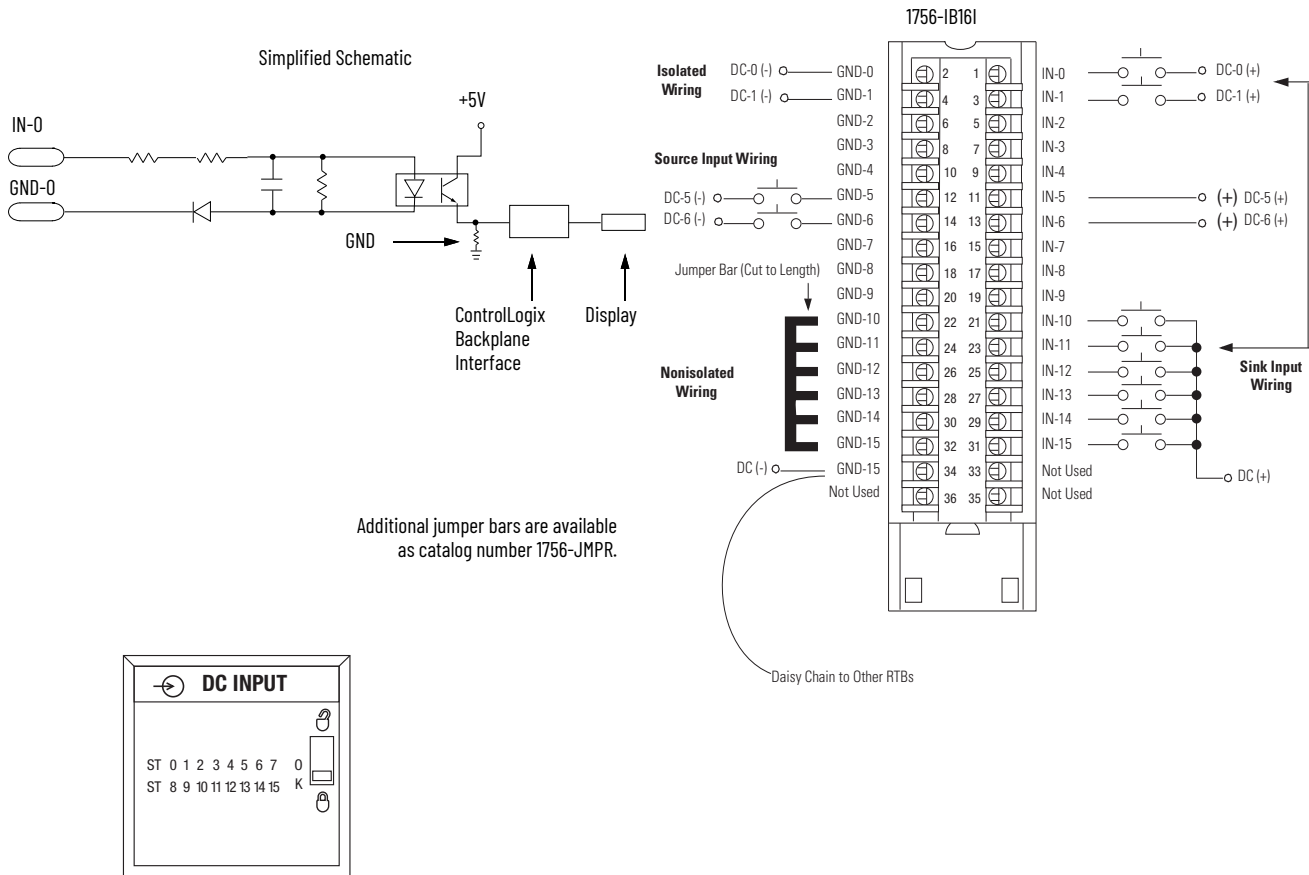


1756-IB16I, 1756-IB16IK

ControlLogix DC (10...30V) isolated input module



Technical Specifications

Attribute	1756-IB16I, 1756-IB16IK
Inputs	16 individually isolated
Voltage category	12/24V DC sink/source
Operating voltage range	10...30V DC
Input voltage, nom	24V DC
Input delay time (screw to backplane) Off to On	Hardware delay: 1 ms max + filter time User-selectable filter time: 0 ms, 1 ms, or 2 ms
On to Off	Hardware delay: 4 ms max + filter time User-selectable filter time: 0 ms, 1 ms, 2 ms, 9 ms, or 18 ms
Current draw @ 5.1V	100 mA
Current draw @ 24V	3 mA
Total backplane power	0.58 W
Power dissipation, max	5 W @ 60 °C (140 °F)
Thermal dissipation	17.05 BTU/hr
Off-state voltage, max	5V
Off-state current, max	1.5 mA
On-state current, min	2 mA @ 10V DC
On-state current, max	10 mA @ 30V DC
Inrush current, max	250 mA peak (decaying to < 37% in 22 ms, without activation)
Input impedance, max	3 kΩ @ 30V DC
Cyclic update time	200 μs...750 ms
Change of stat	Software configurable
Time stamp of inputs	±200 μs
Isolation voltage	250V (continuous), basic insulation type, inputs-to-backplane, and input-to-input
Module keying	Electronic, software configurable
Removable terminal block housing	1756-TBCH 1756-TBS6H
RTB keying	User-defined mechanical
Slot width	1
Wire category	1 ⁽¹⁾
Enclosure type	None (open-style)
Temperature code	T4
Reverse polarity protection	Yes

