Extend Your Network Coverage with Fiber Optics

Advantech Ethernet to fiber media converter solutions that expand the capability of existent copper Ethernet-based hardware
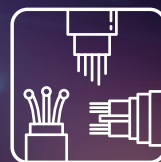
- Intelligent Media Converter
- Compact/Miniature Media Converter
- PoE+ Media Converter
- Industrial Long Reach Ethernet Extender
- SFP Module

Long transmission distances
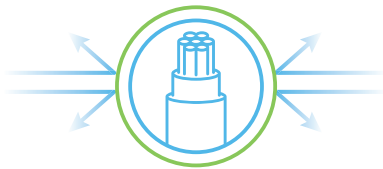
Anti-interference

Variety of fiber optic types
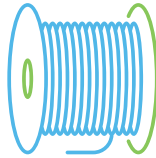
ADVANTECH

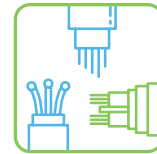*Enabling an Intelligent Planet*

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Fiber Optic Technology

Anti-interference   **Long transmission distances**   **Variety of fiber optic types**

Fiber optics are most commonly associated with massive bandwidth and high speed connections. This technology will enhance your network with additional bandwidth capacity, and can carry multiple signals concurrently, protecting data from noise and interference without electromagnetic emissions.

Advantech offers an extensive choice of fully-featured Ethernet to fiber media converter solutions that expands the capability of existent copper Ethernet-based hardware, allowing for a painless upgrade so as to extend the life cycle of your network infrastructure.

Advantech Media Converter

Advantech's fiber optic and PoE converters are designed to provide network operators with the most compact and reliable solutions for connecting intelligent devices into existing networks and equipment. All models feature duplex or single fiber, or PoE converters.

Intelligent Media Converters
IMC-700/500 Series

The chassis design of IMC-700 series along with iView² functionality and its SNMP module increase installation flexibility for more high-end deployment possibilities with higher capacity.

The IMC-500 series supports wide operating temperature for extremely harsh environments. It also supports LFPT functionality for troubleshooting faulty conditions.

The iView² is a Simple Network Management Protocol-based (SNMP-based) element management software for Advantech's intelligent IMC-574 and IMC-700 fiber module series.

Compact/Miniature Media Converter
IMC-400/300 Series

The compact IMC-400 series have an embedded power supply, reducing wiring complexity and resources. Featuring an ultra-small design, the miniature IMC-300 series fits into almost any corner of your application. Up to 18 miniature media converters can be installed into a centralized powered chassis – IMC-318, increasing space usage efficiency.

PoE+ Media Converter

The multi-port media converters support both IEEE 802.3at PoE+ and IEEE 802.3af PoE standards. The plug-and-play media converters with PoE capability make this product line a valuable solution for Ethernet networks.
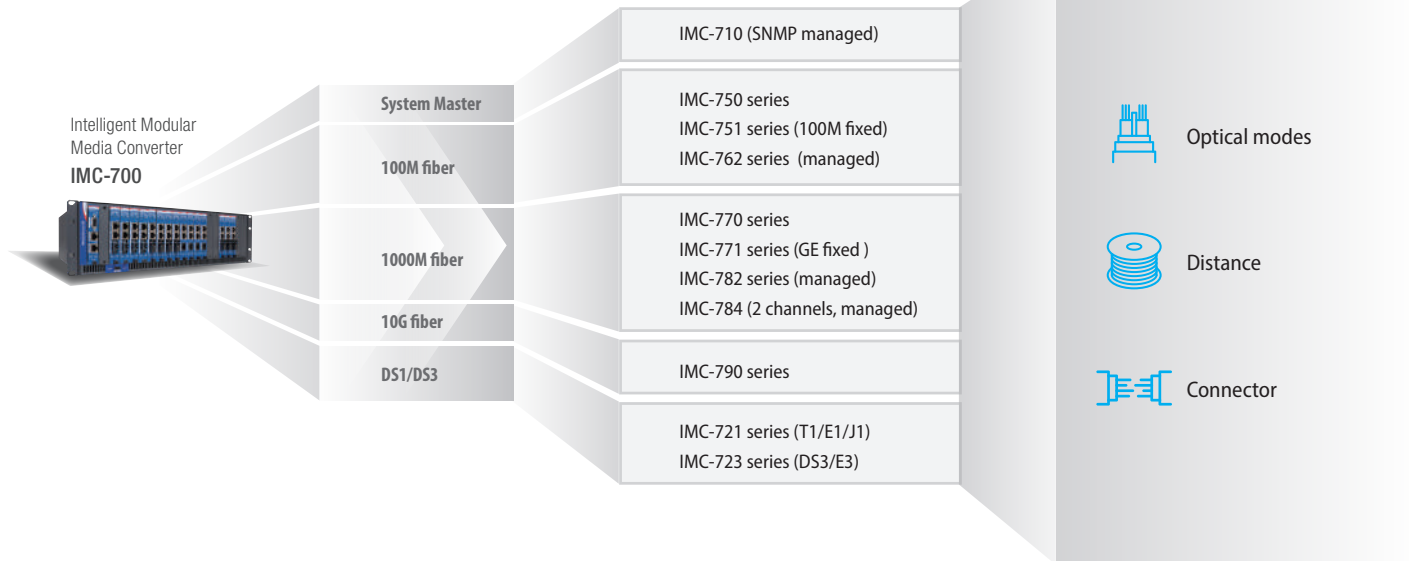
SFP Modules

