Hardware Installation Guide

Unmanaged Gigabit Ethernet PoE Switches

IE-SW-EL10-8GTPoE-2GESFP (Part No. 2682410000)

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.

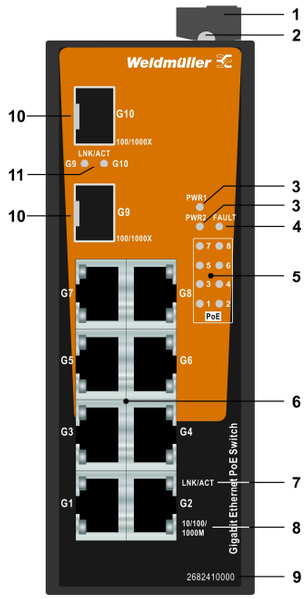
3. Package Checklist

Your Ethernet Switch is shipped with the following items:

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

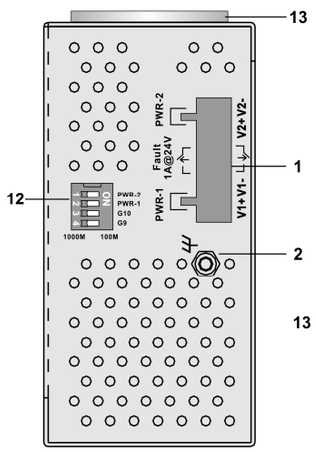
4. Panel Layouts

IE-SW-EL10-8GTPOE-2GESFP
Front Panel View

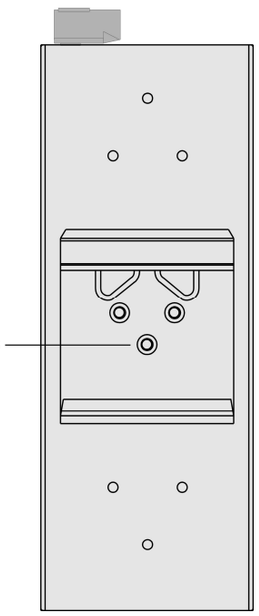


1. Terminal block for power input PWR1/PWR2 and Power failure relay (output)
2. Grounding screw / Frame ground (Note: The shielding ground of the LAN port is electrically connected to the grounding screw)
3. Power Input LED's (PWR1 / PWR2)
4. Power Fault LED (PWR1 or PWR2 fault)
5. LED's for PoE power injection
6. 8 x 10/100/1000Base-T(X) PoE ports (P.S.E)
7. LED Link/Activity for RJ45 port
8. LED for speed indication (Green = 1000 Mbps, Amber = 100 Mbps, Off = 10 Mbps)
9. Article Number
10. SFP port (100 / 1000X)
11. LED Link/Activity for SFP port
12. DIP switches for power fault relay and SFP port speed setting
    SW1 ON: Closes relay if **power 2** fails
    SW2 ON: Closes relay if **power 1** fails
    SW3 and SW4 OFF: SFP port speed setting to 1000 Mbps (default)
    SW3 and SW4 ON: SFP port speed setting to 100 Mbps
13. DIN-Rail kit

Top Panel View

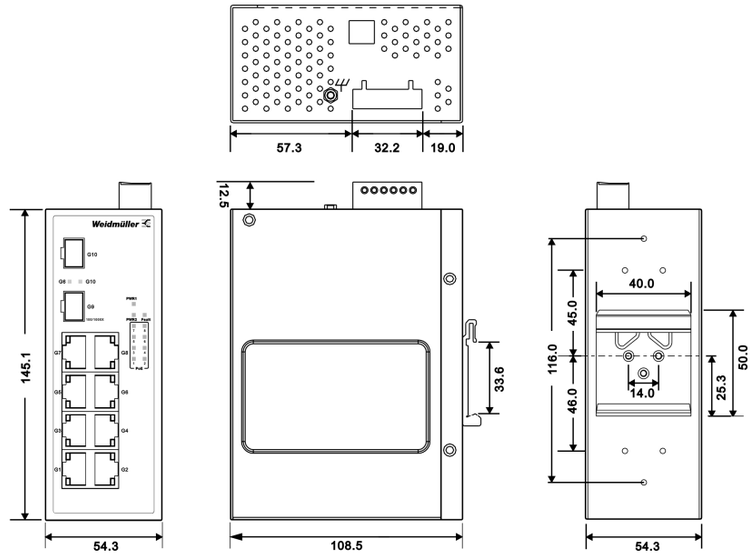


Rear Panel View



5. Mounting Dimensions

(units = mm)

