



Connection Guide

Leader in Ethernet to the World

Ethernet Switches

Media Converters

Ethernet Extenders

Serial Device Servers

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 α -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

01 Ethernet Switches

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Connection Guide / Ethernet Switches



| Hardened Managed >> | | | | | |
|---|--|--------------------|--|--|--------------------------|
| Model Name | ER59000 | ER58000 | EX77000 | EX87000 | EX89000 |
| Interface | | | | | |
| Max. 10/100 BASE-TX | 16 (M12) | 8 (M12) | 24 | 24 | 24 |
| Max. 10/100/1000 BASE-T | 2 | 2 (M12) | 4 | 4 | 4 |
| Max. 100 BASE-FX | - | - | 24 | 24 | 18 |
| Max. 100 BASE-SFP | - | - | 24 | 24 | 4 |
| Max. 1000 BASE - SX/LX/BX | 2 (LC) | 2 (LC) | 4 | 4 | 4 |
| Max. 1000 BASE - SFP | - | - | 4 | 4 | 4 |
| PoE Ports | 8 (30W) | 8 (30W) | - | - | - |
| PoE Power Budget | 240W | 120W | - | - | - |
| RS-232 Console Port | √ | √ | √ | √ | √ |
| Alarm Contact | √ | √ | - | - | √ |
| Performance | | | | | |
| MAC Address Table Size | 8192 | 8192 | 8192 | 8192 | 8192 |
| Packet Buffer Memory (bits) | 2M | 2M | 3M | 3M | 3M |
| Mechanical | | | | | |
| Casing | metal | metal | metal | metal | metal |
| Installation* | W | P | R | R | R |
| Dimensions (WxDxH) | 258x117x228 | 288x161.5x64 | Single Power: 442x250x44 Dual Power: 442x375x44 | Single Power: 442x284x44 Dual Power: 442x375x44 | Single Power: 442x343x44 |
| Power Input | | | | | |
| No. of Power Inputs | 2 | 2 | 1 or 2 | 1 or 2 | 1 |
| 110 - 240VAC | - | - | √ | √ | √ |
| Terminal Block | (55VDC) (M23) (PoE) (12 - 48VDC) (M23) (nonPoE) | (24 - 48VDC) (M23) | ±48VDC, 88 - 370VDC | ±48VDC, 88 - 370VDC | ±48VDC, 88 - 370VDC |
| DC Jack | - | - | - | - | - |
| AC to DC Adapter | - | - | - | - | - |
| Operating Temperature | | | | | |
| -10°C to 60°C | - | - | - | - | - |
| -40°C to 75°C | √ | √ | √ | √ | √ |
| Network Redundancy | | | | | |
| α-Ring / α-Chain | √ | √ | √ | √ | √ |
| STP / RSTP / MSTP | √ | √ | √ | √ | √ |
| Network Management & Control | | | | | |
| | 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 | | | | |
| Regulatory Approvals | | | | | |
| CE / FCC | √ | √ | √ | √ | √ |
| UL508 | - | - | - | - | - |
| ISA12.12.01 / UL1604 | - | - | - | - | - |
| IEC61850-3 / IEEE1613 | - | - | √ | √ | √ |
| EN50121-4 | - | - | √ | √ | √ |
| EN50155 | √ | √ | - | - | - |
| UL60950 | - | - | - | - | - |

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

Connection Guide / Ethernet Switches



| Hardened Managed >> | | | | | | | |
|---|---|------------|-------------------------------------|----------------------------|----------------------------|-------------|------------|
| Model Name | EX75000 | EX76000 | EX78000 | EX78602 <small>NEW</small> | EX78900 <small>NEW</small> | EX74000 | EX83000 |
| Interface | | | | | | | |
| Max. 10/100 BASE-TX | 24 | 16 | 8 | 6 | - | 6 | 16 |
| Max. 10/100/1000 BASE-T | 2 | 2 | 2 | 2 | 12 | 2 | 2 |
| Max. 100 BASE-FX | - | 4 | 4 | - | - | - | 4 |
| Max. 100 BASE-SFP | - | - | 2 | - | - | - | 4 |
| Max. 1000 BASE - SX/LX/BX | 2 | 2 | 2 | 2 | - | - | 2 |
| Max. 1000 BASE - SFP | 4 | - | 2 | 2 | 4 | 2 | 2 |
| PoE Ports | MAX. 12 (30W)+2G (30W) MAX. 24 (15.4W)+2G (30W) | 16 (15.4W) | 8 (15.4W) or 4 (30W) + 4 (15.4W) | 4 (30W) + 2 (60W) | 8 (60W) | 4 (30W) | - |
| PoE Power Budget | 420W | 246.4W | 180W | 180W | 240W | 120W | - |
| RS-232 Console Port | √ | √ | √ | √ | √ | √ | √ |
| Alarm Contact | √ | √ | √ | √ | √ | - | √ |
| Performance | | | | | | | |
| MAC Address Table Size | 8192 | 8192 | 8192 | 8192 | 16K | 8192 | 8192 |
| Packet Buffer Memory (bits) | 3M | 2M | 2M | 2M | 12M | 2M | 2M |
| Jumbo Frame (bytes) | 2048 | - | - | - | 9216 | - | - |
| Mechanical | | | | | | | |
| Casing | metal | metal | metal | metal | aluminum | metal | aluminum |
| Installation | R | R | D, P | D, P | D, P | P | D, P |
| Dimensions (WxDxH) | 442x343x44 | 442x205x44 | 71.4x140x170 | 71.4x140x170 | 63x140x170 | 200x134x50 | 84x125x145 |
| Power Input | | | | | | | |
| No. of Power Inputs | 1 | 2 | 3 | 3 | 3 | 1 | 3 |
| 110 - 240VAC | - | - | - | - | - | - | - |
| Terminal Block | 55VDC | 48VDC | 48VDC | 55VDC | 55VDC | 48VDC (PoE) | 12 - 48VDC |
| DC Jack | - | - | 48VDC | 55VDC | 55VDC | - | 12VDC |
| AC to DC Adapter | - | - | - | - | - | - | - |
| Operating Temperature | | | | | | | |
| -10°C to 60°C | - | - | - | - | - | - | - |
| -40°C to 75°C | √ | √ | √ | √ | √ | - | √ |
| Network Redundancy | | | | | | | |
| α-Ring / α-Chain | √ | √ | √ | √ | √ | √ | √ |
| STP / RSTP / MSTP | √ | √ | √ | √ | √ | √ | √ |
| Network Management & Control | | | | | | | |
| | 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 | | | | | | |
| Regulatory Approvals | | | | | | | |
| 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



| Hardened Managed >> | | | | | | | |
|---|---|------------|------------|------------|------------|------------|----------------------------|
| Model Name | EX73000 | EX63000 | EX72000 | EX62000 | EX71000 | EX61000A | EX70900 <small>NEW</small> |
| Interface | | | | | | | |
| Max. 10/100 BASE-TX | 16 | 16 | 14 | 14 | 8 | 8 | - |
| Max. 10/100/1000 BASE-T | 2 | 2 | 2 | 2 | 2 | 2 | 8 |
| Max. 100 BASE-FX | 4 | 4 | 2 | 2 | 4 | 4 | - |
| Max. 100 BASE-SFP | - | - | - | - | 4 | 4 | - |
| Max. 1000 BASE - SX/LX/BX | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Max. 1000 BASE - SFP | - | 2 | 2 | 2 | 2 | 2 | 2 |
| PoE Ports | - | - | - | - | - | - | - |
| PoE Power Budget | - | - | - | - | - | - | - |
| RS-232 Console Port | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Alarm Contact | ✓ | - | - | - | ✓ | ✓ | ✓ |
| Performance | | | | | | | |
| MAC Address Table Size | 8192 | 8192 | 8192 | 8192 | 8192 | 8192 | 4096 |
| Packet Buffer Memory (bits) | 2M | 2M | 2M | 2M | 2M | 2M | 1.536M |
| Jumbo Frame (bytes) | - | - | - | - | - | - | 9720 |
| Mechanical | | | | | | | |
| Casing | metal | aluminum | metal | metal | aluminum | metal | aluminum |
| Installation* | D, P | D, P | P, R | D, P, R | D, P, R | D, P, R | D, P |
| Dimensions (WxDxH) | 65x125x45 | 59x125x45 | 235x125x50 | 235x125x50 | 60x125x145 | 54x125x145 | 66x125x145 |
| Power Input | | | | | | | |
| No. of Power Inputs | 3 | 3 | 2 | 2 | 3 | 3 | 3 |
| 110 - 240VAC | - | - | - | - | - | - | - |
| Terminal Block | 12 - 48VDC | 12 - 48VDC | 12 - 48VDC | 12 - 48VDC | 12 - 48VDC | 12 - 48VDC | 12 - 48VDC |
| DC Jack | 12VDC | 12VDC | - | 12VDC | 12VDC | 12VDC | 12VDC |
| AC to DC Adapter | - | - | - | - | - | - | - |
| Operating Temperature | | | | | | | |
| -10°C to 60°C | - | - | - | ✓ | - | ✓ | -40°C to 75°C |
| -40°C to 75°C | ✓ | ✓ | ✓ | - | ✓ | - | - |
| Network Redundancy | | | | | | | |
| α-Ring / α-Chain | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ (Q3 2014) |
| STP / RSTP / MSTP | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Network Management & Control | | | | | | | |
| | 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 | | | | | | |
| Regulatory Approvals | | | | | | | |
| CE / FCC | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| UL508 | ✓ | - | ✓ | - | ✓ | ✓ | - |
| ISA12.12.01 / UL1604 | ✓ | - | - | - | - | - | - |
| IEC61850-3 / IEEE1613 | - | - | - | - | - | - | - |
| EN50121-4 | - | - | - | - | ✓ | ✓ | - |
| UL60950 | - | - | - | - | - | - | - |

