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Technologies

DA-820C Series

Intel® 7th Gen Xeon® and Core™ CPU, IEC-61850, 3U rackmount computers with PRP/HSR card support

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
- 7th Generation Intel® Xeon® and Core™ Processor
- 2 built-in SODIMM ECC DDR4 memory slots; up to 64 GB total capacity
- 4 hot-swappable SSD slots; support Intel® RST RAID 0/1/5/10
- Highly reliable design, supporting dual power and PRP/HSR technology (with PRP/HSR expansion module)
- 1 PCIe x16, 1 PCIe x4, 2 PCIe x1, and 1 PCI slots for expansion modules
- Redundant power supply (100 to 240 VAC/VDC)

Certifications

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

Introduction

The DA-820C Series is a high-performance 3U rackmount industrial computer built around a 7th generation Intel® Core™ i3, i5, i7 or Intel® Xeon® processor. The computer comes with 3 display ports (HDMI x 2, VGA x 1), 6 USB ports, 4 gigabit LAN ports, two 3-in-1 RS-232/422/485 serial ports, 6 DI ports, and 2 DO ports. The DA-820C is also equipped with 4 hot swappable 2.5” HDD/SSD slots that support Intel® RST RAID 0/1/5/10 functionality.

The DA-820C complies with IEC-61850-3 and IEEE 1613 standards to deliver stable and reliable system operation for power applications. The computer 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-820C will work reliably and seamlessly with IEDs as part of a robust substation automation system.

EN 50121-4 compliance confirms that the DA-820C 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.

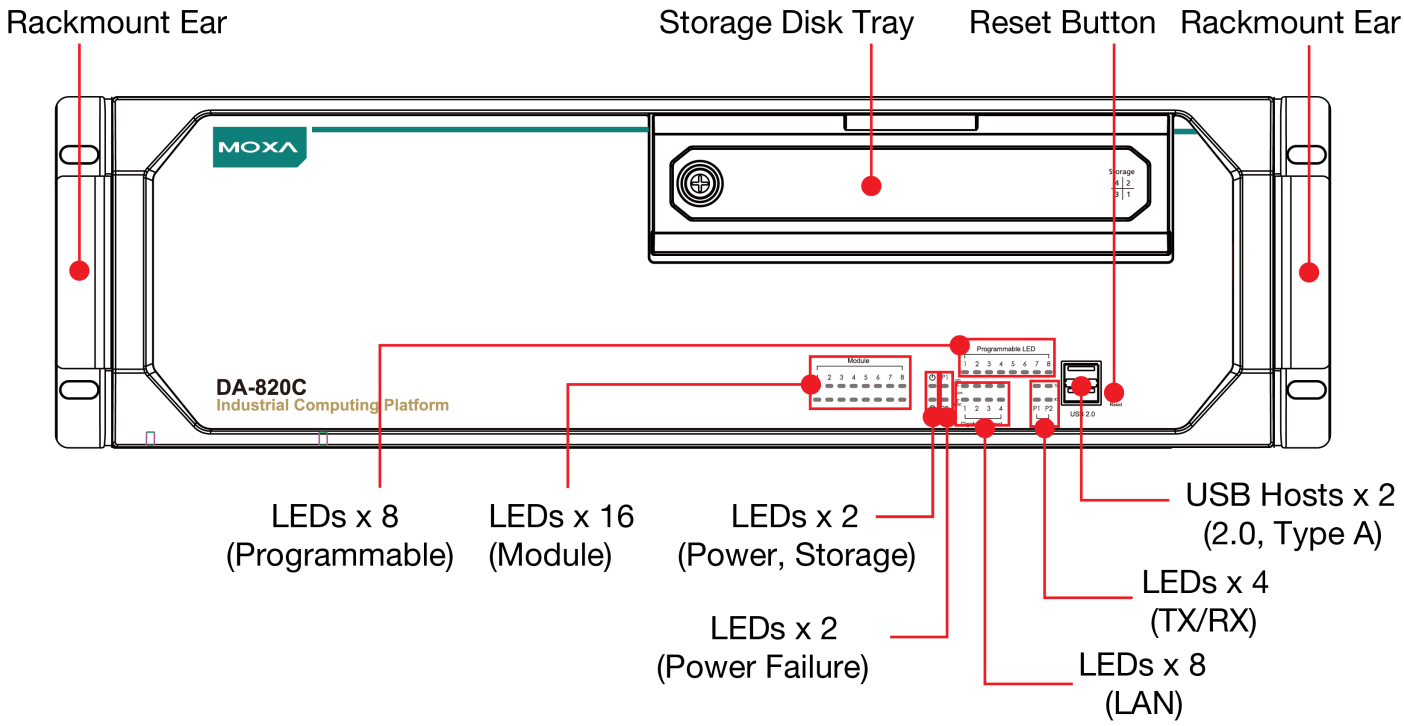
The robust, rack-mountable design provides the hardened protection needed for applications in various industrial environments.

