminal block
Overload Current Protection: 1.1A
Reverse Polarity Protection: Present

Physical Characteristics

Casing: IP30 protection, plastic case
Dimensions (W x H x D): 25 x 100 x 74 mm (0.98 x 3.93 x 2.91 in.)
Weight: 125 g
Installation: DIN-Rail mounting

Environmental Limits

Operating Temperature: -10 to 60°C (14 to 140°F)
Storage Temperature: -40 to 70°C (-40 to 158°F)
Ambient Relative Humidity: 5 to 95% (non-condensing)

Regulatory Approvals

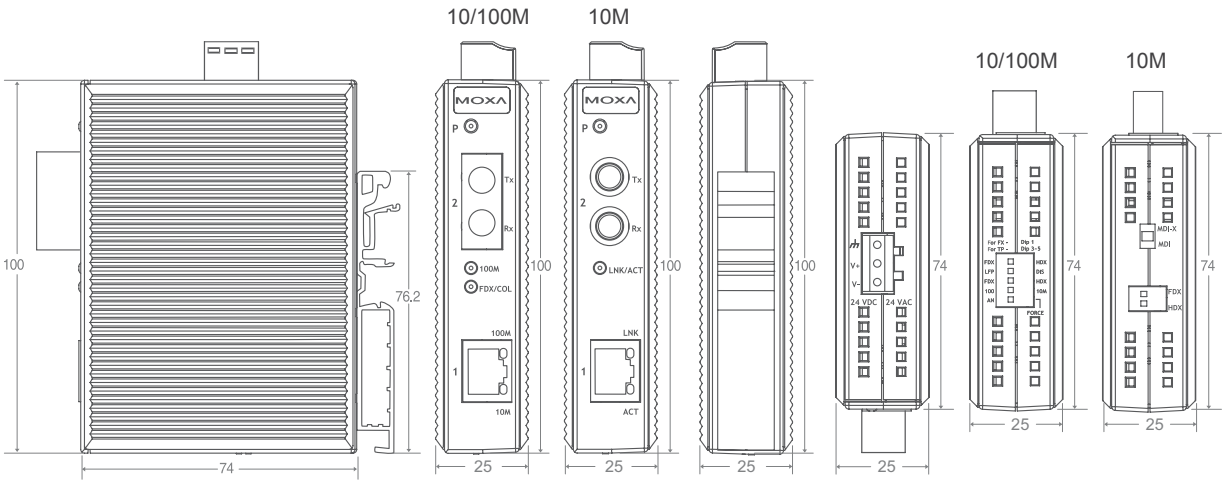
Safety: UL508, UL60950-1, CSA C22.2 No. 60950-1, EN60950-1
EMI: FCC Part 15, CISPR (EN55022) class A
EMS: EN61000-4-2 (ESD)
EN61000-4-3 (RS)
EN61000-4-4 (EFT)
EN61000-4-5 (Surge)
EN61000-4-6 (CS)

Shock: IEC 60068-2-27
Freefall: IEC 60068-2-32
Vibration: IEC 60068-2-6
MTBF: 353,000 hrs
Database: MIL-HDBK-217F, GB 25°C

Warranty

5 years (see www.moxa.com/warranty for details)

Dimensions (unit = mm)



Ordering Information

- **IMC-21-M-SC:** Industrial 10/100BaseT(X) to 100BaseFX media converter, multi mode, SC connector, -10 to 60°C
- **IMC-21-M-ST:** Industrial 10/100BaseT(X) to 100BaseFX media converter, multi mode, ST connector, -10 to 60°C
- **IMC-21-S-SC:** Industrial 10/100BaseT(X) to 100BaseFX media converter, single mode, SC connector, -10 to 60°C
- **IMC-21-M-ST-FL:** Industrial 10BaseT to 10BaseFL media converter, multi mode, ST connector, -10 to 60°C

Optional Accessories

- **DR-4524:** 45W/2A DIN-Rail 24 VDC power supply, 85 to 264 VAC input
- **DR-75-24:** 75W/3.2A DIN-Rail 24 VDC power supply, 85 to 264 VAC input
- **DR-120-24:** 120W/5A DIN-Rail 24 VDC power supply, 88 to 132 VAC/176 to 264 VAC input by switch
- **RK-4U**: 4U-high 19” rack mounting kit

ABC-01

Industrial RS-232 RJ45-based automatic configuration backup solution

- Reduce system down time without extra power input
- Plug-n-Play system backup and restoration
- Front notes for identification
- Compact, rugged and reliable design
- Support Moxa's managed Ethernet switches and wireless product (AWK-3121)

Features

- RS-232 RJ45 console port connection
- Complete configuration storage for Moxa's managed Ethernet switches and wireless product (AWK-3121)
- Automatic loading of system configuration after system reboots
- Manual loading and saving of system configuration through web console
- Portable low-power design that requires no power supply
- CE and FCC approval

Introduction

Automatic Backup Configuration, ABC-01 can save and load the configuration of Moxa's managed Ethernet switches and wireless product (AWK-3121) via RS-232 console port. ABC-01 thus makes it easier to manage the backup of system parameters or replacement of an Ethernet switch and wireless product. With the assistance of the ABC-01, users can quickly re-install a substitute product (of the same model) and/or recover the entire system configuration, including IP address, if any failure occurs.

