

EL9000 Series

1000Base-T to 1000Base-SX/LX Hardened Media Converter

DIREKTRONIK

Direktronik AB tel. 08-52 400 700 www.direktronik.se



Overview

The EL9000 series, Gigabit Ethernet media converters are designed to operate in harsh environments. The EL9000 functions at temperatures ranging from -40°C to 75°C (-40°F to 167°F) and is tested for functional operation @ -40°C to 85°C (-40°F to 185°F). Whether on the factory floor or the street corner, the EL9000 will provide flawless communications when you need it most. EL9000 series supports multi-mode/single-mode/WDM single-mode fiber optics. The RJ-45 port on this unit provides Auto-MDIX and auto-negotiation. The link-fault-pass-through feature allows the network management agent on adjacent equipment to react to a broken link. Flexibility is the main feature of the EL9000, it may be DIN rail or panel mounted, and comes with power options to match the applications that require a tough, environmentally hardened, Gigabit Ethernet media converter.

Features

- ▶ Complies with NEMA TS1 & TS2 Environmental requirements for Traffic control equipment
- ▶ Complies with IEC61000-6-2 EMC Generic standard immunity for Industrial environment
- ▶ UL 1604 Class 1, Division 2 Classified for use in hazardous locations (applicable to versions with terminal block power option)
- ▶ DIP switch configuration for "Link-Fault-Pass-Through", fiber auto/force mode, link down alarm
- ▶ 1000Mbps-Auto/Full-duplex, Auto-Negotiation, Auto-MDI/MDIX
- ▶ Full wire-speed forwarding rate
- ▶ Alarms for power and port link failure by relay output
- ▶ Redundant power inputs with Terminal Block or DC Jack
- ▶ -40°C to 75°C (-40°F to 167°F) operating temperature range
- ▶ Hardened aluminum case
- ▶ Supports DIN-Rail, Panel or Rack Mounting installation

Ordering Information

EL9000-X-Y-I-P 1000Base-T to 1000Base-SX/LX Hardened Media Converter

Gigabit Options :

- (X) = A : 1000Base-T (for Port 1 only)
(Y) = B : 1000Base-SX (SC)
N : 1000Base-LX (SC) -10Km
O : 1000Base-LX (SC) -20Km
P : 1000Base-LX (SC) WDM -TX:1310nm/RX:1550nm -10Km
Q : 1000Base-LX (SC) WDM -TX:1550nm/RX:1310nm -10Km
R : 1000Base-LX (SC) WDM -TX:1310nm/RX:1550nm -20Km
S : 1000Base-LX (SC) WDM -TX:1550nm/RX:1310nm -20Km

*More Gigabit options also available upon request.

Installation Type :

- (I) = 1 : DIN Rail (mounting kit is included)
Optional Panel mount kit, ordered separately,
part number: **KP-AA96-480**



Power Connector Options :

- (P) = A : Terminal Block* / B : DC Jack**
*Options A -The Terminal Block type external power supply are not included. Please order the following part numbers, as required: **DR-30-24, DR-60-24, DR-75-24, DR-120-24** or **41-136046-X X=1,2,3,4,5**
Options B -The external power adapter and power cord are not included. Please order the following part numbers, as required: **41-136044-X X=1,2,3,4,5

*See page 4-5 to 4-9 for more detailed information about optional accessories (Din-Rail Power supply, Power adapter)

DIREKTRONIK

Direktronik AB tel. 08-52 400 700 www.direktronik.se

Specifications

Technology

Standards:

- IEEE802.3ab 1000Base-T, IEEE802.3z 1000Base-SX/1000Base-LX, IEEE802.3x

Forward and Filtering Rate:

- 1,488,100pps for 1000Mbps

Power

Input:

- Input Voltage: 12 to 48VDC (Terminal Block); 12VDC (DC Jack)

Power Consumption:

- 9.12W, 0.76A @ 12VDC, 0.38A @ 24VDC, 0.19A @ 48VDC

Power Supply References:

- Terminal Block: 12 to 24VDC, 1.5A
- DC Jack: 12VDC, 3A

Overload Current Protection:

- Present

Reverse Polarity Protection:

- Present

Mechanical

Casing:

- Aluminum case
- IP20

Dimensions:

- 50mm (W) x 110mm (D) x 135mm (H)
(1.97" (W) x 4.33" (D) x 5.31" (H))

Weight:

- 0.8Kg (1.76lbs.)

