

# CSM-400 Series

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



- > 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-swap
- > IP-based remote management
- > Supports WDM type modules



## Introduction

The CSM-400 modules are 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, 802.3AH OAM for remote management and monitoring, as well as WDM-type fiber modules to reduce fiber cable cost.

## Specifications

### Technology

#### Standards:

IEEE 802.3 for 10BaseT

IEEE 802.3u for 100BaseT(X), 100BaseFX

#### Interface

**RJ45 Ports:** 10/100BaseT(X)

**Fiber Ports:** 100BaseFX (SC/ST connectors)

**LED Indicators:** PWR, Fiber Link, 10/100M (TP port)

#### Optical Fiber

|                  |                         | 100BaseFX    |                              |              |
|------------------|-------------------------|--------------|------------------------------|--------------|
|                  |                         | Multi-Mode   |                              | Single-Mode  |
| Fiber Cable Type |                         | OM1          | 50/125 $\mu$ m<br>800 MHz*km | G.652        |
| Typical Distance |                         | 4 km         | 5 km                         | 40 km        |
| Wave-length      | Typical (nm)            | 1300         |                              | 1310         |
|                  | TX Range (nm)           | 1260 to 1360 |                              | 1280 to 1340 |
|                  | RX Range (nm)           | 1100 to 1600 |                              | 1100 to 1600 |
| Optical Power    | TX Range (dBm)          | -10 to -20   |                              | 0 to -5      |
|                  | RX Range (dBm)          | -3 to -32    |                              | -3 to -34    |
|                  | Link Budget (dB)        | 12           |                              | 29           |
|                  | Dispersion Penalty (dB) | 3            |                              | 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).

### Physical Characteristics

**Dimensions:** 86.8 x 124.3 x 21 mm (3.42 x 4.89 x 0.83 in)

#### Weight:

Product only:

CSM-400-1213/1214/1218: 115 g (0.25 lb)

CSM-400-1224/1225: 125 g (0.28 lb)

#### Packaged:

CSM-400-1213/1214/1218: 170 g (0.37 lb)

CSM-400-1224/1225: 180 g (0.40 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:** -40 to 85°C (-40 to 185°F)

**Ambient Relative Humidity:** 5 to 95% (non-condensing)

### Power Requirements

**Input Voltage:** 12 VDC

**Input Current:** 220 mA @ 12 VDC max.

### Standards and Certifications

**Safety:** UL 60950-1

**EMC:** EN 55032/24

**EMI:** CISPR 32, FCC Part 15B Class A

#### EMS:

EN 61000-4-2 (ESD): Contact: 4 kV; Air: 8 kV

EN 61000-4-3 (RS): 80 MHz to 1 GHz: 3 V/m

EN 61000-4-4 (EFT): Power: 1 kV; Signal: 0.5 kV

EN 61000-4-5 (Surge): Power: 1 kV; Signal: 0.5 kV

EN 61000-4-6 (CS): 150 kHz to 80 MHz: 3 V/m

EN 61000-4-8 (PFMF)

EN 61000-4-11

**Freefall:** IEC 60068-2-32

**MTBF** (mean time between failures)

**Time:** 1,454,560 hrs

**Standard:** Telcordia (Bellcore), GB

### Warranty

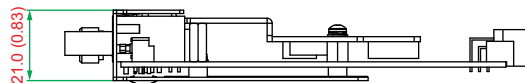
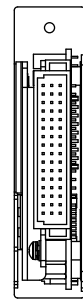
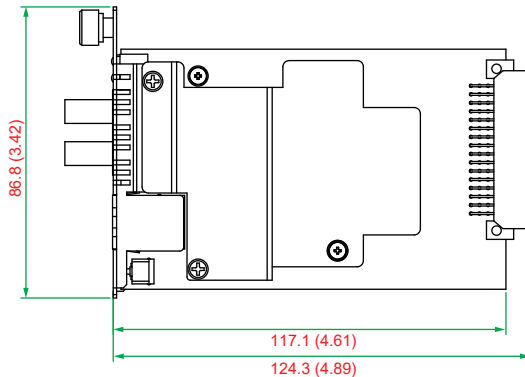
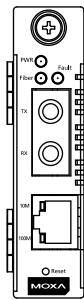
**Warranty Period:** 5 years

