Working Voltage – 1763-L16AWA

Description	1763-L16AWA
Power supply input to backplane isolation	Verified by one of the following dielectric tests: 1836V AC for 1 s or 2596V DC for 1 s
	265V AC Working Voltage (IEC Class 2 reinforced insulation)
Input group to backplane isolation	Verified by one of the following dielectric tests: 1517V AC for 1 s or 2145V DC for 1 s
	132V AC Working Voltage (IEC Class 2 reinforced insulation)
Input group to input group isolation	Verified by one of the following dielectric tests: 1517V AC for 1 s or 2145V DC for 1 s
	132V AC Working Voltage (basic insulation)
Output group to backplane isolation	Verified by one of the following dielectric tests: 1836V AC for 1 s or 2596V DC for 1 s
	265V AC Working Voltage (IEC Class 2 reinforced insulation)
Output group to output group isolation	Verified by one of the following dielectric tests: 1836V AC for 1 s or 2596V DC for 1 s
	265V AC Working Voltage (basic insulation) 150V AC Working Voltage (IEC Class 2 reinforced insulation)

Working Voltage – 1763-L16BWA

Description	1763-L16BWA
Power supply input to backplane isolation	Verified by one of the following dielectric tests: 1836V AC for 1 s or 2596V DC for 1 s
	265V AC Working Voltage (IEC Class 2 reinforced insulation)
Input group to backplane isolation and input group to input group isolation	Verified by one of the following dielectric tests: 1200V AC for 1 s or 1697V DC for 1 s
	75V DC Working Voltage (IEC Class 2 reinforced insulation)
Output group to backplane isolation	Verified by one of the following dielectric tests: 1836V AC for 1 s or 2596V DC for 1 s
	265V AC Working Voltage (IEC Class 2 reinforced insulation)
Output group to output group isolation	Verified by one of the following dielectric tests: 1836V AC for 1 s or 2596V DC for 1 s
	265V AC Working Voltage (basic insulation) 150V Working Voltage (IEC Class 2 reinforced insulation)

Working Voltage – 1763-L16BBB

Description	1762-L16BBB
Input group to backplane isolation and input group to input group isolation	Verified by one of the following dielectric tests: 1200V AC for 1 s or 1697V DC for 1 s
	75V DC Working Voltage (IEC Class 2 reinforced insulation)
FET output group to backplane isolation	Verified by one of the following dielectric tests: 1200V AC for 1 s or 1697V DC for 1 s
	75V DC Working Voltage (IEC Class 2 reinforced insulation)
Relay output group to backplane isolation	Verified by one of the following dielectric tests: 1836V AC for 1 s or 2596V DC for 1 s
	265V AC Working Voltage (IEC Class 2 reinforced insulation)
Relay output group to relay output group and FET output group isolation	Verified by one of the following dielectric tests: 1836V AC for 1 s or 2596V DC for 1 s
	265V AC Working Voltage (basic insulation) 150V Working Voltage (IEC Class 2 reinforced insulation)

Working Voltage – 1763-L16DWD

Description	1763-L16DWD
Input group to backplane isolation and input group to input group isolation	Verified by one of the following dielectric tests: 1200V AC for 1 s or 1697V DC for 1 s
	75V DC Working Voltage (IEC Class 2 reinforced insulation)
Output group to backplane isolation	Verified by one of the following dielectric tests: 1836V AC for 1 s or 2596V DC for 1 s
	265V AC Working Voltage (IEC Class 2 reinforced insulation)
Output group to output group isolation	Verified by one of the following dielectric tests: 1836V AC for 1 s or 2596V DC for 1 s
	265V AC Working Voltage (basic insulation) 150V Working Voltage (IEC Class 2 reinforced insulation)

1762 Expansion I/O Specifications — Digital I/O Modules

General Specifications – Digital I/O Modules

Attribute	Value
Dimensions	Height: 90 mm (3.54 in.), 110 mm (4.33 in.) (including mounting tabs) Width: 87 mm (3.43 in.) Depth: 40.4 mm (1.59 in.)
Enclosure type rating	None (open-style)

