



IMC-1000M

10/100/1000Base-T to 100/1000Base-SX/LX
Managed Fiber Converter

IMC-1000MS

10/100/1000Base-T to 100/1000Base-X SFP
Managed Fiber Converter

IMC-1000M(S) models are managed Gigabit media converters that support conversion between electrical 10/100/1000Base-T and optical 100/1000Base-X Ethernet. Housed in rugged DIN rail or wall mountable enclosures, these converters are designed for harsh environments, such as industrial networking and intelligent transportation systems (ITS) and are also suitable for many military and utility market applications where environmental conditions exceed commercial product specifications. The converters are Web, SNMP or In-Band managed with an easy to use user interface for Operation, Administration, Maintenance & Provisioning, including bandwidth control, speed, VLAN, Diagnostic, storm filter or converter configurations. The network administrator can manage IMC-1000M(S) via standard SNMP manager such as SmartView. It also provide loop-back test and dying gasp, and can be monitored from a centrally located OAM-enabled FRM220-1000MS converter via remote in-band management.

Features

- Conversion between 10/100/1000Base-T and 100/1000Base-X Fiber cable interface
- Supports Dual Rate (100/1000) SFP for selectable Fast or Gigabit speed on fiber
- Redundant dual DC input power 12/24/48VDC (9.6 ~ 60VDC)
- IP30 rugged metal housing and fanless
- Wide operating temperature -20~75°C (IMC-1000M(S)-E)
- UL60950-1, CE, FCC, RailWay traffic EN50121-4 certification
- Industrial grade EMS, EMI EN61000-6-2, EN61000-6-4 certification
- MIB counters
- Supports LFPT (Link Fault Pass Through)
- Auto Laser Shutdown (ALS)
- Supports SmartView for centralized management (Figure 1)
- Web management (Figure 3)
- SNMP management (Figure 1)
- Supports 16 IEEE 802.1Q Tag VLAN Group
- SNMP alarm trap for power loss and port link down
- Supports in-band management from FRM220 Chassis With FRM220-1000MS (Figure 2)
- Remote loop-back test
- Dying gasp (remote power failure detection)

Specifications

Standard	IEEE802.3 10Base-T 10Mbit/s Ethernet IEEE802.3u 100Base-TX, 100Base-FX, Fast Ethernet IEEE802.3ab 1000Base-TX Gbit/s Ethernet over twisted pair IEEE802.3z 1000Base-X Gbit/s Ethernet over Fiber-optic IEEE802.3x Flow Control and Back pressure IEEE802.3ah OAM management	LED	RJ-45 port: Speed: 10 (OFF), 100 (Green), 1000 (Yellow) LNK/ACT for RJ45(Green): ON : Connected to network/ OFF: Not connected to network/ BLK: Networking is active
Fiber Ports	100Base-X or 1000Base-X set by Web Supports Auto Laser Shutdown (ALS)	Reverse Polarity Protection	Present for power Input
RJ45 Ports	10/100/1000Base-T	Overload Current Protection	Present
CPU watch dog	Present	Power Supply	12/24/48VDC (9.6~60VDC) , Redundant power with polarity reverse protect function and removable terminal block Provide DC Power JACK adapter cable for external power adapter
Push Button	Reset, Load default setting	Alarm Relay Contact	Relay outputs with current carrying capacity of 1 A @24VDC Relay alarm output for power fail or port link down
Jumbo Frame	9K bytes	Removable Terminal Block	Provide 2 redundant power, alarm relay contact, 7 Pin
Fiber Parameters	Fiber Cable (Multi-mode): 50/125um,62.5/125um Fiber Cable (Single-mode): 9/125um Wavelength: 1310nm (Multi-mode/Single-mode) Available distance: 500M (Multi-mode SX) 20KM (Single-mode) 40KM (Single-mode) (IMC-1000M, IMC-1000M-E) SFP, Distance depend on plug-in Fiber Transceiver (IMC-1000MS, IMC-1000MS-E)	Power Consumption	4.8 W
Link Fault Pass Through (LFPT)	TX-Fiber: If TX port link down, the media converter will force Fiber port to link down Fiber-TX: If Fiber port link down, the media converter will force TX port to link down	Operating Humidity	5% ~ 95% (Non-condensing)
Connector	Fiber: SC (Multi-mode, 500M), SC (Single-mode, 20KM, 40KM) (IMC-1000M, IMC-1000M-E) SFP Slot (IMC-1000MS, IMC-1000MS-E) RJ-45: CAT 5e (10/100/1000Mbps) Twisted Pair cable Auto MDI/MDI-X and Auto-Negotiation Function Supports	Operating Temperature	-10° ~ 60°C (IMC-1000M, IMC-1000MS) -20 ~ 75°C (IMC-1000M-E, IMC-1000MS-E)
LED	Per Unit : Power 1 (Green), Power 2 (Green), Fault (Amber) Fiber LNK/ACT (Green): ON: Connected to network OFF: Not connected to network BLK: Receive /Transmit Data Fiber speed : Yellow : 1000Base-X Green : 100Base-X	Storage Temperature	-40 ~ 85°C
		Housing	Rugged Metal, IP30 Protection and fanless
		Dimensions	106 x 38.6 x 142.1mm (D x W x H)
		Weight	0.63kg (IMC-1000M, IMC-1000M-E) 0.62kg (IMC-1000MS, IMC-1000MS-E)
		Installation	DIN Rail mounting or wall mounting
		MTBF	544,905 hrs (IMC-1000MS, IMC-1000MS-E) (MIL-HDBK-217) 559,059 hrs (IMC-1000MS, IMC-1000MS-E) (MIL-HDBK-217)
		Warranty	5 years