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| Hardened Unmanaged >> | | | | | | |
|---|------------------------|--------------|--------------|------------|------------|---------------|
| Model Name | EX39924 ^{NEW} | EX95000 | EX33000 | EX47000 | EX94000 | EX35000 |
| Interface | | | | | | |
| Max. 10/100 BASE-TX | - | 16 | 16 | 8 | 8 | - |
| Max. 10/100/1000 BASE-T | 24 | - | - | - | - | 8 |
| Max. 100 BASE-FX | - | 2 | 2 | 2 | 4 | - |
| Max. 100 BASE-SFP | - | - | - | - | - | - |
| Max. 1000 BASE - SX/LX/BX | - | - | - | - | - | 2 |
| Max. 1000 BASE - SFP | 4 (Combo) / 16 (Combo) | - | - | - | - | 2 |
| PoE Ports | - | - | - | - | - | - |
| PoE Power Budget | - | - | - | - | - | - |
| RS-232 Console Port | - | - | - | - | - | - |
| Alarm Contact | - | √ | √ | √ | √ | √ |
| Performance | | | | | | |
| MAC Address Table Size | 8192 | 4096 | 4096 | 2048 | 2048 | 8192 |
| Packet Buffer Memory (bits) | 4.096M | 1.625M | 1.625M | 448K | 768K | 1.125M |
| Jumbo Frame (bytes) | 16K | - | - | - | - | - |
| Mechanical | | | | | | |
| Casing | metal | aluminum | aluminum | aluminum | aluminum | aluminum |
| Installation* | R | D, P, R | D, P, R | D, P, | D, P | D, P |
| Dimensions (WxDxH) | 208.8x440x44 | 75.5x110x135 | 69.5x110x135 | 60x125x145 | 50x110x145 | 68x110x135 |
| Power Input | | | | | | |
| No. of Power Inputs | 1 | 3 | 3 | 3 | 3 | 3 |
| 100 - 240VAC | √ | - | - | - | - | - |
| Terminal Block | - | 12 - 48VDC | 12 - 48VDC | 12 - 48VDC | 12 - 48VDC | 12 - 32VDC |
| DC Jack | - | 12VDC | 12VDC | 12VDC | 12VDC | 12VDC |
| AC to DC Adapter | - | - | - | - | - | - |
| Operating Temperature | | | | | | |
| -10°C to 60°C | √ | - | √ | - | - | -20°C to 60°C |
| -40°C to 75°C | - | √ | - | √ | √ | - |
| Network Redundancy | | | | | | |
| α-Ring / α-Chain | - | - | - | - | - | - |
| STP / RSTP / MSTP | - | - | - | - | - | - |
| Network Management & Control | | | | | | |
| - | | | | | | |
| Regulatory Approvals | | | | | | |
| CE / FCC | √ | √ | √ | √ | √ | √ |
| UL508 | - | √ | √ | - | √ | √ |
| ISA12.12.01 / UL1604 | - | - | - | - | √ | - |
| IEC61850-3 / IEEE1613 | - | - | - | √ | - | - |
| EN50121-4 | - | - | - | √ | - | - |
| UL60950 | - | - | - | - | - | - |

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| Hardened Unmanaged >> | | | | | | |
|---|---|--------------|------------|------------|---|--------------|
| Model Name | EX49000 | EX49000A | EX46100 | EX36100 | EX48000 | EX38000 |
| Interface | | | | | | |
| Max. 10/100 BASE-TX | 16 | 16 | 8 | 8 | 5 | 5 |
| Max. 10/100/1000 BASE-T | 2 | 2 | - | - | - | - |
| Max. 100 BASE-FX | - | - | 2 | 2 | 1 | 1 |
| Max. 100 BASE-SFP | - | - | - | - | - | - |
| Max. 1000 BASE - SX/LX/BX | 2 | 2 | - | - | - | - |
| Max. 1000 BASE - SFP | 2 | 2 | - | - | - | - |
| PoE Ports | 16 (30W) | 16 (30W) | 4 (30W) | 4 (30W) | 4 (30W) | 4 (30W) |
| PoE Power Budget | 480W | 480W | 120W | 120W | 120W | 120W |
| RS-232 Console Port | - | - | - | - | - | - |
| Alarm Contact | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Performance | | | | | | |
| MAC Address Table Size | 4096 | 4096 | 1024 | 1024 | 1024 | 1024 |
| Packet Buffer Memory (bits) | 2.25M | 2.25M | 1M | 1M | 512K | 512K |
| Mechanical | | | | | | |
| Casing | metal | metal | aluminum | aluminum | aluminum | aluminum |
| Installation* | R | R | D, P, R | D, P, R | Desktop, W | Desktop, W |
| Dimensions (WxDxH) | 442x205x44.2 | 442x205x44.2 | 68x135x110 | 62x135x110 | 200x134.3x35 | 200x134.3x35 |
| Power Input | | | | | | |
| No. of Power Inputs | 2 | 2 | 3 | 3 | 3 | 3 |
| 110 - 240VAC | - | - | - | - | - | - |
| Terminal Block | 47 - 57VDC | 47 - 57VDC | 47 - 57VDC | 45 - 57VDC | 47 - 57VDC | 47 - 57VDC |
| DC Jack | - | - | 47 - 57VDC | 45 - 57VDC | 47 - 57VDC | 47 - 57VDC |
| AC to DC Adapter | - | - | - | - | - | - |
| Operating Temperature | | | | | | |
| -10°C to 60°C | - | - | - | ✓ | - | ✓ |
| -40°C to 75°C | ✓ | ✓ | ✓ | - | ✓ | - |
| Network Redundancy | | | | | | |
| α-Ring / α-Chain | - | - | - | - | - | - |
| STP / RSTP / MSTP | - | - | - | - | - | - |
| Network Management & Control | | | | | | |
| | System, IP Configuration, VLAN, QoS, Web Management | - | | | System, IP Configuration, VLAN, QoS, Web Management | |
| Regulatory Approvals | | | | | | |
| CE / FCC | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| UL508 | - | - | - | - | - | - |
| ISA12.12.01 / UL1604 | - | - | - | - | - | - |
| IEC61850-3 / IEC61850-1 | - | - | - | - | - | - |
| EN50121-4 | - | - | - | - | - | - |
| UL60950 | - | - | - | - | - | - |

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

Connection Guide / Ethernet Switches



| Hardened Unmanaged >> | | | | | | |
|---|--------------|--------------|---|------------|------------|------------|
| Model Name | EX48000A | EX38000A | EX46000 | EX36000 | EX45000 | EX34000 |
| Interface | | | | | | |
| Max. 10/100 BASE-TX | 5 | 5 | 8 | 8 | 8 | 8 |
| Max. 10/100/1000 BASE-T | - | - | - | - | - | - |
| Max. 100 BASE-FX | 1 | 1 | 2 | 2 | 2 | 2 |
| Max. 100 BASE-SFP | - | - | - | - | - | - |
| Max. 1000 BASE - SX/LX/BX | - | - | - | - | - | - |
| Max. 1000 BASE - SFP | - | - | - | - | - | - |
| PoE Ports | 4 (15.4W) | 4 (15.4W) | 4 (15.4W) | 4 (15.4W) | 4 (15.4W) | 4 (15.4W) |
| PoE Power Budget | 61.6W | 61.6W | 61.6W | 61.6W | 61.6W | 61.6W |
| RS-232 Console Port | - | - | - | - | - | - |
| Alarm Contact | √ | √ | √ | √ | √ | √ |
| Performance | | | | | | |
| MAC Address Table Size | 1024 | 1024 | 1024 | 1024 | 1024 | 1024 |
| Packet Buffer Memory (bits) | 512K | 512K | 1M | 1M | 1M | 1M |
| Mechanical | | | | | | |
| Casing | aluminum | aluminum | aluminum | metal | aluminum | aluminum |
| Installation* | Desktop, W | Desktop, W | D, P, R | D, P, R | D, P, R | D, P, R |
| Dimensions (WxDxH) | 200x134.3x35 | 200x134.3x35 | 68x110x135 | 62x110x135 | 68x110x135 | 62x110x135 |
| Power Input | | | | | | |
| No. of Power Inputs | 3 | 3 | 3 | 3 | 2 | 3 |
| 110 - 240VAC | - | - | - | - | - | - |
| Terminal Block | 47 - 57VDC | 47 - 57VDC | 47 - 57VDC | 47 - 57VDC | 47 - 57VDC | 47 - 57VDC |
| DC Jack | 47 - 57VDC | 47 - 57VDC | 47 - 57VDC | 47 - 57VDC | 47 - 57VDC | 47 - 57VDC |
| AC to DC Adapter | - | - | - | - | - | - |
| Operating Temperature | | | | | | |
| -10°C to 60°C | - | - | - | √ | - | √ |
| -40°C to 75°C | √ | √ | √ | - | √ | - |
| Network Redundancy | | | | | | |
| α-Ring / α-Chain | - | - | - | - | - | - |
| STP / RSTP / MSTP | - | - | - | - | - | - |
| Network Management & Control | | | | | | |
| | - | - | System, IP Configuration, VLAN, QoS, Web Management | | - | - |
| Regulatory Approvals | | | | | | |
| 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



