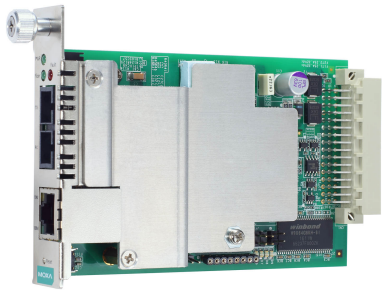# CSM-400 Series

Inroi

Managed 10/100BaseT(X) to 100BaseFX slide-in modules for the NRack System™

Features and Benefits

- LFP (Link Fault Pass-Through) and FEF (Far End Fault)
- Supports store-and-forward mode and pass-through mode
- Auto-negotiation
- Supports IEEE 802.3AH OAM protocol
- Plug and play
- Hot-swappable
- IP-based remote management
- Supports WDM type modules

Certifications

c(UL)us LISTED   CE   FC

Introduction

The CSM-400 Series consists of slide-in Ethernet-to-fiber managed media converters for the NRack System™. The modules provide media conversion from 10/100BaseT(X) to 100BaseFX (with SC/ST connectors), and can be installed in any NRack System™ chassis. The CSM-400 modules support LFP and FEF for easily tracing network link failures, and support store-and-forward and pass-through modes, 802.3AM OAM for remote management and monitoring, as well as WDM-type fiber modules to reduce fiber cable cost.

Specifications

Ethernet Interface

10/100BaseT(X) Ports (RJ45 connector)	1
100BaseFX Ports (multi-mode ST connector)	CSM-400-1213: 1 CSM-400-1213: 1
100BaseFX Ports (multi-mode SC connector)	CSM-400-1214: 1 CSM-400-1214-T: 1
100BaseFX Ports (single-mode SC connector)	CSM-400-1218: 1 CSM-400-1218-T: 1
100BaseFX Ports, WDM-A Single-Mode SC Connector	CSM-400-1224: 1 CSM-400-1224-T: 1
100BaseFX Ports, WDM-B Single-Mode SC Connector	CSM-400-1225: 1 CSM-400-1225-T: 1

Optical Fiber			100BaseFX WDM-A	100BaseFX WDM-A
			Single-Mode	Single-Mode
	Fiber Cable Type		G.652	G.652
	Typical Distance		20 km	20 km
	Wavelength	Typical (nm)	1310/1550 nm	1550/1310 nm
		TX Range (nm)	1280 to 1340	1480 to 1600
		RX Range (nm)	1480 to 1600	1280 to 1340

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		100BaseFX WDM-A	100BaseFX WDM-A
		Single-Mode	Single-Mode
Fiber Cable Type		G.652	G.652
Optical Power	TX Range (dBm)	-5 to -15	-5 to -15
	RX Range (dBm)	-3 to -32	-3 to -32
	Link Budget (dB)	17	17
	Dispersion Penalty (dB)	1	1

Note: When connecting a single-mode fiber transceiver, we recommend using an attenuator to prevent damage caused by excessive optical power.
Note: Compute the "typical distance" of a specific fiber transceiver as follows: Link budget (dB) > dispersion penalty (dB) + total link loss (dB).

Magnetic Isolation Protection	1.5 kV (built-in)
Standards	IEEE 802.3u for 100BaseT(X) and 100BaseFX

Security Functions

Authentication	Local database (password only)
Encryption	HTTPS AES-128 RSA-1024 SHA-1 SHA-256
Security Protocols	SSHv2 HTTPS (TLS 1.2)

Power Parameters

Input Current	220 mA @ 12 VDC
Input Voltage	12 VDC
Overload Current Protection	Supported
Power Consumption	220 mA @ 12 VDC

Physical Characteristics

Dimensions	86.8 x 124.3 x 21 mm (3.42 x 4.89 x 0.83 in)
Weight	CSM-400-1213/1214/1218 Series: 115 g (0.25 lb) CSM-400-1224/1225 Series: 125 g (0.28 lb)

Environmental Limits

Operating Temperature	Standard Models: -20 to 55°C (-4 to 131°F) Wide Temp. Models: -40 to 75°C (-40 to 167°F)
Storage Temperature (package included)	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)

