

DA-820C Series

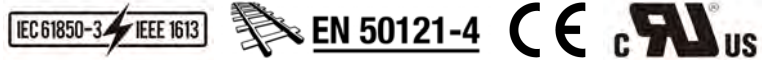
Intel® 7th Gen Xeon® and Core™ CPU, IEC-61850, 3U rackmount computers with PRP/HSR card support



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 SSD slots, supports 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



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.

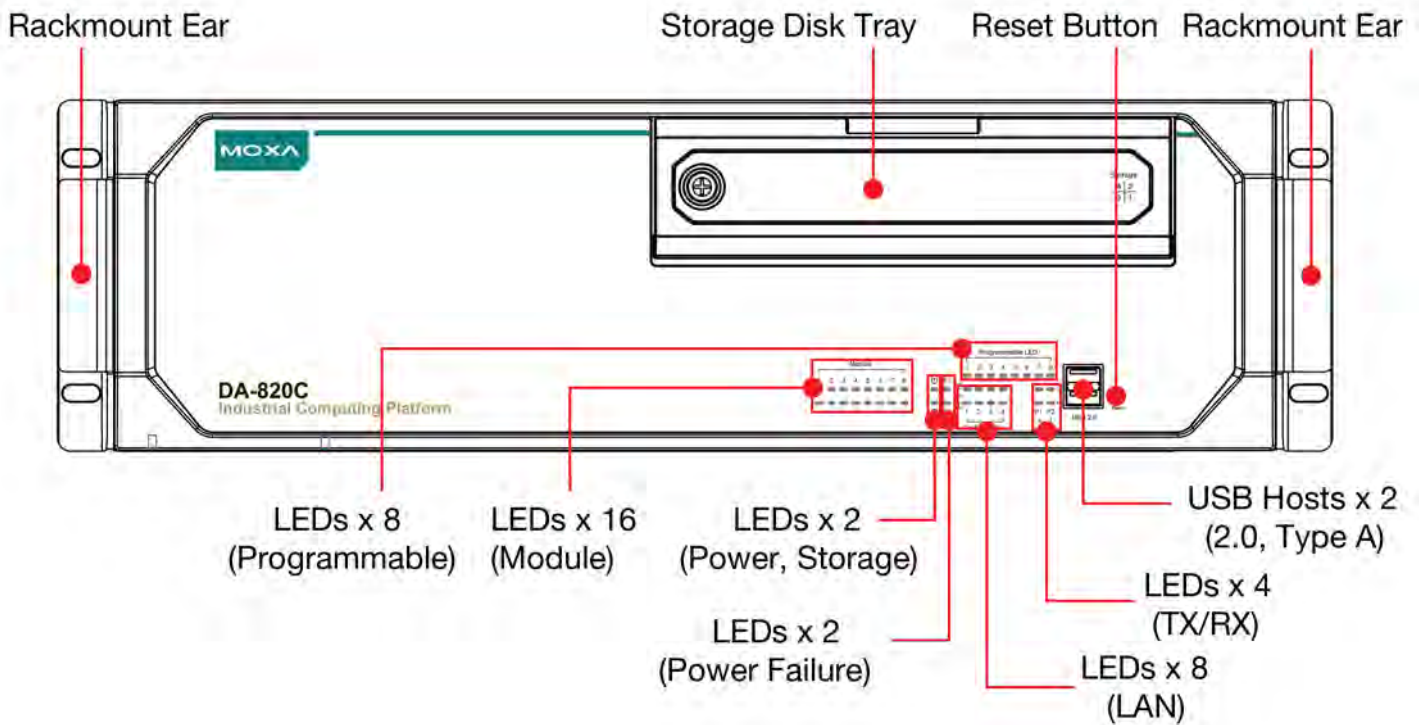
The robust, rack-mountable design provides the hardened protection needed for applications in various industrial environments.

