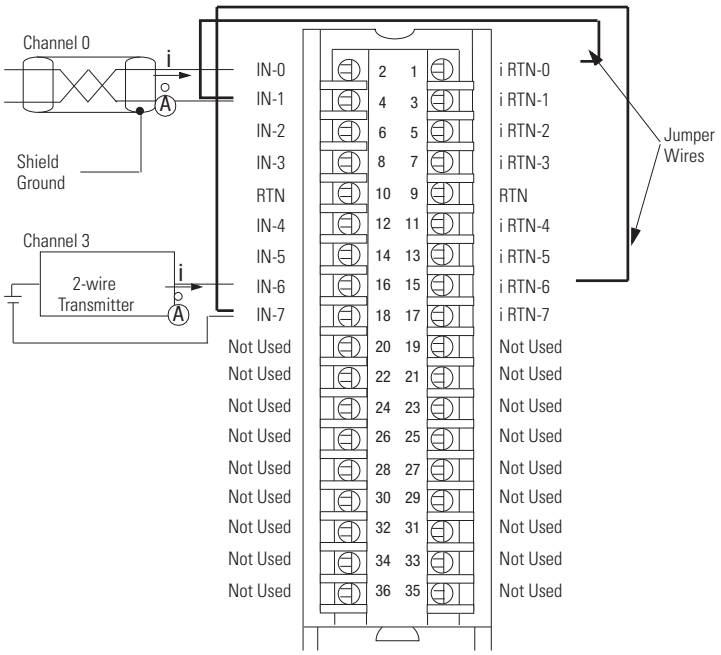
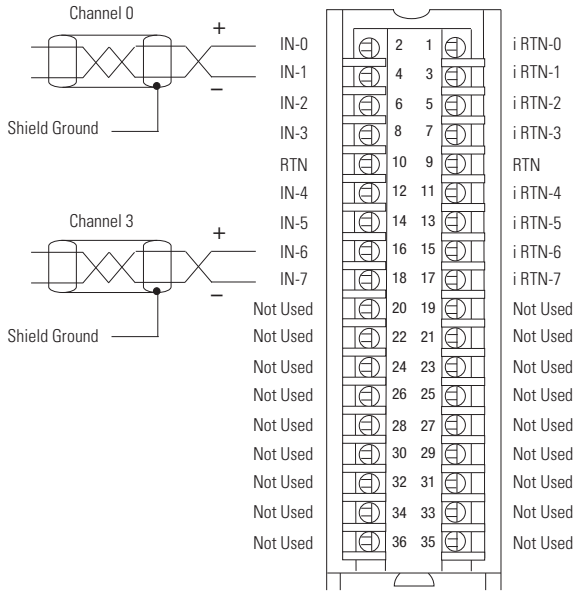
1756-IF8, 1756-IF8K

ControlLogix voltage/current analog input module

1756-IF8, 1756-IF8K Differential Current



1756-IF8, 1756-IF8K Differential Voltage



- Use this table when wiring your module in Differential 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

- 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 module accuracy.
- Place additional loop devices (such as strip chart recorders) at the A location in the current loop.

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

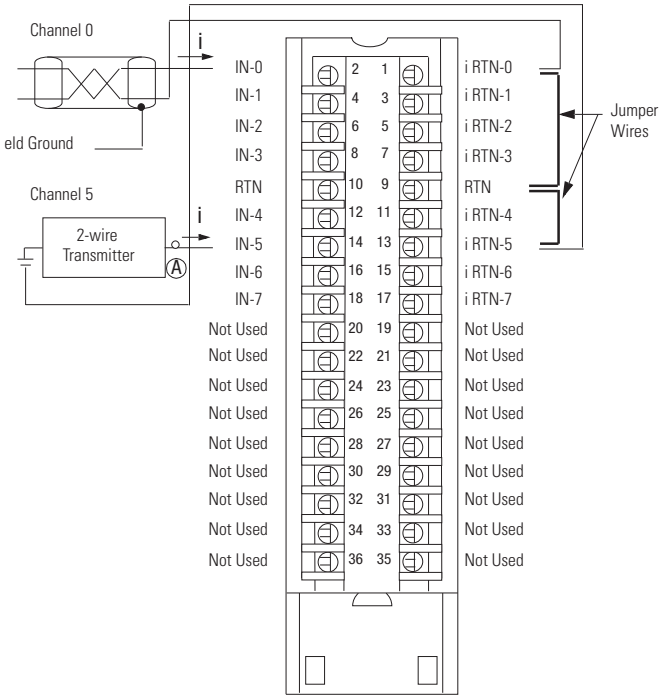
- Use this table when wiring your module in Differential mode.

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 (-)

- 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 module accuracy.
- Terminals marked RTN or i RTN are not used for differential voltage wiring.

