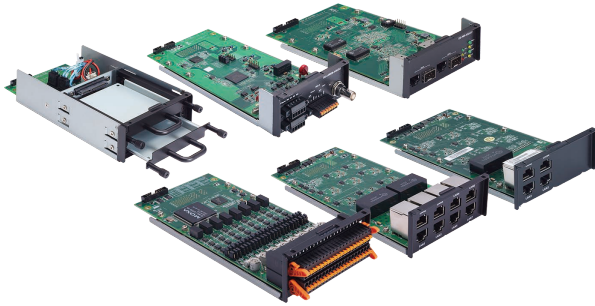


# DA-720 Series Expansion Modules

**Expansion modules with PRP/HSR ports, RS-232/422/485 serial ports, Giga LAN ports, and SATA kit**



- > PRP/HSR module
- > 4-port Giga LAN module
- > 8-port Giga LAN module
- > SATA Storage expansion module
- > IRIG-B time-synchronization module
- > 8-port RS-232/422/485 software-selectable serial modules with isolation protection



## Introduction

DA-720's peripheral expansion modules, which come with PRP/HSR ports, serial ports, LAN ports, time-synchronization IRIG-B ports, and SATA storage expansion kit, give end-users the greatest flexibility for setting up industrial applications.

The serial port modules include an 8-port RS-232/422/485 module with terminal block connectors and designed with 2 kV digital isolation, making it fully suitable for the great demands of industrial applications that use serial communication.

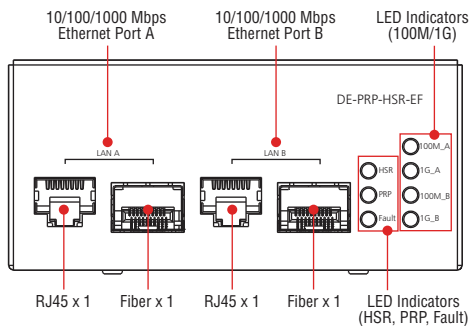
In addition, a 4-port LAN module, 8-port LAN module, and PRP/HSR module are available for setting up industrial communication applications with Ethernet-based devices. A SATA storage kit is also available for expanding data storage to industrial applications.

The time-synchronization module features 4 digital inputs and 4 digital outputs and provides precision timing information using IRIG-B input signals. All modules are designed to offer the greatest flexibility for setting up applications and performing industrial tasks. In particular, users can swap out modules quickly and easily.

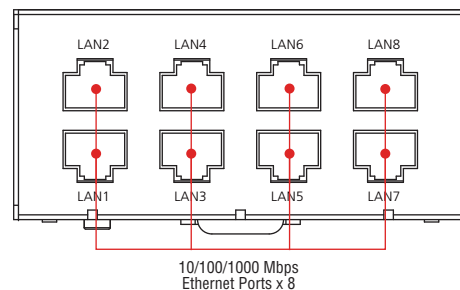
The PRP/HSR expansion module is compliant with IEC 62439-3 Clause 4 (PRP) and IEC 62439-3 Clause 5 (HSR) to ensure the highest system availability and data integrity for mission-critical applications that require redundancy and zero-time recovery. With dual Gigabit Ethernet port design, the DA-PRP/HSR provides high performance for redundant network systems. Moxa's DA-720 series industrial computer with the DA-PRP/HSR is the ideal solution for power substation automation and process automation systems.

