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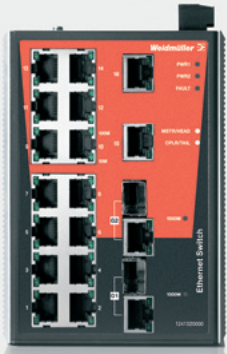
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Industrial Ethernet active and passive

Product Information

Industrial Ethernet active

**Unmanaged Switches
Basic Line**



**Unmanaged Switches
Value Line**



**Managed Switches
Value Line**



**Managed Switches
Premium Line**



**Power-over-Ethernet
Switches**



Media Converter



Serial / Ethernet converter



Industrial wireless



Accessories

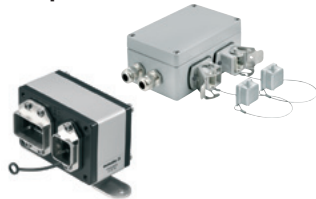


Industrial Ethernet passive

IP67 plug-in connector



IP65 connection components



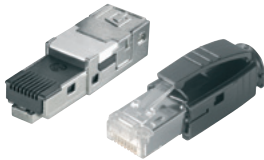
Mounting rail outlets



FrontCom® Micro



RJ45 Connectors IP20



Accessories



Bulk – cables
AdvancedLine



System cables
AdvancedLine



Patch cables
CabinetLine



Industrial Ethernet

Industrial Ethernet active	Übersicht Produktfamilien	6
	Unmanaged Switches Fast Ethernet	8
	Unmanaged Switches Gigabit Ethernet	10
	Managed Switches Fast Ethernet	11
	Managed Switches Gigabit Ethernet	13
	Power-over-Ethernet Switches	16
	Media converter	18
	Serial / Ethernet converter	19
	Industrial wireless	20
	SFP modules	21
	Backup-/Restore module / RM-KIT	22
Industrial Ethernet passive	Connector overview	24
	Cabeling solution overview	25
	IP67 – AdvancedLine	26
	IP20 – AdvancedLine	28
	Accessories	29
	Bulk – cables – AdvancedLine	30
	System cables – AdvancedLine	31
	Patch cables – CabinetLine	34

Industrial Ethernet active

Basic Line



Weidmüller's Basic Line consists of unmanaged Plug & Play switches in a rugged IP30 rated aluminium housing. The devices are available with Fast Ethernet and Gigabit Ethernet and provide an economical solution for Industrial Ethernet ports networks. One model is equipped with Fast Ethernet and Power-over-Ethernet ports. All devices have been developed for applications in harsh industrial environments and have international approvals such as CE, cULus, Class I Div. 2 / Atex and DNV / GL and are thus international applicable for different applications.

- Plug & Play switches in a rugged aluminium housing (IP30)
- Compact design
- Cost efficient entry-level switches
- Fast Ethernet variants with 5 and 8 Ports
- Versions with copper or fibre optic interface (multimode and single-mode)
- 5 port Full-Gigabit Plug & Play Switch
- Power-over-Ethernet switch with 6 Fast Ethernet ports, thereof 4 PoE+ ports
- Approvals: CE, FCC, cULus, Class I Div. 2 / Atex, DNV / GL

Value Line



Weidmüller's Value Line consists of unmanaged and managed switches in a high quality IP30 rated metal housing. The devices are available with Fast Ethernet and Gigabit Ethernet ports. Managed switches of the Value Line support a variety of useful management functions, such as fast ring redundancy, port-based VLAN, QoS, RMON, bandwidth management, port mirroring and warning by email message or relay. The ring redundancy can be set up easily using the web-based management interface, or with the DIP switches located on the top panel of the switches.

- Unmanaged Plug & Play switches in a high quality metal housing (IP30)
- Price-sensitive mid-range class
- Managed switches for entry into configurable network infrastructure
- Unmanaged 8 port Full-Gigabit switches
- Approvals: CE, FCC, cULus, Class I Div. 2 / Atex, DNV / GL

Premium Line

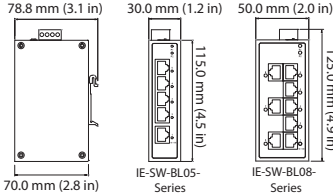


Weidmüller's Premium Line consists of high-end managed switches with advanced management and security features and is therefore suitable for most demanding network solutions. The devices are available with Fast Ethernet or Gigabit Ethernet ports. One model is equipped with Fast Ethernet and Power-over-Ethernet ports. With their advanced ring redundancy technology (recovery time ≤ 20 ms), these devices increase the reliability and availability of your industrial network. The optional use of SFP transceivers offers a high degree of flexibility and the Gigabit variants allow the use in networks with high traffic loads also.

- Managed Fast Ethernet variants in a high quality metal housing (IP30)
- Managed Power-over-Ethernet switch with 6 Fast Ethernet ports, thereof 4 PoE+ ports
- Variants with 10 or 18 ports and Gigabit uplink ports
- Full-Gigabit switch with 9 ports
- Supports all standard protocols in TCP/IP-based industrial networks (e.g. Ethernet/IP, Modbus/TCP)
- Built-in redundancy mechanisms (recovery time ≤ 20 ms) for increased reliability in network ring structures
- Approvals: CE, FCC, cULus, Class I Div. 2 / Atex, DNV / GL

Unmanaged Fast Ethernet Switches

- 10/100BaseT(X) (RJ45 connector), 100BaseFX (multi/singlemode, SC or ST connector)
- Redundant dual 12/24/48 V DC, 18 to 30 V AC power inputs
- IP30 aluminum housing
- Rugged hardware design well suited for hazardous locations (Class I Div. 2 /ATEX) and maritime environments (DNV/GL)
- -40 to 75 °C operating temperature range (T models)



Technical data

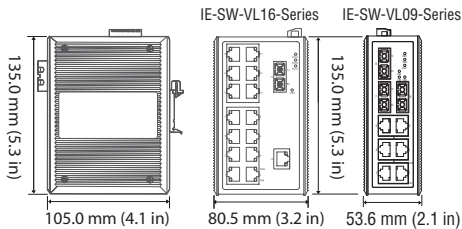
Technology	
Standards	IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) and 100BaseFX IEEE 802.3x for Flow Control
Processing Type	Store and Forward
Flow Control	IEEE 802.3x flow control, back pressure flow control
Switch Properties	
MAC Table Size	1 K
Packet Buffer Size	512 Kbit
Interface	
Fiber Ports	100BaseFX ports (SC/ST connector, multimode, singlemode)
RJ45 Ports	10/100BaseT(X) auto negotiation speed, Full/Half duplex mode, and auto MDI/MDI-X connection
DIP Switches	Enable/Disable broadcast storm protection
LED Indicators	Power, 10/100M (TP port), 100M (fiber port)
Optical Fiber	
	100BaseFX
	multimode
	singlemode
Wavelength	1300 nm
Max. TX	-10 dBm
Min. TX	-20 dBm
RX Sensitivity	-32 dBm
Link Budget	12 dB
Typical Distance	5 km (50/125 μm multimode cable) 4 km (62.5/125 μm multimode cable)
Saturation	-6 dBm
	-3 dBm
Power Requirements	
Input Voltage	12/24/48 V DC (9.6 to 60 V DC), 18 to 30 V AC (47 to 63 Hz), redundant dual inputs
Input Current	IE SW BL05 5TX: 0.1 A @ 24 V IE SW BL05 SC/ST/SCS: 0.11 A @ 24 V IE SW BL08 8TX: 0.13 A @ 24 V IE SW BL08 2SC/2ST: 0.22 A @ 24 V IE SW BL08 SCS: 0.17 A @ 24 V
Overload Current Protection	1.1 A
Connection	1 removable 4-contact terminal block
Reverse Polarity Protection	Present
Physical Characteristics	
Housing	Aluminum, IP30 protection
Dimensions W x H x D	IE-SW-BL05-Series: 30 x 115 x 70 mm (1.18 x 4.52 x 2.76 in) IE-SW-BL08-Series: 50 x 115 x 70 mm (1.96 x 4.52 x 2.76 in)
Weight	IE-SW-BL05-5TX: 175 g IE-SW-BL08-8TX: 275 g
Installation	DIN-Rail mounting
Environmental Limits	
Operating Temperature	Standard Models: -10 to 60 °C (14 to 140 °F) Wide Temp. Models: -40 to 75 °C (-40 to 167 °F)
Storage Temperature	-40 to 85 °C (-40 to 185 °F)

Environmental Limits			
Ambient Relative Humidity	5 to 95 % (non-condensing)		
Regulatory Approvals			
Safety	UL508		
Hazardous Location	UL/cUL Class I, Division 2, Groups A, B, C and D; ATEX Zone 2, Ex nC IIC		
EMI	FCC Part 15, CISPR (EN55022) class A		
EMS	EN61000-4-2 (ESD), level 3; EN61000-4-3 (RS), level 3; EN61000-4-4 (EFT), level 3; EN61000-4-5 (Surge), level 3; EN61000-4-6 (CS), level 3; EN61000-4-8; EN61000-4-11		
Maritime	DNV, GL		
Shock	IEC 60068-2-27		
Freefall	IEC 60068-2-32		
Vibration	IEC 60068-2-6		
MTBF (mean time between failures)			
Time	425,000 hrs		
Database	Telcordia (Bellcore), GB		
Warranty			
Warranty Period	5 years		
Ordering Information			
Port Variants	Type	Operating Temperature	Order No.
5 * RJ45	IE-SW-BL05-5TX IE-SW-BL05T-5TX	-10 to +60 °C -40 to +75 °C	1240840000 1240850000
4 * RJ45, 1 * SC-Multimode	IE-SW-BL05-4TX-1SC IE-SW-BL05T-4TX-1SC	-10 to +60 °C -40 to +75 °C	1240890000 1286550000
4 * RJ45, 1 * ST-Multimode	IE-SW-BL05-4TX-1ST IE-SW-BL05T-4TX-1ST	-10 to +60 °C -40 to +75 °C	1240880000 1286540000
4 * RJ45, 1 * SC-Singlemode	IE-SW-BL05-4TX-1SCS IE-SW-BL05T-4TX-1SCS	-10 to +60 °C -40 to +75 °C	1240870000 1286530000
8 * RJ45	IE-SW-BL08-8TX IE-SW-BL08T-8TX	-10 to +60 °C -40 to +75 °C	1240900000 1286560000
6 * RJ45, 2 * SC-Multimode	IE-SW-BL08-6TX-2SC IE-SW-BL08T-6TX-2SC	-10 to +60 °C -40 to +75 °C	1240910000 1240920000
6 * RJ45, 2 * ST-Multimode	IE-SW-BL08-6TX-2ST IE-SW-BL08T-6TX-2ST	-10 to +60 °C -40 to +75 °C	1240930000 1286570000
7 * RJ45, 1 * SC-Singlemode	IE-SW-BL08-7TX-1SCS IE-SW-BL08T-7TX-1SCS	-10 to +60 °C -40 to +75 °C	1240950000 1286580000
Accessories			
	Type		Order No.
19" Rack Mounting Kit	RM-KIT		1241440000