Proactive Monitoring Function

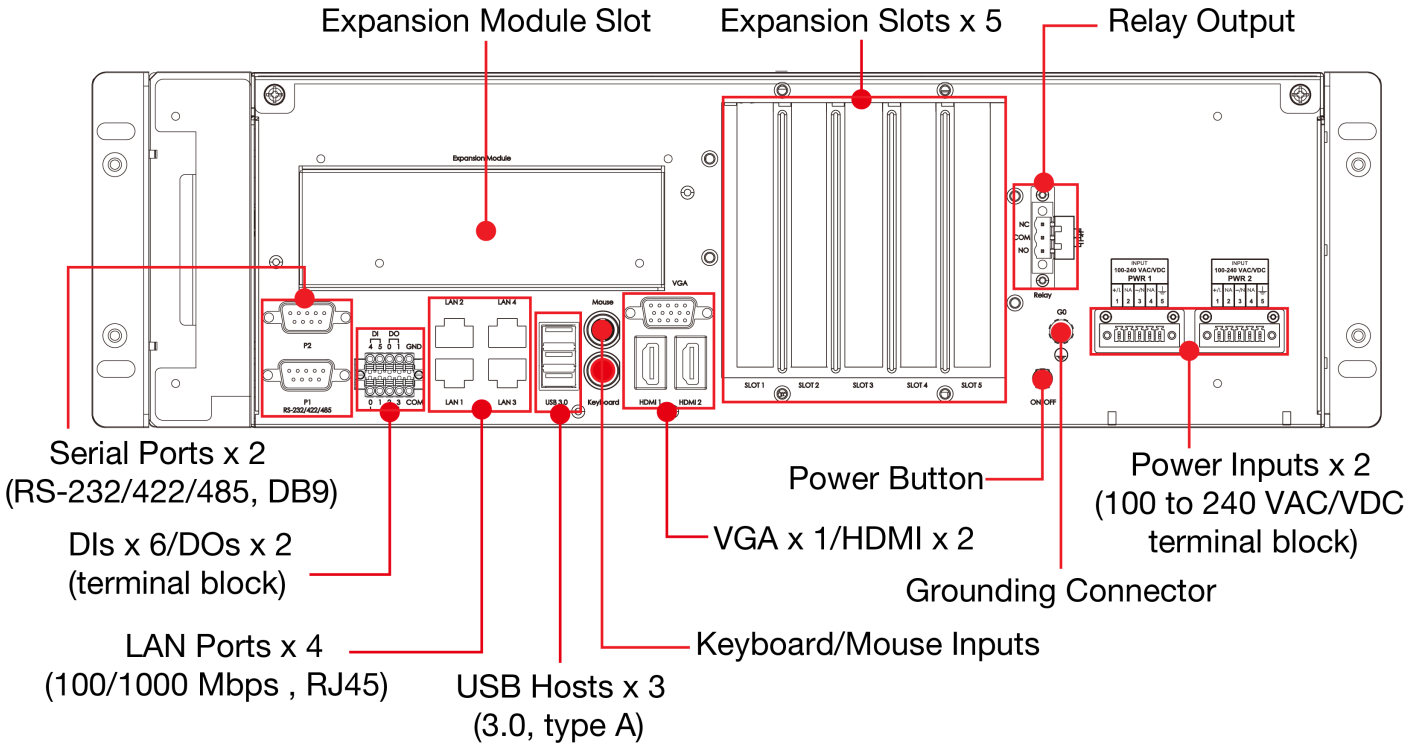
Moxa Proactive Monitoring is a small-footprint, resource-friendly, easy-to-use utility that allows users to track a number of system parameters. Users can view the current parameter values for these key parts by simply clicking on the icons corresponding to the parameters in the user interface. User-defined 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® Xeon® Processor E3-1505M v6 (8M Cache, 3.00 GHz) Intel® Xeon® Processor E3-1505L v6 (8M Cache, 2.20 GHz) Intel® Core™ i7-7820EQ Processor (8M Cache, up to 3.70 GHz) Intel® Core™ i5-7442EQ Processor (6M Cache, up to 2.90 GHz) Intel® Core™ i3-7102E Processor (3M Cache, 2.10 GHz)
System Memory Slot	SODIMM DDR4 slot x 2
DRAM	64 GB max. capacity (SODIMM x 2, each supporting 2400 MHz and 32 GB maximum per module) ECC RAM only supports i3 CPU and Xeon CPU models
Graphics Controller	Intel® Xeon® E3-1505MV6: Intel® HD Graphics P630 Intel® Xeon® E3-1505LV6: Intel® HD Graphics P630 Intel® Core™ i7-7820EQ: Intel® HD Graphics 630 Intel® Core™ i5-7442EQ: Intel® HD Graphics 630 Intel® Core™ i3-7102E: Intel® HD Graphics 630
Storage Slot	2.5-inch HDD/SSD slots x 4
Supported OS	Windows 10 Pro 64-bit Windows 10 Embedded IoT Ent 2019 LTSC 64-bit Linux Debian 9 Note: OS available by CTOS
Supported Driver	Windows Server 2016

