Allen-Bradley 1756-IF16

ControlLogix Analog Input Module

Allen-Bradley 1756-IF16 reads voltage and current process signals in a ControlLogix system. Select it for applications requiring multiple analog inputs with a choice of channel count and input configuration. The 1756-IF16 supports single-ended, differential and high-speed differential operation.



Technical Specifications

Product Identity	
Manufacturer	Allen-Bradley
Catalog number	1756-IF16
Functional Configuration	
Input configurations	16 single-ended; 8 differential; 4 high-speed differential
Voltage ranges	±10V, 0–10V or 0–5V
Current range	0–20mA
Data format	Integer or IEEE 32-bit floating point
Channel isolation	No individual channel isolation; 250V continuous input-group-to-backplane isolation
Removable terminal block	1756-TBCH or 1756-TBS6H
Performance & Power	
Resolution	16 bits unipolar; 15 bits plus sign for bipolar voltage
Current-input impedance	249Ω
Voltage-input impedance	At least 10MΩ
Single-ended scan time	16–488ms, depending on notch filter
Differential scan time	8–244ms, depending on notch filter
High-speed differential scan time	5–122ms, depending on notch filter
Calibrated accuracy at 25°C	Better than 0.05% of range for voltage; better than 0.15% of range for current
Environment	
Operating temperature	0–60°C

Selected original manufacturer material follows on pages 3–4.

Celine unity@mvme.cn +86-18020776786

Compatibility & Selection Guide

System compatibility. The 1756-IF16 belongs to the ControlLogix analog I/O family and supports engineering-unit scaling, software-configurable alarms and integer or floating-point data. Match the input mode, channel assignments, notch filter and data format to the existing controller project; changing to high-speed differential operation reduces the available input count.

Wiring & Installation Reference

Signal and terminal selection

Single-ended voltage. IN-x referenced to RTN · The iRTN terminals are not used for voltage measurements.

Single-ended current. IN-x and corresponding iRTN · Connect the required iRTN-to-RTN jumpers as shown in the current-input diagram.

Differential inputs. Positive/negative input pairs · High-speed mode uses logical channels 0, 2, 4 and 6; do not copy single-ended terminal assignments.

Installation checks

Verify the input design. Confirm voltage/current signal type, single-ended or differential mode, field supply isolation and the expected signal span.

Install and key the RTB. Use the correct 1756-TBCH or 1756-TBS6H, match mechanical keying and route shielded analog cables according to the installation instructions.

Check before commissioning. Seat and lock the RTB, verify shields and returns, and confirm channel mode, scaling, data format and notch filter in the controller project.

Installation precautions. Use an appropriately isolated field supply and follow the manufacturer power and hazardous-location precautions before inserting, removing or disconnecting the module. Protect the electronics from electrostatic discharge and do not treat the analog input channels as individually isolated.

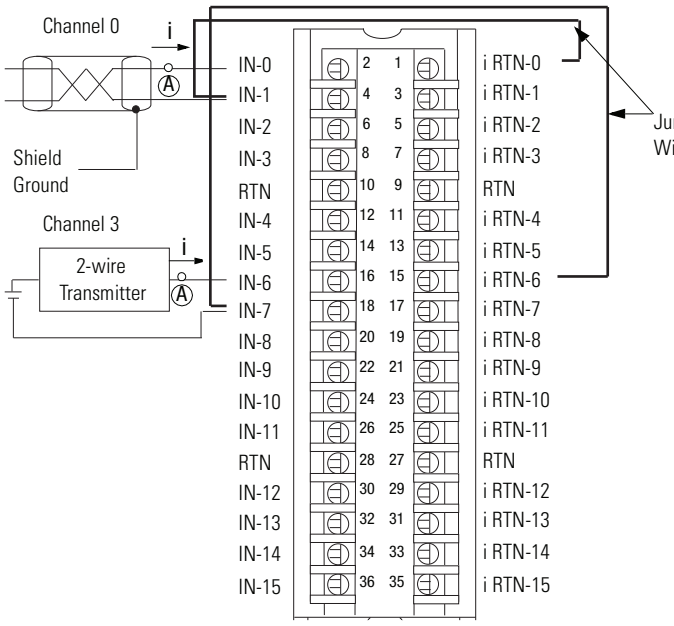
View terminal diagrams (PDF) · PDF page 3 | View installation guide · PDF page 2

