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Technologies

DA-720 Series

Intel® 6th Gen Core™ CPU, IEC-61850, 2U rackmount computer with 3 expansion slots

Features and Benefits

- IEC 61850-3, IEEE 1613, and IEC 60255 compliant for power substation automation systems
- EN 50121-4 compliant for railway wayside applications
- 6th Gen Intel® Core™ i7/i5 CPU (Skylake)
- 2 built-in DDR4 memory sockets
- 1 mSATA for OS and 1 SATA III for storage expansion
- 14 Gigabit Ethernet ports for network redundancy
- 3 PCIe expansion slots for expansion modules
- Highly reliable design, supporting dual power and PRP/HSR technology (with PRP/HSR expansion module)

Certifications

IEC 61850-3 IEEE 1613 EN 50121-4 CE cULus

Introduction

The DA-720 Series computers are x86 platforms with 14 Gigabit Ethernet ports, 2 isolated RS-232/422/485 serial ports, USB, VGA, and 3 PCIe ports for expansion modules. The DA-720 comes in a standard 19-inch 2U rack-mountable case with a robust design ideal for specialized industrial automation applications, including power substations, transportation and shipping, and oil and gas production and supply.

With IEC-61850-3 and IEEE 1613 compliance, the DA-720 is sure to deliver stable and reliable system operation for power applications. The DA-720 also complies with the IEC 60255 standards, which cover the protection of electrical relays in a smart substation. IEC 60255 is one of the most widely used standards for testing relays and protection equipment, and compliance with the standard ensures that the DA-720 will work reliably and seamlessly with IEDs as part of a robust substation automation system.

EN 50121-4 compliance confirms that the DA-720 can deliver stable and reliable system operations in rail wayside applications, such as station SCADA systems, wayside disaster prevention, traction power, and signaling and safety systems to provide an integrated view of your smart rail setup.

The DA-720 comes with two different CPU options and basic models that allow system designers to install the mSATA, RAM, and operating system according to their specific requirements. Such a wide choice of options is particularly welcome when it comes to designing customized industrial solutions.

The DA-720 comes with 3 PCIe ports for expansion modules, including an 8-port RS-232/422/485 module, 4-port and 8-port 10/100/1000 Mbps LAN modules, a 2-port 100/1000 Mbps PCIe PRP/HSR LAN module, a dual 2.5" SATA III SSD/HDD socket module, and a 2-port IRIG-B time-synchronization module with a 4 DI/DO module. The DA-720 computers can support up to 22 Gigabit LAN ports plus 16 serial ports, or 14 Gigabit LAN ports and 24 serial ports, making the DA-720 an ideal solution for a wide range of industrial automation applications.

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 DE-PRP-HSR-EF provides high performance for redundant network systems. Moxa's DA-720 Series industrial computer with the DE-PRP-HSR-EF is the ideal solution for power substation automation and process automation systems.

Smart Recovery Function

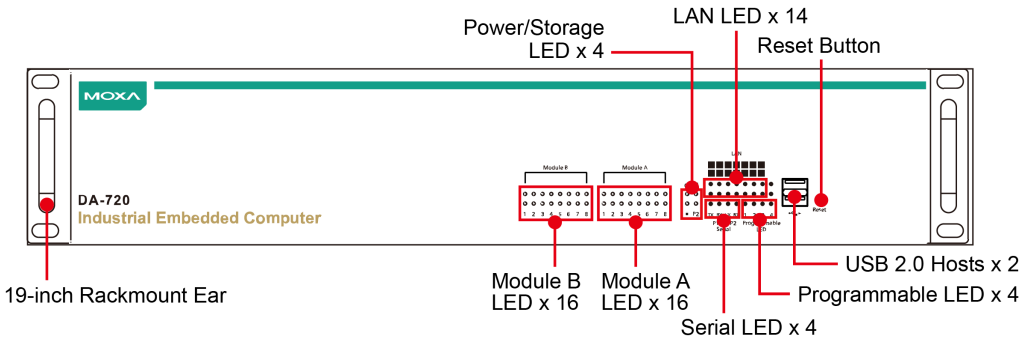
The DA-720's Smart Recovery function minimizes downtime by making it easy to recover from operating system crashes. Engineers who are experts in a particular vertical market may not have enough computer domain knowledge to know how to fix operating system problems. Moxa Smart Recovery™ is an automated BIOS-level software recovery system that allows engineers to automatically trigger OS recovery to minimize downtime.

