# Hardware Installation Guide

## Unmanaged Fast Ethernet Switches

### IE-SW-EL08-6TX-2SC (Part No. 2682170000)
### IE-SW-EL08-6TX-2SCS (Part No. 2682180000)

## 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.<br>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.<br>○ Utilisation en intérieur et degré de pollution II, il faut l'essuyer avec un chiffon sec pour nettoyer l'appareil et son étiquette.<br>• Do not block air ventilation holes.<br>○ Ne bouchez pas les orifices de ventilation.<br>• If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.<br>○ Si l'appareil est utilise d'une maniere non specifiee par le fabricant, la protection qu'il apporte peut se voir diminuee.<br>• Shall be mounted in the Industrial Control Panel and ambient temperature is not exceed 75 degrees C.<br>○ 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

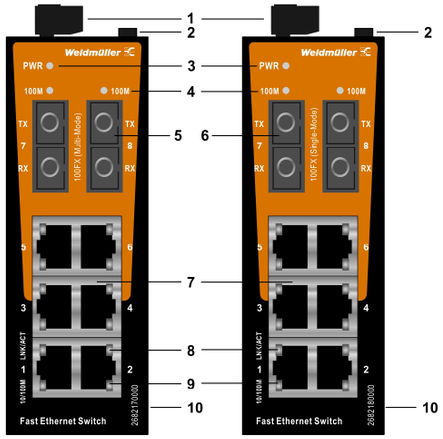
Your Ethernet Switch is shipped with the following items:

- Ethernet Switch
- Hardware Installation Guide (printed)
- 3-Pin Terminal connector
- Protective caps for RJ45 ports and Fiber optic ports

## 4. Panel Layouts

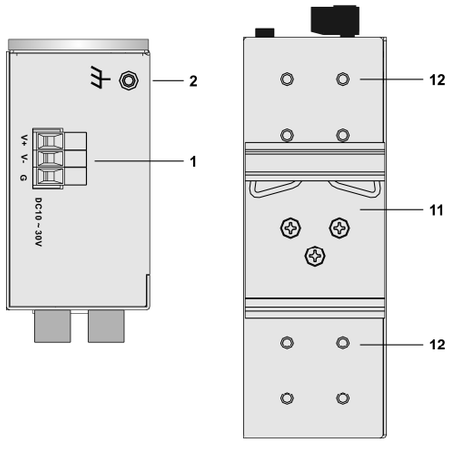
IE-SW-EL08-6TX-2SC
Front Panel view

IE-SW-EL08-6TX-2SCS
Front Panel view




IE-SW-EL08-6TX-2SC(S)
Top Panel view

IE-SW-EL08-6TX-2SC(S)
Rear Panel view




1. Terminal block for power input PWR
2. Grounding screw / Frame ground

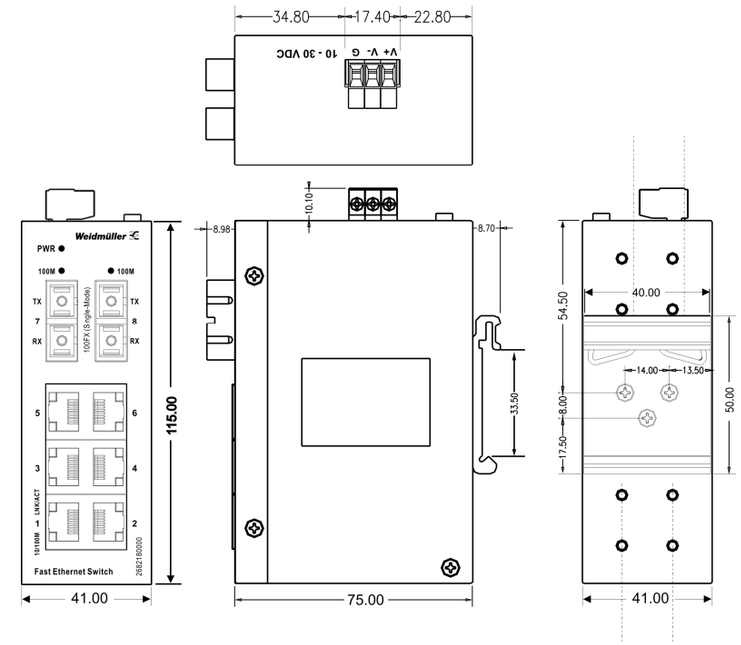
Note: The shielding ground of the LAN port is electrically connected to the grounding screw.