Manufacturer sources: ControlLogix System Selection Guide / ControlLogix I/O Modules Technical Data / ControlLogix Analog I/O Modules Installation Instructions / 1756 ControlLogix I/O Specifications.

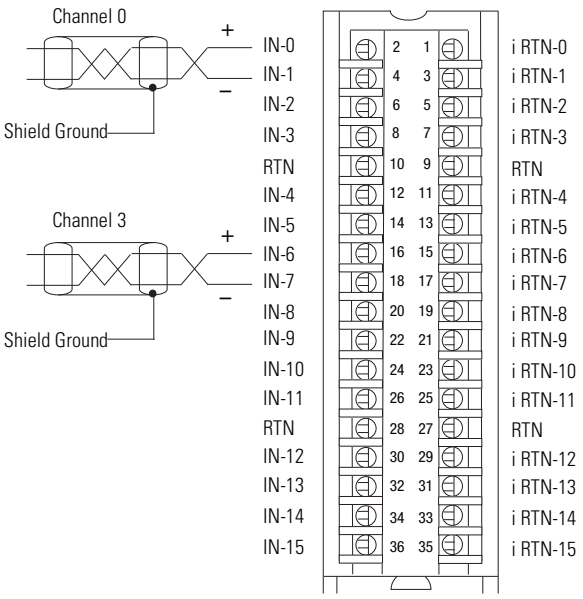
1756-IF16, 1756-IF16K

ControlLogix current/voltage analog input module

1756-IF16 Differential Current



1756-IF16 Differential Voltage



Use this table when wiring your module in Differential Current mode.

This Channel	Uses these terminals
Channel 0	IN-0 (+), IN-1 (-), i RTN-0
Channel 1	IN-2 (+), IN-3 (-), i RTN-2
Channel 2	IN-4 (+), IN-5 (-), i RTN-4
Channel 3	IN-6 (+), IN-7 (-), i RTN-6
Channel 4	IN-8 (+), IN-9 (-), i RTN-8
Channel 5	IN-10 (+), IN-11 (-), i RTN-10
Channel 6	IN-12 (+), IN-13 (-), i RTN-12
Channel 7	IN-14 (+), IN-15 (-), i RTN-14

- All terminals marked RTN are connected internally.
- A 249 Ω current loop resistor is located between IN-*x* and i RTN-*x* terminals.
- If multiple (+) or multiple (-) terminals are tied together, connect that tie point to an RTN terminal to maintain the accuracy of the module.
- Place additional loop devices (such as strip chart recorders) at the A location in the current loop.

IMPORTANT: When operating in 4-channel, High-Speed mode, only use channels 0, 2, 4, and 6.