(1) Use this conductor category information for planning conductor routing as described in the system-level installation manual. See the Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#).

Environmental Specifications

Attribute	1756-IB16I, 1756-IB16IK
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...60 °C (32...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
EFT/B immunity IEC 61000-4-4	±4 kV at 5 kHz on signal ports
Surge transient immunity IEC 61000-4-5	±1 kV line-line (DM) and ±2 kV line-earth (CM) on signal ports
Conducted RF immunity IEC 61000-4-6	10V rms with 1 kHz sine wave 80% AM from 150 kHz...80 MHz

Certifications

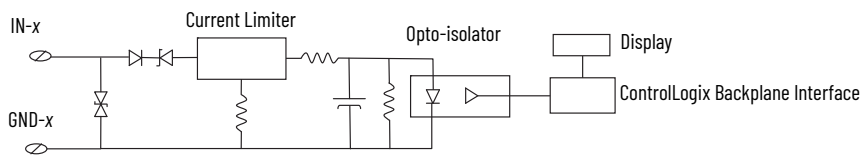
Certification ⁽¹⁾	1756-IB16I, 1756-IB16IK
cULus	UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584. UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.
CE	European Union 2014/30/EU EMC Directive, 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 IEC 60079-0: Explosive atmospheres - Part 0: Equipment - General requirements • EN IEC 60079-7: Explosive atmospheres - Part 7: Equipment protection by increased safety "e" • II 3 G Ex ec IIC T4 Gc • UL22ATEX2820X
IECEx	IECEx System, compliant with: • IEC 60079-0: Explosive atmospheres - Part 0: Equipment - General requirements • IEC 60079-7: Explosive atmospheres - Part 7: Equipment protection by increased safety "e" • II 3 G Ex ec IIC T4 Gc • IECEx UL 22.0065X
UKex	In conformity with the following UKex Statutory Instruments and their amendments: • Schedule 1 of the UKEX Regulation 2016 No. 1107 • Equipment protection by increased safety "e", reference certificate number UL22UKEX2602X • Zone 2 classification according to UKEX Regulation 2016 No. 1107
FM	FM Approved Equipment for use in Class I Division 2 Group A,B,C,D Hazardous Locations
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: Article 58-2 of Radio Waves Act, Clause 3
UKCA	In conformity with the following UK Statutory Instruments and their amendments: • 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: • 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 2020122309M1998 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) When product is marked. See the Product Certification link at rok.auto/certifications for Declarations of Conformity, Certificates, and other certification details.

1756-IB16IF, 1756-IB16IFK

ControlLogix DC (10...30V) sinking or sourcing, isolated, fast input module

Simplified Schematic



Isolated Wiring

Source Input Wiring

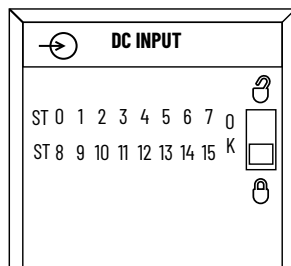
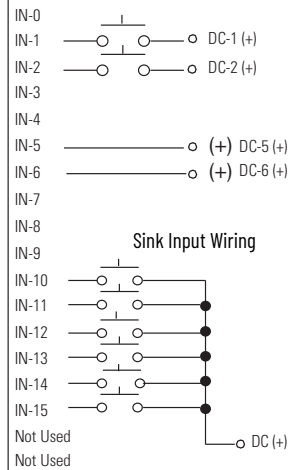
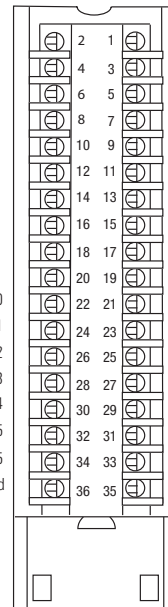
Jumper Bar Cut to Length

Nonisolated Wiring

Additional jumper bars can be purchased by using catalog number 1756-JMPR.