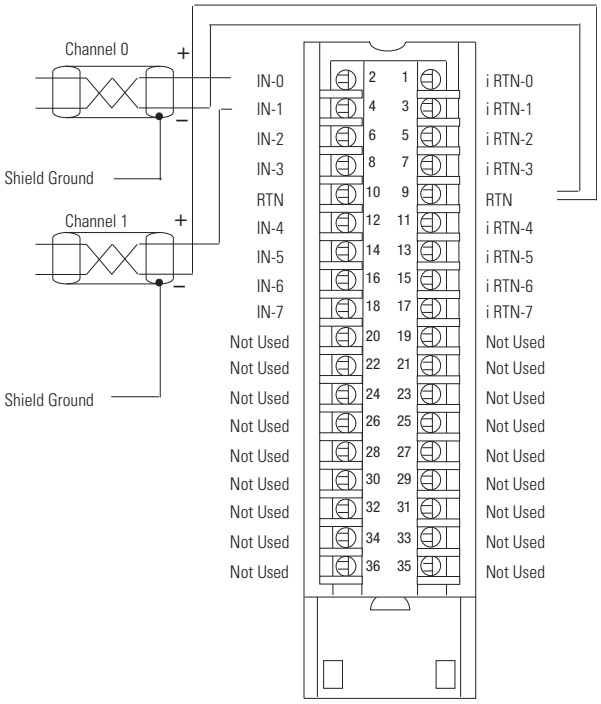
IMPORTANT: When operating in 2-channel, High-Speed mode, only use channels 0 and 2.

1756-IF8, 1756-IF8K Single-ended Current

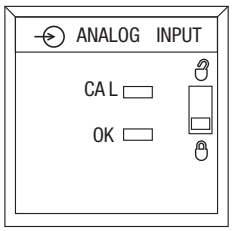


- All terminals marked RTN are connected internally.
- For current applications, all terminals marked iRTN must be wired to terminals marked RTN.
- A 249 Ω current loop resistor is located between IN-*x* and i RTN-*x* terminals.
- Place additional loop devices (such as strip chart recorders) at the A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

1756-IF8, 1756-IF8K Single-ended Voltage



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



Technical Specifications - 1756-IF8, 1756-IF8K

Attribute	1756-IF8, 1756-IF8K
Inputs	Eight single-ended Four differential Two high-speed differential
Input range	±10V 0…10V 0…5V 0…20 mA
Resolution	±10.25V: 320 μV/count (15 bits plus sign bipolar) 0…10.25V: 160 μV/count (16 bits) 0…5.125V: 80 μ/V count (16 bits) 0…20.5mA: 0.32 μA/count (16 bits)
Current draw @ 5.1V	150 mA
Current draw @ 24V	40 mA
Total backplane power	1.73 W
Voltage and current ratings	Backplane: 5.1V DC, 150 mA max, 24V DC, 40 mA max Input voltage range: -10…+10V Input current range: 4…20mA Limited to 100VA
Power consumption	1.73 W
Power dissipation	Voltage: 1.73 W Current 2.33 W
Thermal dissipation	Voltage: 5.88 BTU/hr Current: 7.92 BTU/hr
Input impedance	Voltage: >1 MΩ Current: 249 Ω
Open circuit detection time	Differential voltage: Positive full scale reading within 5 s Single-ended/diff. current: Negative full scale reading within 5 s Single-ended voltage: Even-numbered channels go to positive full scale reading within 5 s, odd-numbered channels go to negative full scale reading within 5 s
Overvoltage protection, max	Voltage: 30V DC Current: 8V DC
Normal mode noise rejection	>80 dB @ 50/60 Hz[(2)]
Common mode noise rejection	>100 dB @ 50/60 Hz
Calibrated accuracy 25 °C (77 °F)	Voltage: Better than 0.05% of range Current: Better than 0.15% of range
Calibration interval	12 months
Offset drift	45 μV/°C
Gain drift with temperature	Voltage: 15 ppm/°C Current: 20 ppm/°C
Module error	Voltage: 0.1% of range Current: 0.3% of range
Module input scan time, min	8 pt single-ended (floating point): 16…488 ms 4 pt differential (floating point): 8…244 ms 2 pt differential (floating point): 5…122 m[(1)]
Onboard data alarming	Yes
Scaling to engineering units	Yes
Real-time channel sampling	Yes

Technical Specifications - 1756-IF8, 1756-IF8K (continued)

