

# DA Series Expansion Modules

**Expansion modules with RS-232/422/485 and RS-232/485 serial ports, 10/100 Mbps LAN and unmanaged switch ports, 100 Mbps fiber LAN ports, and PCI development kit**



- > PCI slots for interface expansion
- > 8-port RS-232/422/485 software-selectable serial modules with isolation protection
- > 4-port 10/100 Mbps LAN module
- > 4-port 100 Mbps fiber LAN module
- > 8-port 10/100 Mbps unmanaged switch module
- > Universal PCI expansion module
- > 8-port RS-422/485 serial module with terminal block connectors
- > Fully compatible with Moxa embedded computers that have peripheral expansion slots



## Overview

Moxa's peripheral expansion modules, which come with serial ports, LAN ports, switch ports, and PCI slots, give end-users the greatest flexibility for setting up industrial applications.

Different types of modules are available, including serial port modules, LAN port modules, switch port modules, and PCI modules, and all are fully compatible with Moxa's embedded computers that come with peripheral expansion slots.

The serial port modules include an 8-port RS-232/422/485 module with either DB9 or terminal block connectors, and an 8-port RS-422/485 module with terminal block connectors. Some modules are even designed with 2 KV digital isolation, making them fully suitable

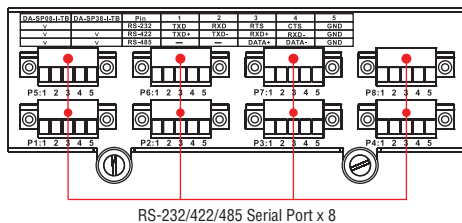
for the great demands of industrial applications that use serial communication.

In addition, a 4-port LAN module, 8-port switch module, and 4-port fiber LAN module are available for setting up industrial communication applications with Ethernet-based devices. A universal PCI development kit is also available for PCI-based devices for expanding industrial applications at a reasonable cost.

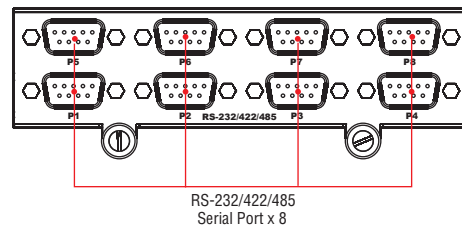
All modules are designed to offer the greatest flexibility for setting up applications and performing industrial tasks. In particular, users can swap out modules quickly and easily.

## Appearance

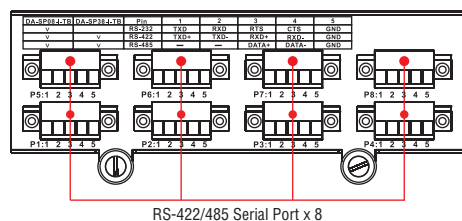
### DA-SP08-I-TB



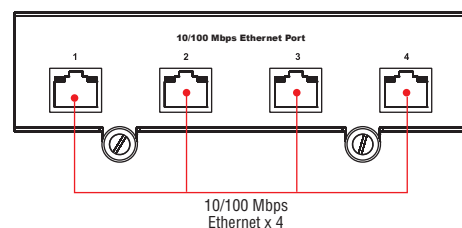
### DA-SP08-DB/DA-SP08-I-DB



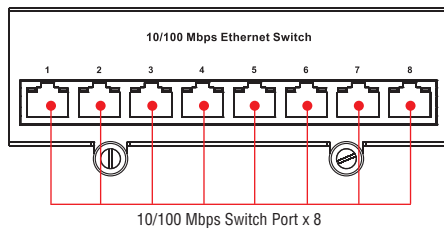
### DA-SP38-I-TB



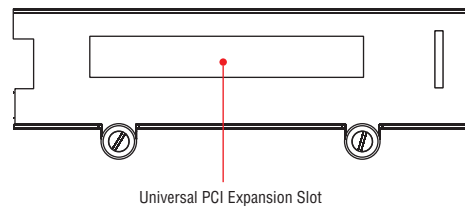
### DA-LN04-RJ



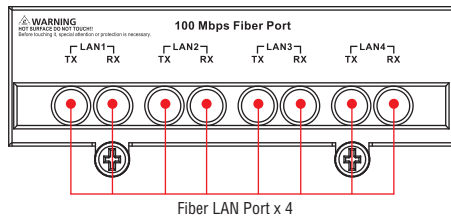
### DA-SW08-RJ



### DA-UPCI-DK



### DA-FX04-MM-ST-T



## : DA-SP08-DB, DA-SP08-I-DB, DA-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:** 15 KV for all signals

**Isolation:** 2 KV digital isolation (DA-SP08-I-DB and DA-SP08-I-TB only)

### 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, DTR, DSR, RTS, CTS, DCD, 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:** 290 g