Computer Interface

Video Output	HDMI x 2, HDMI connector (type A) VGA x 1, 15-pin D-sub connector (female)
Serial Ports	RS-232/422/485 ports x 2, software selectable (DB9 male)
USB 2.0	USB 2.0 hosts x 3, type-A connectors 2 ports on the front panel, 1 port inside the computer
USB 3.0	USB 3.0 hosts x 3, type-A connectors 3 ports on the rear panel
Expansion Slots	PCIe x16 slot x 1 PCIe x4 slots x 1 PCIe x1 slots x 2 PCI slots x 1
Ethernet Ports	Auto-sensing 10/100/1000 Mbps ports (RJ45 connector) x 4
TPM	TPM v2.0
Digital Input	DIs x 6
Digital Output	DOs x 2

LED Indicators

System	Power x 1 Storage x 1 Programmable x 8
Serial	2 per port (Tx, Rx)
LAN	8 per port (10/100/1000 Mbps)

Serial Interface

Baudrate	300 bps to 115.2 kbps
Connector	DB9 male
ESD	8 kV (level 4)
Isolation	2 kV
Serial Standards	RS-232/422/485
Surge	2 kV

Serial Signals

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

Digital Inputs

Digital Input Channels	DIs x 6
Voltage	0 to 30 VDC at 25 Hz
Wet Contact (DI to COM)	On: 10 to 30 VDC

Digital Outputs

Digital Output Channels	DOs x 2
Current Rating	Max. 200 mA per channel
Voltage	24 to 30 VDC
I/O Type	Sink

Power Parameters

Power Button	Reset button (front panel) ON/OFF (rear panel)
Power Consumption	100 W (max.)

Physical Characteristics

Housing	Metal
Dimensions (without ears)	440 x 132.8 x 281.4 mm (17.3 x 5.2 x 11.1 in)
Weight	14,000 g (31.11 lb)
Installation	19-inch rack mounting

Environmental Limits

Operating Temperature	Standard Models: -25 to 55°C (-13 to 131°F) Wide Temp. Models: -40 to 70°C (-40 to 158°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 61000-6-2/-6-4, EN 55032/35
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 8 kV; Air: 15 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 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 IEC 61000-4-11
Power Substation	IEC 61850-3, IEEE 1613
Protection Relay	IEC 60255
Safety	IEC 60950-1, IEC 62368-1, UL 62368-1
Shock	IEC 61850-3 Edition 2.0, IEC 60068-2-27, IEC 60255-21-2