Unmanaged Fast Ethernet Switches

- Redundant dual 24 V DC power inputs
- Relay output warning for power failure and port break alarm
- Broadcast storm protection
- Transparent transmission of VLAN tagged packets
- -40 to 75 °C operating temperature range (T models)



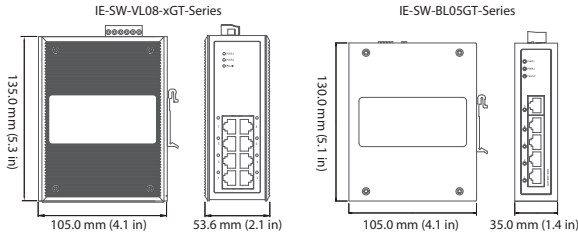
Technical data

Technology	
Standards	IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) and 100BaseFX IEEE 802.3x for Flow Control
Processing Type	Store and Forward
Flow Control	IEEE 802.3x flow control, back pressure flow control
Switch Properties	
MAC Table Size	1 K (IE-SW-VL09...Series), 4 K (IE-SW-VL16...Series)
Packet Buffer Size	512 Kbit (IE-SW-VL09...Series), 1.5 Mbit (IE-SW-VL16...Series)
Interface	
Fiber Ports	100BaseFX ports (SC/ST connector)
RJ45 Ports	10/100BaseT(X) auto negotiation speed, Full/Half duplex mode, and auto MDI/MDI-X connection
DIP Switches	Port break alarm mask
LED Indicators	PWR1, PWR2, FAULT, 10/100M (TP port), 100M (fiber port)
Alarm Contact	1 relay output with current carrying capacity of 1 A @ 24 V DC
Optical Fiber	
	100BaseFX multimode
Wavelength	1300 nm
Max. TX	-10 dBm
Min. TX	-20 dBm
RX Sensitivity	-32 dBm
Link Budget	12 dB
Typical Distance	5 km (50/125 µm multimode cable) 4 km (62,5/125 µm multimode cable)
Saturation	-6 dBm
Power Requirements	
Input Voltage	IE-SW-VL09...16-Ports: 24 V DC (12 to 45 V DC), redundant dual inputs
Input Current	IE-SW-VL09T-6TX-3SC: 0.31 A @ 24 V IE-SW-VL16-16TX: 0.27 A @ 24 V IE-SW-VL16 SC/ST: 0.44 A @ 24 V
Overload Current Protection	IE-SW-VL09/16...Series: 1.6 A
Connection	1 removable 6-pin terminal blocks
Reverse Polarity Protection	Present
Physical Characteristics	
Housing	Metal, IP30 protection
Dimensions W x H x D	IE-SW-VL09...Series: 53.6 x 135 x 105 mm (2.11 x 5.31 x 4.13 in) IE-SW-VL16...Series: 80.5 x 135 x 105 mm (3.16 x 5.31 x 4.13 in)
Weight	IE-SW-VL09: 630 g IE-SW-VL16: 1140 g

Physical Characteristics			
Installation	DIN-Rail mounting		
Environmental Limits			
Operating Temperature	Standard Models: 0 to 60 °C (32 to 140 °F) Wide Temp. Models: -40 to 75 °C (-40 to 167 °F)		
Storage Temperature	-40 to 85 °C (-40 to 185 °F)		
Ambient Relative Humidity	5 to 95 % (non-condensing)		
Regulatory Approvals			
Safety	IE-SW-VL09...Series: UL508, UL60950-1, CSA C22.2 No. 60950-1, EN60950-1 IE-SW-VL16...Series: UL508, UL60950-1, EN60950-1		
Hazardous Location	UL/cUL Class I, Division 2, Groups A, B, C and D; ATEX Zone 2, Ex nC IIC		
EMI	FCC Part 15, CISPR (EN55022) class A		
EMS	EN61000-4-2 (ESD), level 3; EN61000-4-3 (RS), level 3; EN61000-4-4 (EFT), level 3; EN61000-4-5 (Surge), level 3; EN61000-4-6 (CS), level 3;		
Maritime	DNV, GL		
Shock	IEC 60068-2-27		
Freefall	IEC 60068-2-32		
Vibration	IEC 60068-2-6		
MTBF (mean time between failures)			
Time	IE-SW-VL09...Series: 396,000 hrs IE-SW-VL16...Series: 257,000 hrs		
Database	MIL-HDBK-217F, GB 25 °C		
Warranty			
Warranty Period	5 years		
Ordering Information			
Port Variants	Type	Operating Temperature	Order No.
16 * RJ45	IE-SW-VL16-16TX IE-SW-VL16T-16TX	0 to +60 °C -40 to +75 °C	1241000000 1286590000
6 * RJ45, 3 * SC-Multimode	IE-SW-VL09T-6TX-3SC	-40 to +75 °C	1240980000
14 * RJ45, 2 * SC-Multimode	IE-SW-VL16-14TX-2SC IE-SW-VL16T-14TX-2SC	0 to +60 °C -40 to +75 °C	1241030000 1286610000
14 * RJ45, 2 * ST-Multimode	IE-SW-VL16-14TX-2ST IE-SW-VL16T-14TX-2ST	0 to +60 °C -40 to +75 °C	1241050000 1286620000
Accessories			
	Type		Order No.
19" Rack Mounting Kit	RM-KIT		1241440000

Unmanaged Gigabit Ethernet Switches

- Full Gigabit Ethernet on all ports
- Variants with slots for GB SFP transceivers
- Redundant dual 12/24/48 V DC power inputs
- Relay output warning for power failure and port break alarm
- Broadcast storm protection
- Supports jumbo frame transmission (up to 9.6 KB)



Technical data

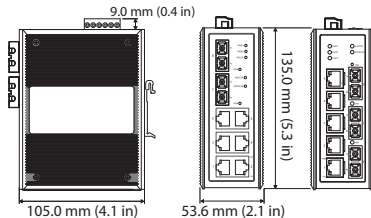
Technology	
Standards	IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) and 100BaseFX IEEE 802.3ab for 1000BaseT(X) IEEE 802.3z for 1000BaseX IEEE 802.3x for Flow Control
Processing Type	Store and Forward
Flow Control	IEEE 802.3x flow control, back pressure flow control
Switch Properties	
MAC Table Size	8 K
Packet Buffer Size	1088 Kbit (IE-SW-BL05-5GT), 1408 Kbit (IE-SW-VL08-xGT)
Interface	
Fiber Ports	100/1000BaseSFP slot (IE-SW-VL08-6GT-2GS)
RJ45 Ports	10/100/1000BaseT(X) auto negotiation speed, Full/Half duplex mode, and auto MDI/MDI-X connection
DIP Switches	One for port break alarm, one for Enable/Disable broadcast storm protection
LED Indicators	PWR1, PWR2, FAULT, 10/100/1000M
Alarm Contact	1 relay output with current carrying capacity of 1 A @ 24 V DC
Power Requirements	
Input Voltage	12/24/48 V DC (9.6 to 60 V DC), redundant dual inputs
Input Current	IE-SW-BL05-5GT: 0.20 A @ 24 V IE-SW-VL08-8GT: 0.32 A @ 24 V IE-SW-VL08-6GT-2GS: 0.34 A @ 24 V
Connection	1 removable 6-contact terminal block
Reverse Polarity Protection	Present
Physical Characteristics	
Housing	Metal, IP30 protection
Dimensions	IE-SW-BL05-5GT: 35 x 130 x 105 mm (1.37 x 5.12 x 4.13 in) IE-SW-VL08-xGT: 53.6 x 135 x 105 mm (2.11 x 5.31 x 4.13 in)
Weight	IE-SW-BL05-5GT: 290 g IE-SW-VL08-xGT: 630 g
Installation	DIN-Rail mounting
Environmental Limits	
Operating Temperature	Standard Models: 0 to 60 °C (32 to 140 °F) Wide Temp. Models: -40 to 75 °C (-40 to 167 °F)
Storage Temperature	-40 to 85 °C (-40 to 185 °F)
Ambient Relative Humidity	5 to 95 % (non-condensing)
Regulatory Approvals	
Safety	UL508
Hazardous Location	UL/cUL Class I, Division 2, Groups A, B, C, and D; ATEX Zone 2, Ex nC IIC
EMI	FCC Part 15, CISPR (EN55022) class A

Regulatory Approvals			
EMS		EN61000-4-2 (ESD), level 3; EN61000-4-3 (RS), level 3; EN61000-4-4 (EFT), level 3; EN61000-4-5 (Surge), level 3; EN61000-4-6 (CS), level 3	
Maritime		DNV, GL	
Shock		IEC 60068-2-27	
Freefall		IEC 60068-2-32	
Vibration		IEC 60068-2-6	
MTBF (meantime between failures)			
Time		478,000 hrs (IE-SW-BL05-5GT series) 325,000 hrs (IE-SW-VL08-XGT series)	
Database		Telcordia (Bellcore), GB (IE-SW-VL08-xGT series)	
Warranty			
Warranty Period		5 years	
Ordering Information			
Port Variants	Type	Operating Temperature	Order No.
5 * RJ45 10/100/1000BaseT(X)	IE-SW-BL05-5GT	0 to +60 °C	1241250000
	IE-SW-BL05T-5GT	-40 to +75 °C	1286850000
8 * RJ45 10/100/1000BaseT(X)	IE-SW-VL08-8GT	0 to +60 °C	1241270000
	IE-SW-VL08T-8GT	-40 to +75 °C	1286860000
6 * RJ45 10/100/1000BaseT(X), 2 Combo-Ports (10/100/1000 BaseT(X) or 100/1000BaseSFP)	IE-SW-VL08-6GT-2GS	0 to +60 °C	1241280000
	IE-SW-VL08T-6GT-2GS	-40 to +75 °C	1286870000
Accessories			
19" Rack Mounting Kit	RM-KIT		1241440000



Managed Entry-level Ethernet Switches

- Turbo Ring and Turbo Chain with fast recovery time (under 20 ms)
- IGMP snooping, QoS, port- and tag-based VLAN
- Configurable error messages via SNMP trap, e-mail or relay output
- User-friendly web-based configuration and management
- External Backup and Restoring Module for easy system reconfiguration (optional accessory)



