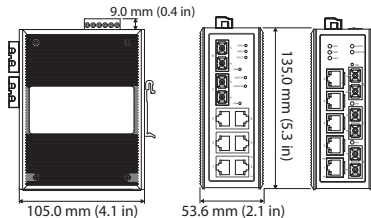




Managed Entry-level Ethernet Switches

- 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)



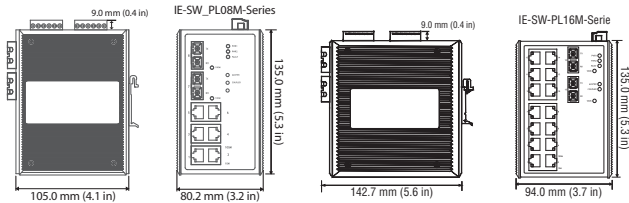
Technical data

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 ▪ SNTP ▪ 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

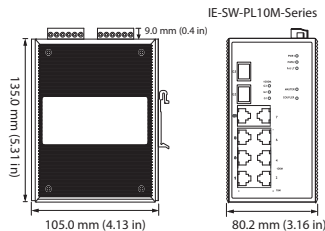
Standards		
IEEE 802.3 for 10BaseT ▪ IEEE 802.3u for 100BaseT(X) and 100BaseFX ▪ IEEE 802.3x for Flow Control ▪ IEEE 802.1D for Spanning Tree Protocol ▪ IEEE 802.1w for Rapid STP ▪ IEEE 802.1Q for VLAN Tagging ▪ IEEE 802.1p for Class of Service ▪ IEEE 802.1X for Authentication ▪ IEEE 802.3ad for Port 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 <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-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

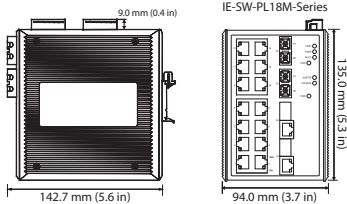
Standards	
IEEE 802.3 for 10BaseT ▪ IEEE 802.3u for 100BaseT (X) and 100BaseFX ▪ IEEE 802.3ab for 1000BaseT(X) ▪ IEEE 802.3z for 1000BaseX ▪ IEEE 802.3x for Flow Control ▪ IEEE 802.1D for Spanning Tree Protocol ▪ IEEE 802.1w for Rapid STP ▪ IEEE 802.1Q for VLAN Tagging ▪ IEEE 802.1p for Class of Service ▪ 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

Ordering Information			
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

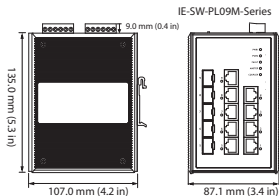
Ordering Information			
Port Variants	Type	Operating Temperature	Order No.
16 * RJ45 10/100BaseT(X), 2 * Combo-Ports ¹	IE-SW-PL18M-2GC-16TX	0 to +60 °C -40 to +75 °C	1241320000 1286970000
14 * RJ45 10/100BaseT(X), 2 * SC-Multimode 100FX, 2 * Combo-Ports ¹	IE-SW-PL18M-2GC14TX2SC	0 to +60 °C -40 to +75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

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