

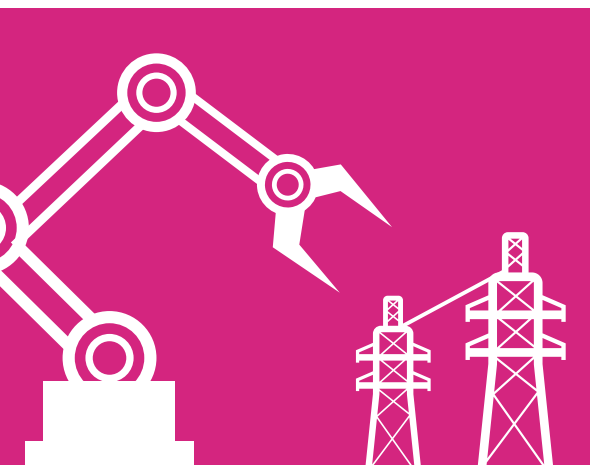


**EtherWAN**

# Connection Guide

When Connectivity is Crucial

- ◆ Ethernet Switches
- ◆ Media Converters
- ◆ Ethernet Extenders
- ◆ Surge Protectors
- ◆ NIC & Industrial PSUs



# About **EtherWAN**

EtherWAN Systems, founded in 1996 in the United States with Pacific Rim headquarters in Taiwan, has become a leader in Ethernet connectivity for IP Surveillance, Intelligent Transportation Systems (ITS), Renewable Energy, Smart Grid, Oil & Mining, Factory Automation, etc.

EtherWAN specializes in designing and manufacturing Ethernet equipment for harsh environments. At EtherWAN, considerations of extreme temperatures, shock and vibration, power surge, and high ESD protection are all part of the most basic and minimal requirements in product design. Our commitment to quality and fault tolerance under extreme environmental conditions continues to drive our engineering capability to higher and higher levels. From Ethernet Switches, Media Converters, Serial Device Servers to Ethernet Extenders EtherWAN offers products and solutions for the most demanding industries.

EtherWAN Systems - When Connectivity is Crucial!



# Core Competency

## Technology Know-how

- In-house hardware, software and mechanical design team with our own Linux kernel source codes
- Unique  $\alpha$ -Ring for network redundancy with recovery time < 15ms
- Specialize in designing hardened Ethernet equipment with superior reliability, long MTBF, redundant power support, wide operating temperature range, EDI, EMI, RFI and surge protection
- Extensive knowledge in internetworking, protocols, and interoperability with products from leading communication manufacturers in the world

## Efficient Operation

- Flexible production process to provide various fiber options
- Efficient logistics to organize all size of standard product shipment without MOQ
- Abundant OEM/ODM experience with global leading networking equipment providers
- Effective inventory plan to guarantee the best delivery lead time

## Customer-focused Services

- Professional technical support crew, with domain know-how and hands-on experience working with system integrators and solution providers
- The most current technical archives are always available online

# Ethernet Switches

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# Media Converters

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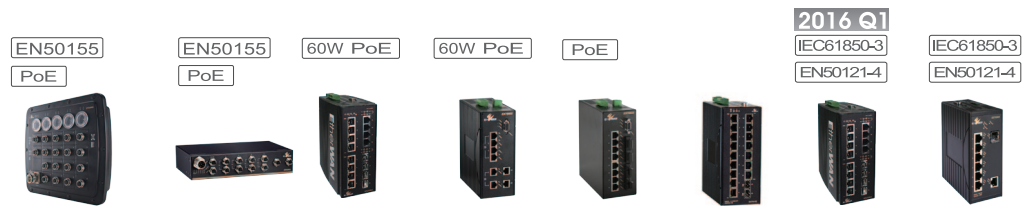
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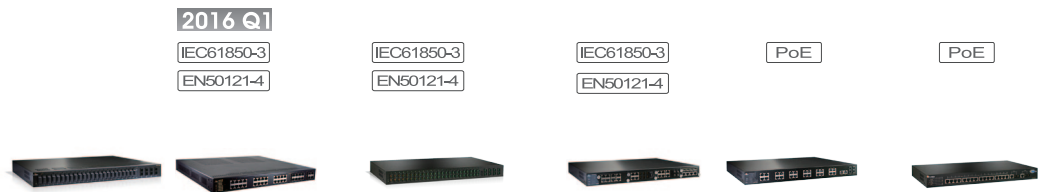
# Connection Guide / Ethernet Switches



Hardened Managed >>								
Model Name	ER59000	ER58000	EX78900	EX78602	EX78000	EX78162	EX73900	EX70900
<b>Interface</b>								
Max. 10/100 BASE-TX	16 (M12)	8 (M12)	-	6	8	16	-	-
Max. 10/100/1000 BASE-T	2 (M12)	2 (M12)	12	2	2	-	12	8
Max. 100 BASE-FX	-	-	-	-	4	-	-	-
Max. 100 BASE-SFP	-	-	-	-	2	-	-	-
Max. 1000 BASE - SX/LX/BX	2 (LC)	2 (LC)	4	2	2	2 (LC)	4	2
Max. 1000 BASE - SFP	-	-	4	2	2	2	4	2
PoE Ports	8 (30W)	8 (30W)	8 (60W)	4 (30W) + 2 (60W)	8 (30W)	16 (30W)	-	-
PoE Power Budget	240W	120W	240W	180W	180W	240W	-	-
RS-232 Console Port	✓	✓	✓	✓	✓	✓	✓	✓
Alarm Contact	✓	✓	✓	✓	✓	✓	✓	✓
<b>Performance</b>								
MAC Address Table Size	8192	8192	16K	8192	8192	8192	16K	4096
Packet Buffer Memory (bits)	2M	2M	12M	2M	2M	2M	12M	1.5M
Jumbo Frame (bytes)	-	-	9216	-	-	-	9216	9720
<b>Mechanical</b>								
Casing	aluminum	metal	aluminum	aluminum	aluminum	aluminum	aluminum	aluminum
Installation*	W	P	D, P	D, P	D, P	D, P	D, P	D, P
Dimensions (mm) (W x D x H)	258 x 117 x 228	288 x 161.5 x 64	63 x 140 x 170	71.4 x 140 x 170	71.4 x 140 x 170	71.4 x 140 x 170	63 x 140 x 170	66 x 125 x 145
<b>Power Input</b>								
No. of Power Inputs	2	2	2	2	3	2	2	3
110 - 240VAC	-	-	-	-	-	-	-	-
Terminal Block	(55VDC) (M23) (PoE) (12 - 48VDC) (M23) (nonPoE)	(24 - 48VDC) (M23)	52 - 57VDC	52 - 57VDC	47 - 57VDC	52 - 57VDC	12 - 48VDC	12 - 48VDC
DC Jack	-	-	-	52 - 57VDC	47 - 57VDC	-	-	12VDC
AC to DC Adapter	-	-	-	-	-	-	-	-
<b>Operating Temperature</b>								
-10°C to 60°C	-	-	-	-	-	-	-	-
-40°C to 75°C	✓	✓	✓	✓	✓	✓	✓	✓
<b>Network Redundancy</b>								
α-Ring / α-Chain	✓	✓	✓	✓	✓	✓	✓	✓
STP / RSTP / MSTP	✓	✓	✓	✓	✓	✓	✓	✓
<b>Network Management &amp; Control</b>								
	VLAN, QoS, IGMP, GMRP, LLDP, Bandwidth Rate Control, Port Trunking, Port Mirroring, Packet Filtering, DHCP Sever/Client, IEEE802.1x Security, SNMP (v1, v2c, v3), RMON, Web Management, Telnet Management, RS-232 Console Management							
Static Routing, RIP V1/V2	-	-	✓	-	-	-	✓	✓
<b>Regulatory Approvals</b>								
CE / FCC	✓	✓	✓	✓	✓	✓	✓	✓
UL508	-	-	-	-	✓	-	-	-
ISA12.12.01 / UL1604	-	-	-	-	-	-	-	-
IEC61850-3 / IEEE1613	-	-	-	-	-	-	✓	✓
EN50155 / EN50121-4	✓	✓	-	-	-	-	EN50121-4 only	EN50121-4 only
UL60950	-	-	-	-	-	-	-	-
UL62368	-	-	(Pending)	-	-	-	(Pending)	-

\* D: DIN-Rail Mounting, P: Panel Mounting, R: Rack Mounting, W: Wall Mounting

# Connection Guide / Ethernet Switches



<b>Hardened Managed &gt;&gt;</b>						
Model Name	EX77000	EX77900 <small>NEW</small>	EX87000	EX89000	EX75000	EX76000
<b>Interface</b>						
Max. 10/100 BASE-TX	24	-	24	24	24	16
Max. 10/100/1000 BASE-T	4	24	4	4	4	2
Max. 100 BASE-FX	24	-	24	18	-	4
Max. 100 BASE-SFP	24	-	24	-	-	-
Max. 1000 BASE- SX/LX/BX	4	8	4	4	2	2
Max. 1000 BASE-SFP	4	8	4	4	4	-
Max. 10 Gigabit SFP+	-	4	-	-	-	-
PoE Ports	-	-	-	-	MAX.12 (30W)+ 2G (30W) MAX. 24 (15.4W)+2G (30W)	16 (30W)
PoE Power Budget	-	-	-	-	420W	480W
RS-232 Console Port	√	√	√	√	√	√
Alarm Contact	-	-	-	√	√	√
<b>Performance</b>						
MAC Address Table Size	8192	16K	8192	8192	8192	8192
Packet Buffer Memory (bits)	3M	12M	3M	3M	3M	2M
Jumbo Frame (bytes)	-	12K	-	-	2048	-
<b>Mechanical</b>						
Casing	metal	metal	metal	metal	metal	metal
Installation*	R	R	R	R	R	R
Dimensions (mm) (W x D x H)	Single Power: 442x250x44 Dual Power: 442x375x44	442 x 375 x 44	Single Power: 442x284x44 Dual Power: 442x375x44	Single Power: 442x343x44 Dual Power: 442x404x44	442 x 343 x 44	442 x 205 x 44
<b>Power Input</b>						
No. of Power Inputs	1 or 2	1 or 2	1 or 2	1 or 2	1	2
110 - 240VAC	√	√	√	√	-	-
Terminal Block	±48VDC, 88 - 370VDC	±48VDC, 88 - 370VDC	±48VDC, 88 - 370VDC	±48VDC, 88 - 370VDC	52 - 57VDC	52 - 57VDC
DC Jack	-	-	-	-	-	-
AC to DC Adapter	-	-	-	-	-	-
<b>Operating Temperature</b>						
-10°C to 60°C	-	-	-	-	-	-
-40°C to 75°C	√	√	√	√	√	√
<b>Network Redundancy</b>						
α-Ring / α-Chain	√	√	√	√	√	√
STP / RSTP / MSTP	√	√	√	√	√	√
<b>Network Management &amp; Control</b>						
	VLAN, QoS, IGMP, GMRP, LLDP, Bandwidth Rate Control, Port Trunking, Port Mirroring, Packet Filtering, IEEE802.1x Security, SNMP (v1, v2c, v3), RMON, Web Management, Telnet Management, RS-232 Console Management					
Static Routing, RIP V1/V2	-	√	-	-	-	-
<b>Regulatory Approvals</b>						
CE / FCC	√	√	√	√	√	√
UL508	-	-	-	-	-	√
ISA12.12.01 / UL1604	-	-	-	-	-	-
IEC61850-3 / IEEE1613	√	√	√	√	-	-
EN50155	-	-	-	-	-	-
EN50121-4	-	√	√	√	-	-
UL60950	-	-	-	-	-	-
UL62368	-	(Pending)	-	-	-	-