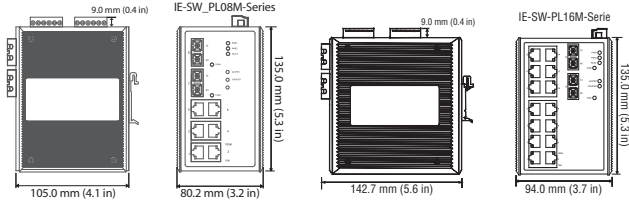
Technical data

Standards		
IEEE 802.3 for 10BaseT ▪ IEEE 802.3u for 100BaseT (X) and 100BaseFX ▪ IEEE 802.3x for Flow Control ▪ IEEE 802.1D for Spanning Tree Protocol ▪ IEEE 802.1w for Rapid STP ▪ IEEE 802.1p for Class of Service ▪ IEEE 802.1Q for VLAN Tagging		
Protocols		
IGMPv1/v2 ▪ GMRP ▪ GVRP ▪ SNMPv1/v2c/v3 ▪ DHCP Server/Client ▪ TFTP ▪ SNMP ▪ SMTP ▪ RARP ▪ RMON ▪ HTTP ▪ Telnet ▪ Syslog ▪ DHCP Option 66/67/82 ▪ BootP ▪ LLDP ▪ Modbus/TCP ▪ IPv6		
MIB		
MIB-II ▪ Ethernet-Like MIB ▪ P-BRIDGE MIB ▪ Bridge MIB ▪ RSTP MIB ▪ RMON MIB Group 1, 2, 3, 9		
Flow Control		
IEEE 802.3x flow control ▪ back pressure flow control		
Switch Properties		
MAC Table Size	8 K	
Packet Buffer Size	1 MBit	
Interface		
Fiber Ports	100BaseFX ports (SC/ST connector)	
RJ45 Ports	10/100BaseT(X) auto negotiation speed, Full/Half duplex mode, and auto MDI/MDI-X connection	
Console Port	RS-232 (RJ45 connector)	
DIP Switches	Turbo Ring, Master, Coupler, Reserve	
LED Indicators	PWR1, PWR2, FAULT, MSTR/HEAD, CPLR/TAIL, 10/100M	
Alarm Contact	1 relay output with current carrying capacity of 1 A @ 24 V DC	
Optical Fiber		
	100BaseFX	
	multimode	singlemode
Wavelength	1300 nm	1310 nm
Max. TX	-10 dBm	0 dBm
Min. TX	-20 dBm	-5 dBm
RX Sensitivity	-32 dBm	-34 dBm
Link Budget	12 dB	29 dB
Typical Distance	5 km ^a 4 km ^b	40 km ^c
Saturation	-6 dBm	-3 dBm
^a 50/125 μm, 800 MHz*km fiber optic cable		
^b 62.5/125 μm, 500 MHz*km fiber optic cable		
^c 9/125 μm singlemode fiber optic cable		
Power Requirements		
Input Voltage	24 V DC (12 to 45 V DC), redundant dual inputs	
Input Current	IE-SW-VL08M-8TX: 0.26 A @ 24 V IE-SW-VL08M-6TX-2ST/SC: 0.35 A @ 24 V IE-SW-VL08M-5TX-3SC: 0.32 A @ 24 V	
Overload Current Protection	Present	
Connection	1 removable 6-contact terminal block	
Reverse Polarity Protection	Present	

Physical Characteristics			
Housing	Metal, IP30 protection		
Dimensions	53.6 x 135 x 105 mm (2.11 x 5.31 x 4.13 in)		
Weight	IE-SW-VL08M-...8TX/6TX-2SC/6TX-2ST: 650 g IE-SW-VL08M-5TX-3SC: 890 g		
Installation	DIN-Rail mounting		
Environmental Limits			
Operating Temperature	-40 to 75 °C (-40 to 167 °F)		
Storage Temperature	-40 to 85 °C (-40 to 185 °F)		
Ambient Relative Humidity	5 to 95 % (non-condensing)		
Regulatory Approvals			
Safety	UL508, UL60950-1, CSA C22.2 No. 60950-1, EN60950-1		
Hazardous Location	UL/cUL Class I, Division 2, Groups A, B, C, and D; ATEX Zone 2, Ex nC IIC		
EMI	FCC Part 15, CISPR (EN55022) class A		
EMS	EN61000-4-2 (ESD), level 3; EN61000-4-3 (RS), level 3; EN61000-4-4 (EFT), level 3; EN61000-4-5 (Surge), level 3; EN61000-4-6 (CS), level 3; EN61000-4-8		
Maritime	DNV, GL		
Shock	IEC 60068-2-27		
Freefall	IEC 60068-2-32		
Vibration	IEC 60068-2-6		
MTBF (meantime between failures)			
Time	IE-SW-VL08M-...Series: 363,000 hrs		
Database	Telcordia (Bellcore), GB		
Warranty			
Warranty Period	5 years		
Ordering Information			
Port Variants	Type	Operating Temperature	Order No.
8 * RJ45	IE-SW-VL08MT-8TX	-40 to +75 °C	1240940000
5 * RJ45, 3 * SC-Multimode	IE-SW-VL08MT-5TX-3SC	-40 to +75 °C	1240970000
6 * RJ45, 2 * ST-Multimode	IE-SW-VL08MT-6TX-2ST	-40 to +75 °C	1240990000
6 * RJ45, 2 * SC-Singlemode	IE-SW-VL08MT-6TX-2SCS	-40 to +75 °C	1241020000
Accessories			
	Type		Order No.
External Backup and Restore Module	EBR-Modul RS232		1241430000
19" Rack Mounting Kit	RM-KIT		1241440000

Managed Fast Ethernet Switches

- Plug-n-play Turbo Ring and Turbo Chain (recovery time < 20 ms), RSTP/STP (IEEE 802.1w/D) for Ethernet redundancy
- IEEE 1588 PTP, Modbus/TCP, LLDP, SNMP Inform, QoS, IGMP snooping, VLAN, IEEE 802.1X, HTTPS, SNMPv3, and SSH supported
- EBR-Module (External Backup and Restore Module) for system configuration backup (optional accessory)



Technical data

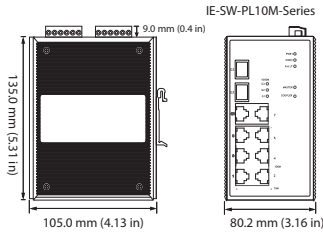
Standards		
IEEE 802.3 for 10BaseT ▪ IEEE 802.3u for 100BaseT (X) and 100BaseFX ▪ IEEE 802.3x for Flow Control ▪ IEEE 802.1D for Spanning Tree Protocol ▪ IEEE 802.1w for Rapid STP ▪ IEEE 802.1Q for VLAN Tagging ▪ IEEE 802.1p for Class of Service ▪ IEEE 802.1X for Authentication ▪ IEEE 802.3ad for Port Trunk with LACP		
Protocols		
IGMPv1/v2 ▪ GVRP ▪ SNMPv1/v2c/v3 ▪ DHCP Server/Client ▪ BootP ▪ TFTP ▪ SNMP ▪ SMTP ▪ RARP ▪ GMRP ▪ LACP ▪ RMON ▪ HTTP ▪ HTTPS ▪ Telnet ▪ Syslog ▪ DHCP Option 66/67/82 ▪ SSH ▪ SNMP Inform ▪ Modbus/TCP ▪ LLDP ▪ IEEE 1588 PTP ▪ IPv6		
MIB		
MIB-II ▪ Ethernet-Like MIB ▪ P-BRIDGE MIB ▪ Q-BRIDGE MIB ▪ Bridge MIB ▪ RSTP MIB ▪ RMON MIB Group 1, 2, 3, 9		
Flow Control		
IEEE 802.3x flow control ▪ back pressure flow control		
Switch Properties		
Priority Queues	4	
Max. Number of Available VLANs	64	
VLAN ID Range	VID 1 to 4094	
IGMP Groups	256	
MAC Table Size	8 K	
Packet Buffer Size	1 Mbit (IE-SW-PL08M), 2 Mbit (IE-SW-PL16M)	
Interface		
Fiber Ports	100BaseFX ports (SC/ST connector)	
RJ45 Ports	10/100BaseT(X) auto negotiation speed, Full/Half duplex mode, and auto MDI/MDI-X connection	
Console Port	RS-232 (RJ45 connector)	
DIP Switches	Turbo Ring, Master, Coupler, Reserve	
LED Indicators	PWR1, PWR2, FAULT, MSTR/HEAD, CPLR/TAIL, 10/100M	
Alarm Contact	2 relay outputs with current carrying capacity of 1 A @ 24 V DC	
Digital Inputs	2 inputs with the same ground, electrically isolated • +13 to +30 V for state "1" • -30 to +3 V for state "0" • Max. input current: 8 mA	
Optical Fiber		
	100BaseFX	
	multimode	singlemode
Wavelength	1300 nm	1310 nm
Max. TX	-10 dBm	0 dBm
Min. TX	-20 dBm	-5 dBm
RX Sensitivity	-32 dBm	-34 dBm
Link Budget	12 dB	29 dB
Typical Distance	5 km (50/125 µm multimode cable) 4 km (62.5/125 µm multimode cable)	40 km (9/125 µm singlemode cable)
Saturation	-6 dBm	-3 dBm
Power Requirements		
Input Voltage	24 V DC (12 to 45 V DC), redundant dual inputs	
Input Current	IE-SW-PL08M-8TX: 0.26 A @ 24 V IE-SW-PL08M-6TX-2SC/ST-2SCS: 0.36 A @ 24 V IE-SW-PL16M-16TX: 0.41 A @ 24 V IE-SW-PL16M-14TX-2SC/ST: 0.51 A @ 24 V	

Power Requirements			
Overload Current Protection	Present		
Connection	2 removable 6-contact terminal blocks		
Reverse Polarity Protection	Present		
Physical Characteristics			
Housing	Metal, IP30 protection		
Dimensions	IE-SW-PL08M: 80.2 x 135 x 105 mm (3.16 x 5.31 x 4.13 in) IE-SW-PL16M: 94 x 135 x 142.7 mm (3.7 x 5.31 x 5.62 in)		
Weight	IE-SW-PL08M: 1040 g, IE-SW-PL16M: 1586 g		
Installation	DIN-Rail mounting		
Environmental Limits			
Operating Temperature	Standard Models: 0 to 60 °C (32 to 140 °F) Wide Temp. Models: -40 to 75 °C (-40 to 167 °F)		
Storage Temperature	-40 to 85 °C (-40 to 185 °F)		
Ambient Relative Humidity	5 to 95 % (non-condensing)		
Regulatory Approvals			
Safety	UL508, UL60950-1, CSA C22.2 No. 60950-1, EN60950-1		
Hazardous Location	UL/cUL Class I, Division 2, Groups A, B, C, and D; ATEX Zone 2, Ex nC IIC		
EMI	FCC Part 15, CISPR (EN55022) class A		
EMS	EN61000-4-2 (ESD): IE-SW-PL08M...Series: level 3 IE-SW-PL16M...Series: level 2; EN61000-4-3 (RS) level 3; EN61000-4-4 (EFT) level 2; EN61000-4-5 (Surge) level 3; EN61000-4-6 (CS) level 3; EN61000-4-8		
Maritime	DNV, GL		
Shock	IEC 60068-2-27		
Freefall	IEC 60068-2-32		
Vibration	IEC 60068-2-6		
MTBF (mean time between failures)			
Time	IE-SW-PL08M...Series: 339,000 hrs IE-SW-PL16M...Series: 247,000 hrs		
Database	Telcordia (Bellcore), GB		
Warranty			
Warranty Period	5 years		
Ordering Information			
Port Variants	Type	Operating Temperature	Order No.
8 * RJ45	IE-SW-PL08M-8TX	0 to 60 °C	1241040000
	IE-SW-PL08MT-8TX	-40 to +75 °C	1286780000
6 * RJ45, 2 * SC-Multimode	IE-SW-PL08M-6TX-2SC	0 to 60 °C	1241070000
	IE-SW-PL08MT-6TX-2SC	-40 to +75 °C	1286790000
6 * RJ45, 2 * ST-Multimode	IE-SW-PL08M-6TX-2ST	0 to 60 °C	1241080000
	IE-SW-PL08MT-6TX-2ST	-40 to +75 °C	1286800000
6 * RJ45, 2 * SC-Singlemode	IE-SW-PL08M-6TX-2SCS	0 to 60 °C	1241090000
	IE-SW-PL08MT-6TX-2SCS	-40 to +75 °C	1286810000
16 * RJ45	IE-SW-PL16M-16TX	0 to 60 °C	1241100000
	IE-SW-PL16MT-16TX	-40 to +75 °C	1286820000
14 * RJ45, 2 * SC-Multimode	IE-SW-PL16M-14TX-2SC	0 to 60 °C	1241120000
	IE-SW-PL16MT-14TX-2SC	-40 to +75 °C	1286830000
14 * RJ45, 2 * ST-Multimode	IE-SW-PL16M-14TX-2ST	0 to 60 °C	1241130000
	IE-SW-PL16MT-14TX-2ST	-40 to +75 °C	1286840000