Daisy Chain to Other RTBs

1756-IB16IF



Technical Specifications

Attribute	1756-IB16IF, 1756-IB16IFK
Inputs	16 individually isolated
Voltage category	12/24V DC sink/source
Operating voltage range	10...30V DC
Input voltage, nom	24V DC
Input delay time (screw to backplane) Off to On On to Off	14 μ s nom/23 μ s max + user-configurable filter time of 0...30,000 μ s 14 μ s nom/23 μ s max + user-configurable filter time of 0...30,000 μ s
Current draw @ 5.1V	275 mA
Current draw @ 24V	3 mA
Total backplane power	1.47 W
Power dissipation	3.8 W @ 60 °C (140 °F)
Thermal dissipation	12.97 BTU/hr
Off-state voltage, max	5V
Off-state current, max	1.5 mA
On-state current, min	2 mA @ 10V DC
On-state current, max	5 mA @ 30V DC
Input impedance, max	6 k Ω @ 30V DC
Cyclic update time	200 μ s...750 ms
Change of state	Software configurable
Time stamp of inputs	$\pm$ 4 μ s for inputs < 4 kHz $\pm$ 13 μ s for inputs > 4 kHz
Isolation voltage	250V (continuous), reinforced insulation type, inputs-to-backplane 250V (continuous), basic insulation type, input-to-input
Module keying	Electronic, software configurable
Removable terminal block housing	1756-TBCH 1756-TBS6H
RTB keying	User-defined mechanical
Slot width	1
Wire category	1 on signal ports ⁽¹⁾
Enclosure type	None (open-style)
Temperature code	T4
Reverse polarity protection	Yes

(1) Use this conductor category information for planning conductor routing as described in the system-level installation manual. See the Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#).

Environmental Specifications

Attribute	1756-IB16IF, 1756-IB16IFK
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...60 °C (32...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
EFT/B immunity IEC 61000-4-4	±4 kV at 5 kHz on signal ports
Surge transient immunity IEC 61000-4-5	±1 kV line-line (DM) and ±2 kV line-earth (CM) on signal ports
Conducted RF immunity IEC 61000-4-6	10V rms with 1 kHz sine wave 80% AM from 150 kHz...80 MHz

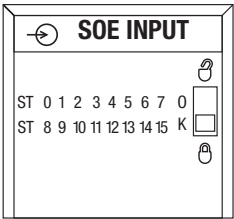
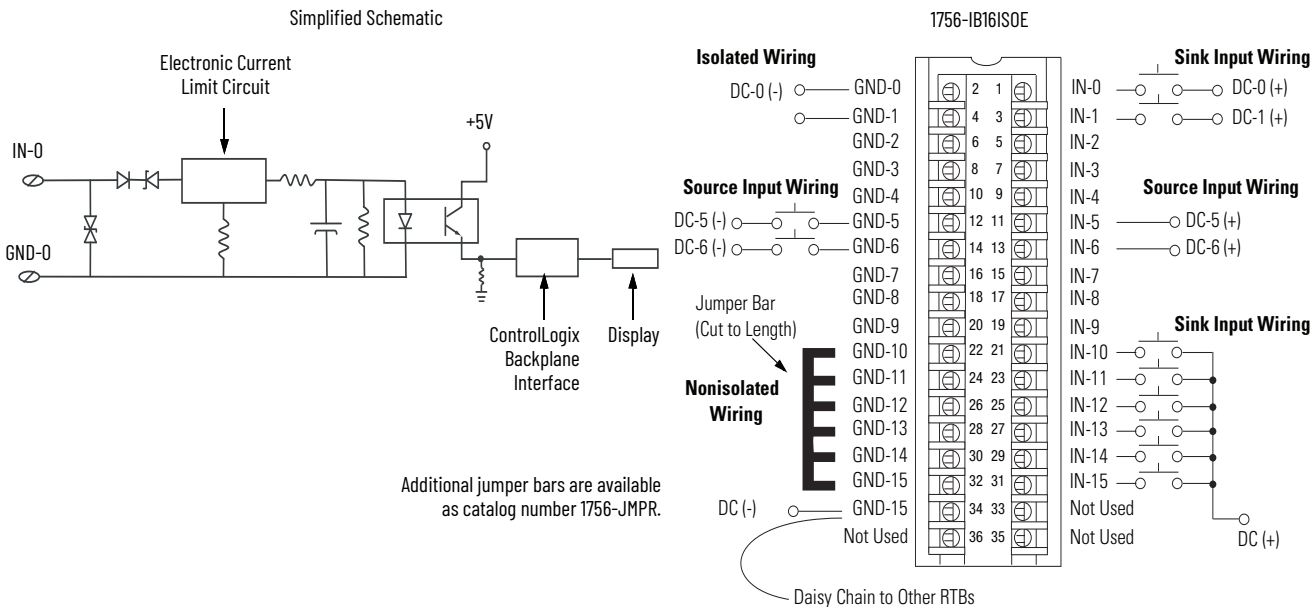
Certifications

