Weidmüller ⚙

Hardware Installation Guide

Unmanaged Gigabit Ethernet Switches

IE-SW-EL08-8GT (Part No. 2682230000)
IE-SW-EL05-4GT-1GESFP (Part No. 2682220000)

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 and 2014/30/EU.
👷	Installation, commissioning and maintenance may only be performed by qualified electricians.
👁	Observe the operating instructions.
⚠	• Indoor use and pollution degree II, it must be wiped with a dry cloth for clean up the device and label. ○ Utilisation en intérieur et degré de pollution II, il faut l'essuyer avec un chiffon sec pour nettoyer l'appareil et son étiquette. • Do not block air ventilation holes. ○ Ne bouchez pas les orifices de ventilation. • If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired. ○ Si l'appareil est utilise d'une maniere non specifiee par le fabricant, la protection qu'il apporte peut se voir diminuee. • Shall be mounted in the Industrial Control Panel and ambient temperature is not exceed 75 degrees C. ○ Doit être monté dans le panneau de commande industriel et la température ambiante ne doit pas dépasser 75 degrés C.

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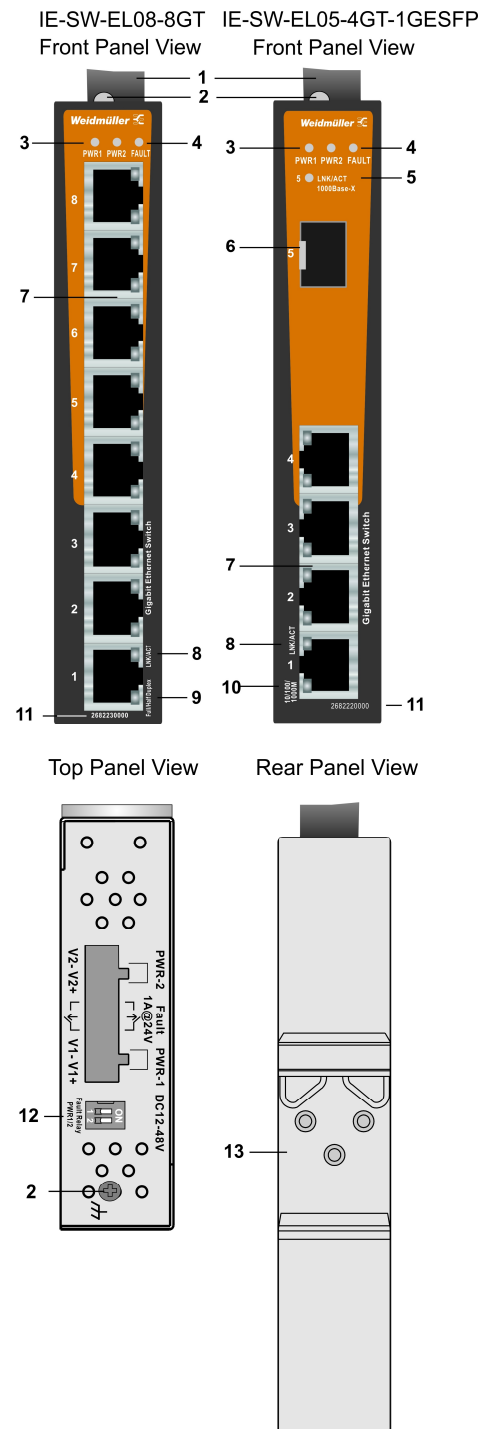
FCC compliance
This device complies with part 15 of FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

3. Package Checklist

Your Ethernet Switch is shipped with the following items:

- Ethernet Switch
- Hardware Installation Guide (printed)
- 6-Pin Terminal connector
- Protective caps for RJ45 ports and SFP ports

