



## Fiber Converters

### TFC-110 Series

- Anleitung zur Schnellinstallation (1)

## 1. Bevor Sie anfangen

### Packungsinhalt

- Glasfaserkonverter
- Mehrsprachige Installationsanleitung
- Netzteil

Wenn keiner der oben genannten Inhalte fehlen, wenden Sie sich an Ihren Fachhändler.

### Mindestanforderungen

- Ausreichend kühle und trockene Umgebung
- Abwesenheit von starken Quellen elektromagnetischer Felder (wie Motoren)
- Vibrationen, Staub und direkter Sonneneinstrahlung
- TFC-1600-Gehäuse (optional) oder feste, ebene Oberfläche, die das Gewicht des Konverters tragen kann
- 10/100MBit/s Ethernet-Switch
- Multi- oder Einzelmodus-Glasfaserkabel
- Kat. 5, 5e oder 6 RJ-45-Ethernetkabel

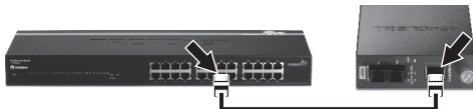
### Optionale Geräte

- Standardmäßiges 19"-Gestell
- TFC-1600-Gehäuse

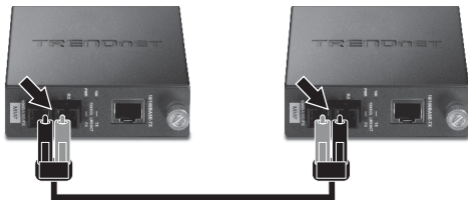
## 2. Installation der Hardware

### Installation eigenständiger Glasfaserkonverter

1. Verbinden Sie den Ethernet-Port des Glasfaserkonverters über ein RJ-45-Ethernetkabel mit einem Ethernet-Port Ihres Umschalters (z.B. TE100-S24g).



2. Verbinden Sie den Glasfaserkonverter mit einem Glasfaserkabel.



3. Verbinden Sie das Netzteil mit der Buchse auf der Rückseite des Konverters.



### **Hinweis:**

1. Bei TFC-110MM/MST/MSC/110S15/S15i/S30/S30i/S60/S60i/S10 müssen die Sende- (TX) und Empfangs- (RX) Kabel an der entgegengesetzten Glasfaser Verbindung vertauscht werden.
2. Der TFC-15MS100 wandelt Multimodus- in Einzelmodus-Glasfaserverbindungen um. Wenn er mit einem Umschalter mit SC Multimodus-Glasfaseranschluss (z.B. TEG-424WS mit Glasfasermodulen) verbunden wird, lässt sich die Reichweite des Netzwerks über Einzelmodus-Glasfaserkabel bis zu 15 km erweitern.
3. Kabel:
  - a. Multimodus-Glasfaserkabel: TFC-110MSC, TFC-110MST, TFC-110MM.
  - b. Einzelmodus-Glasfaserkabel: TFC-110S15, TFC-110S30, TFC-110S60, TFC-110S100, TFC-110S15i, TFC-110S30i, TFC-110S60i.
  - c. Einzelsträngiges Glasfaserkabel für: TFC-110S20D3, TFC-110S20D5, TFC-110S40D3, TFC-110S40D5.

## Installation eines Glasfaserkonverters mit einem Chassis

1. Schrauben Sie die Abdeckung des entsprechenden Gehäuseteils ab.



2. Lösen Sie die Schraube und nehmen Sie den Glasfaserkonverter aus dem Metallgehäuse.



3. Schieben Sie den Glasfaser Konverter in einen freien Steckplatz und ziehen Sie die Schraube wieder an.



**Ihre Installation ist beendet!**

### 3. LEDs and DIP switches

LEDs					
LED	Color	Sequence	Function		
			TFC-110MM/ MST/MSC/ 110S15/S30/ S60/S100/ 20D3/20D5/ 40D3/40D5	TFC-110S15i/ 30i/60i	TFC-15MS100
<b>PWR (Power)</b>	Green	Solid	Device powered On		
	Off	n/a	Device powered Off		
<b>100M</b>	Green	Solid	100/200Mbps (Half/Full Duplex) Connection	n/a	
	Off	n/a	10/20Mbps (Half/Full Duplex) Connection	n/a	
<b>FDX/ COL (TX)</b>	Green	Solid	Connection on TX end in full duplex mode	n/a	
	Green	Blinking	Data collision is detected	n/a	
	Off	n/a	Connection on TX end in half duplex mode	n/a	
<b>FDX/ COL (FX)</b>	Green	Solid	Connection on Fiber end in full duplex mode	n/a	
	Green	Blinking	Data collision is detected	n/a	
	Off	n/a	Connection on Fiber end in half duplex mode	n/a	
<b>LINK/ ACT (TX)</b>	Green	Solid	100/200Mbps (Half/Full Duplex) or 10/20Mbps (Half/ Full Duplex) Connection	n/a	
	Green	Blinking	100/200Mbps (Half/Full Duplex) or 10/20Mbps Data Transmitting/Receiving	n/a	
	Off	n/a	The link is disconnected	n/a	

