Allen-Bradley 1756-IF6I

Technical Reference and Engineering Data

Allen-Bradley 1756-IF6I is a controllogix six-channel isolated analog input module for the ControlLogix 1756 I/O platform. The complete marking must be matched to the installed hardware, wiring and configuration before replacement.

01 Exact identity and system role

Complete model	1756-IF6I
Product type	ControlLogix six-channel isolated analog input module
Manufacturer	Allen-Bradley
Technical source	Rockwell Automation 1756-IF6I product record and publication 1756-TD002
Analog inputs	6 individually isolated
Input ranges	+/-10.5 V; 0 to 10.5 V; 0 to 5.25 V; 0 to 21 mA
Resolution	16 bit
Voltage resolution	343, 171 or 86 microV/bit by range
Current resolution	0.34 microA/bit
Input impedance	>10 Mohm voltage; 249 ohm current

System position

1756-IF6I provides six individually isolated voltage or current inputs in a ControlLogix chassis; the RTB, loop wiring and Logix channel configuration must be reviewed together.

Lifecycle and installed-base context

Exact product phase	Rockwell Automation lists 1756-IF6I as discontinued, with discontinuation dated 2017-03-31 and a functional-replacement category.
Installed-base support	Preserve the six isolated channel ranges, scaling, alarms, real-time sample period, RTB keying and calibration record during replacement review.
Supply boundary	Apter Power availability applies to the offered module and does not change the Rockwell lifecycle classification.

02 Verified technical data

Analog inputs	6 individually isolated
Input ranges	+/-10.5 V; 0 to 10.5 V; 0 to 5.25 V; 0 to 21 mA
Resolution	16 bit
Voltage resolution	343, 171 or 86 microV/bit by range
Current resolution	0.34 microA/bit
Input impedance	>10 Mohm voltage; 249 ohm current
Isolation voltage	250 V continuous; tested at 1,350 V AC for 2 s
Backplane current	250 mA at 5.1 V; 100 mA at 24 V
Backplane power	3.7 W

Additional engineering data

Maximum power dissipation	3.7 W voltage; 4.3 W current
Channel bandwidth	15 Hz at -3 dB
Settling time	<80 ms to 5% of full scale
Calibrated accuracy	Better than 0.1% of range at 25 deg C
Calibration interval	6 months
Minimum scan time	10 ms integer; 25 ms floating point
Normal-mode rejection	60 dB at 60 Hz

Common-mode rejection	120 dB at 60 Hz; 100 dB at 50 Hz
Overvoltage protection	120 V AC/DC voltage input; 8 V AC/DC current input

Applicability boundary

Exact-model electrical values are from Rockwell Automation. Input performance depends on the configured range, terminal block, field wiring and Logix project.

03 Integration and engineering interpretation

Isolated process measurement

Acquire six independently isolated voltage or current loops.

Mixed-range analog monitoring

Configure each channel for the required supported signal range.

High common-mode installations

Separate channel references within the documented isolation limits.

ControlLogix retrofit

Replace an exact 1756-IF6I while preserving RTB wiring and project configuration.

Technical notes

Channel relationship	Each of the six inputs is individually isolated and can be configured for the documented voltage or 0 to 21 mA range; preserve the exact RTB terminal assignment.
Sampling and calibration	Integer sampling can be set from 10 ms and floating-point sampling from 25 ms; review filter, alarms, calibration date and engineering-unit scaling before release.
Technical reference	Rockwell Automation 1756-IF6I product record and publication 1756-TD002.

Interpretation boundaries

Probe-only limit	Do not present complete-system range, scale or linearity as a standalone output of 1756-IF6I.
Target influence	Material, geometry, finish and nearby conductive surfaces can change the installed response.
Length influence	Probe lead and extension cable form part of the calibrated electrical relationship.
Temperature influence	Apply component temperature limits at their actual locations and compare with process transients.
Mechanical influence	Thread engagement, rigidity, target travel and cable support affect repeatability and service life.
Acceptance rule	Use the approved machine baseline and maintenance procedure for the final as-left decision.