4. Panel Layouts

IE-SW-EL08-8GT Front Panel View

IE-SW-EL05-4GT-1GESFP Front Panel View

Top Panel View   Rear Panel View

1. Terminal block for power input PWR1/PWR2 and Power failure relay (output)
2. Grounding screw / Frame ground (Note: The shielding ground of the LAN port is electrically connected to the grounding screw)
3. Power input LEDs (PWR1 / PWR2)
4. Fault LED (PWR1 / PWR2 fault)
5. SFP port Link/Activity LED
6. SFP slot 1000Base-X
7. 10/100/1000Base-T(X) ports
8. LAN port Link/Activity and Speed LED (Amber = 10/100 Mbps, Green =1000 Mbps)
9. LAN port Duplex Mode LED (Amber = full duplex, Off = half duplex, Blinking = collisions)
10. LAN port speed LED (10/100/1000 Mbps)
11. Article Number
12. DIP switch for Enable / Disable Power Fault relay
    SW1 ON: Switch relay for power 1 error signaling
    SW2 ON: Switch relay for power 2 error signaling
13. DIN-Rail kit

5. Mounting Dimensions

(units = mm)
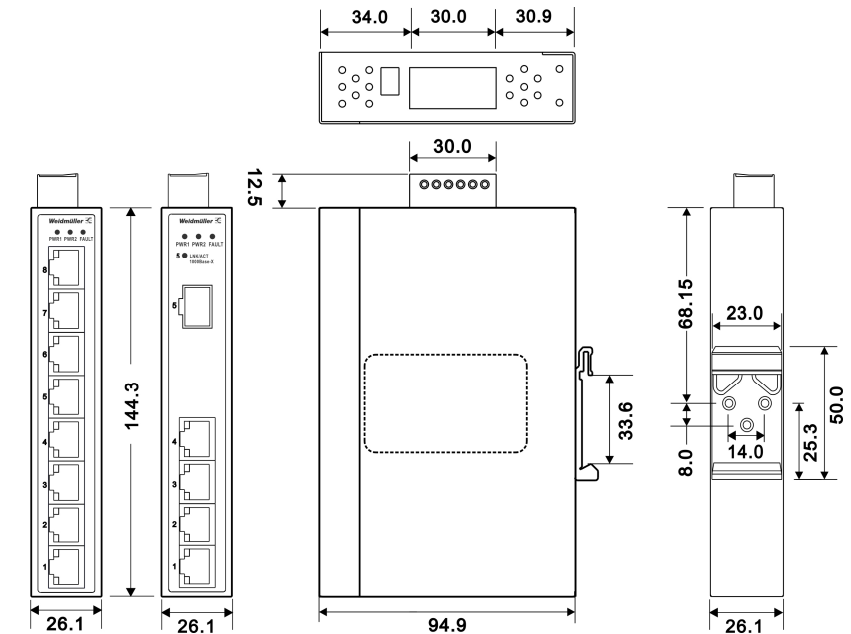
6. DIN-Rail Mounting

Slide the switch onto a DIN-rail and make sure that the switch's Din-rail clip clicks into the rail firmly.

STEP 1: Insert the top of the DIN-Rail into the slot just below the stiff metal spring.

STEP 2: The DIN-Rail attachment unit will snap into place as shown below.

To remove the DIN-rail from the Ethernet Switch, simply reverse Steps 1 and 2.

7. 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).

8. Wiring Redundant Power Inputs and Power Fault Relay

The switch supports redundant power supply inputs and provides a power fault relay which can be used for alarming in case of interruption of Power 1 or Power 2 on the 6-pin terminal block. Refer to illustration below for correct wiring.