3. Power input LED's (PWR)
4. 100BaseFX Port Link/Activity LED's
5. 100BaseFX Port (Multi-Mode)
6. 100BaseFX Port (Single-Mode)
7. 10/100BaseT(X) ports
8. LAN port Link/Activity LED
9. LAN port 10/100 Mbps LED
10. Article Number
11. DIN-Rail kit
12. Screw holes for wall mounting kit



## 5. Mounting Dimensions

**IE-SW-EL08-6TX-2SC(S)** **(units = mm)**

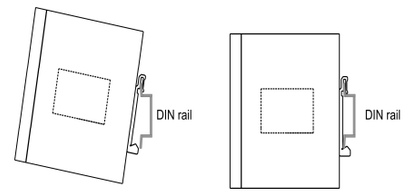



## 6. DIN-Rail Mounting

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**

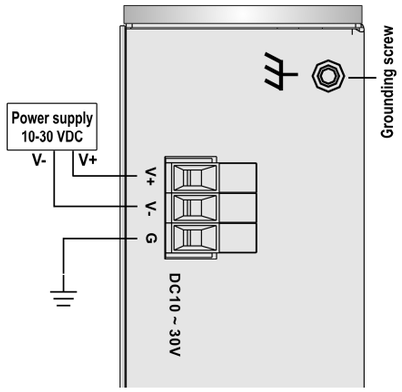
- Grounding and wire routing help limit the effects of noise due to electromagnetic interference (EMI).
- the ground connection from the ground screw to the grounding surface prior to connecting devices.
- This product is intended to be mounted to a well-grounded mounting surface, such as a metal panel.
- The shielding ground of the RJ45 ports are electrically connected to the ground connection (screw).

## 8. Wiring the Power Input

The switch supports a single power supply input which is located on the 3-pin terminal block. Refer to illustration below for correct wiring.

**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.




## 9. Communication Connections

Switch **IE-SW-EL08-6TX-2SC** is equipped with following communication interfaces:

6x 10/100Base-T(X) ports

2x 100BaseFX port with SC Connector (Multi-mode)

Switch **IE-SW-EL08-6TX-2SCS** is equipped with following communication interfaces:

6x 10/100Base-T(X) ports

2x 100BaseFX port with SC Connector (Single-mode)

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

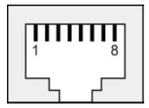
### 9.1 10/100Base T(X) RJ45 Ports

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)

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.



**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.

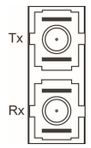
As result the port is set to the correct speed but is using always the half duplex mode as required by the IEEE 802.3u standard in such cases.

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).

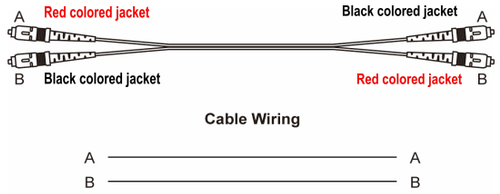
### 9.2 100Base-FX Fiber Ports

The switch is equipped with 2 * 100BaseFX Fiber ports with SC connectors. For connecting fiber ports between 2 devices consider to connect wire Tx (transmit) of device 1 to wire Rx (receive) of device 2, and vice versa. Remember that fiber optic connections generally are using the full-duplex transmission mode.

**SC-Port Pinouts**




**SC-Port to SC-Port Cable Wiring**




**ATTENTION**

This is a Class 1 Laser/LED product. To avoid causing serious damage to your eyes, do not stare directly into the Laser Beam.

