



Compact 5, 8, 16 and 24 Port 10/100Mbit/s Ethernet Switches

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Product User Guide

Introduction

These very compact Tyco Electronics/AMPNetconnect auto-negotiating Ethernet workgroup switches enable SOHO users and small and medium size workgroups to have high speed, low latency LAN connections to network.

These switches are very simple to install and configure with automatic sensing of the connected 10/100Mbit/s data rate and the detection of either a switch/hub or PC connected to the Ethernet port. This eliminates the need for any Ethernet crossover cables.

Package Contents

Unpack the contents and verify them against the items below:-

1. The Ethernet Switch type: -
 - 5 Port Switch = Tyco part number 0-1591090-x
 - 8 Port Switch = Tyco part number 0-1591036-x
 - 16 Port Switch = Tyco part number 0-1591070-x
 - 24 Port Switch = Tyco part number 0-1591072-x
2. AC/DC Power adapter (5 and 8 Port switches),
AC Power Cord (16 and 24 port switches).
3. Four rubber feet.

If any item is damaged or missing, please contact your dealer.

Features

- 5, 8, 16 or 24 Auto-sensing 10/100Base-T RJ-45 Ethernet ports
- Full auto-MDI/MDI-X on all Ethernet ports removes the need for cross-over cables
- Meets IEEE 802.3, .3u and .3x Ethernet standards
- Uses store-and-forward switching to separate collision domains and provide abnormal packet filtering
- Large integral MAC address table with automatic learning: -
 - ◆ 1K addresses in the 5 Port Switch
 - ◆ 2k addresses in the 8 Port Switch
 - ◆ 8K addresses in the 16 Port Switch
 - ◆ 4K addresses in the 24 Port Switch
- Large packet buffer
- Very high backplane bandwidth
- Supports back-pressure & flow control
- Numerous diagnostic LED indicators
- Very compact, stand-alone mounting
- Rack mounting option for 16 and 24 Port Switches
- FCC Class A and CE mark certification

Technical Support and Service

If you require technical advice for these products, please see the FAQ pages on the web address <http://www.lan-electronics.com>

If you still have problems, please contact us using the support form located on the above web site.

If you have a faulty unit then please contact us through the web site to arrange for a replacement unit. The faulty unit must be returned to us as part of the replacement agreement.

Front Panels

The front panel of the 5 and 8 port switches includes the LED indicators that provide a detailed view of the status of the switch.

The front panel of the 16 and 24 port switches have the LED indicators and the RJ-45 Shielded/Unshielded Ethernet Ports.

Rear Panels

The rear panel of the 16 and 24 port switches contains the IEC style power inlet connector.

The rear panel of the 5 and 8 port switch contains the 8 x RJ-45 Shielded/Unshielded Ethernet Ports and the DC power inlet connector.

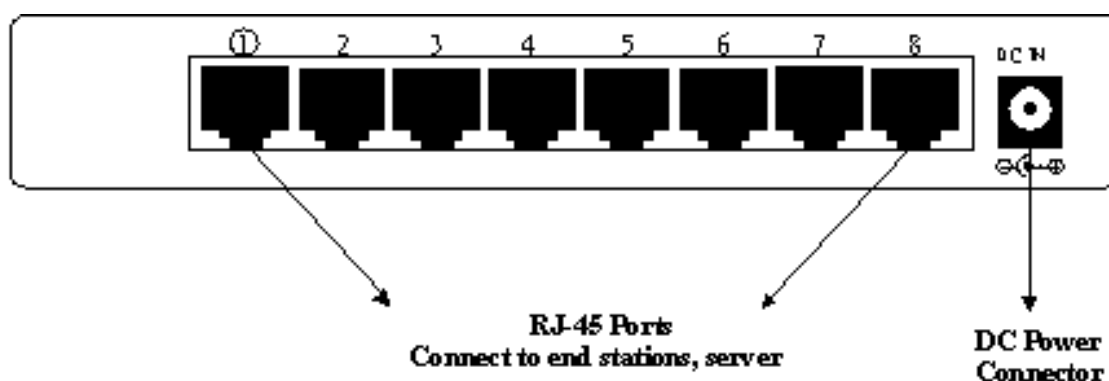


Figure 1 – 8 Port Switch rear panel

Ports

- **RJ-45 Ports.** These Ethernet RJ-45 ports support both shielded and unshielded cabling systems. Each port auto-negotiates the 10/100Mbit/s network speed and auto-detects the connected device type which eliminates the need for cross-over cables.
- **DC Power Connector (5 and 8 Port Switches Only).** The switch is powered by an external AC/DC power unit that is connected to the DC inlet socket.
- **AC Power Connector (16 and 24 Port Switches Only).** This connector is located on the rear panel of the switch and accepts any standard IEC style power connector.

