

Hardware Installation Guide

Unmanaged Fast Ethernet Switches

IE-SW-ELB-05-5TX (Part No.2828540000)

IE-SW-ELB-08-8TX (Part No.2828550000)

1. Introduction

Ethernet Switches from Weidmüller are designed with a very compact housing size and are fitted with a robust housing. To ensure reliable, error-free operation. And to prevent damage or injury, please read the operating instructions, all safety information provided in this document and any other safety information that were supplied with the product.

2. Safety notice

	Switch off the electrical power before removing the power connection!
	The device heats up during operation. Allow the unit to cool down or use protection gloves when carrying out any work.
	The device may only be connected to the supply voltage shown on the product label. Higher voltage than specified will destroy the device. The device must be supplied by a SELV source as defined in the Low Voltage Directive 2014/35/EU.
	Installation, commissioning and maintenance may only be performed by qualified electricians.
	Observe the operating instructions.
	<ul style="list-style-type: none">Indoor use and pollution degree 2, it must be wiped with a dry cloth for clean up the device and label.If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.Shall be mounted in the Industrial Control Panel and ambient temperature is not exceed 60°C.

FCC compliance this device complies with part 15 of FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

Intended use

The device is intended for the realization of communication networks within an industrial environment, it is intended to be used in a restricted access location. The device may only be used within the scope of the specified technical data. The device is intended to be mounted to a well-grounded mounting surface, such as a metal panel. Any other use may result in unintentional malfunction and damage. Observing the documentation is part of the intended use.

Environmental conditions

This equipment is intended to be used in a restricted access location. When planning the installation site make sure that the ambient temperature during operation will not exceed the temperature given in the technical data. Also make sure that the air flow will not be compromised by other devices. Ensure that the mounted and wired device is not exposed to any mechanical stress.

3. Package Checklist

Your Ethernet Switch is shipped with the following items:

- Ethernet Switch
- Hardware Installation Guide (printed)

Contact Information

Weidmüller Interface GmbH&Co. KG

Klingenbergstraße 26, 32758 Detmold/Germany

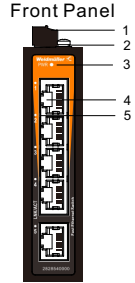
Phone +49 (0) 5231 14-0, Fax +49 (0) 5231 14-292083

E-Mail weidmueller@weidmueller.com, Internet www.weidmueller.com

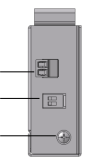
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4. Panel Layouts

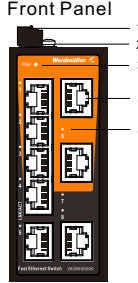
IE-SW-ELB-05-5TX



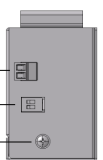
Top Panel



IE-SW-ELB-08-8TX

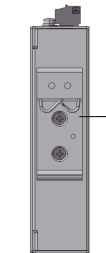


Top Panel

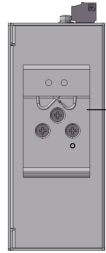


- Terminal block for power input PWR
- Grounding screw
- Note: The shielding ground of the LAN port is electrically connected to the grounding screw.
- Power input LEDs
- 5/8 x 10/100Base-T(X)
- LAN port Link/Activity LED
- DIP Switch
- DIN Rail

Rear Panel

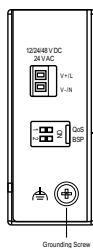


Rear Panel

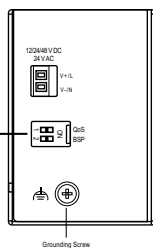


5. DIP Switch

IE-SW-ELB-05-5TX



IE-SW-ELB-08-8TX

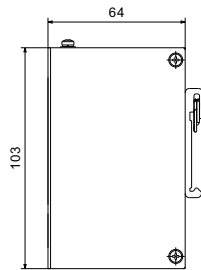


DIP Switch

DIP Switch	Setting	Description
Quality of Service (QoS)	ON (Default)	Enable the Quality of Service to handle packet priorities in two WRR queues. QoS and ToS/DSCP priority mapping matrix in each queue
		QoS 3bit priority
		7 · 6 · 5 · 4
		3 · 2 · 1 · 0
		Queues
		1
		0
		WRR
		16
		1
Broadcast Storm Protection (BSP)	OFF	Disable the Quality of Service
	ON	Enables broadcast storm protection (only allow maximum of 200 broadcast packets per second) for each Ethernet port
Broadcast Storm Protection (BSP)	ON	Enables broadcast storm protection (only allow maximum of 200 broadcast packets per second) for each Ethernet port
	OFF (Default)	Disables the Broadcast Storm Protection

