

DA-660/662 Series

RISC 19-inch rackmount data acquisition computers with 16 serial ports, Ethernet, USB



- > Intel XScale IXP425 533 MHz processor
- > 128 MB RAM onboard, 32 MB flash
- > 16 software-selectable RS-232/422/485 serial ports
- > 15 kV ESD protection for all serial signals
- > Dual or quad 10/100 Mbps Ethernet ports
- > USB slots for storage expansion supported
- > Standard 19-inch rackmount installation, 1U height
- > Wide range of power input voltages from 100 to 240 V, both AC and DC
- > LCM display and keypad for HMI
- > Ready-to-Run Linux OS platform
- > Robust, fanless design



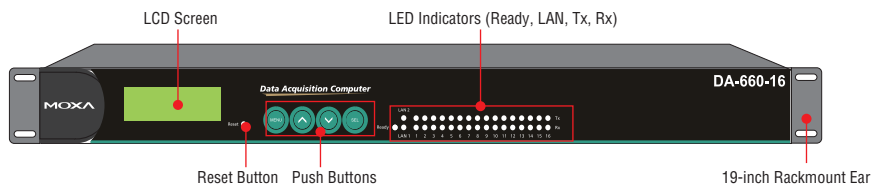
Overview

The DA-660/662 embedded computers come with 16 software-selectable RS-232/422/485 serial ports, making them suitable for a variety of industrial applications. Models are available with either 2 or 4 10/100 Mbps Ethernet ports. The DA-662 models also comes with USB ports to make it easy to add additional memory. The computers

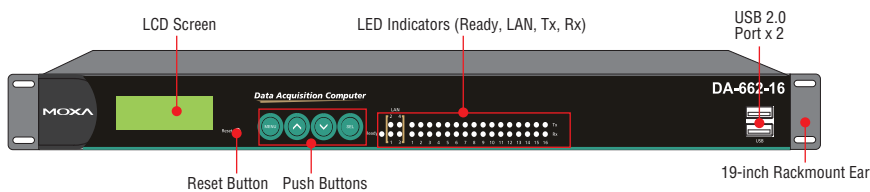
are designed with a standard 19-inch, rugged 1U rackmount case, and are embedded with a 100-240V AC/DC power input. This combination of features gives users a robust and reliable ready-to-run solution for applications such as data acquisition and power substations.

Appearance

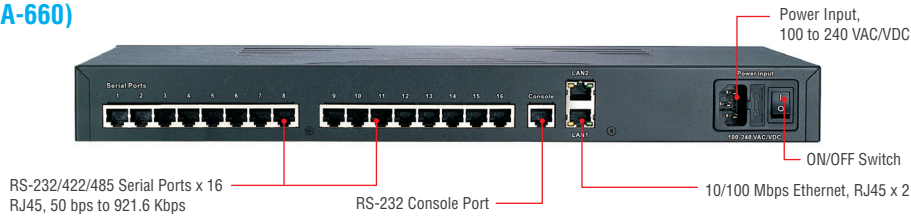
Front View (DA-660)



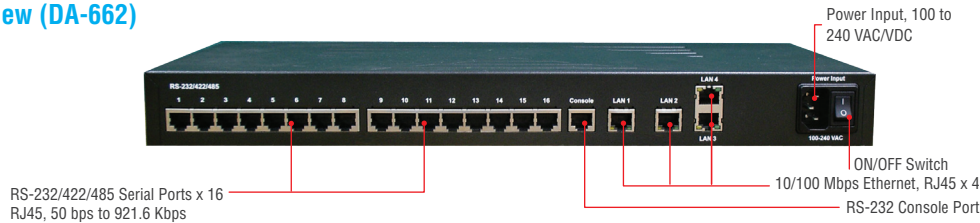
Front View (DA-662)



Rear View (DA-660)



Rear View (DA-662)



Hardware Specifications

Computer

CPU: Intel IXP425 533 MHz
OS: Embedded Linux (pre-installed)
DRAM: 128 MB onboard
Flash: 32 MB onboard

Ethernet Interface

LAN: 2 or 4 auto-sensing 10/100 Mbps ports (RJ45)
Magnetic Isolation Protection: 1.5 kV built-in

Serial Interface

Serial Standards: 16 RS-232/422/485 ports, software selectable (8-pin RJ45)
ESD Protection: 15 kV for all signals
Console Port: RS-232 (all signals), RJ45 connector, supports PPP
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

LEDs

System: OS Ready
LAN:
 DA-660: 10/100M x 2
 DA-662: 10/100M x 4
Serial: TxD, RxD (16 of each)

Mini Screen with Push Buttons

LCD Panel: Liquid Crystal Display on the case, 2 x 16 text mode
Push Buttons: Four membrane buttons for convenient on-site configuration