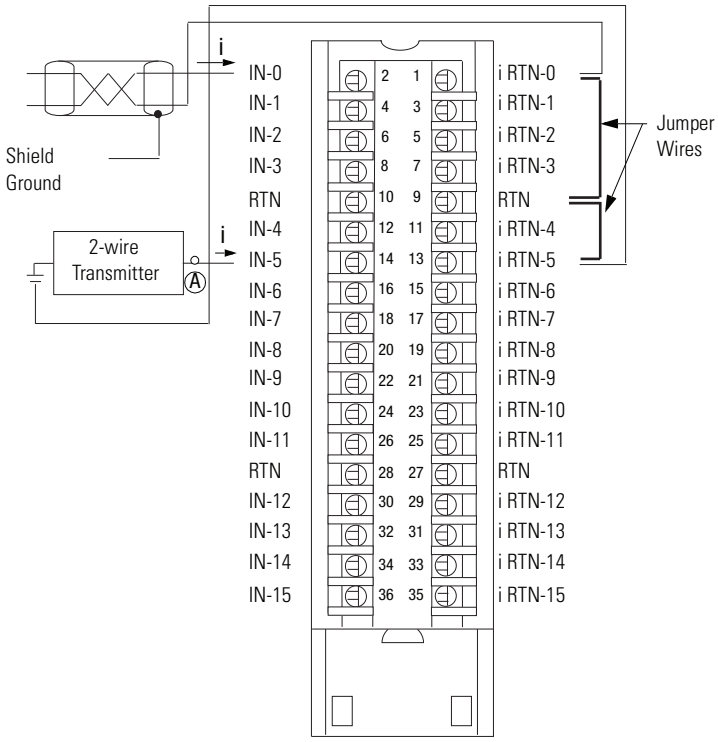
Use this table when wiring your module in Differential Voltage mode.

This Channel	Uses these terminals
Channel 0	IN-0 (+), IN-1 (-)
Channel 1	IN-2 (+), IN-3 (-)
Channel 2	IN-4 (+), IN-5 (-)
Channel 3	IN-6 (+), IN-7 (-)
Channel 4	IN-8 (+), IN-9 (-)
Channel 5	IN-10 (+), IN-11 (-)
Channel 6	IN-12 (+), IN-13 (-)
Channel 7	IN-14 (+), IN-15 (-)

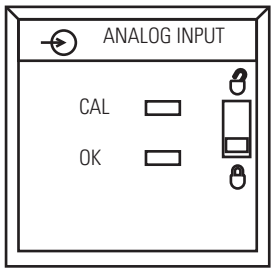
- All terminals marked RTN are connected internally.
- If multiple (+) or multiple (-) terminals are tied together, connect that tie point to an RTN terminal to maintain the accuracy of the module.
- Terminals marked RTN or i RTN are not used for differential voltage wiring.

IMPORTANT: When operating in 4-channel, High-Speed mode, only use channels 0, 2, 4, and 6.

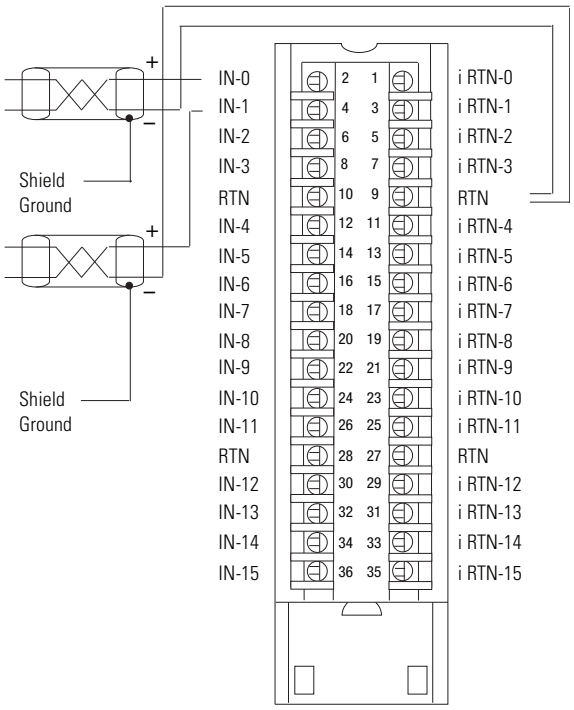
1756-IF16, 1756-IF16K Single-ended Current



- All terminals marked RTN are connected internally.
- For current applications, all terminals marked i RTN must be wired to terminals marked RTN.
- A 249 Ω current loop resistor is located between IN-*x* and iRTN-*x* terminals.
- Place additional loop devices (such as strip chart recorders) at the A location in the current loop.



1756-IF16, 1756-IF16K Single-ended Voltage



- All terminals marked RTN are connected internally.
- Terminals marked i RTN are not used for single-ended voltage wiring.