| Hardened Unmanaged >> | | | | | | |
|---|---------------|------------------------|-------------------------|------------------------|------------|------------|
| Model Name | EX43000 | EX45900 ^{NEW} | EX42900 ^{NEW} | EX32900 ^{NEW} | EX42200 | EX42000 |
| Interface | | | | | | |
| Max. 10/100 BASE-TX | 8 | - | - | - | 5 | 5 |
| Max. 10/100/1000 BASE-T | - | 5 | 5 / 8 | 5 / 8 | - | - |
| Max. 100 BASE-FX | 4 | - | - | - | 1 | 1 |
| Max. 100 BASE-SFP | - | - | - | - | - | - |
| Max. 1000 BASE - SX/LX/BX | - | 1 | 1 | 1 | - | - |
| Max. 1000 BASE - SFP | - | 1 | - | - | - | - |
| PoE Ports | - | 4 (30W) | - | - | 4 (30W) | - |
| PoE Power Budget | - | 120W | - | - | 120W | - |
| RS-232 Console Port | - | - | - | - | - | - |
| Alarm Contact | ✓ | ✓ | - / ✓ | - / ✓ | ✓ | ✓ |
| Performance | | | | | | |
| MAC Address Table Size | 2048 | 8192 | 8192 / 4096 | 8192 / 4096 | 2048 | 2048 |
| Packet Buffer Memory (bits) | 768K | 1M | 1M / 192K | 1M / 192K | 448K | 384K |
| Jumbo Frame (bytes) | - | 10K | 10K / 9720 | 10K / 9720 | - | - |
| Mechanical | | | | | | |
| Casing | metal | aluminum | metal | plastic | aluminum | aluminum |
| Installation* | D | D | D | D | D | D |
| Dimensions (WxDxH) | 50x125x135 | 30x100x149 | 30x70x110 30x100x149 | 26x70x110 30x86x149 | 61x73x110 | 26x70x110 |
| Power Input | | | | | | |
| No. of Power Inputs | 2 | 2 | 1 / 2 | 1 / 2 | 2 | 1 |
| 100 - 240VAC | - | - | - | - | - | - |
| Terminal Block | 12 - 30VDC | 24 / 48VDC | 12 - 48VDC | 12 - 48VDC | 18 - 57VDC | 12 - 48VDC |
| DC Jack | 12VDC | - | - | - | - | - |
| AC to DC Adapter | - | - | - | - | - | - |
| Operating Temperature | | | | | | |
| -10°C to 60°C | -20°C to 60°C | - | - | ✓ | - | ✓ |
| -40°C to 75°C | - | ✓ | ✓ | - | ✓ | - |
| Network Redundancy | | | | | | |
| α-Ring / α-Chain | - | - | - | - | - | - |
| STP / RSTP / MSTP | - | - | - | - | - | - |
| Network Management & Control | | | | | | |
| - | | | | | | |
| Regulatory Approvals | | | | | | |
| 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



| Non-Hardened Managed >> | | | | | |
|---|---|--------------------------|-------------|------------|------------|
| Model Name | EX27000 | EX29000 | EX25611 | EX26262 | EX26182 |
| Interface | | | | | |
| Max. 10/100 BASE-TX | 24 | 24 | - | - | - |
| Max. 10/100/1000 BASE-T | 4 | 4 | 24 | 24 | 18 |
| Max. 100 BASE-FX | 24 | 18 | - | - | - |
| Max. 100 BASE-SFP | 24 | - | - | - | - |
| Max. 1000 BASE - SX/LX/BX | 4 | 4 | - | - | - |
| Max. 1000 BASE - SFP | 4 | 4 | 8 | 2 | 2 |
| PoE Ports | - | - | - | 24 (30W) | 18 (30W) |
| PoE Power Budget | - | - | - | 190W | 190W |
| RS-232 Console Port | √ | √ | √ | - | - |
| Alarm Contact | - | √ | - | - | - |
| Performance | | | | | |
| MAC Address Table Size | 8192 | 8192 | 32K | 8192 | 8192 |
| Packet Buffer Memory (bits) | 3M | 3M | 256M | 64M | 64M |
| Mechanical | | | | | |
| Casing | metal | metal | metal | metal | metal |
| Installation* | R | R | R | R | R |
| Dimensions (WxDxH) | Single Power: 442x343x44 Dual Power: 442x375x44 | Single Power: 442x343x44 | 442x300x44 | 440x350x44 | 440x350x44 |
| Power Input | | | | | |
| No. of Power Inputs | 1 or 2 | 1 | 1 | 1 | 1 |
| 100 - 240VAC | √ | √ | √ | √ | √ |
| Terminal Block | ±48VDC, 88 - 370VDC | ±48VDC, 88 - 370VDC | - | - | - |
| DC Jack | - | - | - | - | - |
| AC to DC Adapter | - | - | - | - | - |
| Operating Temperature | | | | | |
| 0°C to 45°C | - | - | 0°C to 40°C | √ | √ |
| -10°C to 60°C | √ | √ | - | - | - |
| -40°C to 75°C | - | - | - | - | - |
| Network Redundancy | | | | | |
| α-Ring / α-Chain | √ | √ | - | - | - |
| STP / RSTP / MSTP | √ | √ | √ | √ | √ |
| Network Management & Control | | | | | |
| | 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 (except EX26262 and EX26182) | | | | |
| Regulatory Approvals | | | | | |
| 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



| Non-Hardened Unmanaged >> | | | | | |
|---|---|------------|------------|------------|------------|
| Model Name | EX17242 | EX17162 | EX17162A | EX17016 | EX17016A |
| Interface | | | | | |
| Max. 10/100 BASE-TX | 24 | 16 | 16 | 16 | 16 |
| Max. 10/100/1000 BASE-T | 2 | 2 | 2 | - | - |
| Max. 100 BASE-FX | - | - | - | - | - |
| Max. 100 BASE-SFP | - | - | - | - | - |
| Max. 1000 BASE - SX/LX/BX | - | - | - | - | - |
| Max. 1000 BASE - SFP | 2 (Combo) | 2 (Combo) | 2 (Combo) | - | - |
| PoE Ports | 24(15.4W) | 16 (15.4W) | 16 (15.4W) | 16 (15.4W) | 16 (15.4W) |
| PoE Power Budget | 369.6W | 246.4W | 246.4W | 246.4W | 246.4W |
| RS-232 Console Port | - | - | - | - | - |
| Alarm Contact | - | - | - | - | - |
| Performance | | | | | |
| MAC Address Table Size | 4096 | 4096 | 4096 | 4096 | 4096 |
| Packet Buffer Memory (bits) | 2.75M | 2.75M | 2.75M | 1.5M | 1.5M |
| Mechanical | | | | | |
| Casing | metal | metal | metal | metal | metal |
| Installation* | R | R | R | R | R |
| Dimensions (WxDxH) | 440x330x44 | 440x330x44 | 440x330x44 | 440x220x44 | 440x220x44 |
| Power Input | | | | | |
| No. of Power Inputs | 1 | 1 | 1 | 1 | 1 |
| 110 - 240VAC | √ | √ | √ | √ | √ |
| Terminal Block | - | - | - | - | - |
| DC Jack | - | - | - | - | - |
| AC to DC Adapter | - | - | - | - | - |
| Operating Temperature | | | | | |
| 0°C to 45°C | √ | √ | √ | √ | √ |
| -10°C to 60°C | - | - | - | - | - |
| -40°C to 75°C | - | - | - | - | - |
| Network Redundancy | | | | | |
| α-Ring / α-Chain | - | - | - | - | - |
| STP / RSTP / MSTP | - | - | - | - | - |
| Network Management & Control | | | | | |
| | System, IP Configuration, VLAN, QoS, Web Management (Only support to EX17008, EX17016, EX17162, EX17242) | | | | |
| Regulatory Approvals | | | | | |
| 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



| Non-Hardened Unmanaged >> | | | | | | |
|---|---------------|--|------------|---------------|------------|------------|
| Model Name | EX17908 | EX17082 | EX17008 | EX17908A | EX17082A | EX17008A |
| Interface | | | | | | |
| Max. 10/100 BASE-TX | - | 8 | 8 | - | 8 | 8 |
| Max. 10/100/1000 BASE-T | 8 | 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 | 8 (30W) | 8 (30W) | 8 (15.4W) | 8 (30W) | 8 (30W) | 8 (15.4W) |
| PoE Power Budget | 240W | 240W | 123.2W | 240W | 240W | 123.2W |
| RS-232 Console Port | - | - | - | - | - | - |
| Alarm Contact | - | - | - | - | - | - |
| Performance | | | | | | |
| MAC Address Table Size | 8192 | 4096 | 1024 | 8192 | 4096 | 1024 |
| Packet Buffer Memory (bits) | 1M | 2.75M | 512K | 1M | 2.75M | 512K |
| Mechanical | | | | | | |
| Casing | metal | metal | metal | metal | metal | metal |
| Installation* | Desktop | R | R | Desktop | R | R |
| Dimensions (WxDxH) | 266x160x44 | 440x220x44 | 266x160x44 | 266x160x44 | 266x160x44 | 266x160x44 |
| Power Input | | | | | | |
| No. of Power Inputs | 1 | 1 | 1 | 1 | 1 | 1 |
| 110 - 240VAC | √ | √ | √ | √ | √ | √ |
| Terminal Block | - | - | - | - | - | - |
| DC Jack | - | - | - | - | - | - |
| AC to DC Adapter | - | - | - | - | - | - |
| Operating Temperature | | | | | | |
| 0°C to 45°C | (0°C to 40°C) | √ | √ | (0°C to 40°C) | √ | √ |
| -10°C to 60°C | - | - | - | - | - | - |
| -40°C to 75°C | - | - | - | - | - | - |
| Network Redundancy | | | | | | |
| α-Ring / α-Chain | - | - | - | - | - | - |
| STP / RSTP / MSTP | - | - | - | - | - | - |
| Network Management & Control | | | | | | |
| | | System, IP Configuration, VLAN, QoS, Web Management | | | | |
| Regulatory Approvals | | | | | | |
| 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