Declaration

Green Product	RoHS, CRoHS, WEEE

MTBF

Time	325,730 hrs
Standards	Telcordia SR332

Warranty

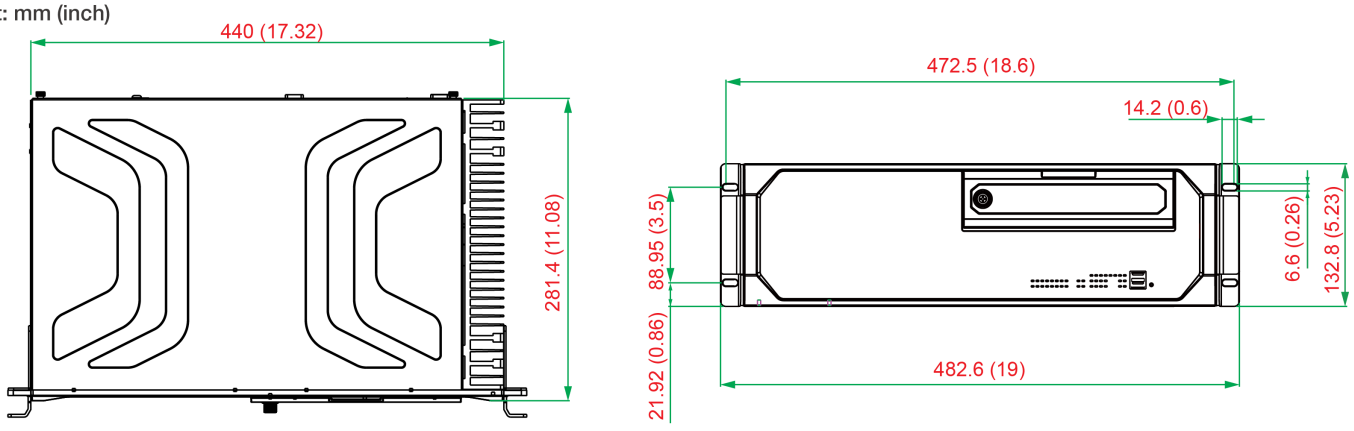
Warranty Period	3 years
Details	See www.moxa.com/warranty

Package Contents

Device	1 x DA-820C 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	Power Input 100-240 VAC/VDC	Operating Temp.
DA-820C-KL3-H-T	i3-7102E	Single Power	-40 to 70°C
DA-820C-KL3-HH-T	i3-7102E	Dual Power	-40 to 70°C
DA-820C-KL5-H-T	i5-7442EQ	Single Power	-40 to 70°C
DA-820C-KL5-HH-T	i5-7442EQ	Dual Power	-40 to 70°C
DA-820C-KLXL-H-T	Xeon E3-1505L v6	Single Power	-40 to 70°C
DA-820C-KLXL-HH-T	Xeon E3-1505L v6	Dual Power	-40 to 70°C
DA-820C-KL7-H	i7-7820EQ	Single Power	-25 to 55°C
DA-820C-KL7-HH	i7-7820EQ	Dual Power	-25 to 55°C
DA-820C-KLXM-H	Xeon E3-1505M v6	Single Power	-25 to 55°C
DA-820C-KLXM-HH	Xeon E3-1505M v6	Dual Power	-25 to 55°C

Accessories (sold separately)

Expansion Modules

DA-PRP-HSR-I210	PRP/HSR expansion card with RJ45 and SFP combo port
DN-LN04-RJ	4-port 10/100/1000 Mbps PCIe LAN module with RJ45 connectors
DN-SP08-I-DB	8-port software-selectable RS-232/422/485 PCIe serial module with DB9 connector
DN-SP08-I-TB	8-port software-selectable RS-232/422/485 PCIe serial module with terminal-block connector
DA-IRIG-B-S-02-T	IRIG-B expansion module, PCI interface, 1 fiber IRIG-B in, 1 DB9M in/out, 1 DB9M out
DE-FX02-SFP-T	2-port 100 Mbps fiber card, SFP slot x 2, PCIe interface (SFP module excluded)

Connectors

Mini DB9F-to-TB	DB9 female to terminal block connector

Cables

CBL-RG58AUBNCMF9-150	DB9 female to BNC male cable for the DA-IRIG-B-S-02-T and DA-IRIG-B-S-04-T, 1.5 m

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