Doc. Code: CE125002 Rev: C

Series Description

The Connect Series offers a complete portfolio for IDC (Industrial Data Communication), providing Gigabit Ethernet network connectivity. Designed as the ideal solution for industrial applications, the Connect Series enables the connection of Programmable Controllers (PLCs), Human Machine Interfaces (HMIs), Frequency Inverters and supervision stations running on industrial servers or computers.

The range includes some models with SFP support for fiber optic connections and PoE for powering compatible devices, guaranteeing flexibility and efficiency in the communication network infrastructure.

With an easy installation procedure, DIN rail or wall mounting, and a robust IP30 standard design for applications in hostile environments, the Connect Series is ideal for industrial sectors, withstanding high temperature variations and ensuring reliable operation at 10/100/1000 Mbps. Its high-performance switching mechanism meets all the requirements for industrial data communication.

Purchase Data

ET5-0500 Items

This product contains the following items:

- An ET5-0500 Switch
- Mounting brackets and screws
- Quick installation guide

ET5-0600 Items

This product contains the following items:

- An ET5-0600 Switch
- Mounting brackets and screws
- Quick installation guide

ET5-0602-M Items

This product contains the following items:

- An ET5-0602-M Switch
- Mounting brackets and screws
- Quick installation guide

ET5-0802-M Items

This product contains the following items:

- An ET5-0802-M Switch
- Mounting brackets and screws
- Quick installation guide

ET5-0800 Items

This product contains the following items:

- An ET5-0800 Switch
- Mounting brackets and screws
- Quick installation guide

PG5-1204-SFP Items

This product contains the following items:

- APG5-1204-SFP Switch
- Mounting brackets and screws
- Quick installation guide

EG5-2004-SFP Items

This product contains the following items:

- An EG5-2004-SFP Switch
- Mounting brackets and screws

Quick installation guide

Product Codes

The following codes should be used when purchasing the product:

Code	Description
ET5-0500	5-Port Industrial Managed Ethernet Switch
ET5-0600	6-Port Industrial Managed Ethernet Switch
ET5-0602-M	6-Port Industrial Managed Ethernet Switch - 4*10/100Base-TX + 2*100FX
ET5-0802-M	8-Port Industrial Managed Ethernet Switch - 6*10/100Base-TX + 2*100FX
ET5-0800	8-Port Industrial Managed Ethernet Switch
PG5-1204-SFP	12-Port Industrial Managed Gigabit Switch, 8 PoE+ electrical ports and 4 SFP ports
EG5-2004-SFP	20-Port Industrial Managed Gigabit Switch, 16 electrical ports and 4 SFP ports

Table 1: Managed Switch Models

Doc. Code: CE125002 Rev: C

ET5-0500 Description

The ET5-0500 is a 5-port managed Fast Ethernet switch (RJ45) designed to be compact, making it the ideal model for installations in limited spaces, such as machine control panels and duct assembly rooms. For harsh environments, such as machines with vibration or assembly rooms, the ET5-0500 can be easily mounted on a DIN rail. With an IP30 rating and a rigid metal alloy housing, it offers resistance to severe vibrations, a wide temperature range, and electromagnetic interference.

Software Features:

Network Redundancy

- STP, RSTP, MSTP, ITU-T G.8032 / Y.1344 ERPS v1/v2 (Ethernet Ring Protection Switch)

Configuration

- Http, Https, Telnet, SSH, CLI, TFTP, SNMP v3

Network Management

- QoS (QoS/CoS), storm protection
- IEEE 802.1Q VLAN, supports VLAN
- IGMP snooping v2/v3, MLD snooping v1/v2, IGMP

Filtering, IGMP Group 1024

- IPv4 / IPv6
- NTP client
- SNMP v1/v2c/v3
- LLDP

Security

- MAC-based Authentication
- Access Control List (ACL), 802.1X authentication, RADIUS Server
- VLAN assignment, QoS Assignment

Main Features:

Interface & Performance

- All copper ports support Automatic MDI/MDI-X function

5x 10/100Tx Fast Ethernet
Store-and-forward switching architecture
8K MAC Address Table
4Mbits Memory Buffer

Power Supply

Redundant power DC 12~48V with 1 removable 6-pin terminal block
Max. Current 3.5A
Relay Contact: 24VDC, 1A resistive

Certification

CE/FCC
UL 61010-1
UL 61010-2-201

Operating Temperature

STD: -10°C ~ 65°C (14°F ~ 149°F)

Housing/Installation

IP30 Protection
Installation in a Pollution Degree 2 industrial environment
DIN-rail mounting and wall mounting.

	ET5-0500
Available Modes	Switch Mode
Connectors	
Ethernet Port	RJ45
Fiber Port	N/A
Power Connection	1 removable 6-pin terminal block
LED diagnóstico	
P1 **P2**	Power Supply Input Indicator
Fault	Lack of redundant power input Indication
Master	Owner Mode Indication (ERPS)
Ring	Ring network connection/activity indication (ERPS)
100 **(LAN Ports 1-5)**	100Mbps connection/traffic indication
10 **(LAN Ports 1-5)**	10Mbps connection/traffic indication

Specification – ET5-0500

		ET5-0500
Technology	**Standards**	IEEE 802.3 10Base-T Ethernet IEEE 802.3u 100Base-TX Fast Ethernet IEEE 802.3x Flow Control IEEE 802.1d STP (Spanning Tree Protocol) IEEE 802.1w RSTP (Rapid Spanning Tree Protocol) IEEE 802.1s MSTP (Multiple Spanning Tree Protocol) ITU-T G.8032 / Y.1344 ERPS v1/v2(Ethernet Ring Protection Switch) IEEE 802.1Q Virtual Local Area Network (VLAN) IEEE 802.1p QoS/CoS Protocol for Traffic Prioritization IEEE 802.1X Network Authentication IEEE 802.1AB Link Layer Discovery Protocol (LLDP) IEEE 802.3ad Link Aggregation (LACP)
	Processing Type	Store and Forward
	Flow Control	IEEE 802.3x flow control, back pressure flow control
Network Management	**Management**	IPv4/IPv6, SNMP v1/v2c/v3, LLDP, LLDP-MED, HTTP, HTTPS, SSHv2 telnet, DHCP client, DHCPv6 client, DHCP server, Port Mirror, DNS client/proxy, IP based Access Filter, ICMPv6, syslog, Time Zone /Daylight Saving, NTP client, RMON, sFlow, Loop detection, Console Port, Power lost warning, relay trigger
	Security	Port-based/Single/Multi 802.1X, ACL (Port/Rate Limiters/ACE), MAC-based Authentication, VLAN assignment, QoS Assignment, Private VLAN, Guest VLAN, RADIUS accounting, TACACS+, IP MAC binding, WEB/CLI authentication, Authorization (15 levels), Port Security Limit Control, ACLs for filtering/policing/port copy, IP source guard, ARP Inspection
	L2 Switching	Port/MAC/Protocol/IP Subnet-based VLAN, VLAN trunking, GARP/GVRP, Loop Guard, Link Aggregation static/LACP, BPDU guard, Error disable recovery, IGMPv2 snooping, MLD snooping, IGMP filtering, IPMC throttling / filtering leave proxy, DHCP snooping, ARP, MEP, G.8032 v1/v2
	L3 Switching	DHCP option82, static routes
	QoS	802.1p Queueing, Input priority mapping, Storm control for Unicast/Multicast/Broadcast, Port/Queue/ACL policer, Port egress shaper, Queue egress shaper, DiffServ (DSCP), Tag remarking, Scheduler mode
	Power Saving	ActiPHY, PerfectReach, IEEE 802.3az EEE power management
	Network Redundancy	STP/RSTP/MSTP, port trunk with LACP, ERPS v1/v2 (<50ms)
	Configuration	Http, Https, Telnet, SSH, CLI, TFTP, SNMP v3

	System / Diagnostics	Dual Image Protection, PING, PING6
Switch Properties	**Switching Fabric (Back-Plane)**	1Gbps
	Priority Queues	8
	Max. Number of VLANs	4095
	VLAN ID Range	VID 1 a 4095
	Memory Buffer	4M bits
	Jumbo Frame	9.6Kbytes
	MAC Table Size	8k
	IGMP Group	1024
	Transfer rate	14,880pps for Ethernet port 148,800pps for Fast Ethernet port
Interface	**RJ45 Ports**	5*10/100 Base-T(X) Auto-Negotiation, Full/Half Duplex, Auto-MDI/MDI-X
	LED Indicators	System: Power 1, Power 2, Master, Ring, Status Ethernet ports: Speed/Link/Active
	RS232 Serial Console	1*RS232 in RJ45 connector with console cable, baud rate 115,200bps,8,N,1
	Relay Contact	24 VDC, 1A resistive
	Network Cable	10Base-T: 2-pair UTP/STP Cat. 3, 4, 5 cable EIA/TIA-568 100-ohm (100m) 100Base-TX: 2-pair UTP/STP Cat. 5 cable EIA/TIA-568 100-ohm (100m)
Power Requirements	**Input Voltage**	Dual 12-48VDC redundant power inputs
	Power Connection	1 removable 6-pin terminal block
	Overload Current Protection	Present (Slow-Blow Fuse)
	Reverse Polarity Protection	Present
	System Power Consumption	Max. 7.5W full loading
Characteristics	**Housing**	Metal, IP30 protection
	Dimensions (W x H x D)	54 x 142 x 99 mm (2.13 x 5.59 x 3.9 inch)
	Weight	Unit weight: 0.87kg (1.91 lb), Shipping weight: 1.17 kg (2.57 lb)
	Mounting	DIN-Rail Mounting, Wall Mounting
Environmental Limits	**Operating Temperature**	STD: -10°C ~ 65°C (14°F ~ 149°F) EOT: -40°C ~ 75°C (-40°F ~ 167°F)
	Storage Temperature	-40°C ~ 85°C (-40°F ~ 185°F)
	Ambient Relative Humidity	5 to 95%, (non-condensing)
Regulatory Approvals	**EMI**	FCC Part 15 Subpart B Class A, CE EN55032/EN61000-6-4 Class A
	EMS	CE EN55024/EN61000-6-2 Class A: IEC61000-4-2 (ESD), IEC61000-4-3 (RS), IEC61000-4-4 (EFT), IEC61000-4-5 (Surge), IEC61000-4-6 (CS), IEC61000-4-8 (Magnetic Field)
	Free Fall	IEC60068-2-32
	Shock	IEC60068-2-27
	Vibration	IEC60068-2-6
	Green	RoHS Compliant
	Safety	UL61010-1, UL61010-2-201
	Compliance	NEMA TS2 (ITS)

Table 2: Specifications

Hardware Details – ET5-0500

Dimension

ET5-0500 physical dimensions (W x H x D):

54 x 142 x 99 mm (2.13 x 5.59 x 3.9 inch)

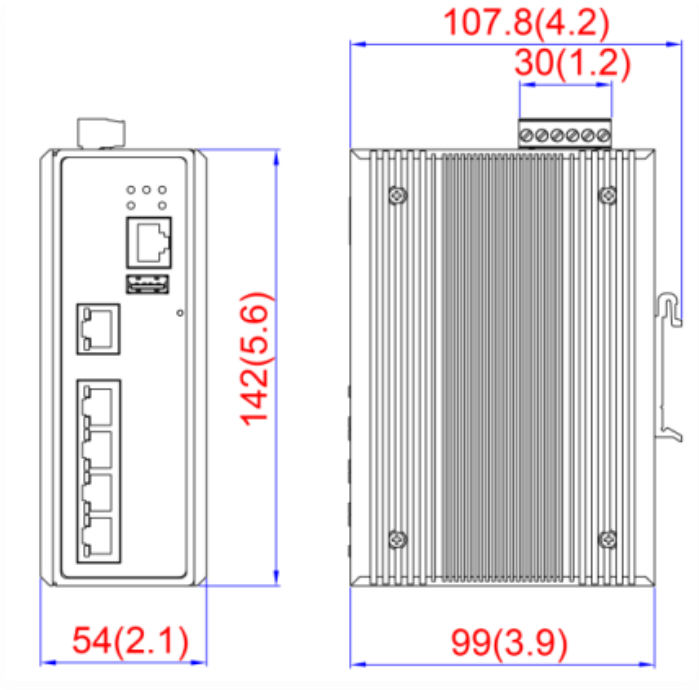


Figure 1: ET5-0500 Physical Dimensions

Unit: mm (inch)

Front Panel

The front panel of the ET5-0500 is shown in the image below:

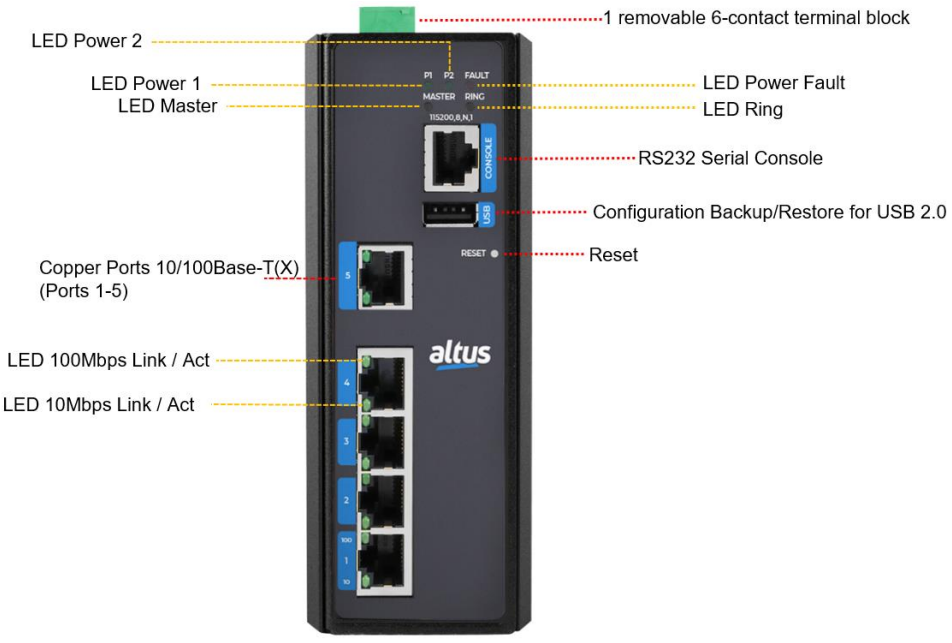


Figure 2: ET5-0500 Front Panel

Top View

The image below demonstrates the top panel of the ET5-0500, which is equipped with one 6-pin removable terminal block connector for dual DC power inputs (12-48VDC).

