

# DA-662A Series

**RISC 19-inch rackmount data acquisition computers with 8 to 16 serial ports, 4 Ethernet ports, USB**



- > MoxaMacro 500 MHz processor
- > 128 MB RAM onboard, 32 MB flash
- > 8 to 16 software-selectable RS-232/422/485 serial ports
- > 8 to 16 jumper-configurable 1/150 kΩ pull low/high and 120 ohm termination resistors
- > 15 kV ESD protection for all serial signals
- > Quad 10/100 Mbps Ethernet ports
- > USB and CF slots for storage expansion supported
- > Standard 19-inch rackmount installation, 1U height
- > Wide range of power input voltages from 100 to 240 VAC
- > LCM display and keypad for HMI
- > Ready-to-Run Linux OS platform
- > Robust, fanless design
- > Isolated serial port protection models available



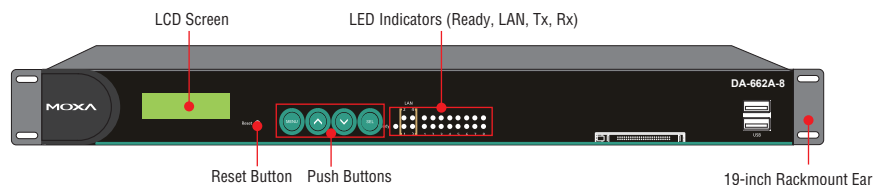
## Overview

The DA-662A RISC-based, ready-to-run embedded computers are designed for industrial data acquisition applications. The computers have 8 to 16 RS-232/422/485 serial ports, 4 Ethernet ports, and 2 USB 2.0 ports, all based on the MoxaMacro communication processor. In addition, the DA-662A-I-8/16-LX's serial ports come with high level interference protection. The housing is a standard 1U, 19-inch wide rack-mounted rugged enclosure. The robust, rack-mountable

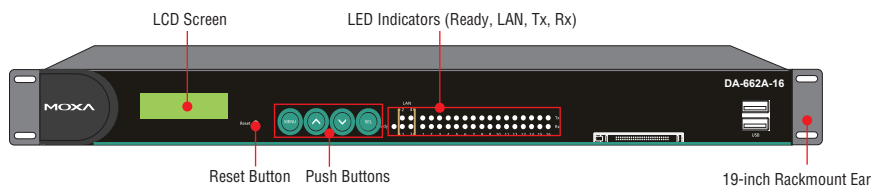
mechanism design provides the hardened protection needed for industrial environment applications, and makes it easy for users to install the DA-662A computers on a standard 19-inch rackmount. The DA-662A computers are ideal for applications that require a distributed embedded technology, such as SCADA systems, plant floor automation, and power electricity monitoring applications.

## Appearance

### Front View (DA-662A-8)



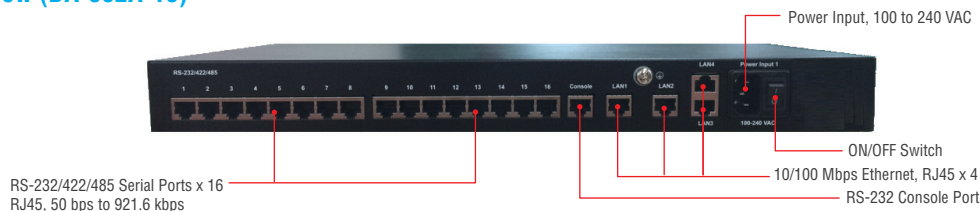
### Front View (DA-662A-16)



## Rear View (DA-662A-8)



## Rear View (DA-662A-16)



## Hardware Specifications

### Computer

**CPU:** MoxaMacro 500 MHz

**OS:** Embedded Linux (pre-installed)

**DRAM:** 128 MB onboard

**Flash:** 32 MB onboard

### Ethernet Interface

**LAN:** Auto-sensing 10/100 Mbps ports (RJ45) x 4

**Magnetic Isolation Protection:** 1.5 kV built-in

### Serial Interface

**Serial Standards:** 8 to 16 RS-232/422/485 ports, software selectable (8-pin RJ45)

**ESD Protection:** 8 kV contact, 15 kV Air ESD protection for all signals

**Surge Protection:** 2 kV line-to-line and 4 kV line-to-ground surge protection, 8/20  $\mu$ s waveform (DA-662A-I-8/16-LX only)

**Insulation:** 500 V (DA-662A-I-8/16-LX only)

**Isolation:** 2 kV digital isolation (DA-662A-I-8/16-LX only)

**Termination Resistor:** 120 ohm, jumper selectable

**Console Port:** RS-232 (all signals), RJ45 connector

### 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 (DA-662A-I-8/16-LX only: TxD, RxD, RTS, CTS, 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:** 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:** 4.3 kg (9.56 lb)

### Dimensions:

Without ears: 440 x 45 x 237 mm (17.32 x 1.77 x 9.33 in)

With ears: 480 x 45 x 237 mm (18.90 x 1.77 x 9.33 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 auto ranging (47 to 63 Hz for AC input)