⚠	**Warning / Avertissement**
	• Take into consideration the following guidelines before wiring the device
	o Tenez compte des directrices suivantes avant de câbler l'appareil.
	• Terminal block is mating with Plug and suitable for 12-24AWG. Torque value 4.5 lb-in.
	o Le bornier est compatible avec les connecteurs et convient pour 12-24AWG. Valeur de couple 4,5 lb-in.
	• The temperature rating of the input connection cable should higher than 105°C.
	o La température de service nominale du câble d'entrée doit être supérieure à 105 °C.
	• Supplied by SELV source evaluated by UL 61010-1 or 61010-2-201 power supply only.
	o Fourni par la source SELV évaluée uniquement par l'alimentation UL 61010-1 ou 61010-2-201.
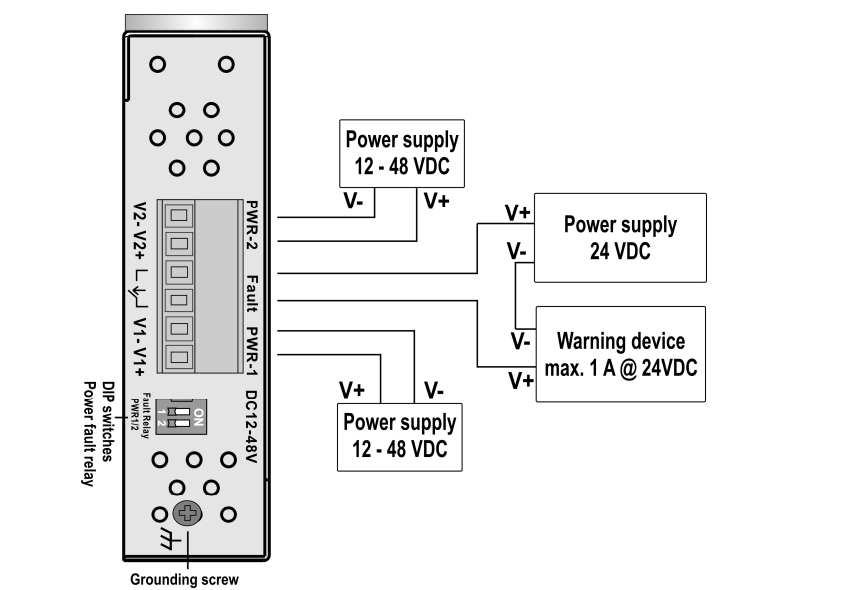
Note about behavior of power failure relay:

- Relay contact is closed if the device is powered-off.
- Relay contact always is open if the device is powered either by PWR1 or PWR2 and if DIP switches 1 and 2 for power control are set to off.
- Relay contact closes if DIP switch 1 is set to ON and PWR1 fails.
- Relay contact closes if DIP switch 2 is set to ON and PWR2 fails.

9. Communication Connections

Switch **IE-SW-EL08-8GT** is equipped with:
8x   10/100/1000Base-T(X) Ethernet ports (Auto MDI-X)

Switch **IE-SW-EL05-4GT-1GESFP** is equipped with:
4x   10/100/1000Base-T(X) Ethernet ports (Auto MDI-X)

1x   1000Base-X slot to be used with SFP Transceivers (mini-GBIC) [accessories]

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

9.1   10/100/1000Base T(X) RJ45 Ports

The 10/100BaseT(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 crossover function).

Pinouts 10/100/1000Base T(X) RJ45

8-Pin RJ45 Port	10/100 Base-T(X) MDI/MDI-X			1000Base-T MDI/MDI-X		
	Pin No.	MDI port	MDI-X port	Pin No.	MDI port	MDI-X port
	1	TD+(transmit)	RD+(receive)	1	BI_DA+	BI_DB+
	2	TD-(transmit)	RD-(receive)	2	BI_DA-	BI_DB-
	3	RD+(receive)	TD+(transmit)	3	BI_DB+	BI_DA+
	4	Not used	Not used	4	BI_DC+	BI_DD+
	5	Not used	Not used	5	BI_DC-	BI_DD-
	6	RD-(receive)	TD-(transmit)	6	BI_DB-	BI_DA-
	7	Not used	Not used	7	BI_DD+	BI_DC+
	8	Not used	Not used	8	BI_DD-	BI_DC-

9.2   1000BaseSFP Port (only IE-SW-EL05-4GT-1GESFP)

The switch is equipped with an 1000BaseSFP slot that can be used with an optional SFP transceivers (mini GBIC). Please only use SFP modules and cables that are compatible with each other to establish an optical connection. Weidmüller provides transceiver models for various distance requirements.

LC-Port with separate Transmit and Receive Port:
Remember to connect the Tx (transmit) port of device I to the Rx (receive) port of device II, and the Rx (receive) port of device I to the Tx (transmit) port of device I
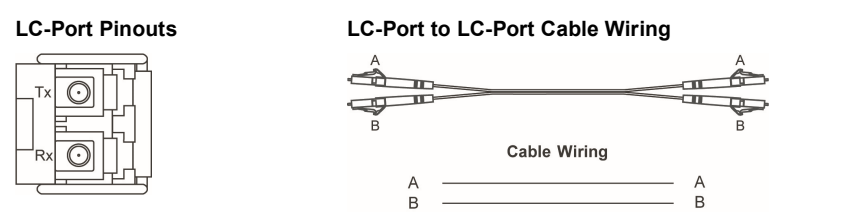
10. LED Indicators

