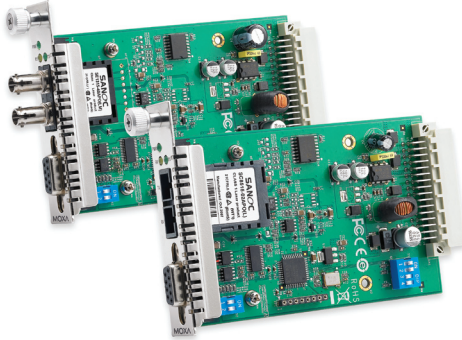# TCF-142-RM Series

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**

Fiber Ring   *15 KV ESD*

: 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
Ring Transmission: Half-duplex

RS-232/422/485 Side
Connector: DB9
RS-232 Signals: TxD, RxD, GND
RS-422 Signals: TxD+, TxD-, RxD+, RxD-, GND
RS-485-4w Signals: TxD+, TxD-, RxD+, RxD-, GND
RS-485-2w Signals: Data+, Data-, GND
Baudrate: 50 bps to 921.6 Kbps
ESD Protection: 15 KV for all signals

Physical Characteristics
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)
Storage Temperature: -20 to 75°C (-4 to 158°F)
Ambient Relative Humidity: 5 to 95% (non-condensing)
Power Requirements
Input Voltage: 12 VDC
Power Consumption: 150 mA @ 12 V
Standards and Certifications
EMC: CE, FCC
EMI: FCC Part 15 Subpart B Class A
EMS:
EN 61000-4-2 (ESD) Level 3,
EN 61000-4-3 (RS) Level 2,
EN 61000-4-4 (EFT) Level 2,
EN 61000-4-5 (Surge) Level 2,
EN 61000-4-6 (CS) Level 2,
EN 61000-4-8 (PFMF) Level 3
Freefall: IEC 60068-2-32
Green Product: RoHS, CRoHS, WEEE
MTBF (mean time between failures)
Time: 514,926 hrs
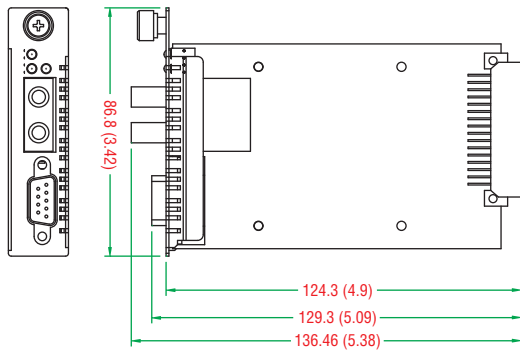**Database:** Telcordia (Bellcore), GB
Warranty
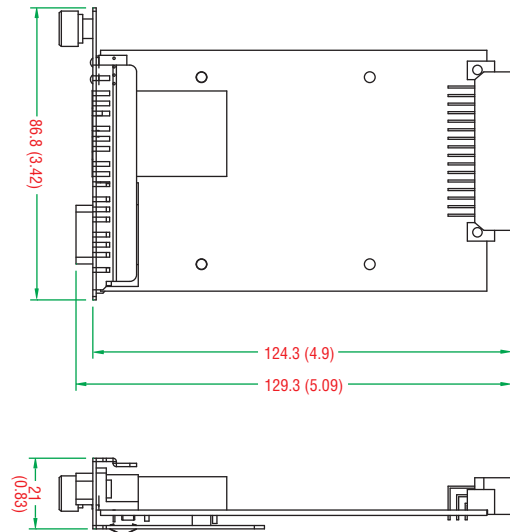**Warranty Period:** 5 years
Details: See www.moxa.com/warranty
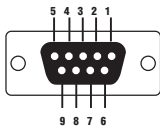
Dimensions

Unit: mm (inch)

TCF-142-M/S-ST-RM Series

86.8 (3.42)

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

TCF-142-M/S-SC-RM Series

86.8 (3.42)

124.3 (4.9)
129.3 (5.09)

21 (0.83)

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	–	RxD-(A)	Data-(A)
2	TxD	RxD+(B)	Data+(B)
3	RxD	TxD+(B)	–
4	–	TxD-(A)	–
5	GND	GND	GND
6	–	–	–
7	–	–	–
8	–	–	–
9	–	–	–

: 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

• 1 TCF-142-RM fiber converter
• Quick installation guide (printed)
• Warranty card