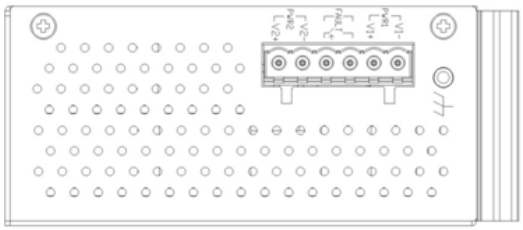


Figure 3: ET5-0500 Top Panel View

LED indicators

LED indicators, situated on the switch's front panel, display both the power input and network status. Each indicator is distinguished by a unique color, and its corresponding meaning is outlined in the table below:

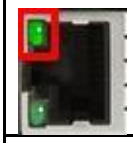
LED	Colour	Description	
P1	Green	On	Power input 1 is active
		Off	Power input 1 is inactive
P2	Green	On	Power input 2 is active
		Off	Power input 2 is inactive
Fault	Green	On	No event happened
	Red	On	Power input 1 or 2 is inactive
			Port link-down/Broken
Master	Green	On	ERPS Owner Mode (Ring Master) is ready
		Off	ERPS Owner Mode is not active
Ring	Green	On	ERPS Ring Network is active and works well
		Flashing	ERPS Ring works abnormally or misconfigure
		Off	ERPS Ring Network is not active
LAN port 1-5 L/A	Green 	On	Connected to the network, 100Mbps
		Flashing	Network is active
		Off	Not connected to the network
	Green 	On	Connected to the network, 10Mbps
		Flashing	Network is active
		Off	Not connected to the network

Table 3: LED indicators for ET5-0500

Note: For managed switches, in order for the LED Fault conditions to operate as shown in the table, this feature must be enabled in the device configuration. Please refer to the manual for more details.

Doc. Code: CE125002 Rev: C

ET5-0600 Description

The ET5-0600 is a 6-port managed Fast Ethernet switch (RJ45) designed to be compact, making it the ideal model for installations in limited spaces, such as machine control panels and duct assembly rooms. For harsh environments, such as machines with vibrations or assembly areas, the ET5-0600 can be easily mounted on a DIN rail. With an IP30 rating and a rigid metal alloy housing, it offers resistance to severe vibrations, a wide temperature range, and electromagnetic interference.

Software Features:

Network Redundancy

- STP, RSTP, MSTP, ITU-T G.8032 / Y.1344 ERPS v1/v2 (Ethernet Ring Protection Switch)

Configuration

- Http, Https, Telnet, SSH, CLI, TFTP, SNMP v3

Network Management

- QoS (QoS/CoS), storm protection
- IEEE 802.1Q VLAN, supports VLAN
- IGMP snooping v2/v3, MLD snooping v1/v2, IGMP

Filtering, IGMP Group 1024

- IPv4 / IPv6
- NTP client
- SNMP v1/v2c/v3
- LLDP

Security

- MAC-based Authentication
- Access Control List (ACL), 802.1X authentication, RADIUS Server
- VLAN assignment, QoS Assignment

Main Features:

Interface & Performance

- All copper ports support Automatic MDI/MDI-X function
- 6x 10/100Tx Fast Ethernet
- Store-and-forward switching architecture
- 8K MAC Address Table
- 4Mbits Memory Buffer

Power Supply

Redundant power DC 12~48V with 1 removable 6-pin terminal block
Max. Current 1A
Relay Contact: 24VDC, 1A resistive

Certification

CE/FCC
UL 61010-1
UL 61010-2-201

Operating Temperature

STD: -10°C ~ 65°C (14°F ~ 149°F)

Housing/Installation

IP30 Protection
Installation in a Pollution Degree 2 industrial environment
DIN-rail mounting and wall mounting.

	ET5-0600
Available Modes	Switch Mode
Connectors	
Ethernet Port	RJ45
Power Connection	1 removable 6-pin terminal block
LED diagnóstico	
P1 **P2**	Power Supply Input Indicator
Fault	Lack of redundant power input Indication
Master	Owner Mode Indication (ERPS)
Ring	Ring network connection/activity indication (ERPS)
100 **(LAN Ports 1-6)**	100Mbps connection/traffic indication
10 **(LAN Ports 1-6)**	10Mbps connection/traffic indication

Specification – ET5-0600

		ET5-0600
Technology	**Standards**	IEEE 802.3 10Base-T Ethernet IEEE 802.3u 100Base-TX Fast Ethernet IEEE 802.3x Flow Control IEEE 802.1d STP (Spanning Tree Protocol) IEEE 802.1w RSTP (Rapid Spanning Tree Protocol) IEEE 802.1s MSTP (Multiple Spanning Tree Protocol) ITU-T G.8032 / Y.1344 ERPS v1/v2(Ethernet Ring Protection Switch) IEEE 802.1Q Virtual Local Area Network (VLAN) IEEE 802.1p QoS/CoS Protocol for Traffic Prioritization IEEE 802.1X Network Authentication IEEE 802.1AB Link Layer Discovery Protocol (LLDP) IEEE 802.3ad Link Aggregation (LACP)
	Processing Type	Store and Forward
	Flow Control	IEEE 802.3x flow control, back pressure flow control
Network Management	**Management**	IPv4/IPv6, SNMP v1/v2c/v3, LLDP, LLDP-MED, HTTP, HTTPS, SSHv2 telnet, DHCP client, DHCPv6 client, DHCP server, Port Mirror, DNS client/proxy, IP based Access Filter, ICMPv6, syslog, Time Zone /Daylight Saving, NTP client, RMON, sFlow, Loop detection, Console Port, Power lost warning, relay trigger
	Security	Port-based/Single/Multi 802.1X, ACL (Port/Rate Limiters/ACE), MAC-based Authentication, VLAN assignment, QoS Assignment, Private VLAN, Guest VLAN, RADIUS accounting, TACACS+, IP MAC binding, WEB/CLI authentication, Authorization (15 levels), Port Security Limit Control, ACLs for filtering/policing/port copy, IP source guard, ARP Inspection
	L2 Switching	Port/MAC/Protocol/IP Subnet-based VLAN, VLAN trunking, GARP/GVRP, Loop Guard, Link Aggregation static/LACP, BPDU guard, Error disable recovery, IGMPv2 snooping, MLD snooping, IGMP filtering, IPMC throttling / filtering leave proxy, DHCP snooping, ARP, MEP, G.8032 v1/v2
	L3 Switching	DHCP option82, static routes
	QoS	802.1p Queueing, Input priority mapping, Storm control for Unicast/Multicast/Broadcast, Port/Queue/ACL policer, Port egress shaper, Queue egress shaper, DiffServ (DSCP), Tag remarking, Scheduler mode
	Power Saving	ActiPHY, PerfectReach, IEEE 802.3az EEE power management
	Network Redundancy	STP/RSTP/MSTP, port trunk with LACP, ERPS v1/v2 (<50ms)
	Configuration	Http, Https, Telnet, SSH, CLI, TFTP, SNMP v3
	System / Diagnostics	Dual Image Protection, PING, PING6
Switch Properties	**Switching Fabric (Back-Plane)**	1.2Gbps
	Priority Queues	8
	Max. Number of VLANs	4095
	VLAN ID Range	VID 1 a 4095

	Memory Buffer	4M bits
	Jumbo Frame	9.6Kbytes
	MAC Table Size	8k
	IGMP Group	1024
	Transfer rate	14,880pps for Ethernet port 148,800pps for Fast Ethernet port
Interface	**RJ45 Ports**	6*10/100 Base-T(X) Auto-Negotiation, Full/Half Duplex, Auto-MDI/MDI-X
	LED Indicators	System: Power 1, Power 2, Master, Ring, Status Ethernet ports: Speed/Link/Active
	RS232 Serial Console	1*RS232 in RJ45 connector with console cable, baud rate 115,200bps,8,N,1
	Relay Contact	24 VDC, 1A resistive
	Network Cable	10Base-T: 2-pair UTP/STP Cat. 3, 4, 5 cable EIA/TIA-568 100-ohm (100m) 100Base-TX: 2-pair UTP/STP Cat. 5 cable EIA/TIA-568 100-ohm (100m)
Power Requirements	**Input Voltage**	Dual 12-48VDC redundant power inputs
	Power Connection	1 removable 6-pin terminal block
	Overload Current Protection	Present (Slow-Blow Fuse)
	Reverse Polarity Protection	Present
	System Power Consumption	Max. 7.5W full loading
Characteristics	**Housing**	Metal, IP30 protection
	Dimensions (W x H x D)	54 x 142 x 99 mm (2.13 x 5.59 x 3.9 inch)
	Weight	Unit weight: 0.87kg (1.91 lb), Shipping weight: 1.17 kg (2.57 lb)
	Mounting	DIN-Rail Mounting, Wall Mounting
Environmental Limits	**Operating Temperature**	STD: -10°C ~ 65°C (14°F ~ 149°F) EOT: -40°C ~ 75°C (-40°F ~ 167°F)
	Storage Temperature	-40°C ~ 85°C (-40°F ~ 185°F)
	Ambient Relative Humidity	5 to 95%, (non-condensing)
Regulatory Approvals	**EMI**	FCC Part 15 Subpart B Class A, CE EN55032/EN61000-6-4 Class A
	EMS	CE EN55024/EN61000-6-2 Class A: IEC61000-4-2 (ESD), IEC61000-4-3 (RS), IEC61000-4-4 (EFT), IEC61000-4-5 (Surge), IEC61000-4-6 (CS), IEC61000-4-8 (Magnetic Field)
	Free Fall	IEC60068-2-32
	Shock	IEC60068-2-27
	Vibration	IEC60068-2-6
	Green	RoHS Compliant
	Safety	UL61010-1, UL61010-2-201
	Compliance	NEMA TS2 (ITS)

Table 4: Specifications

Hardware Details – ET5-0600

Dimension

ET5-0600 physical dimensions (W x H x D):

54 x 142 x 99 mm (2.13 x 5.59 x 3.9 inch)

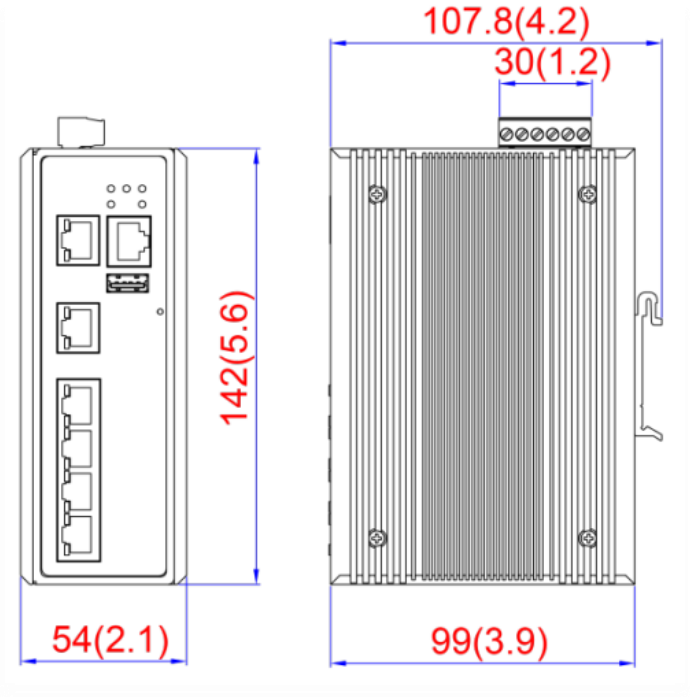


Figure 4: ET5-0600 Physical Dimensions

Unit: mm (inch)

Front Panel

The front panel of the ET5-0600 is shown in the image below:

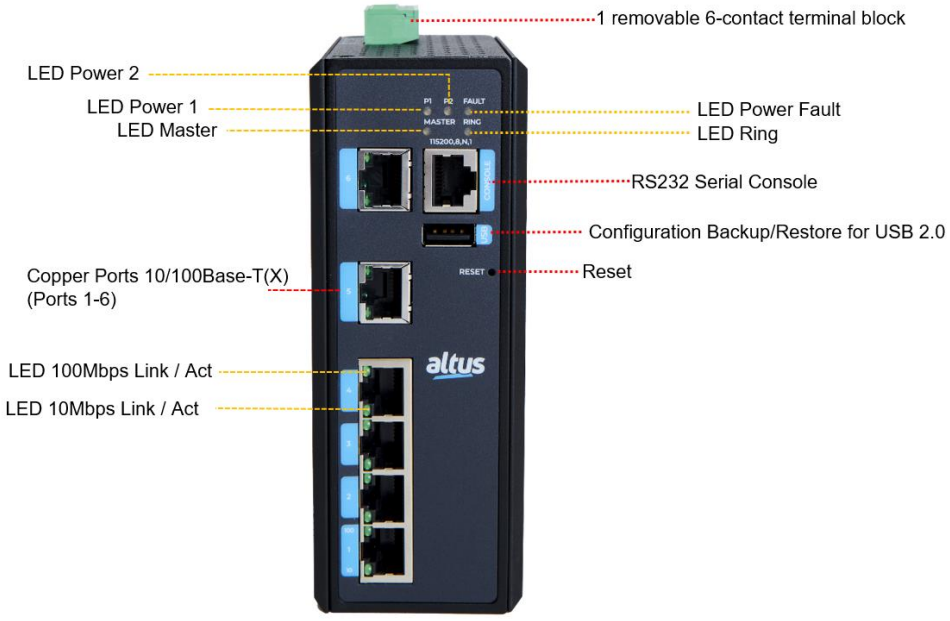


Figure 5: ET5-0600 Front Panel

Top View

The image below demonstrates the top panel of the ET5-0600, which is equipped with one 6-pin removable terminal block connector for dual DC power inputs (12-48VDC).

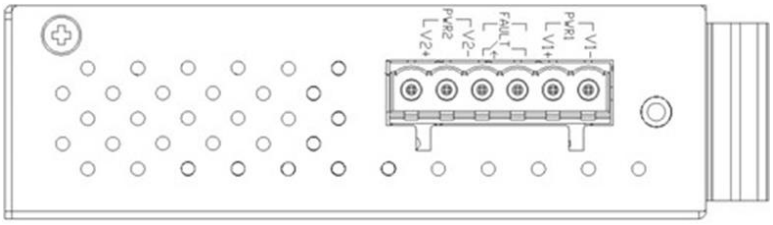


Figure 6: ET5-0600 Top Panel View

LED indicators

The switch's front panel has LED indicators for power and network status. Each LED has a unique color and meaning, detailed in the table below:

LED	Colour	Description	
P1	Green	On	Power input 1 is active
		Off	Power input 1 is inactive
P2	Green	On	Power input 2 is active
		Off	Power input 2 is inactive
Fault	Green	On	No event happened
	Red	On	Power input 1 or 2 is inactive
			Port link-down/Broken
Master	Green	On	ERPS Owner Mode (Ring Master) is ready
		Off	ERPS Owner Mode is not active
Ring	Green	On	ERPS Ring Network is active and works well
		Flashing	ERPS Ring works abnormally or misconfigure
		Off	ERPS Ring Network is not active
LAN port 1-6 L/A	Green 	On	Connected to the network, 100Mbps
		Flashing	Network is active
		Off	Not connected to the network
	Green 	On	Connected to the network, 10Mbps
		Flashing	Network is active
		Off	Not connected to the network

Table 5: LED indicators for ET5-0600

Note: For managed switches, in order for the LED Fault conditions to operate as shown in the table, this feature must be enabled in the device configuration. Please refer to the manual for more details.

Doc. Code: CE125002 Rev: C

ET5-0602-M Description

The ET5-0602-M is a 6-port managed Fast Ethernet switch (4 RJ45 ports and 2 Fiber ports) designed to be compact, making it the ideal model for installations in limited spaces, such as machine control panels and duct assembly rooms. For harsh environments, such as machines with vibrations or assembly areas, the ET5-0602-M can be easily mounted on a DIN rail. With an IP30 rating and a rigid metal alloy housing, it offers resistance to severe vibrations, a wide temperature range, and electromagnetic interference.