Managed Gigabit Ethernet Switches

- 2 Gigabit Ethernet ports for redundant ring and 1 Gigabit Ethernet port for uplink solution
- Turbo Ring, Turbo Chain, and RSTP/STP for network redundancy
- IEEE 1588 PTP, Modbus/TCP, LLDP, SNMP Inform, QoS, IGMP snooping, VLAN, IEEE 802.1X, HTTPS, SNMPv3, and SSH supported
- EBR-Module - External Backup and Restoring Module for easy system reconfiguration (optional accessory)



Technical data

Standards	
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 802.1D for Spanning Tree Protocol ▪ IEEE 802.1w for Rapid STP ▪ IEEE 802.1Q for VLAN Tagging ▪ IEEE 802.1p for Class of Service ▪ IEEE 802.1X for Authentication ▪ IEEE 802.3ad for Port Trunk with LACP	
Protocols	
IGMPv1/v2 ▪ GMRP ▪ GVRP ▪ SNMPv1/v2c/v3 ▪ DHCP Server/Client ▪ BootP ▪ TFTP ▪ SNTP ▪ SMTP ▪ RARP ▪ RMON ▪ HTTP ▪ HTTPS ▪ Telnet ▪ Syslog ▪ DHCP Option 66/67/82 ▪ SSH ▪ SNMP Inform ▪ Modbus/TCP ▪ LLDP ▪ IEEE 1588 PTP ▪ IPv6	
MIB	
MIB-II ▪ Ethernet-Like MIB ▪ P-BRIDGE MIB ▪ Q-BRIDGE MIB ▪ Bridge MIB ▪ RSTP MIB ▪ RMON MIB Group 1, 2, 3, 9	
Flow Control	
IEEE 802.3x flow control ▪ back pressure flow control	
Switch Properties	
Priority Queues	4
Max. Number of Available VLANs	64
VLAN ID Range	VID 1 to 4094
IGMP Groups	256
MAC Table Size	8 K
Packet Buffer Size	1 Mbit
Interface	
Fiber Ports	1000BaseSFP slot
RJ45 Ports	10/100BaseT(X) or 10/100/1000BaseT(X) auto negotiation speed
Console Port	RS-232 (RJ45 connector)
DIP Switches	Turbo Ring, Master, Coupler, Reserve
LED Indicators	PWR1, PWR2, FAULT, 10/100M (TP port), 1000M (Gigabit port), MSTR/HEAD, CPLR/TAIL
Alarm Contact	2 relay outputs with current carrying capacity of 1 A @ 24 V DC
Digital Inputs	2 inputs with the same ground, but electrically isolated from the electronics. <ul style="list-style-type: none"> • +13 to +30 V for state "1" • -30 to +3 V for state "0" • Max. input current: 8 mA
Power Requirements	
Input Voltage	24 V DC (12 to 45 V DC), redundant dual inputs
Input Current	IE-SW-PL10M-3GT-7TX: 0.65 A @ 24 V IE-SW-PL10M-1GT-2GS-7TX: 0.44 A @ 24 V
Overload Current Protection	Present
Connection	2 removable 6-contact terminal blocks
Reverse Polarity Protection	Present
Physical Characteristics	
Housing	Metal, IP30 protection
Dimensions	80.2 x 135 x 105 mm (3.16 x 5.31 x 4.13 in)
Weight	1170 g
Installation	DIN-Rail mounting

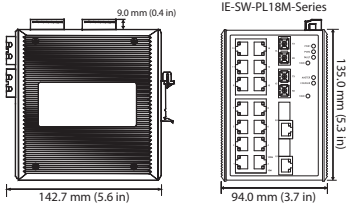
Environmental Limits	
Operating Temperature	Standard Models: 0 to 60 °C (32 to 140 °F) Wide Temp. Models: -40 to 75 °C (-40 to 167 °F)
Storage Temperature	-40 to 85 °C (-40 to 185 °F)
Ambient Relative Humidity	5 to 95 % (non-condensing)
Regulatory Approvals	
Safety	UL508, UL60950-1, CSA C22.2 No. 60950-1, EN60950-1
Hazardous Location	UL/cUL Class I, Division 2, Groups A, B, C, and D; ATEX Zone 2, Ex nC IIC
EMI	FCC Part 15, CISPR (EN55022) class A
EMS	EN61000-4-2 (ESD), level 3; EN61000-4-3 (RS), level 3; EN61000-4-4 (EFT), level 3; EN61000-4-5 (Surge), level 3; EN61000-4-6 (CS), level 3; EN61000-4-8
Maritime	DNV, GL
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6
MTBF (mean time between failures)	
Time	204,000 hrs
Database	MIL-HDBK-217J, GB 25 °C
Warranty	
Warranty Period	5 years

Port Variants	Type	Operating Temperature	Order No.
3 * RJ45 10/100/1000BaseT(X),	IE-SW-PL10M-3GT-7TX	0 to 60 °C	1241290000
7 * RJ45 10/100BaseT(X)	IE-SW-PL10MT-3GT-7TX	-40 to +75 °C	1286930000
1 * RJ45 10/100/1000BaseT(X),	IE-SW-PL10M-1GT-2GS-7TX	0 to 60 °C	1241300000
2 * Slots 1000BaseSFP,	IE-SW-PL10MT-1GT-2GS-7TX	-40 to +75 °C	1286940000
7 * RJ45 10/100BaseT(X)			

Accessories		Type	Order No.
External Backup and Restore Module	EBR-Modul RS232		1241430000
19" Rack Mounting Kit	RM-KIT		1241440000

Managed Gigabit Ethernet Switches

- 2 Gigabit Ethernet ports plus 16 Fast Ethernet ports for copper and fibre
- Turbo Ring, Turbo Chain, and RSTP/STP for network redundancy
- IEEE 1588 PTP, Modbus/TCP, LLDP, SNMP Inform, QoS, IGMP snooping, VLAN, IEEE 802.1X, HTTPS, SNMPv3, and SSH supported
- EBR-Module - External Backup and Restoring Module for easy system reconfiguration (optional accessory)



Technical data

Standards	
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 802.1D for Spanning Tree Protocol ▪ IEEE 802.1w for Rapid STP ▪ IEEE 802.1Q for VLAN Tagging ▪ IEEE 802.1p for Class of Service ▪ IEEE 802.1X for Authentication ▪ IEEE 802.3ad for Port Trunk with LACP	
Protocols	
IGMPv1/v2 ▪ GMRP, GVRP ▪ SNMPv1/v2c/v3 ▪ DHCP Server/Client ▪ BootP ▪ TFTP ▪ SNTP ▪ SMTP ▪ RARP ▪ RMON ▪ HTTP ▪ HTTPS ▪ Telnet ▪ Syslog ▪ DHCP Option 66/67/82 ▪ SSH ▪ SNMP Inform ▪ Modbus/TCP ▪ LLDP ▪ IEEE 1588 PTP ▪ IPv6	
MIB	
MIB-II ▪ Ethernet-Like MIB ▪ P-BRIDGE MIB ▪ Q-BRIDGE MIB ▪ Bridge MIB ▪ RSTP MIB ▪ RMON MIB Group 1, 2, 3, 9	
Flow Control	
IEEE 802.3x flow control, back pressure flow control	
Switch Properties	
Priority Queues	4
Max. Number of Available VLANs	64
VLAN ID Range	VID 1 to 4094
IGMP Groups	256
MAC Table Size	8 K
Packet Buffer Size	2 Mbit
Interface	
Fiber Ports	100BaseFX (SC/ST connector) and 1000BaseSFP slot
RJ45 Ports	10/100BaseT(X) or 10/100/1000BaseT(X) auto negotiation speed
Console Port	RS-232 (RJ45 connector)
LED Indicators	PWR1, PWR2, FAULT, 10/100M (TP port), 100M (fiber port), MSTR/HEAD, CPLR/TAIL
Alarm Contact	2 relay outputs with current carrying capacity of 1 A @ 24 V DC
Digital Inputs	2 inputs with the same ground, but electrically isolated from the electronics. <ul style="list-style-type: none"> • +13 to +30 V for state "1" • -30 to +3 V for state "0" • Max. input current: 8 mA

Optical Fiber	100BaseFX	
	multimode	singlemode
Wavelength	1300 nm	1310 nm
Max. TX	-10 dBm	0 dBm
Min. TX	-20 dBm	-5 dBm
RX Sensitivity	-32 dBm	-34 dBm
Link Budget	12 dB	29 dB
Typical Distance	5 km (50/125 µm multimode cable) 4 km (62,5/125 µm multimode cable)	40 km (9/125 µm singlemode cable)
Saturation	-6 dBm	-3 dBm

Power Requirements	
Input Voltage	24 V DC (12 to 45 V DC), redundant dual inputs
Input Current	IE-SW-PL18M-2GC-16TX: 0.51 A @ 24 V IE-SW-PL18M-SC/ST/SCS: 0.61 A @ 24 V
Overload Current Protection	Present
Connection	2 removable 6-contact terminal blocks
Reverse Polarity Protection	Present
Physical Characteristics	
Housing	Metal, IP30 protection
Dimensions	94 x 135 x 142.7 mm (3.7 x 5.31 x 5.62 in)
Weight	1630 g
Installation	DIN-Rail mounting
Environmental Limits	
Operating Temperature	Standard Models: 0 to 60 °C (32 to 140 °F) Wide Temp. Models: -40 to 75 °C (-40 to 167 °F)
Storage Temperature	-40 to 85 °C (-40 to 185 °F)
Ambient Relative Humidity	5 to 95 % (non-condensing)
Regulatory Approvals	
Safety	UL508, UL60950-1, CSA C22.2 No. 60950-1, EN60950-1
Hazardous Location	UL/cUL Class I, Division 2, Groups A, B, C, and D; ATEX Zone 2, Ex nC IIC
EMI	FCC Part 15, CISPR (EN55022) class A
EMS	EN61000-4-2 (ESD), level 2; EN61000-4-3 (RS), level 3; EN61000-4-4 (EFT), level 2; EN61000-4-5 (Surge), level 3; EN61000-4-6 (CS), level 3; EN61000-4-8; EN61000-4-12
Maritime	DNV, GL
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6
MTBF (meantime between failures)	
Time	240,000 hrs
Database	Telcordia (Bellcore), GB
Warranty	
Warranty Period	5 years