Q2 2014 (8-port)



Non-Hardened Unmanaged >>

| Model Name | EX1608SF | EX16900 NEW | EX1605B/BF1-EX1608B/BF1 |
|---|----------------|--|-------------------------|
| Interface | | | |
| Max. 10/100 BASE-TX | 6 | - | 5 / 8 |
| Max. 10/100/1000 BASE-T | - | 5 / 8 | - |
| Max. 100 BASE-FX | 8 | - | 1 |
| Max. 100 BASE-SFP | - | - | - |
| Max. 1000 BASE - SX/LX/BX | - | 1 | - |
| Max. 1000 BASE - SFP | - | 1 | - |
| PoE Ports | - | - | - |
| PoE Power Budget | - | - | - |
| RS-232 Console Port | - | - | - |
| Alarm Contact | - | - | - |
| Performance | | | |
| MAC Address Table Size | 2048 | 2048 / 4096 | 2048 |
| Packet Buffer Memory (bits) | 768K | 1M / 192K | 1M |
| Jumbo Frame (bytes) | - | 9K / 9720 | - |
| Mechanical | | | |
| Casing | metal | metal | metal |
| Installation* | R | Desktop | R, W |
| Dimensions (WxDxH) | 443.6x203.2x44 | 160x80.5x28 | 252x134.3x35 |
| Power Input | | | |
| No. of Power Inputs | 1 | 1 | 1 |
| 110 - 240VAC | √ | - | √ |
| Terminal Block | - | - | - |
| DC Jack | - | 5VDC | - |
| AC to DC Adapter | - | √ | - |
| Operating Temperature | | | |
| 0°C to 45°C | √ | √ | √ |
| -10°C to 60°C | - | - | - |
| -40°C to 75°C | - | - | - |
| Network Redundancy | | | |
| α-Ring / α-Chain | - | - | - |
| STP / RSTP / MSTP | - | - | - |
| Network Management & Control | | | |
| | | - | |
| Regulatory Approvals | | | |
| 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



| Non-Hardened Unmanaged >> | | | | |
|---|---------------|---------------|---|------------|
| Model Name | EX1605PB/PBF1 | EX1608PB/PBF1 | EX1616W | EX1624W |
| Interface | | | | |
| Max. 10/100 BASE-TX | 5 | 8 | 16 | 24 |
| Max. 10/100/1000 BASE-T | - | - | - | - |
| Max. 100 BASE-FX | 1 | 1 | 1 | 1 |
| Max. 100 BASE-SFP | - | - | - | - |
| Max. 1000 BASE - SX/LX/BX | - | - | - | - |
| Max. 1000 BASE - SFP | - | - | - | - |
| PoE Ports | - | - | - | - |
| PoE Power Budget | - | - | - | - |
| RS-232 Console Port | - | - | - | - |
| Alarm Contact | - | - | - | - |
| Performance | | | | |
| MAC Address Table Size | 2048 | 2048 | 4096 | 4096 |
| Packet Buffer Memory (bits) | 1M | 1M | 1.5M | 1.5M |
| Mechanical | | | | |
| Casing | metal | metal | metal | metal |
| Installation* | W | W | R | R |
| Dimensions (WxDxH) | 160x80.5x28 | 160x80.5x28 | 440x207x44 | 440x207x44 |
| Power Input | | | | |
| No. of Power Inputs | 1 | 1 | 1 | 1 |
| 110 - 240VAC | - | - | √ | √ |
| Terminal Block | - | - | - | - |
| DC Jack | 12VDC | 12VDC | - | - |
| AC to DC Adapter | √ | √ | - | - |
| Operating Temperature | | | | |
| 0°C to 45°C | √ | √ | √ | √ |
| -40°C to 75°C | - | - | - | - |
| Network Redundancy | | | | |
| α-Ring / α-Chain | - | - | - | - |
| STP / RSTP / MSTP | - | - | - | - |
| Network Management & Control | | | | |
| | - | - | System, IP Configuration, VLAN, QoS, Web Management | |
| Regulatory Approvals | | | | |
| 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

Ethernet Switches
Media Converters
Ethernet Extenders
Serial Device Servers
Accessories

Connection Guide / Media Converters



| Gigabit >> | | | | |
|----------------------------------|------------|------------|------------|-----------------|
| Model Name | EL9100 | EL9000 | EL9020 | EL2321 |
| Interface | | | | |
| Max. 100 BASE-T | - | - | - | - |
| Max. 10/100 BASE-TX | - | - | - | - |
| Max. 1000 BASE-T | - | 1 | - | - |
| Max. 10/100/1000 BASE-T | 1 | - | 1 | 1 |
| Max. 100 BASE-FX/BX WDM | - | - | - | 1 |
| Max. 100 BASE-SFP | - | - | - | - |
| Max. 1000 BASE-SX/LX/BX | 1 | 1 | - | 1 |
| Max. 1000 BASE-SFP | - | - | 1 | - |
| Max. PoE Ports | - | - | - | - |
| Web Management | - | - | - | √ |
| Alarm Contact | √ | √ | √ | - |
| Mode of Operations | | | | |
| Auto-negotiation, Auto-MDI/MDI-X | √ | √ | √ | √ |
| Flow Control | √ | - | √ | √ |
| Store & Forward | √ | - | √ | √ |
| Link Fault Pass Through | √ | √ | √ | √ |
| Mechanical | | | | |
| Casing | aluminum | aluminum | aluminum | aluminum |
| Installation* | D, P, R | D, P, R | D, P, R | C, W |
| Dimensions (WxDxH) | 50x110x135 | 50x110x135 | 50x110x135 | 80.3x109.2x23.8 |
| Power Input | | | | |
| No. of Power Inputs | 3 | 2/1 | 3 | 1 |
| Terminal Block | 12 - 48VDC | 12 - 48VDC | 12 - 48VDC | - |
| DC Jack | 12VDC | 12VDC | 12VDC | 12VDC |
| AC to DC Adapter | - | - | - | √ |
| Operating Temperature | | | | |
| 0°C to 50°C | - | - | - | √ |
| -10°C to 60°C | - | - | - | - |
| -40°C to 75°C | √ | √ | √ | - |
| Regulatory Approvals | | | | |
| 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



| Gigabit >> | | | | | | |
|----------------------------------|-----------------|-----------------|------------------|--------------------|------------------|-----------------|
| Model Name | EL2211 | EL2315 | EM1100 EM2100 | EM1000S EM2000S | EM1000 EM2000 | EM1020 |
| Interface | | | | | | |
| 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 | - | - | - | - | - | - |
| Mode of Operations | | | | | | |
| Auto-negotiation, Auto-MDI/MDI-X | √ | √ | √ | - | √ | √ |
| Flow Control | √ | √ | √ | - | - | - |
| Store & Forward | √ | √ | √ | - | - | - |
| Link Fault Pass Through | √ | √ | - | - | √ | √ |
| Mechanical | | | | | | |
| Casing | aluminum | aluminum | aluminum | aluminum | aluminum | aluminum |
| Installation* | C, W | C, W | C, W | C, W | C, W | C, W |
| Dimensions (WxDxH) | 80.3x109.2x23.8 | 80.3x109.2x23.8 | 80.3x109.2x23.8 | 80.3x109.2x23.8 | 80.3x109.2x23.8 | 80.3x109.2x23.8 |
| Power Input | | | | | | |
| No. of Power Inputs | 1 | 1 | 1 | 1 | 1 | 1 |
| Terminal Block | - | - | - | - | - | - |
| DC Jack | 12VDC | 12VDC | 12VDC | 12VDC | 12VDC | 12VDC |
| AC to DC Adapter | √ | √ | √ | √ | √ | √ |
| Operating Temperature | | | | | | |
| 0°C to 45°C | √ | √ | √ | √ | √ | √ |
| -10°C to 60°C | - | - | - | - | - | - |
| -40°C to 75°C | - | - | - | - | - | - |
| Regulatory Approvals | | | | | | |
| 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



| Fast Ethernet >> | | | |
|----------------------------------|------------|--------------------------|--------------------------|
| Model Name | EL900 | EL910 <small>NEW</small> | EL950 <small>NEW</small> |
| Interface | | | |
| 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 | - | - | - |
| Web Management | - | - | ✓ |
| Alarm Contact | ✓ | ✓ | ✓ |
| Mode of Operations | | | |
| Auto-negotiation, Auto-MDI/MDI-X | ✓ | ✓ | ✓ |
| Flow Control | ✓ | ✓ | ✓ |
| Store & Forward | ✓ | ✓ | ✓ |
| Link Fault Pass Through | ✓ | ✓ | ✓ |
| Mechanical | | | |
| Casing | aluminum | aluminum | aluminum |
| Installation* | D, P, R | D | D |
| Dimensions (WxDxH) | 50x110x135 | 42x90x100 | 42x90x100 |
| Power Input | | | |
| No. of Power Inputs | 2 / 1 | 3 | 3 |
| Terminal Block | 10 - 48VDC | 12 - 48VDC | 12 - 48VDC |
| DC Jack | 12VDC | 12VDC | 12VDC |
| AC to DC Adapter | - | - | - |
| Operating Temperature | | | |
| 0°C to 45°C | - | - | - |
| -10°C to 60°C | - | - | - |
| -40°C to 75°C | ✓ | ✓ | ✓ |
| Regulatory Approvals | | | |
| CE / FCC | ✓ | ✓ | ✓ |
| VCCI | ✓ | ✓ | ✓ |
| UL508 | - | - | - |
| ISA12.12.01 / UL1604 | ✓ | - | - |
| IEC61850-3 | - | - | - |
| 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



