

IE-SW-SL20M-8GT-12GESFP-HV

Weidmüller Interface GmbH & Co. KG
 Klingenbergstraße 26
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 Germany

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. | 2778970000 |
| Type | IE-SW-SL20M-8GT-12GESFP-HV |
| GTIN (EAN) | 4064675048237 |
| Qty. | 1 items |

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Technical data

Approvals

Approvals



ROHS Conform

Dimensions and weights

| | | | |
|------------|--------|-----------------|-------------|
| Depth | 159 mm | Depth (inches) | 6.2598 inch |
| Height | 154 mm | Height (inches) | 6.063 inch |
| Width | 115 mm | Width (inches) | 4.5275 inch |
| Net weight | 1900 g | | |

Temperatures

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

Environmental Product Compliance

| | |
|--------------------------------------|---|
| RoHS Compliance Status | Compliant with exemption |
| RoHS Exemption (if applicable/known) | 6c, 7a, 7cI |
| REACH SVHC | Lead 7439-92-1, Lead monoxide 1317-36-8 |
| SCIP | 9229992a-00b9-4096-8962-200a7f33e289 |

EMC conformity and approvals

| | | | |
|-----------------|-------------------------------------|--|--|
| Free fall | IEC 60870-2-2 class Cm | 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 |
| Vibration | IEC 60870-2-2 class Cm and class Bm | Shock | IEC 60870-2-2 class Cm |
| Safety standard | SELV according to EN 62368-1 | Power Transmission & Distribution Systems acc. to standard | IEEE 1613, IEC 61850-3 |

Environmental conditions

| | | |
|-----------------------------|----------------------------|-----------------|
| Operating temperature, max. | 85 °C | |
| Operating temperature, min. | -40 °C | |
| Humidity | 5 to 95 % (non-condensing) | |
| Storage temperature, max. | 85 °C | |
| Storage temperature, min. | -40 °C | |
| Operating altitude | Altitude, max. | 2000 m |
| | Note | in acc. with UL |
| | Altitude, max. | 6000 m |

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Note

for restrictions, see the manufacturer's declaration for operating altitude in section downloads

Guarantee

Time interval 5 years

Interfaces

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

MTBF

| | | |
|------|------------------------------|------------------|
| MTBF | According to Standard | Telcordia SR-332 |
| | Operating time (hours), min. | 421961 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-manager/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, IGMP Snooping, MLD Snooping, MLD v1/v2 |
| IP-address management | Static, DHCP-Client, DHCP-Server (port based, pool-based), DHCP Option 82, DHCP-Relay, IPv4/IPv6 | 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 |

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|---------------------------------|---------------------------------|-----------------------------|---|
| Time synchronization management | SNTP server, SNTP client, PTPv2 | Industrial protocol support | configuration for different user roles PROFINET device acc. to conformance class B, Modbus/TCP slave, MMS server |
|---------------------------------|---------------------------------|-----------------------------|---|

Power supply

| | | | |
|-----------------------------|---|--------|--|
| Reverse polarity protection | Yes | | |
| Supply voltage | 110/220 V DC, 110/220 V AC, 2 redundant isolated inputs | | |
| Overload current protection | Yes | | |
| Connection type | 2x 3-pin fork/ring lug connection | | |
| 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 | |
| Current consumption | Voltage | 110 V | |
| | Current | 0.37 A | |
| | Voltage | 220 V | |
| | Current | 0.23 A | |

Switch characteristics

| | | | |
|---------------------|--------------|--------------------------------|--------|
| Priority queues | 8 | Max. number of available VLANs | 4095 |
| VLAN-ID min | 1 | VLAN-ID max | 4094 |
| MAC table size | 8 K | Packet buffer size | 4 Mbit |
| Bandwidth backplane | 40 Gbit/s | Number of IGMP-Groups per VLAN | 256 |
| Jumbo frame support | up to 9.6 KB | | |

Technical data

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

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 | | |

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(LLDP), IEEE 1588 PTPv2
for time synchronization

Classifications

| | | | |
|-------------|-------------|-------------|-------------|
| ETIM 8.0 | EC000734 | ETIM 9.0 | EC000734 |
| ETIM 10.0 | EC000734 | ECLASS 14.0 | 19-17-04-01 |
| ECLASS 15.0 | 19-17-04-01 | | |