Proactive Monitoring Function

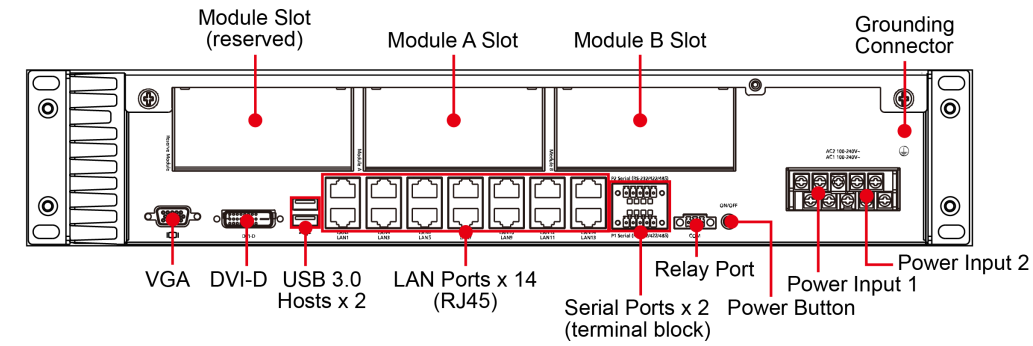
Moxa Proactive Monitoring is a small-footprint, resource-friendly, easy-to-use utility that allows users to track a number of system parameters. Users can view the current parameter values for these key parts by simply clicking on the icons corresponding to the parameters in the user interface. User-defined key part indicators (KPIs) are used to monitor the computer's key parts. Visible and/or audio alerts are triggered automatically via relay and SNMP traps when these KPIs exceed their preset threshold values, making it extremely convenient for operators to avoid system downtime by setting up predictive maintenance tasks well in advance.

Appearance

Front View



Rear View



Specifications

Computer	
CPU	Intel® Core™ i7-6600U Processor (4M Cache, up to 3.40 GHz) Intel® Core™ i5-6300U Processor (3M Cache, up to 3.00 GHz) Intel® Core™ i5-6300U Processor (3M Cache, up to 3.00 GHz) Intel® Core™ i7-6600U Processor (4M Cache, up to 3.40 GHz)
Graphics Controller	Intel® HD Graphics 520
System Memory Pre-installed	DA-720 LX Series: 4 GB DDR4 4 GB DDR4 4 GB DDR4
System Memory Slot	SODIMM DDR4 slot x 2
Pre-installed OS	DA-720 LX Series: Linux Debian 8 64-bit Linux Debian 8 64-bit Linux Debian 8 64-bit
Supported OS	Linux Debian 8 (Linux kernel v4.1) Windows 10 Embedded IoT Ent 2016 LTSB High End EPKEA Windows 10 Embedded IoT Ent 2016 LTSB Value EPKEA Note: W10 available by CTOS
Storage Slot	2.5-inch HDD/SSD slots x 1 mSATA slots x 1, internal mini-PCIe socket
Storage Pre-installed	DA-720 LX Series: 8 GB mSATA 8 GB mSATA 8 GB mSATA

Computer Interface	
Ethernet Ports	Auto-sensing 10/100/1000 Mbps ports (RJ45 connector) x 14
Serial Ports	RS-232/422/485 ports x 2, software-selectable (terminal block)

USB 2.0	USB 2.0 hosts x 2, type-A connectors (front)
USB 3.0	USB 3.0 hosts x 2, type-A connectors (rear)
Expansion Slots	Proprietary PCIe slot x 3
Video Input	DVI-D x 1, 29-pin DVI-D connectors (female) VGA x 1, 15-pin D-sub connector (female)

LED Indicators

System	Power x 1 Storage x 1 Programmable x 4
LAN	1 per port (10/100/1000 Mbps)
Serial	2 per port (Tx, Rx)

Serial Interface

Baudrate	50 bps to 115.2 kbps
Connector	Terminal block
ESD	8 kV (level 4)
Isolation	2 kV
Serial Standards	RS-232/422/485
Surge	2 kV: line-to-line 4 kV: line-to-ground

Serial Signals

RS-422	Tx+, Tx-, Rx+, Rx-, GND
RS-485-2w	Data+, Data-, GND
RS-485-4w	Tx+, Tx-, Rx+, Rx-, GND
RS-232	TxD, RxD, RTS, CTS, GND

Power Parameters

Input Current	0.82 A @ 100 VAC 0.77 A @ 110 VDC
Input Voltage	100 to 240 VAC, 110 to 240 VDC
Power Button	Reset button (front panel) ON/OFF (rear panel)

Physical Characteristics

Housing	Metal
Dimensions (without ears)	440 x 301 x 90 mm (17.32 x 12.20 x 3.54 in)
Weight	6,500 g (14.33 lb)
Installation	19-inch rack mounting

Environmental Limits

Operating Temperature	-25 to 55°C (-13 to 131°F)
Storage Temperature (package included)	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)

Standards and Certifications

EMC	EN 55032/24
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-11 DIPs IEC 61000-4-2 ESD: Contact: 8 kV; Air: 15 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m IEC 61000-4-4 EFT: Power: 4 kV; Signal: 4 kV IEC 61000-4-5 Surge: Power: 4 kV; Signal: 4 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8: 20 A/m
Power Substation	IEC 61850-3, IEEE 1613
Protection Relay	IEC 60255
Railway	EN 50121-4
Safety	EN 60950-1, IEC 60950-1, UL 60950-1
Shock	IEC 60870-2-2, IEC 61850-3 Edition 1.0
Vibration	IEC 61850-3, IEC 60870-2-2

