AT-FS238

2 Port Fast Ethernet Single Strand Speed/Media Converting Switch

AT-FS238

2 port single strand fiber media converter,10/100TX (RJ-45) to 100FX (SC), (1310nm TX/1550nm RX) or (1550nm TX/1310nm RX) with distances up to 40km

Overview

The AT-FS238 media converter is a 10/100Mbps copper to single-mode fiber media converter which can send and receive on single strand fiber (1310nm TX/1550nm RX) or (1550nm TX/1310nm RX). These units are designed to be used in pairs in a network topology to provide point-to-point access. The AT-FS238 converts 10/100TX (RJ-45) to 100FX (SC) and will transmit up to 40km on high quality fiber optic cable. Both ports feature full and half-duplex operation. The AT-FS238 is easy to install and does not require software configuration or management. Additionally, it can be used almost anywhere due to its small physical size, choice of external power supplies and options to be rack-mounted.

Auto MDI/MDI-X

The AT-FS238 media converter features automatic MDI/MDI-X. The 10/100TX (RJ-45) port automatically determines the configuration of the port on the device to which it is connected and then configures itself appropriately. This feature allows you to use either crossover cables or straight-through cable when connecting a device to the copper port.

Smart MissingLink™ (SML)

The MissingLink™ feature allows the ports on the media converter to pass the 'Link' status of their connections to each other. When the media converter detects a problem with one of the ports, such as the loss of connection to a node, it shuts down the connection to the other port, thus notifying the node that the connection has been lost. The AT-FS238 also features Smart MissingLink (SML). This feature monitors network connections and provides notification if a network segment fails. This allows network managers to quickly identify the source and location of a failed segment and minimize downtime.

Key Features

- LEDs for unit and port status
- Auto MDI/MDI-X
- Mode selection button that toggles between Link Test, MissingLink, and Smart MissingLink
- DIP switches for port configuration
- Supports half and full-duplex operation
- Data packet forwarding and filtering at full wirespeed (10Mbps to 100Mbps, 100Mbps to 100Mbps, and 10Mbps to 10Mbps)
- Store and forward switching mode
- Automatic address learning and aging
- IEEE 802.3u compliant auto-negotiation
- External AC/DC power adapter (North America, Continental Europe or United Kingdom)
- Rack-mountable using optional AT-MCR12, AT-TRAY4 or AT-TRAY1 chassis

AT-FS238 | 2 Port Fast Ethernet Single Strand Speed/Media Converting Switch

Status Indicators

System LEDs

Power	Indicates power is applied to the converter

Per fiber port:

Link	Indicates a valid receive link exists
Duplex	Indicates full or half-duplex operation
Collision	Indicates collision during packet

Per copper port:

Link	Indicates a valid receive link exists
Speed	Indicates either 10Mbps or 100Mbps operation
Auto	Indicates port is set for auto-negotiation
FD/Collision	Indicates collision during packet transmission on the port Indicates full or half-duplex operation

Operational Characterisitcs

Per fiber port:

Duplex	Selects either full or half-duplex operation

Per copper port:

Auto	Selects auto-negotiation mode or manual setting
Duplex	Forces port to full or half-duplex operation (Auto-setting = manual only)
Speed	Forces port to 10Mbps or 100Mbps operation (Auto-setting = manual only)

Operational Mode

MissingLink (ML)
Smart MissingLink (SML)
Link Test

Packet buffer	28k per port
MAC address table	8k addresses
Forwarding/filtering rate	148,880pps for 100Mbps 14,880pps for 10Mbps
Latency	14.3 µsec (64 byte packet, 100Mbps full-duplex)

Power Characteristics

Input supply voltage	12vDC or 12-50vDC
Rated currents	.5A max.
Power consumption	24W max.