Software Features:

Network Redundancy

- STP, RSTP, MSTP, ITU-T G.8032 / Y.1344 ERPS v1/v2 (Ethernet Ring Protection Switch)

Configuration

- Http, Https, Telnet, SSH, CLI, TFTP, SNMP v3

Network Management

- QoS (QoS/CoS), storm protection
- IEEE 802.1Q VLAN, supports VLAN
- IGMP snooping v2/v3, MLD snooping v1/v2, IGMP

Filtering, IGMP Group 1024

- IPv4 / IPv6
- NTP client
- SNMP v1/v2c/v3
- LLDP

Security

- MAC-based Authentication
- Access Control List (ACL), 802.1X authentication, RADIUS Server
- VLAN assignment, QoS Assignment

Main Features:

Interface & Performance

- All copper ports support Automatic MDI/MDI-X function

4-port 10/100Base-T(X) Fast Ethernet + 2-port 100Fx – SC
Store-and-forward switching architecture
8K MAC Address Table
4Mbits Memory Buffer

Power Supply

Redundant power DC 12~48V with connective 1*6-pin removable terminal block
Max. Current 1A
Relay Contact: 24VDC, 1A resistive

Certification
CE/FCC
UL 61010-1
UL 61010-2-201

Operating Temperature
STD: -10°C ~ 65°C (14°F ~ 149°F)

Housing/Installation
IP30 Protection
Installation in a Pollution Degree 2 industrial environment
DIN-rail mounting and wall mounting.

	ET5-0602-M
Available Modes	Switch Mode
Connectors	
Ethernet Port	RJ45
Fiber Port	SC
Power Connection	1 removable 6-pin terminal block
LED diagnóstico	
P1 **P2**	Power Supply Input Indicator
Fault	Lack of redundant power input Indication
Master	Owner Mode Indication (ERPS)
Ring	Ring network connection/activity indication (ERPS)
L/A **(Fiber Ports 5-6)**	Connection/traffic indication
100 **(LAN Ports 1-4)**	100Mbps connection/traffic indication
10 **(LAN Ports 1-4)**	10Mbps connection/traffic indication

Specification – ET5-0602-M

		ET5-0602-M
Technology	**Standards**	IEEE 802.3 10Base-T Ethernet IEEE 802.3u 100Base-TX Fast Ethernet IEEE 802.3x Flow Control IEEE 802.1d STP (Spanning Tree Protocol) IEEE 802.1w RSTP (Rapid Spanning Tree Protocol) IEEE 802.1s MSTP (Multiple Spanning Tree Protocol) ITU-T G.8032 / Y.1344 ERPS v1/v2(Ethernet Ring Protection Switch) IEEE 802.1Q Virtual Local Area Network (VLAN) IEEE 802.1p QoS/CoS Protocol for Traffic Prioritization IEEE 802.1X Network Authentication IEEE 802.1AB Link Layer Discovery Protocol (LLDP) IEEE 802.3ad Link Aggregation (LACP)
	Processing Type	Store and Forward
	Flow Control	IEEE 802.3x flow control, back pressure flow control
Network Management	**Management**	IPv4/IPv6, SNMP v1/v2c/v3, LLDP, LLDP-MED, HTTP, HTTPS, SSHv2 telnet, DHCP client, DHCPv6 client, DHCP server, Port Mirror, DNS client/proxy, IP based Access Filter, ICMPv6, syslog, Time Zone /Daylight Saving, NTP client, RMON, sFlow, Loop detection, Console Port, Power lost warning, relay trigger
	Security	Port-based/Single/Multi 802.1X, ACL (Port/Rate Limiters/ACE), MAC-based Authentication, VLAN assignment, QoS Assignment, Private VLAN, Guest VLAN, RADIUS accounting, TACACS+, IP MAC binding, WEB/CLI authentication, Authorization (15 levels), Port Security Limit Control, ACLs for filtering/policing/port copy, IP source guard, ARP Inspection
	L2 Switching	Port/MAC/Protocol/IP Subnet-based VLAN, VLAN trunking, GARP/GVRP, Loop Guard, Link Aggregation static/LACP, BPDU guard, Error disable recovery, IGMPv2 snooping, MLD snooping, IGMP filtering, IPMC throttling / filtering leave proxy, DHCP snooping, ARP, MEP, G.8032 v1/v2
	L3 Switching	DHCP option82, static routes
	QoS	802.1p Queueing, Input priority mapping, Storm control for Unicast/Multicast/Broadcast, Port/Queue/ACL policer, Port egress shaper, Queue egress shaper, DiffServ (DSCP), Tag remarking, Scheduler mode
	Power Saving	ActiPHY, PerfectReach, IEEE 802.3az EEE power management
	Network Redundancy	STP/RSTP/MSTP, port trunk with LACP, ERPS v1/v2 (<50ms)
	Configuration	Http, Https, Telnet, SSH, CLI, TFTP, SNMP v3
	System / Diagnostics	Dual Image Protection, PING, PING6
	Switching Fabric (Back-Plane)	1,6Gbps

Switch Properties	**Priority Queues**	8
	Max. Number of VLANs	4095
	VLAN ID Range	VID 1 a 4095
	Memory Buffer	4M bits
	Jumbo Frame	9.6Kbytes
	MAC Table Size	8k
	IGMP Group	1024
	Transfer rate	14,880pps for Ethernet port 148,800pps for Fast Ethernet port
Interface	**RJ45 Ports**	4*10/100 Base-T(X) Auto-Negotiation, Full/Half Duplex, Auto-MDI/MDI-X
	Fiber Port	2*100Base-FX SC type connector
	LED Indicators	System: Power 1, Power 2, Master, Ring, Status Ethernet ports: Speed/Link/Active Fixed fiber: Link/Active
	Wavelength	1310nm (Multi-Mode)
	RS232 Serial Console	1*RS232 in RJ45 connector with console cable, baud rate 115,200bps,8,N,1
	Relay Contact	24 VDC, 1A resistive
	Network Cable	10Base-T: 2-pair UTP/STP Cat. 3, 4, 5 cable EIA/TIA-568 100-ohm (100m) 100Base-TX: 2-pair UTP/STP Cat. 5 cable EIA/TIA-568 100-ohm (100m)
	Optical Cable	Multi-mode cable - 50/125um or 62.5/125um, Single-mode cable - 9/125um or 10/125um
Power Requirements	**Input Voltage**	Dual 12-48VDC redundant power inputs
	Power Connection	1 removable 6-pin terminal block
	Overload Current Protection	Present (Slow-Blow Fuse)
	Reverse Polarity Protection	Present
	System Power Consumption	Max. 7.5W full loading
Characteristics	**Housing**	Metal, IP30 protection
	Dimensions (W x H x D)	54 x 142 x 99 mm (2.13 x 5.59 x 3.9 inch)
	Weight	Unit weight: 0.88kg (1.94 lb), Shipping weight: 1.18 kg (2.60 lb)
	Mounting	DIN-Rail Mounting, Wall Mounting
Environmental Limits	**Operating Temperature**	STD: -10°C ~ 65°C (14°F ~ 149°F) EOT: -40°C ~ 75°C (-40°F ~ 167°F)
	Storage Temperature	-40°C ~ 85°C (-40°F ~ 185°F)
	Ambient Relative Humidity	5 to 95%, (non-condensing)
Regulatory Approvals	**EMI**	FCC Part 15 Subpart B Class A, CE EN55032/EN61000-6-4 Class A
	EMS	CE EN55035/EN61000-6-2 Class A: IEC61000-4-2 (ESD), IEC61000-4-3 (RS), IEC61000-4-4 (EFT), IEC61000-4-5 (Surge), IEC61000-4-6 (CS), IEC61000-4-8 (Magnetic Field)
	Free Fall	IEC60068-2-32
	Shock	IEC60068-2-27
	Vibration	IEC60068-2-6
	Green	RoHS Compliant
	Safety	UL61010-1, UL61010-2-201
	Compliance	NEMA TS2 (ITS)

Table 6: Specifications

Hardware Details – ET5-0602-M

Dimension

ET5-0602-M physical dimensions (W x H x D):

54 x 142 x 99 mm (2.13 x 5.59 x 3.9 inch)

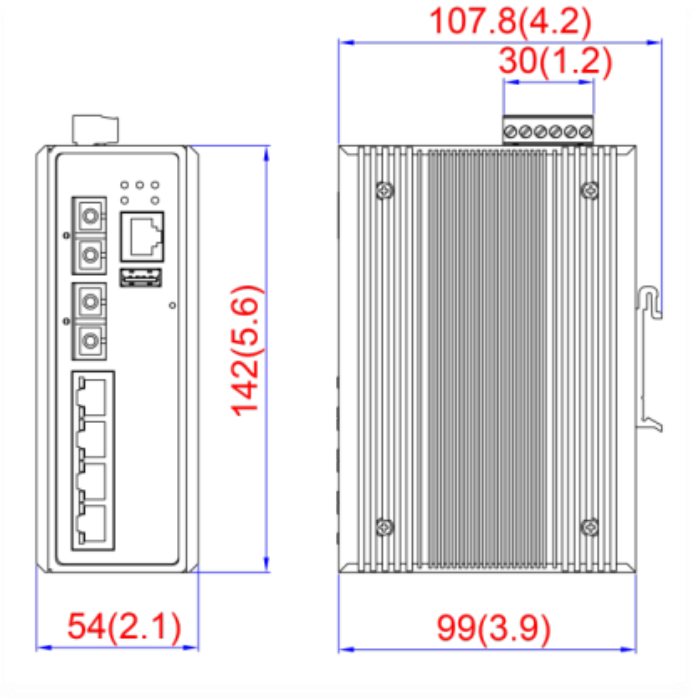


Figure 7: ET5-0602-M Physical Dimensions

Unit: mm (inch)

Front Panel

The front panel of the ET5-0602-M is shown in the image below:

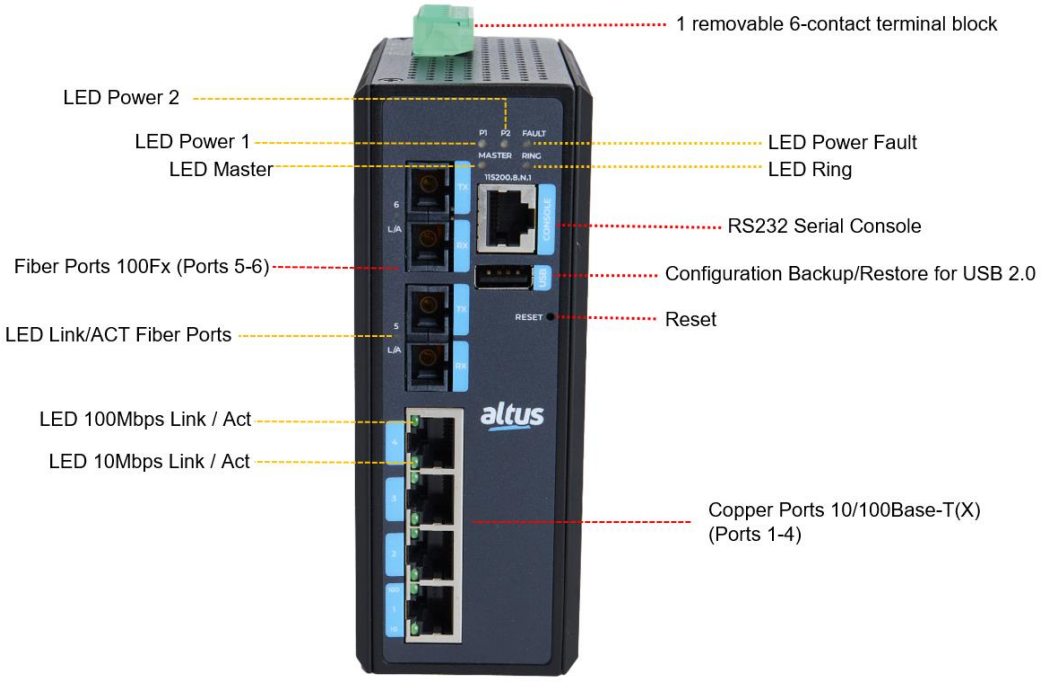


Figure 8: ET5-0602-M Front Panel

Top View

The image below demonstrates the top panel of the ET5-0602-M, which is equipped with one 6-pin removable terminal block connector for dual DC power inputs (12-48VDC).

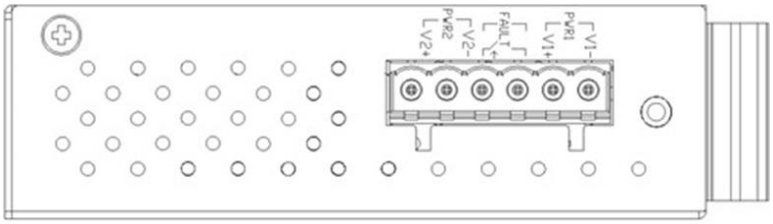


Figure 9: ET5-0602-M Top Panel View

LED indicators

There are LED indicators located on the front panel of the switch that show the power input and network status. Each LED indicator has a different color and has its own meaning, as shown in the table below:

LED	Colour	Description	
P1	Green	On	Power input 1 is active
		Off	Power input 1 is inactive
P2	Green	On	Power input 2 is active
		Off	Power input 2 is inactive
Fault	Green	On	No event happened
	Red	On	Power input 1 or 2 is inactive
			Port link-down/Broken
Master	Green	On	ERPS Owner Mode (Ring Master) is ready
		Off	ERPS Owner Mode is not active
Ring	Green	On	ERPS Ring Network is active and works well
		Flashing	ERPS Ring works abnormally or misconfigure
		Off	ERPS Ring Network is not active
10/100 LAN port 1-4	Green 	On	Connected to the network, 100Mbps
		Flashing	Network is active
		Off	Not connected to the network
	Green 	On	Connected to the network, 10Mbps
		Flashing	Network is active
		Off	Not connected to the network
L/A (Fiber Port 5-6)	Green	On	Connected to the network
		Flashing	Network is active
		Off	Not connected to the network

Table 7: LED indicators for ET5-0602-M

Note: For managed switches, in order for the LED Fault conditions to operate as shown in the table, this feature must be enabled in the device configuration. Please refer to the manual for more details.