Certification	
EMI	CE
EMI (Electromagnetic Interference)	FCC Part 15 Subpart B Class A, CE EN55022 Class A
Railway Traffic	EN50121-4
Immunity for Heavy Industrial Environment	EN61000-6-2
Emission for Heavy Industrial Environment	EN61000-6-4

EMS	EN61000-4-2 (ESD) Level 3, Criteria B
	EN61000-4-3 (RS) Level 3, Criteria A
	EN61000-4-4 (Burst) Level 3, Criteria A
	EN61000-4-5 (Surge) Level 3, Criteria B
	EN61000-4-6 (CS) Level 3, Criteria A
	EN61000-4-8 (PFMF, Magnetic Field) Field Strength: 300A/m, Criteria A
Safety	UL60950-1
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6

Software Specifications

SNMP or Web management Mode (Figure 1, 3)

Management	Ingress/Egress bandwidth control with 64K granularity Web management, Firmware upgrade via Web Supports SNMP, MIB for management Supports DHCP client for automatic IP configuration Supports 802.1Q tag VLAN, 16 Tag VLAN group, MIB counters display
Configuration	IP configuration, password setting, converter configuration, port configuration, MIB counter, SNMP configuration, VLAN group configuration, alarm configuration
Diagnostic & Monitor	Supports Link Fault Pass-Through (LFPT) Function Broadcast/Multicast/Unicast storm filter SNMP alarm trap for power loss and port link Up/Down

In-Band Remote mode (Figure 2)

Management	Supports in-band management from FRM220 Chassis With FRM220-1000MS card Ingress/Egress bandwidth control with 64K granularity
Configuration	IP configuration, converter configuration, port configuration, MIB counter, VLAN group configuration, alarm configuration
Diagnostic & Monitor	Remote loop-back test Dying gasp (remote power failure detection) Supports Link Fault Pass-Through (LFPT) Function Broadcast/Multicast/Unicast storm filter