Input Specifications – 1762-IA8, 1762-IQ8, 1762-IQ16, 1762-IQ32T, 1762-IQ80W6

Attribute	1762-IA8	1762-IQ8	1762-IQ16	1762-IQ32T	1762-IQ80W6
Shipping weight, approx. (with carton)	209 g (0.46 lbs.)	200 g (0.44 lbs.)	230 g (0.51 lbs.)	200 g (0.44 lbs.)	280 g (0.62 lbs.)
Voltage category	100/120V AC	24V DC (sinking/sourcing)(1)	24V DC (sinking/sourcing)(1)	24V DC (sinking/sourcing)(1)	24V DC (sinking/sourcing)(1)
Operating voltage range	79...132V AC at 47...63 Hz	10...30V DC at 30 °C (86 °F) 10...26.4V DC at 55 °C (131 °F)	10...30V DC 10...26.4V DC (2)(3)	10...30V DC (24 points) at 30 °C (86 °F) 10...26.4V DC (23 points) at 60 °C (140 °F)	10...30V DC at 30 °C (86 °F) 10...26.4V DC at 65 °C (149 °F)
Number of inputs	8	8	16	32	8
Bus current draw, max	50 mA at 5V DC (0.25 W)	50 mA at 5V DC (0.25 W)	70 mA at 5V DC (0.35 W)(3)	170 mA at 5V DC 0 mA at 24V DC	110 mA at 5V DC 80 mA at 24V DC
Heat dissipation, max	2.0 W	3.7 W	4.3 W at 26.4V 5.4 W at 30V(3)	5.4 W at 26.4V DC 6.8 W at 30V DC	5.0 W at 30V DC 4.4 W at 26.4V DC (The Watts per point, plus the min W, with all points energized)
Signal delay, max	On delay: 20.0 ms Off delay: 20.0 ms	On delay: 8.0 ms Off delay: 8.0 ms	On delay: 8.0 ms Off delay: 8.0 ms	On delay: 8.0 ms Off delay: 8.0 ms	On delay: 8.0 ms Off delay: 8.0 ms
Off-state voltage, max	20V AC	5V DC	5V DC	5V DC	5V DC
Off-state current, max	2.5 mA	1.5 mA	1.5 mA	1.0 mA	1.5 mA
On-state voltage, min	79V AC (min) 132V AC (max)	10V DC	10V DC	10V DC	10V DC
On-state current	5.0 mA min at 79V AC 47 Hz 12.0 mA nom. at 120V AC 60 Hz 16.0 mA max at 132V AC 63 Hz	2.0 mA min at 10V DC 8.0 mA nom. at 24V DC 12.0 mA max at 30V DC	2.0 mA min at 10V DC 8.0 mA nom. at 24V DC 12.0 mA max at 30V DC	1.6 mA min at 10V DC 2.0 mA min at 15V DC 5.7 mA max at 26.4V DC 6.5 mA max at 30.0V DC	10 mA at 5V DC
Inrush current, max	250 mA	Not applicable	Not applicable	Not applicable	250 mA
Nominal impedance	12 kΩ at 50 Hz 10 kΩ at 60 Hz	3 kΩ	3 kΩ	4.7 kΩ	3 kΩ
IEC input compatibility	Type 1+	Type 1+	Type 1+	Type 1	Type 1+
Isolated groups	Group 1: inputs 0...7 (internally connected commons)	Group 1: inputs 0...7 (internally connected commons)	Group 1: inputs 0...7 Group 2: inputs 8...15	Group 1: Inputs 0...7 Group 2: Inputs 8...15 Group 3: Inputs 16...23 Group 4: Inputs 24...31	Group 1: inputs 0...3 Group 2: inputs 4...7
Input group to backplane isolation	Verified by one of the following dielectric tests: 1517V AC for 1 s or 2145V DC for 1 s 132V AC working voltage (IEC Class 2 reinforced insulation)	Verified by one of the following dielectric tests: 1200V ACAC for 1 s or 1697V DC for 1 s 75V DC working voltage (IEC Class 2 reinforced insulation)	Verified by one of the following dielectric tests: 1200V AC for 1 s or 1697V DC for 1 s 75V DC working voltage (IEC Class 2 reinforced insulation)	Verified by one of the following dielectric tests: 1200V AC for 2 s or 1697V DC for 2 s 75V DC working voltage (IEC Class 2 reinforced insulation)	Verified by one of the following dielectric tests: 1200V AC for 1 s or 1697V DC for 1 s 75V DC working voltage (IEC Class 2 reinforced insulation)
Vendor I.D. code	1				
Product type code	7				
Product code	114	96	97	99	98