Special Models

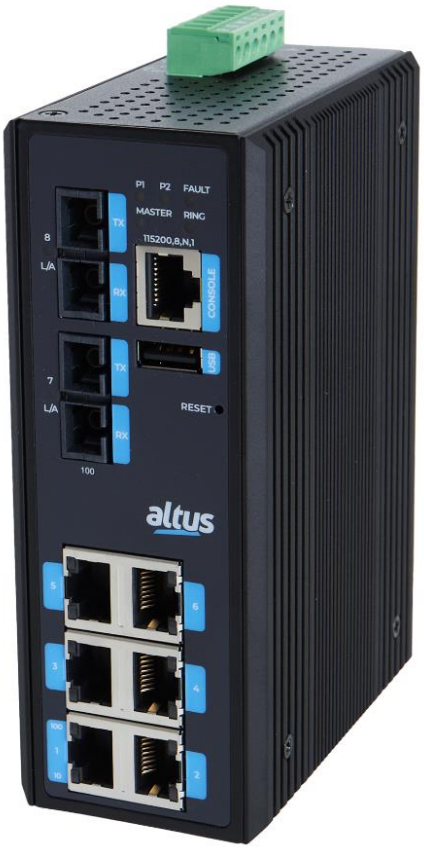
ET2-0602-S1: 6 fast Ethernet ports - 4x10/100Tx + 2x100Fx (SC Connector, Single-mode, 10km/1310nm)
ET2-0602-S3: 6 fast Ethernet ports - 4x10/100Tx + 2x100Fx (SC Connector, Single-mode, 30km/1310nm)

Contact Altus for information on available models and specifications

Doc. Code: CE125002 Rev: C

ET5-0802-M Description

The ET5-0802-M is an 8-port managed Fast Ethernet switch (6 RJ45 ports and 2 Fiber ports) designed to be compact, making it the ideal model for installations in limited spaces, such as machine control panels and duct assembly rooms. For harsh environments, such as machines with vibrations or assembly areas, the ET5-0802-M can be easily mounted on a DIN rail. With an IP30 rating and a rigid metal alloy housing, it offers resistance to severe vibrations, a wide temperature range, and electromagnetic interference.



Software Features:

Network Redundancy

- STP, RSTP, MSTP, ITU-T G.8032 / Y.1344 ERPS v1/v2 (Ethernet Ring Protection Switch)

Configuration

- Http, Https, Telnet, SSH, CLI, TFTP, SNMP v3

Network Management

- QoS (QoS/CoS), storm protection
- IEEE 802.1Q VLAN, supports VLAN
- IGMP snooping v2/v3, MLD snooping v1/v2, IGMP

Filtering, IGMP Group 1024

- IPv4 / IPv6
- NTP client
- SNMP v1/v2c/v3
- LLDP

Security

- MAC-based Authentication
- Access Control List (ACL), 802.1X authentication, RADIUS Server
- VLAN assignment, QoS Assignment

Main Features:

Interface & Performance

- All copper ports support Automatic MDI/MDI-X function
  6-port 10/100Base-T(X) Fast Ethernet + 2-port 100Fx – SC
  Store-and-forward switching architecture
  8K MAC Address Table
  4Mbits Memory Buffer

Power Supply

Redundant power DC 12~48V with connective 1*6-pin removable terminal block
Max. Current 3.5A
Relay Contact: 24VDC, 1A resistive

Certification
CE/FCC
UL 61010-1
UL 61010-2-201

Operating Temperature
STD: -10°C ~ 65°C (14°F ~ 149°F)

Housing/Installation
IP30 Protection
Installation in a Pollution Degree 2 industrial environment
DIN-rail mounting and wall mounting.

	ET5-0802-M
Available Modes	Switch Mode
Connectors	
Ethernet Port	RJ45
Fiber Port	SC
Power Connection	1 removable 6-pin terminal block
LED diagnóstico	
P1 **P2**	Power Supply Input Indicator
Fault	Lack of redundant power input Indication
Master	Owner Mode Indication (ERPS)
Ring	Ring network connection/activity indication (ERPS)
L/A **(Fiber Ports 7-8)**	Connection/traffic indication
100 **(LAN Ports 1-6)**	100Mbps connection/traffic indication
10 **(LAN Ports 1-6)**	10Mbps connection/traffic indication

Specification – ET5-0802-M

		ET5-0802-M
Technology	**Standards**	IEEE 802.3 10Base-T Ethernet IEEE 802.3u 100Base-TX Fast Ethernet IEEE 802.3x Flow Control IEEE 802.1d STP (Spanning Tree Protocol) IEEE 802.1w RSTP (Rapid Spanning Tree Protocol) IEEE 802.1s MSTP (Multiple Spanning Tree Protocol) ITU-T G.8032 / Y.1344 ERPS v1/v2(Ethernet Ring Protection Switch) IEEE 802.1Q Virtual Local Area Network (VLAN) IEEE 802.1p QoS/CoS Protocol for Traffic Prioritization IEEE 802.1X Network Authentication IEEE 802.1AB Link Layer Discovery Protocol (LLDP) IEEE 802.3ad Link Aggregation (LACP)
	Processing Type	Store and Forward
	Flow Control	IEEE 802.3x flow control, back pressure flow control
Network Management	**Management**	IPv4/IPv6, SNMP v1/v2c/v3, LLDP, LLDP-MED, HTTP, HTTPS, SSHv2 telnet, DHCP client, DHCPv6 client, DHCP server, Port Mirror, DNS client/proxy, IP based Access Filter, ICMPv6, syslog, Time Zone /Daylight Saving, NTP client, RMON, sFlow, Loop detection, Console Port, Power lost warning, relay trigger
	Security	Port-based/Single/Multi 802.1X, ACL (Port/Rate Limiters/ACE), MAC-based Authentication, VLAN assignment, QoS Assignment, Private VLAN, Guest VLAN, RADIUS accounting, TACACS+, IP MAC binding, WEB/CLI authentication, Authorization (15 levels), Port Security Limit Control, ACLs for filtering/policing/port copy, IP source guard, ARP Inspection
	L2 Switching	Port/MAC/Protocol/IP Subnet-based VLAN, VLAN trunking, GARP/GVRP, Loop Guard, Link Aggregation static/LACP, BPDU guard, Error disable recovery, IGMPv2 snooping, MLD snooping, IGMP filtering, IPMC throttling / filtering leave proxy, DHCP snooping, ARP, MEP, G.8032 v1/v2
	L3 Switching	DHCP option82, static routes
	QoS	802.1p Queueing, Input priority mapping, Storm control for Unicast/Multicast/Broadcast, Port/Queue/ACL policer, Port egress shaper, Queue egress shaper, DiffServ (DSCP), Tag remarking, Scheduler mode
	Power Saving	ActiPHY, PerfectReach, IEEE 802.3az EEE power management

	Network Redundancy	STP/RSTP/MSTP, port trunk with LACP, ERPS v1/v2 (<50ms)
	Configuration	Http, Https, Telnet, SSH, CLI, TFTP, SNMP v3
	System / Diagnostics	Dual Image Protection, PING, PING6
Switch Properties	**Switching Fabric (Back-Plane)**	1.6Gbps
	Priority Queues	8
	Max. Number of VLANs	4095
	VLAN ID Range	VID 1 a 4095
	Memory Buffer	4M bits
	Jumbo Frame	9.6Kbytes
	MAC Table Size	8k
	IGMP Group	1024
	Transfer rate	14,880pps for Ethernet port 148,800pps for Fast Ethernet port
Interface	**RJ45 Ports**	6*10/100 Base-T(X) Auto-Negotiation, Full/Half Duplex, Auto-MDI/MDI-X
	Fiber Port	2*100Base-FX SC type connector
	LED Indicators	System: Power 1, Power 2, Master, Ring, Status Ethernet ports: Speed/Link/Active Fixed fiber: Link/Active
	Wavelength	1310nm (Multi-Mode)
	RS232 Serial Console	1*RS232 in RJ45 connector with console cable, baud rate 115,200bps,8,N,1
	Relay Contact	24 VDC, 1A resistive
	Network Cable	10Base-T: 2-pair UTP/STP Cat. 3, 4, 5 cable EIA/TIA-568 100-ohm (100m) 100Base-TX: 2-pair UTP/STP Cat. 5 cable EIA/TIA-568 100-ohm (100m)
	Optical Cable	Multi-mode cable - 50/125um or 62.5/125um, Single-mode cable - 9/125um or 10/125um
Power Requirements	**Input Voltage**	Dual 12-48VDC redundant power inputs
	Power Connection	1 removable 6-pin terminal block
	Overload Current Protection	Present (Slow-Blow Fuse)
	Reverse Polarity Protection	Present
	System Power Consumption	Max. 13W full loading
Characteristics	**Housing**	Metal, IP30 protection
	Dimensions (W x H x D)	54 x 142 x 99 mm (2.13 x 5.59 x 3.9 inch)
	Weight	Unit weight: 0.86kg (1.90 lb), Shipping weight: 1.22 kg (2.69 lb)
	Mounting	DIN-Rail Mounting, Wall Mounting
Environmental Limits	**Operating Temperature**	STD: -10°C ~ 65°C (14°F ~ 149°F) EOT: -40°C ~ 75°C (-40°F ~ 167°F)
	Storage Temperature	-40°C ~ 85°C (-40°F ~ 185°F)
	Ambient Relative Humidity	5 to 95%, (non-condensing)
Regulatory Approvals	**EMI**	FCC Part 15 Subpart B Class A, CE EN55022/ /EN61000-6-4 Class A
	EMS	CE EN55024/EN61000-6-2 IEC61000-4-2 (ESD), IEC61000-4-3 (RS), IEC61000-4-4 (EFT), IEC61000-4-5 (Surge), IEC61000-4-6 (CS), IEC61000-4-8 (Magnetic Field)
	Free Fall	IEC60068-2-32
	Shock	IEC60068-2-27
	Vibration	IEC60068-2-6
	Green	RoHS Compliant
	Safety	UL61010-1, UL61010-2-201

Table 8: Specifications

Hardware Details – ET5-0802-M

Dimension

ET5-0802-M physical dimensions (W x H x D):

54 x 142 x 99 mm (2.13 x 5.59 x 3.9 inch)

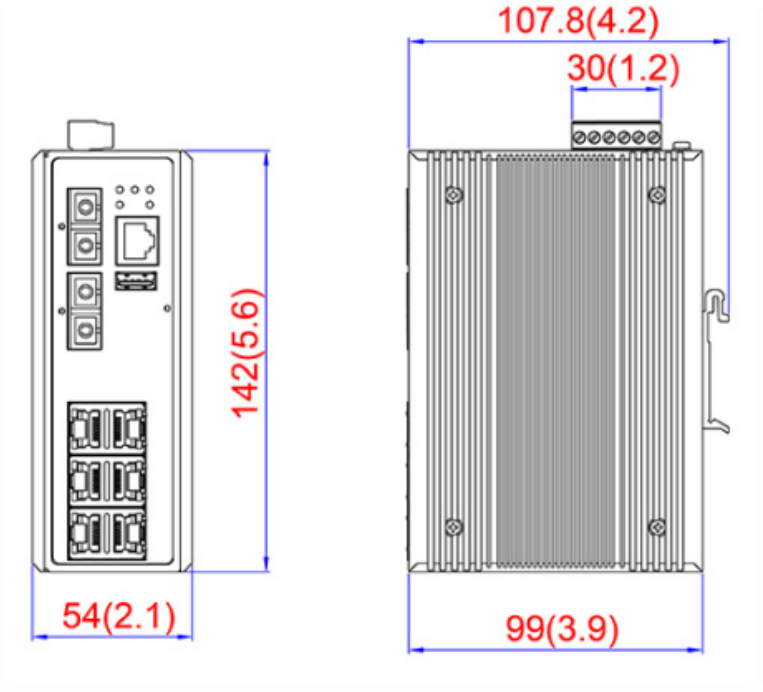


Figure 10: ET5-0802-M Physical Dimensions

Unit: mm (inch)

Front Panel

The front panel of the ET5-0802-M is shown in the image below:

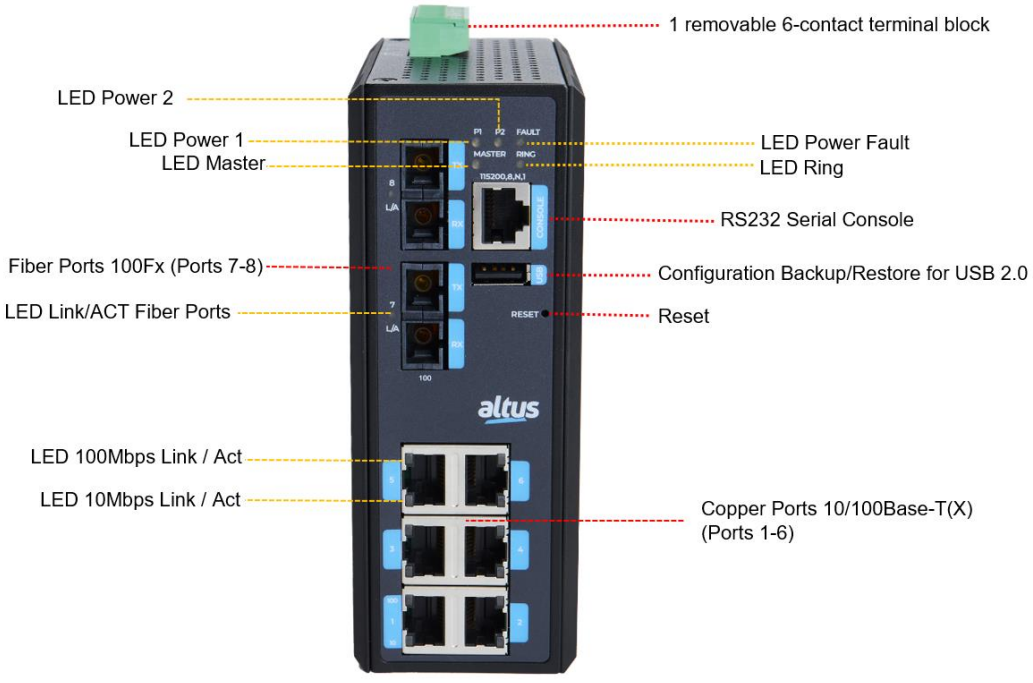


Figure 11: ET5-0802-M Front Panel

Top View

The image below demonstrates the top panel of the ET5-0802-M, which is equipped with one 6-pin removable terminal block connector for dual DC power inputs (12-48VDC).

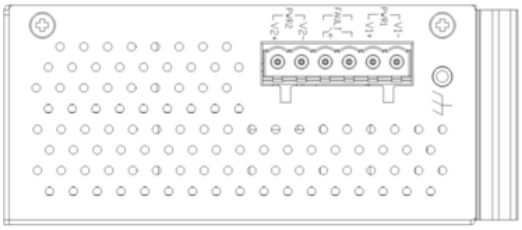


Figure 12: ET5-0802-M Top Panel View

LED indicators

There are LED indicators located on the front panel of the switch that show the power input and network status. Each LED indicator has a different color and has its own meaning, as shown in the table below:

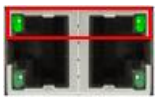
LED	Colour	Description	
P1	Green	On	Power input 1 is active
		Off	Power input 1 is inactive
P2	Green	On	Power input 2 is active
		Off	Power input 2 is inactive
Fault	Green	On	No event happened
	Red	On	Power input 1 or 2 is inactive
			Port link-down/Broken
Master	Green	On	ERPS Owner Mode (Ring Master) is ready
		Off	ERPS Owner Mode is not active
Ring	Green	On	ERPS Ring Network is active and works well
		Flashing	ERPS Ring works abnormally or misconfigure
		Off	ERPS Ring Network is not active
100 (LAN Port 1-6)	Green 	On	Connected to the network, 100Mbps
		Flashing	Network is active
		Off	Not connected to the network
10 (LAN Port 1-6)	Green 	On	Connected to the network, 10Mbps
		Flashing	Network is active
		Off	Not connected to the network
L/A (Fiber Port 7-8)	Green	On	Connected to network
		Flashing	Network is active
		Off	Not connected to the network

Table 9: LED indicators for ET5-0802-M

Note: For managed switches, in order for the LED Fault conditions to operate as shown in the table, this feature must be enabled in the device configuration. Please refer to the manual for more details.

