

**IE-SW-SL20M-8GT-12GESFP-HV****Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

[www.weidmueller.com](http://www.weidmueller.com)**Features of SubstationLine managed switch series**

The SubstationLine includes Ethernet switches complying with the IEC 61850-3 and IEEE 1613 standards, making them robust enough for operation in harsh environments. The family includes variants for mounting on DIN rails and in 19" racks.

All products have a redundant power supply to ensure reliability in critical environments. The new family ranges from managed Fast Ethernet switches to 10-Gigabit Ethernet products with all the necessary features to operate according to the most demanding requirements.

- DIN-rail and 19" rack variants
- IEC 61850-3 and IEEE 1613 compliance
- PRP/HSR support according to Clause 4/Clause 5 of IEC 62439-3
- MMS server based on bridge model defined in IEC 61850-90-4
- Redundant power supply modules in all models
- Wide operating temperature range of -40°C up to 85°C
- Modular switch version with high flexibility in number and type of ports
- Fast/Gigabit/10-Gigabit interfaces
- Layer 3 models for hardware supported routing between up to 28 IP-subnets

**General ordering data**

|            |  |
|------------|--|
| Version    | Layer 2 Network Switch, managed, Gigabit Ethernet, IEC 61850-3 / IEEE 1613, high voltage, Number of ports: 8x RJ45, 12x 100/1000BaseSFP Slot, IP30, -40 °C...85 °C |
| Order No.  | <a href="#">2778970000</a>   |
| Type       | IE-SW-SL20M-8GT-12GESFP-HV   |
| GTIN (EAN) | 4064675048237  |
| Qty.       | 1 pc(s).   |

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## Technical data

## Dimensions and weights

|            |         |                 |            |
|------------|---------|-----------------|------------|
| Depth      | 159 mm  | Depth (inches)  | 6.26 inch  |
| Height     | 154 mm  | Height (inches) | 6.063 inch |
| Width      | 115 mm  | Width (inches)  | 4.528 inch |
| Net weight | 1,900 g |                 |            |

## Temperatures

|                     |                            |                       |                |
|---------------------|----------------------------|-----------------------|----------------|
| Storage temperature | -40 °C...85 °C             | Operating temperature | -40 °C...85 °C |
| Humidity            | 5 to 95 % (non-condensing) |                       |                |

## EMC conformity and approvals

|  |  |                 |   |
|--|--|-----------------|---|
| EMC standards  | EN 55032, CISPR 22, EN 61000-3-2, EN 61000-3-3, FCC Part 15 Subpart B Class A, EN 55035, IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz to 3 GHz: 10 V/m, IEC 61000-4-4 EFT: Power: 4 kV; Signal: 4 kV, IEC 61000-4-6 CS: 10 V, IEC 61000-4-8, IEC 61000-4-11 | Free fall       |   |
| Power Transmission & Distribution Systems acc. to standard | IEEE 1613, IEC 61850-3   | Safety standard | IEC 60870-2-2 class Cm SELV according to EN 62368-1 |
| Shock  | IEC 60870-2-2 class Cm   | Vibration       | IEC 60870-2-2 class Cm and class Bm                 |

## Environmental conditions

|                             |                            |  |  |
|-----------------------------|----------------------------|--|--|
| Humidity                    | 5 to 95 % (non-condensing) |  |  |
| Operating altitude          | Altitude, max.             | 2,000 m  |  |
|                             | Note                       | in acc. with UL  |  |
|                             | Altitude, max.             | 6,000 m  |  |
|                             | Note                       | for restrictions, see the manufacturer's declaration for operating altitude in section downloads |  |
| Operating temperature, max. | 85 °C                      |  |  |
| Operating temperature, min. | -40 °C                     |  |  |
| Storage temperature, max.   | 85 °C                      |  |  |
| Storage temperature, min.   | -40 °C                     |  |  |

## Guarantee

|               |         |
|---------------|---------|
| Time interval | 5 years |
|---------------|---------|

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**Technical data****Interfaces**

|                   |  |                        |  |
|-------------------|--|------------------------|--|
| Alarm contact     | 1 relay output with a current capacity of 1 A at 24 V DC | Console port interface | RS-232 (RJ45 connector)  |
| Fibre-optic ports | 100/1000Base SFP Slot                                    | Function reset button  | <5 sec: System reboot and set LAN IP to factory Default, >5 sec: Factory default   |
| Number of ports   | 8x RJ45, 12x 100/1000BaseSFP Slot                        | RJ45 ports             | 10/100/1000BaseT(X), auto negotiation, Full-/half-duplex mode, Auto MDI/MDI-X port |

