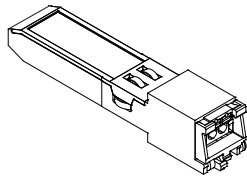# EDWARDS
United Technologies

4-NET-TP(-HC) Twisted Pair SFP Network Controller Installation Sheet

Description

The 4-NET-TP(-HC) Small Form-factor Pluggable (SFP) network controllers support audio and data communication over a single twisted wire pair. Each controller supports a single wire pair connection. The 4-NET-TP(-HC) to 4-NET-TP(-HC) link is supervised for opens, shorts, ground faults, and continued communications.

The 4-NET-TP supports all command and control, live and recorded audio functions, and live firefighters telephone network functions.

The 4-NET-TP-HC supports all command and control, live and recorded audio functions.

4-NET-TP series network controllers plug into one SFP slot in the 4-CPU, 4-ANNCPU, 4-CPUGRPH, or 4-NET-AD modules.

Installation

Install and wire this device in accordance with applicable national and local codes, ordinances, and regulations.

Caution: Equipment damage hazard. This product is sensitive to electrostatic discharge (ESD). To avoid damage, follow accepted ESD handling procedures.

Note: When stripping wire ends, exposing more wire may cause a ground fault; exposing less wire may result in a faulty connection. Strip 0.35 in. (9 mm) from the ends of all wires that connect to the 4-NET-TP(HC).

To install the SFP network controller:

1. Make required connections. Refer to Wiring.

   Push the wire into the holes in the controller shown in Figure 1. Gently pull the wires to make sure that you cannot remove them.

2. Close the bale clasp (Figure 1), and then insert the SFP network controller until you feel the network controller is seated into the connector (Figure 2). Firmly press the SFP network controller into the slot until it latches (clicks).

3. Without releasing the bale clasp, gently pull the SFP network controller to make sure that you cannot remove it.

Notes

- Depending on the installation, it might be easier to remove the wires from the controller after the controller is removed from the module.
- Small Form-factor Pluggable (SFP) network adapters are hot-swappable.

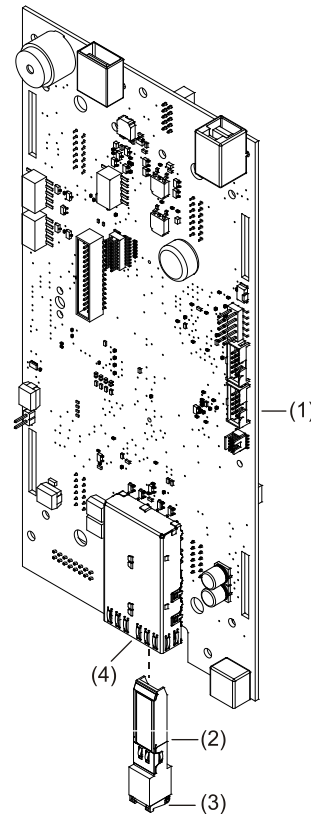**To remove the SFP network controller:**

1. Open the bale clasp.

2. Gently pull the SFP network controller out of the SFP slot by pulling on the open bale clasp.

3. Press both wire release buttons using a #6 (1/8 in. span) spanner tool, and then remove the wires from the 4-NET-TP(-HC). See Figure 3.

