

# TCF-142 系列

## RS-232 / 422 / 485 轉光纖轉換器



### 特色與優點

- 可選擇「環」與「點對點」傳輸模式
- 延伸 RS-232/422/485 傳輸：單模最遠可達 40 公里—TCF-142-S-ST/SC 多模最遠可達 5 公里—TCF-142-M-ST/SC
- 減少訊號干擾
- 保護免受電子干擾與化學侵蝕
- 支援傳輸率至 921.6 Kbps
- 提供寬溫版本 ( -40 至 75°C )

### 認證



### 簡介

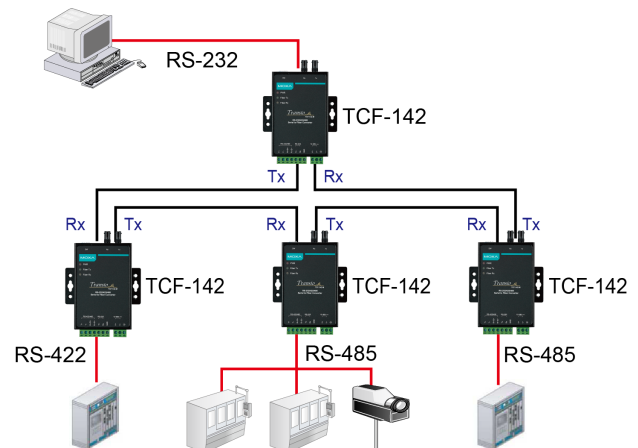
TCF-142 光纖轉換器配備有多重介面電路，可以處理 RS-232 或 RS-422/485 串列介面轉換成多模或單模光纖傳輸。TCF-142 轉換器可將串列傳輸距離延伸最遠可達 5 公里 (TCF-142-M 含多模光纖) 或 40 公里 (TCF-142-S 含單模光纖)。TCF-142 可設定成轉換 RS-232 訊號或 RS-422/485 訊號，非兩者同時。

### 自動傳輸速率偵測

TCF-142 轉換器可以自動偵測串列傳輸速率，這是一個非常方便的功能。即使裝置的傳輸速率改變，訊號仍將透過轉換器傳輸而且不會遺失任何資料。

### 環狀通訊

TCF-142 可連接串列裝置至光纖環。接線方式是，請將 TCF-142 的光纖 Tx 埠連接至相鄰轉換器的光纖 Rx 埠。透過設定 TCF-142 DIP 開關，即可啟用「光纖環模式」。當某個節點傳輸訊號時，訊號會在環中移動，直到訊號返回到傳輸單元，傳輸單元隨即中斷訊號。利用 TCF-142，您可設定總周長高達 100 公里的光纖環。



### 自動資料方向控制 (ADDC®)

Moxa 研發之專利技術 ADDC® 為自動數據流量解決方式，可處理 RS-485 數據流向的控制問題。ADDC® 可自動判別和 RS-485 控制數據傳輸方向，不再需要信號交接的方式。

### 規格

#### Serial Interface

|                  |                                                        |
|------------------|--------------------------------------------------------|
| No. of Ports     | 2                                                      |
| Serial Standards | RS-232, RS-422, RS-485                                 |
| Baudrate         | 50 bps to 921.6 kbps (supports non-standard baudrates) |

