

MEDIA CONVERTER TECHNICAL SPECIFICATIONS

Standards	ANSI/ATA 878	
Case dimensions	4.75" x 3.0" x 1.0" (119mm x 76mm x 25mm)	
Shipping Weight	2 pounds (0.9 kilograms)	
Environment	Temperature:	0-40°C (32° to 104° F)
	Humidity	10-90%, non condensing
	Altitude	0-10,000 feet
Warranty	Five years	

Power Supply Requirements Replace power supply with only the equivalent input rating (see below) and output rating (regulated 9VDC at 0.5 A).

TN PN	Requirement	Location
3525	240 volts, 50 hertz	United Kingdom
3525	230 volts, 50 hertz	Europe
3518	120 volts, 60 hertz	USA/Canada/Mexico
3514	100 volts, 50-60 hertz	Japan
3525	240 volts, 50 hertz	Australia

NOTE: This product also can be powered by the Transition Networks E-MCR series media converter rack.



CAUTION: RJ connectors are NOT INTENDED FOR CONNECTION TO THE PUBLIC TELEPHONE NETWORK. Failure to observe this caution could result in damage to the public telephone network.

Der Anschluss dieses Gerätes an ein öffentliches Telekommunikationsnetz in den EG-Mitgliedstaaten verstößt gegen die jeweiligen einzelstaatlichen Gesetze zur Anwendung der Richtlinie 91/263/EWG zur Angleichung der Rechtsvorschriften der Mitgliedstaaten über Telekommunikationsendeinrichtungen einschliesslich der gegenseitigen Anerkennung ihrer Konformität.

Compliance Information

UL Listed
C-UL Listed (Canada)
CISPR/EN55022 Class A

FCC Regulations

This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at the user's own expense.

Canadian Regulations

This digital apparatus does not exceed the Class A limits for radio noise for digital apparatus set out on the radio interference regulations of the Canadian Department of Communications.

European Regulations

Warning

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

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Minneapolis, MN 55344 USA

ARCNET® RJ-11 Copper/Fiber Media Converter

AR-CF-01, AR-CF-01(SC), AR-CF-01(SM)

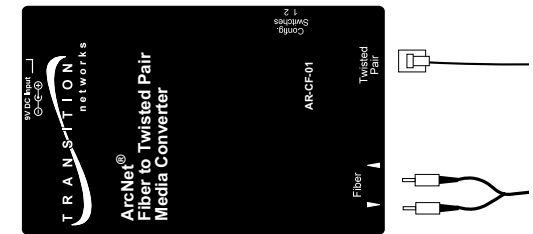
USER'S GUIDE

The TRANSITION Networks ARCNET® RJ-11 Copper/Fiber Media Converter (AR-CF-01) extends the signal distance of an ARCNET® segment or node link.

AR-CF-01 series media converters _____

AR-CF-01

Provides an RJ-11 twisted-pair connector to copper cable and a set of RX (receive) and TX (transmit) ST connectors to multimode fiber-optic cable.



AR-CF-01(SC)

Provides an RJ-11 twisted-pair connector to copper cable and an RX (receive) and TX (transmit) SC connector to multimode fiber-optic cable.

AR-CF-01(SM)

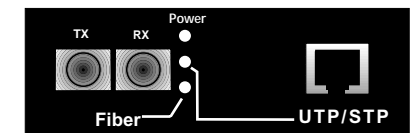
Provides an RJ-11 twisted-pair connector to copper cable and an RX (receive) ST and TX (transmit) SC connector to singlemode fiber-optic cable.

STATUS LEDS

Power Steady green LED indicates connection to external AC power.

UTP/STP Blinking green LED indicates network traffic on unshielded or shielded twisted-pair link.

Fiber Blinking green LED indicates network traffic on fiber link.



Installation NOTES

All cable connections to the AR-CF-01 MUST be AT LEAST 7.6 meters (25 feet) in length.

To install the AR-CF-01 series media converter:

1. Connect host signal to AR-CF-01 media converter.

NOTE: Set the configuration switch (located on the side of the media converter) according to site requirements, using the following:

- Switch 1 NOT USED
- Switch 2 UP = Twisted Pair
DOWN = Coax

Twisted-pair:

- Locate or build twisted-pair cables (See specifications, page 7) with male RJ-11 plug connectors at both cable ends.

NOTE: Install TRANSITION Networks balun part number: **B-4554** between RJ-11 cable and coax connector.

- Install balun at host coax connector.
- Connect male RJ-11 plug connector at one end of twisted pair cable to balun on host coax connector.
- Connect male RJ-11 plug connector at other end of cable to female RJ-11 connector on AR-CF-01 media converter.