| Fast Ethernet >> | | | | |
|----------------------------------|------------|-----------|------------|------------|
| Model Name | EL1032T | EL1033 | EL1141 | EX42011 |
| Interface | | | | |
| Max. 100 BASE-T | - | - | - | - |
| 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 | 1 | 1 |
| Max. 100 BASE-SFP | - | - | - | - |
| Max. 1000 BASE-SX/LX/BX | - | - | - | - |
| Max. 1000 BASE-SFP | - | - | - | - |
| Max. PoE Ports | PSE (30W) | PD | - | - |
| Web Management | - | - | - | - |
| Alarm Contact | - | - | √ | - |
| Mode of Operations | | | | |
| Auto-negotiation, Auto-MDI/MDI-X | √ | √ | √ | √ |
| Flow Control | √ | √ | √ | √ |
| Store & Forward | √ | √ | √ | √ |
| Link Fault Pass Through | √ | √ | √ | - |
| Mechanical | | | | |
| Casing | aluminum | aluminum | aluminum | plastic |
| Installation* | D, P | D, P | D, P, R | D |
| Dimensions (WxDxH) | 70x110x30 | 70x110x30 | 50x110x135 | 26x110x70 |
| Power Input | | | | |
| No. of Power Inputs | 2 | 2 | 3 | 1 |
| Terminal Block | 48 - 57VDC | 48VDC | 12 - 48VDC | 12 - 48VDC |
| DC Jack | 48VDC | 48VDC | 12VDC | 12VDC |
| AC to DC Adapter | - | - | - | - |
| Operating Temperature | | | | |
| 0°C to 45°C | - | - | - | - |
| -10°C to 60°C | √ | √ | - | √ |
| -40°C to 75°C | - | - | √ | - |
| Regulatory Approvals | | | | |
| CE / FCC | √ | √ | √ | √ |
| VCCI | √ | √ | √ | √ |
| UL508 | - | - | √ | - |
| ISA12.12.01 / UL1604 | - | - | - | - |
| IEC61850-3 | - | - | √ | - |
| 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



| Fast Ethernet >> | | | | | |
|----------------------------------|-----------------|-----------------|-----------------|----------------|----------------|
| Model Name | EL200 | EL100 | EM120 | EL50 | EL50 (AC) |
| Interface | | | | | |
| 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 | - | - | - | - | - |
| Mode of Operations | | | | | |
| Auto-negotiation, Auto-MDI/MDI-X | √ | √ | - | √ | √ |
| Flow Control | √ | √ | - | √ | √ |
| Store & Forward | √ | √ | - | √ | √ |
| Link Fault Pass Through | √ | √ | - | - | - |
| Mechanical | | | | | |
| Casing | aluminum | aluminum | aluminum | metal | metal |
| Installation* | C, W | C, W | C, W | W | W |
| Dimensions (WxDxH) | 80.3x109.2x23.8 | 80.3x109.2x23.8 | 80.3x109.2x23.8 | 54.2x80.3x21.9 | 54.2x80.3x21.9 |
| Power Input | | | | | |
| No. of Power Inputs | 1 | 1 | 1 | 1 | 1 |
| Terminal Block | - | - | - | - | 24VAC |
| DC Jack | 12VDC | 12VDC | 12VDC | 12VDC | - |
| AC to DC Adapter | √ | √ | √ | √ | - |
| Operating Temperature | | | | | |
| 0°C to 45°C | √ | √ | √ | √ | √ |
| -10°C to 60°C | - | - | - | - | - |
| -40°C to 75°C | - | - | - | - | - |
| Regulatory Approvals | | | | | |
| 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

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| Model Name | EMC1600 | EMC400 <small>NEW</small> | EMC1200R |
|----------------------------------|--------------|---------------------------|--------------|
| Interface | | | |
| 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 | - | - | - |
| Mode of Operations | | | |
| Auto-negotiation, Auto-MDI/MDI-X | √ | √ | √ |
| Flow Control | √ | √ | √ |
| Store & Forward | √ | √ | √ |
| Link Fault Pass Through | √ | √ | √ |
| Mechanical | | | |
| Casing | metal | metal | metal |
| Installation* | R | D | R |
| Dimensions (WxDxH) | 440x276x90 | 130x164x92 | 440x243x45 |
| Power Input | | | |
| No. of Power Inputs | 2 | 2 | 2 |
| Terminal Block | ±48VDC | 12VDC | ±48VDC |
| DC Jack | 100 - 240VDC | - | 100 - 240VDC |
| AC to DC Adapter | - | - | - |
| Operating Temperature | | | |
| 0°C to 45°C | √ | √ | √ |
| -10°C to 60°C | - | - | - |
| -40°C to 75°C | - | - | - |
| Regulatory Approvals | | | |
| 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

Ethernet Switches

Media Converters

Ethernet Extenders

Serial Device Servers

Accessories

Connection Guide / Ethernet Extenders



| Power over Link >> | | | |
|----------------------------------|------------|------------|---|
| Model Name | ED3638 | ED3538 | ED3238 NEW |
| Interface | | | |
| 10/100 BASE-TX | 1 | 1 | 1 |
| Max. PoE Ports | 1 (30W) | 1 (30W) | 1 (15.4W) |
| Extension Interface | | | |
| RJ-11 | - | 1 | - |
| RJ-48 | - | - | - |
| Terminal Block | - | 1 | - |
| BNC | 1 | - | 1 |
| Mode of Operations | | | |
| Auto-negotiation, Auto-MDI/MDI-X | √ | √ | √ |
| Store & Forward | √ | √ | √ |
| Mechanical | | | |
| Casing | aluminum | aluminum | aluminum |
| Installation* | D, P, R | D, P, R | C |
| Dimensions (WxDxH) | 50x110x135 | 50x110x135 | 46x98x25 |
| Power Input | | | |
| No. of Power Inputs | 3 | 3 | 1 |
| Terminal Block | 46 - 57VDC | 46 - 57VDC | - |
| DC Jack | 48VDC | 48VDC | 57VDC |
| AC to DC Adapter | - | - | √ |
| Operating Temperature | | | |
| -20°C to 45°C | - | - | √ |
| -40°C to 75°C | √ | √ | - |
| Management Function | | | |
| RS-232 console Port | - | - | - |
| Web Management | - | - | - |
| α-Ring / α-Chain | - | - | - |
| Layer 2 Features** | - | - | - |
| Regulatory Approvals | | | |
| 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

** Layer 2 Features include STP/RSTP/MSTP, VLAN, QoS, IGMP, GMRP, Bandwidth Rate Control, LACP, Port Trunking, Port Mirroring, Packet Filtering, IEEE802.1xSecurity, RMON

Connection Guide / Ethernet Extenders



| Copper >> | | | | | | |
|----------------------------------|------------|------------|------------|------------|------------|------------|
| Model Name | ED3175 | ED3146 | ED3145 | ED3171 | ED3142 | ED3141 |
| Interface | | | | | | |
| 10/100 BASE-TX | 8 | 2/4 | 4 | 1 | 1 | 1 |
| Max. PoE Ports | - | 2 (30W) | - | - | 1 (30W) | - |
| Extension Interface | | | | | | |
| RJ-11 | 2 | 1 | 1 | 1 | 1 | 1 |
| RJ-48 | - | - | - | - | - | - |
| Terminal Block | 2 | 1 | 1 | 1 | 1 | 1 |
| BNC | - | - | - | - | - | - |
| Mode of Operations | | | | | | |
| Auto-negotiation, Auto-MDI/MDI-X | √ | √ | √ | √ | √ | √ |
| Store & Forward | √ | √ | √ | √ | √ | √ |
| Mechanical | | | | | | |
| Casing | aluminum | aluminum | aluminum | aluminum | aluminum | aluminum |
| Installation* | D, P, R | D, P, R | D, P, R | D, P, R | D, P, R | D, P, R |
| Dimensions (WxDxH) | 60x125x145 | 50x110x135 | 50x110x135 | 50x110x135 | 50x110x135 | 50x110x135 |
| Power Input | | | | | | |
| No. of Power Inputs | 3 | 3 | 3 | 3 | 3 | 3 |
| Terminal Block | 12 - 48VDC | 24 - 48VDC | 24 - 48VDC | 12 - 32VDC | 24 - 48VDC | 12 - 32VDC |
| DC Jack | 12VDC | 48VDC | 48VDC | 12VDC | 48VDC | 12VDC |
| AC to DC Adapter | - | - | - | - | - | - |
| Operating Temperature | | | | | | |
| -10°C to 60°C | - | - | - | - | - | - |
| -40°C to 70°C | - | - | - | - | - | - |
| -40°C to 75°C | √ | √ | √ | √ | √ | √ |
| Management Function | | | | | | |
| RS-232 console Port | √ | - | - | √ | - | - |
| Web Management | √ | - | - | √ | - | - |
| α-Ring / α-Chain | √ | - | - | - | - | - |
| Layer 2 Features** | √ | - | - | - | - | - |
| Regulatory Approvals | | | | | | |
| 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

** Layer 2 Features include STP/RSTP/MSTP, VLAN, QoS, IGMP, GMRP, Bandwidth Rate Control, LACP, Port Trunking, Port Mirroring, Packet Filtering, IEEE802.1xSecurity, RMON