**MTBF**

|      |                              |                  |
|------|------------------------------|------------------|
| MTBF | According to Standard        | Telcordia SR-332 |
|      | Operating time (hours), min. | 421,961 h        |

**Management features**

|                                 |   |                             |   |
|---------------------------------|---|-----------------------------|---|
| Device configuration            | Webbrowser (HTTP/HTTPS), SNMP v1/v2c/v3, Local serial console port (RS-232 via RJ-45 port), Upload of a configuration file via web-interface, TFTP-Server or external backup module, Command Line Interface (Telnet/SSH)  | Monitoring function         | SNMP v1/v2c/v3, Link Layer Discovery Protocol (LLDP), Port mirroring (local, remote), Port statistics, Port monitoring, Syslog, RMON (Remote monitoring), Event based warning via E-Mail, Event based warning via relay, Event based warning via SNMP trap, Ethernet cable diagnostics on RJ-45 ports |
| Network redundancy              | Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), Multiple Spanning Tree Protocol (MSTP), O-Ring (recovery time <30 ms), O-Chain (recovery time <30 ms), Link Aggregation Control Protocol (LACP), Fast recovery, Media Redundancy Protocol (MRP-client) | Network traffic filter      | Quality of Service (QoS), Tag based VLAN, GVRP (GARP VLAN Registration Protocol), IGMP v2/v3, Traffic Rate Limiting, Differentiated Services Code Point (DSCP), Specific prioritization of GOOSE and Sampled Value messages   |
| IP-address management           | Static, DHCP-Client, DHCP-Server (port based, pool-based), DHCP Option 82, DHCP-Relay   | Security functions          | VLAN segmentation, Enable/disable ports, TACACS+ and IEEE 802.1X User Authentication, DoS/DDoS auto prevention, Access Control List, DHCP snooping, Loop protection, Management access security via privilege level configuration for different user roles  |
| Time synchronization management | SNTP server, SNTP client, PTPv2   | Industrial protocol support | PROFINET device acc. to conformance class B, Modbus/TCP slave, MMS server   |

**Power supply**

|                 |                                   |
|-----------------|-----------------------------------|
| Connection type | 2x 3-pin fork/ring lug connection |
|-----------------|-----------------------------------|

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Catalogue status 20.04.2024 / We reserve the right to make technical changes.

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**Technical data**

|                             |   |         |
|-----------------------------|---|---------|
| Current consumption         | Voltage   | 110 V   |
|                             | Current   | 0.372 A |
|                             | Voltage   | 220 V   |
|                             | Current   | 0.229 A |
| Overload current protection | Yes   |         |
| Reverse polarity protection | Yes   |         |
| Voltage supply              | 110/220 V DC, 110/220 V AC, 2 redundant isolated inputs |         |
| Voltage supply range        | Voltage type  | DC      |
|                             | Voltage, min.   | 88 V    |
|                             | Voltage, max.   | 373 V   |
|                             | Voltage type  | AC      |
|                             | Voltage, min.   | 85 V    |
|                             | Voltage, max.   | 264 V   |

**Switch characteristics**

|                                |           |                                |              |
|--------------------------------|-----------|--------------------------------|--------------|
| Bandwidth backplane            | 40 Gbit/s | Jumbo frame support            | up to 9.6 KB |
| MAC table size                 | 8 K       | Max. number of available VLANs | 4,095        |
| Number of IGMP-Groups per VLAN | 256       | Packet buffer size             | 4 Mbit       |
| Priority queues                | 8         | VLAN-ID max                    | 4,094        |
| VLAN-ID min                    | 1         |                                |              |

**Technical data**

|                       |                  |                   |         |
|-----------------------|------------------|-------------------|---------|
| Housing main material | Metal            | Protection degree | IP30    |
| Speed                 | Gigabit Ethernet | Switch            | managed |
| Type of mounting      | DIN rail         |                   |         |