Physical Characteristics

Housing: SECC sheet metal (1 mm)
Weight: 2.6 kg
Dimensions:
 Without ears: 440 x 45 x 198 mm (17.32 x 1.77 x 7.80 in)
 With ears: 480 x 45 x 198 mm (18.90 x 1.77 x 7.80 in)
Mounting: Standard 19-inch rackmount

Environmental Limits

Operating Temperature: -10 to 60°C (14 to 140°F)
Storage Temperature: -20 to 80°C (-4 to 176°F)
Ambient Relative Humidity: 5 to 95% (non-condensing)
Anti-vibration: 1 g @ IEC-68-2-6, sine wave (resonance search), 5-500 Hz, 1 Oct/min, 1 Cycle, 13 mins 17 sec per axis

Power Requirements

Input Voltage: 100 to 240 VAC/VDC auto ranging (47 to 63 Hz for AC input)
Power Consumption:
 DA-660: 12 W
 DA-662: 20 W

Standards and Certifications

Safety: UL 60950-1, CSA C22.2 No. 60950-1-03, EN 60950-1
EMC: EN 55022 Class A, EN 61000-3-2 Class A, EN 61000-3-3, EN 55024, FCC Part 15 Subpart B Class A
Green Product: RoHS, CRoHS, WEEE

Reliability

Alert Tools: Built-in buzzer and RTC (real-time clock)
Automatic Reboot Trigger: Built-in WDT (watchdog timer)
MTBF (mean time between failures):

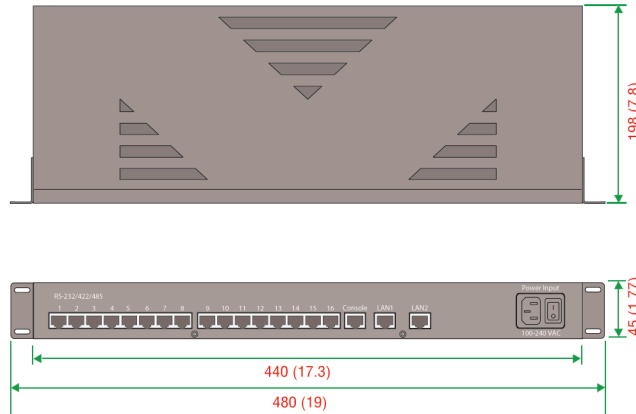
DA-660: 124,323 hrs
 DA-662: 85,193 hrs

Warranty

Warranty Period: 5 years
Details: See www.moxa.com/warranty

Dimensions

Unit: mm (inch)



Software Specifications

Linux

OS:

DA-660: Linux 2.6.10

DA-662: Linux 2.6.10

File System: JFFS2 (on-board flash)

Internet Protocol Suite: TCP, UDP, IPv4, SNMPv1, ICMP, ARP, HTTP, CHAP, PAP, SSH 1.0/2.0, SSL, DHCP, NTP, NFS, Telnet, FTP, TFTP, PPP, PPPoE

Internet Security: OpenVPN, iptables firewall

Web Server (Apache): Allows you to create and manage web sites; supports PHP and XML

Terminal Server (SSH): Provides secure encrypted communications between two un-trusted hosts over an insecure network

Dial-up Networking: PPP Daemon for Linux that allows Unix machines to connect to the Internet through dialup lines, using the PPP protocol, as a PPP server or client. Works with 'chat', 'dip', and 'diald', among (many) others. Supports IP, TCP, UDP, and (for Linux) IPX (Novell).

File Server: Enables remote clients to access files and other resources over the network

Watchdog: Features a hardware function to trigger system reset in a user specified time interval (Moxa API provided)

Application Development Software:

- Moxa API Library (Watchdog timer, LCM, keypad, Moxa serial I/O control)

- GNU C/C++ cross-compiler

- GNU C library

- GDB source-level debugging server

Software Protection: Encryption tool for user executable files (based on patented Moxa technology)

Ordering Information

Available Models

DA-660-16-LX: RISC-based 19-inch rackmount data acquisition computer with 16 serial ports, dual LANs, Linux OS

DA-662-16-LX: RISC-based 19-inch rackmount data acquisition computer with 16 serial ports, quad LANs, USB, Linux OS

Model Name	RS-232/422/485 Serial Port	10/100 Mbps LAN Port	Storage Expansion
DA-660-16-LX	16	2	N/A
DA-662-16-LX	16	4	1 CF card socket, 2 USB ports

Package Checklist

- DA-660 or DA-662 embedded computer
- 19-inch rackmount kit
- Ethernet cable: RJ45 to RJ45 cross-over cable, 100 cm
- CBL-RJ45F9-150: 8-pin RJ45 to DB9 female console port cable, 150 cm
- CBL-RJ45M9-150: 8-pin RJ45 to DB9 male serial port cable, 150 cm
- Documentation and software CD
- Quick installation guide (printed)
- Warranty card