Connection Guide / Ethernet Extenders



| Copper >> | Coaxial >> | | | | |
|----------------------------------|-------------------------|------------|------------|------------|-----------------|
| Model Name | ED3101 | ED3371 | ED3341 | ED3344 | ED3331 |
| Interface | | | | | |
| 10/100 BASE-TX | 1 | 1 | 1 | 1 (M12) | 1 |
| Max. PoE Ports | - | - | - | - | - |
| Extension Interface | | | | | |
| RJ-11 | 1 | - | - | - | - |
| RJ-48 | - | - | - | - | - |
| Terminal Block | - | - | - | - | - |
| BNC | - | 1 | 1 | 1 | 1 |
| Mode of Operations | | | | | |
| Auto-negotiation, Auto-MDI/MDI-X | √ | √ | √ | √ | √ |
| Store & Forward | √ | √ | √ | √ | √ |
| Mechanical | | | | | |
| Casing | aluminum | aluminum | aluminum | aluminum | aluminum |
| Installation* | C, D, W | D, P, R | D, P, R | D, P, R | C, D, W |
| Dimensions (WxDxH) | 80.3x109.2x23.8 | 50x110x135 | 50x110x135 | 50x110x135 | 80.3x109.2x23.8 |
| Power Input | | | | | |
| No. of Power Inputs | 1 | 3 | 3 | 3 | 1 |
| Terminal Block | - | 12 - 48VDC | 12 - 48VDC | 12 - 48VDC | - |
| DC Jack | 12VDC | 12VDC | 12VDC | 12 - 48VDC | 12VDC |
| AC to DC Adapter | √ | - | - | - | √ |
| Operating Temperature | | | | | |
| -10°C to 60°C | - | - | - | - | √ |
| -40°C to 70°C | -20°C to 60°C | √ | √ | - | - |
| -40°C to 75°C | - | - | - | √ | - |
| Management Function | | | | | |
| RS-232 console Port | - | √ | - | - | - |
| Web Management | - | √ | - | - | - |
| α-Ring / α-Chain | - | - | - | - | - |
| Layer 2 Features** | - | - | - | - | - |
| Regulatory Approvals | | | | | |
| 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

** Layer 2 Features include STP/RSTP/MSTP, VLAN, QoS, IGMP, GMRP, Bandwidth Rate Control, LACP, Port Trunking, Port Mirroring, Packet Filtering, IEEE802.1xSecurity, RMON

Connection Guide / Serial Device Servers



| Serial to Ethernet >> | | | | | |
|------------------------------------|-------------------|------------------------------|-------------------|------------------------------|-------------------|
| Model Name | FT5702 | SE6300 | SE5300 | SE6100 | SE5100 |
| Ethernet Interface | | | | | |
| Max. 10/100 BASE-TX | 2 | 2 | 2 | 1 | 1 |
| Max. 100 BASE-FX | 2 | 2 | 2 | 1 | 1 |
| 1.5KV Managetetic Isolation | √ | √ | √ | √ | √ |
| Ethernet Redundancy | √ | √ | √ | - | - |
| Serial Interface | | | | | |
| RS-232/422/485 | 2 | 4 | 4 | 1 | 1 |
| RS-422/485 | - | 2 | 2 | 1 | 1 |
| Connector Type | DB9 | DB9 / RJ50 / TB | DB9 / RJ50 / TB | DB9 / TB | DB9 / TB |
| ESD Protection | √ | √ | √ | √ | √ |
| 2KV Serial Line Isolation | - | SE6320 | SE5320 | SE6110 | SE5110 |
| Speed | 50bps - 460.8kbps | 50bps - 460.8kbps | 50bps - 460.8kbps | 50bps - 460.8kbps | 50bps - 460.8kbps |
| Software | | | | | |
| Operaion Modes | Self-Healing Ring | TCP, UDP, Pair Connection | | TCP, UDP, Pair Connection | |
| COM Driver Support | - | Windows 2000/XP/2003/Vista/7 | | Windows 2000/XP/2003/Vista/7 | |
| Configuration Options | Console | Web, Telnet Console, SNMP | | Web, Telnet Console, SNMP | |
| Mechanical | | | | | |
| Casing | aluminum | aluminum | aluminum | aluminum | aluminum |
| Installation* | D, P | D, P | D, P | D, P | D, P |
| Dimensions (WxHxD) | 100x125x30 | 100x125x30 | 100x125x30 | 70x110x30 | 70x110x30 |
| Power Input | | | | | |
| No. of Power Inputs | 2 | 3 | 3 | 2 | 2 |
| Terminal Block | 12 - 32VDC | 12 - 32VDC | 12 - 32VDC | 12 - 32VDC | 12 - 32VDC |
| DC Jack | - | 12VDC | 12VDC | 12VDC | 12VDC |
| AC to DC Adapter | - | - | - | - | - |
| Operating Temperature | | | | | |
| 0°C to 45°C | - | - | - | - | - |
| -10°C to 60°C | √ | - | √ | - | √ |
| -25°C to 70°C | - | √ | - | - | - |
| -25°C to 75°C | - | - | - | √ (Fiber) | - |
| -34°C to 75°C | - | - | - | √ (Copper) | - |
| -40°C to 75°C | - | - | - | - | - |
| Regulatory Approvals | | | | | |
| CE / FCC | √ | √ | √ | √ | √ |
| VCCI | √ | √ | √ | √ | √ |

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

Connection Guide / Accessories



| Nic Cards >> | | | |
|-------------------------------------|--|--|------------------------|
| Model Name | GE3100 NEW | EN301 | EN400 |
| Ethernet Interface | | | |
| Max. 10/100 BASE-TX | - | - | - |
| Max. 100 BASE-FX | - | 1 | 1 |
| Max. 1000 BASE-T | 1 | - | - |
| Max. 1000 BASE-SX/LX | 1 (SFP) | - | - |
| Bus Interface | | | |
| PCI Express | ✓ | - | ✓ |
| PCI | - | ✓ | - |
| Mode of Operations | | | |
| Auto-negotiation, Auto-MDI/MDI-X | ✓ | - | - |
| Flow Control | ✓ | ✓ | ✓ |
| Store & Forward | - | - | - |
| Mechanical | | | |
| Dimensions (LxW) | 125x121 | 133x117.5 / 133x80 | 80x119.2 / 117.5x119.2 |
| Management Function | | | |
| 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) | - | - |
| Jumbo Frame | ✓ (Only TX model) | - | - |
| Operating Temperature | | | |
| 0°C to 45°C | ✓ | ✓ | ✓ |
| Driver Supports | | | |
| Windows | Windows Vista, Windows 2003, Windows XP, Windows 2000, Windows 7/8 | Windows XP, Windows 2000, Windows ME, Windows 98, Windows 95, Windows NT 3.51/4.0, Work Group 3.11 | |
| Novell | - | Netware 3.11, 3.12, 4.x, 5.x, 6.0 Clinet 32, Netware Client | |
| Unix | Linux 2.4/2.6/3.x | RedHat Linux 6.2, 7.0, 7.1 UnixWare 8.0, SCO UNIX 5.0 | |
| Others | Mac OS, 10.4, 10.5, 10.6 and 10.7 (Intel-based) | LAN Manager, LANtastic, PC-NFC, NCSA Telnet, FreeBSD 3.2, 4.0, 4.11, 4.2 | |
| Regulatory Approvals | | | |
| CE / FCC | Class B | Class B | Class B |

* Advanced Configuration & Power Interface

Connection Guide / Accessories

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| Surge Protector >> | |
|--|-----------------------|
| Model Name | PD1041 NEW |
| Interface | |
| Max. Continuous Operating Voltage U _c | ≤ 3.3VDC |
| Max. Continuous Operating Voltage U _c , PoE | ± 60VDC |
| Nominal Discharge Surge Current I _n (8/20)μs (Core-Core) | 100A |
| Nominal Discharge Surge Current I _n (8/20)μs (Core-Earth) | 2KA (per signal pair) |
| Total Surge Current (8/20)μs | 10KA |
| Nominal Pulse Current I _{an} (10/700)μs (Core-Core) | ≤ 40A |
| Nominal Pulse Current I _{an} (10/700)μs (Core-Earth) | ≤ 160A |
| Connector input/output | RJ45/RJ45 |
| Mechanical | |
| Casing | aluminum |
| Installation* | D |
| Dimensions (WxDxH) | 30x63x100 |
| Operating Temperature | |
| -40°C to 75°C | ✓ |
| Regulatory Approvals | |
| CE / FCC / VCCI | ✓ |
| UL497B | ✓ |

