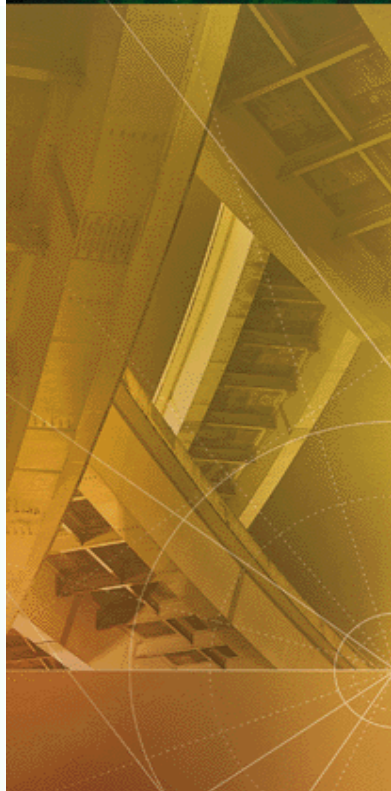
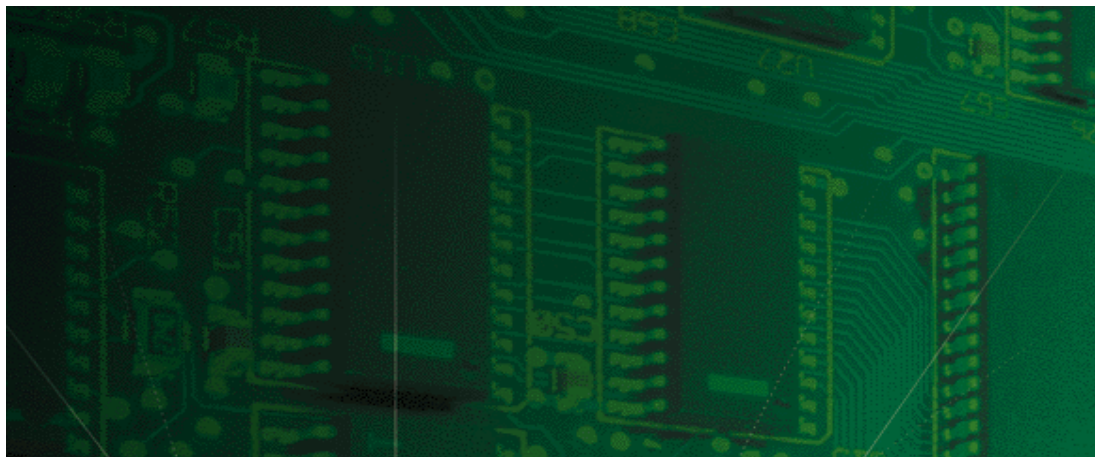


Ethernet 10 Mbps



Network Interface Card Getting Started Guide



Part No. 1.024.1301-00

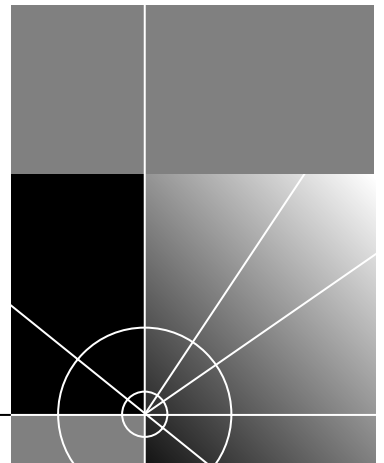


Ethernet 10 Mbps

Network Interface Card Getting Started Guide

<http://www.3com.com/>

Part No. 1.024.1301-00



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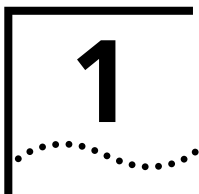
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OVERVIEW

This chapter provides an overview of:

- Contacting 3Com
- Document conventions
- Product description
- Product compatibility

Contacting 3Com

Call the appropriate toll free number listed below for technical support.



For European countries that do not have a toll free number listed, call +31 30 602 9900.