\* D: DIN-Rail Mounting, P: Panel Mounting, R: Rack Mounting, W: Wall Mounting

# Connection Guide / Ethernet Switches



	<b>Hardened Managed &gt;&gt;</b>				<b>Hardened Web-Smart &gt;&gt;</b>		
Model Name	EX83000	EX73000	EX72000	EX71000	EX74000	EX48000	EX46100
<b>Interface</b>							
Max. 10/100 BASE-TX	16	16	14	8	6	5	8
Max. 10/100/1000 BASE-T	2	2	2	2	2	-	-
Max. 100 BASE-FX	4	4	2	4	-	1	2
Max. 100 BASE-SFP	4	-	-	4	-	-	-
Max. 1000 BASE - SX/LX/BX	2	2	2	2	-	-	-
Max. 1000 BASE - SFP	2	-	2	2	2	-	-
PoE Ports	-	-	-	-	4 (30W)	4 (30W)	4 (30W)
PoE Power Budget	-	-	-	-	120W	120W	120W
RS-232 Console Port	✓	✓	✓	✓	✓	-	-
Alarm Contact	✓	✓	-	✓	-	✓	✓
<b>Performance</b>							
MAC Address Table Size	8192	8192	8192	8192	8192	1024	1024
Packet Buffer Memory (bits)	2M	2M	2M	2M	2M	512K	1M
Jumbo Frame (bytes)	-	-	-	-	-	-	-
<b>Mechanical</b>							
Casing	aluminum	aluminum	metal	aluminum	metal	aluminum	aluminum
Installation*	D, P	D, P	P	D, P, R	P, R	Desktop, W	D, P, R
Dimensions (mm) (W x D x H)	84 x 125 x 145	65 x 125 x 45	235 x 125 x 50	60 x 125 x 145	200 x 134 x 50	200 x 134 x 35	68 x 135 x 110
<b>Power Input</b>							
No. of Power Inputs	3	3	2	3	1	3	3
110 - 240VAC	-	-	-	-	-	-	-
Terminal Block	12 - 48VDC	12 - 48VDC	12 - 48VDC	12 - 48VDC	52 - 57VDC	47 - 57VDC	47 - 57VDC
DC Jack	12VDC	12VDC	-	12VDC	-	47 - 57VDC	47 - 57VDC
AC to DC Adapter	-	-	-	-	-	-	-
<b>Operating Temperature</b>							
-10°C to 60°C	-	-	-	-	-	-	-
-40°C to 75°C	✓	✓	✓	✓	✓	✓	✓
<b>Network Redundancy</b>							
α-Ring / α-Chain	✓	✓	✓	✓	✓	-	-
STP / RSTP / MSTP	✓	✓	✓	✓	✓	-	-
<b>Network Management &amp; Control</b>							
	VLAN, QoS, IGMP, GMRP, LLDP, Bandwidth Rate Control, Port Trunking, Port Mirroring, Packet Filtering, IEEE802.1x Security, SNMP (v1, v2c, v3), RMON, Web Management, Telnet Management, RS-232 Console Management					System, IP Configuration, VLAN, QoS, Web Management	
<b>Regulatory Approvals</b>							
CE / FCC	✓	✓	✓	✓	✓	✓	✓
UL508	-	✓	✓	✓	-	-	-
ISA12.12.01 / UL1604	-	✓	-	-	-	-	-
IEC61850-3 / IEEE1613	✓	-	-	-	-	-	-
EN50121-4	✓	-	-	✓	-	-	-
UL60950	-	-	-	-	-	-	-

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# Connection Guide / Ethernet Switches



<b>Hardened Web-Smart &gt;&gt;</b>		<b>Hardened Unmanaged &gt;&gt;</b>				
Model Name	EX49000	ER52000 <sup>NEW</sup>	EX49000A	EX42900	EX45900	EX42300
<b>Interface</b>						
Max. 10/100 BASE-TX	16	8 (M12)	16	-	-	4
Max. 10/100/1000 BASE-T	2	2 (M12) Bypass	2	5 / 8	5	1
Max. 100 BASE-FX	-	-	-	-	-	-
Max. 100 BASE-SFP	-	-	-	-	-	-
Max. 1000 BASE - SX/LX/BX	2	-	2	1	1	1
Max. 1000 BASE - SFP	2	-	2	-	1	1
PoE Ports	16 (30W)	8 (30W)	16 (30W)	-	4 (30W)	4 (30W)
PoE Power Budget	480W	120W	480W	-	120W	120W
RS-232 Console Port	-	-	-	-	-	-
Alarm Contact	√	-	√	- / √	√	√
<b>Performance</b>						
MAC Address Table Size	4096	8192	4096	8192 / 4096	8192	8192
Packet Buffer Memory (bits)	2.25M	4M	2.25M	1M / 192K	1M	1M
Jumbo Frame (bytes)	-	9.6K	-	10K / 9720	10K	10K
<b>Mechanical</b>						
Casing	metal	aluminum	metal	metal	metal	metal
Installation*	R	W	R	D	D	D
Dimensions (mm) (W x D x H)	442 x 205 x 44.2	140 x 228 x 65.8	442 x 205 x 44.2	30 x 70 x 110 30 x 100 x 149	30 x 100 x 149	30 x 100 x 149
<b>Power Input</b>						
No. of Power Inputs	2	2	2	1 / 2	2	2
100 - 240VAC	-	-	-	-	-	-
Terminal Block	47 - 57VDC	110VDC (M12)	47 - 57VDC	12 - 48VDC	24 / 48VDC	24 / 48VDC
DC Jack	-	-	-	-	-	-
AC to DC Adapter	-	-	-	-	-	-
<b>Operating Temperature</b>						
-10°C to 60°C	-	-	-	-	-	-
-40°C to 75°C	√	√	√	√	√	√
<b>Network Redundancy</b>						
α-Ring / α-Chain	-	-	-	-	-	-
STP / RSTP / MSTP	-	-	-	-	-	-
<b>Network Management &amp; Control</b>						
	System, IP Configuration, VLAN, QoS, Web Management			-		
<b>Regulatory Approvals</b>						
E Mark	-	-	-	-	-	-
CE / FCC	√	√	√	√	√	√
UL508	-	-	-	-	-	-
ISA12.12.01 / UL1604	-	-	-	-	-	-
IEC61850-3 / IEEE1613	-	-	-	-	-	-
EN50155	-	√ (pending)	-	-	-	-
UL60950	-	-	-	(EX42905 / EX42914)	√	√

\* D: DIN-Rail Mounting, P: Panel Mounting, R: Rack Mounting, W: Wall Mounting

# Connection Guide / Ethernet Switches

2016 Q1  
PoE



EN50121-4  
IEC61850-3



PoE



PoE



## Hardened Unmanaged >>

Model Name	EX46900A <sup>NEW</sup>	EX95000	EX47000	EX94000	EX45000	EX48000A
<b>Interface</b>						
Max. 10/100 BASE-TX	-	16	8	8	8	5
Max. 10/100/1000 BASE-T	8	-	-	-	-	-
Max. 100 BASE-FX	-	2	6	2	2	1
Max. 100 BASE-SFP	-	-	-	2	-	-
Max. 1000 BASE - SX/LX/BX	2	-	-	-	-	-
Max. 1000 BASE - SFP	2	-	-	-	-	-
PoE Ports	8 (30W)	-	-	-	4 (15.4W)	4 (15.4W)
PoE Power Budget	120W	-	-	-	61.6W	61.6W
RS-232 Console Port	-	-	-	-	-	-
Alarm Contact	√	√	√	√	√	√
<b>Performance</b>						
MAC Address Table Size	8192	4096	2048	1K	1024	1024
Packet Buffer Memory (bits)	4M	1.625M	448K	448K	1M	512K
Jumbo Frame (bytes)	9.6K	-	-	-	-	-
<b>Mechanical</b>						
Casing	aluminum	aluminum	aluminum	aluminum	aluminum	metal
Installation*	D	D, P, R	D, P	D, P	D, P, R	Desktop, W
Dimensions (mm) (W x D x H)	66.8 x 125 x 145	75.5 x 110 x 135	60 x 125 x 145	50 x 110 x 145	68 x 110 x 135	200 x 134.3 x 35
<b>Power Input</b>						
No. of Power Inputs	2	3	3	2	2	3
110 - 240VAC	-	-	-	-	-	-
Terminal Block	18 - 57VDC	12 - 48VDC	12 - 48VDC	12 - 48VDC	47 - 57VDC	47 - 57VDC
DC Jack	-	12VDC	12VDC	-	47 - 57VDC	47 - 57VDC
AC to DC Adapter	-	-	-	-	-	-
<b>Operating Temperature</b>						
-10°C to 60°C	-	-	-	-	-	-
-40°C to 75°C	√	√	√	√	√	√
<b>Network Redundancy</b>						
α-Ring / α-Chain	-	-	-	-	-	-
STP / RSTP / MSTP	-	-	-	-	-	-
<b>Network Management &amp; Control</b>						
<b>Regulatory Approvals</b>						
E Mark	√ (pending)	-	-	-	-	-
CE / FCC	√	√	√	√	√	√
UL508	-	√	-	-	-	-
ISA12.12.01 / UL1604	-	-	-	√ (pending)	-	-
IEC61850-3 / IEEE1613	-	-	√	-	-	-
EN50121-4	-	-	√	-	-	-
UL60950	-	-	-	√ (pending)	-	-