## LEDs (continued)

LED	Color	Sequence	Function		
			TFC-110MM/ MST/MSC/ 110S15/S30/ S60/S100/ 20D3/20D5/ 40D3/40D5	TFC-110S15i/ 30i/60i	TFC-15MS100
LINK/ ACT (FX)	Action	Solid	100/200Mbps (Half/Full Duplex) Connection		n/a
	Green	Blinking	100/200Mbps (Half/Full Duplex) Data Transmitting/ Receiving		n/a
	Off	n/a	The link is disconnected		n/a
LINK/ ACT	Green	Solid	n/a		100/200Mbps (Half/Full Duplex) Connection
	Green	Blinking	n/a		100/200Mbps (Half/Full Duplex) Data Transmitting/ Receiving
	Off	n/a	n/a		The link is disconnected
FAIL (TX)	Green	Solid	n/a	The TX link is disconnected	n/a
	Off	n/a	n/a	The TX link is connected	n/a
FAIL (FX)	Red	Solid	n/a	The Fiber link is disconnected	n/a
	Off	n/a	n/a	The Fiber link is connected	n/a

DIP Switches			
Switch	Action	Function	
		TFC-110MM/MST/MSC/ 110S15/S30/S60/S100/ 20D3/20D5/40D3/40D5	TFC-110S15i/30i/60i
1	On	FX Half-Duplex	FX Half-Duplex
	Off	FX Full-Duplex	FX Full-Duplex
2	On	n/a	TX Forced Mode
	Off	n/a	TX Auto-Negotiation
3	On	n/a	TX 10M
	Off	n/a	TX 100M
4	On	n/a	TX Half-Duplex
	Off	n/a	TX Full Duplex
5	On	n/a	LLR Enable
	Off	n/a	LLR Disable
6	On	n/a	LLCF Enable
	Off	n/a	LLCF Disable

**Note:**

1. After changing the DIP Switch settings, power cycle the Fiber Converter.
2. LLCF stands for Link Loss Carry Forward. When LLCF is enabled, the ports do not transmit a link signal until they receive a link signal from the opposite port. Link loss is "carried forward" to the managed switch or hub that is sending the link. LLCF can be used for either the copper or fiber ports.
3. LLR stands for Link Loss Return. When LLR is enabled, the fiber port's transmitter shuts down if its receiver fails to detect a valid receive link. If one of the optical conductors is bad, the card with LLR enabled will return a no link condition to its link partner. LLR is used to detect link problems only on the fiber port. If LLR is enabled on one Fiber converter, the opposite Fiber converter must have LLR disabled.

## 4. Technical Specifications

Power Budget									
Model Number	Media	Connectors	Wavelength	Optical Output Power (dBm)		Optical Input Power (dBm)		Power Budget	Distance
				Min.	Max.	Min. (Sensitivity)	Max.		
TFC-110MSC	MMF	RJ-45/SC (Duplex)	1310nm	-23.5	-14	-32	-14	13	2 km
TFC-110MST	MMF	RJ-45/ST (Duplex)	1310nm	-23.5	-14	-32	-8	8.5	2 km
TFC-110MM	MMF	RJ-45/MT-RJ (Duplex)	1300nm	-23.5	14	-31	-14 (typical)	7.5	2 km
TFC-110S15	SMF	RJ-45/SC (Duplex)	1310nm	-20	0	-32	0	12	15 km
TFC-110S30	SMF	RJ-45/SC (Duplex)	1310nm	-15	-8	-34	0	19	30 km
TFC-110S60	SMF	RJ-45/SC (Duplex)	1310nm	-5	0	-35	0	30	60 km
TFC-110S100	SMF	RJ-45/SC (Duplex)	1550nm	-5	0	-35	0	30	100 km
TFC-110S15i	SMF	RJ-45/SC (Duplex)	1310nm	-20	0	-32	0	12	15 km
TFC-110S30i	SMF	RJ-45/SC (Duplex)	1310nm	-15	-8	-34	0	19	30 km
TFC-110S60i	SMF	RJ-45/SC (Duplex)	1310nm	-5	0	-35	0	30	60 km
TFC-110S20D3	SMF	RJ-45/SC- (Simplex)	TX-1310nm/ RX-1550nm	-14	-8	-31	0	17	20 km
TFC-110S20D5	SMF	RJ-45/SC- (Simplex)	TX-1550nm/ RX-1310nm	-14	-8	-31	0	17	20 km
TFC-110S40D3	SMF	RJ-45/SC- (Simplex)	TX-1310nm/ RX-1550nm	-8	-3	-34	-3	26	40 km
TFC-110S40D5	SMF	RJ-45/SC- (Simplex)	TX-1550nm/ RX-1310nm	-8	-3	-34	-3	26	40 km



## Troubleshooting

### 1. After connecting the Fiber converter, the LEDs do not turn on. What should I do?

1. Check that the power outlet is receiving power.
2. Make sure the power adapter is firmly connected to the Fiber converter and the power outlet.
3. Make sure the Ethernet and the Fiber cables are connected.

### 2. All the LEDs are on, but I can't make a connection. What should I do?

1. Verify that you are using the proper fiber cable (e.g. multi-mode fiber cable for multi-mode converter; single-mode fiber cables for single-mode converters).
2. Verify that the TX and RX cables have been reverse on the opposite Fiber connection (TFC-110MM, TFC-110MSC, TFC-110MST, TFC-110S15, TFC-110S30, TFC-110S60, TFC-110S100, TFC-110S15i, TFC-110S30i, TFC-110S60i).
3. Power down the fiber converters and the switches. Wait 15 seconds, then plug the switches and the fiber converters back in.

### 3. What is the maximum distance that is supported by the fiber converter?

Please reference section 4 for distance information.

If you still encounter problems or have any questions regarding the **Fiber converters** please contact TRENDnet's Technical Support Department.

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