Country	Toll Free Number	Country	Toll Free Number
Austria	06 607468	Netherlands	0800 0227788
Belgium	0800 71429	Norway	800 11376
Canada	1800 2318770	Poland	00800 3111206
Denmark	800 17309	Portugal	0800 831416
Finland	0800 113153	South Africa	0800 995014
France	0800 917959	Spain	900 983125
Germany	0800 1821502	Sweden	020 795482
Hungary	00800 12813	Switzerland	0800 553072
Ireland	1800 553117	UK	0800 966197
Israel	0800 9453794	United States	1800 2318770
Italy	1678 79489	All Other Locations (Outside Europe)	1847 7976600

Refer to the Total Control Hub Documentation CD-ROM for more information regarding product warranty.



For information about Customer Service, including support, training, contracts, and documentation, visit our website at <http://totalservice.3com.com>

Document Conventions

These tables list conventions used throughout this guide.

Icon	Notice Type	Description
	Information note	Information that contains important features or instructions.
	Caution	Information to alert you to potential damage to a program, system, or device.
	Warning	Information to alert you to potential personal injury or fatality. May also alert you to potential electrical hazard.
	ESD	Information to alert you to take proper grounding precautions before handling a product.

Convention	Description
Text represented as a screen display	This <code>typeface</code> represents displays that appear on your terminal screen, for example: <code>Netlogin:</code>
Text represented as commands	This typeface represents commands that you enter for example: <code>setenv TCMHOME directory</code> <i>This guide always gives the full form of a command in uppercase and lowercase letters. However, you can abbreviate commands by entering only the uppercase letters and the appropriate value. Commands are not case-sensitive.</i>
Text represented as menu or sub-menu names.	This typeface represents all menu and sub-menu names within procedures, for example: On the File menu, click New .

Product Description	The Ethernet 10 Mbps Network Interface Card (NIC) provides an Ethernet interface between a particular Network Application Card (NAC) in the 3Com Total Control chassis and your network.
Product Compatibility	<div>The Ethernet 10 Mbps NIC is compatible with the following NACs:</div> <ul style="list-style-type: none">■ 486 Network Management Card (NMC)■ NETServer

2

INSTALLATION

This chapter contains Ethernet 10 Mbps Network Interface Card (NIC) installation information.

Installation Tools

To install this NIC in the Total Control chassis, you need a #2 Phillips and flat-head screwdriver.

Installation Procedure

To install this NIC:

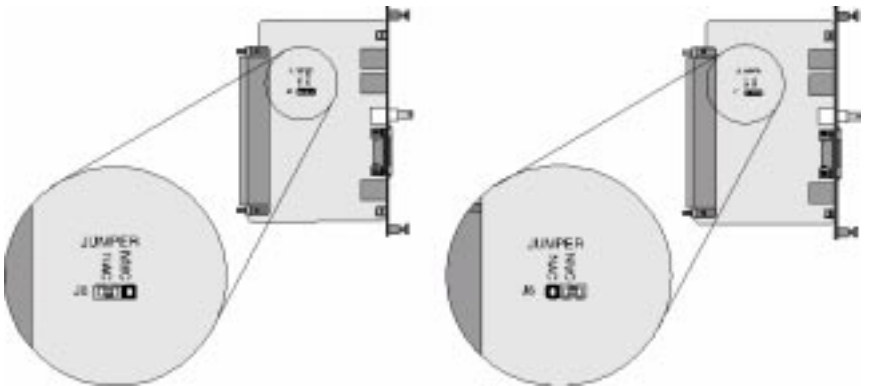


ESD: To reduce the risk of electrostatic discharge (ESD), take proper grounding precautions before handling the NIC.



Install the NIC with or without power applied to the chassis.

- 1 Configure the NIC via the DIP switches.

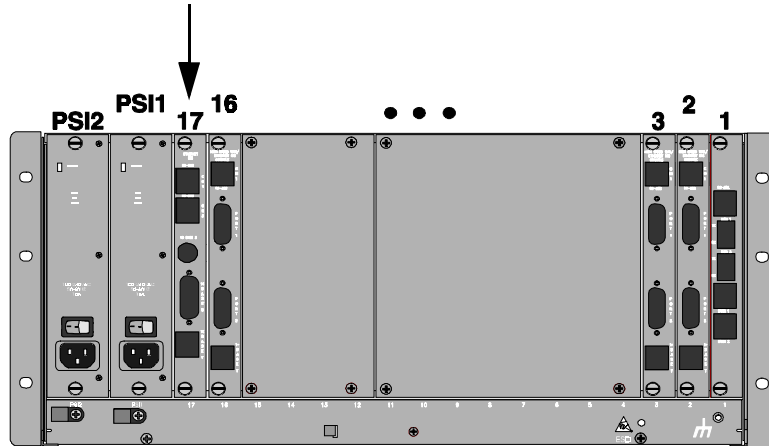


DIP Switch Number	Function
J8 NAC	To install NIC behind NAC other than NMC
J8 NMC	To install NIC behind NMC NAC

