Allen-Bradley 1756-L82E

ControlLogix 5580 - Programmable automation controller

Product photograph, application notes and selected Allen-Bradley technical pages.



PRODUCT IDENTIFICATION

ControlLogix 5580 controller with 5 MB user memory, an embedded Gigabit EtherNet/IP port and USB programming.

Replacement check
Match the full 1756-L82E catalog number, hardware series and project firmware; node limits and redundancy depend on the Logix Designer version. Standard Series C chassis permit 0…60 °C, while standard Series B chassis limit operation to 0…50 °C.

HARDWARE AND SYSTEM COMPATIBILITY

The single-slot controller provides 5 MB of user memory, an embedded Ethernet port supporting up to 1 Gbps, and a USB programming port. It uses Secure Digital nonvolatile storage and an embedded, non-removable energy storage module.

Studio 5000 Logix Designer version 30 or later supports 175 EtherNet/IP nodes. Redundancy requires version 33.00.02 or later and a compatible system configuration; enabling it disables the embedded Ethernet port and integrated motion.

Photographs identify 1756-L82E Series B; they do not establish current stock quantity, firmware or included accessories. Apply only the selected official source rows and instructions that cover this catalog number and series. Other catalog numbers on shared source pages are reference context, not specifications for this product. This EWOLO CONTROL compilation contains selected Allen-Bradley original pages and does not replace the complete manufacturer manual.

Manufacturer references: 1756-TD001, W / October 2025; 1756-IN043, G / July 2025.

1756-L82E - Connection and installation

CHASSIS AND ENVIRONMENT

1756-L82E is an open-type indoor industrial controller. Use a suitable tool-access, flame-retardant enclosure in Pollution Degree 2, overvoltage Category II, up to 2000 m without derating. Nonmetallic enclosures require 5VA or application approval. The permitted surrounding-air range is 0-50 C in a 1756 Series B chassis or 0-60 C in Series C; operation at 60 C requires Series C. Do not substitute temperature limits for Process, XT or NSE variants. [1756-IN043G, pp.3-4,6]

POWER, ESD AND SAFE USE

Module insertion/removal, SD-card changes, powered communication-cable connection and reset-button operation can create an arc. Remove the relevant power or verify the area is nonhazardous before proceeding. Secure external connections with their provided locks/latches; component substitutions can impair hazardous-location suitability. Never use USB in hazardous locations. Discharge static, wear a grounded wriststrap, avoid pins/circuits and use static-safe work/storage. Do not dismantle or repair; return damaged equipment to the manufacturer and clean only with a dry antistatic cloth. [1756-IN043G, pp.3,6-7]

ZONE 2 CONDITIONS, WHERE APPLICABLE

Verify the unit's markings and system approval. Use an ATEX/IECEx-certified Zone 2 enclosure rated at least IP54, tool-only access, and a certified Rockwell Automation backplane. Protect from sunlight/UV, remain within rated limits and Pollution Degree 2, and prevent transients exceeding 140% of peak rated voltage. Do not disconnect equipment unless power is removed or the area is known nonhazardous. Follow the complete safe-use conditions; an enclosure alone does not establish approval. [1756-IN043G, pp.3-4]

CONTROLLER AND SD-CARD INSTALLATION

Prepare the supported chassis and power supply using their installation instructions. Align the circuit board with the top/bottom slot guides; slide the controller in until it snaps, and verify it is flush with adjacent components. It can occupy any chassis slot. Insert the key after installation. Check the SD-card lock/unlock position for the application. For card access remove the key and open the door; insert the card contact-end first, contacts right, label left and beveled corner uppermost. Press gently until it clicks, close the door and reinsert the key if required. Never force the card. [1756-IN043G, pp.6-7]

USB, ETHERNET AND CONFIRMATION

USB is for temporary local programming only: maximum cable length 3 m, no hubs and no permanent connection. Use the RJ45 port for the EtherNet/IP network, following IEC 61918/IEC 61784-5-2 cabling requirements. A 10 Mbps link is only for necessary temporary setup, not normal operation. After power-up inspect the four-character display and status indicators; interpret them using 1756-UM543. Apply the current project's firmware/network configuration and the replacement checks on page 1. [1756-IN043G, pp.3,7; 1756-TD001W, p.19]

Source scope: The next page preserves the original manufacturer specification table. This sourced summary highlights applicable installation and connection conditions; use the complete 1756-IN043G instructions, chassis/power-supply instructions and 1756-UM543 for the installation-specific assessment. Shared source tables cover other models; apply only the 1756-L82E column.

Technical Specifications - ControlLogix 5580 Standard and Conformal Coated Controllers

Attribute	1756-L81E, 1756-L81EK	1756-L82E, 1756-L82EK	1756-L83E, 1756-L83EK	1756-L84E, 1756-L84EK	1756-L85E, 1756-L85EK
Standard memory	3 MB	5 MB	10 MB	20 MB	40 MB
Digital I/O max	128,000				
Analog I/O max	4000				
Total I/O max	128,000				
Nonvolatile memory storage	4 GB Secure Digital (SD) card (1784-SD4), ships pre-installed in the controller(1)				
Energy storage module	Embedded in controller, non-removable				
Number of power cycles	80,000				
Current draw @ 1.2V DC	5.0 mA				
Current draw @ 5.1V DC	1.20 A				
Power dissipation	6.2 W				
Thermal dissipation	21.2 BTU/hr				
Isolation voltage	50V (continuous), Basic Insulation type, USB port to backplane, Ethernet port to backplane, and USB port to Ethernet port Compliant and tested according to IEC/UL 61010-1				
Weight approx	0.394 kg (.868 lb)				
Slot width	1				
Module location	Chassis-based, any slot				
Chassis	1756-A4, 1756-A4K, 1756-A7, 1756-A7K, 1756-A10, 1756-A10K, 1756-A13, 1756-A13K, 1756-A17, 1756-A17 K Series B, Series C				
Power supply, standard	1756-PA50, 1756-PA50K, 1756-PA72, 1756-PA72K, 1756-PA75, 1756-PA75K, 1756-PB50, 1756-PB50K 1756-PB72, 1756-PB72K, 1756-PB75, 1756-PB75K, 1756-PC75, 1756-PH75				
Power supply, redundant	1756-PA75R, 1756-PA75RK, 1756-PB75R, 1756-PB75RK, 1756-PSCA2, 1756-PSCA2K				
Wire category(2)	3 - on USB port 2 - on Ethernet ports				
Wire size	Ethernet connections: Ethernet cabling and installation according to IEC 61918 and IEC 61784-5-2				
Temperature code	T4				
Enclosure type rating	None (open-style)				

(1) Larger versions may be available. See Memory Cards on page 42.
(2) Use this conductor category information to plan conductor routing. See Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.