

**Technical Specifications - 1756-IF8**

Attribute	1756-IF8
Inputs	8 single-ended 4 differential 2 high-speed differential
Input range	$\pm 10V$ 0...10V 0...5V 0...20 mA
Resolution	$\pm 10.25V$ : 320 $\mu V$ /count (15 bits plus sign bipolar) 0...10.25V: 160 $\mu V$ /count (16 bits) 0...5.125V: 80 $\mu V$ /count (16 bits) 0...20.5mA: 0.32 $\mu A$ /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, 40mA 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: $>1 M\Omega$ Current: 249 $\Omega$
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 <sup>(2)</sup>
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 $\mu V/^\circ C$
Gain drift with temperature	Voltage: 15 ppm/ $^\circ C$ Current: 20 ppm/ $^\circ C$
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 <sup>(1)</sup>
Onboard data alarming	Yes
Scaling to engineering units	Yes
Real-time channel sampling	Yes
Data format	Integer mode (left justified, 2 s complement) IEEE 32-bit floating point
Module conversion method	Sigma-Delta

**Technical Specifications - 1756-IF8 (continued)**

Attribute	1756-IF8
Isolation voltage	250V (continuous), Reinforced insulation type, Inputs to Backplane. No isolation between individual Inputs. Routine tested at 1350V AC for 2 s
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 <sup>2</sup> (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 <sup>2</sup> (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 <sup>(1)</sup>	2 - on signal ports
North American temp code	T4A
ATEX temp code	T4
IECEX temp code	T4
Enclosure type	None (open-style)

(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**

Attribute	1756-IF8
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

**Environmental Specifications - 1756-IF8 (continued)**

Attribute	1756-IF8
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**

Certification <sup>(1)</sup>	1756-IF8
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: <ul style="list-style-type: none"> <li>EN 61326-1; Meas./Control/Lab., Industrial Requirements</li> <li>EN 61000-6-2; Industrial Immunity</li> <li>EN 61000-6-4; Industrial Emissions</li> <li>EN 61131-2; Programmable Controllers (Clause 8, Zone A &amp; B)</li> </ul> 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: <ul style="list-style-type: none"> <li>EN 60079-0; General Requirements</li> <li>EN 60079-15; Potentially Explosive Atmospheres, Protection "n"</li> <li>II 3 G Ex nA IIC T4 Gc</li> <li>DEMKO15ATEX1482X</li> </ul>
IECEX	IECEX System, compliant with: <ul style="list-style-type: none"> <li>IEC 60079-0; General Requirements</li> <li>IEC 60079-15; Potentially Explosive Atmospheres, Protection "n"</li> <li>II 3 G Ex nA IIC T4 Gc</li> <li>IECEX UL 15.0053X</li> </ul>
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 <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.