04 Diagnostic decisions and support record

How should each configured range on 1756-IF6I be documented before replacement?	Export the Logix module properties and record range, filter, real-time sampling, scaling, alarms and data format for all six channels.
What causes a current input on 1756-IF6I to read incorrectly while voltage channels remain normal?	Check the 249-ohm current path, loop supply, terminal selection, range configuration and transmitter compliance voltage.
How should isolation on 1756-IF6I be treated during field testing?	Use test equipment and wiring that preserve channel-to-channel isolation; do not create an unintended common through shields or calibrator references.
What acceptance test is appropriate for 1756-IF6I after installation?	Inject traceable low, mid and high values on every used range and compare module tags, engineering scaling, alarms and historian values.
What evidence should be recorded before replacing 1756-IF6I?	Capture the complete nameplate, installed slot or mounting position, companion hardware, wiring identifiers and the accepted operating baseline for the controllogix six-channel isolated analog input module.
How should an intermittent fault around 1756-IF6I be isolated?	Separate field wiring, connector, supply, grounding, configuration and host-system causes. Reproduce the symptom under a controlled test and change only one variable at a time.
What configuration evidence should be retained after commissioning 1756-IF6I?	Retain the hardware identity, firmware or parameter record where applicable, channel assignment, as-left measurements, alarm or diagnostic state and the approved functional-test result.
When should 1756-IF6I be rejected during incoming inspection?	Quarantine the item if the complete marking, connector keying, board revision, protective coating, terminal condition or required companion hardware differs from the approved replacement record.

Verified source

Rockwell Automation 1756-IF6I product record and publication 1756-TD002

Related product references

Related product	1734-EP24DC
Related product	2711-T9C1X
Related product	2711-T10C8X
Related product	1746-NIO4I

Engineering contact

Discuss the exact marking and installed application with Apter Power.
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Acceptance evidence package

Nameplate evidence	Overall and close photographs showing 1756-IF6I, revision, approval and serial details where present.
Installation evidence	Views of the rack position, mechanical datum, terminal assignment, cable route and strain relief.
Configuration evidence	Export or screenshots identifying the approved hardware assignment and parameters without exposing credentials.
Baseline evidence	As-found readings with units, test conditions, machine state and the instrument used.
Inspection evidence	Connector, contact, insulation, fastener, contamination and heat-condition observations.
Functional evidence	As-left readings and the controlled input, output or channel response used for acceptance.
Change evidence	Any wiring, setting, firmware or mechanical change linked to its approved work reference.
Release evidence	Technician, reviewer, date, asset reference and the maintenance-record location for traceability.

Controlled acceptance sequence

01 Isolate	Place the monitored machine and channel in the approved maintenance state; prove the required isolation.
02 Photograph	Capture 1756-IF6I, the installed datum, connector, route and companion-component markings.
03 Measure	Record mechanical position and the applicable stopped-machine electrical reading before removal.
04 Compare	Check delivered identity, interfaces and evidence against the approved drawing and spare-parts record.
05 Install	Fit without twisting the lead; preserve thread engagement, target clearance, bend radius and strain relief.
06 Set point	Establish the operating gap or datum only with the approved stopped-machine procedure.
07 Prove	Compare local reading, monitor indication and controlled operating response with the accepted baseline.
08 Handover	Record as-left values, photographs, deviations, responsible technician and release approval.

Evidence quality controls

Traceability	Each value is tied to 1756-IF6I, the asset location, test state, instrument and date.
Repeatability	The same approved method and comparable operating state are used for before-and-after readings.
Resolution	Recorded precision does not exceed the capability of the instrument or source document.
Reference state	Stopped, energized, loaded and process-running observations are clearly distinguished.
Change control	Every changed setting, connection or mechanical datum has an approved reason and reviewer.
Retention	Evidence remains accessible with the maintenance record for future troubleshooting and replacement review.