

# EL900 Series

10/100Base-TX to 100Base-FX Hardened Media Converter

**DIREKTRONIK**

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## Overview

The EL900 series, Fast Ethernet media converters are designed to operate in harsh environments. The EL900 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 EL900 will provide flawless communications when you most need it most. EL900 series are available in all types of fiber cabling and connector types. 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 EL900, it may be DIN rail or panel mounted, and comes with power options to match the applications that require a tough, environmentally hardened, Fast 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", link down alarm, speed, duplex mode
- ▶ 2048 MAC addresses
- ▶ 768K bits buffer memory
- ▶ 10/100Mbps-Full/Half-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

EL900-X-Y-I-P 10/100Base-TX to 100Base-FX Hardened Media Converter

### 10/100TX Options :

(X) = A : 10/100Base-TX (for Port 1 only)

### 100FX Fiber Options :

(Y) = B : Multi Mode (SC)  
C : Multi Mode (ST)  
D : Multi Mode (SC) WDM -TX:1310nm/RX:1550nm -2Km  
E : Multi Mode (SC) WDM -TX:1550nm/RX:1310nm -2Km  
F : Multi Mode (SC) WDM -TX:1310nm/RX:1550nm -5Km  
G : Multi Mode (SC) WDM -TX:1550nm/RX:1310nm -5Km  
M : Single Mode (ST) -20Km  
N : Single Mode (SC) -20Km  
O : Single Mode (SC) -40Km

Q : Single Mode (SC) WDM -TX:1310nm/RX:1550nm -20Km  
R : Single Mode (SC) WDM -TX:1550nm/RX:1310nm -20Km  
S : Single Mode (SC) WDM -TX:1310nm/RX:1550nm -40Km  
T : Single Mode (SC) WDM -TX:1550nm/RX:1310nm -40Km

\*More 100FX Fiber 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 5-8 to 5-15 for more detailed information about optional accessories (Din-Rail Power supply, Power adapter)

## Specifications

### Technology

#### Standards:

- IEEE802.3 10Base-T, IEEE802.3u 100Base-TX/100Base-FX, IEEE802.3x

#### Forward and Filtering Rate:

- 14,880pps for 10Mbps
- 148,810pps for 100Mbps

#### Packet Buffer Memory:

- 768K bits

#### Processing Type:

- Store-and-Forward
- Half-duplex back-pressure and IEEE802.3x full-duplex flow control

#### Address Table Size:

- 2048 MAC addresses

#### Latency:

- Less than 128.9µs

### Power

#### Input:

- Input Voltage: 10 to 48VDC (Terminal Block); 12VDC (DC Jack)

#### Power Consumption:

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

#### Overload Current Protection:

- Present

#### Reverse Polarity Protection:

- Present

### Mechanical

#### Casing:

- Aluminum case
- IP30

#### 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 (Top hat type 35mm), Panel, Rack Mounting

### Interface

#### Ethernet Port:

- 10/100Base-TX: 1 port
- 100Base-FX: 1 port

#### LED Indicators:

- Per Unit: Power Status (Power 1, Power 2, Fault), Link-Fault-Pass-Through
- Per Port: 10/100TX: Link/Activity, Full-duplex/Collision, Speed 100FX: Link/Activity, Full-duplex/Collision

#### Relay Contact:

- Relay contact rating with current 1A@30VDC, 0.5A@120VAC

### 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
  - EN61000-4-5 (Surge Standards)  
Signal Ports: + / - 1KV; Line-to-Line; Criteria B  
D.C. Power Ports: + / - 0.5KV; 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
  - EN61000-4-8 (Magnetic Field Standards)  
30A/m @ 50, 60Hz; Criteria A

#### 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

