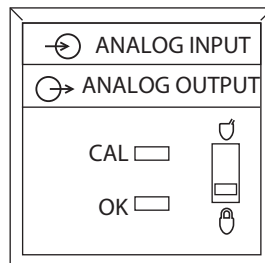
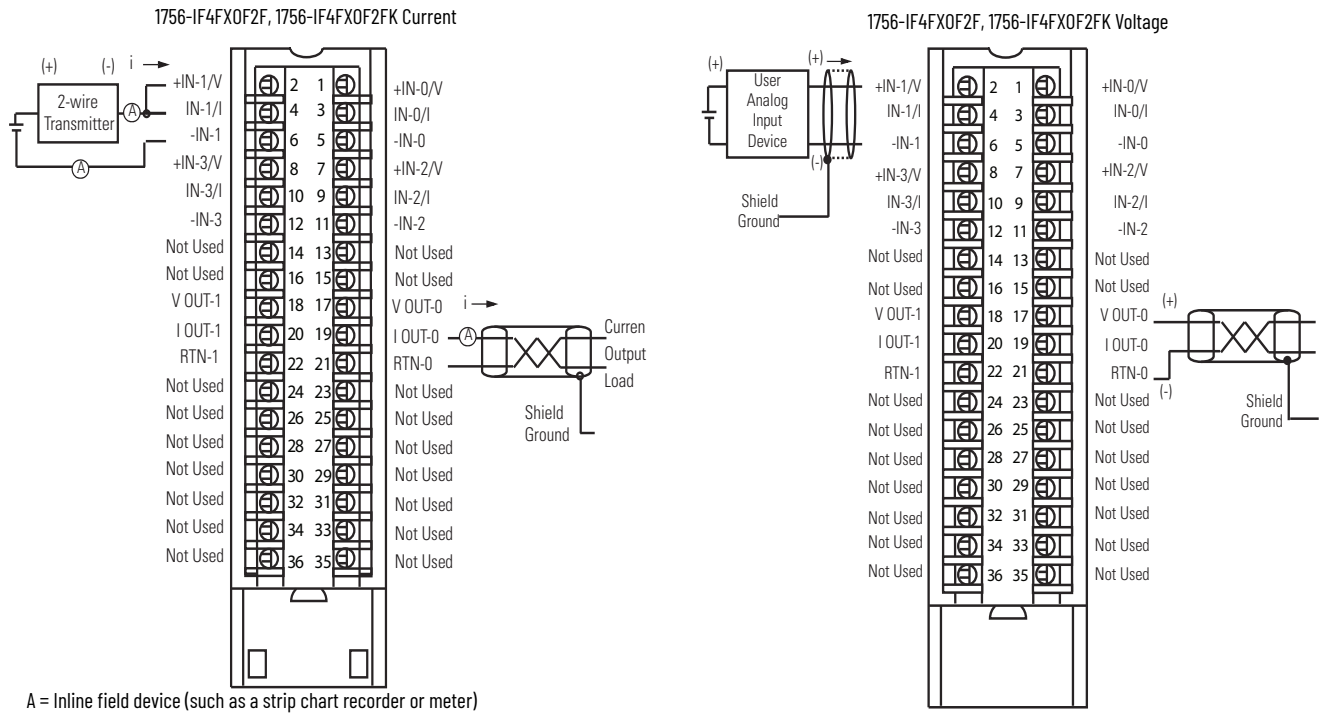


1756-IF4FXOF2F, 1756-IF4FXOF2FK

ControlLogix® high-speed input/output analog module



Technical Specifications

Attribute	1756-IF4FXOF2F, 1756-IF4FXOF2FK
Current draw at 5.1V	375 mA
Current draw at 24V	100 mA
Voltage and current ratings	Backplane: 375 mA @ 5.1V DC, 100 mA @ 24V DC Analog inputs: -10...+10V, 4...20 mA Analog outputs: -10...+10V, 4...20 mA
Power consumption	4.3 W
Power dissipation	Voltage: 4.3 W Current: 4.7 W
Thermal dissipation	Voltage: 14.66 BTU/hr Current: 16.02 BTU/hr
Data format	IEEE 32-bit floating point
Isolation voltage	250V (continuous) Reinforced insulation type, inputs and outputs to backplane No isolation between individual inputs or outputs
Module keying	Electronic, software configurable

Technical Specifications (Continued)

Attribute	1756-IF4FX0F2F, 1756-IF4FX0F2FK
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. Double wire connection: 0.33...1.3 mm ² (22...16 AWG) solid or stranded copper wire rated at 105 °C (221 °F), or greater, 1.2 mm (3/64 in.) insulation max. Use only the same size wires with no intermixing of solid and stranded wire types. 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: 0.5 Nm (4.4 pound-inches)
Wiring category ⁽¹⁾	2 - on signal ports
Enclosure type	None (open-style)
Temperature code	T4

(1) Use this Conductor Category information for planning conductor routing. See the Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#).