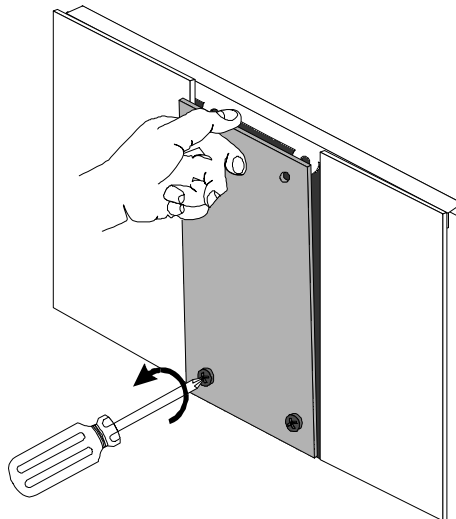
- 2 Select a slot at the rear of the Total Control chassis for installing the NIC. Install this NIC in slot(s) 16 and 17.



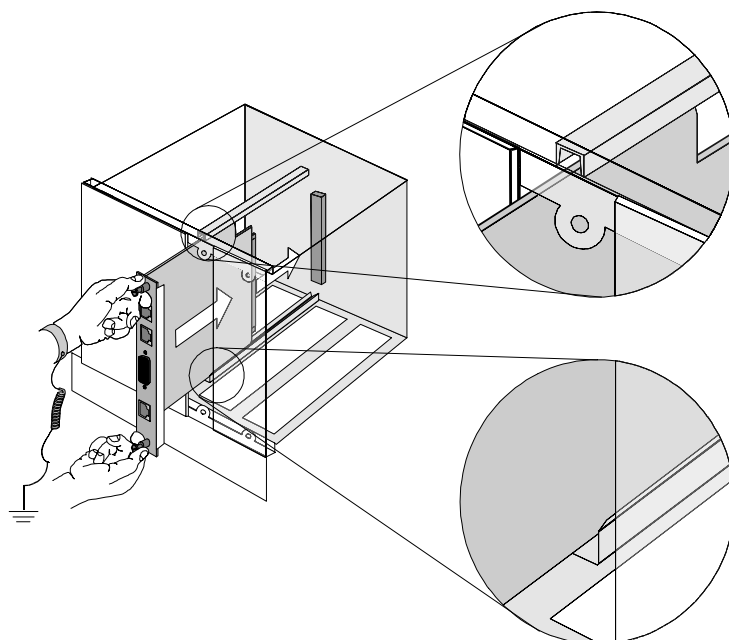
For managed chassis, slot 17 is reserved for the Network Management Card (NMC) NIC.



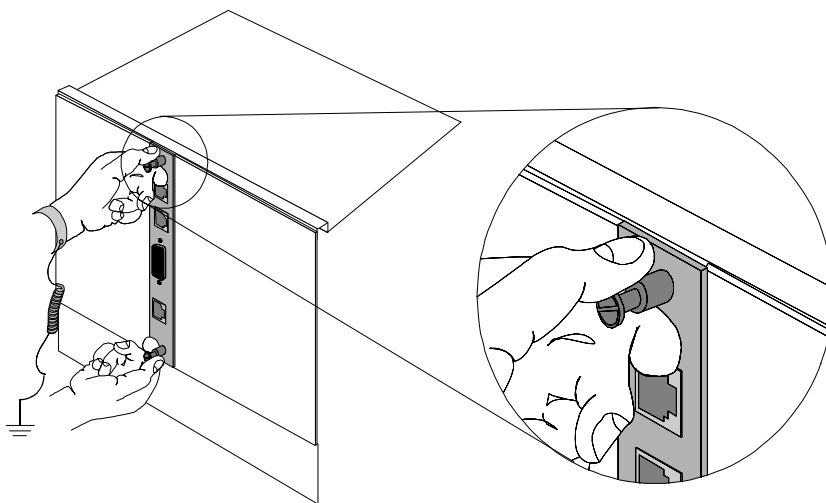
- 3 Use a #2 Phillips screwdriver to remove the safety panel covering this slot.