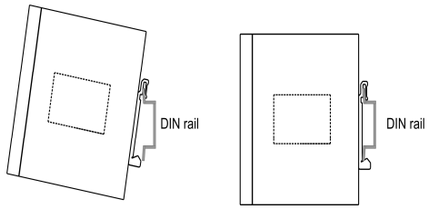


6. DIN-Rail Mounting

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

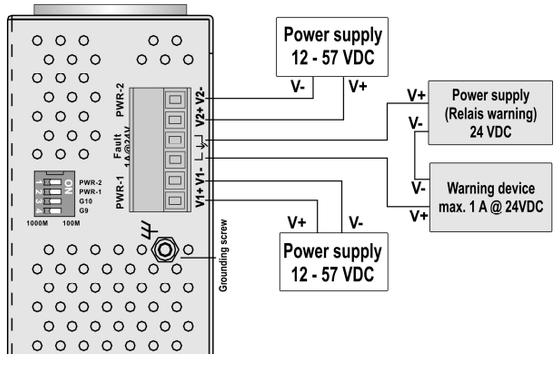
	ATTENTION - Grounding and wire routing help limit the effects of noise due to electromagnetic interference (EMI). - the ground connection from the ground screw to the grounding surface prior to connecting devices. - This product is intended to be mounted to a well-grounded mounting surface, such as a 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 supplies and provides a power fault relay which can be used for alarming in case of interruption of Power 1 or Power 2. For wiring via 6-pin terminal connector please refer to below illustration.

Warning / Avertissement

- Take into consideration the following guidelines before wiring the device
- 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.
- 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.
- 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.
- Fourni par la source SELV évaluée uniquement par l'alimentation UL 61010-1 or 61010-2-201.



Note about behavior of power failure relay (DIP switches PWR-1 / PWR-2):

- 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 PWR1** fails and **DIP switch 2** is set to ON.
- Relay contact closes **if PWR2** fails and **DIP switch 1** is set to ON.

9. Communication Connections

Switch **IE-SW-EL10-8GTPoE-2GESFP** is equipped with the following communication interfaces:

8 x 10/100/1000Base-T PoE ports (P.S.E.)
2 x 100/1000BaseSFP slots to be used with SFP Transceivers (mini-GBIC)

9.1 10/100/1000Base-T(X) PoE ports (P.S.E)

For communication without PoE sourcing the switch supports auto negotiation speed, Full/Half duplex mode and auto MDI/MDI-X connection, means automatic setting of pinouts for both MDI ports (NIC-type) or MDI-X ports (HUB/Switch-type).

Note:

According to IEEE 802.3af/at standards, the PD shall be implemented to be insensitive to the polarity of the power supply and shall be able to operate per MDI mode and MDI-X mode. However, some PDs only support MDI mode or MDI-X mode only.

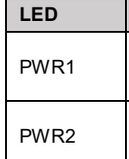
If the PD only supports PoE MDI mode (V+, V+, V-, V- for pins 1, 2, 3, 6), choose a cross-over Ethernet cable to connect the PD and the switch. If the PD only supports PoE MDI-X mode (V-, V-, V+, V+ for pins 1, 2, 3, 6), choose a straight-through Ethernet cable between the PD and the Switch.

