

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

Klingenbergstraße 26

D-32758 Detmold

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 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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Creation date November 4, 2024 10:16:29 PM CET

Catalogue status 26.10.2024 / We reserve the right to make technical changes.

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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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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
ECLASS 14.0	19-17-04-01		

Environmental Product Compliance

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

Approvals

Approvals



ROHS	Conform
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Downloads

Approval/Certificate/Document of Conformity	EU Declaration of Conformity RCM Declaration of Conformity UK Declaration of Conformity Manufacturer's declaration for operating altitude
Engineering Data	CAD data – STEP Configuration tutorials – Video Tutorial Substation Line
Product Change Notification	Firmware Release Notes
Software	Device description – SNMP private MIB Firmware – Current Firmware Device description – GSDML file
User Documentation	Hardware Installation Guide User manual User manual Command Line Interface
Catalogues	Catalogues in PDF-format

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Accessories

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 pc(s).	

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-1GE-MM-2	Version
Order No.	2682490000	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-20-BIDI-T ...	Version
Order No.	2682540000	SFP Transceiver, 1000 Mbps, Singlemode BiDi, LC-Simplex, 20 km, -40 °C...85 °C
GTIN (EAN)	4050118692174	
Qty.	1 pc(s).	
Type	IE-SFP-1GE-SM-10	Version
Order No.	2682500000	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-40	Version
Order No.	2682510000	SFP Transceiver, 1000 Mbps, Singlemode, LC-Duplex, 40 km, -40 °C...85 °C
GTIN (EAN)	4050118692204	
Qty.	1 pc(s).	
Type	IE-SFP-1FE-MM-2	Version
Order No.	2682450000	SFP Transceiver, 100 Mbps, Multimode, LC-Duplex, 4 km, -40 °C...85 °C
GTIN (EAN)	4050118692266	
Qty.	1 pc(s).	

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Accessories

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 pc(s).	
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 pc(s).	
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 pc(s).	
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 pc(s).	
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 pc(s).	
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 pc(s).	
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 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.	1241440000	Kit for 19"-rack mounting
GTIN (EAN)	4050118029154	
Qty.	1 pc(s).	