Special Models

- **ET5-0802-S1** 8-Port fast Ethernet – 6x10/100Tx + 2x100Fx (Connector SC, single-mode, 10km/1310nm)
- **ET5-0802-S3** 8-Port fast Ethernet - 6x10/100Tx + 2x100Fx (Connector SC, single-mode, 30km/1310nm)

Contact Altus for information on available models and specifications.

Doc. Code: CE125002 Rev: C

ET5-0800 Description

The ET5-0800 is an 8-port managed Fast Ethernet switch (RJ45) designed to be compact, making it the ideal model for installations in limited spaces, such as machine control panels and duct assembly rooms. For harsh environments, such as machines with vibrations or assembly areas, the ET5-0800 can be easily mounted on a DIN rail. With an IP30 rating and a rigid metal alloy housing, it offers resistance to severe vibrations, a wide temperature range, and electromagnetic interference.

Software Features:

Network Redundancy

- STP, RSTP, MSTP, ITU-T G.8032 ERPS (Ethernet Ring Protection Switch)

Configuration

- Http, Https, Telnet, SSH, CLI, TFTP, SNMP v3

Network Management

- QoS (QoS/CoS), storm protection
- IEEE 802.1Q VLAN, supports VLAN
- IGMP snooping v2/v3, MLD snooping v1/v2, IGMP
- Filtering, IGMP Group 1024
- IPv4 / IPv6
- NTP client
- SNMP v1/v2c/v3
- LLDP

Security

- MAC-based Authentication
- Access Control List (ACL), 802.1X authentication, RADIUS Server
- VLAN assignment, QoS Assignment

Main Features:

Interface & Performance

- All copper ports support Automatic MDI/MDI-X function
- 8-port 10/100Base-T(X) Fast Ethernet
- Store-and-forward switching architecture
- 8K MAC Address Table
- 4Mbits Memory Buffer

Power Supply

Redundant power DC 12~48V with 1 removable 6-pin terminal block
Max. Current 3.5A
Relay Contact: 24VDC, 1A resistive

Certification
CE/FCC
UL 61010-1
UL 61010-2-201

Operating Temperature
STD: -10°C ~ 65°C (14°F ~ 149°F)

Housing/Installation
IP30 Protection
Installation in a Pollution Degree 2 industrial environment
DIN-rail mounting and wall mounting.

	ET5-0800
Available Modes	Switch Mode
Connectors	
Ethernet Port	RJ45
Power Connection	1 removable 6-pin terminal block
LED diagnóstico	
P1 **P2**	Power Supply Input Indicator
Fault	Lack of redundant power input Indication
Master	Owner Mode Indication (ERPS)
Ring	Ring network connection/activity indication (ERPS)
100 **(LAN Ports 1-6)**	100Mbps connection/traffic indication
10 **(LAN Ports 1-6)**	10Mbps connection/traffic indication

Specification – ET5-0800

		ET5-0800
Technology	**Standards**	IEEE 802.3 10Base-T Ethernet IEEE 802.3u 100Base-TX Fast Ethernet IEEE 802.3x Flow Control IEEE 802.1d STP (Spanning Tree Protocol) IEEE 802.1w RSTP (Rapid Spanning Tree Protocol) IEEE 802.1s MSTP (Multiple Spanning Tree Protocol) ITU-T G.8032 / Y.1344 ERPS v1/v2(Ethernet Ring Protection Switch) IEEE 802.1Q Virtual Local Area Network (VLAN) IEEE 802.1p QoS/CoS Protocol for Traffic Prioritization IEEE 802.1X Network Authentication IEEE 802.1AB Link Layer Discovery Protocol (LLDP) IEEE 802.3ad Link Aggregation (LACP)
	Processing Type	Store and Forward
	Flow Control	IEEE 802.3x flow control, back pressure flow control
Network Management	**Management**	IPv4/IPv6, SNMP v1/v2c/v3, LLDP, LLDP-MED, HTTP, HTTPS, SSHv2 telnet, DHCP client, DHCPv6 client, DHCP server, Port Mirror, DNS client/proxy, IP based Access Filter, ICMPv6, syslog, Time Zone /Daylight Saving, NTP client, RMON, sFlow, Loop detection, Console Port, Power lost warning, relay trigger
	Security	Port-based/Single/Multi 802.1X, ACL (Port/Rate Limiters/ACE), MAC-based Authentication, VLAN assignment, QoS Assignment, Private VLAN, Guest VLAN, RADIUS accounting, TACACS+, IP MAC binding, WEB/CLI authentication, Authorization (15 levels), Port Security Limit Control, ACLs for filtering/policing/port copy, IP source guard, ARP Inspection
	L2 Switching	Port/MAC/Protocol/IP Subnet-based VLAN, VLAN trunking, GARP/GVRP, Loop Guard, Link Aggregation static/LACP, BPDU guard, Error disable recovery, IGMPv2 snooping, MLD snooping, IGMP filtering, IPMC throttling / filtering leave proxy, DHCP snooping, ARP, MEP, G.8032 v1/v2
	L3 Switching	DHCP option82, IP route
	QoS	802.1p Queueing, Input priority mapping, Storm control for Unicast/Multicast/Broadcast, Port/Queue/ACL policer, Port egress shaper, Queue egress shaper, DiffServ (DSCP), Tag remarking.
	Power Saving	ActiPHY, PerfectReach, IEEE 802.3az EEE power management
	Network Redundancy	STP/RSTP/MSTP, port trunk with LACP, ERPS v1/v2 (<50ms)
	Configuration	Http, Https, Telnet, SSH, CLI, TFTP, SNMP v3
	System / Diagnostics	Dual Image Protection, PING, PING6

Switch Properties	**Switching Fabric (Back-Plane)**	1.6Gbps
	Priority Queues	8
	Max. Number of VLANs	4095
	VLAN ID Range	VID 1 a 4095
	Memory Buffer	4M bits
	Jumbo Frame	9.6Kbytes
	MAC Table Size	8k
	IGMP Group	1024
	Transfer rate	14,880pps for Ethernet port 148,800pps for Fast Ethernet port
Interface	**RJ45 Ports**	8*10/100BaseT(X), auto negotiation speed, Full/Half duplex mode, and auto MDI/MDI-X connection
	LED Indicators	System: Power 1, Power 2, Master, Ring, Status Ethernet ports: Speed/Link/Active
	RS232 Serial Console	1*RS232 in RJ45 connector with console cable, baud rate 115,200bps,8,N,1
	Relay Contact	24 VDC, 1A resistive
Power Requirements	**Input Voltage**	Dual 12-48VDC redundant power inputs
	Power Connection	1 removable 6-pin terminal block
	Overload Current Protection	Present (Slow-Blow Fuse)
	Reverse Polarity Protection	Present
	System Power Consumption	Max. 10W full loading
Characteristics	**Housing**	Metal, IP30 protection
	Dimensions (W x H x D)	54 x 142 x 99 mm (2.13 x 5.59 x 3.9 inch)
	Weight	Unit weight: 0.9kg (1.98 lb), Shipping weight: 1.3 kg (2.86 lb)
	Mounting	DIN-Rail Mounting, Wall Mounting
Environmental Limits	**Operating Temperature**	STD: -10°C ~ 65°C (14°F ~ 149°F) EOT: -40°C ~ 75°C (-40°F ~ 167°F)
	Storage Temperature	-40°C ~ 85°C (-40°F ~ 185°F)
	Ambient Relative Humidity	5 to 95%, (non-condensing)
Regulatory Approvals	**EMI**	FCC Part 15 Subpart B Class A, CE EN55022/ /EN61000-6-4 Class A
	EMS	CE EN55024/EN61000-6-2 IEC61000-4-2 (ESD), IEC61000-4-3 (RS), IEC61000-4-4 (EFT), IEC61000-4-5 (Surge), IEC61000-4-6 (CS), IEC61000-4-8 (Magnetic Field)
	Free Fall	IEC60068-2-32
	Shock	IEC60068-2-27
	Vibration	IEC60068-2-6
	Green	RoHS Compliant
	Safety	UL61010-1, UL61010-2-201

Table 10: Specifications

Hardware Details – ET5-0800

Dimension

ET5-0800 physical dimensions (W x H x D):

54 x 142 x 99 mm (2.13 x 5.59 x 3.9 inch)

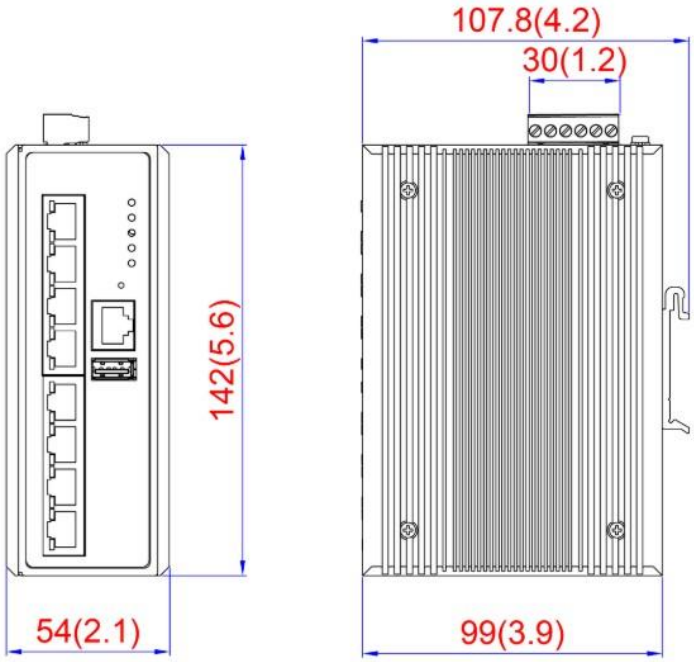


Figure 13: ET5-0800 Physical Dimensions

Unit: mm (inch)

Front Panel

The front panel of the ET5-0800 is shown in the image below:

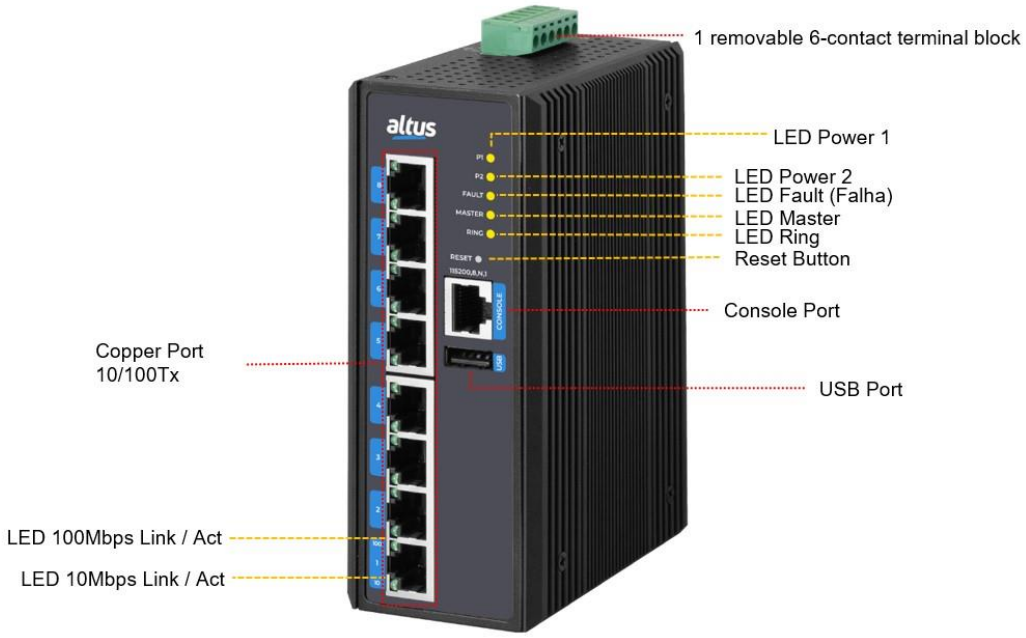


Figure 14: ET5-0800 Front Panel

Top View

The image below demonstrates the top panel of the ET5-0800, which is equipped with one 6-pin removable terminal block connector for dual DC power inputs (12-48VDC).

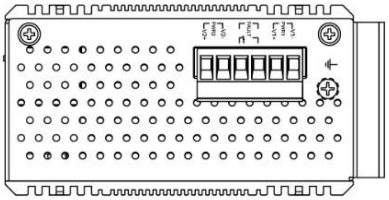


Figure 15: ET5-0800 Top Panel View

LED indicators

There are LED indicators located on the front panel of the switch that show the power input and network status. Each LED indicator has a different color and has its own meaning, as shown in the table below:

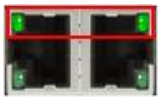
LED	Colour	Description	
P1	Green	On	Power input 1 is active
		Off	Power input 1 is inactive
P2	Green	On	Power input 2 is active
		Off	Power input 2 is inactive
Fault	Green	On	No event happened
	Red	On	Power input 1 or 2 is inactive
			Port link-down/Broken
Master	Green	On	ERPS Owner Mode (Ring Master) is ready
		Off	ERPS Owner Mode is not active
Ring	Green	On	ERPS Ring Network is active and works well
		Flashing	ERPS Ring works abnormally or misconfigure
		Off	ERPS Ring Network is not active
100 (LAN Ports 1-8)	Green 	On	Connected to the network, 100Mbps
		Flashing	Network is active
		Off	Not connected to the network
10 (LAN Portas 1-8)	Green 	On	Connected to the network, 10Mbps
		Flashing	Network is active
		Off	Not connected to the network

Table 11: LED indicators for ET5-0800

Note: For managed switches, in order for the LED Fault conditions to operate as shown in the table, this feature must be enabled in the device configuration. Please refer to the manual for more details.

Special Models

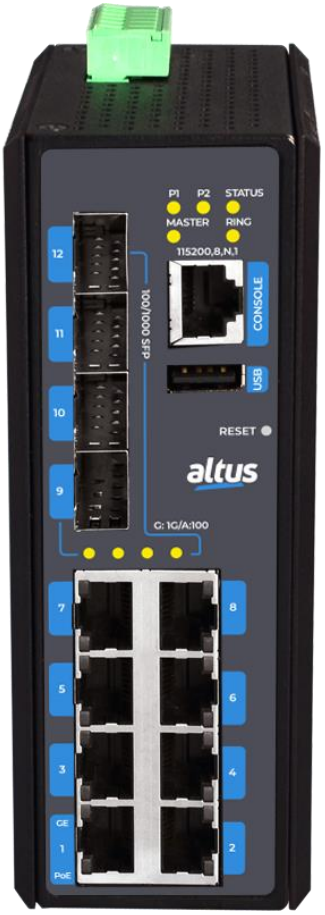
- **ET5-0800-T:** 8-Port Industrial Gigabit Managed Ethernet Switch.

Contact Altus for information on available models and specifications.