Compliant with the Small Form-factor Pluggable (SFP) Multi-source Agreement (MSA), Advantech's SFP transceiver series comes with a variety of copper SFP and fiber SFPs, SFP+ and XFP.
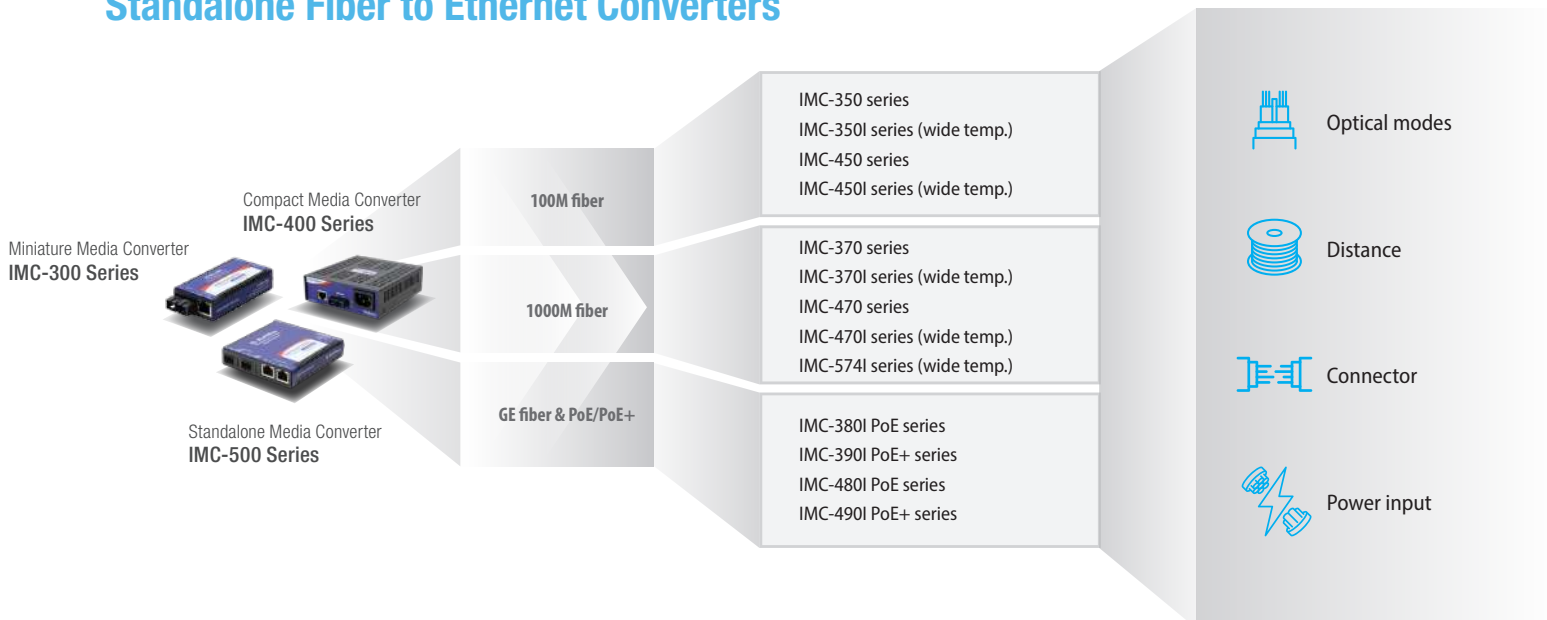
Industrial Long-Reach Extender

Brand new leading product which breaks the 100-meter limitation and reaches a longer transmission distance. Compliant with IEEE 802.3at/af PoE standard, it delivers power over cable without the distance limitations of traditional copper wires.

Modular Media Converters

Intelligent Modular Media Converter
IMC-700

System Master	IMC-710 (SNMP managed)
100M fiber	IMC-750 series IMC-751 series (100M fixed) IMC-762 series (managed)
1000M fiber	IMC-770 series IMC-771 series (GE fixed) IMC-782 series (managed) IMC-784 (2 channels, managed)
10G fiber	
DS1/DS3	IMC-790 series
	IMC-721 series (T1/E1/J1) IMC-723 series (DS3/E3)

- Optical modes
- Distance
- Connector

Standalone Fiber to Ethernet Converters

Miniature Media Converter
IMC-300 Series

Compact Media Converter
IMC-400 Series

Standalone Media Converter
IMC-500 Series

100M fiber	IMC-350 series IMC-350I series (wide temp.) IMC-450 series IMC-450I series (wide temp.)
1000M fiber	IMC-370 series IMC-370I series (wide temp.) IMC-470 series IMC-470I series (wide temp.) IMC-574I series (wide temp.)
GE fiber & PoE/PoE+	IMC-380I PoE series IMC-390I PoE+ series IMC-480I PoE series IMC-490I PoE+ series

- Optical modes
- Distance
- Connector
- Power input

3

Intelligent Media Converters

Advantech provides reliable and flexible high port density media converters consisting of chassis and a variety of Ethernet to fiber converter modules. Offering wide speed ranges up to 10GE transmission along with AC or DC power input for a redundant power solution, these media converters allow for higher deployment, flexibility, and stable operation. The modular chassis also supports network management functionality via iView² and its its SNMP module module for remote management and monitoring.

An intelligent chassis with an installed SNMP management module connects to the network via a twisted pair wire connection. Through this connection, the network operator can remotely monitor and control all compatible modules from a central site.

iView² is a Simple Network Management Protocol-based (SNMP-based) element management software dedicated to Advantech's intelligent IMC-574 and IMC-700 fiber module series. It enables network managers to configure, update, manage and monitor through IMC-710. The intuitive Graphical User Interface provides a real-time representation of all installed converter equipment and enables network managers to control and monitor device functions, port settings, and receive device status information and traffic statistics via SNMP.