Standards and Certifications

EMC	EN 55032/35
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV

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	IEC 61000-4-5 Surge: Power: 2 kV(AC), 1 kV(DC); Signal: 1 kV
	IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m; Signal: 3 V/m
	IEC 61000-4-8 PFMF
	IEC 61000-4-11
Environmental Testing	IEC 60068-2-1
	IEC 60068-2-14
	IEC 60068-2-2
	IEC 60068-2-3
Safety	EN 62368-1
	UL 62368-1
Vibration	IEC 60068-2-6

MTBF

Time	1,454,560 hrs
Standards	Telcordia (Bellcore), GB

Warranty

Warranty Period	5 years
Details	See www.moxa.com/warranty

Package Contents

Device	1 x CSM-400 Series module
Documentation	1 x quick installation guide
	1 x warranty card

Dimensions

CSM-400-1213

Unit: mm (inch)

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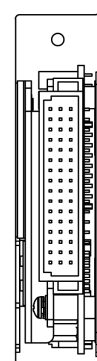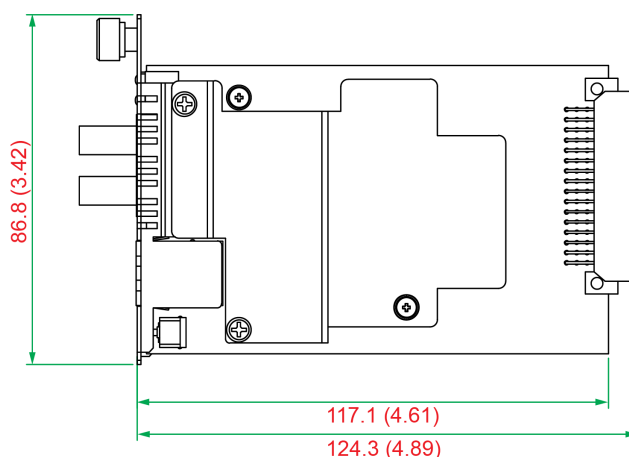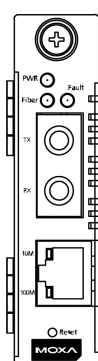
CSM-400-1214, CSM-400-1218

Unit: mm (inch)

86.8 (3.42)
117.1 (4.61)
124.3 (4.89)
21.0 (0.83)
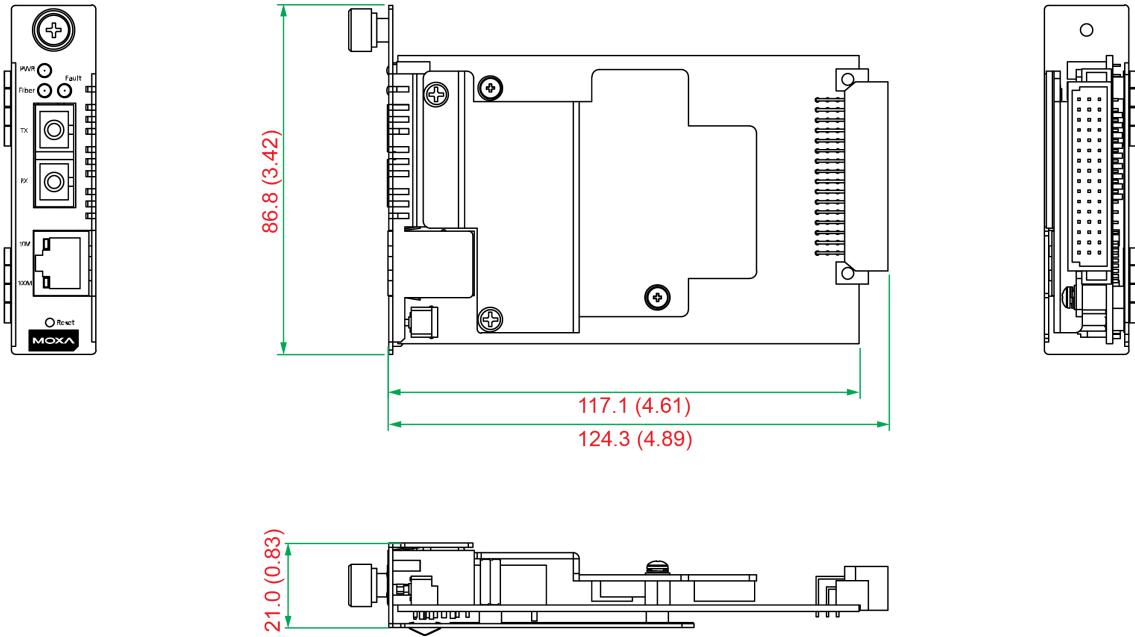
CSM-400-1224, CSM-400-1225