\* D: DIN-Rail Mounting, P: Panel Mounting, R: Rack Mounting, W: Wall Mounting

# Connection Guide / Ethernet Switches



	<b>Industrial Managed &gt;&gt;</b>				<b>Industrial Web-Smart &gt;&gt;</b>	
Model Name	EX27000	EX29000	EX63000	EX61000A	EX62000	EX38000
<b>Interface</b>						
Max. 10/100 BASE-TX	24	24	16	8	14	5
Max. 10/100/1000 BASE-T	4	4	2	2	2	-
Max. 100 BASE-FX	24	18	4	4	2	1
Max. 100 BASE-SFP	24	-	-	4	-	-
Max. 1000 BASE - SX/LX/BX	4	4	2	2	2	-
Max. 1000 BASE - SFP	4	4	-	2	2	-
PoE Ports	-	-	-	-	-	4 (30W)
PoE Power Budget	-	-	-	-	-	120W
RS-232 Console Port	✓	✓	✓	✓	✓	-
Alarm Contact	-	✓	-	✓	-	✓
<b>Performance</b>						
MAC Address Table Size	8192	8192	8192	8192	8192	1024
Packet Buffer Memory (bits)	3M	3M	2M	2M	2M	512K
Jumbo Frame (bytes)	-	-	-	-	-	-
<b>Mechanical</b>						
Casing	metal	metal	metal	metal	metal	metal
Installation*	R	R	D, P, R	D, P, R	D, P, R	Desktop, W
Dimensions (mm) (W x D x H)	Single Power: 442x343x44 Dual Power: 442x375x44	Single Power: 442x343x44 Dual Power: 442x404x44	59 x 125 x 45	54 x 125 x 145	235 x 125 x 50	200 x 134.3 x 35
<b>Power Input</b>						
No. of Power Inputs	1 or 2	1 or 2	3	3	2	3
110 - 240VAC	✓	✓	-	-	-	-
Terminal Block	±48VDC, 88 - 370VDC	±48VDC, 88 - 370VDC	12 - 48VDC	12 - 48VDC	12 - 48VDC	47- 57VDC
DC Jack	-	-	12VDC	12VDC	12VDC	47- 57VDC
AC to DC Adapter	-	-	-	-	-	-
<b>Operating Temperature</b>						
-10°C to 60°C	✓	✓	✓	✓	✓	✓
-40°C to 75°C	-	-	-	-	-	-
<b>Network Redundancy</b>						
α-Ring / α-Chain	✓	✓	✓	✓	✓	-
STP / RSTP / MSTP	✓	✓	✓	✓	✓	-
<b>Network Management &amp; Control</b>						
	VLAN, QoS, IGMP, GMRP, Bandwidth Rate Control, Port Trunking, Port Mirroring, Packet Filtering, IEEE802.1x Security, SNMP (v1, v2c, v3), RMON, Web Management, Telnet Management, RS232 Console Management (expect EX26262 and EX26182)					System, IP Configuration, VLAN, QoS, Web Management
<b>Regulatory Approvals</b>						
CE / FCC	✓	✓	✓	✓	✓	✓
UL508	-	-	-	✓	-	-
ISA12.12.01 / UL1604	-	-	-	-	-	-
IEC61850-3 / IEEE1613	✓	✓	-	-	-	-
EN50121-4	✓	✓	-	✓	-	-
UL60950	-	-	-	-	-	-

\* D: DIN-Rail Mounting, P: Panel Mounting, R: Rack Mounting, W: Wall Mounting

# Connection Guide / Ethernet Switches



<b>Industrial Unmanaged &gt;&gt;</b>						
Model Name	EX39924	EX32900	EX35000	EX33000	EX34000	EX43000
<b>Interface</b>						
Max. 10/100 BASE-TX	-	-	-	16	8	8
Max. 10/100/1000 BASE-T	24	5 / 8	8	-	-	-
Max. 100 BASE-FX	-	-	-	2	2	2
Max. 100 BASE-SFP	-	-	-	-	-	2
Max. 1000 BASE - SX/LX/BX	-	1	2	-	-	-
Max. 1000 BASE - SFP	4 (Combo) / 16 (Combo)	-	2	-	-	-
PoE Ports	-	-	-	-	4 (15.4W)	-
PoE Power Budget	-	-	-	-	61.6W	-
RS-232 Console Port	-	-	-	-	-	-
Alarm Contact	-	- / √	√	√	√	√
<b>Performance</b>						
MAC Address Table Size	8192	8192 / 4096	8192	4096	1024	1K
Packet Buffer Memory (bits)	512K	1M / 192K	1.125M	1.625M	1M	448K
Jumbo Frame (bytes)	16379	10K / 9720	-	-	-	-
<b>Mechanical</b>						
Casing	metal	plastic	aluminum	metal	metal	metal
Installation*	R	D	D, P	D, P, R	D, P, R	D, P
Dimensions (mm) (W x D x H)	210 x 440 x 44	26 x 70 x 110 30 x 86 x 149	68 x 110 x 135	69.5 x 110 x 135	62 x 110 x 135	43.6 x 110 x 135
<b>Power Input</b>						
No. of Power Inputs	1	1 / 2	3	3	3	2
100 - 240VAC	√	-	-	-	-	-
Terminal Block	-	12 - 48VDC	12 - 32VDC	12 - 48VDC	47- 57VDC	12 - 48VDC
DC Jack	-	-	12VDC	12VDC	47- 57VDC	-
AC to DC Adapter	-	-	-	-	-	-
<b>Operating Temperature</b>						
-10°C to 60°C	√	√	-20°C to 60°C	√	√	-20°C to 60°C
-40°C to 75°C	-	-	-	-	-	-
<b>Network Redundancy</b>						
α-Ring / α-Chain	-	-	-	-	-	-
STP / RSTP / MSTP	-	-	-	-	-	-
<b>Network Management &amp; Control</b>						
-						
<b>Regulatory Approvals</b>						
CE / FCC	√	√	√	√	√	√
UL508	-	-	√	√	-	-
ISA12.12.01 / UL1604	-	-	-	-	-	-
IEC61850-3 / IEEE1613	-	-	-	-	-	-
EN50121-4	-	-	-	-	-	-
UL60950	-	(EX32905 / EX32914)	-	-	-	√ (pending)

\* D: DIN-Rail Mounting, P: Panel Mounting, R: Rack Mounting, W: Wall Mounting

# Connection Guide / Ethernet Switches



<b>Industrial Unmanaged &gt;&gt;</b>			<b>Commercial Managed &gt;&gt;</b>		
Model Name	EX42008 <small>NEW</small>	EX32008 <small>NEW</small>	EX42000	EX25611	EX24402
<b>Interface</b>					
Max. 10/100 BASE-TX	8	8	5	-	16
Max. 10/100/1000 BASE-T	-	-	-	24	2
Max. 100 BASE-FX	1	1	1	-	-
Max. 100 BASE-SFP	-	-	-	-	-
Max. 1000 BASE - SX/LX/BX	-	-	-	-	-
Max. 1000 BASE - SFP	-	-	-	4 (Combo)	2
Max. 10 Gigabit SFP+	-	-	-	4	-
PoE Ports	-	-	-	-	16 (15.4W)
PoE Power Budget	-	-	-	-	195W
RS-232 Console Port	-	-	-	√	√
Alarm Contact	√	√	√	-	√
<b>Performance</b>					
MAC Address Table Size	1K	1K	1K	32K	8192
Packet Buffer Memory (bits)	448K	448K	448K	256M	2M
<b>Mechanical</b>					
Casing	metal	plastic	plastic	metal	metal
Installation*	D	D	D	R	R
Dimensions (mm) (W x D x H)	30 x 100 x 149	30 x 86 x 149	26 x 70 x 110	442 x 300 x 44	443.6 x 285 x 44
<b>Power Input</b>					
No. of Power Inputs	2	2	1	1	1
100 - 240VAC	-	-	-	√	√
Terminal Block	12 - 48VDC	12 - 48VDC	12 - 48VDC	-	-
DC Jack	-	-	-	-	-
AC to DC Adapter	-	-	-	-	-
<b>Operating Temperature</b>					
0°C to 45°C	-	-	-	0°C to 40°C	√
-10°C to 60°C	-	√	√	-	-
-40°C to 75°C	√	-	-	-	-
<b>Network Redundancy</b>					
α-Ring / α-Chain	-	-	-	-	-
STP / RSTP / MSTP	-	-	-	√	-
<b>Network Management &amp; Control</b>					
				VLAN, QoS, IGMP, GMRP, Bandwidth Rate Control, Port Trunking, Port Mirroring, Packet Filtering, IEEE802.1x Security, SNMP (v1, v2c, v3), RMON, Web Management, Telnet Management, RS232 Console Management	
<b>Regulatory Approvals</b>					
CE / FCC	√	√	√	√	√
UL508	-	-	-	-	-
ISA12.12.01 / UL1604	-	-	-	-	-
IEC61850-3 / IEEE1613	-	-	-	-	-
EN50121-4	-	-	-	-	-
UL60950	-	-	√	-	-

\* D: DIN-Rail Mounting, P: Panel Mounting, R: Rack Mounting, W: Wall Mounting

# Connection Guide / Ethernet Switches



Commercial Web-Smart >>				
Model Name	EX26262	EX26182	EX17242	EX17162
<b>Interface</b>				
Max. 10/100 BASE-TX	-	-	24	16
Max. 10/100/1000 BASE-T	24	18	2	2
Max. 100 BASE-FX	-	-	-	-
Max. 100 BASE-SFP	-	-	-	-
Max. 1000 BASE - SX/LX/BX	-	-	-	-
Max. 1000 BASE - SFP	2	2	2 (Combo)	2 (Combo)
PoE Ports	24 (30W)	18 (30W)	24(15.4W)	16 (15.4W)
PoE Power Budget	190W	190W	369.6W	246.4W
RS-232 Console Port	-	-	-	-
Alarm Contact	-	-	-	-
<b>Performance</b>				
MAC Address Table Size	8192	8192	4096	4096
Packet Buffer Memory (bits)	64M	64M	2.75M	2.75M
<b>Mechanical</b>				
Casing	metal	metal	metal	metal
Installation*	R	R	R	R
Dimensions (mm) (W x D x H)	440 x 350 x 44	440 x 350 x 44	440 x 330 x 44	440 x 330 x 44
<b>Power Input</b>				
No. of Power Inputs	1	1	1	1
110 - 240VAC	√	√	√	√
Terminal Block	-	-	-	-
DC Jack	-	-	-	-
AC to DC Adapter	-	-	-	-
<b>Operating Temperature</b>				
0°C to 45°C	0°C to 50°C	0°C to 50°C	√	√
-10°C to 60°C	-	-	-	-
-40°C to 75°C	-	-	-	-
<b>Network Redundancy</b>				
α-Ring / α-Chain	-	-	-	-
STP / RSTP / MSTP	√	√	-	-
<b>Network Management &amp; Control</b>				
	VLAN, QoS, IGMP, GMRP, Bandwidth Rate Control, Port Trunking, Port Mirroring, Packet Filtering, IEEE802.1x Security, S NMP (v1, v2c, v3), RMON, Web Management, Telnet Management, RS232 Console Management (expect EX26262).		System, IP Configuration, VLAN, QoS, Web Management	
<b>Regulatory Approvals</b>				
CE / FCC	√	√	√	√
UL508	-	-	-	-
ISA12.12.01 / UL1604	-	-	-	-
IEC61850-3 / IEEE1613	-	-	-	-
EN50121-4	-	-	-	-
UL60950	√	√	-	√

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# Connection Guide / Ethernet Switches