IMC-574I-SFP

Industrial 10/100/1000Mbps Intelligent Media Converter

A value-based, managed Gigabit Ethernet solution that comes with two SFP ports and two fixed 10/100/1000Base-T copper ports. It supports wide operating temperatures for extremely harsh environments and features OAM and 1+1 with troubleshooting functionality

- Converts Ethernet data to fiber optic signals
- Supports wide temperature operation for harsh environments
- Offers Link Fault Pass Through (LFPT) for easy troubleshooting fault conditions
- Supports OAM and 1+1 protection

Ordering P/N: IMC-574I-SFP-PS

Intelligent Media Converter, Wide-Temp, 1000Base-TX/FX, SFP

IMC-700

Intelligent Modular Media Converters

The centralized powered chassis design along with SNMP management increases installation flexibility for high-end deployment.

- Supports iView[2] with capacity of more than 400 devices
- High-port density modules for Ethernet to fiber applications
- Comes with AC or DC power inputs for redundancy
- Supports Network management via iView[2] and SNMP for remote management
- Wide speed ranges up to 10GE transmission

Intelligent Modular Chassis

Part Number	Slot	Power Input
IMC-711	1	AC / DC
IMC-712	2	AC / DC
IMC-713*	3	Dual AC/DC
IMC-716*	6	Dual AC/DC
IMC-719*	20	Dual AC/DC

* Needs to work with a centralized SNMP module IMC-710 for network management.

IMC-710: 2 x 10/100Mbps RJ-45 Slide-In SNMP Management Module

Unmanageable Slide-in Modules

Part Number	Optical Speed	Optical Mode	Wavelength	Distance	Optical Connector	Wide Temp.
IMC-790-2XFP	10Gbps	Various	Various	Various	2 x XFP	No
IMC-790-2SFP	10Gbps	Various	Various	Various	2 x SFP+	No
IMC-771-MM	1000Mbps	Multi-Mode	850 nm	550 m	1 x SC	No
IMC-771-SM	1000Mbps	Single-Mode	1310 nm	10 km	1 x SC	No
IMC-771-SE	1000Mbps	Single-Mode	1310 nm	40 km	1 x SC	No
IMC-771-SXL	1000Mbps	Single-Mode	1550 nm	100 km	1 x SC	No
IMC-771-SST	1000Mbps	Single-Strand	1310T/1550R	10 km	1 x SC	No
IMC-771-SSR	1000Mbps	Single-Strand	1550T/1310R	10 km	1 x SC	No
IMC-771-SSET	1000Mbps	Single-Strand	1310T/1550R	40 km	1 x SC	No
IMC-771-SSER	1000Mbps	Single-Strand	1550T/1310R	40 km	1 x SC	No
IMC-771-SS4T	1000Mbps	Single-Strand	1490T/1550R	70 km	1 x SC	No
IMC-771-SS4R	1000Mbps	Single-Strand	1550T/1490R	70 km	1 x SC	No
IMC-771I-SFP	1000Mbps	Various	Various	Various	1 x SFP	Yes
IMC-770-MM	10/100/1000Mbps	Multi-Mode	850 nm	550 m	1 x SC	No
IMC-770-SM	10/100/1000Mbps	Single-Mode	1310 nm	10 km	1 x SC	No
IMC-770-SSR	10/100/1000Mbps	Single-Strand	1550T/1310R	10 km	1 x SC	No
IMC-770-SFP	10/100/1000Mbps	Various	Various	Various	1 x SFP	No
IMC-770I-2SFP	10/100/1000Mbps	Various	Various	Various	2 x SFP	Yes
IMC-751-SST	100Mbps	Single-Strand	1310T/1550R	20 km	1 x SC	No
IMC-751-SSR	100Mbps	Single-Strand	1550T/1310R	20 km	1 x SC	No
IMC-751-SSET	100Mbps	Single-Strand	1310T/1550R	40 km	1 x SC	No
IMC-751-SSER	100Mbps	Single-Strand	1550T/1310R	40 km	1 x SC	No
IMC-751-SE	100Mbps	Single-Mode	1310nm	40 km	1 x SC	No
IMC-751I-2SFP	100Mbps	Various	Various	Various	2 x SFP	Yes
IMC-750-SST	10/100Mbps	Single-Strand	1310T/1550R	20 km	1 x SC	No
IMC-750-SSR	10/100Mbps	Single-Strand	1550T/1310R	20 km	1 x SC	No
IMC-750-SSET	10/100Mbps	Single-Strand	1310T/1550R	40 km	1 x SC	No
IMC-750-SSER	10/100Mbps	Single-Strand	1550T/1310R	40 km	1 x SC	No
IMC-750I-SFP	10/100Mbps	Various	Various	Various	1 x SFP	Yes