(1) Sinking/Sourcing Inputs – Sinking/sourcing describes the current flow between the I/O module and the field device. Sourcing I/O circuits supply (source) current to sinking field devices. Sinking I/O circuits are driven by a current sourcing field device. Field devices connected to the negative side (DC Common) of the field power supply are sinking field devices. Field devices connected to the positive side (+V) of the field supply are sourcing field devices.
(2) For derating chart, see MicroLogix 1762-IQ16 DC Input Module Installation Instructions, publication 1762-IN010.
(3) Only applicable for series B and series C I/O modules.

Output Specifications – 1762-0A8, 1762-0B8, 1762-0B16, 1762-0B32T, 1762-0V32T

Attribute	1762-0A8	1762-0B8	1762-0B16	1762-0B32T	1762-0V32T
Shipping weight, approx. (with carton)	215 g (7.58 oz.)	210 g (7.41 oz.)	235 g (8.29 oz.)	200 g (7.05 oz.)	200 g (7.05 oz.)
Voltage category	100...240V AC	24V DC	24V DC	24V DC sourcing	24V DC sinking
Operating voltage range	85...265V AC at 47...63 Hz	20.4...26.4V DC	20.4...26.4V DC	10.2...26.4V DC	10.2...26.4V DC
Number of outputs	8	8	16	32	32
Bus current draw, max	115 mA at 5V DC (0.575 W)	115 mA at 5V DC (0.575 W)	175 mA at 5V DC (0.88 W)	175 mA at 5V DC 0 mA at 24V DC	175 mA at 5V DC 0 mA at 24V DC
Heat dissipation, max	2.9 W	1.61 W	2.9 W at 30 °C (86 °F) 2.1 W at 55 °C (131 °F)	3.4 W at 26.4 DC	2.7 W at 26.4V DC
Signal delay, max – resistive load	On delay: 1/2 cycle Off delay: 1/2 cycle	On delay: 0.1 ms Off delay: 1.0 ms	On delay: 0.1 ms Off delay: 1.0 ms	On delay: 0.5 ms Off delay: 4.0 ms	On delay: 0.5 ms Off delay: 4.0 ms
Off-state leakage current, max	2 mA at 132V 2.5 mA at 265V	1.0 mA	1.0 mA	0.1 mA at 26.4V DC	0.1 mA at 26.4V DC
On-state current, min	10 mA	1.0 mA	1.0 mA	1.0 mA	1.0 mA
On-state voltage drop, max	1.5V at 0.5 A	1.0V DC	1.0V DC	0.3V DC at 0.5 A	0.3V DC at 0.5 A
Continuous current per point, max	0.25 A at 55 °C (131 °F) 0.5 A at 30 °C (86 °F)	0.5 A at 55 °C (131 °F) 1.0 A at 30 °C (86 °F)	0.5 A at 55 °C (131 °F) 1.0 A at 30 °C (86 °F)	0.5 A at 60 °C (140 °F)	0.5 A at 60 °C (140 °F)
Continuous current per common, max	1.0 A at 55 °C (131 °F) 2.0 A at 30 °C (86 °F)	4.0 A at 55 °C (131 °F) 8.0 A at 30 °C (86 °F)	4.0 A at 55 °C (131 °F) 8.0 A at 30 °C (86 °F)	2.0 A at 60 °C (140 °F)	2.0 A at 60 °C (140 °F)
Continuous current per module, max	2.0 A at 55 °C (131 °F) 4.0 A at 30 °C (86 °F)	4.0 A at 55 °C (131 °F) 8.0 A at 30 °C (86 °F)	4.0 A at 55 °C (131 °F) 8.0 A at 30 °C (86 °F)	4.0 A at 60 °C (140 °F)	4.0 A at 60 °C (140 °F)
Surge current, max	5.0 A (Repeatability is once every 2 s for a duration of 25 ms)	2.0 A (Repeatability is once every 2 s at 55 °C (131 °F), once every second at 30 °C (86 °F) for a duration of 10 ms)	2.0 A (Repeatability is once every 2 s at 55 °C (131 °F), once every second at 30 °C (86 °F) for a duration of 10 ms)	2.0 A (Repeatability is once every 2 s at 60 °C (140 °F) for 10 ms)	2.0 A (Repeatability is once every 2 s at 60 °C (140 °F) for 10 ms)
Isolated groups	Group 1: Outputs 0...3 Group 2: Outputs 4...7	Group 1: Outputs 0...7	Group 1: Outputs 0...15	Group 1: Outputs 0...15 Group 2: Outputs 16...31 (internally connected to common)	
Output group to backplane isolation	Verified by one of the following dielectric tests: 1836V AC for 1 s or 2596V DC for 1 s 265V AC working voltage (IEC Class 2 reinforced insulation)	Verified by one of the following dielectric tests: 1200V AC for 1 s or 1697V DC for 1 s 75V DC working voltage (IEC Class 2 reinforced insulation)		Verified by one of the following dielectric tests: 1200V AC for 2 s or 1697V DC for 2 s 75V DC working voltage (IEC Class 2 reinforced insulation)	
Output group to output group isolation	Verified by one of the following dielectric tests: 1836V AC for 1 s or 2596V DC for 1 s 265V AC working voltage (IEC Class 2 reinforced insulation)	Not applicable		Verified by one of the following dielectric tests: 1200V AC for 2 s or 1697V DC for 2 s 75V DC working voltage (IEC Class 2 reinforced insulation)	
Vendor I.D. code	1				
Product type code	7				
Product code	119	101	103	100	102