Coax:

- Locate or build coaxial RG-62 cables (See specifications, page 7) with male BNC connectors at both ends.
- Install one end of cable to female BNC connector on host.
- Install other end of cable to female BNC connector on media converter.

2. Connect AR-CF-01 media converter *near host* to AR-CF-01 media converter *near terminal device*.

- Locate or build fiber cable that conforms to cable specifications (See page 7) with male fiber connectors at both ends.

CABLE SPECIFICATIONS

The physical characteristics of the cable must meet or exceed the following:

FIBER CABLE AND CONNECTOR SPECIFICATIONS

Cable Characteristics:

Fiber Optic Cable Recommended:	62.5 / 125 μm multimode fiber
Optional:	100 / 140 μm multimode fiber 85 / 125 μm multimode fiber 50 / 125 μm multimode fiber
Fiber Optic Transmitter Power:	Average power: -15.0 dBm Peak power: -12.0 dBm ± 1 dBm
Fiber Optic Receiver Sensitivity:	Maximum sensitivity: -27.4 dBm Bit error rate: ≤10 ⁻¹⁰

Maximum Fiber Cable Distance:

3000 meters (10,000 feet)

Connector Characteristics:

ST type connectors (SMA type available upon request)

TWISTED PAIR CABLE AND CONNECTOR SPECIFICATIONS

Cable Characteristics:

Category 3 wire or better is required; category 5 wire is recommended. Either shielded twisted pair (STP) or unshielded twisted pair (UTP) can be used. DO NOT USE FLAT OR SILVER SATIN WIRE.

Category 3:

Gauge	24 to 22 AWG
Attenuation	28 dB/1000' @ 10 MHz
Differential Characteristic Impedance	100 Ω ± 10% @ 10 MHz

Category 5:

Gauge	24 to 22 AWG
Attenuation	20 dB/1000' @ 10 MHz
Differential Characteristic Impedance	100 Ω ± 10% @ 10 MHz

Minimum UTP/STP Cable Distance:

7.6 meters (25 feet)

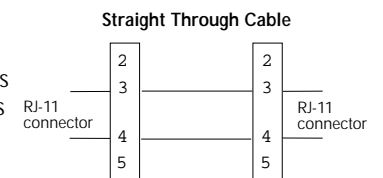
Maximum UTP/STP Cable Distance:

762 meters (2500 feet)

Connector Characteristics:

RJ-11 connector

NOTE: The active pair in a twisted-pair copper ARCNET®-compliant network are pins 3 & 4. Use only dedicated wire pairs (such as blue/white & white/blue, orange/white & white/orange) for the active pins.



TROUBLESHOOTING SUGGESTIONS

If a Media Converter fails, ask the following questions:

1. Is the **Power** LED on the media converter illuminated?

NO

- Is the power adapter the proper voltage and cycle frequency for the AC outlet? NOTE: Refer to the "Power Supply Requirements" on the back page.
- Is the power adapter properly installed in the media converter and in the outlet?
- Contact Technical Support: (800) 260-1312/(800) LAN-WANS.

YES

- Proceed to step 2.

2. Is the **UTP/STP** LED illuminated?

NO

- Check twisted pair cables for proper connection.
- Check RJ-11 connector for correct twisted pair cable configuration.
- Contact Technical Support: (800) 260-1312/(800) LAN-WANS.

YES

- Proceed to step 3.

3. Is the **Fiber** LED illuminated?

NO

- Check fiber cables for proper connection.
- Verify that TX and RX cables on media converter are connected to RX and TX ports, respectively, on other device.
- Contact Technical Support: (800) 260-1312/(800) LAN-WANS.

YES

- Contact Technical Support: (800) 260-1312/(800) LAN-WANS.

AR-CF-01

- Connect one end of *first* fiber cable to AR-CF-01 media converter **TX** connector.
- Connect other end of *that* fiber cable to *second* AR-CF-01 media converter **RX** connector.
- Connect one end of *second* fiber cable to AR-CF-01 media converter **RX** connector.
- Connect other end of *that* fiber cable to AR-CF-01 media converter **TX** connector.

3. Connect AR-CF-01 media converter *near terminal device* to terminal device.

Twisted-pair:

NOTE: Install TRANSITION Networks balun part number: **B-4554** between RJ-11 cable and terminal device coax connector.