Application

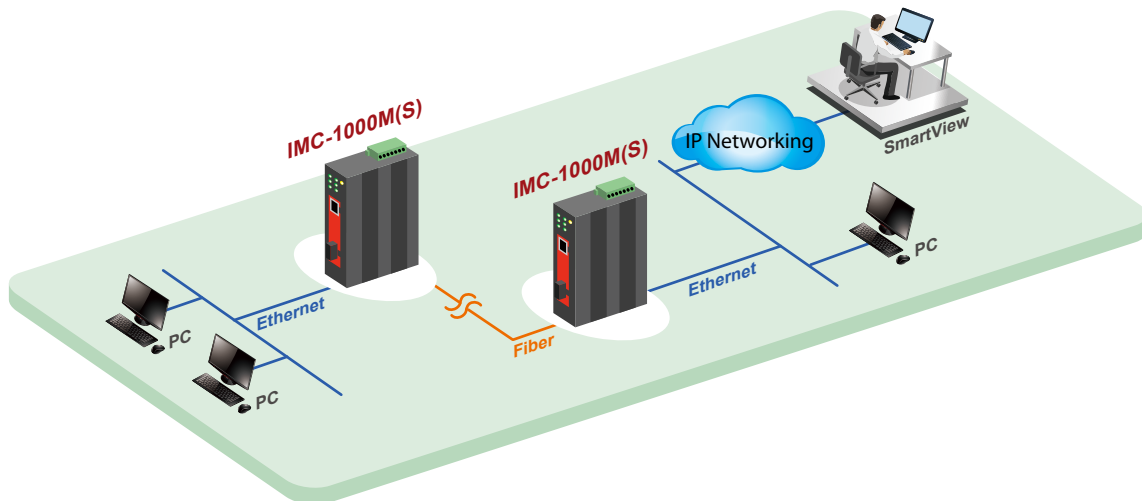


Figure 1 : IMC-1000M(S) Management by SNMP, SmartView

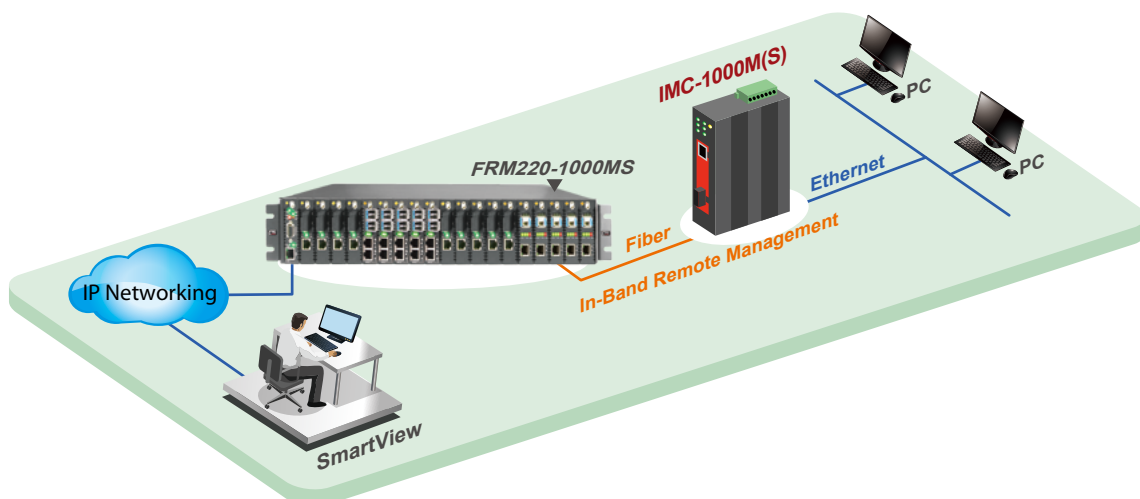


Figure 2 : IMC-1000M(S) Application in Remote, in-Band Management

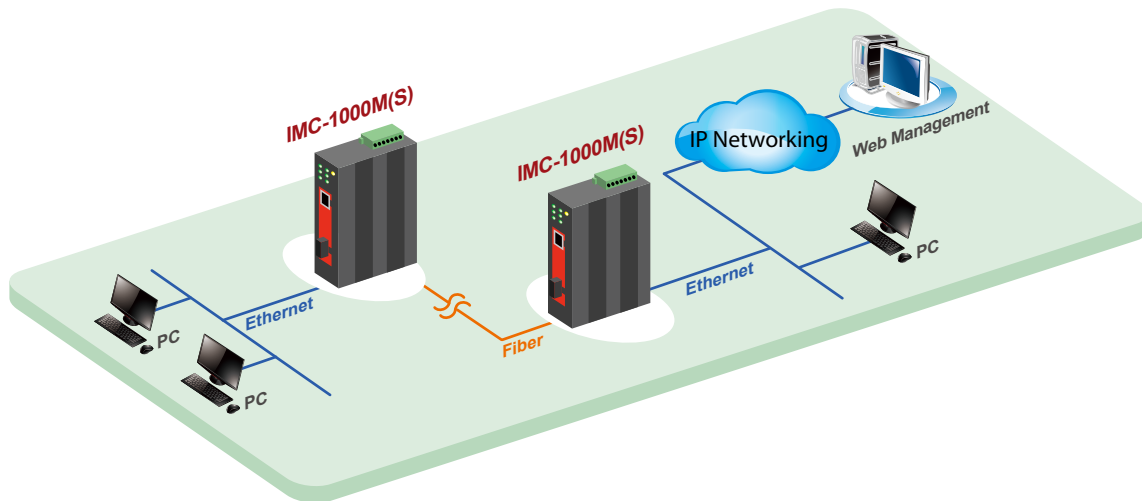
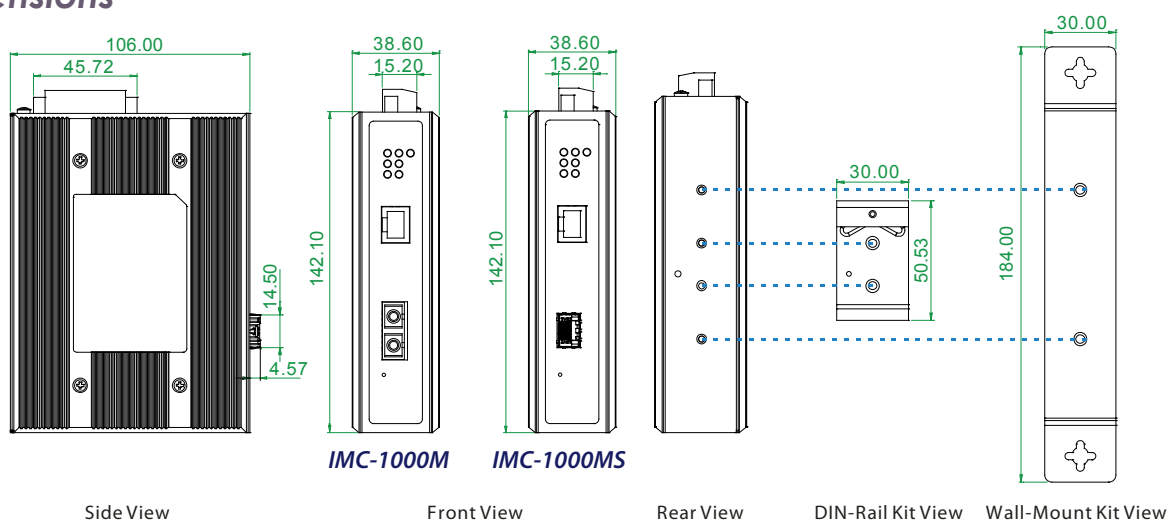


Figure 3 : IMC-1000M(S) Application in Web Management

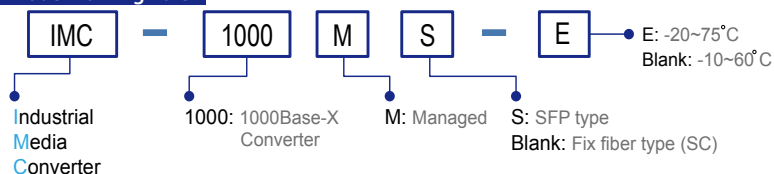
Dimensions



Ordering Information

Model Name	Managed	Connectivity		Safety UL60950-1	Certification			CE	FCC	Operating Temperature
		UTP 10/100/1000 Base-T	Fiber Dual Speed 100/1000Base-X		Railway EN50121-4	EN61000-6-2 EN61000-6-4				
IMC-1000M	V	1	1 SC	V	V	V	V	V	V	-10~60 C