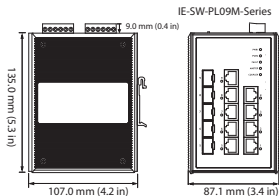
Ordering Information			
Port Variants	Type	Operating Temperature	Order No.
16 * RJ45 10/100BaseT(X),	IE-SW-PL18M-2GC-16TX	0 to +60 °C	1241320000 1286970000
2 * Combo-Ports ¹	IE-SW-PL18MT-2GC-16TX	-40 to +75 °C	
14 * RJ45 10/100BaseT(X),	IE-SW-PL18M-2GC14TX2SC	0 to +60 °C	1241330000 1286990000
2 * SC-Multimode 100FX,	IE-SW-PL18MT-2GC14TX2SC	-40 to +75 °C	
2 * Combo-Ports ¹			
14 * RJ45 10/100BaseT(X),	IE-SW-PL18M-2GC14TX2ST	0 to +60 °C	1241340000 1287000000
2 * ST-Multimode 100FX,	IE-SW-PL18MT-2GC14TX2ST	-40 to +75 °C	
2 * Combo-Ports ¹			
14 * RJ45 10/100BaseT(X),	IE-SW-PL18M-2GC14TX2SCS	0 to +60 °C	1241350000 1287010000
2 * SC-Singlemode 100FX,	IE-SW-PL18MT-2GC14TX2SCS	-40 to +75 °C	
2 * Combo-Ports ¹			

¹ (10/100/1000BaseT(X) or 100/1000BaseSFP)



Managed Full Gigabit Ethernet Switch

- 4 10/100/1000BaseT(X) ports plus 5 combo (10/100/1000BaseT(X) or 100/1000BaseSFP slot) Gigabit ports
- Turbo Ring, Turbo Chain, and RSTP/STP for network redundancy
- IEEE 1588 PTP, Modbus/TCP, LLDP, SNMP Inform, QoS, IGMP snooping, VLAN, IEEE 802.1X, HTTPS, SNMPv3, and SSH supported
- EBR-Module - External Backup and Restoring Module for easy system reconfiguration (optional accessory)



Technical data

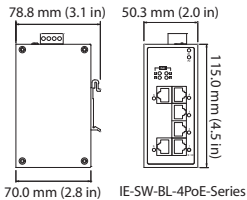
Standards	
IEEE 802.3 for 10BaseT ▪ IEEE 802.3u for 100BaseT (X) and 100BaseFX ▪ IEEE 802.3ab for 1000BaseT(X) ▪ IEEE 802.3z for 1000BaseX ▪ IEEE 802.3x for Flow Control ▪ IEEE 802.1D for Spanning Tree Protocol ▪ IEEE 802.1w for Rapid STP ▪ IEEE 802.1Q for VLAN Tagging ▪ IEEE 802.1p for Class of Service ▪ IEEE 802.1X for Authentication ▪ IEEE 802.3ad for Port Trunk with LACP	
Protocols	
IGMPv1/v2 ▪ GMRP ▪ GVRP ▪ SNMPv1/v2c/v3 ▪ DHCP Server/Client ▪ DHCP Option 66/67/82 ▪ BootP ▪ TFTP ▪ SNTP ▪ SMTP ▪ RARP ▪ RMON ▪ HTTP ▪ HTTPS ▪ Telnet ▪ SSH ▪ Syslog ▪ Modbus/TCP ▪ SNMP Inform ▪ LLDP ▪ IEEE 1588 PTP ▪ IPv6	
MIB	
MIB-II ▪ Ethernet-Like MIB ▪ P-BRIDGE MIB ▪ Q-BRIDGE MIB ▪ Bridge MIB ▪ RSTP MIB ▪ RMON MIB Group 1, 2, 3, 9	
Flow Control	
IEEE 802.3x flow control ▪ back pressure flow control	
Switch Properties	
Priority Queues	4
Max. Number of Available VLANs	64
VLAN ID Range	ID 1 to 4094
IGMP Groups	256
MAC Table Size	8 K
Packet Buffer Size	1 Mbit
Interface	
Fiber Ports	100/1000Base SFP slot
RJ45 Ports	10/100/1000BaseT(X) auto negotiation speed
Console Port	RS-232 (RJ45 connector)
DIP Switches	Turbo Ring, Master, Coupler, Reserve
LED Indicators	PWR1, PWR2, FAULT, 10/100/1000M, MSTR/HEAD, CPLR/TAIL
Alarm Contact	2 relay outputs with current carrying capacity of 1 A @ 24 V DC
Digital Inputs	2 inputs with the same ground, but electrically isolated from the electronics. <ul style="list-style-type: none"> • +13 to +30 V for state "1" • -30 to +3 V for state "0" • Max. input current: 8 mA
Power Requirements	
Input Voltage	12/24/48 V DC, redundant dual inputs
Input Current	0.81 A @ 24 V
Overload Current Protection	Present
Connection	2 removable 6-contact terminal blocks
Reverse Polarity Protection	Present
Physical Characteristics	
Housing	Metal, IP30 protection
Dimensions	87.1 × 135 × 107 mm (3.43 × 5.31 × 4.21 in)
Weight	1510 g
Installation	DIN-Rail mounting

Environmental Limits			
Operating Temperature	Standard Models: 0 to 60 °C (32 to 140 °F) Wide Temp. Models: -40 to 75 °C (-40 to 167 °F)		
Storage Temperature	-40 to 85 °C (-40 to 185 °F)		
Ambient Relative Humidity	5 to 95 % (non-condensing)		
Regulatory Approvals			
Safety	UL508, EN60950-1		
Hazardous Location	UL/cUL Class I, Division 2, Groups A, B, C, and D (Pending); ATEX Zone 2, Ex nC IIC (Pending)		
EMI	FCC Part 15, CISPR (EN55022) class A		
EMS	EN61000-4-2 (ESD), level 3; EN61000-4-3 (RS), level 3; EN61000-4-4 (EFT), level 3; EN61000-4-5 (Surge), level 3; EN61000-4-6 (CS), level 3; EN61000-4-8		
Maritime	DNV		
Shock	IEC 60068-2-27		
Freefall	IEC 60068-2-32		
Vibration	IEC 60068-2-6		
MTBF (meantime between failures)			
Time	330,000 hrs		
Database	Telcordia (Bellcore), GB		
Warranty			
Warranty Period	5 years		
Ordering Information			
Port Variants	Type	Operating Temperature	Order No.
4 * RJ45 10/100/1000BaseT(X), 5 * Combo Ports	IE-SW-PL09M-5GC-4GT IE-SW-PL09MT-5GC-4GT	0 to 60 °C -40 to +75 °C	1241370000 1287020000
10/100/1000BaseT(X) or 100/1000BaseSFP			
Accessories			
	Type		Order No.
External Backup and Restore Module	EBR-Modul RS232		1241430000
19" Rack Mounting Kit	RM-KIT		1241440000



6-port IEEE 802.3af/at PoE+ unmanaged Ethernet Switch

- 4 IEEE 802.3af/at compliant PoE and Ethernet combo ports
- Up to 30 watts per PoE port
- 24/48 V DC redundant wide-range power supply
- Integrated DC/DC converter can supply 48V-PoE devices across the entire input voltage range of 24 to 48 V DC
- Intelligent power consumption detection and classification
- Redundant dual V DC power inputs
- Broadcast Storm Protection



Technical data

Technology	
Standards	IEEE 802.3at for Power-over-Ethernet IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) IEEE 802.3x for Flow Control
Processing Type	Store and Forward
Flow Control	IEEE 802.3x flow control, back pressure flow control
Interface	
RJ45 Ports	10/100BaseT(X) auto negotiation speed, Full/Half duplex mode and auto MDI/MDI-X connection
LED Indicators	PWR1, PWR2, 10/100M, PoE
Power Requirements	
Input Voltage	24/48 (20 to 60 V) V DC
Input Current	Max 7.5 A @ 24 V DC (supports up to 4 ports at 30 watts per PoE port)
Overload Current Protection	Present
Connection	1 removable 4-contact terminal block
Reverse Polarity Protection	Present
Physical Characteristics	
Housing	Metal, IP30 protection
Dimensions	50 x 115 x 70 mm (1.96 x 4.52 x 2.76 in)
Weight	375 g
Installation	DIN-Rail mounting, wall mounting (with optional kit)
Environmental Limits	
Operating Temperature	Standard Models: 0 to 60 °C (32 to 140 °F) Wide Temp. Models: -40 to 75 °C (-40 to 167 °F)
Storage Temperature	-40 to 85 °C (-40 to 185 °F)
Ambient Relative Humidity	5 to 95 % (non-condensing)
Regulatory Approvals	
Safety	UL508
EMI	FCC Part 15, CISPR (EN55022) class A
EMS	EN61000-4-2 (ESD), level 3; EN61000-4-3 (RS), level 3; EN61000-4-4 (EFT), level 4; EN61000-4-5 (Surge), level 4; EN61000-4-6 (CS), level 3; EN61000-4-8
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6
Warranty	
Warranty Period	5 years

Ordering Information

Port Variants	Type	Operating Temperature	Order No.
2 * RJ45 10/100 BaseT(X), 4 *	IE-SW-BL06-2TX-4POE	0 to 60 °C	1241380000
RJ45 10/100 BaseT(X) PoE+	IE-SW-BL06T-2TX-4POE	-40 to +75 °C	1286920000

Models with Fiber optic ports on request

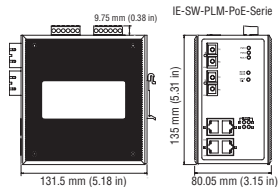
Accessories

Type	Order No.
19" Rack Mounting Kit	RM-KIT 1241440000



6-port IEEE 802.3af/at PoE+ managed Ethernet Switch

- 4 IEEE 802.3af/at compliant PoE and Ethernet combo ports
- Up to 30 watts per PoE port
- 24/48 V DC redundant wide-range power supply
- Integrated DC/DC converter can supply 48 V-PoE devices across the entire input voltage range of 24 to 48 V DC
- Extended PoE management functions, including PoE error checking or configuring the operational times of connected PoE devices