|                                                                                                                                                                |                                                     |                         |                      |              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|-------------------------|----------------------|--------------|
| Flow Control                                                                                                                                                   | ADDC® (automatic data direction control) for RS-485 |                         |                      |              |
| Optical Fiber                                                                                                                                                  | Low-Speed Fiber Module                              |                         | Multi-Mode           | Single-Mode  |
|                                                                                                                                                                | Fiber Cable Requirements                            |                         | 50/125 μm, 800 MHz   | G.652        |
|                                                                                                                                                                |                                                     |                         | 62.5/125 μm, 500 MHz |              |
|                                                                                                                                                                | Typical Distance                                    |                         | 5 km                 | 40 km        |
|                                                                                                                                                                | Wavelength                                          | Typical (nm)            | 850                  | 1310         |
|                                                                                                                                                                |                                                     | TX Range (nm)           | 840 to 860           | 1290 to 1330 |
|                                                                                                                                                                |                                                     | RX Range (nm)           | 800 to 900           | 1100 to 1650 |
|                                                                                                                                                                | Optical Power                                       | TX Range (dBm)          | 0 to -5              | 0 to -5      |
|                                                                                                                                                                |                                                     | RX Range (dBm)          | 0 to -20             | 0 to -25     |
|                                                                                                                                                                |                                                     | Link Budget (dB)        | 15                   | 20           |
|                                                                                                                                                                |                                                     | Dispersion Penalty (dB) | 1                    | 1            |
| Note: When using a power meter to measure the fiber TX power, set the baudrate to 9,600 bps and send data (00, ..., 0h) to the serial converter’s serial port. |                                                     |                         |                      |              |
| Pull High/Low Resistor for RS-485                                                                                                                              | 1 kilo-ohm, 150 kilo-ohms                           |                         |                      |              |
| RS-485 Data Direction Control                                                                                                                                  | ADDC® (automatic data direction control)            |                         |                      |              |
| Terminator for RS-485                                                                                                                                          | N/A, 120 ohms, 120 kilo-ohms                        |                         |                      |              |
| Connector                                                                                                                                                      | 7-pin terminal block                                |                         |                      |              |
| Latency                                                                                                                                                        | 300 ns                                              |                         |                      |              |

Serial Signals

|           |                         |
|-----------|-------------------------|
| RS-232    | TxD, RxD, GND           |
| RS-422    | Tx+, Tx-, Rx+, Rx-, GND |
| RS-485-4w | Tx+, Tx-, Rx+, Rx-, GND |
| RS-485-2w | Data+, Data-, GND       |

Power Parameters

|                             |                             |
|-----------------------------|-----------------------------|
| No. of Power Inputs         | 1                           |
| Input Current               | 70 to 140 mA @ 12 to 48 VDC |
| Input Voltage               | 12 to 48 VDC                |
| Overload Current Protection | Supported                   |
| Power Connector             | Terminal block              |
| Power Consumption           | 70 to 140 mA @ 12 to 48 VDC |
| Reverse Polarity Protection | Supported                   |

Physical Characteristics

|                        |                                          |
|------------------------|------------------------------------------|
| IP Rating              | IP30                                     |
| Housing                | Metal                                    |
| Dimensions (with ears) | 90 x 100 x 22 mm (3.54 x 3.94 x 0.87 in) |

|                           |                                          |
|---------------------------|------------------------------------------|
| Dimensions (without ears) | 67 x 100 x 22 mm (2.64 x 3.94 x 0.87 in) |
| Weight                    | 320 g (0.71 lb)                          |
| Installation              | Wall mounting                            |

#### Environmental Limits

|                                        |                                                                                           |
|----------------------------------------|-------------------------------------------------------------------------------------------|
| Operating Temperature                  | Standard Models: 0 to 60°C (32 to 140°F)<br>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 55032/24                                                                                                                                                                                                   |
| EMI                   | CISPR 32, FCC Part 15B Class A                                                                                                                                                                                |
| EMS                   | IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV<br>IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m<br>IEC 61000-4-4 EFT: Power: 1 kV<br>IEC 61000-4-5 Surge: Power: 1 kV<br>IEC 61000-4-6 CS: 3 V<br>IEC 61000-4-8 PFMF |
| Environmental Testing | IEC 60068-2-1<br>IEC 60068-2-2<br>IEC 60068-2-3                                                                                                                                                               |
| Safety                | EN 60950-1, IEC 60950-1                                                                                                                                                                                       |
| Vibration             | IEC 60068-2-6                                                                                                                                                                                                 |

#### MTBF

|           |                          |
|-----------|--------------------------|
| Time      | 780,480 hrs              |
| Standards | Telcordia (Bellcore), GB |

#### Warranty

|                 |                                                                            |
|-----------------|----------------------------------------------------------------------------|
| Warranty Period | 5 years                                                                    |
| Details         | See <a href="http://www.moxa.com/tw/warranty">www.moxa.com/tw/warranty</a> |