Output Specifications – 1762-0W8, 1762-0W16, 1762-0X6I, 1762-IQ8OW6

Attribute	1762-0W8	1762-0W16	1762-0X6I	1762-IQ8OW6
Shipping weight, approx. (with carton)	228 g (0.50 lbs.)	285 g (0.63 lbs.)	220 g (0.485 lbs)	280 g (0.62 lbs.)
Voltage category	AC/DC normally open relay	AC/DC normally open relay	AC/DC Type C Relay	AC/DC normally open relay
Operating voltage range	5...265V AC 5...125V DC	5...265V AC 5...125V DC	5...265V AC 5...125V DC	5...265V AC 5...125V DC
Number of outputs	8	16	6	6
Bus current draw, max	80 mA at 5V DC (0.40 W) 90 mA at 24V DC (2.16 W)	140 mA at 5V DC (0.70 W)[1] 180 mA at 24V DC (4.32 W)[1]	110 mA at 5V DC (0.55 W) 110 mA at 24V DC (2.64 W)	110 mA at 5V DC 80 mA at 24V DC

Output Specifications – 1762-0W8, 1762-0W16, 1762-0X6I, 1762-IQ8OW6 (Continued)

Attribute	1762-0W8	1762-0W16	1762-0X6I	1762-IQ8OW6
Heat dissipation, max	2.9 W	6.1 W(1)	2.8 W	5.0 W at 30V DC 4.4 W at 26.4V DC (The Watts per point, plus the min W, with all points energized)
Signal delay, max – resistive load	On Delay: 10 ms Off Delay: 10 ms	On Delay: 10 ms Off Delay: 10 ms	On Delay: 10 ms (max) 6 ms (typical) Off Delay: 20 ms (max) 12 ms (typical)	On-delay: 10 ms (max) Off-delay: 10 ms (max)
Off-state leakage, max	0 mA	0 mA	0 mA	0 mA
On-state current, min	10 mA	10 mA	100 mA	10 mA
On-state voltage drop, max	Not Applicable			
Continuous current per point, max	2.5 A. See Table 25		7 A See Table 26	2.5 A See Table 25
Continuous current per common, max	8 A	8 A	7 A See Table 26	8 A
Continuous current per module, max	16 A	16 A	30 A See Table 27	8 A
Surge current, max	See Table 25		See Table 26	See Table 25
Isolated groups	Group 1: Outputs 0…3 Group 2: Outputs 4…7	Group 1: Outputs 0…7 Group 2: Outputs 8…15	All 6 Outputs Individually Isolated	Group 3: Outputs 0…5
Output group to backplane isolation	Verified by one of the following dielectric tests: 1836V AC for 1 s or 2596V DC for 1 s 265V AC working voltage (IEC Class 2 reinforced insulation)			
Output group to output group isolation	Verified by one of the following dielectric tests: 1836V AC for 1 s or 2596V DC for 1 s 265V AC working voltage (basic insulation) 150V AC working voltage (IEC Class 2 reinforced insulation)			
Vendor I.D. code	1			
Product type code	7			
Product code	120	121	124	98

(1) Only applicable for series B and series C I/O modules.