Figure 1: 4-NET-TP(-HC) component descriptions
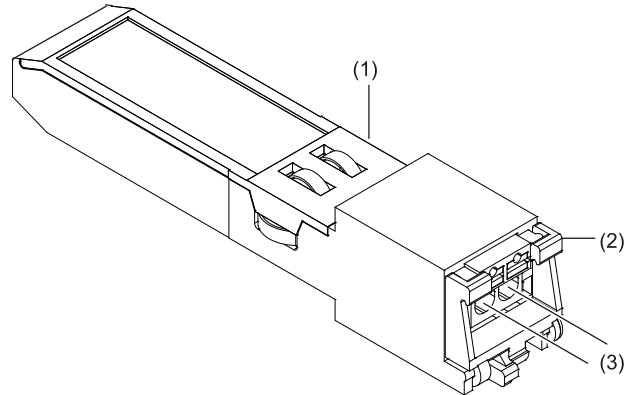
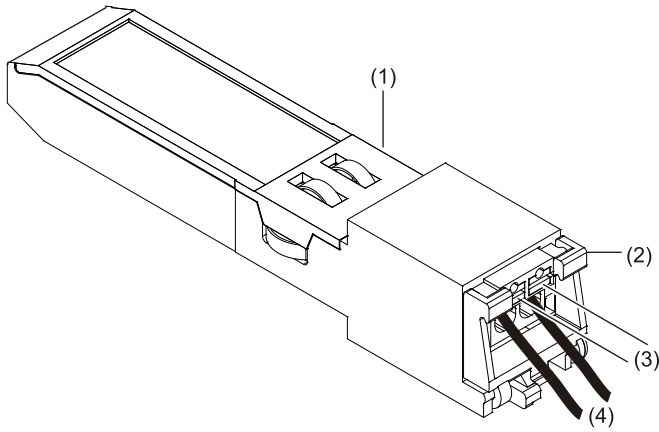|	
(1) 4-NET-TP(-HC) network controller	(3) Wire connections
(2) Bale clasp	

Figure 2: 4-NET-TP(HC) installation

(1) 4-CPU module	(3) Bale clasp
(2) 4-NET-TP(HC) controller	(4) SFP connection on 4-CPU

Figure 3: SFP wire removal

(1) SFP network controller
(2) Bale clasp
(3) Wire release buttons
(4) Wires

Wiring

Network data and network audio circuit wiring are supervised and power-limited. The wiring connections on the 4-NET-TP(HC) are *not* polarity sensitive.

Supported wiring styles include:

• Class A
• Class B
• Class X
• Mesh networking topology

Pass-through from the CPU module eth1 and eth0 network connections is supported from the 4-NET-TP(HC) to any other SFP type, with the exception of a 4-NET-TP to a 4-NET-TP-HC connection, which is *not* supported. Pass-through mode does not limit individual wire run lengths. Refer to the control unit Technical Reference Manual for details.

Specifications

Current [1]	
Standby/Alarm	32 mA at 24 VDC
Cable specifications	See Table 1
Operating environment	
Temperature	32 to 120°F (0 to 49°C)
Relative humidity	0 to 93% noncondensing

[1] Used for battery calculations

Regulatory information

FCC compliance	This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
Environmental class	UL/ULC: Indoor, Dry

Contact information

For contact information, see www.edwardsfiresafety.com.

Table 1: Cabling specifications

Wire type	Wire size	Circuit length [1]	Maximum circuit resistance	Maximum circuit capacitance	Communication speed
4-NET-TP					
UTP -Unshielded Twisted Pair (UTP) other than CAT cables	16 to 22 AWG	5,000 ft. (1,524 m)	90 Ω	0.09 µF	Up to 2 Mbps TX and RX Communication
CAT5 or better - UTP that meets ANSI/TIA/EIA-568-A definition	22 to 24 AWG	3,280 ft. (1,000m)	N/A	N/A	Up to 2 Mbps TX and RX Communication
Shielded Twisted Pair (STP) other than CAT cables [2]	Not supported				
4-NET-TP-HC					
Unshielded Twisted Pair (UTP) other than CAT cables	16 to 24 AWG	5,000 ft. (1,524 m)	90 Ω	0.3 µF	Up to 0.3 Mbps TX and RX Communication
CAT5 or better - UTP that meets ANSI/TIA/EIA-568-A definition	16 to 24 AWG	5,000 ft. (1,524 m)	N/A	N/A	Up to 0.3 Mbps TX and RX Communication
Shielded Twisted Pair (STP) other than CAT cables	16 to 22 AWG	3,280 ft. (1,000m)	90 Ω	0.3 µF	Up to 0.3 Mbps TX and RX Communication

[1] Circuit length is between any two nodes.

[2] Shielded Twisted Pair is not supported for the 4-NET-TP.