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Accessories

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SFP transceiver (for use with switches of Eco-, Advanced-, Substation and BasicLine series B)



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. | 2682450000 | SFP Transceiver, 100 Mbps, Multimode, LC-Duplex, 4 km, -40 °C...85 |
| GTIN (EAN) | 4050118692266 | °C |
| Qty. | 1 ST | |
| Type | IE-SFP-1FE-SM-30 | Version |
| Order No. | 2682460000 | SFP Transceiver, 100 Mbps, Singlemode, LC-Duplex, 30 km, -40 |
| GTIN (EAN) | 4050118692259 | °C...85 °C |
| Qty. | 1 ST | |
| Type | IE-SFP-1FE-SM-60 | Version |
| Order No. | 2682470000 | SFP Transceiver, 100 Mbps, Singlemode, LC-Duplex, 60 km, -40 |
| GTIN (EAN) | 4050118692242 | °C...85 °C |
| Qty. | 1 ST | |
| Type | IE-SFP-1GE-MM-05 | Version |
| Order No. | 2682480000 | SFP Transceiver, 1000 Mbps, Multimode, LC-Duplex, 0.5 km, -40 |
| GTIN (EAN) | 4050118692235 | °C...85 °C |
| Qty. | 1 ST | |
| Type | IE-SFP-1GE-MM-2 | Version |
| Order No. | 2682490000 | SFP Transceiver, 1000 Mbps, Multimode, LC-Duplex, 2 km, -40 |
| GTIN (EAN) | 4050118692228 | °C...85 °C |
| Qty. | 1 ST | |
| Type | IE-SFP-1GE-SM-10 | Version |
| Order No. | 2682500000 | SFP Transceiver, 1000 Mbps, Singlemode, LC-Duplex, 10 km, -40 |
| GTIN (EAN) | 4050118692211 | °C...85 °C |
| Qty. | 1 ST | |
| Type | IE-SFP-1GE-SM-40 | Version |
| Order No. | 2682510000 | SFP Transceiver, 1000 Mbps, Singlemode, LC-Duplex, 40 km, -40 |
| GTIN (EAN) | 4050118692204 | °C...85 °C |
| Qty. | 1 ST | |
| Type | IE-SFP-1GE-SM-10-BIDI-T... | Version |
| Order No. | 2682520000 | SFP Transceiver, 1000 Mbps, Singlemode BiDi, LC-Simplex, 10 km, |
| GTIN (EAN) | 4050118692198 | -40 °C...85 °C |
| Qty. | 1 ST | |
| Type | IE-SFP-1GE-SM-10-BIDI-T... | Version |
| Order No. | 2682530000 | SFP Transceiver, 1000 Mbps, Singlemode BiDi, LC-Simplex, 10 km, |
| GTIN (EAN) | 4050118692181 | -40 °C...85 °C |
| Qty. | 1 ST | |
| Type | IE-SFP-1GE-SM-20-BIDI-T... | Version |
| Order No. | 2682540000 | SFP Transceiver, 1000 Mbps, Singlemode BiDi, LC-Simplex, 20 km, |
| GTIN (EAN) | 4050118692174 | -40 °C...85 °C |
| Qty. | 1 ST | |

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| | | |
|------------|----------------------------|---|
| Type | IE-SFP-1GE-SM-20-BIDI-T... | Version |
| Order No. | 2682550000 | SFP Transceiver, 1000 Mbps, Singlemode BiDi, LC-Simplex, 20 km, |
| GTIN (EAN) | 4050118692167 | -40 °C...85 °C |
| Qty. | 1 ST | |
| Type | IE-SFP-1GE-RJ45 | Version |
| Order No. | 2766120000 | SFP Transceiver, 10/100/1000 MBit/s, RJ45, 0.1 km, -40 °C...85 °C |
| GTIN (EAN) | 4064675023791 | |
| Qty. | 1 ST | |

Mounting kit for 19" rack assembly

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



General ordering data

| | | |
|------------|----------------------------|---------------------------|
| Type | RM-KIT | Version |
| Order No. | 1241440000 | Kit for 19"-rack mounting |
| GTIN (EAN) | 4050118029154 | |
| Qty. | 1 ST | |

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. | 2682610000 | Configuration backup and restore module, IP40, -10 °C...60 °C |
| GTIN (EAN) | 4050118692105 | |
| Qty. | 1 ST | |