Allen-Bradley
by ROCKWELL AUTOMATION

Catalog #: 1756-IF16H Preferred Availability

ControlLogix 16 Pt A/I HART Module

Lifecycle status: ACTIVE

Technical Specifications

Electrical

Input, current	Yes
Input, voltage	Yes
Input, resistor	No
Input, resistance thermometer	No
Input, thermocouple	No
Input signal, configurable	Yes
Output, current	No
Output, voltage	No
Output signal configurable	No
Analogue inputs configurable	Yes
Analogue outputs configurable	No
Type of electric connection	Screw-/spring clamp connection
Wire type	Copper
Terminal block torque specifications	1756-TBCH: 0.5 Nm (4.4 lb.in)
Input conversion method	Successive approximation
Module keying	Electronic, software configurable
Offset drift	27 µV/°C
Output conversion method	R-Ladder DAC, monotonicity with no missing codes

Input range	0...20 mA, 4...20 mA
Data format	Integer mode (left justified, 2 s complement) IEEE 32-bit floating point
Wire category	2 - on signal ports
Overvoltage protection	8V DC maximum
Common mode noise rejection	>90 dB @ 50/60 Hz (15 Hz and 20 Hz filters only)
Normal mode noise rejection	74 dB @ 50/60 Hz (15 Hz filter) 90 dB @ 60 Hz (20 Hz filter)
Module error	0.3% of range
Gain drift with temperature	11 ppm/°C
Module input scan time, min	11...328 ms (filter dependent)
Voltage and current ratings	Backplane: 5.1V DC @ 200 mA, 24V DC @ 125 mA, Input current range: 0...20 mA, 4...20 mA
Total backplane power	4.02 W
Thermal dissipation	12 BTU/h
Inputs	16 differential, current dedicated HART modem per channel
Power dissipation	6 W maximum
Resolution	16 to 21 Bit
Wire size	Single wire connection (1756-TBCH): 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 maximum, Single wire connection (1756-TBS6H): 0.33...2.1 mm^2 (22...14 AWG) solid or
Calibrated accuracy	Better than 0.13% of range (all filters)
Open circuit detection time	Positive full scale reading within 5 s
Module HART scan time	Estimate 1 s if all channels are HART enabled
Suitable for safety functions	No

Environmental

Surrounding air temperature, max	60 °C
North American temperature code	T5
Emissions	IEC 61000-6-4
ESD immunity	6 kV contact discharges, 8 kV air discharges
EFT/B immunity	±2kV at 5 kHz on signal ports
Relative humidity	5...95% noncondensing
Conducted RF immunity	10V rms with 1 kHz sine wave 80% AM from 150 kHz...80

	MHz on shielded signal ports
Surge transient immunity	±2 kV line-earth (CM) on shielded signal ports
Operating temperature	0 °C <Ta <60 °C (32 °F <Ta <140 °F)
Radiated RF immunity	10 V/m with 1 kHz sine-wave 80% AM from 80...2000 MHz, 10 V/m with 200 Hz 50% pulse 100% AM @ 900 MHz, 10 V/m with 200 Hz 50% pulse 100% AM @ 1890 MHz, 3 V/m with 1 kHz sine-wave 80% AM from 2000...2700 MHz
Nonoperating temperature	-40 °C

Mechanical

RTB keying	User-defined mechanical
Vibration	2 G @ 10...500 Hz
Shock	Operating: 30 G, Non operating: 50 G
Slot width	1

Certification

Calibration interval	12 months typical
IEC temperature code	T4
ATEX temperature code	T4

General Specifications

Repeatability	Better than 0.01% of range (15 Hz and 20 Hz filters only)

Input Specifications

Input impedance	249 Ohm

Power

Isolation voltage	50V (continuous), basic insulation type, input channels to backplane, No isolation between individual input channels Type tested at 1500V DC for 60 s

Construction

Enclosure type rating	None (open-style)

Certifications

- China CCC

- Safety

This product was certified with the above certifications as of 2023-11-01. Products sold before or after this date might carry different certifications. Please review the product label to check for the certifications your specific product carries.