**Technology**

|                |   |              |                          |
|----------------|---|--------------|--------------------------|
| Data switching | Store and Forward   | Flow control | IEEE 802.3x flow control |
| Standard       | 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 802.3x for flow control, IEEE 802.3ad for port trunk with LACP, IEEE 802.1D for the Spanning Tree protocol, IEEE 802.1w for Rapid STP, IEEE 802.1s for the Multiple Spanning Tree Protocol (MSTP), IEEE 802.1p for Class of Service, IEEE 802.1Q for VLAN tagging, IEEE 802.1X for authentication, IEEE 802.1AB for Link Layer Discovery protocol (LLDP), IEEE 1588 PT-Pv2 for time synchronization |              |                          |

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## Technical data

## Classifications

|             |             |             |             |
|-------------|-------------|-------------|-------------|
| ETIM 6.0    | EC000734    | ETIM 7.0    | EC000734    |
| ETIM 8.0    | EC000734    | ETIM 9.0    | EC000734    |
| ECLASS 9.0  | 19-17-01-06 | ECLASS 9.1  | 19-17-01-06 |
| ECLASS 10.0 | 19-17-04-01 | ECLASS 11.0 | 19-17-04-01 |
| ECLASS 12.0 | 19-17-04-01 | ECLASS 13.0 | 19-17-04-01 |

## Environmental Product Compliance

|            |                                       |
|------------|---------------------------------------|
| REACH SVHC | Lead 7439-92-1                        |
| SCIP       | 9229992a-00b9-4096-8962-200a7f133e289 |

## Approvals

Approvals



|      |         |
|------|---------|
| ROHS | Conform |
|------|---------|

## Downloads

|   |  |
|---|--|
| Approval/Certificate/Document of Conformity | <a href="#">EU Declaration of Conformity</a><br><a href="#">RCM Declaration of Conformity</a><br><a href="#">UK Declaration of Conformity</a><br><a href="#">Manufacturer's declaration for operating altitude</a> |
| Engineering Data                            | <a href="#">CAD data – STEP</a>  |
| Product Change Notification                 | <a href="#">Firmware Release Notes</a>   |
| Software                                    | <a href="#">Device description – SNMP private MIB</a><br><a href="#">Firmware – Current Firmware</a><br><a href="#">Device description – GSDML file</a>  |
| User Documentation                          | <a href="#">Hardware Installation Guide</a><br><a href="#">User manual</a><br><a href="#">User manual Command Line Interface</a>   |
| Catalogues                                  | <a href="#">Catalogues in PDF-format</a>   |

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## Accessories

## SFP transceiver (for use with switches of Eco- Advanced- and SubstationLine)



## Features of SFP-Transceiver series

- Huge variety of transceiver types for several transmission speeds (up to 10 Gigabit Ethernet) and distances (up to 60 km)
- BiDi SFP models for communication via single fiber
- Easy control of transceiver status due to support of Digital Diagnostic Monitoring (DDM)
- Hot pluggable (during operation)
- Class 1 laser product, EN60825-1 compliant
- Applicable for switches of the Eco-, Advanced- and SubstationLine