Physical Characteristics

Dimensions	10.5cm x 9.5cm x 2.5cm (4.12" x 3.75" x 1")
Weight	294g (10.4 oz)

Fiber Optic Port Specifications

Fiber Optic Transmitter

Model	Fiber Type[1]	Fiber Optic Diameter (Microns)	Optical Wavelength	Launch Power (dBm)[2]		
				Min.	Avg.[2]	Max.
AT-FS238a/1	SMF (SC)	9/125	1310nm	-15.0	-11.0	-8.0
AT-FS238a/2	SMF (SC)	9/125	1310nm	-8.0	-5.0	-2.0
AT-FS238b/1	SMF (SC)	9/125	1550nm	-15.0	-11.0	-8.0
AT-FS238b/2	SMF (SC)	9/125	1550nm	-8.0	-5.0	-2.0

1 SMF = Single-mode fiber
2 Launch power is measured at one meter from the transmitter
3 Launch power (Avg.) is power coupled into a single-mode fiber

Fiber Optic Receiver

Model	Fiber Type[1]	Fiber Optic Diameter (Microns)	Optical Wavelength	Receiver Sensitivity (dBm)		
				Max.	Avg.	Saturation
AT-FS238a/1	SMF (SC)	9/125	1550nm	-30.0	n/a	-7.5
AT-FS238a/2	SMF (SC)	9/125	1550nm	-33.0	n/a	-2.0
AT-FS238b/1	SMF (SC)	9/125	1310nm	-30.0	n/a	-7.5
AT-FS238b/2	SMF (SC)	9/125	1310nm	-33.0	n/a	-2.0

1 SMF = Single-mode fiber

Fiber Optic Datalink

Model	Fiber Type[1]	Minimum Power/Link Budget	Minimum Operating Distance[2]	Minimum Operating Distance[3]
AT-FS238a/1	9/125 SMF	6.0dB	0	15km (9.4mi)
AT-FS238a/2	9/125 SMF	16.0dB	0	40km (9.4mi)
AT-FS238b/1	9/125 SMF	6.0dB	0	15km (9.4mi)
AT-FS238b/2	9/125 SMF	16.0dB	0	40km (9.4mi)

1 SMF = Single-mode fiber
2 The recommended mimimum range is stated in all cases where the maximum transmitter output power exceeds the receiver's saturation level. This is to prevent blinding or burning out of the optical receiver on the far-end mode.
3. Distance is calculated based on ideal situations without any other loss factor

Fiber Optic Loss Specification (Benchmark)

Fiber Type[1]	Fiber Optic Diameter (Microns)	Optical Wavelength	Typical Loss Factor	Bandwidth
SMF (SC)	9/125	1310nm	0.4dBm	n/a

Environmental Specifications

Operating temp.	0°C to 40°C (32°F to 104°F)
Storage temp.	-20°C to 70°C (-13°F to 158°F)
Relative humidity (operating)	5% to 90% non-condensing
Relative humidity (storage)	5% to 95% non-condensing
Operating and storage altitude	Up to 3,048m (10,000 feet)

Electrical/Mechanical Approvals

CE	IEEE 802.3, IEEE 802.3u
Safety	UL60950 (cULus), EN60950, EN60825 (TUV)
Emission	FCC Part 15 Class B, EN55022 Class B
Immunity	EN55024

Ordering Information

AT-FS238A/1-10
2 port single strand fiber media converter, 10/100TX (RJ-45) to 100FX (SC) (1310nm TX/1550nm RX) with 12vDC power supply and distances up to 15km

AT-FS238A/2-10
2 port single strand fiber media converter, 10/100TX (RJ-45) to 100FX (SC) (1310nm TX/1550nm RX) with 12vDC power supply and distances up to 40km

AT-FS238B/1-10
2 port single strand fiber media converter, 10/100TX (RJ-45) to 100FX (SC) (1550nm TX/1310nm RX) with 12vDC power supply and distances up to 15km

AT-FS238B/2-10
2 port single strand fiber media converter, 10/100TX (RJ-45) to 100FX (SC) (1550nm TX/1310nm RX) with 12vDC power supply and distances up to 40km

Associated Products

AT-PWR237-11
12vDC power supply with screw terminals

USA Headquarters | 19800 North Creek Parkway | Suite 200 | Bothell | WA 98011 | USA | T: +1 800 424 4284 | F: +1 425 481 3895
European Headquarters | Via Motta 24 | 6830 Chiasso | Switzerland | T: +41 91 69769.00 | F: +41 91 69769.11
Asia-Pacific Headquarters | 11 Tai Seng Link | Singapore | 534182 | T: +65 6383 3832 | F: +65 6383 3830

www.alliedtelesis.com

617-00520 Rev E

Connecting The IP World

Allied Telesis