ProSoft MVI56E-GSC

Installation & Commissioning Guide

01 Scope, hardware and application readiness

Define the serial application

MVI56E-GSC is a two-port ASCII transport module for a ControlLogix chassis. Before installation, establish how the controller constructs commands, identifies complete responses and interprets device data. Record the peripheral protocol, normal response and timeout behavior; a physical serial connection alone is not an application driver.

Preserve the installed project

Save the controller project and record the chassis path, slot number, firmware and current I/O definition. Use the ProSoft sample logic or Add-On Instruction appropriate to the controller software. The AOI requires RSLogix 5000 version 16 or later; earlier supported projects use sample ladder.

Prepare hardware safely

Control the consequences of losing serial communication before working on the rack. Observe the manufacturer installation and hazardous-location instructions, use ESD precautions and confirm that power removal or the permitted safe-location conditions are established before insertion, removal or cable connection.

Check the module environment

Use the standard MVI56E-GSC operating range of 0 to 60 C, with 5-95% noncondensing humidity. Do not apply the GSCXT extended-temperature rating. Include 800 mA at 5 V DC and 3 mA at 24 V DC in the backplane power assessment.

Identify the service and application paths

P1 and P2 are independent serial application ports. E1 is the 10/100BaseT Ethernet service connection for software access and diagnostics. Keep Ethernet service addressing separate from the serial device settings and the controller I/O connection.

Field reference matrix

Host position	One 1756 chassis slot; match the project I/O path
Application channels	P1 and P2; independent serial configuration
Service path	E1 Ethernet; configuration access and diagnostics
Controller data	500-byte input / 496-byte output images

Reference basis

ProSoft MVI56E-GSC/GSCXT ControlLogix Platform Enhanced Generic ASCII Serial Communication Module User Manual, October 13, 2025

02 Port selection and connection plan

Match the electrical interface

Set each serial port jumper for RS-232, RS-422 or RS-485 according to the connected device. Record both port selections before fitting the module. Select the corresponding adapter and cable pinout; a connector that fits does not establish compatible wiring.

Retain firmware write protection

The setup jumper is shipped OFF. It enables firmware updates when fitted and is not required for ordinary configuration. Leave the normal protected position unless an approved firmware service procedure specifically requires a change.

Create an independent port record

For each port, record baud rate, data bits, parity, stop bits and handshaking. Supported baud rates extend from 110 to 115200 bit/s; data bits are 5, 6, 7 or 8 and stop bits are 1 or 2. Both endpoints must agree.

Allow for device handshaking

Choose none, RTS/CTS, DTR/DSR or XON/XOFF as required by the peripheral. Set RTS on and off delays to match the device timing. A handshake mismatch can prevent transmission even when the electrical interface and baud rate are correct.

Seat the module and preserve slot identity

Align the module with the chassis guides and seat it fully so the retention clips engage. Preserve the planned slot number in the controller I/O configuration. Route and identify each serial cable to prevent P1 and P2 from being interchanged during maintenance.

Field reference matrix

Baud rate	110-115200 bit/s
Character format	5/6/7/8 data bits; 1/2 stop bits
Parity	None, odd or even
Handshaking	None; RTS/CTS; DTR/DSR; XON/XOFF
RTS delays	0-65535 ms, independently configured
Message capacity	Up to 4096 bytes per port

03 Message framing and controller configuration

Choose a message boundary

The receive termination bitmap can select termination characters, message timeout, intercharacter delay or packet length. Conditions can be combined. The first selected condition that is satisfied ends the current message, so a short timeout can finish a message before its final delimiter arrives.

Configure character and length criteria

Set the termination-character count and matching characters for the actual device format; the supported count is 0-12. Use a fixed packet length only when the protocol defines a predictable byte count. Include separators or terminators in the length calculation as required by the device protocol.

Distinguish the two timing criteria

Message timeout measures elapsed time after the first character. Intercharacter delay detects idle time between characters. Choose values that accommodate the peripheral transmission pattern and normal controller load without combining separate messages or truncating valid responses.

Use stream mode deliberately

In stream mode the controller must service received data quickly enough to avoid loss. Prefer a meaningful framing condition when the device protocol provides one. Test sustained traffic at the expected production rate, not only an isolated short message.

Apply the configuration and restart

Port settings reside in GSC.CONFIG.PORT1 and PORT2; backplane behavior uses the corresponding utility configuration. After changing configuration, apply the documented warm-boot, cold-boot or power-cycle procedure. Set a suitable nonzero WTimeout value to avoid transmit error 0400.

Field reference matrix

Bitmap 0	Stream mode; controller servicing is time critical
Flag value 1	Termination character sequence
Flag value 2	Elapsed message timeout after first character
Flag value 4	Intercharacter idle delay
Flag value 8	Configured packet length
Combined conditions	First satisfied selected criterion ends the message

04 Commissioning and fault isolation

Establish the controller connection

Bring the controller and module into the intended operating state. Verify the correct slot, I/O definition, sample ladder or AOI and controller RUN condition. A waiting-for-processor indication requires resolving this connection before troubleshooting the field device.

Check module indicators

Normal module operation uses green APP and OK indications. APP red can occur during startup, reboot or a communication error. An OK indication that remains red beyond the startup interval requires diagnosis rather than repeated blind restarts.

Prove each serial direction

Send a known valid command and compare the transmitted bytes with the device protocol. Check the received response in the diagnostic analyzer and then in the controller data. Repeat independently for P1 and P2, including the selected termination condition and handshake behavior.

Exercise the failure policy

Review the consecutive backplane-failure threshold. A value of zero disables the shutdown feature; a configured nonzero threshold can stop serial communication after repeated backplane failures. Confirm that the process responds appropriately when data is unavailable or stale.

Verify controlled recovery

After a threshold-induced shutdown, restore the controller connection and perform the documented reset, reinsertion or power-cycle method. Confirm that communication resumes and that the controller rejects stale data until a valid new response has been accepted.

Field reference matrix

Waiting for processor	Check I/O definition, slot, sample logic and RUN state
No serial transmission	Check electrical mode, wiring, handshake and WTimeout
Partial or joined messages	Review delimiters, packet length and receive timing
APP red	Distinguish startup/reboot from a communication error
Backplane shutdown	Restore connection, apply documented reset and retest
Valid bytes, wrong process value	Check controller parsing and device message format

05 Service record and technical handover

Retain reproducible settings

Keep the controller project, module firmware, slot path, port jumpers, serial parameters and message-framing criteria together. Record a representative valid command and response for each peripheral so later service can separate protocol errors from wiring faults.

Preserve acceptance evidence

Document successful transmit and receive tests, controller interpretation of the response, timeout handling and recovery after the configured backplane failure. Retain the tested traffic rate and any peripheral-specific timing assumptions.

Plan support using the dated statement

The ProSoft lifecycle statement dated March 31, 2026 lists MVI56E-GSC as Active, with no planned or expected move to Limited Availability or Discontinued before December 31, 2031 at that date. Request current guidance for the installed firmware and controller revision.

Related ProSoft references

Portfolio navigation only; no compatibility or substitution is implied.

ProSoft MVI56E-MNETR	View product
ProSoft MVI56E-MCM	View product
ProSoft PLX31-EIP-MBS	View product
ProSoft PS69-DPM	View product

Discuss the complete offered reference

Send label photos, quantity and the installed application reference. Condition: New, original product.

sales13@apterpower.com | +86 18030235313

Document scope

The standard MVI56E-GSC temperature rating applies here; GSCXT extended-temperature ratings are excluded. Serial message formatting and interpretation remain part of the controller application.

ProSoft product lifecycle statement, March 31, 2026.