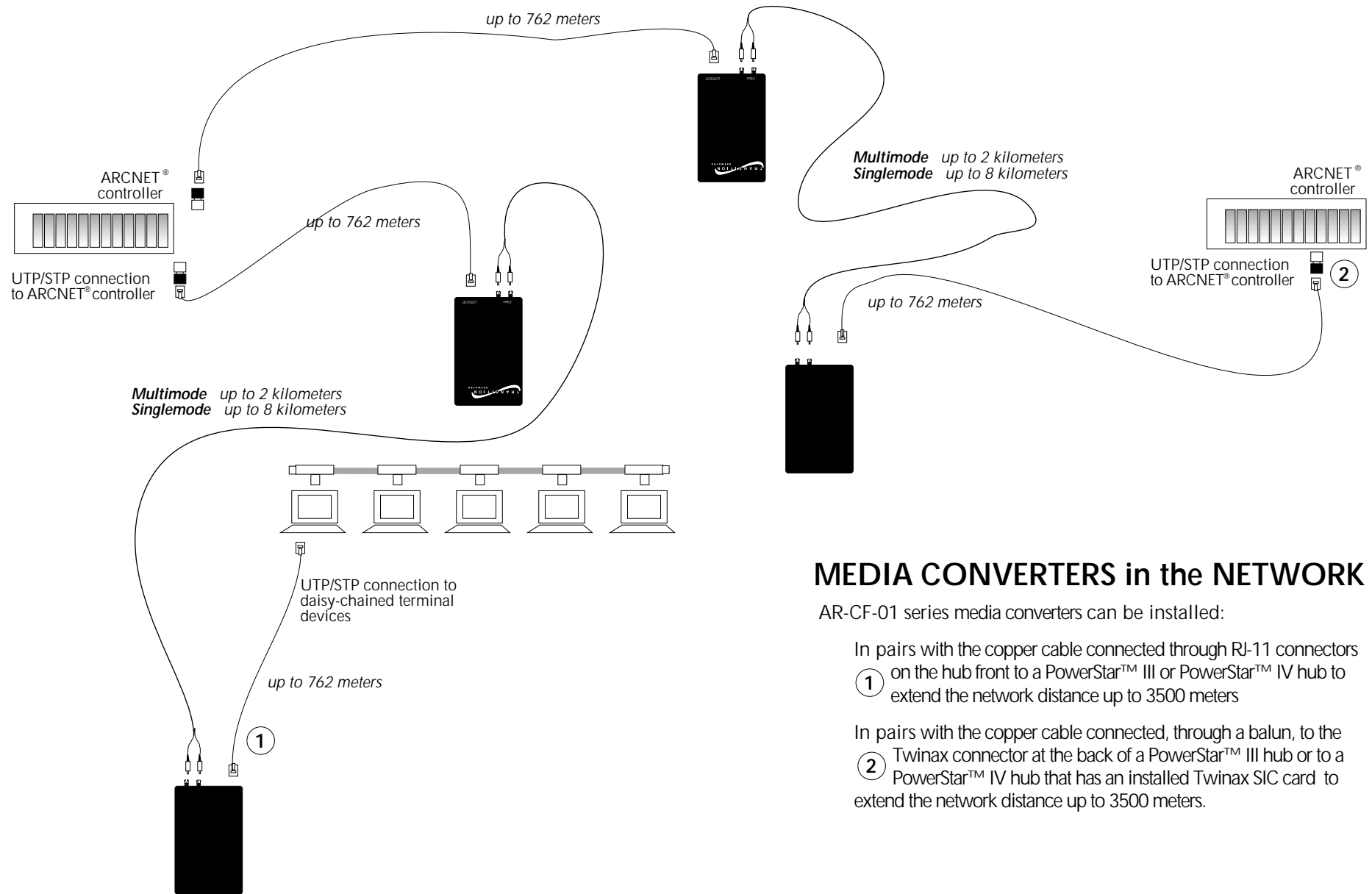
- Install balun at terminal device coax connector.
- Connect male RJ-11 plug connector on one end of cable to female RJ-11 connector marked "UTP/STP" on media converter.
- Connect male RJ-11 plug connector at other end of cable to balun on terminal device.

Coaxial:

- Connect male coax connector on one end of cable to female RJ-11 connector marked "Coax" on media converter.
- Connect male coax connector at other end of cable to female coax connector on terminal device.

4. Connect AR-CF-01 media converter(s) to power.

- Locate correct power supply adapter for site installation. (See back page.)
- Connect media converter power connector at end of power supply adapter cord to AR-CF-01 media converter power receptacle.
- Connect 2-prong or 3-prong external power connector on other end of power supply adapter cord to external AC power.



MEDIA CONVERTERS in the NETWORK

AR-CF-01 series media converters can be installed:

- In pairs with the copper cable connected through RJ-11 connectors
 - ① on the hub front to a PowerStar™ III or PowerStar™ IV hub to extend the network distance up to 3500 meters
- In pairs with the copper cable connected, through a balun, to the
 - ② Twinax connector at the back of a PowerStar™ III hub or to a PowerStar™ IV hub that has an installed Twinax SIC card to extend the network distance up to 3500 meters.