Manageable Slide-in Modules

Part Number	Optical Speed	Optical Mode	Wavelength	Distance	Optical Connector	Wide Temp.
IMC-784I-SFP	10/100/1000 Mbps	Various	Various	Various	2 x SFP	Yes
IMC-782-SFP	10/100/1000 Mbps	Various	Various	Various	1 x SFP	No
IMC-762-SST	10/100 Mbps	Single-Strand	1310T/1550R	20 km	1 x SC	No
IMC-762-SSR	10/100 Mbps	Single-Strand	1550T/1310R	20 km	1 x SC	No
IMC-762-SSET	10/100 Mbps	Single-Strand	1310T/1550R	40 km	1 x SC	No
IMC-762-SSER	10/100 Mbps	Single-Strand	1550T/1310R	40 km	1 x SC	No
IMC-762-SFP	10/100 Mbps	Various	-	Various	1 x SFP	No
IMC-721I-MMST	DS1	Multi-Mode	1310nm	40 km	1 x ST	Yes
IMC-721I-MM	DS1	Multi-Mode	1310nm	40 km	1 x SC	Yes
IMC-721I-SEST	DS1	Single-Mode	1300nm	5 km	1 x ST	Yes
IMC-721I-SE	DS1	Single-Mode	1300nm	5 km	1 x SC	Yes
IMC-721I-SL	DS1	Single-Mode	1310nm	80 km	1 x SC	Yes
IMC-721I-SST	DS1	Single-Strand	1310T/1550R	20 km	1 x SC	Yes
IMC-721I-SSR	DS1	Single-Strand	1550T/1310R	20 km	1 x SC	Yes
IMC-721I-SSET	DS1	Single-Strand	1310T/1550R	40 km	1 x SC	Yes
IMC-721I-SSER	DS1	Single-Strand	1550T/1310R	40 km	1 x SC	Yes
IMC-721I-SFP	DS1	Various	Various	Various	1 x SFP	Yes
IMC-721I-T1MUX	DS1	Various	Various	Various	2 x SFP	Yes
IMC-721I-E1MUX	DS1	Various	Various	Various	2 x SFP	Yes

Compact/Miniature Media Converter

Advantech provides ultra-small industrial media converters measuring only 3.5 x 2 inches. Compliant with our centralized powered chassis, the media converters can be easily installed sharing a central power source, saving much space and elevating power usage efficiency.

These media converters can be installed anywhere a network connection is needed. In addition, these media converters feature automatic link restoration for network reinstatement. They also increase the scalability of a network by providing rate conversion, distance extension, and multiple types of fixed fiber connectors or open slots for Small Form-Factor Pluggable (SFP) connections.

IMC-300
Miniature Media Converters

Featuring ultra-small design, the miniature media converters fit almost every corner of your application. Using them with a centralized powered chassis will highly increase space and power usage efficiency.

- Measuring only 3.5 x 2 inches
- Supports Link Fault Pass Through (LFPT)
- The centralized powered chassis allows for multiple Advantech miniature media converters sharing a central power source in one chassis

IMC-400
Compact Media Converters

The compact media converters is built with embedded power supply(s) and can free users from purchasing extra power sourcing devices, saving cost, and reducing wiring complexity.

- Supports internal AC power supply
- Supports automatic link restoration
- Provides rate conversion, distance extension, multiple types of fixed fiber connectors or open slots for Small Form-Factor Pluggable (SFP) connections

Compact Media Converter Series

Part Number	Ethernet Speed	Optical Mode	Wavelength	Distance	Optical Connector
IMC-450-MM	10/100 Mbps	Multi-Mode	1300 nm	5 km	SC / ST
IMC-450-SE	10/100 Mbps	Single-Mode	1310 nm	40 km	SC / ST
IMC-450-SL	10/100 Mbps	Single-Mode	1310 nm	80 km	SC / ST
IMC-470-MM	10/100/1000 Mbps	Multi-Mode	850 nm	550 m	SC
IMC-470-M1	10/100/1000 Mbps	Multi-Mode	1300 nm	2 km	SC
IMC-470-SM	10/100/1000 Mbps	Single-Mode	1310 nm	10 km	SC
IMC-470-SE	10/100/1000 Mbps	Single-Mode	1310 nm	40 km	SC
IMC-470-SFP	10/100/1000 Mbps	Various	Various	Various	SFP

10/100Mbps Miniature Media Converter

Part Number	Optical Mode	Wavelength	Distance	Optical Connector
IMC-350-M8ST-PS-A	Multi-Mode	850 nm	2 km	ST
IMC-350-M8ST-A	Multi-Mode	850 nm	2 km	ST
IMC-350-M8-PS-A	Multi-Mode	850 nm	2 km	SC
IMC-350-M8-A	Multi-Mode	850 nm	2 km	SC
IMC-350-USB-A	Multi-Mode	850 nm	2 km	SC
IMC-350-MMST-PS-A	Multi-Mode	1300 nm	5 km	ST
IMC-350-MMST-A	Multi-Mode	1300 nm	5 km	ST
IMC-350-MM-PS-A	Multi-Mode	1300 nm	5 km	SC
IMC-350-MM-A	Multi-Mode	1300 nm	5 km	SC
IMC-350-SEST-PS-A	Single-Mode	1310 nm	40 km	ST
IMC-350-SEST-A	Single-Mode	1310 nm	40 km	ST
IMC-350-SE-PS-A	Single-Mode	1310 nm	40 km	SC
IMC-350-SE-A	Single-Mode	1310 nm	40 km	SC
IMC-350-SL-PS-A	Single-Mode	1310 nm	80 km	SC
IMC-350-SL-A	Single-Mode	1310 nm	80 km	SC
IMC-350-SSMT-PS-A	Single-Strand	1310T/1550R	2 km	SC
IMC-350-SSMR-PS-A	Single-Strand	1550T/1310R	2 km	SC
IMC-350-SST-PS-A	Single-Strand	1310T/1550R	20 km	SC
IMC-350-SSR-PS-A	Single-Strand	1550T/1310R	20 km	SC
IMC-350-SFP-PS-A	Various	Various	Various	SFP
IMC-350-SFP-A	Various	Various	Various	SFP