<b>Commercial Web-Smart &gt;&gt;</b>					
Model Name	EX17016	EX1616W	EX17908	EX17082	EX17008
<b>Interface</b>					
Max. 10/100 BASE-TX	16	16	-	8	8
Max. 10/100/1000 BASE-T	-	-	8	2	-
Max. 100 BASE-FX	-	1	-	-	-
Max. 100 BASE-SFP	-	-	-	-	-
Max. 1000 BASE - SX/LX/BX	-	-	-	-	-
Max. 1000 BASE - SFP	-	-	-	2 (Combo)	-
PoE Ports	16 (15.4W)	-	8 (30W)	8 (30W)	8 (15.4W)
PoE Power Budget	246.4W	-	240W	240W	123.2W
RS-232 Console Port	-	-	-	-	-
Alarm Contact	-	-	-	-	-
<b>Performance</b>					
MAC Address Table Size	4096	4096	8192	4096	1024
Packet Buffer Memory (bits)	1.5M	1.5M	1M	2.75M	512K
<b>Mechanical</b>					
Casing	metal	metal	metal	metal	metal
Installation*	R	R	R	R	Desktop
Dimensions (mm) (W x D x H)	440 x 330 x 44	440 x 207 x 44	266 x 160 x 44	440 x 220 x 44	266 x 160 x 44
<b>Power Input</b>					
No. of Power Inputs	1	1	1	1	1
110 - 240VAC	√	√	√	√	√
Terminal Block	-	-	-	-	-
DC Jack	-	-	-	-	-
AC to DC Adapter	-	-	-	-	-
<b>Operating Temperature</b>					
0°C to 45°C	√	√	0°C to 40°C	√	√
-10°C to 60°C	-	-	-	-	-
-40°C to 75°C	-	-	-	-	-
<b>Network Redundancy</b>					
α-Ring / α-Chain	-	-	-	-	-
STP / RSTP / MSTP	-	-	-	-	-
<b>Network Management &amp; Control</b>					
			System, IP Configuration, VLAN, QoS, Web Management		
<b>Regulatory Approvals</b>					
CE / FCC	√	√	√	√	√
UL508	-	-	-	-	-
ISA12.12.01 / UL1604	-	-	-	-	-
IEC61850-3 / IEEE1613	-	-	-	-	-
EN50121-4	-	-	-	-	-
UL60950	-	-	-	-	√

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# Connection Guide / Ethernet Switches



<b>Commercial Unmanaged &gt;&gt;</b>				
Model Name	EX17162A	EX17016A	EX17908A	EX17082A
<b>Interface</b>				
Max. 10/100 BASE-TX	16	16	-	8
Max. 10/100/1000 BASE-T	2	-	8	2
Max. 100 BASE-FX	-	-	-	-
Max. 100 BASE-SFP	-	-	-	-
Max. 1000 BASE - SX/LX/BX	-	-	-	-
Max. 1000 BASE - SFP	2 (Combo)	-	-	-
PoE Ports	16 (15.4W)	16 (15.4W)	8 (30W)	8 (30W)
PoE Power Budget	246.4W	246.4W	240W	240W
RS-232 Console Port	-	-	-	-
Alarm Contact	-	-	-	-
<b>Performance</b>				
MAC Address Table Size	4096	4096	8192	4096
Packet Buffer Memory (bits)	2.75M	1.5M	1M	2.75M
<b>Mechanical</b>				
Casing	metal	metal	metal	metal
Installation*	R	R	Desktop	R
Dimensions (mm) (W x D x H)	440 x 330 x 44	440 x 220 x 44	266 x 160 x 44	440 x 220 x 44
<b>Power Input</b>				
No. of Power Inputs	1	1	1	1
110 - 240VAC	√	√	√	√
Terminal Block	-	-	-	-
DC Jack	-	-	-	-
AC to DC Adapter	-	-	-	-
<b>Operating Temperature</b>				
0°C to 45°C	√	√	0°C to 40°C	√
-10°C to 60°C	-	-	-	-
-40°C to 75°C	-	-	-	-
<b>Network Redundancy</b>				
α-Ring / α-Chain	-	-	-	-
STP / RSTP / MSTP	-	-	-	-
<b>Network Management &amp; Control</b>				
-				
<b>Regulatory Approvals</b>				
CE / FCC	√	√	√	√
UL508	-	-	-	-
ISA12.12.01 / UL1604	-	-	-	-
IEC61850-3 / IEEE1613	-	-	-	-
EN50121-4	-	-	-	-
UL60950	√	√	-	-

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# Connection Guide / Ethernet Switches

PoE



<b>Commercial Unmanaged &gt;&gt;</b>				
Model Name	EX17008A	EX16900	EX16916	EX16926
<b>Interface</b>				
Max. 10/100 BASE-TX	8	-	-	-
Max. 10/100/1000 BASE-T	-	5 / 8	16	24
Max. 100 BASE-FX	-	-	-	-
Max. 100 BASE-SFP	-	-	-	-
Max. 1000 BASE - SX/LX/BX	-	1	-	-
Max. 1000 BASE - SFP	-	1	-	2
PoE Ports	8 (15.4W)	-	-	-
PoE Power Budget	123.2W	-	-	-
RS-232 Console Port	-	-	-	-
Alarm Contact	-	-	-	-
<b>Performance</b>				
MAC Address Table Size	1024	2048 / 4096	8K	4K
Packet Buffer Memory (bits)	512K	1M / 192K	256K	4.1M
Jumbo Frame (bytes)	-	9K / 9720	9K	10K
<b>Mechanical</b>				
Casing	metal	metal	metal	metal
Installation*	Desktop	Desktop	R, W	R
Dimensions (mm) (W x D x H)	266 x 160 x 44	160 x 80.5 x 28	216 x 133 x 42	441 x 131 x 44
<b>Power Input</b>				
No. of Power Inputs	1	1	1	1
110 - 240VAC	√	-	√	√
Terminal Block	-	-	-	-
DC Jack	-	5VDC	-	-
AC to DC Adapter	-	√	-	-
<b>Operating Temperature</b>				
0°C to 45°C	√	√	0°C to 50°C	0°C to 50°C
-10°C to 60°C	-	-	-	-
-40°C to 75°C	-	-	-	-
<b>Network Redundancy</b>				
α-Ring / α-Chain	-	-	-	-
STP / RSTP / MSTP	-	-	-	-
<b>Network Management &amp; Control</b>				
-				
<b>Regulatory Approvals</b>				
CE / FCC	√	√	√	√
UL508	-	-	-	-
ISA12.12.01 / UL1604	-	-	-	-
IEC61850-3 / IEEE1613	-	-	-	-
EN50121-4	-	-	-	-
UL60950	√	√	-	-

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# Connection Guide / Media Converters



<b>Gigabit &gt;&gt;</b>					
Model Name	EL9100	EL9000	EL9020	EL2242 <small>NEW</small>	EL2321
<b>Interface</b>					
Max. 100 BASE-T	-	-	-	-	-
Max. 10/100 BASE-TX	-	-	-	-	-
Max. 1000 BASE-T	-	1	-	-	-
Max. 10/100/1000 BASE-T	1	-	1	1	1
Max. 100 BASE-FX/BX WDM	-	-	-	-	1
Max. 100 BASE-SFP	-	-	-	1	-
Max. 1000 BASE-SX/LX/BX	1	1	-	-	1
Max. 1000 BASE-SFP	-	-	1	1	-
Max. PoE Ports	-	-	-	PSE (30W)	-
Web Management	-	-	-	-	✓
Alarm Contact	✓	✓	✓	✓	-
<b>Mode of Operations</b>					
Auto-negotiation, Auto-MDI/MDI-X	✓	✓	✓	✓	✓
Flow Control	✓	-	✓	✓	✓
Store & Forward	✓	-	✓	-	✓
Link Fault Pass Through	✓	✓	✓	✓	✓
<b>Mechanical</b>					
Casing	aluminum	aluminum	aluminum	aluminum	aluminum
Installation*	D, P, R	D, P, R	D, P, R	D	C, W
Dimensions (mm) (W x D x H)	50 x 110 x 135	50 x 110 x 135	50 x 110 x 135	42 x 90 x 100	80.3 x 109.2 x 23.8
<b>Power Input</b>					
No. of Power Inputs	3	2/1	3	2	1
Terminal Block	12 - 48VDC	12 - 48VDC	12 - 48VDC	48 - 57VDC	-
DC Jack	12VDC	12VDC	12VDC	-	12VDC
AC to DC Adapter	-	-	-	-	✓
<b>Operating Temperature</b>					
0°C to 50°C	-	-	-	-	✓
-10°C to 60°C	-	-	-	-	-
-40°C to 75°C	✓	✓	✓	✓	-
<b>Regulatory Approvals</b>					
CE / FCC	✓	✓	✓	✓	✓
VCCI	✓	✓	✓	✓	✓
UL508	✓	-	✓	-	-
ISA12.12.01 / UL1604	-	✓	-	-	-
EN50121-4	-	-	-	-	-
UL/cUL 60950-1	-	✓	-	✓	-

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# Connection Guide / Media Converters



<b>Gigabit &gt;&gt;</b>						
Model Name	EL2211	EL2315	EM1100 EM2100	EM1000S EM2000S	EM1000 EM2000	EM1020
<b>Interface</b>						
Max. 100 BASE-T	-	-	-	-	-	-
Max. 10/100 BASE-TX	-	-	-	-	-	-
Max. 1000 BASE-T	-	-	-	-	1	1
Max. 10/100/1000 BASE-T	1	1	1	-	-	-
Max. 100 BASE-FX/BX WDM	-	-	-	-	-	-
Max. 100 BASE-SFP	-	1	-	-	-	-
Max. 1000 BASE-SX/LX/BX	1	-	1	2	1	-
Max. 1000 BASE-SFP	-	1	-	-	-	1
Max. PoE Ports	-	-	-	-	-	-
Web Management	-	-	-	-	-	-
Alarm Contact	-	-	-	-	-	-
<b>Mode of Operations</b>						
Auto-negotiation, Auto-MDI/MDI-X	√	√	√	-	√	√
Flow Control	√	√	√	-	-	-
Store & Forward	√	√	√	-	-	-
Link Fault Pass Through	√	√	-	-	√	√
<b>Mechanical</b>						
Casing	aluminum	aluminum	aluminum	aluminum	aluminum	aluminum
Installation*	C, W	C, W	C, W	C, W	C, W	C, W
Dimensions (mm) (W x D x H)	80.3 x 109.2 x 23.8	80.3 x 109.2 x 23.8	80.3 x 109.2 x 23.8	80.3 x 109.2 x 23.8	80.3 x 109.2 x 23.8	80.3 x 109.2 x 23.8
<b>Power Input</b>						
No. of Power Inputs	1	1	1	1	1	1
Terminal Block	-	-	-	-	-	-
DC Jack	12VDC	12VDC	12VDC	12VDC	12VDC	12VDC
AC to DC Adapter	√	√	√	√	√	√
<b>Operating Temperature</b>						
0°C to 45°C	√	√	√	√	√	√
-10°C to 60°C	-	-	-	-	-	-
-40°C to 75°C	-	-	-	-	-	-
<b>Regulatory Approvals</b>						
CE / FCC	√	√	√	√	√	√
VCCI	√	√	√	√	√	√
UL508	-	-	-	-	-	-
ISA12.12.01 / UL1604	-	-	-	-	-	-
EN50121-4	-	-	-	-	-	-
UL/cUL 60950-1	-	-	-	-	-	-