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

Connection Guide / Accessories

2014 Q2



| Industrial Power Supplies >> | | | | | | | |
|---|------------|------------|--------------|-------------------------|--------------|----------------|----------------|
| Model Name | DD-85-48 | DD-85-55 | DR-30-24 | DR-30-12 ^{NEW} | DR-60-24 | DR-75-24 | DR-120-24 |
| Output | | | | | | | |
| 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 |
| Input | | | | | | | |
| 12 - 36VDC | √ | √ | - | - | - | - | - |
| 85 - 264VAC / 120 - 370VDC | - | - | √ | √ | √ | √ | - |
| 88 - 132VAC / 176 - 264VDC | - | - | - | - | - | - | √ |
| 90 - 264VAC | - | - | - | - | - | - | - |
| Protection | | | | | | | |
| 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 | - | - | √ | √ | √ | - | √ |
| Mechanical | | | | | | | |
| Casing | aluminum | aluminum | plastic | plastic | plastic | aluminum | aluminum |
| Installation* | D, P | D, P | D | D | D | D | D |
| Dimensions (WxHxD) | 50x148x165 | 50x148x165 | 78x56x93 | 78x56x93 | 78x56x93 | 55.5x100x125.2 | 65.5x100x125.2 |
| Operating Temperature | | | | | | | |
| -10°C to 60°C | √ | √ | - | - | - | √ | √ |
| -20°C to 60°C | - | - | √ | √ | √ | - | - |
| -20°C to 75°C | - | - | - | - | - | - | - |
| -40°C to 75°C | - | - | - | - | - | - | - |
| Regulatory Approvals | | | | | | | |
| 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 >> | | | | | | |
|---|----------------|----------------|----------------|----------------|----------------|--------------|
| Model Name | DR-75-48 | DR-120-48 | SDR-120-48 | SDR-240-48 | SDR-480-48 | MDR-40-48 |
| Output | | | | | | |
| 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 |
| Input | | | | | | |
| 12 - 36VDC | - | - | - | - | - | - |
| 85 - 264VAC / 120 - 370VDC | √ | - | - | - | - | √ |
| 88 - 264VAC / 120 - 370VDC | - | - | √ | √ | √ | - |
| 88 - 132VAC / 176 - 264VDC | - | √ | - | - | - | - |
| Protection | | | | | | |
| 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 | √ | √ | √ | √ | √ | √ |
| Mechanical | | | | | | |
| Casing | aluminum | aluminum | aluminum | aluminum | aluminum | plastic |
| Installation* | D | D | D | D | D | D |
| Dimensions (WxDxH) | 55.5x125.2x100 | 65.5x125.2x100 | 40x125.2x113.5 | 63x125.2x113.5 | 85x125.2x128.5 | 40x100x90 |
| Operating Temperature | | | | | | |
| -10°C to 60°C | √ | √ | - | - | - | - |
| -20°C to 70°C | - | - | - | - | - | √ |
| -25°C to 70°C | - | - | √ | √ | √ | - |
| -40°C to 75°C | - | - | - | - | - | - |
| Regulatory Approvals | | | | | | |
| CE / FCC | √ | √ | √ | √ | √ | √ |
| UL60950-1 | - | √ | - | √ | √ | √ |
| UL508 | √ | √ | √ | √ | √ | √ |
| E Mark | - | - | - | - | - | - |

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

Connection Guide / Accessories



Power Adapters >>

| Model Name | GS120A-48 | 41-136042 |
|------------------------------|-----------|-----------|
| Output | | |
| DC Voltage | 48VDC | 12VDC |
| Current Range | 0 - 2.5A | 0 - 3A |
| Rated Power | 120W | 36W |
| Input | | |
| 90 - 264VDC | √ | √ |
| Mechanical | | |
| Casing | plastic | plastic |
| Installation* | - | - |
| Operating Temperature | | |
| 0°C to 55°C | √ | - |
| -40°C to 75°C | - | √ |
| Output Connector | | |
| DC Jack with Latch | √ | - |
| Open Wire for Terminal Block | - | √ |
| DC Plug | - | - |



Power Adapters >>

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

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

TransRack Series



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

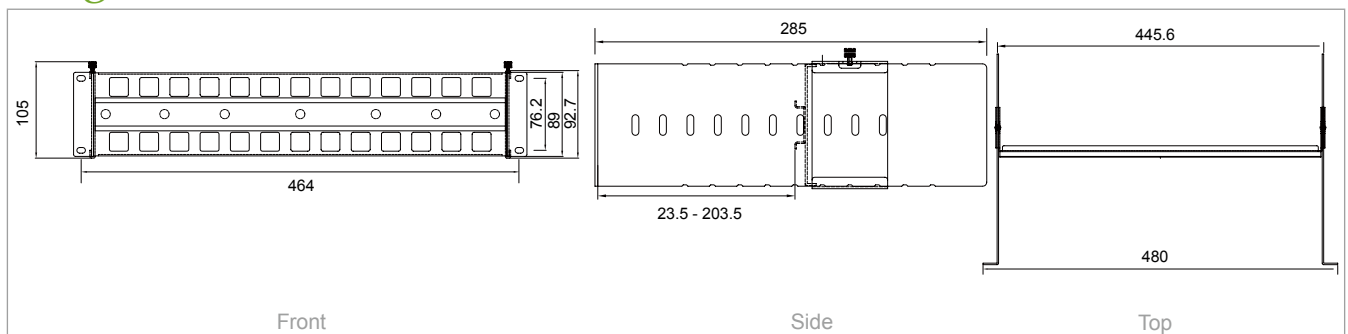
- › Patent-pending design
- › Heavy-duty cold-rolled steel
- › Adjustable in depth from 50mm (2") to 210mm (8.25")
- › Dimensions : 464mm (19") x 105mm (4.13") x 285mm (11.22") (W x H x D)

Ordering Information

| | |
|-----------|-------------|
| TransRack | KR-DINRAILB |
|-----------|-------------|

Diagrams

Unit: mm



Mounting Kits

KR-BKEL900



19" Rack mount kit (Black)
For EL900, EL9000, EL9020, EL9100, EL1141, ED3341, ED3344, ED3371,
ED3141, ED3171 series

KR-BK-43-400



19" Rack mount kit (Black)
For EX43000 series

KR-BK71000



19" Rack mount kit (Black)
For EX71000, EX61000A, ED3175 series

KR-BK72-400



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

KR-BK74-400



19" Rack mount kit (Black)
For EX74000 series

KR-AE612-400



19" Rack mount kit (Black)
For EX1616W, EX1624W, EX27000 (Single Power), EX29000 (Single Power), EX49000A,
EX75000, EX76000, EX77000 (Single Power), EX87000 (Single Power), EX89000 (Single Power),
EMC1200R series

KR-EW612-400



19" Rack mount kit (White)
For EX1608SF series

KR-BK1600R-410



19" Rack mount kit (Black)
For EMC1600 series

KR-BK17



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

KP-AA51

Panel mount kit
For SE6300 series

KP-BK6212

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

KP-AA96-480

Panel mount kit
For EX33000, EX34000, EX35000, EX36000, EX36100, EX43000, EX45000,
EX46000, EX46100, EX47000, EX61000A, EX63000, EX71000, EX73000, EX78000,
EX94000, EX95000, EL900, EL9020, EL9100, EL1141, ED3341, ED3344,
ED3371, ED3141, ED3171 series

KD-31003

DIN-Rail mount kit
For ED3101, 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, EL1033, SE5100, SE5300, FT5702, SE6100, EX42900 series

KD-AA78000

Panel mount kit
For EX78000, DD-85-48 series

KD-AA96000

DIN-Rail mount kit
For EX43000, EL1141, ED3142, ED3145, ED3146, ED3171, ED3175, EX33000, ED3371,
EX34000, EX35000, ED3538, EX36000, EX36100, ED3638, EX42200, EX45000, EX46000,
EX46100, EX47000, EX63000, EX61000A, EX71000, EX73000, EX83000, EL900, EL9100,
EX94000, EX95000, EL9000 series

KD-AAEL950

DIN-Rail mount kit
For EL910, EL950 series

KD-BK1360

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

SFP Fiber Transceivers Series



Features

- › 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 comply 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 | Ordering Number | Distance | Cable Type | Connector Type | Wavelength | ** Link Budget | Optical Output Power | Sensitivity |
|------------------|-----------------|----------|----------------------------|----------------|---------------------------|----------------|----------------------|-------------|
| EXFE-R1S4-05H1 | 96G-AMXT1ACS4 | 100M | - | TX | - | - | - | - |
| EX-0155NSP-MB2L | 96G-1MSM02CS4 | 2KM | 62.5/125 μm, MM | Duplex LC | 1310nm | 13 dbm | -19 to -14 dBm | -32 dbm |
| EX38-A3S-TC-N-B3 | 96G-7MPM02CS4 | 2KM | 62.5/125 μm/ 50/125 μm, MM | Single LC | TX:1310 nm/ RX:1550 nm | 18 dBm | -10 to 0 dbm | -28 dbm |
| EX38-A3S-TC-N-B5 | 96G-7MQM02CS4 | 2KM | 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 | 96G-1MSS15CS4 | 15KM | 9/125μm, SM | Duplex LC | 1310nm | 17 dbm | -15 to -8 dBm | -32 dbm |
| EX-0155TBP-MB5L | 96G-1MPS20CS4 | 20KM | 9/125μm, SM | Single LC | TX:1310 nm/ RX:1550 nm | 18 dBm | -14 to -8 dBm | -32 dbm |
| EX-0155TBP-LB5L | 96G-1MQS20CS4 | 20KM | 9/125μm, SM | Single LC | TX:1550 nm/ RX:1310 nm | 18 dBm | -14 to -8 dBm | -32 dbm |
| EX-0155TSP-MB6L | 96G-1MSS40CS4 | 40KM | 9/125μm, SM | Duplex LC | 1310nm | 29 dBm | -5 to 0 dBm | -34 dbm |
| EX-0155TBP-MB6L | 96G-1MPS40CS4 | 40KM | 9/125μm, SM | Single LC | TX:1310 nm/ RX:1550 nm | 26 dBm | -8 to -3 dbm | -34 dbm |
| EX-0155TBP-KB6L | 96G-1MQS40CS4 | 40KM | 9/125μm, SM | Single LC | TX:1550 nm/ RX:1310 nm | 26 dBm | -8 to -3 dbm | -34 dbm |