Doc. Code: CE125002 Rev: C

PG5-1204-SFP Description

The PG5-1204-SFP is a 12-port managed Gigabit switch with 8 PoE+ ports (RJ45) and 4 SFP slot ports (Fiber) designed to be compact, making it the ideal model for installations in limited spaces, such as machine control panels and duct assembly rooms. For harsh environments, such as machines with vibrations or assembly areas, the PG5-1204-SFP can be easily mounted on a DIN rail. With an IP30 rating and a rigid metal alloy housing, it offers resistance to severe vibrations, a wide temperature range, and electromagnetic interference.



Software Features:

Network Redundancy

- STP, RSTP, MSTP, ITU-T G.8032 ERPS (Ethernet Ring Protection Switch)

Configuration

- Http, Https, Telnet, SSH, CLI, TFTP, SNMP v3

Network Management

- QoS (QoS/CoS), storm protection
- IEEE 802.1Q VLAN, supports VLAN
- IGMP snooping v2/v3, MLD snooping v1/v2, IGMP
- Filtering, IGMP Group 1024
- IPv4 / IPv6
- NTP client
- SNMP v1/v2c/v3
- LLDP

Security

- MAC-based Authentication
- Access Control List (ACL), 802.1X authentication, RADIUS Server
- VLAN assignment, QoS Assignment

Main Features:

Interface & Performance

- All copper ports support Automatic MDI/MDI-X function
- 8x10/100/1000Tx (PSE 30W/Port) and 4*100/1000 SFP Slots
- Store-and-forward switching architecture
- 8K MAC Address Table
- 4Mbits Memory Buffer

Power Supply

Redundant power DC 48~55V with connective 1*6-pin removable terminal block
Max. Current 5.5A
Relay Contact: 24VDC, 1A resistive
Max. PoE output: 180W

Certification
CE/FCC
UL 61010-1
UL 61010-2-201

Operating Temperature
STD: -10°C ~ 65°C (14°F ~ 149°F)

Housing/Installation
IP30 Protection
Installation in a Pollution Degree 2 industrial environment
DIN-rail mounting and wall mounting.

	PG5-1204-SFP
Available Modes	Switch Mode
Connectors	
Ethernet Port	RJ45
Fiber Port	SFP
Power Connection	1 removable 6-pin terminal block
LED diagnóstico	
P1 **P2**	Power Supply Input Indicator
Fault	Lack of redundant power input Indication
Master	Owner Mode Indication (ERPS)
Ring	Ring network connection/activity indication (ERPS)
L/A **(SFP Port 9-12)**	100/1000Mbps connection/traffic indication
GE **(LAN Port 1-8)**	10/100/1000Mbps connection/traffic indication
PoE **(LAN Ports 1-8)**	PoE power indication

Specification – PG5-1204-SFP

		PG5-1204-SFP
Technology	**Standards**	IEEE 802.3 10Base-T Ethernet IEEE 802.3u 100Base-TX Fast Ethernet IEEE 802.3z 1000Base-X Gigabit Fiber IEEE 802.3af/at Power over Ethernet IEEE 802.3x Flow Control IEEE 802.1d STP (Spanning Tree Protocol) IEEE 802.1w RSTP (Rapid Spanning Tree Protocol) IEEE 802.1s MSTP (Multiple Spanning Tree Protocol) ITU-T G.8032 / Y.1344 ERPS v1/v2(Ethernet Ring Protection Switch) IEEE 802.1Q Virtual Local Area Network (VLAN) IEEE 802.1p QoS/CoS Protocol for Traffic Prioritization IEEE 802.1X Network Authentication IEEE 802.1AB Link Layer Discovery Protocol (LLDP) IEEE 802.3ad Link Aggregation (LACP)
	Processing Type	Store and Forward
	Flow Control	IEEE 802.3x flow control, back pressure flow control
Network Management	**Management**	IPv4/IPv6, SNMP v1/v2c/v3, LLDP, LLDPMED, HTTP, HTTPS, SSHv2 telnet, DHCP client, DHCPv6 client, DHCP server, Port Mirror, DNS client/proxy, IP based Access Filter, ICMPv6, syslog, Time Zone /Daylight Saving, NTP client, RMON, sFlow, Loop detection, Console Port, Power lost warning, relay trigger
	Security	Portbased/Single/Multi 802.1X, ACL(Port/Rate Limiters/ACE), MACbased Authentication, VLAN assignment, QoS Assignment, Private VLAN, Guest VLAN, RADIUS accounting, TACACS+, IP MAC binding, WEB/CLI authentication, Authorization (15 levels), Port Security Limit Control, ACLs for filtering/policing/port copy, IP source guard, ARP Inspection
	L2 Switching	Port/MAC/Protocol/IP Subnet-based VLAN, VLAN trunking, GARP/GVRP, Loop Guard, Link Aggregation static/LACP, BPDU guard, Error disable recovery, IGMPv2 snooping, MLD snooping, IGMP filtering, IPMC throttling / filtering leave proxy, DHCP snooping, ARP, MEP, G.8032 v1/v2
	L3 Switching	DHCP option82, IP route
	QoS	802.1p Queueing, Input priority mapping, Storm control for Unicast/Multicast/Broadcast, Port/Queue/ACL policer, Port egress shaper, Queue egress shaper, DiffServ (DSCP), Tag remarking, Scheduler mode
	Power Saving	ActiPHY, PerfectReach, IEEE 802.3az EEE power management
	Network Redundancy	STP/RSTP/MSTP, port trunk with LACP, ERPS v1/v2 (<50ms)
	Configuration	Http, Https, Telnet, SSH, CLI, TFTP, SNMP v3

	PoE	POE/POE+ port power allocation, Power budget protection, PoE output scheduled, PoE alive check and remote reboot PD device
	System / Diagnostics	Dual Image Protection, PING, PING6
Switch Properties	**Switching Fabric (Back-Plane)**	24Gbps
	Priority Queues	8
	Max. Number of VLANs	4095
	VLAN ID Range	VID 1 a 4095
	Memory Buffer	4M bits
	Jumbo Frame	9.6Kbytes
	MAC Table Size	8k
	IGMP Group	1024
	Transfer rate	14,880pps for Ethernet port 148,800pps for Fast Ethernet port 1,488,000pps for Gigabit Ethernet port
Interface	**RJ45 Ports**	8*10/100/1000Base-T(X) with 8*PoE+, auto negotiation speed, Full/Half duplex mode, and auto MDI/MDI-X connection
	PoE Pin Out	V+, V+, V-, V-, for pin 1, 2, 3, 6 (End-span, Mode A)
	Fiber Port	4*100/1000Base-(F)X SFP slot
	LED Indicators	System: Power 1, Power 2, Master, Ring, Status Ethernet ports: Speed/Link/Active PoE: Connected to PD devices SFP: Link/Active
	Wavelength	Depends on SFP modules
	RS232 Serial Console	1*RS232 in RJ45 connector with console cable, baud rate 115,200bps,8,N,1
	Relay Contact	24 VDC, 1A resistive
Power Requirements	**Input Voltage**	Dual 48-55VDC redundant power inputs
	Power Connection	1 removable 6-pin terminal block
	Overload Current Protection	Present (Slow-Blow Fuse)
	Reverse Polarity Protection	Present
	System Power Consumption	Max. 15W full loading
	Max. PoE Power Budget	180W
	PoE Power Output	30W max. per PoE port
Characteristics	**Housing**	Metal, IP30 protection
	Dimensions (W x H x D)	54 x 142 x 99 mm (2.13 x 5.59 x 3.9 inch)
	Weight	Unit weight: 0.9kg (1.98 lb), Shipping weight: 1.3 kg (2.86 lb)
	Mounting	DIN-Rail Mounting, Wall Mounting
Environmental Limits	**Operating Temperature**	STD: -10°C ~ 65°C (14°F ~ 149°F) EOT: -40°C ~ 75°C (-40°F ~ 167°F)
	Storage Temperature	-40°C ~ 85°C (-40°F ~ 185°F)
	Ambient Relative Humidity	5 to 95%, (non-condensing)
Regulatory Approvals	**EMI**	FCC Part 15 Subpart B Class A, CE EN55022/ /EN61000-6-4 Class A
	EMS	CE EN55024/EN61000-6-2 IEC61000-4-2 (ESD), IEC61000-4-3 (RS), IEC61000-4-4 (EFT), IEC61000-4-5 (Surge), IEC61000-4-6 (CS), IEC61000-4-8 (Magnetic Field)
	Free Fall	IEC60068-2-32
	Shock	IEC60068-2-27
	Vibration	IEC60068-2-6
	Green	RoHS Compliant
	Safety	UL 61010-1, UL 61010-2-201, ISA 12.12.01 C1D2, ATEX Zone 2 Ex nA nC IIC T4 GC

Table 14: Specifications

Hardware Details – PG5-1204-SFP

Dimension

PG5-1204-SFP physical dimensions (W x H x D):

54 x 142 x 99 mm (2.13 x 5.59 x 3.9 inch)

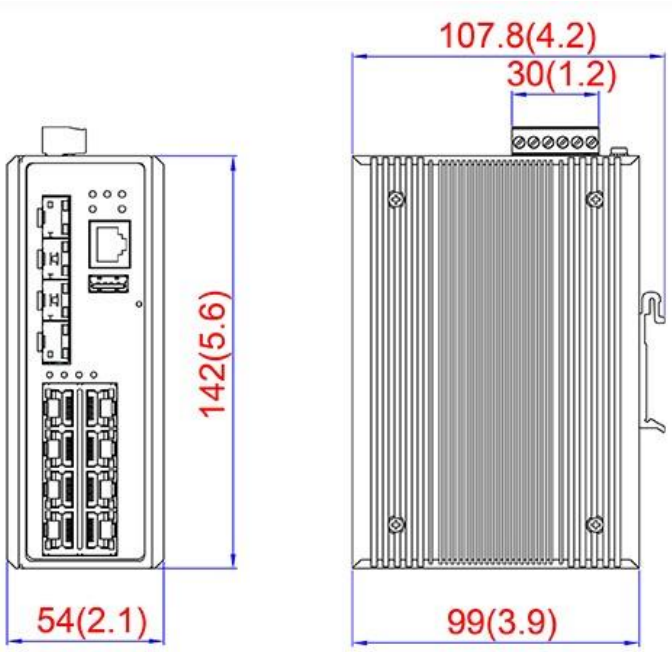


Figure 19: PG5-1204-SFP Physical Dimensions

Unit: mm (inch)

Front Panel

The front panel of the PG5-1204-SFP is shown in the image below:

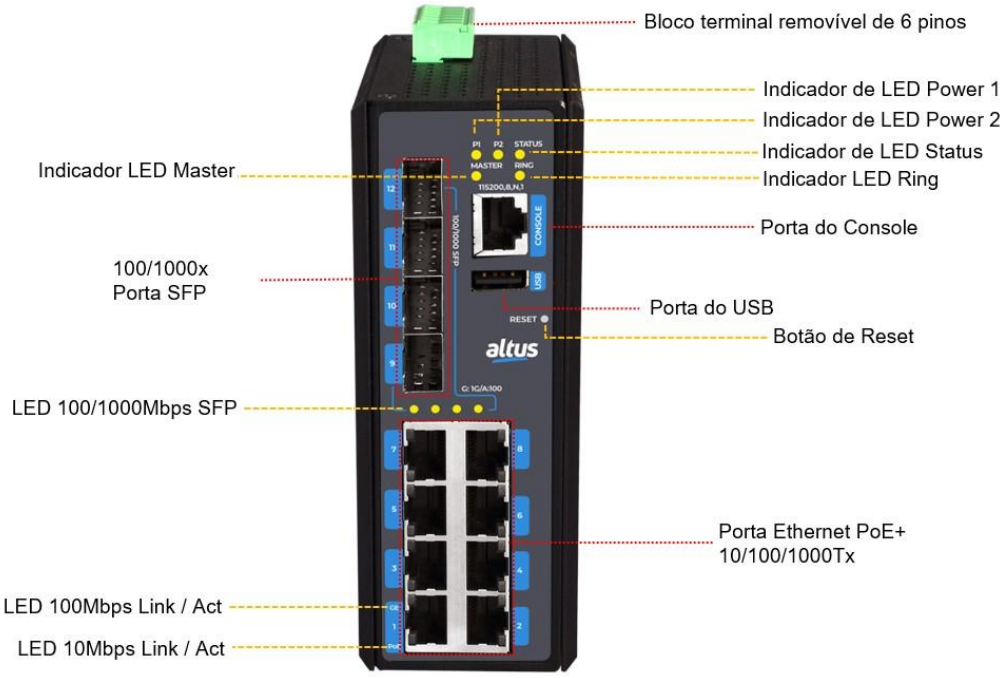


Figure 20: PG5-1204-SFP Front Panel

Top View

The image below demonstrates the top panel of the PG5-1204-SFP, which is equipped with one 6-pin removable terminal block connector for dual DC power inputs (48-55VDC).

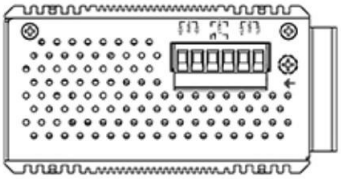


Figure 15: PG5-1204-SFP Top Panel View

LED indicators

There are LED indicators located on the front panel of the switch that show the power input and network status. Each LED indicator has a different color and has its own meaning, as shown in the table below:

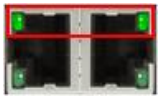
LED	Colour	Description	
P1	Green	On	Power input 1 is active
		Off	Power input 1 is inactive
P2	Green	On	Power input 2 is active
		Off	Power input 2 is inactive
Fault	Green	On	No event happened
	Red	On	Power input 1 or 2 is inactive
			Port link-down/Broken
Master	Green	On	ERPS Owner Mode (Ring Master) is ready
		Off	ERPS Owner Mode is not active
Ring	Green	On	ERPS Ring Network is active and works well
		Flashing	ERPS Ring works abnormally or misconfigure
		Off	ERPS Ring Network is not active
L/A (SFP Port 9-12)	Green	On	Connected to network, 1000Mbps
		Flashing	Networking is active
		Off	Not connected to network
	Amber	On	Connected to network, 100Mbps
		Flashing	Networking is active
		Off	Not connected to network
GE (LAN Port 1-8)	Green 	On	Connected to the network, 10/100/1000Mbps
		Flashing	Network is active
		Off	Not connected to the network
PoE (LAN Port 1-8)	Green 	On	Supplying power to the powered-device
		Off	Not connected to a Powered Device

Table 15: LED indicators for PG5-1204-SFP

Note: For managed switches, in order for the LED Fault conditions to operate as shown in the table, this feature must be enabled in the device configuration. Please refer to the manual for more details.

Special Models

- **PG5-1204-SFP-T:** 12-port Gigabit PoE+ Managed Industrial Ethernet Switch.
- **PG5-1204-SFP-24:** 12-port Gigabit PoE+ Managed Industrial Ethernet Switch.
- **PG5-1204-SFP-24-T:** 12-port Gigabit PoE+ Gigabit PoE+ Gigabit PoE+ Managed Industrial Ethernet Switch.

Contact Altus for information on available models and specifications.