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# Connection Guide / Media Converters

ISA 12.12.01



<b>Fast Ethernet &gt;&gt;</b>		
Model Name	EL900	EL950 <small>NEW</small>
<b>Interface</b>		
Max. 100 BASE-T	-	-
Max. 10/100 BASE-TX	1	1
Max. 1000 BASE-T	-	-
Max. 10/100/1000 BASE-T	-	-
Max. 100 BASE-FX/BX WDM	1	1
Max. 100 BASE-SFP	-	-
Max. 1000 BASE-SX/LX/BX	-	-
Max. 1000 BASE-SFP	-	-
Max. PoE Ports	-	-
Web Management	-	✓
Alarm Contact	✓	✓
<b>Mode of Operations</b>		
Auto-negotiation, Auto-MDI/MDI-X	✓	✓
Flow Control	✓	✓
Store & Forward	✓	✓
Link Fault Pass Through	✓	✓
<b>Mechanical</b>		
Casing	aluminum	aluminum
Installation*	D, P, R	D
Dimensions (mm) (W x D x H)	50 x 110 x 135	42 x 90 x 100
<b>Power Input</b>		
No. of Power Inputs	2 / 1	3
Terminal Block	10 - 48VDC	12 - 48VDC
DC Jack	12VDC	12VDC
AC to DC Adapter	-	-
<b>Operating Temperature</b>		
0°C to 45°C	-	-
-10°C to 60°C	-	-
-40°C to 75°C	✓	✓
<b>Regulatory Approvals</b>		
CE / FCC	✓	✓
VCCI	✓	✓
UL508	-	-
ISA12.12.01 / UL1604	✓	-
IEC61850-3	-	-
EN50121-4	-	-
UL/cUL 60950-1	✓	✓

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# Connection Guide / Media Converters



<b>Fast Ethernet &gt;&gt;</b>			
Model Name	EL1032T	EL1141	EX42011
<b>Interface</b>			
Max. 100 BASE-T	-	-	-
Max. 10/100 BASE-TX	1	1	1
Max. 1000 BASE-T	-	-	-
Max. 10/100/1000 BASE-T	-	-	-
Max. 100 BASE-FX/BX WDM	1	1	1
Max. 100 BASE-SFP	-	-	-
Max. 1000 BASE-SX/LX/BX	-	-	-
Max. 1000 BASE-SFP	-	-	-
Max. PoE Ports	PSE (30W)	-	-
Web Management	-	-	-
Alarm Contact	-	√	-
<b>Mode of Operations</b>			
Auto-negotiation, Auto-MDI/MDI-X	√	√	√
Flow Control	√	√	√
Store & Forward	√	√	√
Link Fault Pass Through	√	√	-
<b>Mechanical</b>			
Casing	aluminum	aluminum	plastic
Installation*	D, P	D, P, R	D
Dimensions (mm) (W x D x H)	70 x 110 x 30	50 x 110 x 135	26 x 110 x 70
<b>Power Input</b>			
No. of Power Inputs	2	3	1
Terminal Block	48 - 57VDC	12 - 48VDC	12 - 48VDC
DC Jack	48VDC	12VDC	12VDC
AC to DC Adapter	-	-	-
<b>Operating Temperature</b>			
0°C to 45°C	-	-	-
-10°C to 60°C	√	-	√
-40°C to 75°C	-	√	-
<b>Regulatory Approvals</b>			
CE / FCC	√	√	√
VCCI	√	√	√
UL508	-	√	-
ISA12.12.01 / UL1604	-	-	-
IEC61850-3	-	√	-
EN50121-4	-	√	-
UL/cUL 60950-1	-	-	√

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# Connection Guide / Media Converters



<b>Fast Ethernet &gt;&gt;</b>					
Model Name	EL200	EL100	EM120	EL50	EL50 (AC)
<b>Interface</b>					
Max. 100 BASE-T	1	1	-	-	-
Max. 10/100 BASE-TX	1	1	-	1	1
Max. 1000 BASE-T	-	-	-	-	-
Max. 10/100/1000 BASE-T	-	-	-	-	-
Max. 100 BASE-FX/BX WDM	1	1	2	1	1
Max. 100 BASE-SFP	-	-	-	-	-
Max. 1000 BASE-SX/LX/BX	-	-	-	-	-
Max. 1000 BASE-SFP	-	-	-	-	-
Max. PoE Ports	-	-	-	-	-
Web Management	-	-	-	-	-
Alarm Contact	-	-	-	-	-
<b>Mode of Operations</b>					
Auto-negotiation, Auto-MDI/MDI-X	√	√	-	√	√
Flow Control	√	√	-	√	√
Store & Forward	√	√	-	√	√
Link Fault Pass Through	√	√	-	-	-
<b>Mechanical</b>					
Casing	aluminum	aluminum	aluminum	metal	metal
Installation*	C, W	C, W	C, W	W	W
Dimensions (mm) (W x D x H)	80.3 x 109.2 x 23.8	80.3 x 109.2 x 23.8	80.3 x 109.2 x 23.8	54.2 x 80.3 x 21.9	54.2 x 80.3 x 21.9
<b>Power Input</b>					
No. of Power Inputs	1	1	1	1	1
Terminal Block	-	-	-	-	24VAC
DC Jack	12VDC	12VDC	12VDC	12VDC	-
AC to DC Adapter	√	√	√	√	-
<b>Operating Temperature</b>					
0°C to 45°C	√	√	√	√	√
-10°C to 60°C	-	-	-	-	-
-40°C to 75°C	-	-	-	-	-
<b>Regulatory Approvals</b>					
CE / FCC	√	√	√	√	√
VCCI	√	√	√	√	√
UL508	-	-	-	-	-
ISA12.12.01 / UL1604	-	-	-	-	-
EN50121-4	-	-	-	-	-
UL/cUL 60950-1	√	√	-	-	-

\* C: Chassis, D: DIN-Rail Mounting, P: Panel Mounting, R: Rack Mounting, W: Wall Mounting

# Connection Guide / Media Converters



<b>Multiple Channel &gt;&gt;</b>			
Model Name	EMC1600	EMC400	EMC1200R
<b>Interface</b>			
Max. 100 BASE-T	16	4	12
Max. 10/100 BASE-TX	16	4	12
Max. 1000 BASE-T	16	4	12
Max. 10/100/1000 BASE-T	16	4	12
Max. 100 BASE-FX/BX WDM	32	8	24
Max. 100 BASE-SFP	16	4	12
Max. 1000 BASE-SX/LX/BX	32	8	24
Max. 1000 BASE-SFP	16	4	12
Max. PoE Ports	-	-	-
Web Management	-	-	-
Alarm Contact	-	-	-
<b>Mode of Operations</b>			
Auto-negotiation, Auto-MDI/MDI-X	√	√	√
Flow Control	√	√	√
Store & Forward	√	√	√
Link Fault Pass Through	√	√	√
<b>Mechanical</b>			
Casing	metal	metal	metal
Installation*	R	D	R
Dimensions (mm) (W x D x H)	440 x 276 x 90	130 x 164 x 92	440 x 243 x 45
<b>Power Input</b>			
No. of Power Inputs	2	2	2
100 - 240VAC	√	-	√
Terminal Block	±48VDC	12VDC	±48VDC
DC Jack	-	-	-
AC to DC Adapter	-	-	-
<b>Operating Temperature</b>			
0°C to 45°C	√	√	√
-10°C to 60°C	-	-	-
-40°C to 75°C	-	-	-
<b>Regulatory Approvals</b>			
CE / FCC	√	√	√
VCCI	√	√	-
UL508	-	-	-
ISA12.12.01 / UL1604	-	-	-
EN50121-4	-	-	-
UL/cUL 60950-1	√	-	-

\* C: Chassis, D: DIN-Rail Mounting, P: Panel Mounting, R: Rack Mounting, W: Wall Mounting

# Connection Guide / Ethernet Extenders



Power over Link >>			
Model Name	ED3638	ED3538	ED3238
<b>Interface</b>			
10/100 BASE-TX	1	1	1
Max. PoE Ports	1 (30W)	1 (30W)	1 (15.4W)
<b>Extension Interface</b>			
RJ-11	-	1	-
RJ-48	-	-	-
Terminal Block	-	1	-
BNC	1	-	1
<b>Mode of Operations</b>			
Auto-negotiation, Auto-MDI/MDI-X	√	√	√
Store & Forward	√	√	√
<b>Mechanical</b>			
Casing	aluminum	aluminum	aluminum
Installation*	D	D	C
Dimensions (mm) (W x D x H)	50 x 110 x 135	50 x 110 x 135	46 x 98 x 25
<b>Power Input</b>			
No. of Power Inputs	3	3	1
Terminal Block	46 - 57VDC	46 - 57VDC	-
DC Jack	48VDC	48VDC	57VDC
AC to DC Adapter	-	-	√
<b>Operating Temperature</b>			
-10°C to 50°C	-	-	√
-40°C to 75°C	√	√	-
<b>Management Function</b>			
RS-232 console Port	-	-	-
Web Management	-	-	-
α-Ring / α-Chain	-	-	-
Layer 2 Features**	-	-	-
<b>Regulatory Approvals</b>			
CE / FCC	√	√	√
VCCI	√	√	√
UL508	-	-	-
ISA12.12.01 / UL1604	-	-	-
IEC61850-3 / IEEE1613	-	-	-
UL/cUL 60950-1	√	√	√
EN50121-4	-	-	-
EN50155	-	-	-

\* C: Chassis, D: DIN-Rail Mounting, P: Panel Mounting, R: Rack Mounting, W: Wall Mounting



# Connection Guide / Ethernet Extenders

2016 Q1



<b>Copper &gt;&gt;</b>	
Model Name	ED3575 <small>NEW</small>
<b>Interface</b>	
10/100 BASE-TX	6
Max. 10/100/1000BASE-T	2
Max. 100/1000BASE-SFP	2
<b>Extension Interface</b>	
RJ-11	2
RJ-48	-
Terminal Block	2
BNC	-
<b>Mode of Operations</b>	
Auto-negotiation, Auto-MDI/MDI-X	✓
Store & Forward	✓
<b>Mechanical</b>	
Casing	aluminum
Installation*	D
Dimensions (mm) (W x D x H)	60 x 125 x 145
<b>Power Input</b>	
No. of Power Inputs	2
Terminal Block	12 - 48VDC
DC Jack	-
AC to DC Adapter	-
<b>Operating Temperature</b>	
-10°C to 60°C	-
-40°C to 70°C	-
-40°C to 75°C	✓
<b>Management Function</b>	
RS-232 console Port	✓
Web Management	✓
α-Ring / α-Chain	✓
Layer 2 Features**	✓
<b>Regulatory Approvals</b>	
CE / FCC	✓
VCCI	✓
UL508	-
ISA12.12.01 / UL1604	-
IEC61850-3 / IEEE1613	-
UL/cUL 60950-1	✓
EN50121-4	-
EN50155	-