Certification ⁽¹⁾	1756-IB16IF, 1756-IB16IFK
cULus	UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584. UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.
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 IEC 60079-0: Explosive atmospheres - Part 0: Equipment - General requirements - EN IEC 60079-7: Explosive atmospheres - Part 7: Equipment protection by increased safety "e" - II 3 G Ex ec IIC T4 Gc - UL22ATEX2820X
IECEx	IECEx System, compliant with: - IEC 60079-0: Explosive atmospheres - Part 0: Equipment - General requirements - IEC 60079-7: Explosive atmospheres - Part 7: Equipment protection by increased safety "e" - II 3 G Ex ec IIC T4 Gc - IECEx UL 22.0065X
UKex	In conformity with the following UKex Statutory Instruments and their amendments: - Schedule 1 of the UKEX Regulation 2016 No. 1107 - Equipment protection by increased safety "e", reference certificate number UL22UKEX2602X - 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
UKCA	In conformity with the following UK Statutory Instruments and their amendments: 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: - 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 2020122309111998 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) When product is marked. See the Product Certification link at rok.auto/certifications for Declarations of Conformity, Certificates, and other certification details.

1756-IB16ISOE, 1756-IB16ISOEK

ControlLogix DC (10...55V) sequence of events input module



Technical Specifications

Attribute	1756-IB16ISOE, 1756-IB16ISOEK
Inputs	16 individually isolated, sequence of events
Voltage category	24/48V DC sink/source
Operating voltage range	10...55V DC
Input voltage, nom	24V DC
Input delay time (screw to backplane) Off to On	Hardware delay: 10 μ s nom/20 μ s max + firmware scan: up to 25 μ s + filter time: 0...50 ms + ASIC delay: 175 μ s (FIFO) or 625 μ s (Coordinated System Time per point)
On to Off	Hardware delay: 25 μ s nom/50 μ s max + firmware scan: up to 25 μ s + filter time: 0...50 ms + ASIC delay: 175 μ s (FIFO) or 625 μ s (Coordinated System Time per point)
Current draw @ 5.1V	320 mA
Current draw @ 24V	2 mA
Total backplane power	1.7 W
Power dissipation, max	5.5 W @ 60 °C (140 °F)
Thermal dissipation	17.22 BTU/hr
Off-state voltage, max	5V
Off-state current, max	1.5 mA
On-state current, min	2.0 mA @ 9V DC
On-state current, nom	4.5 mA @ 24...31V DC
On-state current, max	5.1 mA @ 48...55V DC
Input impedance, max	10.8 k Ω @ 55V DC
Cyclic update time	200 μ s...750 ms
Change of state	Software configurable
Time stamp of inputs	$\pm$ 100 μ s
Isolation voltage	250V (continuous), basic ⁽¹⁾ insulation type, outputs to backplane. 125V (continuous), basic insulation type, outputs group to group. No isolation between individual outputs.
Module keying	Electronic, software configurable
Removable terminal block	1756-TBCH 1756-TBS6H
RTB keying	User-defined mechanical
Slot width	1
Wire category	1 ⁽²⁾
Enclosure type	None (open-style)
Temperature code	T4
Reverse polarity protection	Yes

(1) Per IEC 61010-1 terminology, the insulation type is basic. Per older UL508 terminology, the insulation type is reinforced.

(2) Use this conductor category information for planning conductor routing as described in the system-level installation manual. See the Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#).

Environmental Specifications

Attribute	1756-IB16ISOE, 1756-IB16ISOEK
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...60 °C (32...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
EFT/B immunity IEC 61000-4-4	±4 kV at 5 kHz on signal ports
Surge transient immunity IEC 61000-4-5	±1 kV line-line (DM) and ±2 kV line-earth (CM) on 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 ⁽¹⁾	1756-IB16ISOE, 1756-IB16ISOEK
cULus	UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584. UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.
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 IEC 60079-0: Explosive atmospheres - Part 0: Equipment - General requirements - EN IEC 60079-7: Explosive atmospheres - Part 7: Equipment protection by increased safety "e" - II 3 G Ex ec IIC T4 Gc - UL22ATEX2820X
IECEX	IECEX System, compliant with: - IEC 60079-0: Explosive atmospheres - Part 0: Equipment - General requirements - IEC 60079-7: Explosive atmospheres - Part 7: Equipment protection by increased safety "e" - II 3 G Ex ec IIC T4 Gc - IECEX UL 22.0065X
UKex	In conformity with the following UKex Statutory Instruments and their amendments: - Schedule 1 of the UKEX Regulation 2016 No. 1107 - Equipment protection by increased safety "e", reference certificate number UL22UKEX2602X - 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
UKCA	In conformity with the following UK Statutory Instruments and their amendments: 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: - 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 2020122309111998 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) When product is marked. See the Product Certification link at rok.auto/certifications for Declarations of Conformity, Certificates, and other certification details.