Table 25 - Relay Contact Ratings – 1762-0W8, 1762-0W16, and 1762-IQ8OW6

Maximum Volts	Amperes Continuous	Amperes		Voltamperes	
		Make	Break	Make	Break
240V AC	2.5 A(1)	7.5 A	0.75 A	1800VA	180VA
120V AC	2.5 A(1)	15 A	1.5 A	1800VA	180VA
125V DC	1.0 A	0.22 A(2)		28VA	
24V DC	2.0 A	1.2 A(2)			

(1) 1.5 A above 40 °C (104 °F).
(2) For DC voltage applications, the make/break ampere rating for relay contacts can be determined by dividing 28VA by the applied DC voltage. For example, 28VA/48V DC = 0.58 A. For DC voltage applications less than 14V, the make/break ratings for relay contacts cannot exceed 2 A.

Table 26 - Relay Contact Ratings 1762-0X6I

Maximum Volts	Continuous Amps per Point (Max)(1)	Amperes(2)		Voltamperes	
		Make	Break	Make	Break
240V AC	5.0 A	15 A	1.5 A	3600VA	360VA
120V AC	7.0 A(3)	30 A	3.0 A		
125V DC	2.5 A	0.4 A		50VA(4)	
24V DC	7.0 A(3)	7.0 A		168VA(4)	

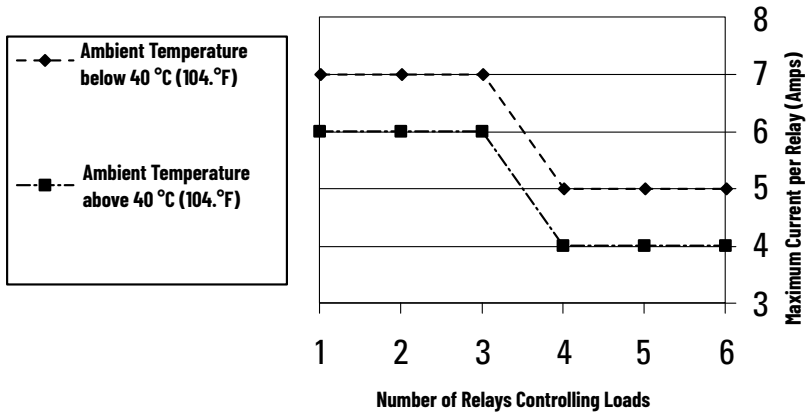
(1) The continuous current per module must be limited so that the module power does not exceed 1440VA.
(2) **Surge Suppression** – Connecting surge suppressors across your external inductive load will extend the life of the relay contacts. For additional details, see the Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.
(3) 6 A in ambient temperatures above 40 °C (104.°F)
(4) DC Make/Break Voltamperes must be limited to 50VA for DC voltages between 28V DC and 125V DC. DC Make/Break Voltamperes below 28V DC are limited by the 7 A Make/Break current limit.

Table 27 - Module Load Ratings 1762-0X6I

Volts (Max)	Controlled Load (Current) per Module (Max)
240V AC	6 A
120V AC	12 A(1)
125V DC	11.5 A
24V DC	30 A(2)

(1) Current per relay is limited to 6 A at ambient temperatures above 40 °C (104.°F).
(2) 24 A in ambient temperatures above 40 °C (104.°F). Limited by ambient temperature and the number of relays controlling loads. See Figure 85.