Proactive Monitoring Function

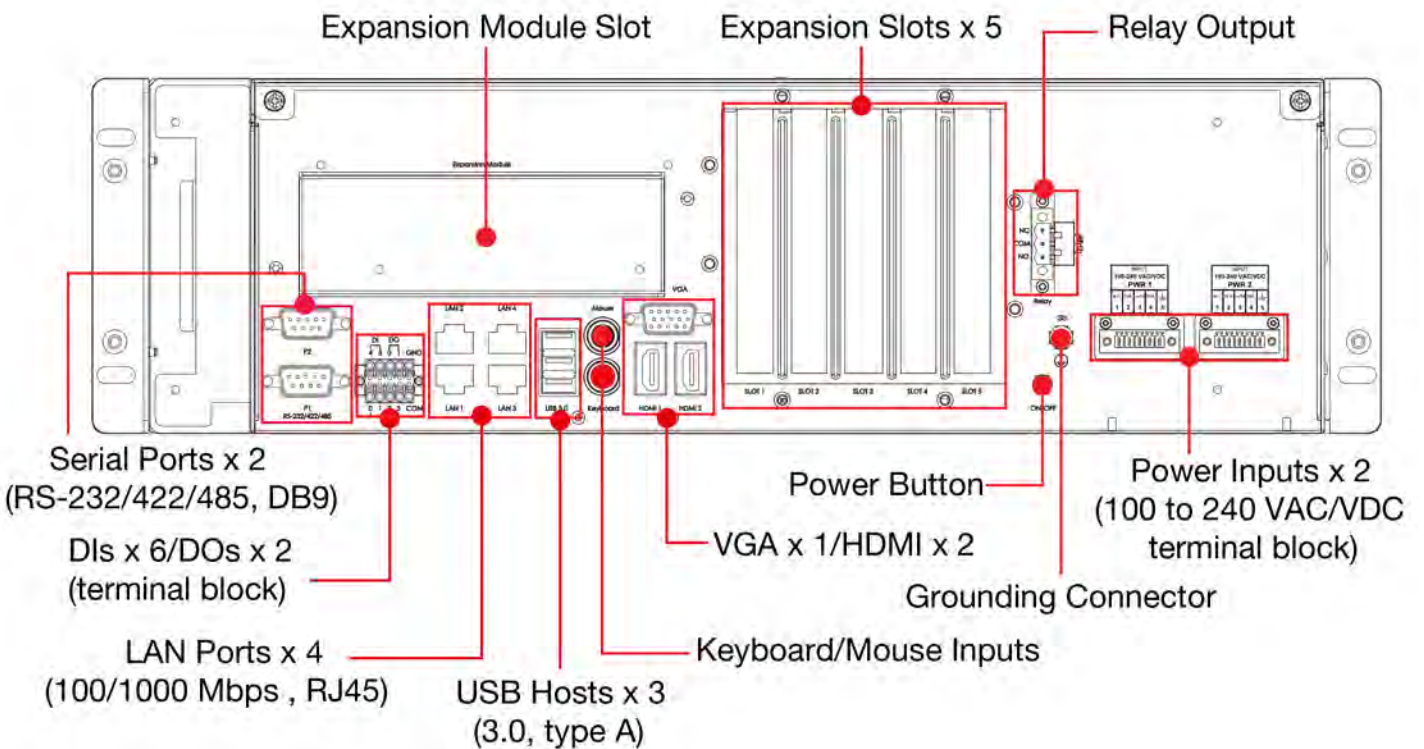
Moxa Proactive Monitoring is a small-footprint, resource-friendly, easy-to-use utility that allows users to track a number of system parameters. Users can view the current parameter values for these key parts by simply clicking on the icons corresponding to the parameters in the user interface. User-defined 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 mSATA slots x 1, internal mini-PCIe socket |
| 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 2019 Windows Server 2016 |

Computer Interface

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|-----------------|--|
| 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

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|--------|--|
| 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

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

Physical Characteristics

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|---------------------------|---|
| 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

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|--|--|
| 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

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|---------------|-------------------|
| Green Product | RoHS, CRoHS, WEEE |
|---------------|-------------------|

MTBF

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|-----------|-----------------|
| Time | 325,730 hrs |
| Standards | Telcordia SR332 |

Warranty

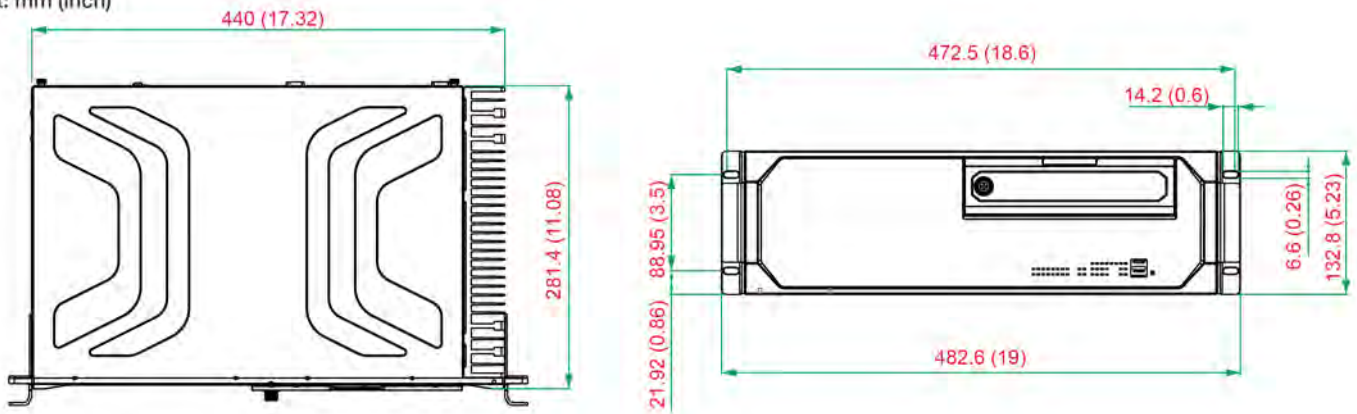
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| Warranty Period | 3 years |
| Details | See www.moxa.com/warranty |

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

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|------------------|--|
| DA-PRP-HSR-I210 | PRP/HSR expansion card with RJ45 and SFP combo port |
| DN-FX04 | 4-port 100M/1000M SFP Ethernet module |
| 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 |
| DN-PRP-HSR-I210 | PRP/HSR expansion module with RJ45 and SFP combo port |
| 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

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

Cables

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|----------------------|---|
| 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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