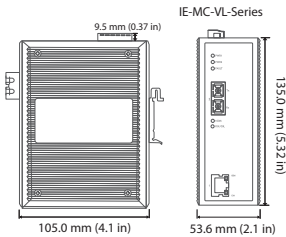
Technical data

Standards	
IEEE 802.3af/at for Power-over-Ethernet ▪ IEEE 802.3 for 10BaseT ▪ IEEE 802.3u for 100BaseT (X) and 100BaseFX ▪ IEEE 802.3x for Flow Control ▪ IEEE 802.1D for Spanning Tree Protocol ▪ IEEE 802.1w for Rapid STP ▪ IEEE 802.1Q for VLAN Tagging ▪ IEEE 802.1p for Class of Service ▪ IEEE 802.1X for Authentication ▪ IEEE 802.3ad for Port Trunk with LACP	
Protocols	
IGMPv1/v2 ▪ GMRP ▪ GVRP ▪ SNMPv1/v2c/v3 ▪ DHCP Server/Client ▪ DHCP Option 66/67/82 ▪ BootP ▪ TFTP ▪ SNTP ▪ SMTP ▪ RARP ▪ RMON ▪ HTTP ▪ HTTPS ▪ Telnet ▪ SSH ▪ Syslog ▪ Modbus/TCP ▪ SNMP Inform ▪ LLDP ▪ IEEE 1588 PTP ▪ IPv6	
MIB	
MIB-II ▪ Ethernet-Like MIB ▪ P-BRIDGE MIB ▪ Q-BRIDGE MIB ▪ Bridge MIB ▪ RSTP MIB ▪ RMON MIB Group 1, 2, 3, 9	
Flow Control	
IEEE 802.3x flow control ▪ back pressure flow control	
Switch Properties	
Priority Queues	4
Max. Number of Available VLANs	64
VLAN ID Range	VID 1 to 4094
IGMP Groups	256
MAC Table Size	8 K
Packet Buffer Size	1 Mbit
Interface	
RJ45 Ports	10/100BaseT(X) auto negotiation speed, Full/Half duplex mode, and auto MDI/MDI-X connection
Console Port	RS-232 (RJ45 connector)
DIP Switches	Turbo Ring, Master, Coupler, Reserve
LED Indicators	PWR1, PWR2, FAULT, 10/100M, MSTR/HEAD, CPLR/TAIL, PoE
Alarm Contact	2 relay outputs with current carrying capacity of 1 A @ 24 V DC
Digital Inputs	2 inputs with the same ground, electrically isolated <ul style="list-style-type: none"> • +13 to +30 V for state "1" • -30 to +3 V for state "0" • Max. input current: 8 mA
Power Requirements	
Input Voltage	24/48 (20 to 60 V) V DC
Input Current	Max. 7.8 A @ 24 V DC (supports up to 4 ports at 30 watts per PoE port)
Overload Current Protection	Present
Connection	2 removable 6-contact terminal blocks
Reverse Polarity Protection	Present
Physical Characteristics	
Housing	Metal, IP30 protection
Dimensions	80 x 135 x 131.5 mm (3.15 x 5.31 x 5.18 in)
Weight	1270 g
Installation	DIN-Rail mounting

Environmental Limits			
Operating Temperature	Standard Models: 0 to 60 °C (32 to 140 °F) Wide Operating Temp. Models: -40 to 75 °C (-40 to 167 °F)		
Storage Temperature	-40 to 85 °C (-40 to 185 °F)		
Ambient Relative Humidity	5 to 95 % (non-condensing)		
Regulatory Approvals			
Safety	UL508 (Pending)		
EMI	FCC Part 15, CISPR (EN55022) class A		
EMS	EN61000-4-2 (ESD), level 3; EN61000-4-3 (RS), level 3; EN61000-4-4 (EFT), level 3; EN61000-4-5 (Surge), level 3; EN61000-4-6 (CS), level 3; EN61000-4-8		
Shock	IEC 60068-2-27		
Freefall	IEC 60068-2-32		
Vibration	IEC 60068-2-6		
Warranty			
Warranty Period	5 years		
Ordering Information			
Port Variants	Type	Operating Temperature	Order No.
2 * RJ45 10/100 BaseT(X), 4 *	IE-SW-PL06M-2TX-4PoE	0 to 60 °C	1241390000
RJ45 10/100 BaseT(X) PoE+	IE-SW-PL06MT-2TX-4PoE	-40 to +75 °C	1286910000
Models with Fiber optic ports on request			
Accessories			
	Type		Order No.
External Backup and Restore Module	EBR-Modul RS232		1241430000
19" Rack Mounting Kit	RM-KIT		1241440000

Industrial Fast Ethernet Media Converter

- 10/100BaseT(X) auto-negotiation and auto-MDI/MDI-X
- Link Fault Pass-Through (LFP)
- Power failure, port break alarm by relay output
- Redundant power inputs
- Designed for hazardous locations (Class 1 Div. 2/Zone 2)



Technical data

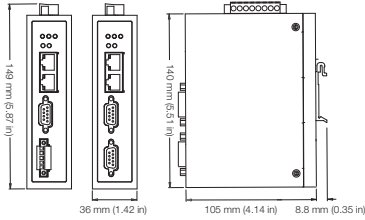
Technology		
Standards	IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) and 100BaseFX	
Interface		
Fiber Ports	100BaseFX (SC/ST connectors)	
RJ45 Ports	10/100BaseT(X)	
DIP Switches	100BaseFX Full/Half duplex selection, port break alarm mask	
LED Indicators	PWR1, PWR2, FAULT, 10/100M (TP port), 100M (Fiber port), FDX/COL (Fiber port)	
Alarm Contact	One relay output with current carrying capacity of 1 A @ 24 V DC	
Optical Fiber		
	100BaseFX	
	multimode	
	singlemode	
Wavelength	1300 nm	1310 nm
Max. TX	-10 dBm	0 dBm
Min. TX	-20 dBm	-5 dBm
RX Sensitivity	-32 dBm	-34 dBm
Link Budget	12 dB	29 dB
Typical Distance	5 km ^a 4 km ^b	40 km ^c
Saturation	-6 dBm	-3 dBm
^a 50/125 μm, 800 MHz*km fiber optic cable		
^b 62.5/125 μm, 500 MHz*km fiber optic cable		
^c 9/125 μm, 3.5 PS/(nm*km) fiber optic cable		
Power Requirements		
Input Voltage	24 V DC (12 to 48 V DC), redundant inputs	
Input Current	0.16 A (@ 24 V)	
Connection	Removable terminal block	
Overload Current Protection	1.1 A	
Reverse Polarity Protection	Present	
Physical Characteristics		
Housing	Metal, IP30 protection	
Dimensions	53.6 x 135 x 105 mm (2.11 x 5.31 x 4.13 in)	
Weight	630 g	
Installation	DIN-Rail mounting, wall mounting (with optional kit)	
Environmental Limits		
Operating Temperature	Standard Models: 0 to 60 °C (32 to 140 °F) Wide Temp. Models: -40 to 75 °C (-40 to 167 °F)	
Operating Humidity	5 to 95 % RH	
Storage Temperature	-40 to 85 °C (-40 to 185 °F)	

Regulatory Approvals			
Safety	UL508, UL60950-1, CSA C22.2 No. 60950-1, EN60950-1		
EMI	FCC Part 15, CISPR (EN55022) class A		
EMS	EN61000-4-2 (ESD), level 3 EN61000-4-3 (RS), level 3 EN61000-4-4 (EFT), level 3 EN61000-4-5 (Surge), level 2 EN61000-4-6 (CS), level 3 EN61000-4-8 EN61000-4-11		
Hazardous Location	UL/cUL Class1, Division 2, Groups A, B, C, and D, ATEX Class1, Zone 2, Ex nC IIC		
Freefall	IEC60068-2-32		
Shock	IEC60068-2-27		
Vibration	IEC60068-2-6		
Maritime	DNV, GL		
MTBF	401,000 hrs; Database: MIL-HDBK-217F; GB 25 °C		
Warranty			
Warranty Period	5 years		
Ordering Information			
Port Variants	Type	Operating Temperature	Order No.
1 * RJ45, 1 * SC-Multimode	IE-MC-VL-1TX-1SC	0 to +60 °C	1241400000
	IE-MC-VLT-1TX-1SC	-40 to +75 °C	1286880000
1 * RJ45, 1 * ST-Multimode	IE-MC-VL-1TX-1ST	0 to +60 °C	1241410000
	IE-MC-VLT-1TX-1ST	-40 to +75 °C	1286890000
1 * RJ45, 1 * SC-Singlemode	IE-MC-VL-1TX-1SCS	0 to +60 °C	1241420000
	IE-MC-VLT-1TX-1SCS	-40 to +75 °C	1286900000
Accessories			
	Type		Order No.
19" Rack Mounting Kit	RM-KIT		1241440000



1 and 2- port Serial/Ethernet Converter for industrial automation

- High surge protection for the serial ports, LAN ports and power supply connection
- Rugged screw-type terminal blocks for power and serial connectors
- Cascading Ethernet ports for easy wiring
- Redundant DC power inputs
- Warning by relay output and email
- Low power consumption



Technical data

Ethernet Interface	
Number of Ports	2
Speed	10/100 Mbps, auto MDI/MDIX
Connector	8-pin RJ45
Magnetic Isolation Protection	1.5 KV built-in
Ethernet Line Protection	1 KV (level 2) surge protection
Serial Interface	
Number of Ports	IE-CS-2TX-1RS232/485: 1, IE-CS-2TX-2RS232/485: 2
Serial Standards	RS-232/422/485
Connector	IE-CS-2TX-1RS232/485: DB9 for RS-232, terminal block for RS-422/485 IE-CS-2TX-2RS232/485: DB9 for RS-232/422/485
Serial Line Protection	<ul style="list-style-type: none"> • 15 KV ESD protection for all signals • 1 KV (level 2) surge protection
RS-485 Data Direction Control	ADDC® (automatic data direction control)
Serial Communication Parameters	
Data Bits	5, 6, 7, 8
Stop Bits	1, 1.5, 2
Parity	None, Even, Odd, Space, Mark
Flow Control	RTS/CTS and DTR/DSR (RS-232 only), XON/XOFF
Baud rate	50 to 921.6 Kbps
Serial Signals	
RS-232	TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND
RS-422	Tx+, Tx-, Rx+, Rx-, GND
RS-485-4w	Tx+, Tx-, Rx+, Rx-, GND
RS-485-2w	Data+, Data-, GND
Software	
Network Protocols	ICMP, IP, TCP, UDP, DHCP, BOOTP, Telnet, Rtelnet, DNS, SNMP, HTTP, SMTP, SNTP, IGMP
Configuration Options	Web Console, Serial Console, Telnet Console, Windows Utility
Windows Real COM Drivers	Windows 95/98/ME/NT/2000, Windows XP/2003/Vista/2008/7 x86/x64
Physical Characteristics	
Housing	Metal, IP30 protection
Weight	IE-CS-2TX-1RS232/485: 475 g IE-CS-2TX-2RS232/485: 485 g
Dimensions	36 x 105 x 140 mm (1.42 x 4.13 x 5.51 in)
Environmental Limits	
Operating Temperature	Standard Models: 0 to 60 °C (32 to 140 °F) Wide Temp. Models: -40 to 75 °C (-40 to 167 °F)
Operating Humidity	5 to 95% RH
Storage Temperature	-40 to 85 °C (-40 to 185 °F)
Power Requirements	
Input Voltage	12 to 48 V DC
Power Consumption	IE-CS-2TX-1RS232/485: 12 to 48 V DC; 220 mA @ 12 V DC, 110 mA @ 24 V DC IE-CS-2TX-2RS232/485: 12 to 48 V DC; 250 mA @ 12 V DC, 125 mA @ 24 V DC