Industrial Grade 10/100Mbps Miniature Media Converter with PoE-PD

Part Number	Optical Mode	Wavelength	Distance	Optical Connector
IMC-350I-M8ST-PS-A	Multi-Mode	850 nm	2 km	ST
IMC-350I-M8ST-A	Multi-Mode	850 nm	2 km	ST
IMC-350I-M8-PS-A	Multi-Mode	850 nm	2 km	SC
IMC-350I-M8-A	Multi-Mode	850 nm	2 km	SC
IMC-350I-MMST-PS-A	Multi-Mode	1300 nm	5 km	ST
IMC-350I-MMST-A	Multi-Mode	1300 nm	5 km	ST
IMC-350I-MM-PS-A	Multi-Mode	1300 nm	5 km	SC
IMC-350I-MM-A	Multi-Mode	1300 nm	5 km	SC
IMC-350I-SEST-PS-A	Single-Mode	1310 nm	40 km	ST
IMC-350I-SEST-A	Single-Mode	1310 nm	40 km	ST
IMC-350I-SE-PS-A	Single-Mode	1310 nm	40 km	SC
IMC-350I-SE-A	Single-Mode	1310 nm	40 km	SC
IMC-350I-SL-PS-A	Single-Mode	1310 nm	80 km	SC
IMC-350I-SST-PS-A	Single-Strand	1310T/1550R	20 km	SC
IMC-350I-SST-A	Single-Strand	1310T/1550R	20 km	SC
IMC-350I-SSR-PS-A	Single-Strand	1550T/1310R	20 km	SC
IMC-350I-SSR-A	Single-Strand	1550T/1310R	20 km	SC
IMC-350I-SFP-PS-A	Various	Various	Various	SFP

10/100/1000Mbps Miniature Media Converter

Part Number	Optical Mode	Wavelength	Distance	Optical Connector
IMC-370-MM-PS-A	Multi-Mode	850 nm	550 m	SC
IMC-370-MMST-PS-A	Multi-Mode	850 nm	550 m	ST
IMC-370-SM-PS-A	Single-Mode	1310 nm	10 km	SC
IMC-370-SE-PS-A	Single-Mode	1310 nm	40 km	SC
IMC-370-SL-PS-A	Single-Mode	1550 nm	80 km	SC
IMC-370-SST-PS-A	Single-Strand	1310T/1550R	15 km	SC
IMC-370-SSR-PS-A	Single-Strand	1550T/1310R	15 km	SC
IMC-370-SFP-PS-A	Various	Various	Various	SFP

Industrial Grade 10/100/1000Mbps Miniature Media Converter

Part Number	Optical Mode	Wavelength	Distance	Optical Connector
IMC-370I-MM-A	Multi-Mode	850 nm	550 m	SC
IMC-370I-MM-PS-A	Multi-Mode	850 nm	15 km	SC
IMC-370I-SM-A	Single-Mode	1310 nm	15 km	SC
IMC-370I-SM-PS-A	Single-Mode	1310 nm	15 km	SC
IMC-370I-SE-PS-A	Single-Mode	1310 nm	30 km	SC
IMC-370I-SST-PS-A	Single-Strand	1310T/1550R	15 km	SC
IMC-370I-SSR-PS-A	Single-Strand	1550T/1310R	15 km	SC
IMC-370I-SFP-A	Various	Various	Various	SFP
IMC-370I-SFP-PS-A	Various	Various	Various	SFP

For IMC-350 and IMC-370 series, "-PS-A" means a universal power adapter with US/EU/UK/AU/JP plugs are included
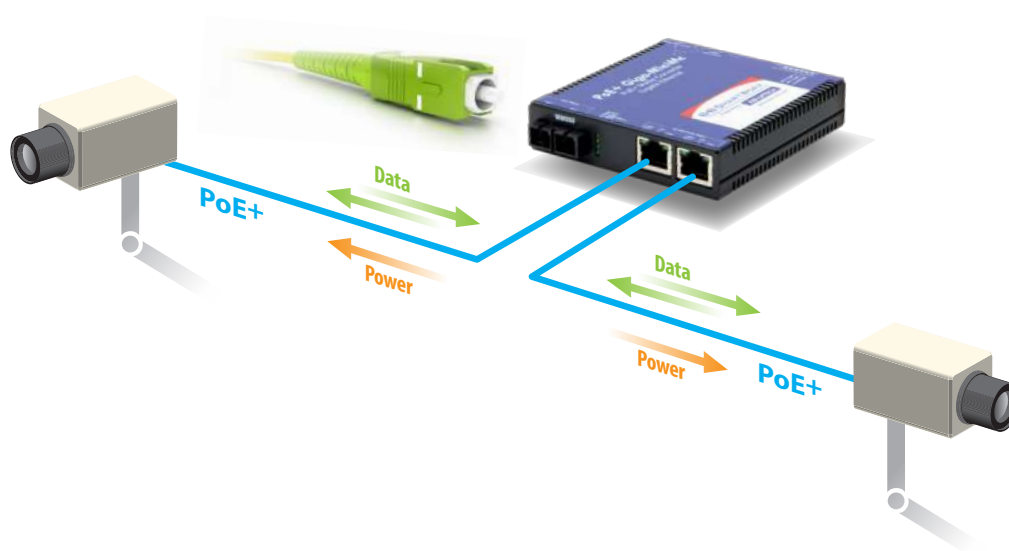
PoE+/ PoE Media Converter

Multi-port media converters support both IEEE 802.3at (PoE+) and IEEE 802.3af (PoE) standards. The plug-and-play and PoE/ PoE+ capability features make this product line a valuable solution for Ethernet networks.

Featuring two 10/100/1000Base-T copper UTP ports, one SFP or fixed fiber transceiver for network connection, the PoE media converters serve as Power Source Equipment (PSE) devices that can support up to a total power budget of 60 watts. The IMC-390 series is capable of powering up two Powered Devices (PD) over standard CAT5 (or higher level) cable, whereas the IMC-380 can power one PD device over one copper port while transmitting data over the other port.

