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

RoHS CE FC

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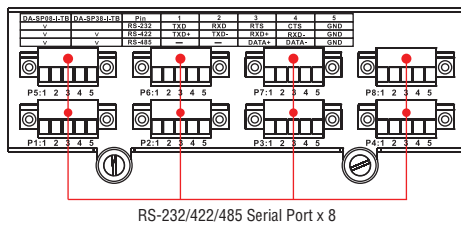
for the great demands of industrial applications that use serial communication.

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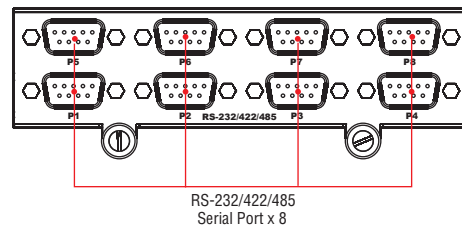
All modules are designed to offer the greatest flexibility for setting up applications and performing industrial tasks. In particular, users can swap out modules quickly and easily.
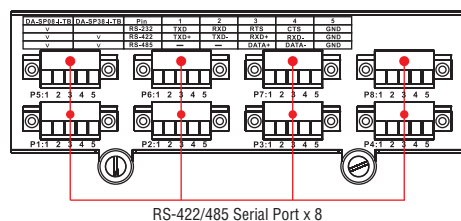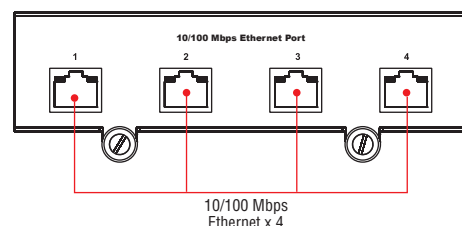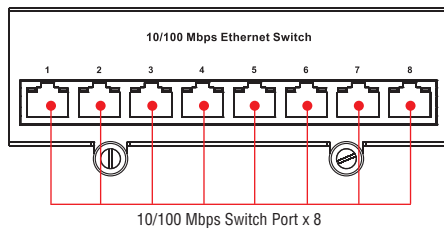
: Appearance

DA-SP08-I-TB

RS-232/422/485 Serial Port x 8

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

RS-232/422/485
Serial Port x 8

DA-SP38-I-TB

RS-422/485 Serial Port x 8

DA-LN04-RJ

10/100 Mbps
Ethernet x 4

DA-SW08-RJ

10/100 Mbps Ethernet Switch

1 2 3 4 5 6 7 8

10/100 Mbps Switch Port x 8

DA-UPCI-DK

Universal PCI Expansion Slot

DA-FX04-MM-ST-T

⚠ WARNING
HOT SURFACE DO NOT TOUCH!!
Before touching it, special attention or protection is necessary.

100 Mbps Fiber Port

LAN1   LAN2   LAN3   LAN4
TX   RX   TX   RX   TX   RX   TX   RX

Fiber LAN Port x 4
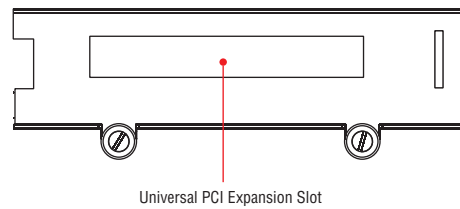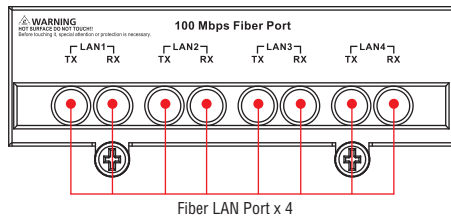
DA-SP08-DB, DA-SP08-I-DB, DA-SP08-I-TB Hardware Specifications

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 Adatpor
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	–	–	–	–	–	✓	–	–	–	✓	–