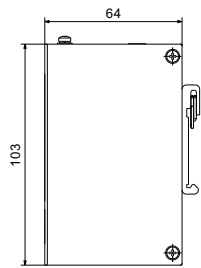
6. Mounting Dimensions

IE-SW-ELB-05-5TX



(units = mm)

IE-SW-ELB-08-8TX



(units = mm)

7. DIN-Rail Mounting

The switch supports horizontal and vertical installation. The DIN rail kit can be adjusted according to the actual application to meet different installation requirements.

Installation

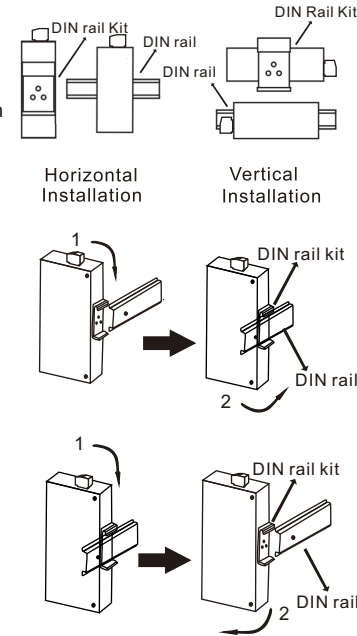
Step 1: Select the mounting position for the device and guarantee adequate space and heat dissipation.

Step 2: Clip the upper part of the rail holder to the DIN rail, push the upper part of the device down slightly in the direction of arrow 1, push the front of the module toward the mounting surface until it audibly snaps into place in the direction of arrow 2.

Uninstallation

Step 1: As shown in the following figure, press the device downward in the direction of arrow 1 until the bottom of the device is detached from the DIN rail.

Step 2: Rotate the device in the direction of arrow 2 until the device is removed from the DIN rail.



8. Grounding Ethernet Switch



ATTENTION

- Grounding and wire routing help limit the effects of noise due to electromagnetic interference (EMI).
- The ground connection from the ground screw to the grounding surface prior to connecting devices.
- This product is intended to be mounted to a well-grounded mounting surface, such as a metal panel.
- The shielding ground of the RJ45 ports are electrically connected to the ground connection (screw).
- Cross-sectional area of the grounding cable $\geq 0.82 \text{ mm}^2$ (AWG 18); Grounding resistance $< 5 \Omega$.

9. Wiring the Power Inputs

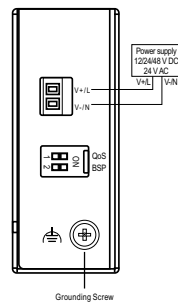
The switch power supply inputs which are located on the 2-pin terminal block. Refer to illustration below for correct wiring.



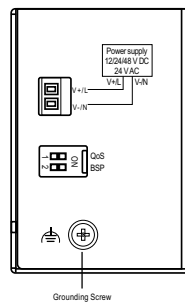
WARNING

- Take into consideration the following guidelines before wiring the device.
- Terminal block is mating with Plug and suitable for $0.20\text{--}3.31 \text{ mm}^2$. Torque value 0.508 Nm .
- The temperature rating of the input connection cable should higher than 105°C .
- Supplied by SELV source evaluated by UL 61010-1 or 61010-2-201 power supply only.

IE-SW-ELB-05-5TX



IE-SW-ELB-08-8TX



10. Communication Connections

Switch IE-SW-ELB-05-5TX is equipped with following communication interfaces: 5x10/100Base-T(X) ports

Switch IE-SW-ELB-08-8TX is equipped with following communication interfaces: 8x10/100Base-T(X) ports

Please only use cables suitable for the respective type of communication and ensure that signals are protected from possible interference.