Figure 85 - Relays Used vs. Maximum Current per Relay (24V DC) 1762-0X6I



Environmental Specifications

Attribute	Value
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): -20 °C ≤ Ta ≤ +65 °C (-4 °F ≤ Ta ≤ +149 °F)
Temperature, ambient, max	65 °C (140 °F)
Temperature, surrounding air, max	65 °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): 5 g @ 10...500 Hz
Shock, operating	IEC 60068-2-27 (Test Ea, Unpackaged Shock): 30 g - Panel mounted
Shock, nonoperating	IEC 60068-2-27 (Test Ea, Unpackaged Shock): 30 g - Panel mounted 40 g - DIN rail mounted
Emissions	IEC 61000-6-4
ESD immunity	EC 61000-4-2: 4 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...6000 MHz

Environmental Specifications (Continued)

Attribute	Value
EFT/B immunity	IEC 61000-4-4: ±2 kV @ 5 kHz on power ports ±2 kV @ 5 kHz on signal ports ±1 kV @ 5 kHz on communication ports
Surge transient immunity	IEC 61000-4-5: ±2 kV line-line(DM) and ±4 kV line-earth(CM) on AC power ports ±500V line-line(DM) and ±1 kV line-earth(CM) on signal ports ±1 kV line-earth(CM) on shielded ports ±2 kV line-earth(CM) on communication 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)	Value
c-UL-us	UL Listed Industrial Control Equipment, certified for U.S. and Canada. See UL File E322657. UL Listed for Class I Division 2 Group A, B, C, D Hazardous Locations, certified for U.S. and Canada. See UL File E334470.
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) European Union 2011/62/EU RoHS, compliant with: EN IEC 63000; Technical Documentation
RCM	Australian Radiocommunications Act, compliant with: EN 61000-6-4; Industrial Emmissions
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: Article 58-2 of Radio Waves Act, Clause 3
UKCA	2016 No. 1091 – Electromagnetic Compatibility Regulations 2016 No. 1101 – Electrical Equipment (Safety) Regulations 2012 No. 3032 – Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations

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

Analog I/O Modules

Common Specifications – 1762-IF20F2, 1762-IF4, 1762-IR4, 1762-IT4, 1762-0F4

Attribute	1762-IF20F2, 1762-IF4, 1762-IR4, 1762-IT4, 1762-0F4
Dimensions HxWxD	90 x 87 x 40 mm Height including mounting tabs is 110 mm (3.54 x 3.43 x 1.58 in.) Height including mounting tabs is 4.33 in.
Module power status indicator	On: Indicates power is applied
Recommended cable	Belden 8761 (shielded) For 1762-IT4, shielded thermocouple extension wire for the specific type of thermocouple you are using. Follow the thermocouple manufacturer's recommendations.

General Specifications – 1762-IF20F2, 1762-IF4, 1762-0F4, 1762-IR4, 1762-IT4

Specification	1762-IF20F2	1762-IF4	1762-0F4	1762-IR4	1762-IT4
Shipping weight, approx. (with carton)	240 g (0.53 lbs.)		235 g (0.517 lbs.)	260 g (0.57 lbs.)	220 g (0.53 lbs.)
Bus current draw, max	40 mA @ 5V DC 105 mA @ 24V DC	40 mA @ 5V DC 50 mA @ 24V DC	40 mA @ 5V DC 165 mA @ 24V DC	40 mA @ 5V DC 50 mA @ 24V DC	40 mA @ 5V DC 50 mA @ 24V DC
Analog normal operating range	Voltage: 0...10V DC Current: 4...20 mA	Voltage: -10...+10V DC Current: 4...20 mA	Voltage 0...10V DC Current: 4...20 mA	Not applicable	Not applicable

General Specifications – 1762-IF20F2, 1762-IF4, 1762-OF4, 1762-IR4, 1762-IT4 (Continued)

Specification	1762-IF20F2	1762-IF4	1762-OF4	1762-IR4	1762-IT4
Full scale(1) analog ranges	Voltage: 0...10.5V DC Current: 0...21 mA	Voltage: -10.5...+10.5V DC Current: -21...+21 mA	Voltage:0...10.5V DC Current: 0...21 mA	Not applicable	Not applicable
Resolution	12 bits (unipolar)	15 bits (bipolar) (2)	12 bits (unipolar)	Input filter and configuration dependent	15 bits plus sign
Repeatability(3)	±0.12%(2)	±0.12%(2)	±0.12%(2)	±0.1 °C (±0.18 °F) for Ni and NiFe ±0.2 °C (±0.36 °F)...±0.2 °C (±0.36 °F) for other RTD inputs ±0.04 ohm for 150 ohm resistances ±0.2 ohm for other resistances	See Table 28
Input and output group to system isolation	30V AC/30V DC rated working voltage(4) (N.E.C. Class 2 required) (IEC Class 2 reinforced insulation) type test: 500V AC or 707V DC for 1 minute		30V AC/30V DC rated working voltage (IEC Class 2 reinforced insulation) type test: 500V AC or 707V DC for 1 minute	30V AC/30V DC working voltage type test: 500V AC or 707V DC for 1 minute	30V AC/30V DC working voltage qualification test: 720V DC for 1 minute
Vendor I.D. code	1	1	1	1	1
Product type code	10	10	10	10	10
Product code	75	67	66	65	64