The Link Fault Pass Through (LFPT) feature works perfectly with TX LinkLoss (Twisted pair, copper interface) and FX LinkLoss (Fiber, fiber interface) when two media converters work in pair: one as a local device and the other as a remote device. One media converter will send link fault signals to the media converter partner to make sure it is still operating. When one media converter notices its partner is no longer available, it will stop transmitting data to the failed partner.
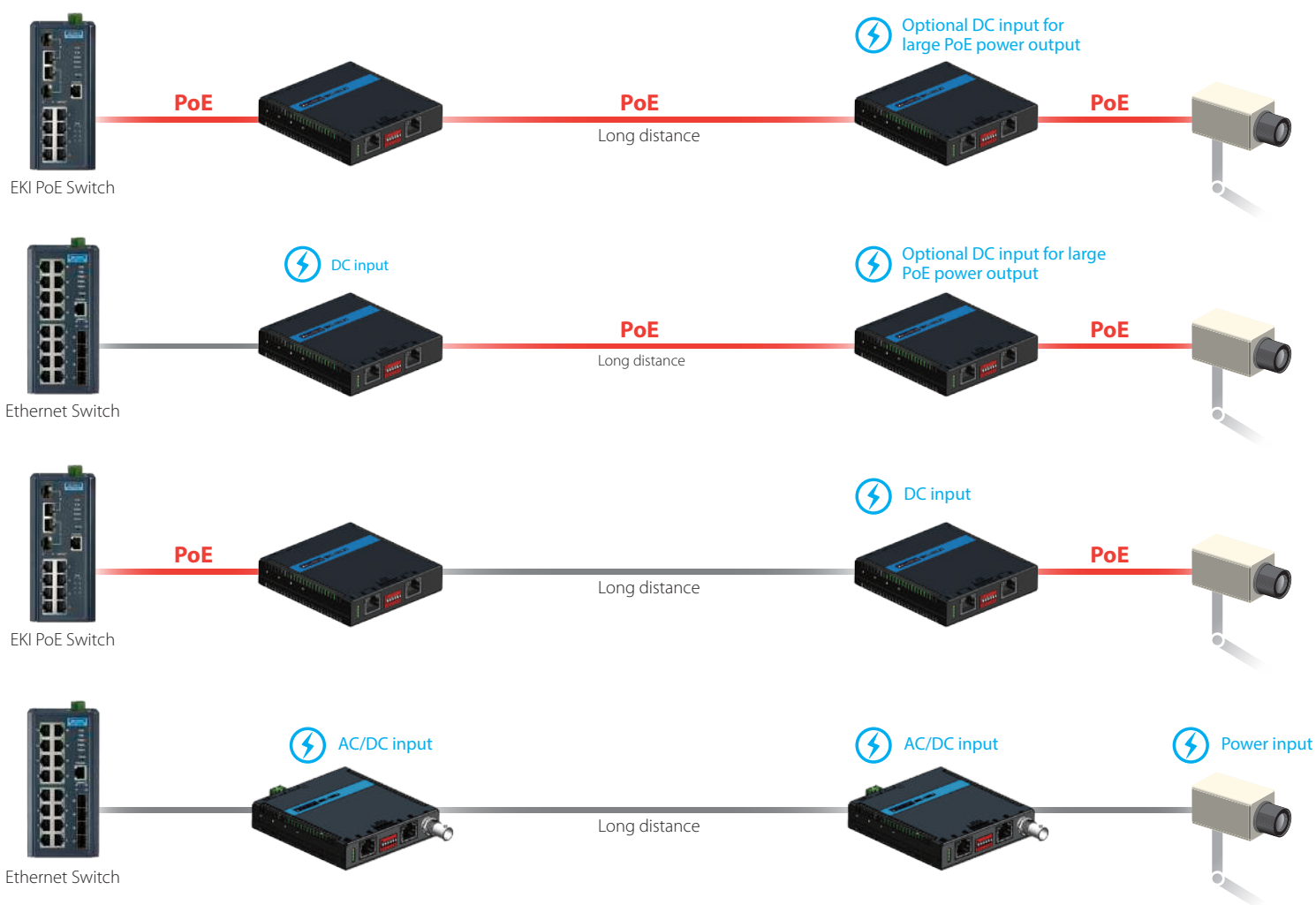
1 Gbps PoE & PoE+ Media Converter w/ 2 x RJ-45

Part Number	PSE	Optical Mode	Wavelength	Distance	Optical Connector	Internal Power
IMC-380-SFP	1 x PoE	Various	Various	Various	SFP	No
IMC-390-MM	2 x PoE+	Multi-Mode	850 nm	550 m	SC	No
IMC-390-M1	2 x PoE+	Multi-Mode	1310 nm	2 km	SC	No
IMC-390-SM	2 x PoE+	Single-Mode	1310 nm	15 km	SC	No
IMC-390-SFP	2 x PoE+	Various	Various	Various	SFP	No
IMC-480-M8	1 x PoE	Multi-Mode	850 nm	2 km	SC	Yes
IMC-480-M8ST	1 x PoE	Multi-Mode	850 nm	2 km	ST	Yes
IMC-480-MM	1 x PoE	Multi-Mode	1300 nm	5 km	SC	Yes
IMC-480-MMST	1 x PoE	Multi-Mode	1300 nm	5 km	ST	Yes
IMC-480-SE	1 x PoE	Single-Mode	1310 nm	40 km	SC	Yes
IMC-480-SEST	1 x PoE	Single-Mode	1310 nm	40 km	ST	Yes
IMC-490-MM	1 x PoE+	Multi-Mode	850 nm	550 m	SC	Yes
IMC-490-M1	1 x PoE+	Multi-Mode	1300 nm	2 km	SC	Yes
IMC-490-SM	1 x PoE+	Single-Mode	1310 nm	10 km	SC	Yes
IMC-490-SFP	1 x PoE+	Various	Various	Various	SFP	Yes