## Appearance

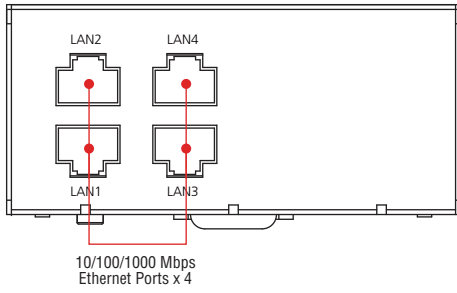
### DE-PRP-HSR-EF



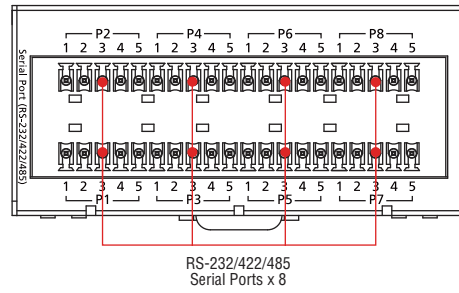
### DE-LN08-RJ



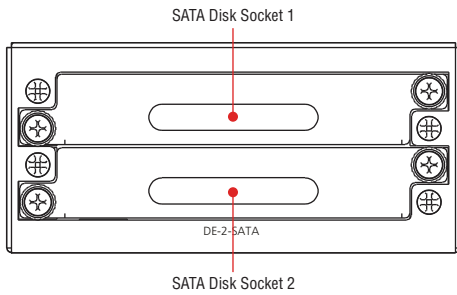
**DE-LN04-RJ**



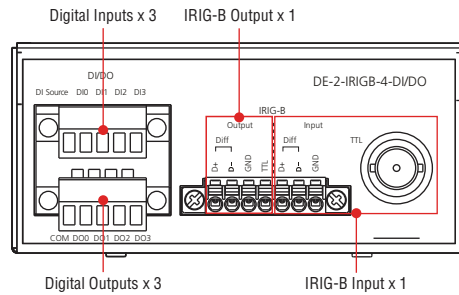
**DE-SP08-I-TB**



**DE-2-SATA**

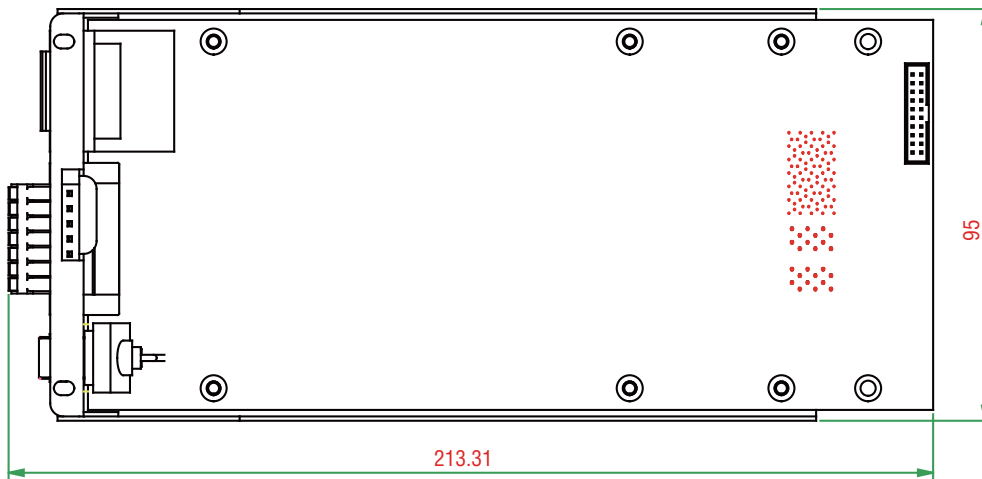


**DE-2-IRIGB-4-DI/DO**



**Dimensions**

Unit: mm



**Software Installation**

**Details:** DA-720 Series Linux Software User's Manual, Chapter 6  
**Details:** DA-720 Series Windows Software User's Manual, Chapter 7