Total PoE Budget

For the total power budget, the switch will provide 60 Watts from 12 to 23 VDC input and 120 Watts from 24 to 57 VDC input. The total power budget is the total amount of reserved PoE power based on the PoE class of the PoE device. If a newly connected PoE device causes the total reserved power to exceed the total power budget, the newly connected PoE device will be denied power.

In case of active PoE sourcing the switch uses the pinout of "Alternative A, MDI mode" of 802.3af/802.3at standards. Please see the details in the following table.

10/100/1000Base-T(X) RJ45 Pinouts (P.S.E. Port)

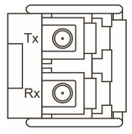
8-Pin RJ45 Port	10/100 Base-T(X) MDI/MDI-X			1000Base-T MDI/MDI-X		
	Pin No.	MDI port	MDI-X port	Pin No.	MDI port	MDI-X port
	1	TD+(transmit) with PoE Power +	RD+(receive)	1	BI_DA+ with PoE Power +	BI_DB+
	2	TD-(transmit) with PoE Power +	RD-(receive)	2	BI_DA- with PoE Power +	BI_DB-
	3	RD+(receive)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

9.2 100/1000BaseSFP (mini-GBIC) Fiber Port

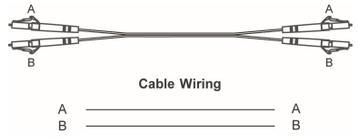
The 100/1000BaseSFP type slots, require either a 100BaseSFP or a 1000BaseSFP fiber transceiver (mini-GBIC) to work properly. Depending on the used SFP module the correct transmission speed has to be set via DIP switches 3 and 4. Please only use SFP modules and cables that are compatible with each other 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

LC-Port Pinouts



LC-Port to LC-Port Cable Wiring



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 supplied to power input PWR1.
		Off	Power is not supplied to power input PWR1.
PWR2	Green	On	Power is supplied to power input PWR2.
		Off	Power is not 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	Green	On	Port's link is active.
		Off	Port's link is inactive.
10/100/ 1000M	Green / Amber	Green	Port's speed is 1000 Mbps.
		Amber	Port's speed is 100 Mbps.
		Off	Port's speed is 10 Mbps.
PoE	Green	On	PoE power injection is active.
		Off	PoE power injection is inactive.

11. Specifications

Technology	
Standards	IEEE 802.3 for 10Base-T IEEE 802.3u for 100Base-TX and 100Base-FX IEEE 802.3ab for 1000Base-T IEEE 802.3z for 1000Base-X IEEE 802.3af/at for Power over Ethernet IEEE 802.3x flow control
Processing Type	Store and Forward
MAC Table size	8K
Packet buffer size	4 Mbit
Backplane bandwidth	20 Gbps
Jumbo frame support	up to 9.6 KB
Interfaces	
RJ45 Ports	10/100/1000Base-T(X) auto negotiation speed, F/H duplex mode and auto MDI/MDI-X connection
Fiber optic port	100/1000Base SFP slot
LED Indicators	PWR1, PWR2 (Power), Power Fault, Port Speed and Link/Activity, PoE
Relay Contact	Max. 1A @ 24 VDC
DIP Switches	Relay alarm for PWR1/PWR2 failure; SFP speed setting
Power	
Input Voltage	12/24/48 V DC (12 - 57 V DC), 2 redundant inputs
Input Current @24 VDC	0.44 A (w/o PD consumption)
Connection	One removable 6-pin terminal block, Wiring cable 12-24AWG
Overload Current Protect.	Present
Reverse Polarity Protect.	Present
PoE	
Total power budget	60 W @ 12 – 23 V DC; 120 W @ 24 -57 V DC
PoE Pinout	Mode A: Pin 1, 2 (V+); Pin 3, 6 (V-); Alternative A; MDI
Physical Characteristics	
Housing	IP30 protection, metal
Dimension (W x H x D)	54.3 x 145.1 x 108.3 mm (2.13 x 5.71 x 4.26 inch.)
Weight	916 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)
Operating 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	537,330 hrs
Database	Telcordia SR332
Warranty	
Time Period	5 years

Contact Information

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