SFP Fiber Transceivers Series

100BASE SFP Series

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

| Model Name | Ordering Number | Distance | Cable Type | Connector Type | Wavelength | ** Link Budget | Optical Output Power | Sensitivity |
|-------------------|-----------------|----------|----------------------------|----------------|---------------------------|----------------|----------------------|-------------|
| EX-0155NSP-MB2L-A | 96G-1MSM02MS4 | 2KM | 62.5/125 μm, MM | Duplex LC | 1310nm | 13 dBm | -19 to -14 dbm | -32 dbm |
| EX38-A3S-TI-N-B3 | 96G-7MPM02MS4 | 2KM | 62.5/125 μm/ 50/125 μm, MM | Single LC | TX:1310 nm/ RX:1550 nm | 18 dbm | -10 to 0 dbm | -28 dbm |
| EX48-A3S-TI-N-B5 | 96G-7MQM02MS4 | 2KM | 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 | 96G-1MSS15MS4 | 15KM | 9/125μm, SM | Duplex LC | 1310nm | 19 dbm | -15 to -8 dbm | -34 dbm |
| EX-0155TBP-MB5L-A | 96G-1MPS20MS4 | 20KM | 9/125μm, SM | Single LC | TX:1310 nm/ RX:1550 nm | 18 dBm | -14 to -8 dbm | -32 dbm |
| EX-0155TBP-LB5L-A | 96G-1MQS20MS4 | 20KM | 9/125μm, SM | Single LC | TX:1550 nm/ RX:1310 nm | 18 dBm | -14 to -8 dbm | -32 dbm |
| EX-0155TSP-MB6L-A | 96G-1MSS40MS4 | 40KM | 9/125μm, SM | Duplex LC | 1310nm | 30 dbm | -5 to 0 dbm | -35 dbm |
| EX-0155TBP-MB6L-A | 96G-1MPS40MS4 | 40KM | 9/125μm, SM | Single LC | TX:1310 nm/ RX:1550 nm | 26 dbm | -8 to -3 dbm | -34 dbm |
| EX-0155TBP-KB6L-A | 96G-1MQS40MS4 | 40KM | 9/125μm, 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 | Ordering Number | Distance | Cable Type | Connector Type | Wavelength | ** Link Budget | Optical Output Power | Sensitivity |
|-------------------------------|-----------------|---------------|----------------------------|----------------|---------------------------|----------------|----------------------|-------------|
| EX-1250NSP-SB1L | 96G-1GSM02CS4 | 275M/ 550M | 62.5/125 μm/ 50/125 μm, MM | Duplex LC | 850nm | 7.5 dBm | -9.5 to -4 dBm | -17 dBm |
| EX-1250TBP-MB1L | 96G-1GPM02CS4 | 550M | 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 | 96G-1GQM02CS4 | 550M | 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 | 96G-1GSN02CS4 | 2KM | 62.5/125 μm, MM | Duplex LC | 1310nm | 13.5 dBm | -9.5 to -3 dBm | -23 dBm |
| EX-1250TSP-MB4L | 96G-1GSN02CS4 | 10KM | 9/125μm, SM | Duplex LC | 1310nm | 11.5 dBm | -9.5 to -3 dBm | -21 dBm |
| EX-1250TBP-MB4L | 96G-1GPS10CS4 | 10KM | 9/125μm, SM | Single LC | TX:1310 nm/ RX:1550 nm | 12 dBm | -9 to -3 dBm | -21 dBm |
| EX-1250TBP-KB4L | 96G-1GQS10CS4 | 10KM | 9/125μm, SM | Single LC | TX:1550 nm/ RX:1310 nm | 12 dBm | -9 to -3 dBm | -21 dBm |
| EX-1250TSP-MB5L | 96G-1GSS20CS4 | 20KM | 9/125μm, SM | Duplex LC | 1310nm | 15 dBm | -9 to -3 dBm | -24 dBm |
| EX-1250TBP-MB5L | 96G-1GPS20CS4 | 20KM | 9/125μm, SM | Single LC | TX:1310 nm/ RX:1550 nm | 15 dBm | -8 to -3 dBm | -23 dBm |
| EX-1250TBP-KB5L | 96G-1GQS20CS4 | 20KM | 9/125μm, SM | Single LC | TX:1550 nm/ RX:1310 nm | 15 dBm | -8 to -3 dBm | -23 dBm |
| EX-1250TSP-NB6L | 96G-1GSS40CS4 | 40KM | 9/125μm, SM | Duplex LC | 1310nm | 20 dBm | -3 to +2 dBm | -23 dBm |
| EX-1250TBP-NB6L-D | 96G-1GPS40CS4 | 40KM | 9/125μm, SM | Single LC | TX:1310 nm/ RX:1550 nm | 20 dBm | -3 to +2 dBm | -23 dBm |
| EX-1250TBP-KB6L-D | 96G-1GQS40CS4 | 40KM | 9/125μm, SM | Single LC | TX:1550 nm/ RX:1310 nm | 20 dBm | -3 to +2 dBm | -23 dBm |
| EX-1250TBP-NB7L-D | 96G-1GPS60CS4 | 60KM | 9/125μm, SM | Single LC | TX:1310 nm/ RX:1550 nm | 25 dBm | 0 to +5 dBm | -23 dBm |
| EX-1250TBP-KB7L-D | 96G-1GQS60CS4 | 60KM | 9/125μm, SM | Single LC | TX:1550 nm/ RX:1310 nm | 23 dBm | -2 to +3 dBm | -25 dBm |
| EX-1250TSP-KB8L | 96G-1GSS70CS4 | 70KM | 9/125μm, SM | Duplex LC | 1550nm | 23 dBm | 0 to +5 dBm | -23 dBm |
| EX-1250TSP-CB8L | 96G-1GWS70CS4 | 70KM | 9/125μm, SM | Duplex LC | 1550nm (CWDM) | 24 dBm | 0 to +5 dBm | -24 dBm |
| EX-1250TBP-CB8L-D (1490nm) | 96G-1GPS80CS4 | 80KM | 9/125μm, SM | Single LC | TX:1490 nm/ RX:1570 nm | 24 dBm | -1 to +4 dBm | -25 dBm |
| EX-1250TBP-CB8L-D (1570nm) | 96G-1GQS80CS4 | 80KM | 9/125μm, SM | Single LC | TX:1570 nm/ RX:1490 nm | 24 dBm | -1 to +4 dBm | -25 dBm |

SFP Fiber Transceivers Series

Gigabit SFP Series

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

| Model Name | Ordering Number | Distance | Cable Type | Connector Type | Wavelength | ** Link Budget | Optical Output Power | Sensitivity |
|-------------------|-----------------|---------------|----------------------------|----------------|---------------------------|----------------|----------------------|-------------|
| EX-1250NSP-SB1L-A | 96G-1GSM02MS4 | 275M/ 550M | 62.5/125 µm/ 50/125 µm, MM | Duplex LC | 850nm | 7.5 dBm | -9.5 to -4 dBm | -17 dBm |
| EX-1250TBP-MB1L-A | 96G-1GPM02MS4 | 550M | 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 | 96G-1GQM02MS4 | 550M | 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-A | 96G-1GSN02MS4 | 2KM | 62.5/125 µm, MM | Duplex LC | 1310nm | 13.5 dBm | -9.5 to -3 dBm | -23 dBm |
| EX-1250TSP-MB4L-A | 96G-1GSS10MS4 | 10KM | 9/125µm, SM | Duplex LC | 1310nm | 11.5 dBm | -9.5 to -3 dBm | -21 dBm |
| EX-1250TBP-MB4L-A | 96G-1GPS10MS4 | 10KM | 9/125µm, SM | Single LC | TX:1310 nm/ RX:1550 nm | 12 dBm | -9 to -3 dBm | -21 dBm |
| EX-1250TBP-KB4L-A | 96G-1GQS10MS4 | 10KM | 9/125µm, SM | Single LC | TX:1550 nm/ RX:1310 nm | 12 dBm | -9 to -3 dBm | -21 dBm |
| EX-1250TSP-MB5L-A | 96G-1GSS20MS4 | 20KM | 9/125µm, SM | Duplex LC | 1310nm | 15 dBm | -9 to -3 dBm | -24 dBm |
| EX-1250TBP-MB5L-A | 96G-1GPS20MS4 | 20KM | 9/125µm, SM | Single LC | TX:1310 nm/ RX:1550 nm | 15 dBm | -8 to -3 dBm | -23 dBm |
| EX-1250TBP-KB5L-A | 96G-1GQS20MS4 | 20KM | 9/125µm, SM | Single LC | TX:1550 nm/ RX:1310 nm | 15 dBm | -8 to -3 dBm | -23 dBm |
| EX-1250TSP-NB6L-A | 96G-1GSS40MS4 | 40KM | 9/125µm, SM | Duplex LC | 1310nm | 20 dBm | -3 to +2 dBm | -23 dBm |
| EX-1250TSP-KB8L-A | 96G-1GSS70MS4 | 70KM | 9/125µm, SM | Duplex LC | 1550nm | 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 | Ordering Number | Distance | Cable Type | Connector Type | Wavelength | ** Link Budget | Optical Output Power | Sensitivity |
|------------------|-----------------|-------------|----------------------------|----------------|------------|----------------|----------------------|-------------|
| EX-LM28-H3S-TC-N | 96G-7TIM02ES4 | 30M/ 80M | 62.5/125 µm/ 50/125 µm, MM | Duplex LC | 850nm | 2.8 dBm | -7.1 to -1 dBm | -9.9 dBm |
| EX-LS38-H3S-TC-N | 96G-7TIS10ES4 | 10KM | 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

Choose the Right Partner Who Delivers

EtherWAN - When connectivity is crucial

At EtherWAN, we understand that quality is important to your business just as it is to ours. As a leader in designing hardened networking solutions we closely monitor each step of the design process from the component selection to comprehensive design verification testing prior to production. EtherWAN's manufacturing process is also monitored at every stage ensuring the highest quality is being delivered. Our hardened products are required to pass stringent real-time data transfer testing at temperatures from -40°C to $+85^{\circ}\text{C}$ for up to 72 hours without compromise. In addition to the torturous data testing, our products are subjected to numerous other testing such as shock, vibration, drop, electrostatic discharge, electrical burst immunity, surge immunity, and EMI radiation just to name a few. All tests are designed and implemented in EtherWAN's comprehensive labs to ensure our products meet or exceed the demanding requirements of the markets we serve. For mission-critical applications where connectivity is crucial, look to EtherWAN Systems as your solution provider.



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