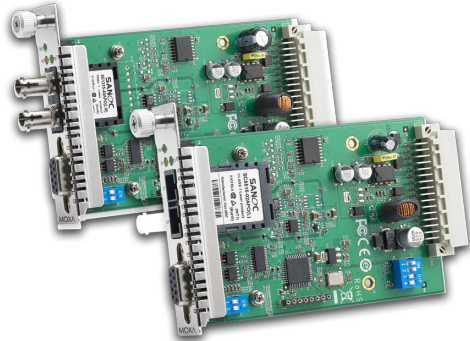# TCF-142-RM Series

RS-232/422/485 to fiber slide-in modules for the NRack System™

> **Extend RS-232/422/485 transmission up to:**
> ▪ **40 km with single mode**
> ▪ **5 km with multi-mode**
> **1K or 150K ohm adjustable pull high/low resistor**
> **"Ring" and "Point-to-Point" transmission supported**

The certification logos shown here apply to some or all of the products in this section. For details, see "Regulatory Approvals" under "Specifications" below.

Introduction

The TCF-142-RM series of serial-to-fiber converters are slide-in modules that work with the TRC-190 chassis. The modules convert from the RS-232, RS-422, or RS-485 signal to a fiber optic signal.

Automatic Baudrate Detection

The TCF-142-RM series can automatically detect the serial baudrate. This is an extremely convenient feature. Even if a device's baudrate is changed, the signal will still be transmitted through the media converter without any problem.

Specifications

Optical Fiber Side

Fiber Connector: SC or ST

Cable Requirements:
Single-mode: 8.3/125, 8.7/125, 9/125, or 10/125 μm
Multi-mode: 50/125, 62.5/125, or 100/140 μm

Transmission Distance:
Single-mode: 40 km
Multi-mode: 5 km

Wavelength:
Single-mode: 1310 nm
Multi-mode: 850 nm

Tx Output:
Single-mode: > -5 dBm
Multi-mode: > -5 dBm

Rx Sensitivity:
Single-mode: -25 dBm
Multi-mode: -20 dBm

Point-to-Point Transmission: Half-duplex or full-duplex

RS-232/422/485 Side

Terminal Block

RS-232 Signals: TxD, RxD, SGND

RS-422 Signals: TxD+, TxD-, RxD+, RxD-, SGND

RS-485-4w Signals: TxD+, TxD-, RxD+, RxD-, SGND

RS-485-2w Signals: Data+, Data-, SGND

Baudrate: 50 bps to 921.6 Kbps

ESD Protection: 15 KV for all signals

Physical Characteristics

Housing: SPCC

Dimensions: 86.8 x 136.5 x 21 mm (3.42 x 5.37 x 0.83 in)

Environmental Limits

Operating Temperature: 0 to 60°C (32 to 140°F)

Operating Humidity: 5 to 95% RH

Storage Temperature: -20 to 75°C (-4 to 158°F)

Power Requirements

Input Voltage: 12 VDC

Power Consumption: 150 mA @ 12 V

Regulatory Approvals

CE: Class A

FCC: Part 15 sub part B Class A

EMS:
EN61000-4-2 (ESD), Criteria A, Level 4
EN61000-4-3 (RS), Criteria A, Level 2
EN61000-4-4 (EFT), Criteria A, Level 3
EN61000-4-5 (Surge), Criteria A, Level 3
EN61000-4-6 (CS), Criteria A, Level 2
EN61000-4-8 (PFMF), Criteria A, Level 3
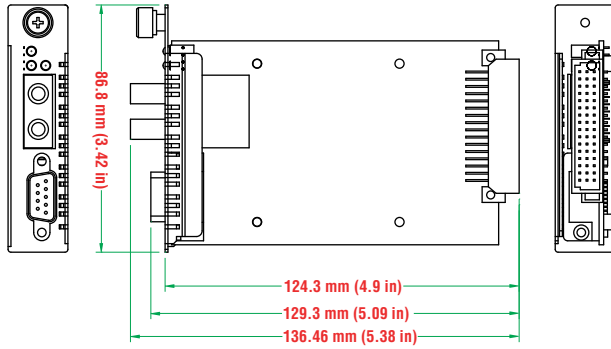
Freefall: IEC 60068-2-32
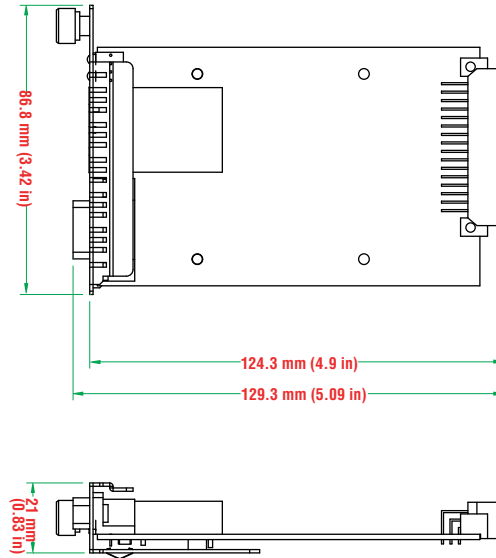
Warranty

Warranty Period: 5 years

Details: See www.moxa.com/warranty

Dimensions

TCF-142-M/S-ST Series

86.8 mm (3.42 in)

124.3 mm (4.9 in)
129.3 mm (5.09 in)
136.46 mm (5.38 in)

TCF-142-M/S-SC Series

86.8 mm (3.42 in)

124.3 mm (4.9 in)
129.3 mm (5.09 in)

21 mm (0.83 in)

Pin Assignment

DB9 female connector

5 4 3 2 1

9 8 7 6
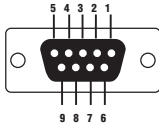
Pin	RS-232	RS-422/485-4w	RS-485-2w
1	DCD	Tx-	---
2	RxD	Tx+	---
3	TxD	Rx+	Data+
4	DTR	Rx-	Data-
5	GND	GND	GND
6	DSR	---	---
7	RTS	---	---
8	CTS	---	---

⠸ Ordering Information

Available Models

TCF-142-M-SC-RM: RS-232/422/485 to multi-mode fiber slide-in module converter, SC connector
TCF-142-M-ST-RM: RS-232/422/485 to multi-mode fiber slide-in module converter, ST connector
TCF-142-S-SC-RM: RS-232/422/485 to single-mode fiber slide-in module converter, SC connector
TCF-142-S-ST-RM: RS-232/422/485 to single-mode fiber slide-in module converter, ST connector

Package Checklist

- TCF-142 series fiber converter
- Quick Installation Guide (printed)
- Warranty Card