## 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 |
|---|---|---|---|
| PWR | Green | On | Power is being supplied to power input |
| | | Off | Power is not being supplied to power input |
| LNK/ACT | Green | On | Port's link is active. |
| | | Off | Port's link is inactive. |
| | | Blinking | Transmitting data. |
| 10/100M | Amber | On | Port speed 100 Mbps |
| | | Off | Port speed 10 Mbps |
| 100M (Fiber Ports) | Green | On | Port's link is active. |
| | | Off | Port's link is inactive. |
| | | Blinking | Transmitting data. |

## 11. Specifications

| Technology | |
|---|---|
| Standards | IEEE 802.3 for 10Base-T<br>IEEE 802.3u for 100Base-TX and 100Base-FX<br>IEEE 802.3x flow control |
| Processing Type | Store and Forward |
| MAC Table size | 1K |
| Packet buffer size | 448 Kbit |
| Backplane bandwidth | 1.6 Gbps |
| **Interface** | |
| RJ45 Ports | 10/100BaseT(X) auto negotiation speed, F/H duplex mode and auto MDI/MDI-X connection |
| LED Indicators | PWR1, PWR2 (Power), Port Link/Activity, Port Speed |

| Fiber Ports | IE-SW-EL08-6TX-2SC | IE-SW-EL08-6TX-2SCS |
|---|---|---|
| Fiber Ports number | 2 | 2 |
| Fiber Ports standard | 100Base-FX | 100Base-FX |
| Fiber Mode | Multi-mode | Single-mode |
| Fiber Diameter (µm) | 62.5/125 µm<br>50/125 µm | 9/125 µm |
| Connector Type | SC | SC |
| Typical Distance (km) | 2 km | 30 km |
| Wavelength (nm) | 1310 nm | 1310 nm |
| Max. Output Optical Power (dbm) | -14 dbm | -8 dbm |
| Min. Output Optical Power (dbm) | -23.5 dbm | -15 dbm |
| Max. Input Optical Power (Saturation) | 0 dbm | 0 dbm |
| Min. Input Optical Power (Sensitivity) | -31 dbm | -34 dbm |
| Link Budget (db) | 7.5 db | 19 db |

| Power | IE-SW-EL08-6TX-2SC | IE-SW-EL08-6TX-2SCS |
|---|---|---|
| Input Voltage | 24 V DC (10 - 30 V DC), 1 single input | |
| Input Current@24 VDC | 0.14 A | 0.14 A |
| Connection | One removable 3-pin terminal block, Wiring cable 12-24AWG | |
| Overload Current Protec. | Present | |
| Reverse Polarity Protec. | Present | |

| Physical Characteristics | IE-SW-EL08-6TX-2SC | IE-SW-EL08-6TX-2SCS |
|---|---|---|
| Housing | IP30 protection, metal | |
| Dimension (W x H x D) | 41 x 115 x 84 mm (1.61 x 4.52 x 3.31 inch) | |
| Weight | 328 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 | |
| Pollution Degree | 2 | |
| **Regulatory Approvals** | | |
| Safety | UL 61010-1, UL 61010-2-201 | |
| EMC | EN 55032, EN 55024, FCC Part 15 Subpart B Class A,<br>IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV,<br>IEC 61000-4-3 RS: 80 MHz to 1 Ghz: 3 V/m,<br>IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV,<br>IEC 61000-4-5 Surge: Power: 0.5 kV; Signal: 1 kV,<br>IEC 61000-4-6 CS: 3 Vrms | |
| Shock | IEC 60068-2-27 | |
| Free Fall | IEC 60068-2-31 | |
| Vibration | IEC 60068-2-6 | |

| MTBF | IE-SW-EL08-6TX-2SC | IE-SW-EL08-6TX-2SCS |
|---|---|---|
| Time | 1.218.117 hrs | 1.060.513 hrs |
| Database | Telcordia SR332 | |

| Warranty | |
|---|---|
| Time Period | 5 years |



### Contact Information

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