**Details:** See [www.moxa.com/warranty](http://www.moxa.com/warranty)

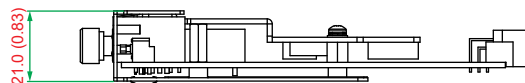
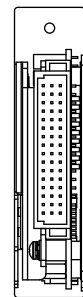
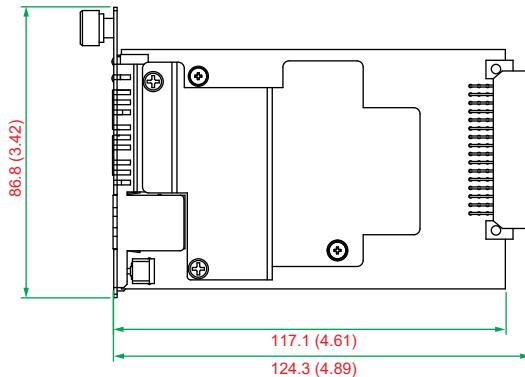
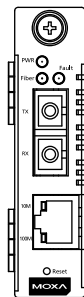
Dimensions

Unit: mm (inch)

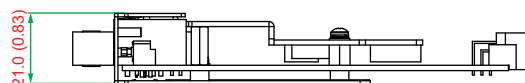
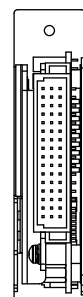
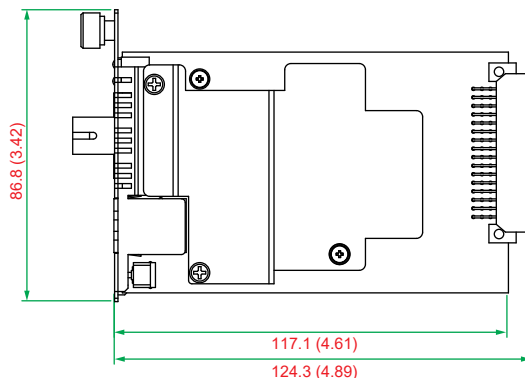
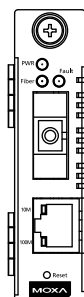
**CSM-400-1213**



**CSM-400-1214  
CSM-400-1218**



**CSM-400-1224  
CSM-400-1225**



## : Ordering Information

### Available Models

**CSM-400-1213:** 10/100BaseT(X) to 100BaseFX slide-in management module converter, multi-mode ST connector, -20 to 55°C

**CSM-400-1213-T:** 10/100BaseT(X) to 100BaseFX slide-in management module converter, multi-mode ST connector, -40 to 75°C

**CSM-400-1214:** 10/100BaseT(X) to 100BaseFX slide-in management module converter, multi-mode SC connector, -20 to 55°C

**CSM-400-1214-T:** 10/100BaseT(X) to 100BaseFX slide-in management module converter, multi-mode SC connector, -20 to 55°C

**CSM-400-1218:** 10/100BaseT(X) to 100BaseFX slide-in management module converter, single-mode SC connector, -40 to 75°C

**CSM-400-1218-T:** 10/100BaseT(X) to 100BaseFX slide-in management module converter, single-mode SC connector, -20 to 55°C

**CSM-400-1224:** 10/100BaseT(X) to 100BaseFX slide-in management module converter, WDM-A single-mode SC connector, -20 to 55°C

**CSM-400-1224-T:** 10/100BaseT(X) to 100BaseFX slide-in management module converter, WDM-A single-mode SC connector, -40 to 75°C

**CSM-400-1225:** 10/100BaseT(X) to 100BaseFX slide-in management module converter, WDM-B single-mode SC connector, -20 to 55°C

**CSM-400-1225-T:** 10/100BaseT(X) to 100BaseFX slide-in management module converter, WDM-B single-mode SC connector, -40 to 75°C

### Package Checklist

- 1 CSM-400 media converter
- Quick installation guide (printed)
- Warranty card