

**IE-SW-L3-SL28M-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 3 Network Switch, Modular, 19" rack mount, managed, Fast/Gigabit/10-Gigabit Ethernet, IEC 61850-3 / IEEE 1613, high voltage, Number of ports: up to 28 (depending on used media interface modules), IP30, -40 °C...85 °C
Order No.	<a href="#">2875580000</a>
Type	IE-SW-L3-SL28M-HV
GTIN (EAN)	4064675654698
Qty.	1 pc(s).

## IE-SW-L3-SL28M-HV

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## Technical data

## Dimensions and weights

Depth	325 mm	Depth (inches)	12.795 inch
Height	44 mm	Height (inches)	1.732 inch
Width	440 mm	Width (inches)	17.323 inch
Net weight	6,450 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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## Interfaces

Console port interface	RS-232 (RJ45 connector)
Function reset button	<5 sec: System reboot and set LAN IP to factory Default, >5 sec: Factory default
Number of ports	up to 28 (depending on used media interface modules)

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Supported media interface modules	Media module interface slot	M1, M2, M3
	Supported module	<a href="#">IE-SWM-SL04-4SC</a> <a href="#">IE-SWM-SL04-4SCS</a> <a href="#">IE-SWM-SL04-4ST</a> <a href="#">IE-SWM-SL04-4STS</a> <a href="#">IE-SWM-SL08-8GT</a> <a href="#">IE-SWM-SL08-8GESFP</a> <a href="#">IE-SWM-SL02-2GC-PRP/HSR</a>
	Media module interface slot	M4
	Supported module	<a href="#">IE-SWM-SL04-4GESFP</a> <a href="#">IE-SWM-SL02-2GESFP+</a> <a href="#">IE-SWM-SL04-4GESFP+</a>

**MTBF**

MTBF	According to Standard	Telcordia SR-332
	Operating time (hours), min.	647,420 h

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## 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 <10/30 ms at Fast/Gigabit Ethernet interface), O-Chain (recovery time <10/30 ms at Fast/Gigabit Ethernet interface), Link Aggregation Control Protocol (LACP), Fast recovery, Media Redundancy Protocol (MRP-client), Parallel Redundancy Protocol (PRP) / High-availability Seamless Redundancy (HSR) RedBox function (specific media interface module required)	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
Layer 3 support	Static or dynamic routing according to RIP v2, VRRP (Virtual Router Redundancy Protocol)		

## Power supply

Connection type	1x 10-pin fork/ring lug connection
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## Technical data

Current consumption	Voltage	110 V
	Current	0.363 A
	Voltage type	DC
	Voltage	220 V
	Current	0.18 A
	Voltage type	DC
	Voltage	110 V
	Current	0.67 A
	Voltage type	AC
	Voltage	220 V
	Current	0.43 A
	Voltage type	AC
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.	100 V
	Voltage, max.	370 V
	Voltage type	AC
	Voltage, min.	100 V
	Voltage, max.	240 V

## Switch characteristics

Bandwidth backplane	128 Gbit/s	Jumbo frame support	up to 10 KB
MAC table size	8 K	Max. number of available VLANs	4,095
Memory (Flash)	16 MB	Memory (RAM)	128 MB
Number of IGMP-Groups per VLAN	128	Packet buffer size	32 Mbit
Priority queues	8	VLAN-ID max	4,094
VLAN-ID min	1		

## Technical data

Housing main material	Metal	Protection degree	IP30
Speed	Fast/Gigabit/10-Gigabit Ethernet	Switch	managed
Type of mounting	19" rack mounting		

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## 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 802.3ae for 10-Gigabit Ethernet, 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		

## 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-00b9-4096-8962-200a7f33e289

## Approvals

Approvals



ROHS	Conform
UL File Number Search	UL Website
Certificate no. (cULus)	E141197

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### Downloads

Approval/Certificate/Document of Conformity	<a href="#">EU Declaration of Conformity</a> <a href="#">UK Declaration of Conformity</a> <a href="#">RCM Declaration of Conformity</a> <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 – GSDML file</a> <a href="#">Firmware – Current Firmware</a> <a href="#">Device description – SNMP private MIB</a>
User Documentation	<a href="#">Hardware Installation Guide</a> <a href="#">User manual</a>
Catalogues	<a href="#">Catalogues in PDF-format</a>

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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.	<a href="#">2682610000</a>	Configuration backup and restore module, IP40, -10 °C...60 °C
GTIN (EAN)	4050118692105	
Qty.	1 pc(s).	

