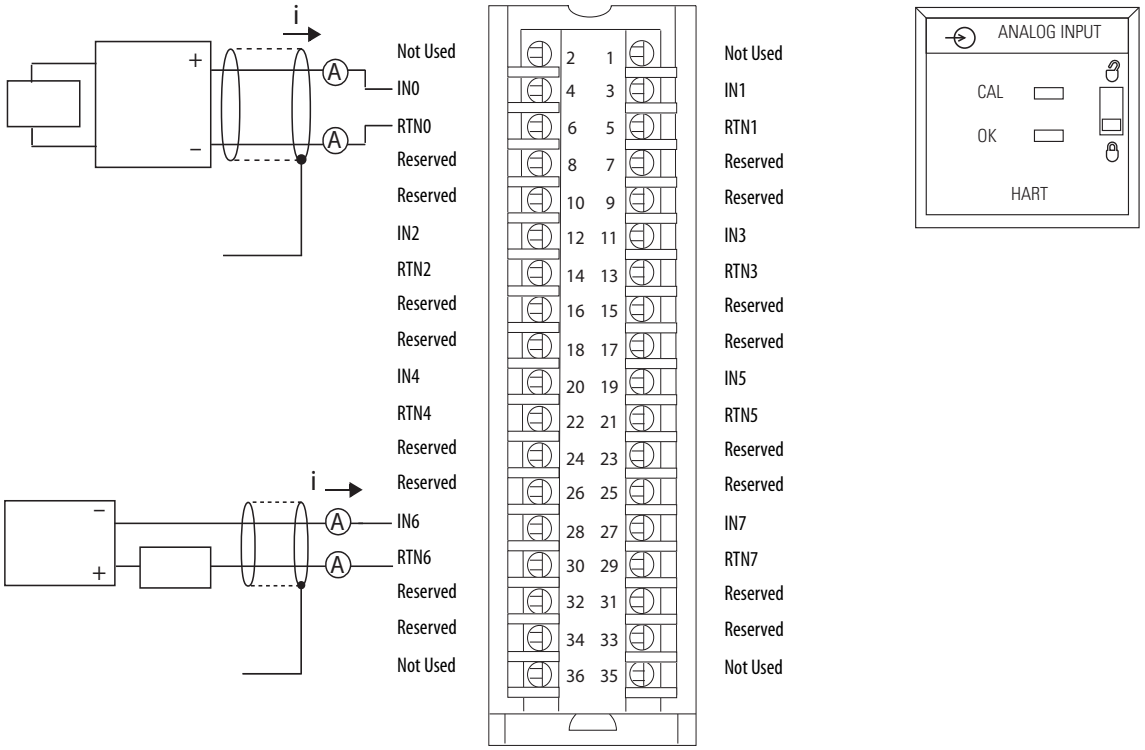
1756-IF8IH

ControlLogix isolated current analog input module with HART protocol



Technical Specifications - 1756-IF8IH

Attribute	1756-IF8IH
Inputs	Eight current inputs
Input range	0…20 mA (0…20.58 mA) 4…20 mA (3.42…20.58 mA)
Resolution	16…21 bits
Voltage and current ratings	Backplane: 210 mA @ 5.1V DC, 110 mA @ 24V DC Input voltage range: 5…30V DC Input current range: 0…20 mA, 4…20 mA
Power dissipation within module	4 W
Inrush current	400 mA @ 5V 450 mA @ 24V
Isolation voltage	250V (continuous) Reinforced Insulation Type, inputs to backplane. Basic Insulation Type, input to input, and inputs to ground. Type tested at 3535V DC for 60 s, inputs to backplane. Type tested at 2120V DC for 60 s, input to input, and inputs to ground.
Input impedance	250 Ω ±5 Ω
Open circuit detection time	5 s (4...20 mA range only)
Input overvoltage protection	+28.8V DC
Normal mode noise rejection	> 90 dB @ 50 Hz and 60 Hz with 10 Hz filter > 74 dB @ 50 Hz and 60 Hz with 15 Hz filter > 33 dB @ 50 Hz and > 90 dB @ 60 Hz with 20 Hz filter

Technical Specifications - 1756-IF8IH (continued)

Attribute	1756-IF8IH
Common mode noise rejection	> 90 dB @ 50 Hz and 60 Hz (10 Hz, 15 Hz, or 20 Hz filters only)
Calibrated accuracy at 25 °C with HART disabled	0.15…1.5% of full scale, filter dependent
Calibrated accuracy at 25 °C with HART enabled	1.5% of full scale with 250 Hz filter 0.5% of full scale with 100 Hz filter 0.2% of full scale with 50 Hz or 60 Hz filter 0.15% of full scale with 15 Hz or 20 Hz filter Monotonicity not guaranteed
Calibrated accuracy over full temperature range with HART enabled	1.8% of full scale with 250 Hz filter 0.8% of full scale with 100 Hz filter 0.5% of full scale with 50 Hz or 60 Hz filter 0.4% of full scale with 15 Hz or 20 Hz filter Monotonicity not guaranteed
Calibration interval	12 months typical
Input offset drift with temperature	<=300 μA/°C
Gain drift with temperature	20 ppm/°C
Module error over full temperature range with HART disabled	0.3% of range (all filters)
Module scan time for all channels - analog, min	18…488 ms (filter dependent)
Typical module HART dynamic variables update time for all channels	1 s typical if all channels are HART enabled Pass through messages, handheld communications, secondary masters, communication errors, or configuration changes can significantly increase the update time.
Data format	32-bit floating point
Input conversion method	Sigma-Delta ADC (24-bit converter)
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 mm^2 (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 mm^2 (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 0.4 N•m (4. 4 lb•in)
Wire category	2 - on signal ports(1)
Wire type	Copper
North American temp code	T5
ATEX temp code	T4
IECEx temp code	T4
Enclosure type	None (open-style)

(1) Use this conductor category information for planning conductor routing. See Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.

Environmental Specifications - 1756-IF8IH

Attribute	1756-IF8IH
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 Na, 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
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 10V/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