

IE-SW-SL28M-LV**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, Modular, 19" rack mount, managed, Fast/Gigabit/10-Gigabit Ethernet, IEC 61850-3 / IEEE 1613, low voltage, Number of ports: up to 28 (depending on used media interface modules), IP30, -40 °C...85 °C
Order No.	2779020000
Type	IE-SW-SL28M-LV
GTIN (EAN)	4064675048282
Qty.	1 items

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Technical data

Approvals

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ROHS Conform

Dimensions and weights

Depth	325 mm	Depth (inches)	12.7952 inch
Height	44 mm	Height (inches)	1.7323 inch
Width	440 mm	Width (inches)	17.3228 inch
Net weight	6105 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, 7cl
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, 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
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	
	Note	for restrictions, see the manufacturer's declaration for operating altitude in section downloads	

Technical data

Guarantee

Time interval	5 years
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Interfaces

Console port interface	RS-232 (RJ45 connector)	
Number of ports	up to 28 (depending on used media interface modules)	
Function reset button	<5 sec: System reboot and set LAN IP to factory Default, >5 sec: Factory default	
Supported media interface modules	Media module interface slot	M1, M2, M3
	Supported module	IE-SWM-SL04-4SC , IE-SWM-SL04-4SCS , IE-SWM-SL04-4ST , IE-SWM-SL04-4STS , IE-SWM-SL08-8GT , IE-SWM-SL08-8GESFP , IE-SWM-SL02-2GC-PRP/HSR
	Media module interface slot	M4
	Supported module	IE-SWM-SL04-4GESFP , IE-SWM-SL02-2GESFP+ , IE-SWM-SL04-4GESFP+

MTBF

MTBF	According to Standard	Telcordia SR-332
	Operating time (hours), min.	608907 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 <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-manager/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, 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,

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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
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Power supply

Reverse polarity protection	Yes		
Supply voltage	24 V DC, 48 V DC, 2 redundant isolated inputs		
Overload current protection	Yes		
Connection type	1x 10-pin fork/ring lug connection		
Voltage supply range	Voltage type	DC	
	Voltage, min.	20 V	
	Voltage, max.	72 V	
Current consumption	Voltage	24 V	
	Current	1.64 A	
	Voltage	48 V	
	Current	0.82 A	

Switch characteristics

Priority queues	8	Max. number of available VLANs	4095
VLAN-ID min	1	VLAN-ID max	4094
MAC table size	32 K	Packet buffer size	32 Mbit
Memory (RAM)	128 MB	Bandwidth backplane	128 Gbit/s
Number of IGMP-Groups per VLAN	128	Memory (Flash)	16 MB
Jumbo frame support	up to 10 KB		

Technical data

Housing main material	Metal	Type of mounting	19" rack mounting
Protection degree	IP30	Speed	Fast/Gigabit/10-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 802.3ae 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		

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for VLAN tagging, IEEE
802.1X for authentication,
IEEE 802.1AB for Link
Layer Discovery protocol
(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		