Installation

Copper Cabling Guidelines

1. The RJ-45 ports can be connected to either unshielded twisted pair (UTP) or shielded twisted pair (STP) cabling systems compliant with the IEEE 802.3u 100Base TX standard for Category 5. The cable between the switch and the link partner device (router, hub, workstation, etc.) must be less than 100 metres long.
2. The switch auto-detects the type of connected device (PC or hub) and automatically configures the port to avoid the need for an Ethernet crossover cable.

Desktop Installation

1. Fit the self-adhesive rubber feet to the underside of the switch.
2. Locate the switch in a clean, flat and safe position that has easy access to AC power. Ensure that there is sufficient clearance around the switch to enable air circulation.

Completing The Installation

When the switch has been installed as specified above, then the unit can be configured as detailed below:-

1. 5 and 8 Port Switch:- Connect the AC power adapter cable to the DC inlet connector on the rear panel of the switch.
16 and 24 Port Switch: - Connect the AC power cable to the switch.
2. Apply AC mains power. The green Power LED on the front panel of the switch should light.
3. Connect the Cat. 5/5e twisted pair cables from the network partner devices to the RJ-45 ports on the switch. When a network connection is obtained, the green LK/ACT LED associated with the port will light.
4. Note that auto-negotiation with connected devices can take up to 30 seconds to complete depending on the partner device.

LED Indicators

The diagnostic LED indicators located on the front panel of the switch provide real-time information about switch status. The following table describes the LED status and meaning.

LED	Colour	Function
Power	Green	Power on
LK/ACT	Green	Ethernet link pulses are present
	Blinks	Port transmitting or receiving packets
	Off	No device is attached or faulty cable
FDX/COL (5 and 8 Port Switch Only)	Orange	The port is in full-duplex mode
	Blinks	Collisions in half-duplex mode
	Off	The port is in half-duplex mode

Trouble Shooting

Power

1. Verify that the AC power is present and that the external fusing is correct and compliant with national requirements. The green Power LED should be lit to indicate that the switch is powered correctly.

Data Problems

1. Ensure that the Ethernet partner device (switch, router, NIC etc) connected to the RJ-45 UTP port of the switch is set for auto-negotiation. If this Ethernet partner device does not support auto-negotiation, then you need to program that device to operate at 100Mbit/s half duplex or 10Mbit/s half duplex.
2. If the switch and the partner device cannot auto-negotiate then both units automatically revert to the lower level of half-duplex operation. This issue is common to all auto-negotiating Ethernet devices and the symptoms of incorrect negotiation include data errors and fragmented packets.
3. Auto-negotiation can take up to 30 seconds to complete depending on the partner device.
4. Ensure that the switch is not overheating due to obstructed airflow around the side vents or around the power adapter.

If you still have problems and need further advice, please see Technical Support section on page 3 to obtain more information.

Product Specifications

Standards Compliance	IEEE 802.3 10Base-T Ethernet IEEE 802.3u 100 BASE-TX Fast Ethernet IEEE 802.3u 100 Base-FX Fast Ethernet ANSI/IEEE standard 802.3 N-way Auto-Negotiation
Max Forwarding Rate Per Port	14,880 pps Ethernet port (10Mbit/s) 148,800 pps Fast Ethernet port (100Mbit/s)
LED Indicators	Power, 5 Port Switch: - Link/Act, FD/Coll. 8 Port Switch: - Link/Act, FD/Coll. 16 and 24 Port Switch: - Link/Act
Ethernet LAN Copper Network Cable	10Base-T: 2-pair UTP/STP Cat. 3, 4, 5 cable EIA/TIA-586 100-ohm 100Base-TX: 2-pair UTP/STP Cat. 5 cable EIA/TIA-586 100-ohm
Switch Bandwidth	5 Port = 1.0Gbit/s, 8 port = 1.6Gbit/s, 16 port = 3.2Gbit/s, 24 Port = 4.8Gbit/s.
Dimensions (W x D x H)	5 Port: - 110 x 70 x 19mm 8 Port:- 164 x 100 x 26mm 16/24 Port:- 250 x 132 x 37mm
Mounting Format	5 and 8 Port: - Standalone 16 and 24 Port: - Standalone or rackmount with optional adapter plates (0-1591068-0)
Weight	5 and 8 port = 0.5Kg, 16 and 24 port = 1.1Kg
Temperature	0°C to 45°C (32°F to 113°F) (Operating)
Humidity	10% to 90% (Non-condensing)
Power Connection	5 and 8 Port Switch: - External AC/DC Adapter 16 and 24 Port Switch: - IEC Format Cord
Power Supply	100v to 240v AC, 50/60Hz auto-ranging.
Power Consumption	5 and 8 Port Switch: - 4 Watts (Max.) 16 Port Switch: - 15 Watts (Max). 24 Port Switch: - 19 Watts (Max).
EMI	FCC Class A and CE Mark

Table 1 - Product Specifications