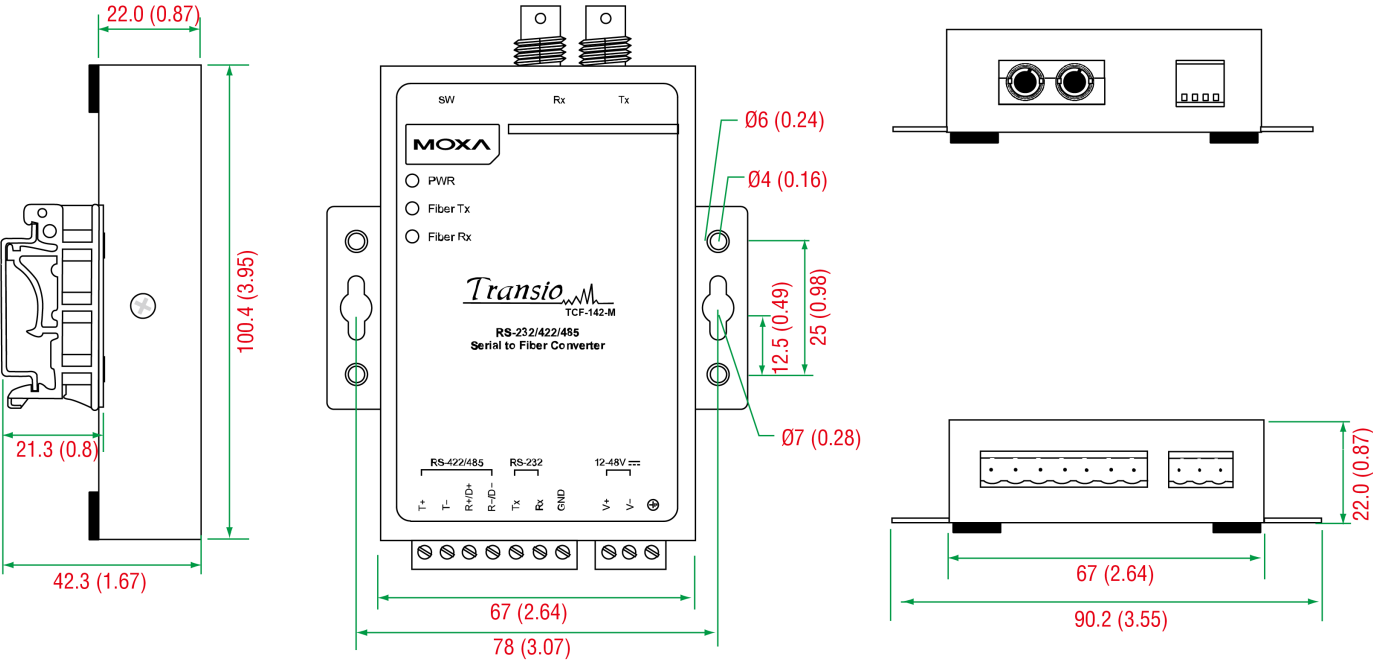
#### Package Contents

|                  |                                                   |
|------------------|---------------------------------------------------|
| Device           | 1 x TCF-142 Series converter                      |
| Installation Kit | 1 x rubber stand                                  |
| Documentation    | 1 x quick installation guide<br>1 x warranty card |