\* C: Chassis, D: DIN-Rail Mounting, P: Panel Mounting, R: Rack Mounting, W: Wall Mounting

# Connection Guide / Ethernet Extenders



<b>Copper &gt;&gt;</b>		
Model Name	ED3541 <small>NEW</small>	ED3501 <small>NEW</small>
<b>Interface</b>		
10/100 BASE-TX	1	1
Max. PoE Ports	-	-
<b>Extension Interface</b>		
RJ-11	1	1
RJ-48	-	-
Terminal Block	1	1
BNC	-	-
<b>Mode of Operations</b>		
Auto-negotiation, Auto-MDI/MDI-X	√	√
Store & Forward	√	√
<b>Mechanical</b>		
Casing	aluminum	aluminum
Installation*	D	C, D, W
Dimensions (mm) (W x D x H)	42 x 190 x 100	80.3 x 109.2 x 23.8
<b>Power Input</b>		
No. of Power Inputs	2	1
Terminal Block	12 - 48VDC	-
DC Jack	-	12VDC
AC to DC Adapter	-	√
<b>Operating Temperature</b>		
-10°C to 60°C	-	√
-40°C to 70°C	-	-
-40°C to 75°C	√	-
<b>Management Function</b>		
RS-232 console Port	-	-
Web Management	-	-
α-Ring / α-Chain	-	-
Layer 2 Features**	-	-
<b>Regulatory Approvals</b>		
CE / FCC	√	√
VCCI	√	√
UL508	-	-
ISA12.12.01 / UL1604	√	-
IEC61850-3 / IEEE1613	-	-
UL/cUL 60950-1	√	√
EN50121-4	-	-
EN50155	-	-

\* C: Chassis, D: DIN-Rail Mounting, P: Panel Mounting, R: Rack Mounting, W: Wall Mounting

# Connection Guide / Ethernet Extenders

EN50155



EN50155



<b>Coaxial &gt;&gt;</b>			
Model Name	ED3341	ED3344	ED3331
<b>Interface</b>			
10/100 BASE-TX	1	1 (M12)	1
Max. PoE Ports	-	-	-
<b>Extension Interface</b>			
RJ-11	-	-	-
RJ-48	-	-	-
Terminal Block	-	-	-
BNC	1	1	1
<b>Mode of Operations</b>			
Auto-negotiation, Auto-MDI/MDI-X	√	√	√
Store & Forward	√	√	√
<b>Mechanical</b>			
Casing	aluminum	aluminum	aluminum
Installation*	D, P, R	D, P, R	C, D, W
Dimensions (mm) (W x D x H)	50 x 110 x 135	50 x 110 x 135	80.3 x 109.2 x 23.8
<b>Power Input</b>			
No. of Power Inputs	3	3	1
Terminal Block	12 - 48VDC	12 - 48VDC	-
DC Jack	12VDC	12 - 48VDC	12VDC
AC to DC Adapter	-	-	√
<b>Operating Temperature</b>			
-10°C to 60°C	-	-	√
-40°C to 70°C	√	-	-
-40°C to 75°C	-	√	-
<b>Management Function</b>			
RS-232 console Port	-	-	-
Web Management	-	-	-
α-Ring / α-Chain	-	-	-
Layer 2 Features**	-	-	-
<b>Regulatory Approvals</b>			
CE / FCC	√	√	√
VCCI	√	√	√
UL508	√	√	√
ISA12.12.01 / UL1604	-	-	-
IEC61850-3 / IEEE1613	-	-	-
UL/cUL 60950-1	-	-	-
EN50121-4	√	√	-
EN50155	√	√	-

\* C: Chassis, D: DIN-Rail Mounting, P: Panel Mounting, R: Rack Mounting, W: Wall Mounting

# Connection Guide / Accessories - Network Interface Cards



<b>Network Interface Cards &gt;&gt;</b>				
Model Name	GE3000	GE3100	EN301	EN400
<b>Ethernet Interface</b>				
Max. 10/100 BASE-TX	-	-	-	-
Max. 100 BASE-FX	-	-	1	1
Max. 100BASE SFP	-	-	-	1
Max. 1000 BASE-T	1	1	-	-
Max. 1000 BASE-SX/LX	1	1	-	-
Max. 1000BASE SFP	1	1	-	-
<b>Bus Interface</b>				
PCI Express	√	√	-	√
PCI	-	-	√	-
<b>Mode of Operations</b>				
Auto-negotiation, Auto-MDI/MDI-X	√	√	-	-
Flow Control	√	√	√	√
Store & Forward	-	-	-	-
<b>Mechanical</b>				
Dimensions (mm) (L x W)	125 x 121	125 x 121	133 x 117.5 / 133 x 80	80 x 119.2 / 117.5 x 119.2
<b>Management Function</b>				
ACPI*	√	√	√	√
Wake-on -LAN remote wake-up	√	√	-	√
IEEE802.1Q VLAN	√	√	√	√
IEEE802.1P Layer 2 Priority Tagging	√	√	√	√
NDIS5 Checksum Offload	√	√	√	√
RFC1157 SNMP v1	√	√	-	-
Preboot Execution Environment	√	√	-	-
Cable Diagnostic Utility	√ (Only TX model)	√ (Only TX model)	-	-
Jumbo Frame	√ (Only TX model)	√ (Only TX model)	-	-
<b>Operating Temperature</b>				
0°C to 45°C	√	√	√	√
<b>Driver Supports</b>				
Windows	Windows 2000 / XP / 2003 / Vista (32bit/64bit), Windows 7 (32bit/64bit)	Windows Vista, Windows 2003, Windows XP, Windows 2000, Windows 7/8	Microsoft Windows 95 (including OSR2), Windows 98 (including SE), Windows ME, Windows 2000, Windows XP, Windows Vista (32bit/64bit), Windows NT 4.0, Windows 7 (32bit/64bit)	Microsoft Windows 98, Windows ME, Windows XP, Windows 2000, Windows 2003, Windows 2008, Windows Vista, and Windows 7
Novell	Netware 4.2 - 4.6	-	Novell Netware 3.11, 3.12, 4.x, 5.x, 6.0, Client 32	Novell server driver (Support OS 6.x, 5.x), client for DOS (ODI driver)
Unix	Linux 2.4/2.6	Linux 2.4/2.6/3.x	Linux Kernel 2.2.x/2.4.x/2.6.x, SCO UnixWare 7.x/Open Unix 8, SCO UNIX 5.0	SCO Unix 5.0.6/5.0.7, SCO OpenServer 6, UnixWare 7.1.x and Linux kernel 2.6.x and 2.4.x (Support x86 and x64)
Others	Mac OS, 10.4, 10.5, 10.6 and 10.7 (Intel-based)	Mac OS, 10.4, 10.5, 10.6 and 10.7 (Intel-based)	LAN Manager, LANtastic, PC-NFS, FreeBSD 3.2, 4.0, 4.11, 4.2, 5.x	MacOS 10.4/10.5 on Intel-based Mac computer, 10.6 on Intel-based Mac computer, FreeBSD 7.x/8.0
<b>Regulatory Approvals</b>				
CE / FCC	Class B	Class B	Class B	Class B

\* Advanced Configuration & Power Interface

# Connection Guide / Accessories - Surge Protectors



<b>Surge Protector &gt;&gt;</b>		
Model Name	PD1041	PD3041 <small>NEW</small>
<b>Interface</b>		
Max. Continuous Operating Voltage U <sub>c</sub>	≤ 3.3VDC	≤185VDC
Max. Continuous Operating Voltage U <sub>c</sub> , PoE	≤ 3.3VDC (± 60VDC / PoE+)	-
Nominal Discharge Surge Current I <sub>n</sub> (8/20) μs (Core-Core)	100A	≤5KA
Nominal Discharge Surge Current I <sub>n</sub> (8/20) μs (Core-Earth)	2KA (per signal pair)	≤5KA
Total Surge Current (8/20) μs	10KA	10KA
Nominal Pulse Current I <sub>an</sub> (Core-Core)	≤ 40A, (10/700) μs	≤100A, (10/1000) μs
Nominal Pulse Current I <sub>an</sub> ((Core-Earth)	≤160A, (10/700) μs	≤100A, (10/1000) μs
Connector input/output	RJ45 / RJ45	RJ11 / RJ11 Terminal Block / Terminal Block
<b>Mechanical</b>		
Casing	aluminum	aluminum
Installation*	D	D
Dimensions (mm) (W x D x H)	30 x 63 x 100	30 x 63 x 100
<b>Operating Temperature</b>		
-40°C to 75°C	√	√
<b>Regulatory Approvals</b>		
CE / FCC / VCCI	√	√
UL497B	√	√
EN / IEC61643-21 (pending)	√	√

\* D: DIN-Rail Mounting, P: Panel Mounting, R: Rack Mounting, W: Wall Mounting

# Connection Guide / Accessories - Industrial Power Supplies



<b>Industrial Power Supplies &gt;&gt;</b>							
Model Name	DD-85-48	DD-85-55	DR-30-24	DR-30-12	DR-60-24	DR-75-24	DR-120-24
<b>Output</b>							
DC Voltage	48VDC	55VDC	24VDC	12VDC	24VDC	24VDC	24VDC
Current Range	0 - 1.78A	0 - 1.55A	0 - 1.5A	0 - 2A	0 - 2.5A	3.2A	0 - 5A
Rated Power	85W	85W	36W	24W	60W	76.8W	120W
<b>Input</b>							
12 - 36VDC	√	√	-	-	-	-	-
85 - 264VAC / 120 - 370VDC	-	-	√	√	√	√	-
88 - 132VAC / 176 - 264VDC	-	-	-	-	-	-	√
90 - 264VAC	-	-	-	-	-	-	-
<b>Protection</b>							
Over Voltage Protection	58V	60V	27.6 - 32.4V	13.8 - 16.2V	27.6 - 32.4V	29 - 34V	29 - 33V
Overload Protection	110 - 160%	110 - 180%	105 - 160%	105 - 160%	105 - 160%	105 - 150%	105 - 150%
Constant Current Limiting	-	-	√	√	√	-	√
<b>Mechanical</b>							
Casing	aluminum	aluminum	plastic	plastic	plastic	aluminum	aluminum
Installation*	D, P	D, P	D	D	D	D	D
Dimensions (mm) (W x D x H)	50 x 148 x 165	50 x 148 x 165	78 x 56 x 93	78 x 56 x 93	78 x 56 x 93	55.5 x 100 x 125.2	65.5 x 100 x 125.2
<b>Operating Temperature</b>							
-10°C to 60°C	√	√	-	-	-	√	√
-20°C to 60°C	-	-	√	√	√	-	-
-20°C to 75°C	-	-	-	-	-	-	-
-40°C to 75°C	-	-	-	-	-	-	-
<b>Regulatory Approvals</b>							
CE / FCC	√	√	√	√	√	√	√
UL60950-1	√	√	√	√	√	-	-
UL508	-	-	-	-	-	√	√
E Mark	√	-	-	-	-	-	-