Regulatory Approvals	
EMC	CE (EN55022 Class A, EN55024), FCC Part 15 Subpart B Class A
Safety	UL508
Hazardous Location	UL/cUL Class 1 Division 2 Groups A, B, C and D
ATEX	Class I, Zone 2 (Pending)
EMS	EN61000-4-2 (ESD), Level 3 EN61000-4-3 (RS), Level 3 EN61000-4-4 (EFT), Level 4 EN61000-4-5 (Surge), Level 3 EN61000-4-6 (CS), Level 3 EN61000-4-8 EN61000-4-11
Shock	IEC60068-2-27
Freefall	IEC60068-2-32
Vibration	IEC60068-2-6
Reliability	
Alert Tools	Built-in buzzer and RTC (real-time clock)
Automatic Reboot Trigger	Built-in WDT (watchdog timer)
Warranty	
Warranty Period	5 years
Pin Assignment	

RS-232/422/485 DB9 male port	PIN	RS-232	RS-422/RS-485-4w	RS-485-2W
1	DCD	TxD-(A)	-	-
2	RxD	TxD+(B)	-	-
3	TxD	RxD+(B)	Data+(B)	-
4	DTR	RxD-(A)	Data-(A)	-
5	GND	GND	GND	-
6	DSR	-	-	-
7	RTS	-	-	-
8	CTS	-	-	-

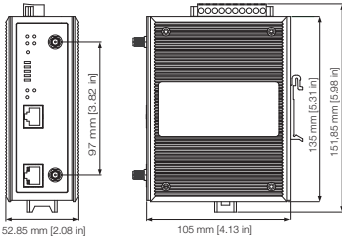
RS-422/485 Terminal Block Wiring	PIN	RS-422/RS-485-4w	RS-485-2w
1	TxD+(B)	-	-
2	TxD-(A)	-	-
3	RxD+(B)	Data+(B)	-
4	RxD-(A)	Data-(A)	-
5	GND	GND	-

Ordering Information			
Models	Type	Operating Temperature	Order No.
Two RJ45; One serial (RS232: Sub-DB9, RS422/485: terminal block)	IE-CS-2TX-1RS232/485	0 to +60 °C	1242080000
Two RJ45; Two serial (RS232/422/485: Two SubDB9)	IE-CST-2TX-1RS232/485	-40 to +75 °C	1285830000
	IE-CS-2TX-2RS232/485	0 to +60 °C	1242090000
	IE-CST-2TX-2RS232/485	-40 to +75 °C	1285840000

Accessories		
Type		Order No.
19" Rack Mounting Kit	RM-KIT	1241440000

Industrial Wireless - Access point/bridge/client

- IEEE 802.11a/b/g compatible single radio module (2.4 GHz or 5 GHz band)
- Power input by redundant 24 V DC power inputs or Power-over-Ethernet
- Multi-SSID and VLAN support
- Turbo Roaming for seamless wireless connections
- Integrated DI/DO for on-site monitoring and warning
- QoS (WMM) support



Technical data

WLAN Interface	
Standards	IEEE 802.11a/b/g for Wireless LAN IEEE 802.11i for Wireless Security IEEE 802.3u for 10/100BaseT(X) IEEE 802.3af for Power-over-Ethernet IEEE 802.1D for Spanning Tree Protocol IEEE 802.1w for Rapid STP IEEE 802.1Q VLAN
Spread Spectrum and Modulation (typical)	<ul style="list-style-type: none"> • DSSS with DBPSK, DQPSK, CCK • OFDM with BPSK, QPSK, 16QAM, 64QAM • 802.11b: CCK @ 11/5.5 Mbps, DQPSK @ 2 Mbps, DBPSK @ 11 Mbps • 802.11a/g: 64QAM @ 54/48 Mbps, 16QAM @ 36/24 Mbps, QPSK @ 18/12 Mbps, BPSK @ 9/6 Mbps
Operating Channels (central frequency)	US: 2.412 to 2.462 GHz (11 channels) 5.18 to 5.24 GHz (4 channels) EU: 2.412 to 2.472 GHz (13 channels) 5.18 to 5.24 GHz (4 channels)
Security	<ul style="list-style-type: none"> • SSID broadcast enable/disable • Firewall for MAC/IP/Protocol/Port-based filtering • 64-bit and 128-bit WEP encryption, WPA /WPA2-Personal and Enterprise (IEEE 802.1X/RADIUS, TKIP and AES)
Transmission Rates	802.11b: 1, 2, 5.5, 11 Mbps 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
TX Transmit Power	802.11b: Typ. 23±1.5 dBm @ 1 to 11 Mbps 802.11g: Typ. 20±1.5 dBm @ 6 to 24 Mbps, Typ. 19±1.5 dBm @ 36 Mbps, Typ. 18±1.5 dBm @ 48 Mbps, Typ. 17±1.5 dBm @ 54 Mbps 802.11a: Typ. 18±1.5 dBm @ 6 to 24 Mbps, Typ. 16±1.5 dBm @ 36 to 48 Mbps, Typ. 15±1.5 dBm @ 54 Mbps
RX Sensitivity	802.11b: -97 dBm @ 1 Mbps, -94 dBm @ 2 Mbps, -92 dBm @ 5.5 Mbps, -90 dBm @ 11 Mbps 802.11g: -93 dBm @ 6 Mbps, -91 dBm @ 9 Mbps, -90 dBm @ 12 Mbps, -88 dBm @ 18 Mbps, -84 dBm @ 24 Mbps, -80 dBm @ 36 Mbps, -76 dBm @ 48 Mbps, -74 dBm @ 54 Mbps 802.11a: -90 dBm @ 6 Mbps, -89 dBm @ 9 Mbps, -89 dBm @ 12 Mbps, -85 dBm @ 18 Mbps, -83 dBm @ 24 Mbps, -79 dBm @ 36 Mbps, -75 dBm @ 48 Mbps, -74 dBm @ 54 Mbps
Protocol Support	
General Protocols:	Proxy ARP, DNS, HTTP, HTTPS, IP, ICMP, SNMP, TCP, UDP, RADIUS, SNMP, PPPoE, DHCP
AP-only Protocols:	ARP, BOOTP, DHCP, dynamic VLAN-Tags for 802.1X-Clients, STP/RSTP (IEEE 802.1D/w)



Interface			
Default Antenna	2 dBi dual-band omni-directional antenna, RP-SMA (male)		
Connector for External Antennas	RP-SMA (female)		
LAN Port	10/100BaseT(X), auto negotiation speed (RJ45-type)		
Console Port	RS-232 (RJ45-type)		
LED Indicators	PWR1, PWR2, PoE, FAULT, STATE, signal strength, CLIENT MODE, BRIDGE MODE, WLAN, 10M, 100M		
Alarm Contact	1 relay output with current carrying capacity of 1 A @ 24 V DC		
Digital Inputs	2 electrically isolated inputs <ul style="list-style-type: none"> • +13 to +30 V for state "1" • +3 to -30 V for state "0" • Max. input current: 8 mA 		
Physical Characteristics			
Housing	Metal, IP30 protection		
Weight	850 g		
Dimensions	53.6 x 135 x 105 mm (2.11 x 5.31 x 4.13 in)		
Installation	DIN-Rail mounting		
Environmental Limits			
Operating Temperature	Standard Models: 0 to 60 °C (32 to 140 °F) Wide Temp. Models: -40 to 75 °C (-40 to 167 °F)		
Storage Temperature	-40 to 85 °C (-40 to 185 °F)		
Ambient Relative Humidity	5% to 95% (non-condensing)		
Power Requirements			
Input Voltage	12 to 48 V DC, redundant dual DC power inputs or 48 V DC Power-over-Ethernet (IEEE 802.3af compliant)		
Connector	10-pin removable terminal block		
Power Consumption	<ul style="list-style-type: none"> • 0.121 to 0.494 A @ 12 to 48 V DC • 0.3 A @ 24 V DC 		
Reverse Polarity Protection	Present		
Regulatory Approvals			
Safety	EN60950-1, UL60950-1		
Radio	EN300 328, EN301 893,		
EMC	EN301 489-1/-17, FCC Part 15 Subpart B Class B, EN55022/55024		
Hazardous Location	UL/cUL Class I, Div. 2; ATEX Class I, Zone 2		
MTBF	392.209 hrs		
Warranty			
Warranty Period	5 years		
Ordering Information			
Models	Type	Operating Temperature	Order No.
IEEE 802.11a/b/g Wireless AP/Bridge/Client (European version)	IE-WL-AP-BR-CL-ABG-EU	0 to +60 °C	1242100000
	IE-WLT-AP-BR-CL-ABG-EU	-40 to +75 °C	1286480000
IEEE 802.11a/b/g Wireless AP/Bridge/Client (US version)	IE-WL-AP-BR-CL-ABG-US	0 to +60 °C	1242110000
	IE-WLT-AP-BR-CL-ABG-US	-40 to +75 °C	1286490000
Accessories			
	Type	Order No.	
External Backup and Restore Module	EBR-Modul RS232	1241430000	
19" Rack Mounting Kit	RM-KIT	1241440000	

1-port Gigabit Ethernet SFP modules

- Compliant with IEEE 802.3z
- Differential LVPECL inputs and outputs
- TTL signal detect indicator
- Hot pluggable LC duplex connector
- Class 1 laser product; complies with EN60825-1



1-port Fast Ethernet SFP modules

- Compliant with IEEE 802.3u
- Differential PECL inputs and outputs
- TTL signal detect indicator
- Hot pluggable LC duplex connector
- Class 1 laser product; complies with EN60825-1



Technical data

Interface								
Ethernet Ports	1							
Connectors	Duplex LC Connector or Simplex LC							
Optical Fiber								
	Gigabit Ethernet							
	SFP-SX	SFP-LSX	SFP-LX	SFP-LHX	SFP-10A	SFP-10B	SFP-20A	SFP-20B
Wavelength	850 nm	1310 nm	1310 nm	1310 nm	TX 1310 nm, RX 1550 nm	TX 1550 nm, RX 1310 nm	TX 1310 nm, RX 1550 nm	TX 1550 nm, RX 1310 nm
Max. TX	-4 dBm	-1 dBm	-3 dBm	1 dBm	-3 dBm	-3 dBm	-2 dBm	-2 dBm
Min. TX	-9.5 dBm	-9 dBm	-9.5 dBm	-4 dBm	-9 dBm	-9 dBm	-8 dBm	-8 dBm
RX Sensitivity	-18 dBm	-19 dBm	-20 dBm	-24 dBm	-21 dBm	-21 dBm	-23 dBm	-23 dBm
Link Budget	8.5 dB	10 dB	10.5 dB	20 dB	12 dB	12 dB	15 dB	15 dB
Typical Distance	550 m ^{a)}	2 km ^{b)}	10 km ^{c)}	40 km ^{c)}	10 km ^{c)}	10 km ^{c)}	20 km ^{c)}	20 km ^{c)}
Saturation	0 dBm	-3 dBm	-3 dBm	-3 dBm	-1 dBm	-1 dBm	-1 dBm	-1 dBm

^{a)} 50/125 µm, 400 MHz * km or 62.5/125 µm, 500 MHz * km @ 850 nm multimode fiber optic cable

^{b)} 62.5/125 µm, 750 MHz * km @ 1310 nm multimode fiber optic cable

^{c)} 9/125 µm singlemode fiber optic cable

Note: The actual communication distance depends on many factors, including connector loss, cable deployment, and the age of the cabling system. We recommend doing a link budget analysis and reserving a 3 dB margin for such factors.