尺寸

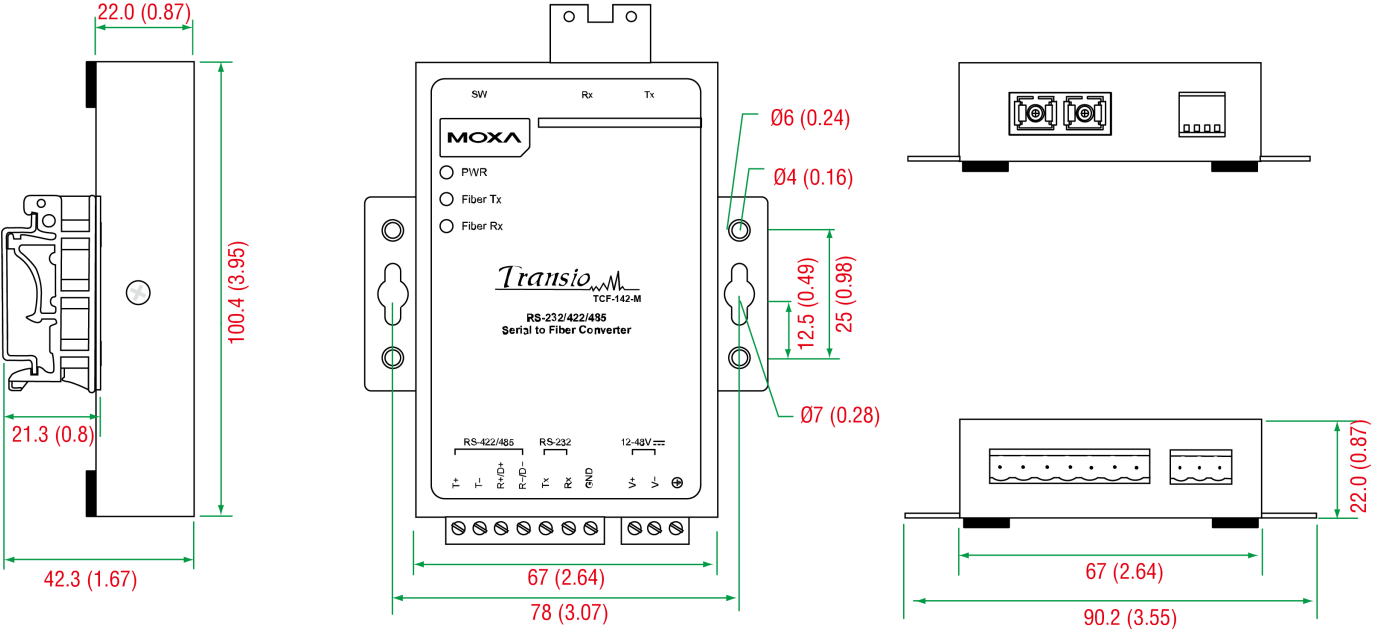
TCF-142-M/S-ST

單位：公釐（英吋）



TCF-142-M/S-SC

單位：公釐（英吋）



訂購資訊

| Model Name   | Operating Temp. | Fiber Module Type |
|--------------|-----------------|-------------------|
| TCF-142-M-ST | 0 to 60°C       | Multi-mode ST     |
| TCF-142-M-SC | 0 to 60°C       | Multi-mode SC     |
| TCF-142-S-ST | 0 to 60°C       | Single-mode ST    |

| Model Name     | Operating Temp. | Fiber Module Type |
|----------------|-----------------|-------------------|
| TCF-142-S-SC   | 0 to 60°C       | Single-mode SC    |
| TCF-142-M-ST-T | -40 to 75°C     | Multi-mode ST     |
| TCF-142-M-SC-T | -40 to 75°C     | Multi-mode SC     |
| TCF-142-S-ST-T | -40 to 75°C     | Single-mode ST    |
| TCF-142-S-SC-T | -40 to 75°C     | Single-mode SC    |

## 配件 (選購)

### DIN-Rail Mounting Kits

|       |                              |
|-------|------------------------------|
| DK35A | DIN-rail mounting kit, 35 mm |
|-------|------------------------------|

### Power Adapters

|                   |                                                                                                                            |
|-------------------|----------------------------------------------------------------------------------------------------------------------------|
| PWR-12125-USJP-S1 | Non-locking barrel plug, 12 VDC, 1.25 A, 100 to 240 VAC, United States/Japan (US/JP) plug, 0 to 40°C operating temperature |
| PWR-12150-AU-S2   | Non-locking barrel plug, 12 VDC, 1.5 A, 100 to 240 VAC, Australia (AU) plug, 0 to 40°C operating temperature               |
| PWR-12150-EU-S2   | Non-locking barrel plug, 12 VDC, 1.5 A, 100 to 240 VAC, Continental Europe (EU) Plug, 0 to 40°C operating temperature      |
| PWR-12150-UK-S2   | Non-locking barrel plug, 12 VDC, 1.5 A, 100 to 240 VAC, United Kingdom (UK) plug, 0 to 40°C operating temperature          |
| PWR-12150-CN-S1   | Non-locking barrel plug, 12 VDC, 1.5 A, 100 to 240 VAC, China (CN) plug, 0 to 40°C                                         |

### Power Cords

|             |                                            |
|-------------|--------------------------------------------|
| CBL-PJTB-10 | Non-locking barrel plug to bare-wire cable |
|-------------|--------------------------------------------|

© Moxa Inc. 版權所有. 2021 年 5 月 31 日更新。

未經 Moxa Inc. 明確書面許可，不得以任何方式複製或使用本文件及其任何部分。產品規格如有變更，恕不另行通知。請至本公司官網了解最新的產品資訊。