Declaration

Green Product	RoHS, CRoHS, WEEE

MTBF

Time	138,319 hrs
Standards	Telcordia SR332

Warranty

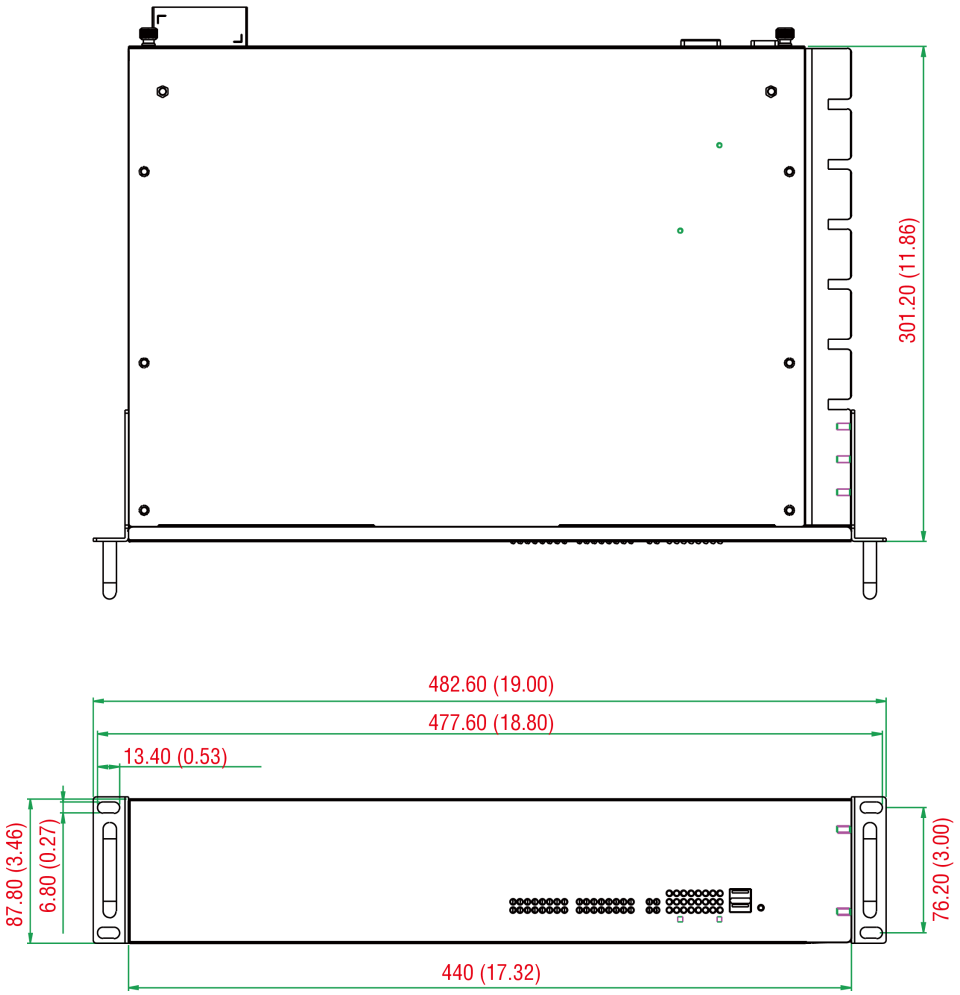
Warranty Period	3 years
Details	See www.moxa.com/warranty

Package Contents

Device	1 x DA-720 Series computer
Installation Kit	1 x rack-mounting ear
Documentation	1 x quick installation guide 1 x warranty card
Note	This product requires additional modules (sold separately) to function.

Dimensions

Unit: mm (inch)



Ordering Information

Model Name	CPU	DDR4 RAM	OS Storage (mSATA)	Linux Debian 8 64-bit	Power Input 100-240 VAC 110-240 VDC	Operating Temp.
DA-720-C5-DPP	i5-6300U	–	–	–	✓	-25 to 55°C
DA-720-C5-DPP-LX	i5-6300U	4 GB	8 GB	✓	✓	-25 to 55°C
DA-720-C7-DPP	i7-6600U	–	–	–	✓	-25 to 55°C
DA-720-C7-DPP-LX	i7-6600U	4 GB	8 GB	✓	✓	-25 to 55°C

Accessories (sold separately)

Expansion Modules

DE-PRP-HSR-EF	2-Port 100/1000 Mbps PCIe PRP/HSR LAN Module
DE-2-SATA	2 x 2.5” SATA III SSD/HDD Socket Module
DE-LN04-RJ	4-port 100/1000 Mbps PCIe LAN module
DE-SP08-I-TB	8-port RS-232/422/485 PCIe serial module
DE-LN08-RJ	8-port 100/1000 Mbps PCIe LAN module
DE-2-IRIGB-4-DI/DO	2-port IRIG-B time synchronization module with 4DI/DO

Storage Kits

DA-720 HDD Kit	DA-720 HDD/SSD kit

USB Dongle Kits

USB Dongle Kit	Internal USB dongle kit installation package

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