10.1 10/100Base-T(X) RJ45 Ports

Each RJ45 Ethernet port independently supports auto-negotiation for recognizing the transmission speed 10 Mbps or 100 Mbps according to the IEEE802.3 standard. This means that some of connected Ethernet devices could operate at 10 Mbps, while at the same time other nodes are operating at 100 Mbps.

The 10/100Base-T(X) ports located on Ethernet Switch's front panel are used to connect to Ethernet-enabled devices. Below we show pinouts for both MDI (NIC-type) ports and MDI-X (HUB/Switch-type) ports. Auto MDI-X ensures that both wiring-schemes are supported. (Automatic cross over function)

10/100Base-T(X) RJ45 Pinouts

MDI Port Pinouts		MDI-X Port Pinouts		8-pin RJ45
Pin	Signal	Pin	Signal	
1	Tx+	1	Rx+	
2	Tx-	2	Rx-	
3	Rx+	3	Tx+	
6	Rx-	6	Tx-	



Note about possible loss of data packages in case of "Duplex mismatching"

If the switch's auto-negotiation port is connected to a non-negotiating device, then the switch will set its port transmission speed same as the connected device but is unable to correctly detect the duplex mode. As result the port is set to the correct speed but is using always the half duplex mode as required by the IEEE 802.3u standard in such cases. For correct transmission, the non-negotiating port must be set to half-duplex mode (speed can be either 10 Mbps or 100 Mbps, it always will be recognized automatically by an Auto-Negotiation-Device).

11. LED Indicators

The front panel of the Ethernet Switch contains several LED indicators. The function of each LED is described in the table below.

LED	Color	Status	Description
PWR	Green	On	Power is being supplied to power input PWR
		Off	Power is not being supplied to power input PWR
LNK/ACT	Green:100Mbps	On	Port's link is active
		Off	Port's link is inactive
		Blinking	Transmitting data

12. Specifications

Technology	
Standards	IEEE 802.3 for 10Base-T IEEE 802.3u for 100Base-TX IEEE 802.3x for Flow Control IEEE 802.1p for Class of Service
Processing Type	Store and Forward
MAC Table size	1K
Packet buffer size	448 Kbit
Interface	
RJ45 Ports	10/100Base-T(X) auto negotiation speed, F/H duplex mode and auto MDI/MDI-X connection
LED Indicators	PWR , LNK/ACT
Power	
Input Voltage	9.6~60VDC or 18~30VAC
Input Current @24 VDC	IE-SW-ELB-05-5TX: 0.12A IE-SW-ELB-08-8TX: 0.13A
Connection	One removable 2-pin terminal block, Wiring cable 0.2-3.31mm ²
Overload Current Protection	Present
Reverse Polarity Protection	Present
Physical Characteristics	
Housing	IP40 protection, metal
Dimension (W x H x D)	IE-SW-ELB-05-5TX: 26.0x103 x 64 mm IE-SW-ELB-08-8TX: 43.5x103 x 64 mm
Weight	IE-SW-ELB-05-5TX: 145 g IE-SW-ELB-08-8TX: 205 g
Installation	DIN-rail
Environmental conditions	
Operating Temperature	-10 to 60°C
Storage Temperature	-40 to 85°C
Ambient Relative Humidity	5% to 95% (non-condensing)
Altitude	up to 2000 m
Pollution Degree	2
Regulatory Approvals	
Safety	UL 61010-1: UL 61010-2-201
EMC	EN 55032, EN 55035, Class A, IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz~1 Ghz: 3 V/m, IEC 61000-4-4 EFT: Power:0.5 kV; Signal:0.5 kV, IEC 61000-4-5 Surge: Power:0.5 kV; Signal:1 kV, IEC 61000-4-6 CS:3 Vrms
Shock	IEC 60068-2-27
Free Fall	IEC 60068-2-32
Vibration	IEC 60068-2-6
MTBF	
Time	IE-SW-ELB-05-5TX: 488,236 hrs IE-SW-ELB-08-8TX: 463,836 hrs
Database	Telcordia SR332
Warranty	
Time Period	5 years



Observe the notes for proper disposal of the product. You can find the notes here: www.weidmueller.com/disposal.