IMC-1000M-E	V	1	1 SC	V	V	V	V	V	V	-20~75 C
IMC-1000MS	V	1	1 SFP	V	V	V	V	V	V	-10~60 C
IMC-1000MS-E	V	1	1 SFP	V	V	V	V	V	V	-20~75 C

Model Naming Rule

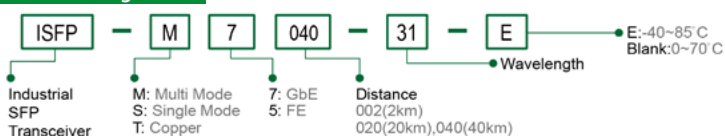


Connector Type	Connectivity Distance
SC	001:500M (M/M) 002 : 2km (M/M) 020:20km (S/M) 040:40km (S/M)
(IMC-1000M, IMC-1000M-E only)	020A: WDM 20km A type (TX:1310nm) 020B: WDM 20km B type (TX: 1550nm)

Accessories

DR-4524	Industrial Power, Input 85 ~ 264VAC, Output 24VDC, 48W, -10 ~ +50°C
MDR-40-24	Industrial Power, Input 85 ~ 264VAC, Output 24VDC, 40W, -20 ~ +70°C
SFP Transceiver	Compatible, Reliable, 5-year Warranty

SFP Naming Rule



Example: **IMC - 1000M - E - SC002**