**Dimensions:** 130 x 150 x 42 mm (5.12 x 5.91 x 1.65 in)

**MTBF (mean time between failures):** 1,753,143 hrs

## : DA-SP38-I-TB Hardware Specifications

### Serial Interface

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

**ESD Protection:** 15 KV for all signals

**Isolation:** 2 KV digital isolation

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

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

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

### Physical Characteristics

**Weight:** 245 g

**Dimensions:** 130 x 150 x 42 mm (5.12 x 5.91 x 1.65 in)

## : DA-LN04-RJ Hardware Specifications

### Ethernet Interface

**LAN:** 4 auto-sensing 10/100 Mbps ports (RJ45)

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

### Physical Characteristics

**Weight:** 198 g

**Dimensions:** 132 x 150 x 42 mm (5.20 x 5.91 x 1.65 in)

## : DA-SW08-RJ Hardware Specifications

### Ethernet Interface

**LAN:** 8 auto-sensing 10/100 Mbps unmanaged Ethernet switch ports (RJ45)

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

### Physical Characteristics

**Weight:** 200 g

**Dimensions:** 132 x 150 x 42 mm (5.20 x 5.91 x 1.65 in)

## : DA-UPCI-DK Hardware Specifications

### Universal PCI Expansion Adaptor

**PCI Slots:** 1

**Interface Bus:** 32-bit Universal PCI (3.3 V and 5 V)

### Physical Characteristics

**Weight:** 195 g

**Dimensions:** 132 x 150 x 42 mm (5.20 x 5.91 x 1.65 in)

**MTBF (mean time between failures):** 11,053,266 hrs

## : DA-FX04-MM-ST-T Hardware Specifications

### Fiber Interface

**Number of Ports:** 4 (100BaseFX)

**Fiber Mode:** Multi-mode

**Connector Type:** ST

**Optical Wavelength:** 0 to 2 km, 1310 nm (62.5/125 μm, 500 MHz\*km)

**Min-TX Output:** -20 dBm

**Max-TX Output:** -14 dBm

**RX Sensitivity:** -34 dBm

### Physical Characteristics

**Weight:** 495 g

**Dimensions:** 132 x 150 x 42 mm (5.20 x 5.91 x 1.65 in)

### Environmental Limits

**Operating Temperature:** -40 to 70°C (-40 to 158°F)

### Standards and Certifications

**EMC:** EMC Level 4, ESD Level 4, criteria A

### Software Functions

**IEEE 1588 or IP Teaming Selectable (Default =IP Teaming):** Supports 4 modes

**AFT:** Adaptor Failover Teaming

**SFT:** Switch Fault Tolerance

**ALB:** Adaptor Failover and Load Balancing

**Link Aggregation:** supported

## : Compatibility Chart for Peripheral Expansion Modules and Embedded Computers

All expansion modules can be used on any of Moxa's embedded computers that come with the peripheral expansion slots, such as the

Module Models	DA-682	DA-710	DA-683
DA-SP08-DB 8-port Serial Module (RS-232/422/485)	✓	✓	✓
DA-SP08-I-DB 8-port Serial Module (RS-232/422/485)	✓	✓	✓
DA-SP08-I-TB 8-port Serial Module (RS-232/422/485)	✓	✓	✓
DA-SP38-I-TB 8-port Serial Module (RS-422/485)	✓	✓	✓
DA-LN04-RJ 4-port LAN Module (10/100 Mbps)	✓	✓	✓
DA-SW08-RJ 8-port Switch Module (10/100 Mbps)	✓	✓	✓
DA-UPCI-DK PCI Module	✓	✓	✓
DA-FX04-MM-ST-T 4-port Fiber LAN Module (100 Mbps)	✓	✓	✓

## : Ordering Information

### Available Models

**DA-SP08-I-DB:** 8-port RS-232/422/485 serial module with DB9 connector and digital isolation

**DA-SP08-DB:** 8-port RS-232/422/485 serial module with DB9 connector

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

**DA-SP38-I-TB:** 8-port RS-422/485 serial module with terminal block connector and digital isolation

**DA-SW08-RJ:** 8-port 10/100 Mbps unmanaged switch module

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

**DA-UPCI-DK:** Universal PCI development kit

**DA-FX04-MM-ST-T:** 4-port (100BaseFX) fiber LAN module with multi-mode, ST connector, supports IP Teaming

### Package Checklist

- 1 expansion module
- 8 terminal blocks (DA-SP08-I-TB, DA-SP38-I-TB)
- Product notes (printed, DA-SP38-I-TB)

Model Name	Serial Ports		Isolation	Switch	LAN		Connector Type				PCI
	RS-232/422/485	RS-232/485	2 KV Digital	10/100 Mbps	10/100 Mbps (RJ45)	Fiber 100 Mbps (ST)	DB9	RJ45	Terminal Block	Fiber	3.3/5 V
DA-SP08-I-DB	8	-	✓	-	-	-	✓	-	-	-	-
DA-SP08-DB	8	-	-	-	-	-	✓	-	-	-	-
DA-SP08-I-TB	8	-	✓	-	-	-	-	-	✓	-	-
DA-SP38-I-TB	-	8	✓	-	-	-	-	-	✓	-	-
DA-SW08-RJ	-	-	-	8	-	-	-	✓	-	-	-
DA-LN04-RJ	-	-	-	-	4	-	-	✓	-	-	-
DA-UPCI-DK	-	-	-	-	-	-	-	-	-	-	✓
DA-FX04-MM-ST-T	-	-	-	-	-	✓	-	-	-	✓	-