\* D: DIN-Rail Mounting, P: Panel Mounting, R: Rack Mounting, W: Wall Mounting

# Connection Guide / Accessories - Industrial Power Supplies



<b>Industrial Power Supplies &gt;&gt;</b>						
Model Name	DR-75-48	DR-120-48	SDR-120-48	SDR-240-48	SDR-480-48	MDR-40-48
<b>Output</b>						
DC Voltage	48 - 53VDC	48 - 53VDC	48 - 55VDC	48 - 55VDC	48 - 55VDC	48 - 56VDC
Current Range	0 - 1.6A	0 - 2.5A	2.5A	5A	10A	0 - 0.83A
Rated Power	76.8W	120W	120W	240W	480W	39.8W
<b>Input</b>						
12 - 36VDC	-	-	-	-	-	-
85 - 264VAC / 120 - 370VDC	√	-	-	-	-	√
88 - 264VAC / 120 - 370VDC	-	-	√	√	√	-
88 - 132VAC / 176 - 264VDC	-	√	-	-	-	-
<b>Protection</b>						
Over Voltage Protection	58 - 65V	58 - 65V	56 - 65V	56 - 65V	56 - 65V	57.6 - 64.8V
Overload Protection	105 - 150%	105 - 150%	110 - 150%	110 - 150%	110 - 150%	105-150%
Constant Current Limiting	√	√	√	√	√	√
<b>Mechanical</b>						
Casing	aluminum	aluminum	aluminum	aluminum	aluminum	plastic
Installation*	D	D	D	D	D	D
Dimensions (mm) (W x D x H)	55.5 x 125.2 x 100	65.5 x 125.2 x 100	40 x 125.2 x 113.5	63 x 125.2 x 113.5	85 x 125.2 x 128.5	40 x 100 x 90
<b>Operating Temperature</b>						
-10°C to 60°C	√	√	-	-	-	-
-20°C to 70°C	-	-	-	-	-	√
-25°C to 70°C	-	-	√	√	√	-
-40°C to 75°C	-	-	-	-	-	-
<b>Regulatory Approvals</b>						
CE / FCC	√	√	√	√	√	√
UL60950-1	-	√	-	-	-	√
UL508	√	√	√	√	√	√
E Mark	-	-	-	-	-	-

\* D: DIN-Rail Mounting, P: Panel Mounting, R: Rack Mounting, W: Wall Mounting

# Connection Guide / Accessories - Industrial Power Adapters



Power Adapters >>		
Model Name	GS-120A-48	41-136042
<b>Output</b>		
DC Voltage	48VDC	12VDC
Current Range	0 - 2.5A	0 - 3A
Rated Power	120W	36W
<b>Input</b>		
90 - 264VDC	√	√
<b>Mechanical</b>		
Casing	plastic	plastic
Installation*	-	-
<b>Operating Temperature</b>		
0°C to 55°C	-	-
-40°C to 75°C	√	√
<b>Output Connector</b>		
DC Jack with Latch	√	-
Open Wire for Terminal Block	-	√
DC Plug	-	-



Power Adapters >>			
Model Name	41-136043	41-136044	41-136046
<b>Output</b>			
DC Voltage	12VDC	12VDC	12VDC
Current Range	0 - 3A	0 - 3A	0 - 3A
Rated Power	36W	36W	36W
<b>Input</b>			
90 - 264VDC	√	√	√
<b>Mechanical</b>			
Casing	aluminum	aluminum	aluminum
Installation*	W	W	W
<b>Operating Temperature</b>			
0°C to 55°C	-	-	-
-40°C to 75°C	√	√	√
<b>Output Connector</b>			
DC Jack with Latch	-	√	-
Open Wire for Terminal Block	-	-	√
DC Plug	√	-	-

\* D: DIN-Rail Mounting, P: Panel Mounting, R: Rack Mounting, W: Wall Mounting



# Connection Guide / Accessories - TransRack

## ✓ Value

- › Mount DIN-Rail devices inside a standard 19" rack or cabinet
- › Unique depth adjustment feature to fit any size of equipment
- › One standard 35mm (1.38") DIN-Rail track included



## Features

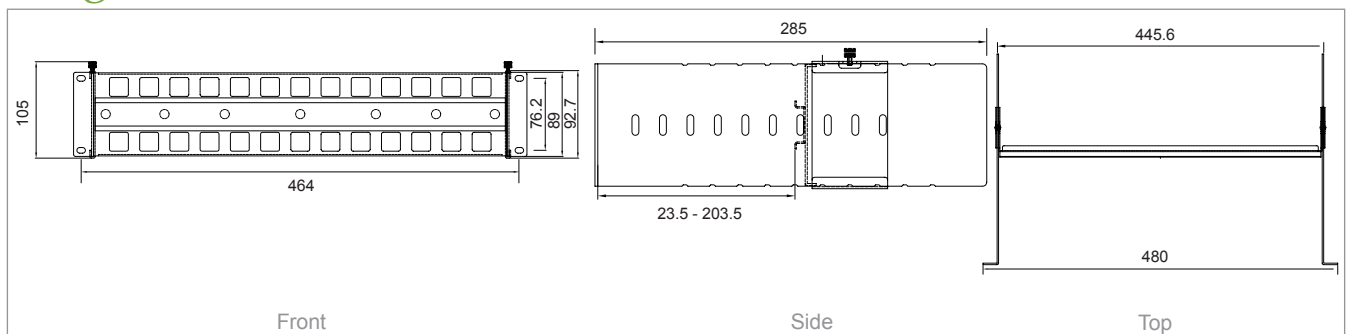
- › Patent-pending design
- › Heavy-duty cold-rolled steel
- › Adjustable in depth from 50mm (2") to 210mm (8.25")
- › Dimensions : 464mm (19") x 105mm (4.13") x 285mm (11.22") (W x H x D)

## Ordering Information

TransRack	KR-DINRAILB
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## Diagrams

Unit: mm



# Connection Guide / Accessories - Mounting Kits

## KR-BKEL900



19" Rack mount kit (Black)  
For EX43000, EL900, EL9000, EL9020, EL9100, EL1141, ED3341, ED3344 and EX94000 series

## KR-BK71000



19" Rack mount kit (Black)  
For EX61000A, EX71000 and ED3575 series

## KR-BK72-400



19" Rack mount kit (Black)  
For EX72000 and EX62000 series

## KR-BK74-400



19" Rack mount kit (Black)  
For EX74000 series

## KR-AE612-400



19" Rack mount kit (Black)  
For EX1616W, EX27000 (Single Power), EX29000 (Single Power), EX49000A, EX75000, EX76000, EX77000 (Single Power), EX87000 (Single Power), EX89000 (Single Power) and EMC1200R series

## KR-BK1600R-410



19" Rack mount kit (Black)  
For EMC1600 series

## KR-BK17



19" Rack mount kit (Black)  
For EX17008, EX17008A, EX17908 and EX17908A series

**KP-BK6212**

Panel mount kit (Black)  
For EX74000, EX72000, EX62000 and DD-85-48 series

**KP-AA96-480**

Panel mount kit  
For EX33000, EX34000, EX35000, EX43000, EX45000, EX46100, EX47000, EX61000A, EX63000, EX70900, EX71000, EX73000, EX73900, EX78000, EX78602, EX78162, EX78900, EX94000, EX95000, EL900, EL9000, EL9020, EL9100, EL1141, ED3341 and ED3344 series

**KD-31003**

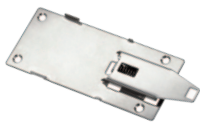
DIN-Rail mount kit  
For ED3501 and ED3331 series  
(Can be mounted using hardware version V3 and above with holes on the bottom cases)

**KD-AA5100**

DIN-Rail mount kit  
For EL1032T and EX42900 series

**KD-AA78000**

Din-Rail mount kit  
For EX38000, EX48000, EX48000A, EX73900, EX78000, EX78162, EX78602, EX78900 and DD-85-48 series

**KD-AA96000**

DIN-Rail mount kit  
For EX33000, EX34000, EX35000, EX43000, EX45000, EX46100, EX47000, EX61000A, EX63000, EX70900, EX71000, EX73000, EX83000, EX94000, EX95000, EL1141, EMC400, EL900, EL9000, EL9100, ED3538, ED3638 and ED3575 series

**KD-AAEL950**

DIN-Rail mount kit  
For EL950 series

**KD-BK1360**

DIN-Rail mount kit  
For 41-136043, 41-136044 and 41-136046 series

# Connection Guide / Accessories - SFP Fiber Transceivers



## Spotlight

- > All SFPs have been tested with the best operating performance on EtherWAN switches
- > The characteristics are performed in accordance with Telcordia Specification GR-468-CORE
- > Single +3.3V Power Supply
- > RoHS Compliant and Lead-free
- > AC/AC Differential Electrical Interface
- > Eye Safety Designed to meet Laser Class 1 compliant with EN60825-1
- > Compliant with Multi-Source Agreement (MSA) Small Form Factor Pluggable (SFP)
- > EMC requirement meets FCC in the United States and CENELEC EN55022 (CISPR 22) in Europe

## Ordering Information

### 100BASE SFP Series\*

Non-Hardened (Operating Temperature : 0°C to 70°C / 32°F to 158°F)

Model Name	Distance	Cable Type	Connector Type	Wavelength	Link Budget **	Optical Output Power	Sensitivity
EXFE-R1S4-05H1	100 m	-	TX	-	-	-	-
EX-0155NSP-MB2L	2 Km	62.5 / 125 μm, MM	Duplex LC	1310 nm	13 dbm	-19 to -14 dBm	-32 dbm
EX-LM38-A3S-TC-N-B3	2 Km	62.5 / 125 μm / 50 / 125 μm, MM	Single LC	TX:1310 nm / RX:1550 nm	18 dBm	-10 to 0 dbm	-28 dbm
EX-LM48-A3S-TC-N-B5	2 Km	62.5 / 125 μm / 50 / 125 μm, MM	Single LC	TX:1550 nm / RX:1310 nm	18 dBm	-10 to 0 dbm	-28 dbm
EX-0155TSP-MB5L	15 Km	9 / 125 μm, SM	Duplex LC	1310 nm	19 dbm	-15 to -8 dBm	-34 dbm
EX-0155TBP-MB5L	20 Km	9 / 125 μm, SM	Single LC	TX:1310 nm / RX:1550 nm	18 dBm	-14 to -8 dBm	-32 dbm
EX-0155TBP-LB5L	20 Km	9 / 125 μm, SM	Single LC	TX:1550 nm / RX:1310 nm	18 dBm	-14 to -8 dBm	-32 dbm
EX-0155TSP-MB6L	40 Km	9 / 125 μm, SM	Duplex LC	1310 nm	30 dBm	-5 to 0 dBm	-35 dbm