Unit: mm (inch)

86.8 (3.42)
117.1 (4.61)
124.3 (4.89)
21.0 (0.83)
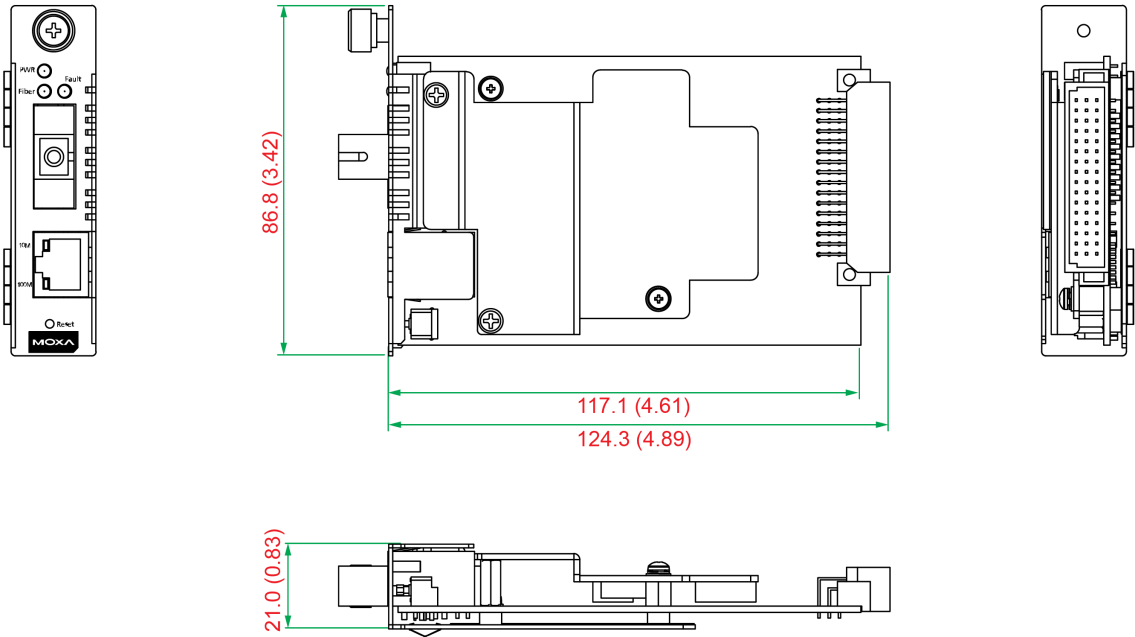
Ordering Information

Model Name	Operating Temp.	Fiber Module Type
CSM-400-1213	-20 to 55°C	Multi-mode ST
CSM-400-1213-T	-40 to 75°C	Multi-mode ST
CSM-400-1214	-20 to 55°C	Multi-mode SC
CSM-400-1214-T	-40 to 75°C	Multi-mode SC
CSM-400-1218	-20 to 55°C	Single-mode SC

Model Name	Operating Temp.	Fiber Module Type
CSM-400-1218-T	-40 to 75°C	Single-mode SC
CSM-400-1224	-20 to 55°C	WDM-A single-mode SC
CSM-400-1224-T	-40 to 75°C	WDM-A single-mode SC
CSM-400-1225	-20 to 55°C	WDM-B single-mode SC
CSM-400-1225-T	-40 to 75°C	WDM-B single-mode SC

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