## DE-PRP-HSR-EF Hardware Specifications

### Ethernet Interface

**LAN:** 2 auto-sensing 100/1000 Mbps unmanaged Ethernet switch ports (RJ45 and SFP)

**Fiber Ports:** 1000 Base SFP slot

**Magnetic Isolation Protection:** 15 kV built-in

### Physical Characteristics

**Weight:** TBD

**Dimensions:** 213.31 x 95 mm (8.398 x 3.74 in)

**MTBF (mean time between failures):** TBD

### Environmental Limits

**Operating Temperature:** -25 to 55°C (-13 to 131°F)

### Warranty

**Warranty Period:** 3 years

**Details:** See [www.moxa.com/warranty](http://www.moxa.com/warranty)

## DE-LN08-RJ/DE-LN04-RJ Hardware Specifications

### Ethernet Interface

**LAN:**

DE-LN04-RJ: 4 auto-sensing 10/100/100 Mbps ports (RJ45)

DE-LN08-RJ: 8 auto-sensing 10/100/100 Mbps ports (RJ45)

**Magnetic Isolation Protection:** 1.5 kV built-in

### Physical Characteristics

**Weight:** TBD

**Dimensions:** 213.31 x 95 mm (8.398 x 3.74 in)

**MTBF (mean time between failures):** TBD

### Environmental Limits

**Operating Temperature:** -25 to 55°C (-13 to 131°F)

### Warranty

**Warranty Period:** 3 years

**Details:** See [www.moxa.com/warranty](http://www.moxa.com/warranty)

## DE-SP08-I-TB Hardware Specifications

### Serial Interface

**Serial Standards:** 8 RS-232/422/485 ports, software selectable (DB9 male or terminal block connector)

**ESD Protection:** 8 kV contact, 15 kV air

**Surge Protection:** 2 kV line-to-line and 4 kV line-to-ground surge protection, 8/20 μs waveform

**Insulation:** 500 V

**Isolation:** 2 kV digital isolation

**Pull low/high:** 1k/150k, jumper selectable

**Termination Resistor:** 120 ohms, jumper selectable

### Serial Communication Parameters

**Data Bits:** 5, 6, 7, 8

**Stop Bits:** 1, 1.5, 2

**Parity:** None, Even, Odd, Space, Mark

**Flow Control:** RTS/CTS, XON/XOFF, ADDC® (automatic data direction control) for RS-485

**Baudrate:** 50 bps to 921.6 kbps (supports non-standard baudrates; see user's manual for details)

### Serial Signals

**RS-232:** TxD, RxD, RTS, CTS, GND

**RS-422:** TxD+, TxD-, RxD+, RxD-, GND

**RS-485-4w:** TxD+, TxD-, RxD+, RxD-, GND

**RS-485-2w:** Data+, Data-, GND

### Physical Characteristics

**Weight:** TBD

**Dimensions:** 213.31 x 95 mm (8.398 x 3.74 in)

**MTBF (mean time between failures):** TBD

### Environmental Limits

**Operating Temperature:** -25 to 55°C (-13 to 131°F)

### Warranty

**Warranty Period:** 3 years

**Details:** See [www.moxa.com/warranty](http://www.moxa.com/warranty)

## DE-2-SATA Hardware Specifications

### Hardware

**Interface:** 2 x 2.5" SATA III Socket

### Physical Characteristics

**Weight:** TBD

**Dimensions:** 213.31 x 95 mm (8.398 x 3.74 in)

**MTBF (mean time between failures):** TBD

### Environmental Limits

**Operating Temperature:** -25 to 55°C (-13 to 131°F)

### Warranty

**Warranty Period:** 3 years

**Details:** See [www.moxa.com/warranty](http://www.moxa.com/warranty)

## DE-2-IRIGB-4-DI/DO Hardware Specifications

### Interface

**IRIG-B:** 7-pin terminal block and BNC

**DI/DO:** 2 x 5-pin terminal block

### Time Code Input

**IRIG-B:** Based on the IRIG STANDARD 200-04 and IEEE 1344

### Precision and Accuracy

**Accuracy (Time Synchronization):** ±1 μs

**Accuracy (Free Running):** ±500 ms @ 24 hr

### Input Signals

**Single Level:**

- Open: High