Environmental Limits	
Operating Temperature	Standard Models: 0 to 60 °C (32 to 140 °F) Wide Temp. Models: -40 to 75 °C (-40 to 167 °F)
Storage Temperature	-40 to 85 °C (-40 to 185 °F)
Ambient Relative Humidity	5 to 95 % (non-condensing)
Regulatory Approvals	
Safety	UL, TÜV
Warranty	
Warranty Period	3 years

Ordering Information			
SFP Variants	Type	Operating Temperature	Order No.
Gigabit-Ethernet, Multimode, LC Connector, 500 m	IE-SFP-1GSXLC	0 to +60 °C	1241490000
	IE-SFP-1GSXLC-T	-20 to 75 °C	1286700000
Gigabit-Ethernet, Multimode, LC Connector, 2 km	IE-SFP-1GLXLC	0 to +60 °C	1241500000
	IE-SFP-1GLXLC-T	-40 to 85 °C	1286710000
Gigabit-Ethernet, Singlemode, LC Connector, 10 km	IE-SFP-1GLXLC	0 to +60 °C	1241510000
	IE-SFP-1GLXLC-T	-40 to 85 °C	1286720000
Gigabit-Ethernet, Singlemode, LC Connector, 40 km	IE-SFP-1GLHXL	0 to +60 °C	1241520000
	IE-SFP-1GLHXL-T	-40 to 85 °C	1286730000
WDM-Type, Gigabit Ethernet, LC Connector, 10 km, Tx 1310 nm, Rx 1550 nm, must be paired with IE-SFP-1G10BLC	IE-SFP-1G10ALC	0 to +60 °C	1241530000
	IE-SFP-1G10ALC-T	-40 to 85 °C	1286740000
WDM-Type, Gigabit Ethernet, LC Connector, 10 km, Tx 1550 nm, Rx 1310 nm, must be paired with IE-SFP-1G10ALC	IE-SFP-1G10BLC	0 to +60 °C	1241540000
	IE-SFP-1G10BLC-T	-40 to 85 °C	1286750000
WDM-Type, Gigabit Ethernet, LC Connector, 20 km, Tx 1310 nm, Rx 1550 nm, must be paired with IE-SFP-1G20BLC	IE-SFP-1G20ALC	0 to +60 °C	1241550000
	IE-SFP-1G20ALC-T	-40 to 85 °C	1286760000
WDM-Type, Gigabit Ethernet, LC Connector, 20 km, Tx 1550 nm, Rx 1310 nm, must be paired with IE-SFP-1G20ALC	IE-SFP-1G20BLC	0 to +60 °C	1241570000
	IE-SFP-1G20BLC-T	-40 to 85 °C	1286770000

Note: WDM-type SFP modules must be used in pairs (e.g. SFP-1GXXALC and SFP-1GXXBLC)

Technical data

Interface			
Ethernet Ports	1		
Connectors	Duplex LC Connector		
Optical Fiber			
	Fast Ethernet		
	SFP-M	SFP-S	SFP-L
Wavelength	1300 nm	1310 nm	1550 nm
Max. TX	-18 dBm	0 dBm	0 dBm
Min. TX	-8 dBm	-5 dBm	-5 dBm
RX Sensitivity	-34 dBm	-34 dBm	-34 dBm
Link Budget	26 dB	29 dB	29 dB
Typical Distance	4 km ^{a)}	40 km ^{b)}	80 km ^{b)}
Saturation	0 dBm	-3 dBm	-3 dBm

^{a)} 50/125 µm or 62.5/125 µm, 800 MHz * km @ 1300 nm multimode fiber optic cable

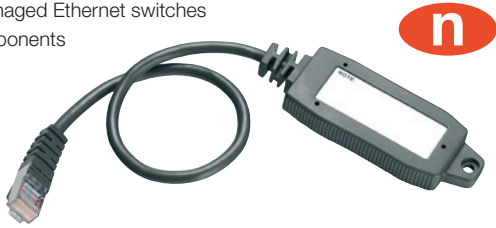
^{b)} 9/125 µm singlemode fiber optic cable

Environmental Limits	
Operating Temperature	-40 to 85 °C (-40 to 185 °F)
Storage Temperature	-40 to 85 °C (-40 to 185 °F)
Ambient Relative Humidity	5 to 95 % (non-condensing)
Regulatory Approvals	
Safety	UL, TÜV
Warranty	
Warranty Period	3 years

Ordering Information			
Port Variants	Type	Operating Temperature	Order No.
Fast Ethernet, Multimode, LC Connector, 4 km	IE-SFP-1FEMLC-T	-40 to +85 °C	1241450000
Fast Ethernet, Singlemode, LC Connector, 40 km	IE-SFP-1FESLC-T	-40 to +85 °C	1241470000
Fast Ethernet, Singlemode, LC Connector, 80 km	IE-SFP-1FELLC-T	-40 to +85 °C	1241480000

External Backup and Restore Module for System Configuration

- Reduce system downtime by simple reconfiguration in case of replacing devices
- Plug-n-Play system backup and restoration
- Compact, rugged, reliable design
- Supports all managed Ethernet switches and WLAN components



Technical data

Basic Operation		
Connector	RS232-Interface with RJ45-Connector	
Configuration	Use the WEB-Console of managed Switches	
Power Requirements		
Input Voltage	3 to 5 V DC (through the RS-232 port's RTS signal)	
Physical Characteristics		
Housing	PVC molding, IP40 protection	
Dimensions	32.5 x 97 x 12 mm (8.07 x 3.82 x 0.47 in)	
Weight	50 g	
Mounting possibility	M4 screw (< 4 mm)	
Cable Length	35 cm (including connector)	
Environmental Limits		
Operating Temperature	0 to 60 °C (32 to 140 °F)	
Storage Temperature	-20 to 70 °C (-4 to 158 °F)	
Ambient Relative Humidity	5 to 95 % (non-condensing)	
Regulatory Approvals		
EMI	FCC Part 15, CISPR (EN55022) Class A	
EMS	EN61000-4-2 (ESD), level 2; EN61000-4-3 (RS), level 3; EN61000-4-4 (EFT), level 3; EN61000-4-5 (Surge), level 3; EN61000-4-6 (CS), level 3	
Warranty		
Warranty Period	5 years	
Ordering Information		
Models	Type	Order No.
External Backup and Restore Module	EBR-Modul RS232	1241430000

Kit for 19"-rack mounting

- For mounting DIN-rail based devices in 19" racks

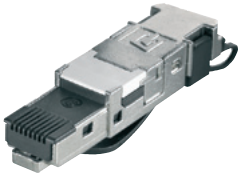


Technical data

Physical Characteristics		
Dimensions	481 x 177.8 x 202.4 mm	
Ordering Information		
Models	Type	Order No.
19" Rack Mounting Kit	RM-KIT	1241440000

Industrial Ethernet passive

Connectors for copper cable



RJ45 (IP20) acc. to IEC 60603-7

For use in office environments, in floor and building distributors, or in the electrical cabinet

The benefits:

- For high-speed transmissions, up to 10-gigabit Ethernet
- Standardized internationally
- Can be used overall
- Sturdy version suitable for industrial applications



RJ45 (IP67) acc. to IEC 61076-3-106

For connections between electrical cabinets and for use in the field for gigabit applications

The benefits:

- For high-speed transmissions, up to 10-gigabit Ethernet
- IP67 protection
- Can be assembled in the field



M12, D-coded acc. to IEC 61076-2-101

For use near machinery or where a high degree of vibration resistance is required

The benefits:

- Compact design
- IP67 protection
- Can be used with extrusion mould or assembled in the field
- particularly resistant to vibrations

Connector for fibre-optic cable



SC duplex acc. to IEC 61754-4

For use in building distributors, electrical cabinets, together with protective housing it can also be used in the field or for connecting our active components

The benefits:

- For multi-mode, single-mode or POF

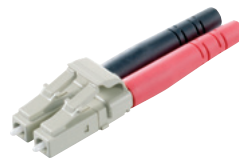


SC-RJ acc. to IEC 61754-24

For use in building distributors, electrical cabinets, or together with protective housing it can also be used in the field in compliance with PROFINET directive

The benefits:

- For multi-mode, single-mode and POF



LC-Duplex acc. to IEC 61754-20

For use in building distributors, electrical cabinets, or together with protective housing it can also be used in the field in compliance with EtherNet/IP directive

The benefits:

- For multi-mode and single-mode
- In protective housing, also in IP67



ST acc. to IEC 61754-2

For use in building distributors, electrical cabinets, or for connecting our active components

The benefits:

- For multi-mode, single-mode and POF

AdvancedLine



The AdvancedLine from Weidmüller offers all combinations of cables that are possible with the extensive range of plug connections.

This means flexibility and robustness through the high quality of the used components. The range comprises standard cables and customer-specific versions. Standard cables can be found in the catalogue; customer-specific versions can be freely configured online using the “Galaxy” configuration software. All AdvancedLine cables are particularly suitable for industrial use.

- High-quality cables with very good technical characteristics
- Suitable for demanding IP20 to IP67 applications
- Suitable for temperatures from -40 to +70 °C
- High-quality shielding

CabinetLine



The new Cabinet Line range of patch cables from Weidmüller is available in a variety of colours for visually differentiating between various networks.

Additional advantage:

all Cabinet Line cables are fitted with Weidmüller TM marking sleeves for clearly labelling cables and ports. Cabinet Line is available in the colours grey, blue, red and violet in combination with LSZH sheathing material and transmission power Cat.6_A. Furthermore, Cabinet Line is also available in the colour green and Cat.5 with PUR or PVC sheathing material. All variants are fitted with protected clips which facilitate, e.g., pulling through a cable duct.

- For applications in switching cabinets and simple environmental conditions
- Suitable for temperatures from 0 to +60 °C
- Simple shielding