Doc. Code: CE125002 Rev: C

EG5-2004-SFP Description

The EG5-2004-SFP is a 20-port managed Gigabit switch with 16 RJ45 ports and 4 SFP slot ports designed to be compact, making it the ideal model for installations in limited spaces, such as machine control panels and duct assembly rooms. For harsh environments, such as machines with vibrations or assembly areas, the PG5-1204-SFP can be easily mounted on a DIN rail. With an IP30 rating and a rigid metal alloy housing, it offers resistance to severe vibrations, a wide temperature range, and electromagnetic interference.

Software Features:

Network Redundancy

- STP, RSTP, MSTP, ITU-T G.8032 ERPS (Ethernet Ring Protection Switch)

Configuration

- Http, Https, Telnet, SSH, CLI, TFTP, SNMP v3

Network Management

- QoS (QoS/CoS), storm protection
- IEEE 802.1Q VLAN, supports VLAN
- IGMP snooping v2/v3, IGMP Filtering, IGMP Group 1024
- Client/Server DHCP
- IPv4 / IPv6
- NTP client
- SNMP v1/v2c/v3
- LLDP

Security

- MAC-based Authentication
- Access Control List (ACL), 802.1X authentication, RADIUS Server
- VLAN assignment, QoS Assignment

Main Features:

Interface & Performance

- All copper ports support Automatic MDI/MDI-X function
- 16x10/100/1000Tx and 4*100/1000 SFP Slots
- Store-and-forward switching architecture
- 8K MAC Address Table
- 4Mbits Memory Buffer

Power Supply

Redundant power DC 12~48V with connective 2*4-pin removable terminal block
Max. Current 1.31A
Relay Contact: 24VDC, 1A resistive

Certification
CE/FCC
UL61010-1
UL61010-2-201
IEC 61850-3
NEMA TS2

Operating Temperature
STD: -10°C ~ 65°C (14°F ~ 149°F)

Housing/Installation
IP30 Protection
Installation in a Pollution Degree 2 industrial environment
DIN-rail mounting and wall mounting.
Standalone installation

	EG5-2004-SFP
Available Modes	Switch Mode
Connectors	
Ethernet Port	RJ45
Fiber Port	SFP
Power Connection	2 removable 4-pin terminal block
LED diagnóstico	
P1 **P2**	Power Supply Input Indicator
Fault	Lack of redundant power input Indication
Master	Owner Mode Indication (ERPS)
Ring	Ring network connection/activity indication (ERPS)
1000 (LAN Port 1-16)	1000Mbps connection/traffic indication
10/100 (LAN Port 1-16)	10/100Mbps connection/traffic indication
L/A (SFP Ports 17-20)	100/1000Mbps connection/traffic indication

Specification – EG5-2004-SFP

		EG5-2004-SFP
Technology	**Standards**	IEEE 802.3 10Base-T Ethernet IEEE 802.3u 100Base-TX and 100Base-FX Fast Ethernet IEEE 802.3ab 1000Base-T Gigabit Ethernet IEEE 802.3z 1000Base-X Gigabit Fiber IEEE 802.3x Flow Control IEEE 802.1d STP (Spanning Tree Protocol) IEEE 802.1w RSTP (Rapid Spanning Tree Protocol) IEEE 802.1s MSTP (Multiple Spanning Tree Protocol) ITU-T G.8032 / Y.1344 ERPS v1/v2(Ethernet Ring Protection Switch) IEEE 802.1Q Virtual Local Area Network (VLAN) IEEE 802.1p QoS/CoS Protocol for Traffic Prioritization IEEE 802.1X Network Authentication IEEE 802.1AB Link Layer Discovery Protocol (LLDP) IEEE 802.3ad Link Aggregation (LACP)
	Processing Type	Store and Forward
	Flow Control	IEEE 802.3x flow control, back pressure flow control
Network Management	**Management**	IPv4/IPv6, SNMP v1/v2c/v3, LLDP, LLDPMED, HTTP, HTTPS, SSHv2 telnet, DHCP client, DHCPv6 client, DHCP server, Port Mirror, DNS client/proxy, IP based Access Filter, ICMPv6, syslog, Time Zone /Daylight Saving, NTP client, RMON, sFlow, Loop detection, Console Port, Power lost warning, relay trigger
	Security	Portbased/Single/Multi 802.1X, ACL(Port/Rate Limiters/ACE), MACbased Authentication, VLAN assignment, QoS Assignment, Private VLAN, Guest VLAN, RADIUS accounting, TACACS+, IP MAC binding, WEB/CLI authentication, Authorization (15 levels), Port Security Limit Control, ACLs for filtering/policing/port copy, IP source guard, ARP Inspection
	L2 Switching	Port/MAC/Protocol/IP Subnet-based VLAN, VLAN trunking, GARP/GVRP, Loop Guard, Link Aggregation static/LACP, BPDU guard, Error disable recovery, IGMPv2 snooping, MLD snooping, IGMP filtering, IPMC throttling / filtering leave proxy, DHCP snooping, ARP, MEP, G.8032 v1/v2
	L3 Switching	DHCP option82, IP route
	QoS	802.1p Queueing, Input priority mapping, Storm control for Unicast/Multicast/Broadcast, Port/Queue/ACL policer, Port egress shaper, Queue egress shaper, DiffServ (DSCP), Tag remarking, Scheduler mode
	Power Saving	ActiPHY, PerfectReach, IEEE 802.3az EEE power management

	Network Redundancy	STP/RSTP/MSTP, port trunk with LACP, ERPS v1/v2 (<50ms)
	Configuration	Http, Https, Telnet, SSH, CLI, TFTP, SNMP v3
	System / Diagnostics	Dual Image Protection, PING, PING6
Switch Properties	**Switching Fabric (Back-Plane)**	40Gbps
	Priority Queues	8
	Max. Number of VLANs	4095
	VLAN ID Range	VID 1 a 4095
	Memory Buffer	4M bits
	Jumbo Frame	9.6Kbytes
	MAC Table Size	8k
	IGMP Group	1024
	Transfer rate	14,880pps for Ethernet port 148,800pps for Fast Ethernet port 1,488,000pps for Gigabit Ethernet port
Interface	**RJ45 Ports**	16*10/100/1000Base-T(X), auto negotiation speed, Full/Half duplex mode, and auto MDI/MDI-X connection
	Fiber Port	4*100/1000Base-(F)X SFP slot
	LED Indicators	System: Power 1, Power 2, Master, Ring, Status Ethernet ports: Speed/Link/Active SFP: Link/Active
	Wavelength	Depends on SFP modules
	RS232 Serial Console	1*RS232 in RJ45 connector with console cable, baud rate 115,200bps,8,N,1
	Relay Contact	24 VDC, 1A resistive
Power Requirements	**Input Voltage**	Dual 12-48VDC redundant power inputs
	Power Connection	2 removable 4-pin terminal block
	Overload Current Protection	Present (Slow-Blow Fuse)
	Reverse Polarity Protection	Present
	System Power Consumption	Max. 18.8W full loading
Characteristics	**Housing**	Metal, IP30 protection
	Dimensions (W x H x D)	67 x 142 x 99 mm (2.13 x 5.59 x 3.9 inch)
	Weight	Unit weight: 1.2kg (2.64 lb), Shipping weight: 1.4 kg (3.08 lb)
	Mounting	DIN-Rail Mounting, Wall Mounting
Environmental Limits	**Operating Temperature**	STD: -10°C ~ 65°C (14°F ~ 149°F) EOT: -40°C ~ 75°C (-40°F ~ 167°F)
	Storage Temperature	-40°C ~ 85°C (-40°F ~ 185°F)
	Ambient Relative Humidity	5 to 95%, (non-condensing)
Regulatory Approvals	**EMI**	FCC Part 15 Subpart B Class A, CE EN55022/ /EN61000-6-4 Class A
	EMS	CE EN55024/EN61000-6-2 IEC61000-4-2 (ESD), IEC61000-4-3 (RS), IEC61000-4-4 (EFT), IEC61000-4-5 (Surge), IEC61000-4-6 (CS), IEC61000-4-8 (Magnetic Field)
	Free Fall	IEC60068-2-32
	Shock	IEC60068-2-27
	Vibration	IEC60068-2-6
	Green	RoHS Compliant

Table 14: Specifications

Hardware Details – EG5-2004-SFP

Dimension

EG5-2004-SFP physical dimensions (W x H x D):

67 x 142 x 99 mm (2.63 x 5.59 x 3.9 inch)

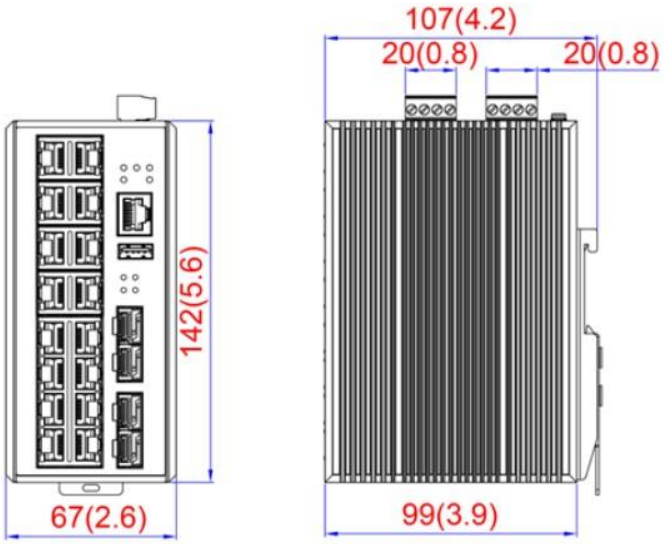


Figure 19: EG5-2004-SFP Physical Dimensions

Unit: mm (inch)

Front Panel

The front panel of the EG5-2004-SFP is shown in the image below:

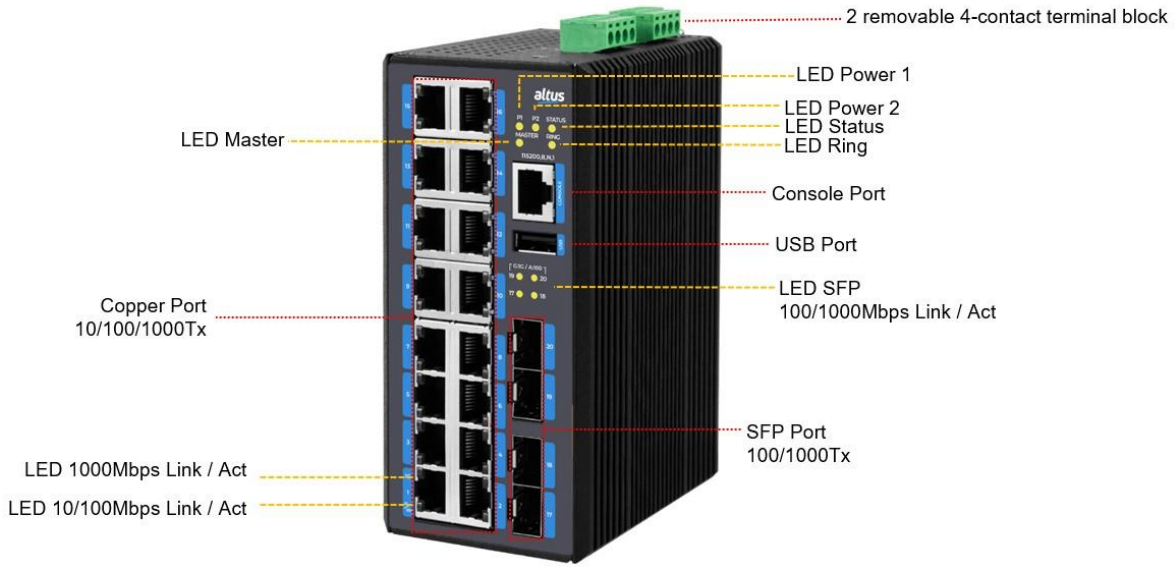


Figure 20: EG5-2004-SFP Front Panel

Top View

The image below demonstrates the top panel of the EG5-2004-SFP, which is equipped with two 4-pin removable terminal block connector for dual DC power inputs (12-48VDC).

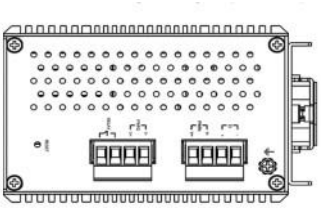


Figure 21: EG5-2004-SFP Top Panel View

LED indicators

There are LED indicators located on the front panel of the switch that show the power input and network status. Each LED indicator has a different color and has its own meaning, as shown in the table below:

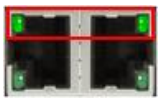
LED	Colour	Description	
P1	Green	On	Power input 1 is active
		Off	Power input 1 is inactive
P2	Green	On	Power input 2 is active
		Off	Power input 2 is inactive
Status	Green	On	No event happened
	Red	On	1. 1. Power inputs 1 or 2 are inactive 2. Port connection inactive
Master	Green	On	ERPS Owner Mode (Ring Master) is ready
		Off	ERPS Owner Mode is not active
Ring	Green	On	ERPS Ring Network is active and works well
		Flashing	ERPS Ring works abnormally or misconfigure
		Off	ERPS Ring Network is not active
L/A (SFP Port 17-20)	Green	On	Connected to network, 1000Mbps
		Flashing	Networking is active
		Off	Not connected to network
	Amber	On	Connected to network, 100Mbps
		Flashing	Networking is active
		Off	Not connected to network
1000 (LAN Port 1-16)	Green 	On	Connected to the network, 1000Mbps
		Flashing	Network is active
		Off	Not connected to the network
10/100 (LAN Port 1-16)	Green 	On	Connected to the network, 10/100Mbps
		Flashing	Network is active
		Off	Not connected to the network

Table 15: LED indicators for EG5-2004-SFP

Note: For managed switches, in order for the LED Fault conditions to operate as shown in the table, this feature must be enabled in the device configuration. Please refer to the manual for more details.

Special Models

• **EG5-2004-SFP-T:** 16-port Gigabit Ethernet and 4-port SFP managed switch. Extended operating temperature range of -40°C to 85°C.

Contact Altus for information on available models and specifications.

Ports

Ethernet ports

The RJ45 ports automatically detect 10Base-T, 100Base-TX, or 1000Base-T device connections. Automatic MDI/MDIX means that the switch can connect to another switch or workstation without rquiring changes to direct or crossover cabling. See the table below for the schematic of straight-through and crossover cables:

Crossover Cable		Direct Cable	
Nº / Pin signal	Nº / Pin signal	Nº / Pin signal	Nº / Pin signal
1 / RX+	3 / TX+	1 / RX+	1 / TX+
2 / RX-	6 / TX-	2 / RX-	2 / TX-
3 / TX+	1 / RX+	3 / TX+	3 / RX+
6 / TX-	2 / RX-	6 / TX-	6 / RX-

Table 16: 10/100Base-T(X) Pinout

Crossover Cable		Direct Cable	
Nº / Pin signal	Nº / Pin signal	Nº / Pin signal	Nº / Pin signal
1 / TP0+	3 / TP1+	1 / TP0+	1 / TP1+
2 / TP0-	6 / TP1-	2 / TP0-	2 / TP1-
3 / TP1+	1 / TP0+	3 / TP1+	3 / TP0+
4 / TP2+	7 / TP3+	4 / TP2+	4 / TP3+
5 / TP2-	8 / TP3-	5 / TP2-	5 / TP3-
6 / TP1-	2 / TP0-	6 / TP1-	6 / TP0-
7 / TP3+	4 / TP2+	7 / TP3+	7 / TP2+
8 / TP3-	5 / TP2-	8 / TP3-	8 / TP2-

Table 17: 1000Base-T(X) Pinout

NOTE:"+" and "-" signals represent the polarity of the wires that make up each pair.