Industrial Long-Reach Ethernet Extender

Injecting data and power together, the IMC-150LPI and IMC-150LI are brand new leading products which break the 100-meter limitation to extend Ethernet transmission distance. The extender is flexible and freely extends existing Ethernet networks to reach remote IP devices. Compliant with IEEE 802.3at PoE+ standard, it delivers power over cable without the distance limitations of traditional copper wires. DIP switches for various LAN rates strike the perfect balance of rates and distances for each device.

Optional DC input for large PoE power output

PoE   PoE   Long distance   PoE

EKI PoE Switch

DC input   **Optional DC input for large PoE power output**

PoE   Long distance   PoE

Ethernet Switch

PoE   **DC input**   Long distance   PoE

EKI PoE Switch

AC/DC input   **AC/DC input**   **Power input**

Long distance

Ethernet Switch

Part Number	Ethernet Speed	PoE+	UTP	Coaxial
IMC-150LPI	10/100 Mbps	PSE/PD	2 x RJ-45	-
IMC-150LI	10/100 Mbps	-	2 x RJ-45	1 x BNC

SFP Modules

The SFP (small form-factor pluggable) is a hot-swappable optical module transceiver in a compact size with a variety of transmitter and receiver specifications for data communications. When a user need a transmission service between destinations further than 100 meters and beyond where traditional copper cables can reach, SFP modules can easily solve these problems.

Industrial Grade 1.25 Gbps SFP Modules w/ DDM

Part Number	Wavelength	Optical Mode	Distance	Optical Connector	Sensitivity (dB)
SFP-GMM-550	850 nm	Multi-Mode	550 m	LC	-17
SFP-GMM-2K	1310 nm	Multi-Mode	2 km	LC	-19
SFP-GSM-20K	1310 nm	Single-Mode	20 km	LC	-23
SFP-GSM-30K	1310 nm	Single-Mode	30 km	LC	-24
SFP-GSM-40K	1550 nm	Single-Mode	40 km	LC	-24
SFP-GSS-40KTX-LC	1310T/1550R	Single-Strand	40 km	LC	-23
SFP-GSS-40KRX-LC	1550T/1310R	Single-Strand	40 km	LC	-23
SFP-GS4-70KTX-LC	1490T/1550R	Single-Strand	70 km	LC	-24
SFP-GS4-70KRX-LC	1550T/1490R	Single-Strand	70 km	LC	-24
SFP-GSS-20KTX	1310T/1550R	Single-Strand	20 km	SC	-23
SFP-GSS-20KRX	1550T/1310R	Single-Strand	20 km	SC	-23
SFP-GSS-40KTX	1310T/1550R	Single-Strand	40 km	SC	-23
SFP-GSS-40KRX	1550T/1310R	Single-Strand	40 km	SC	-23
SFP-GS4-70KTX	1490T/1550R	Single-Strand	70 km	SC	-24
SFP-GS4-70KRX	1550T/1490R	Single-Strand	70 km	SC	-24

Industrial Grade 1.25 Gbps SFP Modules

Part Number	Wavelength	Optical Mode	Distance	Optical Connector	Sensitivity (dB)
SFP-GSX/LCI-AE	850 nm	Multi-Mode	550 m	LC	-17
SFP-GLX/LCI-10E	1310 nm	Single-Mode	10 km	LC	-20
SFP-GLX/LCI-20E	1310 nm	Single-Mode	20 km	LC	-23
SFP-GLX/LCI-40E	1310 nm	Single-Mode	40 km	LC	-23

1.25 Gbps SFP Modules

Part Number	Wavelength	Optical Mode	Distance	Optical Connector	Sensitivity (dB)
SFP-GSX/LC-AE	850 nm	Multi-Mode	550 m	LC	-17
SFP-GLX/LC-10E	1310 nm	Single-Mode	10 km	LC	-20
SFP-GLX/LC-20E	1310 nm	Single-Mode	20 km	LC	-23
SFP-GLX/LC-40E	1310 nm	Single-Mode	40 km	LC	-23

Industrial Grade 100-155 Mbps SFP Modules w/ DDM

Part Number	Wavelength	Optical Mode	Distance	Optical Connector	Sensitivity (dB)
SFP-FMM850-2K	850 nm	Multi-Mode	2 km	LC	-26
SFP-FMM-2K	1300 nm	Multi-Mode	2 km	LC	-32
SFP-FSM-20K	1310 nm	Single-Mode	20 km	LC	-35
SFP-FSM-40K	1310 nm	Single-Mode	40 km	LC	-36
SFP-FSM-80K	1310 nm	Single-Mode	80 km	LC	-36
SFP-FSS-20KTX	1310T/1550R	Single-Strand	20 km	SC	-32
SFP-FSS-20KRX	1550T/1310R	Single-Strand	20 km	SC	-32
SFP-FSS-40KTX	1310T/1550R	Single-Strand	40 km	SC	-34
SFP-FSS-40KRX	1550T/1310R	Single-Strand	40 km	SC	-34