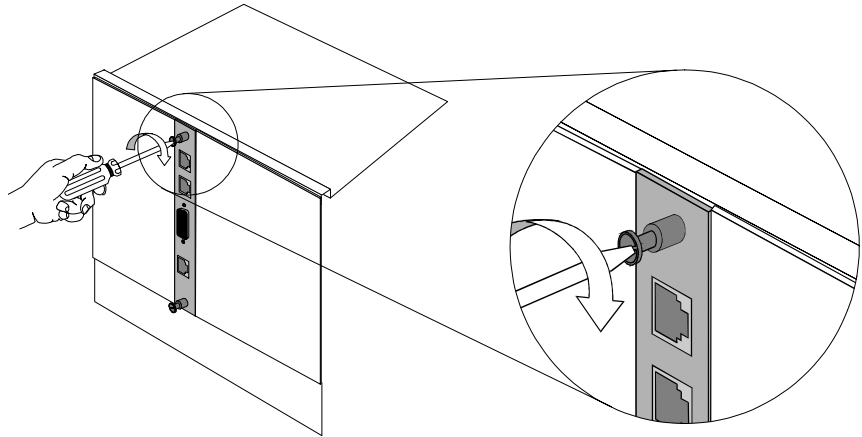
- 4** Insert the NIC between the slot's upper and lower card guides.



- 5** Slide the NIC into the chassis, until the front of the NIC is flush with the chassis.



- 6 Use a flat-head screwdriver to tighten the screws on the front panel.



- 7 Cover any unused chassis slots with safety panels.
- 8 Install the Network Application Card (NAC) corresponding to this NIC. Refer to the NAC's Getting Started Guide for more information.

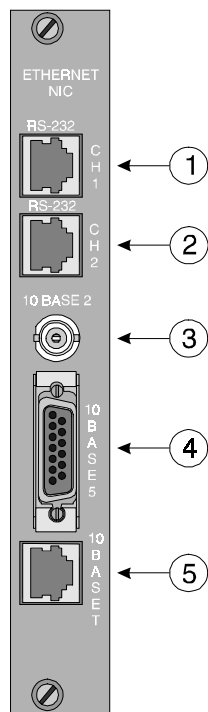
3

NETWORK INTERFACE CARD CABLING

This chapter provides information about the physical interfaces of the Ethernet 10 Mbps Network Interface Card (NIC) and instructions for accessing the corresponding Network Application Card (NAC) through the user interface (UI).

Physical Interfaces

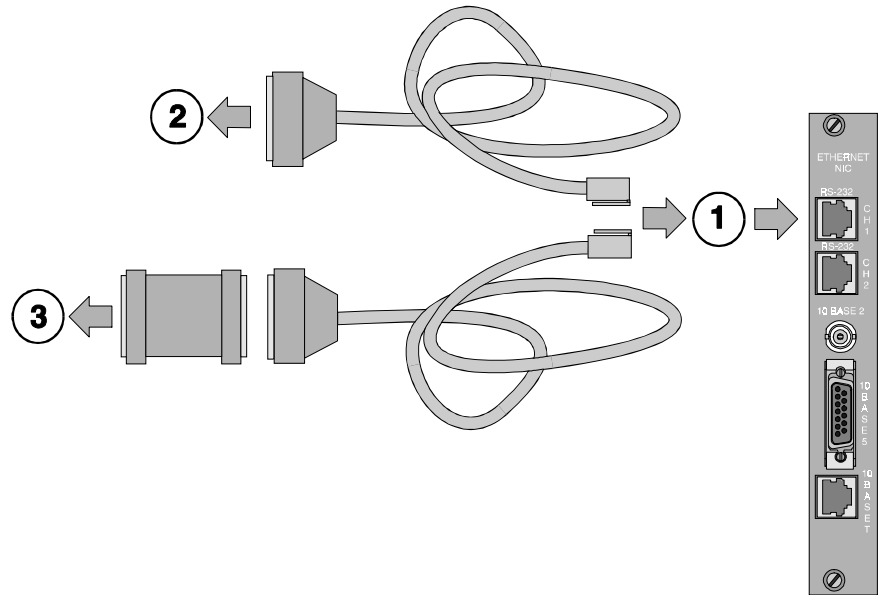
The Ethernet 10 Mbps NIC has the following physical interfaces:



