IE-SW-AL18M-16TX-2GC

Features of AdvancedLine managed Switch series

Industrial networks require a future-proof infrastructure with high availability, reliability, and transparency. Managed switches increase network availability utilizing redundancies and control mechanisms as well as network diagnostics in demanding automation networks.

- Extensive set of management features enable the set-up of various redundancy, monitoring, traffic filter and security functions
- Huge variety of port count and media type enable a wide range of applications (5 to 24 ports)
- Models supporting Gigabit Ethernet including Jumbo Frame support for applications with high demand on bandwidth and latency
- Suitable for use in harsh industrial environment thanks to rugged design and wide operating temperature range of -40°C up to 75°C

General ordering data

Version	Network switch, managed, Fast/Gigabit Ethernet, Number of ports: 16x RJ45 10/100BaseT(X), 2x combo-ports (10/100/1000BaseT(X) or 100/1000BaseSFP), IP30, -40 °C...75 °C
Order No.	2682330000
Type	IE-SW-AL18M-16TX-2GC
GTIN (EAN)	4050118692389
Qty.	1 ST

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Technical data

Approvals

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

Dimensions and weights

Depth	108.5 mm	Depth (inches)	4.2716 inch
Height	154 mm	Height (inches)	6.063 inch
Width	96.4 mm	Width (inches)	3.7953 inch
Net weight	1363 g		

Temperatures

Storage temperature	-40 °C...85 °C	Operating temperature	-40 °C...75 °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	According to IEC 60068-2-31	EMC standards	EN 55032, EN 55024, FCC Part 15 Subpart B Class A, IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz bis 1 Ghz: 3 V/m, IEC 61000-4-4 EFT: Power: 0.5 kV; Signal: 0.5 kV, IEC 61000-4-5 Surge: Power: 0,5 kV; Signal: 1 kV, IEC 61000-4-6 CS: 3 Vrms
Vibration	according to IEC 60068-2-6	Shock	according to IEC 60068-2-27
Safety standard	SELV according to EN 62368-1, UL 61010-1, UL 61010-2-201		

Environmental conditions

Operating temperature, max.	75 °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	10/100BaseT(X) or 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	16x RJ45 10/100BaseT(X), 2x combo-ports (10/100/1000BaseT(X) or 100/1000BaseSFP)	Function reset button	<5 sec: System reboot, >5 sec: Factory default

MTBF

MTBF	According to Standard	Telcordia SR-332	
	Operating time (hours), min.	600504 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 or TFTP-Server, Command Line Interface (Telnet/SSH)	Monitoring function	SNMP v1/v2c/v3, Link Layer Discovery Protocol (LLDP), Port mirroring, 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
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	Network traffic filter	Quality of Service (QoS), Class of Service (CoS), Type of Service (ToS), Differentiated Services Code Point (DSCP), Port based VLAN, Tag based VLAN, GVRP (GARP VLAN Registration Protocol), IGMP v2/v3, Multicast VLAN Registration (MVR), Traffic Rate Limiting
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, Access control (port based via IEEE 802.1X), Access control list (IP-based), Access control list (MAC-based), Management access security via secure

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			IP-list and configuration of allowed access methods (web-interface, telnet, SSH), Loop protection
Time synchronization management	NTP server, SNTP client	Industrial protocol support	Modbus/TCP slave, PROFINET device acc. to conformance class A

Power supply

Reverse polarity protection	Yes		
Voltage supply	12/24/48 V DC, 2 redundant inputs		
Overload current protection	Yes		
Connection type	1 removable 6-pin terminal block		
Voltage supply range	Voltage type	DC	
	Voltage, min.	10.8 V	
	Voltage, max.	52.8 V	
Current consumption	Voltage	12 V	
	Current	1.2 A	
	Voltage	24 V	
	Current	0.6 A	
	Voltage	48 V	
	Current	0.3 A	

Switch characteristics

Priority queues	4	Max. number of available VLANs	4095
VLAN-ID min	1	VLAN-ID max	4094
IGMP-Groups	1024	MAC table size	8 K
Packet buffer size	1 Mbit	Bandwidth backplane	7.2 Gbit/s

Technical data

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

Technology

Data switching	Store and Forward	Flow control	IEEE 802.3x flow control
Standard	IEEE 802.3 for 10BaseT, IEEE 802.3u for 100BaseT(X) and 100BaseFX, IEEE 802.3ab for 1000BaseT(X), IEEE 802.3z for 1000BaseX, 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 802.1p for Class of Service, IEEE 802.1Q for VLAN tagging, IEEE 802.1X for authentication, IEEE 802.1AB for Link Layer Discovery protocol (LLDP)		

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Technical data

Classifications

ETIM 6.0	EC000734	ETIM 7.0	EC000734
ETIM 8.0	EC000734	ETIM 9.0	EC000734
ETIM 10.0	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
ECLASS 15.0	19-17-04-01		

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Accessories

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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Accessories

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	

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	