Attribute	1756-IF8, 1756-IF8K
Data format	Integer mode (left justified, 2 s complement) IEEE 32-bit floating point
Module conversion method	Sigma-Delta
Isolation voltage	250V (continuous), Reinforced insulation type, Inputs to Backplane. No isolation between individual Inputs.
Module keying	Electronic, software configurable
Removable terminal block	1756-TBCH 1756-TBS6H
RTB keying	User-defined mechanical
Slot width	1
Wire size	1756-TBCH Single wire connection: 0.33…2.1 mm2(22…14 AWG) solid or stranded shielded copper wire, rated at 105 °C (221 °F) or greater, 1.2 mm (3/64 in.) insulation max 1756-TBS6H Single wire connection: 0.33…2.1 mm2(22…14 AWG) solid or stranded shielded copper wire, rated at |105 °C (221 °F) or greater, 1.2 mm (3/64 in.) insulation max
Terminal block torque specs	1756-TBCH: 0.5 N•m (4.4 lb•in)
Wiring category(1)	2 - on signal ports
Enclosure type	None (open-style)
North American temp code	T4A
ATEX temp code	T4
IECEx temp code	T4

(1) Use this Conductor Category information for planning conductor routing. See the Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.
(2) Notch filter dependent.

Environmental Specifications - 1756-IF8, 1756-IF8K

Attribute	1756-IF8, 1756-IF8K
Temperature, operating IEC 60068-2-1 (Test Ad, Operating Cold), IEC 60068-2-2 (Test Bd, Operating Dry Heat), IEC 60068-2-14 (Test Nb, Operating Thermal Shock)	0 °C < Ta < +60 °C (+32 °F < Ta < +140 °F)
Temperature, surrounding air, max	60 °C (140 °F)
Temperature, nonoperating IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold), IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat), IEC 60068-2-14 (Test N/A, Unpackaged Nonoperating Thermal Shock)	-40…+85 °C (-40…+185 °F)
Relative humidity IEC 60068-2-30 (Test dB, Unpackaged Damp Heat)	5…95% noncondensing
Vibration IEC 60068-2-6 (Test Fc, Operating)	2 g @ 10…500 Hz
Shock, operating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	30 g
Shock, nonoperating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	50 g
Emissions	IEC 61000-6-4
ESD immunity IEC 61000-4-2	6 kV contact discharges 8 kV air discharges

Environmental Specifications - 1756-IF8, 1756-IF8K (continued)

Attribute	1756-IF8, 1756-IF8K
Radiated RF immunity IEC 61000-4-3	10V/m with 1 kHz sine-wave 80% AM from 80…2000 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 900 MHz 10V/m with 200 Hz 50% Pulse 100% AM @ 1890 MHz 3V/m with 1 kHz sine-wave 80% AM from 2000…2700 MHz
EFT/B immunity IEC 61000-4-4	±2 kV at 5 kHz on signal ports
Surge transient immunity IEC 61000-4-5	±2 kV line-earth (CM) on shielded ports
Conducted RF immunity IEC 61000-4-6	10V rms with 1 kHz sine-wave 80% AM from 150 kHz…80 MHz

Certifications - 1756-IF8, 1756-IF8K

Certification (when product is marked)(1)	1756-IF8, 1756-IF8K
UL	UL Listed Industrial Control Equipment. See UL File E65584.
CSA	CSA Certified Process Control Equipment. See CSA File LR54689C. CSA Certified Process Control Equipment for Class I, Division 2 Group A,B,C,D Hazardous Locations. See CSA File LR69960C.
FM	FM Approved Equipment for use in Class I Division 2 Group A,B,C,D Hazardous Locations
CE	European Union 2014/30/EU EMC Directive, compliant with: • EN 61326-1; Meas./Control/Lab., Industrial Requirements • EN 61000-6-2; Industrial Immunity • EN 61000-6-4; Industrial Emissions • EN 61131-2; Programmable Controllers (Clause 8, Zone A & B) European Union 2014/35/EU LVD, compliant with: EN 61131-2; Programmable Controllers (Clause 11)
RCM	Australian Radiocommunications Act, compliant with: EN 61000-6-4; Industrial Emissions
Ex	European Union 2014/34/EU ATEX Directive, compliant with: • EN 60079-0; General Requirements • EN 60079-15; Potentially Explosive Atmospheres, Protection "n" • II 3 G Ex nA IIC T4 Gc • DEMKO15ATEX1482X
IECEx	IECEx System, compliant with: • IEC 60079-0; General Requirements • IEC 60079-15; Potentially Explosive Atmospheres, Protection "n" • II 3 G Ex nA IIC T4 Gc • IECEx UL 15.0053X
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: Article 58-2 of Radio Waves Act, Clause 3
EAC	Russian Customs Union TR CU 020/2011 EMC Technical Regulation Russian Customs Union TR CU 004/2011 LV Technical Regulation

(1) See the Product Certification link at rok.auto/certifications for Declarations of Conformity, Certificates, and other certification details.