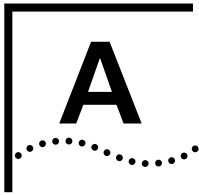
Callout Number	Interface Description
1	CH1: RJ-232 DTE port Used to access its corresponding NACs User Interface (UI) console. This port's speed is determined by DIP switch settings on the NAC. When behind the NMC, this port can be configured as a second SLIP port. See the <i>NMC Getting Started Guide</i> for more information.
2	CH2: RJ-45 RS-232 DTE port Used as a dedicated SLIP port when behind the NMC. It is reserved when behind any other NAC.
3	10 BASE 2: BNC 10 BASE 2 Ethernet port
4	10 BASE 5: DB-13 10 BASE 5 Ethernet port
5	10 BASE T: RJ-45 10 BASE T Ethernet port

Accessing the User Interface

To access the UI of the corresponding NAC, connect the following cables to the NIC's console port.



Callout Number	Description
1	RJ-45 connector to NIC's console port
2	DB-25 male connector to modem for remote operations
3	DB-25 female-to-female null modem adapter to PC or terminal COM port



TECHNICAL SPECIFICATIONS

Certification

EMI/RFI	<ul style="list-style-type: none">■ FCC 15A■ EN55022A
Safety	<ul style="list-style-type: none">■ UL 1950■ C-UL■ EN 60950
Telco	<ul style="list-style-type: none">■ FCC 68

Regulatory Compliance Statements

United States

FCC Part 15 Compliance Statement

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 his own expense.

Interface Specifications

Serial Ports RS-232 CH1 and CH2

Electrical Specification:	RS-232, 8-position modular jack
Connector:	Modular Jack: Stewart 88-360808 or equivalent DB-25: Amp 748677-1 or equivalent
Configuration:	DTE
Transmission Method:	Unbalanced RS-232
Transmission Rate:	57.6 Kbps maximum

Cable Specifications

Wire Type:	Belden 9538 or equivalent, 8 conductor, shielded
Maximum Cable Distance:	50 feet, 15 meters
Cabling:	8-position modular jack to DB-25 (IBM AT pin-out)
Nominal Direct Current Resistance:	Center Conductor: <ul style="list-style-type: none">■ 24 gage (7 strands 32 gage)■ .61 millimeter diameter■ 23.7 ohms/1000 feet■ 77.8 ohms/kilometer Shield: <ul style="list-style-type: none">■ 15.5 ohms/1000 feet■ 50.9 ohms/kilometer
Outside Diameter:	.265 inch; 6.73 millimeter
Capacitance Between Conductors:	30 picofarads/feet; 98 picofarads/meter

Ethernet 10 Base-T Port

Data Transfer Rate:	10 Mbps
Accessing Scheme:	CSMA/CD (Carrier Sense Multiple Access with Collision Detection)
Topology:	Star Wired Hub (using multiport repeater)
Maximum Nodes:	Limited only by repeater used
Transmission Medium:	Unshielded twisted pair
Network Lobe Distance:	100 meters (328 feet) suggested maximum. Longer cabling can be used at the expense of reduced receiver squelch levels.
Connector:	8-position modular jack, Stewart 88-360808 or equivalent

Cable Specifications

Wire Type:	.5 millimeters or 24 AWG twisted pairs
Maximum Cable Distance:	100 meters (328 feet) with standard receiver squelch levels
Cable Loss:	Must be ≤ 11.5 dB/100 meters for frequency range of 5-10 MHz
Characteristic Impedance:	85-111 ohms for frequency range of 5-10 MHz
Propagation Delay:	≤ 5.7 nanoseconds/meter
Cabling:	RJ45 plug to RJ45 plug straight through for multiport repeater applications—Transmit to Receive crossover cable for two-node network