Fiber ports

The Fiber Port of the SC connector Type can operate in multimode or monomode. When connecting Fiber Ports to each other, follow the instructions as illustrated below to make the connection correctly. A wrong connection will cause abnormal operation.

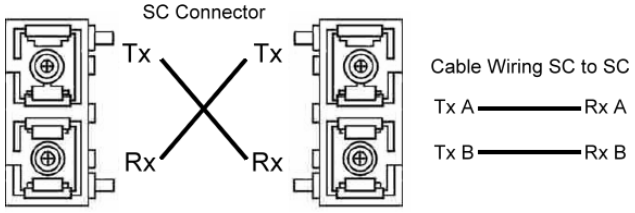


Figure 22: SC Multimode Connector Fiber Port

Caution: This is a Class 1 Laser/LED product. Do not look directly at the Laser/LED beam

Cabling

Use a 2 or 4-pair twisted-pair cable, category 5e or higher, for RJ-45 port connections. The cable between the switch and the connected device (switch, hub, workstation, etc.) should be less than 100 meters in length.

For fiber optic connections, use 50 or 62.5/125µm multimode fiber cables with multimode connectors. If using single-mode connectors, the cable should be 9/125µm single-mode fiber.

Additionally, some models support SFP (Small Form-factor Pluggable), a compact optical transceiver used in optical communications for telecommunications and data communication applications.

To connect the transceiver and LC cable, follow the steps below:

Step 1: Insert the SFP transceiver module into the SFP slot as shown in the figure below. Note that the triangle mark is on the bottom of the SFP slot:

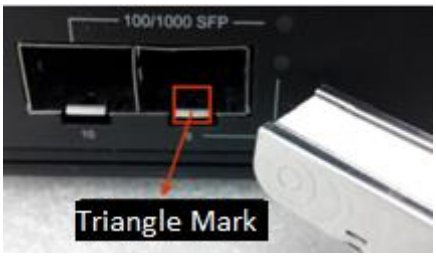


Figure 22: Transceiver for the SFP module

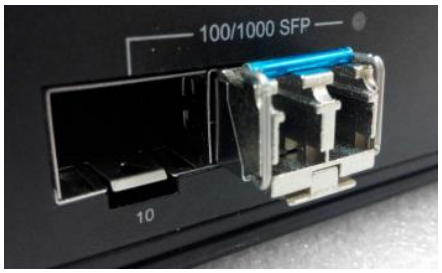


Figure 23: Transceiver inserted

Step 2: Insert the fiber cable from the LC connector into the transceiver, as shown in the figure below:

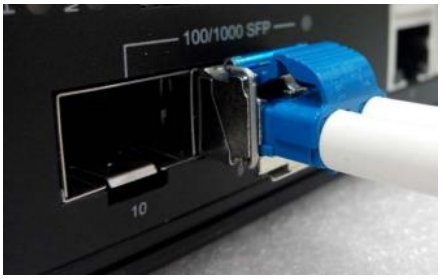


Figure 24: LC connector for the transceiver

To remove the LC connector from the transceiver, follow the steps shown below:

Step 1: Press the top side of the transceiver's LC connector and pull it out to release as shown below in the figure:

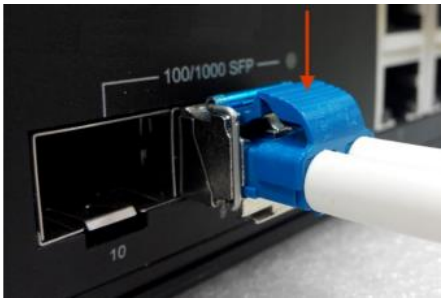


Figure 25: Removing the LC Connector

Step 2: Push down on the metal clasp and pull the transceiver out through the plastic part, as shown below in the figure:

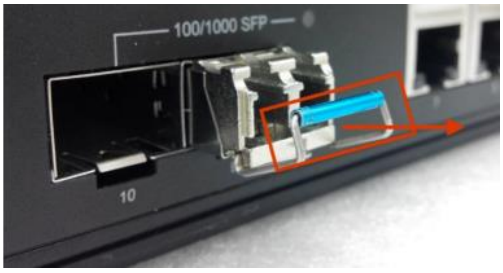


Figure 36: Removing the SFP module

Connecting Power Inputs

The steps below demonstrate the electrical installation process of the equipment with DC power supply:

For one 6-pin removable terminal block**:**

Step 1: Insert the positive and negative wires into the PWR1 (V1+, V1-) and PWR2 (V2+, V2-) contacts on the terminal block connector as shown below in image

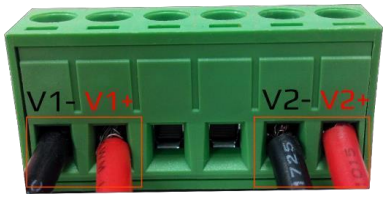


Figure 27: Power Terminal Block

Step 2: Tighten the wire-clamp screws to prevent the wires from loosening, as shown below:

Figure 28: Power Terminal Block

For two 4-pin removable terminal block:

Step 1: Insert the positive and negative wires into the PWR1 (V1-, V1+) and PWR2 (V2-, V2+) contacts on the terminal block connector as shown below:

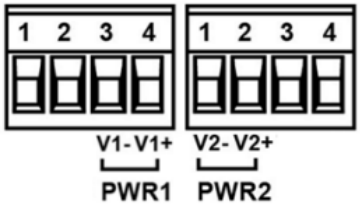


Figure 29: Power Terminal Block

Step 2: Tighten the wire-clamp screws to prevent the wires from loosening, as shown below:

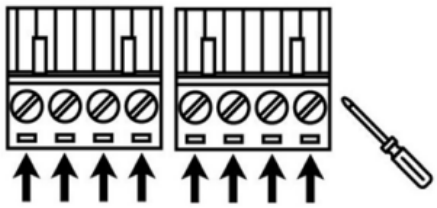


Figure 30: Power Terminal Block

Attention: Use only copper conductors with appropriate insulation. Tighten the screws. The wire gauge for the terminal block should be **18-20 AWG (0.81 mm to 1.02 mm).** Refer to the table below to check the temperature specifications of copper conductors and the recommended torque for the screws of each model:

Switch Model	Copper Conductor Temperature (°C)	Recommended Torque for Screws (N·m)
ET5-0500	100	0,56
ET5-0600	125	0,56
ET5-0602-M	125	0,56
ET5-0802-M	100	0,56
ET5-0800	125	0,79
PG5-1204-SFP	100	0,56
EG5-2004-SFP	125	0,56

Table 18: Conductor Temperature Specifications and Screw Tightening Torque

Connecting the Fault Alarm Contact

The fault alarm contact is in the middle of the terminal block connector as shown below. By inserting the wires, it will detect the fault status including power failure or port link failure (Only for managed industrial switches, requiring the feature to be enabled in the device settings) and form a normally open circuit. The following image shows an application example for the fault alarm.

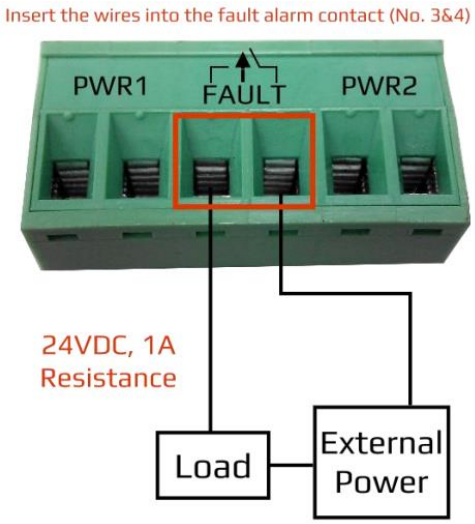


Figure 31: Connecting the Fault Alarm Contact for ET5-0500, ET5-0600, ET5-0602-M, ET5-0802-M, ET5-0800 E PT5-1204-SFP switches.

Note: The wire gauge for the terminal block should be between **12-24 AWG (0.51mm to 2.05mm).** If using only one power source, jumper Pin 1 to Pin 5 and Pin 2 to Pin 6 to eliminate power fault alarm.

Grounding note

Grounding and wire routing help limit the effects of noise due to electromagnetic interference (EMI). Run the ground connection from the ground screw to the grounding surface prior to connecting devices. The grounding screw symbol is shown below:

Figure 32: Ground screw

Caution: Using shielded wires allows better electromagnetic compatibility.

Mechanical Assembly

DIN Rail Mounting

The DIN rail comes pre-installed on the industrial Ethernet switch from the factory. If the DIN-Rail isn't attached to the switch, follow the images to learn how to install it.

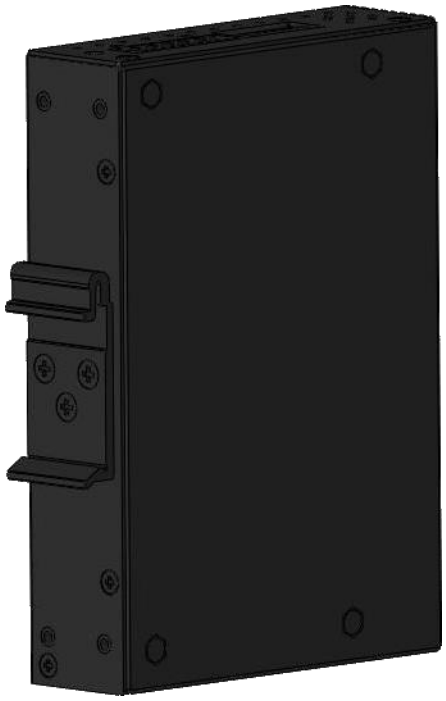


Figure 33: Switch back and DIN rail holder

Follow the steps below to learn how to fix the switch.

Step 1: Use the screws to install the DIN rail holder on the back of the switch.

Step 2: To remove the DIN rail holder, do the opposite of Step 1.

Step 3: After the DIN rail holder is installed on the back of the switch, insert the top of the bracket into the rail, as shown in the image below:

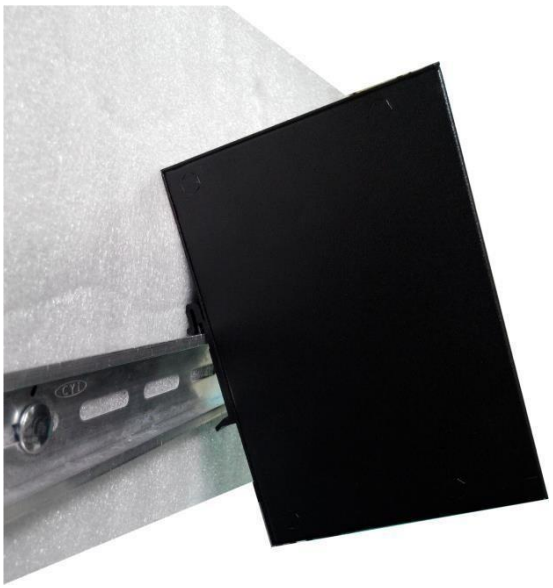


Figure 34: Insert the switch into the DIN rail

Step 4: Pull the bracket slightly down the rail, as shown in the image below:

Figura 35: Stabilize the switch on the DIN rail

Step 5: Check if the bracket is mounted tightly on the rail.

Step 6: To remove the rail switch, do the opposite of the steps above.

Wall Mounting

Follow the steps below to mount the switch using the wall mount bracket, as shown in the image below.

Step 1: Remove the DIN rail holder from the switch loosening the screws.

Step 2: Position the wall mount brackets on the top and bottom of the switch.

Step 3: Use the screws to secure the wall mount bracket to the switch.

Step 4: Use the hook holes at the corners of the wall mount bracket to secure the switch to the wall.

Step 5: To remove the wall mount bracket, do the opposite of the steps above.

Figure 36: Wall mounting support

The image below shows the dimensions of the wall mounting holder:

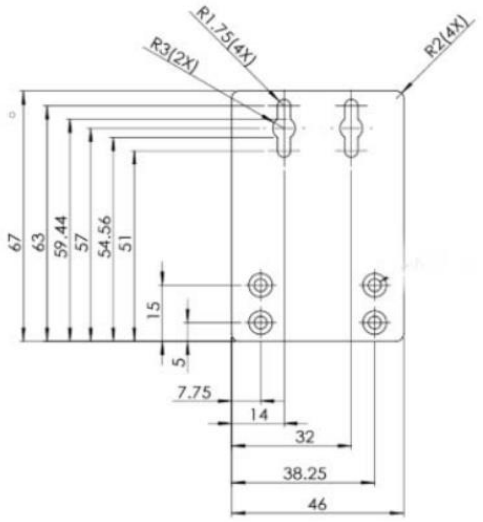


Figure 37: Wall Mounting Holder Dimensions

Hardware Installation

Installation Steps

This section explains how to install the switch:

Installation Steps:

Step 1: Unpack the switch from the original box

Step 2: Make sure the bracket is screwed onto the switch.

• If the DIN rail bracket is not screwed into the switch, refer to the DIN Rail Mounting section for DIN Rail Installation.

• If you want to wall mount the switch, refer to the Wall Mounting section.

Step 3: To attach the switch to a DIN rail or wall, see the Mechanical Mounting section.

Step 4: Power up the switch and verify if the Power LED turned on.

• If you need help connecting the power cords, refer to the Connecting Power Inputs section.

• See the LED Indicators section for LED light indication.

Step 5: Prepare the straight-through CAT5 twisted-pair cable for the Ethernet connection.

Step 6: Insert one end of the RJ45 cable into the switch's Ethernet port, and the other end into the Ethernet network device (PC, server, etc.). The Ethernet port LED on the switch will light when the cable is plugged into the network device.

• See the LED Indicators section for indication of LED lights.

Step 7: When all connections made and the LED lights indicate normal operation, installation is complete.

Troubleshooting

- Make sure you have the correct power cord and/or adapter. Never use a power supply or adapter with a non-compliant DC output voltage, or the equipment might burn.
- Select the appropriate UTP/STP cable to establish the network. Use an unshielded twisted-pair cable (UTP, or unshielded twisted-pair) or a shielded twisted pair cable (STP, or Shielded twisted-pair) for

RJ45:100Ω CAT5e connections for 10M/100Mbps. Also, ensure that the length of any twisted-pair cable connection does not exceed 100 meters.

- Diagnosing LED indicators: To aid in problem identification, the switch can be easily monitored with LED indicators, which help identify if any problems exist.
    - In managed switches, the fault diagnosis (*Fault*) must be enabled in the device settings. Refer to the manual.
- See the LED Indicators section for LED light indication
- If the power indicator LED does not turn on when the power cord is plugged in, the user may be having issues with the cord. Look for loose power connections, power outages, or power outlet surges.
- Contact Altus for technical support service if the problem still cannot be resolved.
- If the switch LED indicators are normal and the cables are properly connected, but packets are still not beingtransmitted, check the configuration or status of the Ethernet devices in the system.