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
PWR1	Green	On	Power is being supplied to power input PWR1.
		Off	Power is not being supplied to power input PWR1.
PWR2	Green	On	Power is being supplied to power input PWR2.
		Off	Power is not being supplied to power input PWR2.
FAULT	Amber	On	Indicates PWR1 or PWR2 fault (if corresponding DIP switches are set to ON).
		Off	If DIP switches are set to OFF or no power failure.
LNK/ACT (IE-SW-EL08-8GT)	Green / Amber	Green	Port's link is active at 1 Gbps.
		Amber	Port's link is active at 10/100 Mbps.
		Off	Port's link is inactive.
LNK/ACT (IE-SW-EL05-4GT-1GESFP)	Green	On	Port's link is active.
		Off	Port's link is inactive.
Full/Half Duplex (IE-SW-EL08-8GT)	Amber	On	Port is set to Full Duplex Mode.
		Off	Port is set to Half Duplex Mode.
		Blinking	Packet collisions detected.
10/100/1000M (IE-SW-EL05-4GT-1GESFP)	Amber	On	Port speed is 100 Mbps.
		Off	Port speed is 10 Mbps or 1 Gbps (Full Duplex).
LNK/ACT 1000Base-X (IE-SW-EL05-4GT-1GESFP)	Green	On	Fiber-Link is active.
		Off	Fiber-Link is inactive.

11. Specifications

Technology	
Standards	IEEE 802.3 for 10Base-T, IEEE 802.3u for 100Base-TX, IEEE 802.3z for 1000Base-X, IEEE 802.3ab for 1000Base-T, IEEE 802.3x flow control
Processing Type	Store and Forward
MAC Table size	IE-SW-EL05-4GT-1GESFP: 1K; IE-SW-EL08-8GT: 4K
Packet buffer size	IE-SW-EL05-4GT-1GESFP: 1 Mbit, IE-SW-EL08-8GT: 1.5 Mbit
Backplane bandwidth	IE-SW-EL05-4GT-1GESFP: 10 Gbps, IE-SW-EL08-8GT: 16 Gbps
Jumbo frame support	IE-SW-EL05-4GT-1GESFP: up to 10 KB, IE-SW-EL08-8GT: 9216 Bytes

Interfaces	
RJ45 Ports	10/100/1000BaseT(X) auto negotiation speed, F/H duplex mode and auto MDI/MDI-X connection
SFP slot	1000Base-X
LED Indicators	PWR1, PWR2 (Power), Power Fault, Port Link/Activity, Port Full/Half Duplex Mode
Relay Contact	Max. 1A @ 24 VDC
DIP Switches	Enabling/Disabling relay alarm for PWR1/PWR2 failure

Power	
Input Voltage	24 V DC (12 - 48 V DC), 2 redundant inputs
Input Current @24 VDC	IE-SW-EL05-4GT-1GESFP: 0.18 A; IE-SW-EL08-8GT: 0.2 A
Connection	One removable 6-pin terminal block, Wiring cable 12-24AWG
Overload Current Protection	Present
Reverse Polarity Protection	Present

Physical Characteristics	
Housing	IP30 protection, metal
Dimension (W x H x D)	26.1 x 144.3 x 94.9 mm (1.03 x 5.68 x 3.74 in)
Weight	IE-SW-EL05-4GT-1GESFP: 403 g; IE-SW-EL08-8GT: 390 g
Installation	DIN-rail

Environmental conditions	
Operating Temperature	-40 to 75°C (-40 to 167°F)
Storage Temperature	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)
Altitude	up to 2000 m

Regulatory Approvals	
Safety	UL 61010-1, UL 61010-2-201
EMC	EN 55032, EN 55024, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz to 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 60068-2-31
Vibration	IEC 60068-2-6

MTBF	
Time	IE-SW-EL08-8GT: 926.332 hrs, IE-SW-EL05-4GT-1GESFP: 1.861.840 hrs
Database	Telcordia SR332

Warranty	
Time Period	5 years

Contact Information

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