Specifications

Operation

Connectors: RS-232 RJ45 port
Power Requirement: 3 to 5 VDC, power input via RS-232 RTS
Configuration: via Moxa managed Ethernet switches' and wireless product's (AWK-3121) web console

Physical Characteristics

Casing: PVC molding, IP40
Dimension (W x H x D): 32.5 x 97 x 12 mm (1.28 x 3.82 x 0.47 in.)
Weight: 50 g
Installation: M4 screw (< 4 mm)
Cable Length: 35 cm, including connectors

Environmental Limits

Operating Temperature: 0 to 60°C (32 to 140°F)
Storage Temperature: -20 to 70°C (-4 to 158°F)
Ambient Relative Humidity: 5 to 95 % (non-condensing)

Regulatory Approvals

EMI: FCC Part 15, CISPR (EN55022) class A
EMS: EN61000-4-2 (ESD), level 3
EN61000-4-3 (RS), level 3
EN61000-4-4 (EFT), level 3
EN61000-4-5 (Surge), level 3
EN61000-4-6 (CS), level 3

Warranty

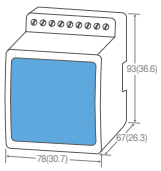
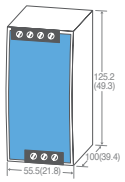
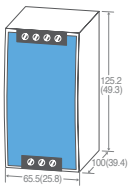
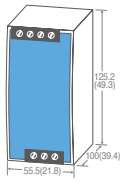
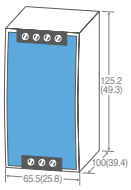
5 years (see www.moxa.com/warranty for details)

Ordering Information

ABC-01: RS-232 RJ45-based automatic backup configurator, 0 to 60˚C

DIN-Rail Power Supplies

DIN-Rail 24/48 VDC Power Supplies

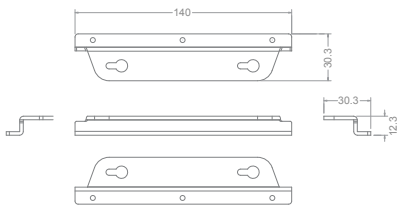
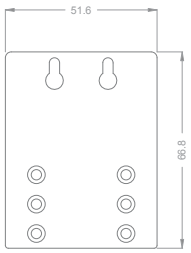
Model	DR-4524	DR-75-24	DR-120-24	DR-75-48	DR-120-48
DIN-Rail 24/48 VDC power supplies					
Dimensions Unit: mm (W x H x D)					
	78 x 93 x 67 mm	55.5 x 125.2 x 100 mm	65.5 x 125.2 x 100 mm	55.5 x 125.2 x 100 mm	65.5 x 125.2 x 100 mm
Power	45W	75W	120W	75W	120W
Input	85-264 VAC (47-63 Hz) or 120-370 VDC		88-132 VAC/ 176-264 VAC (47-63 Hz) by switch or 248-370 VDC	85-264 VAC (47-63 Hz) or 120-370 VDC	88-132 VAC/ 176-264 VAC (47-63 Hz) by switch or 248-370 VDC
Output	48W, 24 VDC, 0-2A	76.8W, 24 VDC, 0-3.2A	120W, 24 VDC, 0-5A	76.8W, 48 VDC, 0-1.6A	120W, 48 VDC, 0-2.5A
Over voltage protection	115-135% of rated output voltage	29-33V			
Overload protection	105-150%				
Type	Constant current limiting				
Reset	Auto recovery				
Inrush current	30A/115V or 60A/230V				
Weight	400 g	550 g	650 g	550 g	650 g
Working temp. and relative humidity	-10 to 50°C to 90% RH	-10 to 60°C, 20 to 90% RH			
Warranty	3 years				
Safety standards	TÜV EN60950-1, UL508 approved				
EMC standards	CISPR22 (EN55022) class B, EN61000-4-2, 3, 4, 5, 6, 8, 11, ENV50204, EN61000-3-2, -3, EN50082-2				