Ethernet 10 Base-5 Port

Data Transfer Rate:	10 Mbps
Accessing Scheme:	CSMA/CD (Carrier Sense Multiple Access with Collision Detection)
Topology:	Bus
Maximum Nodes:	100
Transmission Medium:	Coaxial trunk cable, twisted pair AUI
Network Lobe Distance:	Minimum separation of 2.5 meters
Connector:	DB-15, AMP 747845-4 or equivalent

Cable Specifications—AUI Cable

Wire Type:	Shielded twisted pairs
Maximum Cable Distance:	Not specified, must meet following specifications
Nominal DC Resistance:	≤ 1.75 ohms per conductor
Pair-to-Pair Crosstalk:	≤ 40 dB attenuation for frequency range of 5-10 MHz
Characteristic Impedance:	78 ± 5 Ohms at 10 MHz
Attenuation:	≤ 3 dB per pair for frequency range of 5-10 MHz
Propagation Delay:	≤ 257 nanoseconds
Cabling:	DB-15M to DB-15F

Cable Specifications—Trunk Cable

Wire Type:	Coaxial; Center Conductor: <ul style="list-style-type: none">2.17 ±.013 millimeter (.0855 ±.0005 inch) diameter solid copper Shield: <ul style="list-style-type: none">6.15 millimeter (.242 inch) inner diameter8.28 ±.178 millimeter (.326 ±.007 inch) outer diameter Dielectric: <ul style="list-style-type: none">Any material that meets other cable specs Jacket: <ul style="list-style-type: none">Polyvinyl chloride with outer diameter of 10.287 ±.178 millimeter (.405 ±.007 inch) <div>OR</div> <ul style="list-style-type: none">Fluoropolymer with outer diameter of 9.525 ±.254 millimeter (.375 ±.010 inch)
Maximum Cable Distance:	500 meters
DC Loop Resistance:	≤ 10 milliohms/meter
Velocity of Propagation:	.77c
Characteristic Impedance:	50 ±2 Ohms at 10 MHz
Attenuation:	<ul style="list-style-type: none">≤ 8.5 dB for 10 MHz sine wave≤ 6.0 dB for 5 MHz sine wave
Cabling:	Type N plug or coaxial "tap"

Ethernet 10 Base-2 Port

Data Transfer Rate:	10 Mbps
Accessing Scheme:	CSMA/CD (Carrier Sense Multiple Access with Collision Detection)
Topology:	Bus
Maximum Nodes:	30
Transmission Medium:	Coaxial cable
Network Lobe Distance:	Minimum separation of .5 meters
Connector:	Type BNC "T"

Cable Specifications

Wire Type:	Coaxial; Center Conductor: <ul style="list-style-type: none"> ■ .89 ±.05 millimeter diameter stranded, tinned copper Shield: <ul style="list-style-type: none"> ■ 2.95 ±.15 millimeter inside diameter Dielectric: <ul style="list-style-type: none"> ■ Solid preferred; any other material that meets other cable specs Jacket: <ul style="list-style-type: none"> ■ Polyvinyl chloride with outer diameter of 4.93 ±.3 millimeter OR <ul style="list-style-type: none"> ■ Fluoropolymer with outer diameter of 4.9 ±.3 millimeter
Maximum Cable Distance:	185 meter
DC Loop Resistance	≤ 50 milliohms per meter
Velocity of Propagation	.65 c
Characteristic Impedance:	50 ±2 Ohms
Attenuation:	<ul style="list-style-type: none"> ■ ≤ 8.5 dB for 10 MHz sine wave ■ ≤ 6.0 dB for 5 MHz sine wave
Cabling:	BNC "T" (plug, receptacle, plug adapter)

Current Draw

+5.2 VDC @ 500 mA typical maximum

i

Typical maximum refers to the maximum current draw under most typical configurations.

Environment

Shipping and Storage

Temperature:	-25 to 75° C, -13 to 167° F
Relative Humidity:	0 to 100%, Non-condensing

Operating

Temperature:	0 to 40° C, 32 to 104° F
Relative Humidity:	0 to 95%, Non-condensing

Physical Dimensions

	Inches	Centimeters
Length:	5.30	13.46
Width:	0.79	2.00
Height:	6.90	17.53



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