**Power Consumption:** 20 W

### Standards and Certifications

**Safety:** UL 60950-1

**EMC:** EN 61000-6-2/6-4

**EMI:** CISPR 22, 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: 3 V/m

IEC 61000-4-4 EFT: Power: 1 kV; Signal: 0.5 kV

IEC 61000-4-5 Surge: Power: 2 kV; Signal: 4 kV

IEC 61000-4-6 CS: Signal: 3 V/m

IEC 61000-4-8 1 A/m

IEC 61000-4-11

**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)

**Time:**

DA-662A-8-LX: 272,913 hrs

DA-662A-16-LX: 177,580 hrs

DA-662A-16-DP-LX: 177,260 hrs

DA-662A-I-8-LX: 268,332 hrs

DA-662A-I-16-LX: 189,455 hrs

**Standard:** Telcordia (Bellcore) Standard TR/SR

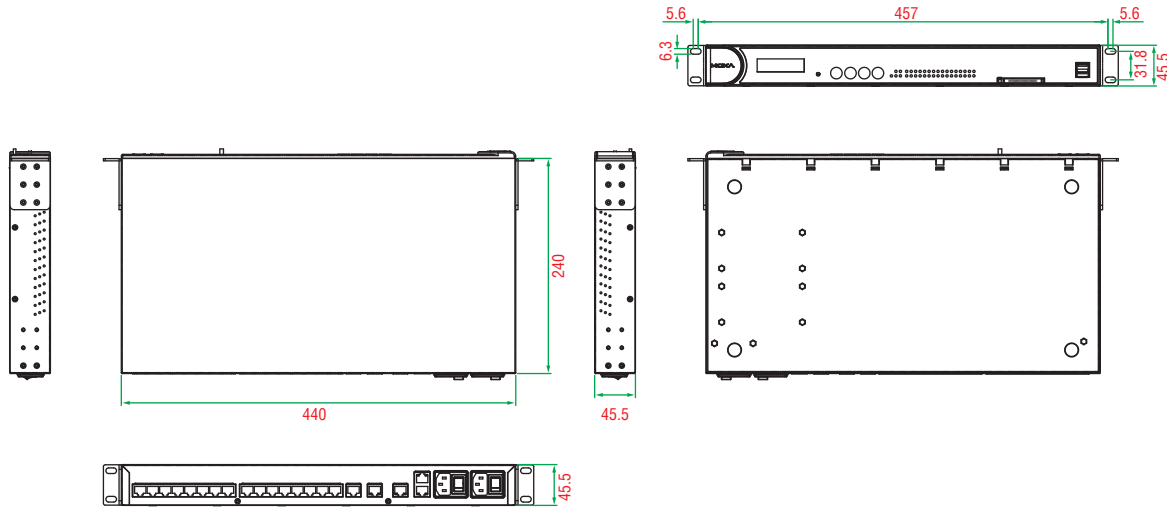
### Warranty

**Warranty Period:** 5 years

**Details:** See [www.moxa.com/warranty](http://www.moxa.com/warranty)

## Dimensions

Unit: mm (inch)



## Software Specifications

### Linux

**OS:** Linux 2.6.38.8

**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

**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, SNMP v1/v2, SSL, OpenVPN

**Internet Security:** iptables firewall

**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

## Ordering Information

### Available Models

**DA-662A-8-LX:** RISC-based 19-inch rackmount data acquisition computer with 8 serial ports, quad LANs, USB, Linux OS

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

**DA-662A-16-DP-LX:** RISC-based 19-inch rackmount data acquisition computer with 16 serial ports, quad LANs, USB, Linux OS, dual power inputs

**DA-662A-I-8-LX:** RISC-based 19-inch rackmount data acquisition computer with 8 serial ports (isolation protection), quad LANs, USB, Linux OS




**DA-662A-I-16-LX:** RISC-based 19-inch rackmount data acquisition computer with 16 serial ports (isolation protection), quad LANs, USB, Linux OS

### Package Checklist

- DA-662A 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
- 6 jumper caps
- Documentation and software CD
- Quick installation guide (printed)
- Warranty card

Model Name	RS-232/422/485 Serial Port	RS-485 2-wire Serial Port only	10/100 Mbps LAN Port	Storage Expansion	Serial port protection
DA-662A-8-LX	8	–	4	2 USB ports, CF slot	15 kV Air ESD protection
DA-662A-16-LX	16	–	4	2 USB ports, CF slot	15 kV Air ESD protection
DA-662A-16-DP-LX	16	–	4	2 USB ports, CF slot	15 kV Air ESD protection
DA-662A-I-8-LX	4	4	4	2 USB ports, CF slot	Isolation: 2 kV digital isolation ESD Protection: 8 kV contact, 15 kV Air ESD protection Surge Protection: 2 kV line-to-line and 4 kV line-to-ground surge protection, 8/20 μs
DA-662A-I-16-LX	4	12	4	2 USB ports, CF slot	Isolation: 2 kV digital isolation ESD Protection: 8 kV contact, 15 kV Air ESD protection Surge Protection: 2 kV line-to-line and 4 kV line-to-ground surge protection, 8/20 μs

**Accessories (can be purchased separately)**

Model	Description
 PWC-C13US-3B-183 10A/125V	US-type power supply cord
 PWC-C13EU-3B-183 10A/250V	EU-type power supply cord
 PWC-C13CN-3B-183 10A/250V	CN-type power supply cord
 PWC-C13UK-3B-183 10A/250V	UK-type power supply cord
 PWC-C13AU-3B-183 10A/250V	AU-type power supply cord