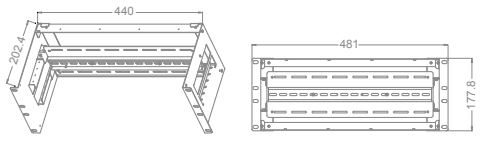
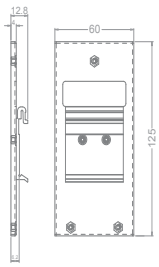
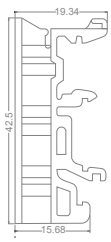
Ordering Information

- **DR-4524:** 45W/2A DIN-Rail 24 VDC power supply with universal 85 to 264 VAC input
- **DR-75-24:** 75W/3.2A DIN-Rail 24 VDC power supply with universal 85 to 264 VAC input
- **DR-120-24:** 120W/5A DIN-Rail 24 VDC power supply with 88 to 132 VAC/176 to 264 VAC input by switch
- **DR-75-48:** 75W/1.6A DIN-Rail 48 VDC power supply with universal 85 to 264 VAC input
- **DR-120-48:** 120W/2.5A DIN-Rail 48 VDC power supply with 88 to 132 VAC/176 to 264 VAC input by switch

Mounting Kits

Wall mounting, rack mounting, and DIN-Rail mounting kits

Model	WK-32	WK-46
Mounting Kit		
Matched Products	**Modular Ethernet Switch:** EDS-828/728 series	**Managed Ethernet Switch:** EDS-G509/500A/400A and PX-1510 series **Unmanaged Ethernet Switch:** EDS-G308/P308/316/309/308/305 series **Wireless AP/Bridge/AP Client:** AWK-3121/1100 series **Media Converter:** IMC-101G/101 series **Video Server:** VPort 354/351/3310/D351 series
Dimensions (W x H x D)	 30.3 x 140 x 12.3 mm	 51.6 x 66.8 x 1 mm

Model	RK-4U	DK-M12-305	DK-35A
Mounting Kit			
Matched Products	**Managed Ethernet Switch:** EDS-G509/500A/400A and PX-1510 series **Unmanaged Ethernet Switch:** EDS-G308/P308/316/309/308/305/200A/200 series **Wireless AP/Bridge/AP Client:** AWK-3121/1100 series **Media Converter:** IMC-101G/101/21 series **Video Server:** VPort 354/351/3310/D351 series	**Unmanaged Ethernet Switch:** EDS-305-M12 series	**Video Server:** VPort 251/2141 series
Dimensions (W x H x D)	 481 x 177.8 x 202.4 mm	 60 x 125 x 12.8 mm	 42.5 x 10 x 19.34 mm

Ordering Information

- **WK-32:** Wall mounting kit for EDS-828/728 series
- **WK-46:** Wall mounting kit
- **RK-4U:** 4U-high 19” rack mounting kit
- **DK-M12-305:** DIN-Rail mounting kit for EDS-305-M12 series
- **DK-35A:** DIN-Rail mounting kit for VPort 251/2141 series

Multi-mode Optical Fiber Patch Cords

These fiber optic patch cords can be used with the following products:
Multi-mode models of industrial Ethernet switches, VPort 354/VPort 351 industrial video encoders, and industrial media converters

Features

- Standard multi-mode (graded index)
- Duplex for TX/RX, cable is joined together in lamp-cord fashion for easy separation when installing
- 62.5/125 micron core fiber
- Ceramic ferrules offer a typical insertion loss of ≤ 0.5 dB
- Operating temperature: -20 to 75°C (-4 to 167°F)
- Storage temperature: -40 to 85°C (-40 to 185°F)
- Standards: IEC607932-2
- Wavelength: 850/1300 nm

Ordering Information

SC to SC Connectors

Optical fiber patch cords, full duplex multi-mode, 62.5 microns

Model Name	Cable Length
PA-MM(62.5)-2SC2SC-1M	1 meter
PA-MM(62.5)-2SC2SC-3M	3 meters
PA-MM(62.5)-2SC2SC-5M	5 meters
PA-MM(62.5)-2SC2SC-10M	10 meters

ST to ST Connectors

Optical fiber patch cords, full duplex multi-mode, 62.5 microns

Model Name	Cable Length
PA-MM(62.5)-2ST2ST-1M	1 meter
PA-MM(62.5)-2ST2ST-3M	3 meters
PA-MM(62.5)-2ST2ST-5M	5 meters
PA-MM(62.5)-2ST2ST-10M	10 meters

SC to ST Connectors

Optical fiber patch cords, full duplex multi-mode, 62.5 microns

Model Name	Cable Length
PA-MM(62.5)-2SC2ST-1M	1 meter
PA-MM(62.5)-2SC2ST-3M	3 meters
PA-MM(62.5)-2SC2ST-5M	5 meters
PA-MM(62.5)-2SC2ST-10M	10 meters