**100BASE SFP Series\***

Hardened (Operating Temperature : -40°C to 85°C / -40°F to 185°F)

Model Name	Distance	Cable Type	Connector Type	Wavelength	Link Budget **	Optical Output Power	Sensitivity
EX-0155NSP-MB2L-A	2 Km	62.5 / 125 µm, MM	Duplex LC	1310nm	13 dBm	-19 to -14 dbm	-32 dbm
EX-LM38-A3S-TI-N-B3	2 Km	62.5 / 25 µm / 50 / 125 µm, MM	Single LC	TX: 1310 nm / RX:1550 nm	18 dbm	-10 to 0 dbm	-28 dbm
EX-LM48-A3S-TI-N-B5	2 Km	62.5 / 125 µm / 50 / 125 µm, MM	Single LC	TX: 1550 nm / RX:1310 nm	18 dbm	-10 to 0 dbm	-28 dbm
EX-0155TSP-MB5L-A	15 Km	9 / 125 µm, SM	Duplex LC	1310nm	19 dbm	-15 to -8 dbm	-34 dbm
EX-0155TBP-MB5L-A	20 Km	9 / 125 µm, SM	Single LC	TX: 1310 nm / RX:1550 nm	18 dBm	-14 to -8 dbm	-32 dbm
EX-0155TBP-LB5L-A	20 Km	9 / 125 µm, SM	Single LC	TX: 1550 nm / RX:1310 nm	18 dBm	-14 to -8 dbm	-32 dbm
EX-0155TSP-MB6L-A	40 Km	9 / 125 µm, SM	Duplex LC	1310nm	29 dbm	-5 to 0 dbm	-34 dbm
EX-0155TBP-MB6L-A	40 Km	9 / 125 µm, SM	Single LC	TX: 1310 nm / RX:1550 nm	26 dbm	-8 to -3 dbm	-34 dbm
EX-0155TBP-KB6L-A	40 Km	9 / 125 µm, SM	Single LC	TX: 1550 nm / RX:1310 nm	26 dbm	-8 to -3 dbm	-34 dbm

\* More SFP options upon the request

\*\* Link Budget data is based on pair of the same SFP modules

**Gigabit SFP Series\***

Non-Hardened (Operating Temperature : 0°C to 70°C / 32°F to 158°F)

Model Name	Distance	Cable Type	Connector Type	Wavelength	Link Budget **	Optical Output Power	Sensitivity
EX-1250NSP-SB1L S	275 m / 550 m	62.5 / 125 µm / 50 / 125 µm, MM	Duplex LC	850 nm	7.5 dBm	-9.5 to -4 dBm	-17 dBm
EX-1250TBP-MB1L S	550 m	62.5 / 125 µm / 50/125 µm, MM	Single LC	TX: 1310 nm / RX: 1550 nm	7 dBm	-10 to -4 dBm	-17 dBm
EX-1250TBP-LB1L S	550 m	62.5 / 125 µm / 50 / 125 µm, MM	Single LC	TX: 1550 nm / RX: 1310 nm	7 dBm	-10 to -4 dBm	-17 dBm
EX-1250TSP-MB2L S	2 Km	62.5 / 125 µm, MM	Duplex LC	1310 nm	13.5 dBm	-9.5 to -3 dBm	-23 dBm
EX-1250TSP-MB4L S	10 Km	9 / 125 µm, SM	Duplex LC	1310 nm	11.5 dBm	-9.5 to -3 dBm	-21 dBm
EX-1250TBP-MB4L S	10 Km	9 / 125 µm, SM	Single LC	TX: 1310 nm / RX: 1550 nm	12 dBm	-9 to -3 dBm	-21 dBm
EX-1250TBP-KB4L S	10 Km	9 / 125 µm, SM	Single LC	TX: 1550 nm / RX: 1310 nm	12 dBm	-9 to -3 dBm	-21 dBm
EX-1250TSP-MB5L S	20 Km	9 / 125 µm, SM	Duplex LC	1310 nm	15 dBm	-9 to -3 dBm	-24 dBm
EX-1250TBP-MB5L S	20 Km	9 / 125 µm, SM	Single LC	TX: 1310 nm / RX: 1550 nm	15 dBm	-8 to -3 dBm	-23 dBm
EX-1250TBP-KB5L S	20 Km	9 / 125 µm, SM	Single LC	TX: 1550 nm / RX: 1310 nm	15 dBm	-8 to -3 dBm	-23 dBm
EX-LS38-C3L-TC-N-EB (DDM)	40 Km	9 / 125 µm, SM	Duplex LC	1310 nm	20 dBm	-3 to +2 dBm	-23 dBm
EX-LS38-C3L-TC-N-CE (DDM)	40 Km	9 / 125 µm, SM	Single LC	TX: 1310 nm / RX: 1550 nm	20 dBm	-3 to +2 dBm	-23 dBm
EX-LS48-C3L-TC-N-CE (DDM)	40 Km	9 / 125 µm, SM	Single LC	TX: 1550 nm / RX: 1310 nm	20 dBm	-3 to +2 dBm	-23 dBm
EX-LS38-C3U-TC-N-CE (DDM)	60 Km	9 / 125 µm, SM	Single LC	TX: 1310 nm / RX: 1550 nm	24 dBm	0 to +5 dBm	-24 dBm
EX-LS48-C3U-TC-N-CE (DDM)	60 Km	9 / 125 µm, SM	Single LC	TX: 1550 nm / RX: 1310 nm	23 dBm	-2 to +4 dBm	-25 dBm
EX-LS48-C3U-TC-N-EB (DDM)	70 Km	9 / 125 µm, SM	Duplex LC	1550 nm	23 dBm	0 to +5 dBm	-23 dBm
EX-LS48-C3U-TC-N51-CE (1510 nm) (DDM)	80 Km	9 / 125 µm, SM	Single LC	TX: 1510 nm / RX: 1570 nm	24 dBm	-2 to +3 dBm	-26 dBm
EX-LS48-C3U-TC-N57-CE (1570 nm) (DDM)	80 Km	9 / 125 µm, SM	Single LC	TX: 1570 nm / RX: 1510 nm	24 dBm	-2 to +3 dBm	-26 dBm

## Gigabit SFP Series\*

Hardened (Operating Temperature : -40°C to 85°C / -40°F to 185°F)

Model Name	Distance	Cable Type	Connector Type	Wavelength	Link Budget **	Optical Output Power	Sensitivity
EXGT-R154-05H3	100 m	TX	TX	-	-	-	-
EX-1250NSP-SB1L-A S	275 m/ 550 m	62.5 / 125 μm/ 50/125 μm, MM	Duplex LC	850 nm	7.5 dBm	-9.5 to -4 dBm	-17 dBm
EX-1250TBP-MB1L-A S	550 m	62.5 / 125 μm/ 50/125 μm, MM	Single LC	TX: 1310 nm / RX: 1550 nm	7 dBm	-10 to -4 dBm	-17 dBm
EX-1250TBP-LB1L-A S	550 m	62.5 / 125 μm/ 50/125 μm, MM	Single LC	TX: 1550 nm / RX: 1310 nm	7 dBm	-10 to -4 dBm	-17 dBm
EX-LM38-C3S-TI-N-CE (DDM)	550 m	62.5 / 125 μm, MM	Single LC	TX: 1310 nm / RX: 1550 nm	8 dBm	-10 to +2 dBm	-18 dBm
EX-LM48-C3S-TI-N-CE (DDM)	550 m	62.5 / 125 μm, MM	Single LC	TX: 1550 nm / RX: 1310 nm	10 dBm	-8 to 0 dBm	-18 dBm
EX-1250TSP-MB2L-A S	2 Km	62.5 / 125 μm, MM	Duplex LC	1310 nm	13.5 dBm	-9.5 to -3 dBm	-23 dBm
EX-1250TSP-MB4L-A S	10 Km	9 / 125 μm, SM	Duplex LC	1310 nm	11.5 dBm	-9.5 to -3 dBm	-21 dBm
EX-1250TBP-MB4L-A S	10 Km	9 / 125 μm, SM	Single LC	TX: 1310 nm / RX: 1550 nm	12 dBm	-9 to -3 dBm	-21 dBm
EX-1250TBP-KB4L-A S	10 Km	9 / 125 μm, SM	Single LC	TX: 1550 nm / RX: 1310 nm	12 dBm	-9 to -3 dBm	-21 dBm
EX-1250TSP-MB5L-A S	20 Km	9 / 125 μm, SM	Duplex LC	1310 nm	15 dBm	-9 to -3 dBm	-24 dBm
EX-1250TBP-MB5L-A S	20 Km	9 / 125 μm, SM	Single LC	TX: 1310 nm / RX: 1550 nm	15 dBm	-8 to -3 dBm	-23 dBm
EX-1250TBP-KB5L-A S	20 Km	9 / 125 μm, SM	Single LC	TX: 1550 nm / RX: 1310 nm	15 dBm	-8 to -3 dBm	-23 dBm
EX-LS38-C3L-TI-N-CE (DDM)	40 Km	9 / 125 μm, SM	Single LC	TX: 1310 nm / RX: 1550 nm	20 dBm	-3 to +2 dBm	-23 dBm
EX-LS48-C3L-TI-N-CE (DDM)	40 Km	9 / 125 μm, SM	Single LC	TX: 1550 nm / RX: 1310 nm	20 dBm	-3 to +2 dBm	-23 dBm
EX-LS38-C3U-TI-N-CE (DDM)	60 Km	9 / 125 μm, SM	Single LC	TX: 1310 nm / RX: 1550 nm	24 dBm	0 to +5 dBm	-24 dBm
EX-LS48-C3U-TI-N-CE (DDM)	60 Km	9 / 125 μm, SM	Single LC	TX: 1550 nm / RX: 1310 nm	23 dBm	-2 to +4 dBm	-25 dBm
EX-LS38-C3L-TI-N-EB (DDM)	40 Km	9 / 125 μm, SM	Duplex LC	1310 nm	20 dBm	-3 to +2 dBm	-23 dBm
EX-LS48-C3U-TI-N-EB (DDM)	70 Km	9 / 125 μm, SM	Duplex LC	1550 nm	23 dBm	0 to +5 dBm	-23 dBm

\* More SFP options upon the request

\*\* Link Budget data is based on pair of the same SFP modules

## 10GBASE SFP Series\*

Non-Hardened (Operating Temperature : 0°C to 70°C / 32°F to 158°F)

Model Name	Distance	Cable Type	Connector Type	Wavelength	Link Budget **	Optical Output Power	Sensitivity
EX-LM28-H3S-TC-N	30 m / 80 m	662.5 / 125 μm / 50 / 125 μm, MM	Duplex LC	850nm	2.8 dBm	-7.1 to -1 dBm	-9.9 dBm
EX-LS38-H3S-TC-N	10 Km	SMF	Duplex LC	1310nm	8.4 dBm	-6 to 0.5 dBm	-14.4 dBm

\* More SFP options upon the request

\*\* Link Budget data is based on pair of the same SFP modules

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