Installation:

- DIN-Rail, Panel, Rack Mounting

Interface

Ethernet Port:

- 1000Base-T: 1 port
- 1000Base-SX/LX: 1 port

LED Indicators:

- Per Unit: Power Status (Power1, Power2, Fault)
- Per Port: 1000T, 1000SX/LX: LNK, TX, RX

Alarm Contact:

- One relay output with current 1A @ 24VDC

Environment

Operating Temperature:

- -40°C to 75°C (-40°F to 167°F)
Tested @ -40°C to 85°C (-40°F to 185°F)

Storage Temperature:

- -40°C to 85°C (-40°F to 185°F)

Ambient Relative Humidity:

- 5% to 95% (non-condensing)

Regulatory Approvals:

ISO:

- Manufactured in an ISO9001 facility

Safety:

- Hazardous locations: Class 1, Division 2 group A,B,C&D
- UL60950-1, EN60950-1, IEC60950-1

EMI:

- FCC Part 15, Class A
- EN61000-6-3
 - EN55022
 - EN61000-3-2
 - EN61000-3-3

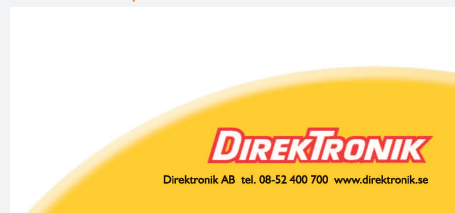
EMS:

- EN61000-6-2
 - EN61000-4-2 (ESD Standards)
Contact: + / - 4KV; Criteria B
Air: + / - 8KV; Criteria B
 - EN61000-4-3 (Radiated RFI Standards)
10V/m, 80 to 1000MHz; 80% AM Criteria A
 - EN61000-4-4 (Burst Standards)
Signal Ports: + / - 4KV; Criteria B
D.C. Power Ports: + / - 4KV; Criteria B
A.C. Power Ports: + / - 4KV; Criteria B
 - EN61000-4-5 (Surge Standards)
Signal Ports: + / - 1KV; Line-to-Line; Criteria B
D.C. Power Ports: + / - 0.5KV; Line-to-earth; Criteria B
A.C. Power Ports: + / - 2KV; Line-to-earth; Criteria B
 - EN61000-4-6 (Induced RFI Standards)
Signal Ports: 10Vrms @ 0.15~80MHz; 80% AM Criteria A
D.C. Power Ports: 10Vrms @ 0.15~80MHz; 80% AM Criteria A
A.C. Power Ports: 10Vrms @ 0.15~80MHz; 80% AM Criteria A
 - EN61000-4-8 (Magnetic Field Standards)
30A/m @ 50, 60Hz; Criteria A
 - EN61000-4-11 (Voltage Dip Standards)
A.C. Power Ports: 30% Reduction for 0.5 period; Criteria B

Environmental Test Compliance:

- IEC60068-2-6 Fc (Vibration Resistance)
5g @ 10~150KHz, Amplitude 0.35mm (Operation/Storage/Transport)
- IEC60068-2-27 Ea (Shock)
25g @ 11ms (Half-Sine Shock Pulse; Operation)
50g @ 11ms (Half-Sine Shock Pulse; Storage/Transport)
- IEC60068-2-32 Ed (Free Fall)
1M (3.281ft.)

NEMA TS1/2 Environmental requirements for Traffic control equipment



Diagrams