- Short to GND: > Low
- Level Input: 5 to 12 V

**Differential Level:**

- D+ - D- > 0.2 V, RXD is High
- D+ - D- < -0.2 V, RXD is Low
- Level Input: 5 V

### Protection

**ESD Protection:** 8 kV contact, 15 kV Air ESD protection

**Surge Protection:** 2 kV line-to-line and 4 kV line-to-ground surge protection, 8/20 μs waveform

**Insulation:** 500 V

### Digital Input

**Input Channels:** 4, source type

**Input Voltage:** 0 to 30 VDC

**Digital Input Levels for Dry Contacts:**

- Logic level 0: Close to GND
- Logic level 1: Open

**Digital Input Levels for Wet Contacts:**

- Logic level 0: +3 V max.
- Logic level 1: +10 V to +30 V (source to DI)

**Isolation:** 3 kV optical isolation

### Digital Output

**Output Channels:** 4, sink type

**Output Current:** Max. 200 mA per channel

**On-state Voltage:** 24 VDC nominal, open collector to 30 V

**Isolation:** 3 kV optical isolation

### Physical Characteristics

**Weight:** TBD

**Dimensions:** 213.31 x 95 mm (8.398 x 3.74 in)

**MTBF (mean time between failures):** TBD

### Environmental Limits

**Operating Temperature:** -25 to 55°C (-13 to 131°F)

**Storage Temperature:** -40 to 85°C (-40 to 185°F)

**Ambient Relative Humidity:** 5 to 95% (non-condensing)

**Altitude:** Up to 2000 m

### Warranty

**Warranty Period:** 3 years

**Details:** See [www.moxa.com/warranty](http://www.moxa.com/warranty)

## Ordering Information

### Available Models

**DE-PRP-HSR-EF:** 2-port Gigabit Ethernet expansion module compliant with IEC62439-3 protocol for Moxa DA-720 series industrial computers

**DE-2-IRIGB-4-DI/DO:** 2 IRIG-B signal input port, 4 digital inputs, 4 digital outputs

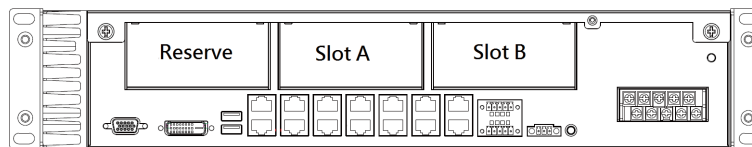
**DE-SP08-I-TB:** 8-port RS-232/422/485 serial module with terminal block connector and digital isolation

**DE-LN04-RJ:** 4-port 10/100/1000 Mbps LAN module

**DE-LN08-RJ:** 8-port 10/100/1000 Mbps LAN module

**DE-2-SATA:** 2 x SATA-III 2.5" Storage kit

### Optional DA-720 Expansion Modules (can be purchased separately)



Expansion Module	Description	Reserve Slot	Module Slot A	Module Slot B
DE-LN04-RJ	4-port 100/1000 Mbps PCIe LAN module	N/A (Bandwidth Limitation)	✓	N/A (Bandwidth Limitation)
DE-LN08-RJ	8-port 100/1000 Mbps PCIe LAN module	N/A (Bandwidth Limitation)	✓	N/A (Bandwidth Limitation)
DE-2-SATA	2 x 2.5" SATA III SSD/HDD Socket Module	✓	✓	N/A (Heat Limitation)
DE-PRP-HSR-EF	2-Port 100/1000 Mbps PCIe PRP/HSR LAN Module	✓	✓	N/A (Heat Limitation)
DE-SP08-I-TB	8-port RS-232/422/485 PCIe serial module	✓	✓	✓
DE-2-IRIGB-4-DI/DO	2-port IRIG-B time synchronization module with 4 DI/DO	✓	✓	✓

Note: Please refer to the DA-720 Hardware/Software manuals for detailed information.