Input Specifications

Attribute	1756-IF4FX0F2F, 1756-IF4FX0F2FK
Number	4 high-speed, submillisecond, differential
Input range	±10V 0...10V 0...5V 0...20 mA (Ovrrange indication when exceeded)
Resolution	Approx 14 bits across ±10.5V DC (21V total) ±10.5V range: 1.3 mV/bit, 14 bit effective 0...10.5V range: 1.3 mV/bit, 13 bit effective 0...5.25V range: 1.3 mV/bit, 12 bit effective Approx 12 bits across 21 mA 0...21 mA range: 5.25 µA/bit
Repeatability	±1 Least Significant Bit (LSB) ⁽¹⁾
Input impedance	Voltage: >1 MΩ Current: 249 Ω
Open circuit detection	Positive full-scale reading within 1 s
Ovrrange protection	Voltage: 30V DC Current: 8V AC/DC
Calibrated accuracy @ 25 °C (77 °F)	0.05% of range immediately after calibration Better than 0.1% of range within calibration interval
Calibration interval	12 months
Gain drift with temperature	Voltage: 25 ppm/°C max Current: 35 ppm/°C max
Module error	0.2% of range
Module scan time	300 µs min ⁽²⁾
Input conversion method	Successive approximation

(1) Repeatability is defined as the stability of the input channel reading when a steady state signal is applied, for example, ±1 LSB is one count (1.3 mV) from the nominal reading.

(2) 300 µs min for 1756-IF4FX0F2F/B, firmware revision 3 or greater. 400 µs min for 1756-IF4FX0F2F/A, firmware revision 1.

Output Specifications

Attribute	1756-IF4FX0F2F, 1756-IF4FX0F2FK
Number	Two high-speed voltage or current
Output range	± 10V 0...20 mA
Resolution	13 bits across 21 mA = 2.8 µA/bit 14 bits across 21.8V = 1.3 mV/bit
Open circuit detection	Current output only (Output must be set to >0.1 mA)
Overvoltage protection	24V DC
Short circuit protection	Electronically current limited to 21 mA or less
Drive capability	Voltage: >2000 Ω Current: 0...750 Ω
Output settling time	< 2 ms to 95% of final value with resistive loads
Calibrated accuracy @ 25 °C (77 °F)	0.05% of range immediately after calibration Better than 0.1% of range within calibration interval
Calibration interval	12 months
Offset drift	50 µV/°C 1 µA/°C
Gain drift with temperature	Voltage: 25 ppm/°C max Current: 50 ppm/°C max
Module error	Voltage: 0.2% of range Current: 0.3% of range
Update period for all channels (RPI), min	1 ms
Output conversion method	R-Ladder DAC, monotonicity with no missing codes

Environmental Specifications

Attribute	1756-IF4FX0F2F, 1756-IF4FX0F2FK
Temperature, operating IEC 60068-2-1 (Test Ae, Operating Cold), IEC 60068-2-2 (Test Be, 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 3V/m with 1 kHz sine wave 80% AM from 2000...2700 MHz 3V/m with 1 kHz sine wave 80% AM from 2700...6000 MHz
EFT/B immunity IEC 61000-4-4	±2 kV at 5 kHz and 100 kHz on shielded signal ports
Surge transient immunity IEC 61000-4-5	±2 kV line-earth (CM) on shielded signal ports
Conducted RF immunity IEC 61000-4-6	10V rms with 1 kHz sine wave 80% AM from 150 kHz...80 MHz

Certifications

Certification (when product is marked) ⁽¹⁾	1756-IF4FX0F2F, 1756-IF4FX0F2FK
cULus	UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584. UL Listed for Class 1, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.
FM	FM Approved Equipment for use in Class 1 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"> 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: <ul style="list-style-type: none"> IEC 60079-0 Edition 7; General Requirements EN IEC 60079-7; Potentially Explosive Atmospheres, Protection "e" II 3 G Ex ec IIC T4 X Gc UL22ATEX2820
IECEx	IECEx System, compliant with: <ul style="list-style-type: none"> IEC 60079-0 Edition 7; General Requirements IEC 60079-7; Potentially Explosive Atmospheres, Protection "e" II 3 G Ex ec IIC T4 Gc IECEx UL 22.0039X
UKex	In conformity with the following UKex Statutory Instruments and their amendments: <ul style="list-style-type: none"> Schedule 1 of the UKEX Regulation 2016 No. 1107 Equipment protection by increased safety "e", reference certificate number UL22UKEX2499X Zone 2 classification according to UKEX Regulation 2016 No. 1107
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
UKCA	In conformity with the following UK Statutory Instruments and their amendments: <ul style="list-style-type: none"> 2016 No. 1091, Electromagnetic Compatibility Regulations 2016 No. 1101, Electrical Equipment (Safety) Regulations 2016 No. 1107, Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2012 No. 3032, Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment
Morocco	In conformity with the following regulations: <ul style="list-style-type: none"> Arrêté ministériel n° 6404-15 du 1 er muharram 1437 (15 octobre 2015) Équipements électriques destinés à être utilisés sous certaines limites de tension Arrêté ministériel n° 6404-15 du 29 ramadan 1436 (16 juillet 2015) Compatibilité électromagnétique des équipements
CCC	CCC 2020122309111830, 2020122309111998, 2020122309113868 CNCA-C23-01 强制性产品认证实施规则 防爆电气 CNCA-C23-01 CCC Implementation Rule Explosion-Proof Electrical Products

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