## General ordering data

|            |                             |  |
|------------|-----------------------------|--|
| Type       | IE-SFP-1FE-MM-2             | Version  |
| Order No.  | <a href="#">2682450000</a>  | SFP Transceiver, 100 Mbps, Multimode, LC-Duplex, 4 km, -40 °C...85 °C          |
| GTIN (EAN) | 4050118692266               |  |
| Qty.       | 1 pc(s).                    |  |
| Type       | IE-SFP-1FE-SM-30            | Version  |
| Order No.  | <a href="#">2682460000</a>  | SFP Transceiver, 100 Mbps, Singlemode, LC-Duplex, 30 km, -40 °C...85 °C        |
| GTIN (EAN) | 4050118692259               |  |
| Qty.       | 1 pc(s).                    |  |
| Type       | IE-SFP-1GE-SM-20-BIDI-T ... | Version  |
| Order No.  | <a href="#">2682550000</a>  | SFP Transceiver, 1000 Mbps, Singlemode BiDi, LC-Simplex, 20 km, -40 °C...85 °C |
| GTIN (EAN) | 4050118692167               |  |
| Qty.       | 1 pc(s).                    |  |
| Type       | IE-SFP-1GE-MM-2             | Version  |
| Order No.  | <a href="#">2682490000</a>  | SFP Transceiver, 1000 Mbps, Multimode, LC-Duplex, 2 km, -40 °C...85 °C         |
| GTIN (EAN) | 4050118692228               |  |
| Qty.       | 1 pc(s).                    |  |
| Type       | IE-SFP-1GE-SM-10            | Version  |
| Order No.  | <a href="#">2682500000</a>  | SFP Transceiver, 1000 Mbps, Singlemode, LC-Duplex, 10 km, -40 °C...85 °C       |
| GTIN (EAN) | 4050118692211               |  |
| Qty.       | 1 pc(s).                    |  |
| Type       | IE-SFP-1GE-SM-10-BIDI-T ... | Version  |
| Order No.  | <a href="#">2682530000</a>  | SFP Transceiver, 1000 Mbps, Singlemode BiDi, LC-Simplex, 10 km, -40 °C...85 °C |
| GTIN (EAN) | 4050118692181               |  |
| Qty.       | 1 pc(s).                    |  |
| Type       | IE-SFP-1GE-SM-20-BIDI-T ... | Version  |
| Order No.  | <a href="#">2682540000</a>  | SFP Transceiver, 1000 Mbps, Singlemode BiDi, LC-Simplex, 20 km, -40 °C...85 °C |
| GTIN (EAN) | 4050118692174               |  |
| Qty.       | 1 pc(s).                    |  |
| Type       | IE-SFP-1FE-SM-60            | Version  |
| Order No.  | <a href="#">2682470000</a>  | SFP Transceiver, 100 Mbps, Singlemode, LC-Duplex, 60 km, -40 °C...85 °C        |
| GTIN (EAN) | 4050118692242               |  |
| Qty.       | 1 pc(s).                    |  |
| Type       | IE-SFP-1GE-RJ45             | Version  |
| Order No.  | <a href="#">2766120000</a>  | SFP Transceiver, 10/100/1000 MBit/s, RJ45, 100 m, -40 °C...85 °C               |
| GTIN (EAN) | 4064675023791               |  |
| Qty.       | 1 pc(s).                    |  |

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**Accessories**

|            |                             |   |
|------------|-----------------------------|---|
| Type       | IE-SFP-1GE-SM-40            | Version   |
| Order No.  | <a href="#">2682510000</a>  | SFP Transceiver, 1000 Mbps, Singlemode, LC-Duplex, 40 km, -40   |
| GTIN (EAN) | 4050118692204               | °C...85 °C  |
| Qty.       | 1 pc(s).                    |   |
| Type       | IE-SFP-1GE-SM-10-BIDI-T ... | Version   |
| Order No.  | <a href="#">2682520000</a>  | SFP Transceiver, 1000 Mbps, Singlemode BiDi, LC-Simplex, 10 km, |
| GTIN (EAN) | 4050118692198               | -40 °C...85 °C  |
| Qty.       | 1 pc(s).                    |   |
| Type       | IE-SFP-1GE-MM-05            | Version   |
| Order No.  | <a href="#">2682480000</a>  | SFP Transceiver, 1000 Mbps, Multimode, LC-Duplex, 0.5 km, -40   |
| GTIN (EAN) | 4050118692235               | °C...85 °C  |
| Qty.       | 1 pc(s).                    |   |

**Mounting kit for 19" rack assembly**

- For assembling DIN rail-based devices on 19" racks

**General ordering data**

|            |                            |                           |
|------------|----------------------------|---------------------------|
| Type       | RM-KIT                     | Version                   |
| Order No.  | <a href="#">1241440000</a> | Kit for 19"-rack mounting |
| GTIN (EAN) | 4050118029154              |                           |
| Qty.       | 1 pc(s).                   |                           |

**Configuration backup and restore module (for use with switches of Advanced- and SubstationLine)****Module for saving and loading a device configuration**

- Reduce system downtime by simple reconfiguration in case of replacing devices
- 2 storage spaces selectable via DIP switch
- Compact, rugged, reliable design
- For use with switches of Advanced- and SubstationLine

**General ordering data**

|            |                            |   |
|------------|----------------------------|---|
| Type       | IE-EBR-MODULE-RS232-ALM    | Version   |
| Order No.  | <a href="#">2682610000</a> | Configuration backup and restore module, IP40, -10 °C...60 °C |
| GTIN (EAN) | 4050118692105              |   |
| Qty.       | 1 pc(s).                   |   |