Industrial Grade 100-155 Mbps SFP Modules

Part Number	Wavelength	Optical Mode	Distance	Optical Connector	Sensitivity (dB)
SFP-FXM/LCI-AE	1310 nm	Multi-Mode	2 km	LC	-32
SFP-FXS/LCI-30E	1310 nm	Single-Mode	30km	LC	-34

Industrial Grade 10 Gbps SFP+ & XFP Modules w/ DDM

Part Number	Wavelength	Optical Mode	Distance	Optical Connector	Sensitivity (dB)
SFP-XMM-33	850 nm	Multi-Mode	33 m	LC	-9.9
SFP-XSM-10K	1310 nm	Single-Mode	10 km	LC	-14.4
SFP-XMM-33-XFP	850 nm	Multi-Mode	33 m	LC	-9.9
SFP-XSM-10K-XFP	1310 nm	Single-Mode	10 km	LC	-14.4
SFP-XSM-40K-XFP	1550 nm	Single-Mode	40 km	LC	-16
SFP-XSM-80K-XFP	1550 nm	Single-Mode	80 km	LC	-23

Copper SFP Modules

Part Number	Speed	Distance	Wide Temp.
SFP-GTX	10/100/1000 Mbps	100 m	-
SFP-GTXB	1000 Mbps	100 m	-
SFP-GTX/RJ45I-AE	1000 Mbps	100 m	Yes

Fiber Optic Cable Construction

BUFFER:
A hard plastic coating applied to the core and cladding for protection.

CLADDing: (125 μm outer diameter)
Surrounds the core and keeps light inside the core with its internal mirror-like reflectivity

CORE:
62.5μm Diameter- Multimode. 850nm and 1300 nm wavelengths.
50μm Diameter- Multimode. 850 nm and 1300 nm wavelengths
9μm Diameter- Singlemode. 1310nm and 1550 nm wavelengths

ARAMID FIBERS:
Strength members that give the cable pulling strength. Often made by DuPont and referred to as Keclar®.

JACKET:
Outer protective cover made of PVC plastic or plenum, flame-retardant compounds. (The color orange is standard for multi-mode cable, and yellow is standard for single-mode cable.)
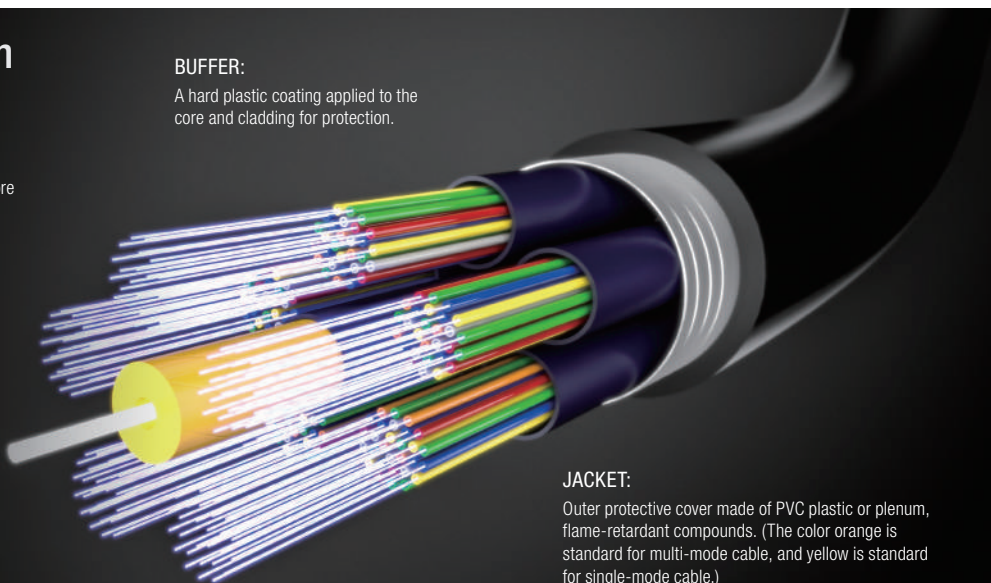
| The ST Connector	The SC connector	The LC connector
Uses a bayonet locking system which is the most common connector.	Has a molded body and a push-pull system.	Small-form-factor connector, features a ceramic ferrule and looks like a mini SC connector.

Multi-Mode vs. Single-Mode Total Internal Reflection
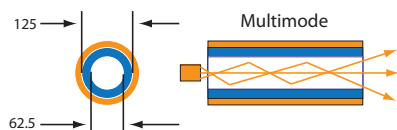
- For use in general data and voice fiber applications
- Used in LANs and over short distances
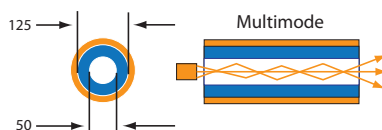
- For use in new construction and installations
- Provides more bandwidth than 62.5/125 at 850 nm wavelengths
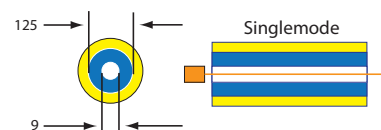
- 50 times more distance than multimode

Core   Cladding   Buffer Coating (diameters vary)

Multi-Mode Optical Fiber Specifications

Category	Maximum attenuation (dB/km)		Minimum model bandwidth (MHz x km)		
			Overfilled launch		"Laser" launch
	850 nm	1300 nm	850 nm	1300 nm	850 nm
OM1	3.5	1.5	200	500	Not specified
OM2	3.5	1.5	500	500	Not specified
OM3	3.5	1.5	1500	500	2000

Single-Mode Optical Fiber Specifications

Wavelength (nm)	Maximum attenuation (dB/km)	
	OS1	OS2
1310	1.0	0.4
1383	Not specified	0.4
1550	1.	0.4

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