## SubstationLine managed switches and media interface modules

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## General ordering data

Type	IE-SWM-SL02-2GESFP+	Version
Order No.	<a href="#">2779210000</a>	Media interface module for modular switch, 10-Gigabit Ethernet,
GTIN (EAN)	4064675048572	Number of ports: 2x 10GBaseSFP+ slot, -40 °C...60 °C
Qty.	1 pc(s).	
Type	IE-SWM-SL08-8GT	Version
Order No.	<a href="#">2779140000</a>	Media interface module for modular switch, Fast/Gigabit Ethernet,
GTIN (EAN)	4064675048503	Number of ports: 8x RJ45, -40 °C...85 °C
Qty.	1 pc(s).	

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## Accessories

Type	IE-SWM-SL04-4STS	Version
Order No.	<a href="#">2779180000</a>	Media interface module for modular switch, Fast Ethernet, Number of
GTIN (EAN)	4064675048541	ports: 4x ST Single-mode, -40 °C...85 °C
Qty.	1 pc(s).	
Type	IE-SWM-SL04-4SC	Version
Order No.	<a href="#">2779170000</a>	Media interface module for modular switch, Fast Ethernet, Number of
GTIN (EAN)	4064675048534	ports: 4x SC Multi-mode, -40 °C...85 °C
Qty.	1 pc(s).	
Type	IE-SWM-SL02-2GC-PRP/HSR	Version
Order No.	<a href="#">2985050000</a>	Media interface module for modular switch, PRP/HSR RedBox,
GTIN (EAN)	4099986846364	Fast/Gigabit Ethernet, Number of ports: 2x combo-ports
Qty.	1 pc(s).	(10/100/1000BaseT(X) or 100/1000BaseSFP), -40 °C...85 °C
Type	IE-SWM-SL04-4SCS	Version
Order No.	<a href="#">2779160000</a>	Media interface module for modular switch, Fast Ethernet, Number of
GTIN (EAN)	4064675048527	ports: 4x SC Single-mode, -40 °C...85 °C
Qty.	1 pc(s).	
Type	IE-SWM-SL04-4ST	Version
Order No.	<a href="#">2779190000</a>	Media interface module for modular switch, Fast Ethernet, Number of
GTIN (EAN)	4064675048558	ports: 4x ST Multi-mode, -40 °C...85 °C
Qty.	1 pc(s).	
Type	IE-SWM-SL04-4GESFP	Version
Order No.	<a href="#">2779200000</a>	Media interface module for modular switch, Gigabit Ethernet, Number
GTIN (EAN)	4064675048565	of ports: 4x 1000BaseSFP slot, -40 °C...85 °C
Qty.	1 pc(s).	
Type	IE-SWM-SL04-4GESFP+	Version
Order No.	<a href="#">2779220000</a>	Media interface module for modular switch, 10-Gigabit Ethernet,
GTIN (EAN)	4064675048589	Number of ports: 4x 10GBaseSFP+ slot, -40 °C...60 °C
Qty.	1 pc(s).	
Type	IE-SWM-SL08-8GESFP	Version
Order No.	<a href="#">2779150000</a>	Media interface module for modular switch, Fast/Gigabit Ethernet,
GTIN (EAN)	4064675048510	Number of ports: 8x 100/1000BaseSFP Slot, -40 °C...85 °C
Qty.	1 pc(s).	