(1) The overrange or underrange flag comes on when the normal operating range (over/under) is exceeded. The module continues to convert the analog input up to the maximum full-scale range.
(2) Only applicable to series B I/O and series C I/O modules.
(3) Repeatability is the ability of the module to register the same reading in successive measurements for the same signal.
(4) Rated working voltage is the maximum continuous voltage that can be applied at the terminals with respect to earth ground.

Input Specifications – 1762-IF20F2, 1762-IF4, 1762-IR4, 1762-IT4

Attribute	1762-IF20F2	1762-IF4	1762-IR4	1762-IT4
Number of inputs	2 differential (unipolar)	4 differential (bipolar)	4	4 input channels plus 1 CJC sensor
Update time (typical)	2.5 ms	130, 250, 290, 450, 530 ms (selectable)	Input filter and configuration dependent	NA
A/D converter type	Successive approximation	Successive approximation	Delta-Sigma	Delta-Sigma
Common mode voltage range(1)	±27V	±27V	NA	±10V
Common mode rejection(2)	> 55 dB at 50 Hz and 60 Hz	> 55 dB at 50 Hz and 60 Hz	>110 dB at 50 Hz (with 10 Hz or 60 Hz filter)	>110 dB at 50 Hz (with 10 Hz or 60 Hz filter)
Non-linearity (in percent full scale)	±0.12%(3)	±0.12%(3)	±0.05%	NA
Typical overall accuracy(4)	±0.55% full scale at -20...+65 °C (-4...+149 °F)(3) ±0.3% full scale at 25 °C (77 °F)	±0.32% full scale at -20...+65 °C (-4...+149 °F)(3) ±0.24% full scale at 25 °C (77 °F)	±0.5 °C (0.9 °F) for Pt 385	NA
Input impedance	Voltage Terminal: 200 kΩ Current Terminal: 250 Ω	Voltage Terminal: 200 kΩ Current Terminal: 275 Ω	>10 MΩ	>10 MΩ
Current input protection	±32 mA	±32 mA	NA	NA
Voltage input protection	±30V	±30V	NA	NA
Channel diagnostics	Over or under range or open circuit condition by bit reporting for analog inputs	Over or under range or open circuit condition by bit reporting for analog inputs	Over or under range or open circuit condition by bit reporting for analog inputs	Over or under range or open circuit condition by bit reporting for analog inputs

(1) For proper operation, both the plus and minus input terminals must be within ±27V (±10V for 1762-IT4) of analog common.
(2) $V_{cm} = 1\ V_{pk\text{-}pk}$ AC
(3) Only applicable for series B and series C I/O modules.
(4) $V_{cm} = 0$ (includes offset, gain, non-linearity, and repeatability error terms)

Input Specifications 1762-IR4

Attribute	1762-IR4	
Input types	100 Ω Platinum 385 200 Ω Platinum 385 500 Ω Platinum 385 1000 Ω Platinum 385 100 Ω Platinum 3916 200 Ω Platinum 3916 500 Ω Platinum 3916 1000 Ω Platinum 3916 10 Ω Copper 426 120 Ω Nickel 672 120 Ω Nickel 618 604 Ω Nickel-Iron 518 0…150 Ω 0…500 Ω 0…1000 Ω 0…3000 Ω	
Heat dissipation	1.5 Total Watts (The Watts per point, plus the minimum Watts, with all points enabled)	
Normal mode rejection ratio	70 dB minimum at 50 Hz with the 10 Hz or 50 Hz filter selected 70 dB minimum at 60 Hz with the 10 Hz or 60 Hz filter selected	
Typical accuracy [Auto-calibration enabled] at 25 °C (77 °F) ambient with module operating temperature at 25 °C (77 °F)(1)	±0.5 °C (0.90 °F) for Pt 385 ±0.4 °C (0.72 °F) for Pt 3916 ±0.2 °C (0.36 °F) for Ni ±0.3 °C (0.54 °F) for NiFe ±0.6 °C (1.08 °F) for Cu	±0.15 Ω for 150 Ω range ±0.5 Ω for 500 Ω range ±1.0 Ω for 1000 Ω range ±1.5 Ω for 3000 Ω range
Typical accuracy [Auto-calibration enabled] at 0…55 °C (32…131 °F)(1)	±0.9 °C (1.62 °F) for Pt 385 ±0.8 °C (1.40 °F) for Pt 3916 ±0.4 °C (0.72 °F) for Ni ±0.5 °C (0.90 °F) for NiFe ±1.1 °C (1.98 °F) for Cu	±0.25 Ω for 150 Ω range ±0.8 Ω for 500 Ω range ±1.5 Ω for 1000 Ω range ±2.5 Ω for 3000 Ω range
Accuracy drift at 0…55 °C (32…131 °F)	±0.026 °C/°C (0.026 °F/°F) for Pt 385 ±0.023 °C/°C (0.023 °F/°F) for Pt 3916 ±0.012 °C/°C (0.012 °F/°F) for Ni ±0.015 °C/°C (0.015 °F/°F) for NiFe ±0.032 °C/°C (0.032 °F/°F) for Cu	±0.007 Ω/°C (0.012 Ω/°F) for 150 Ω range ±0.023 Ω/°C (0.041 Ω/°F) for 500 Ω range ±0.043 Ω/°C (0.077 Ω/°F) for 1000 Ω range ±0.07 Ω/°C (0.130 Ω/°F) for 3000 Ω range
Excitation current source	0.5 mA and 1.0 mA selectable per channel	
Open-circuit detection time(2)	6…1212 ms	
Input channel configuration	Via configuration software screen or the user program (by writing a unique bit pattern into the module's configuration file). See your controller's user manual to determine if user program configuration is supported.	
Calibration	The module performs auto-calibration on channel enable and on a configuration change between channels. You can also program the module to calibrate every 5 minutes.	
Maximum overload at input terminals	±35V DC continuous	
Cable impedance, max	25 Ω — Operating with >25 Ω reduces accuracy.	
Channel to channel isolation	±10V DC	

(1) Accuracy is dependent upon the Analog/Digital converter filter rate selection, excitation current selection, data format, and input noise.
(2) Open-circuit detection time is equal to channel update time.

Input Specifications 1762-IT4

Attribute	Value
Heat dissipation	1.5 Total Watts (The Watts per point, plus the minimum Watts, with all points energized)
Response speed per channel	Input filter and configuration dependent
Rated working voltage(1)	30V AC/30V DC
Normal mode rejection ratio	85 dB (minimum) at 50 Hz (with 10 Hz or 50 Hz filter) 85 dB (minimum) at 60 Hz (with 10 Hz or 60 Hz filter)
Cable impedance, max	25 Ω (for specified accuracy)
Open-circuit detection time	7 ms…1.515 s(2)
Calibration	The module performs auto-calibration upon power-up and whenever a channel is enabled. You can also program the module to calibrate every 5 minutes.

Input Specifications 1762-IT4 (Continued)

Attribute	Value
CJC accuracy	±1.3 °C (±2.34 °F)
Maximum overload at input terminals	±35V DC continuous(3)
Input channel configuration	Via configuration software screen or the user program (by writing a unique bit pattern into the module's configuration file)

(1) Rated working voltage is the maximum continuous voltage that can be applied at the input terminal, including the input signal and the value that floats above ground potential (for example, 30V DC input signal and 20V DC potential above ground).
(2) Open-circuit detection time is equal to the module scan time, which is based on the number of enabled channels, the filter frequency of each channel, and whether cyclic calibration is enabled.
(3) Maximum current input is limited due to input impedance.

Table 28 - 1762-IT4 Repeatability at 25 °C (77 °F)(1) (2)

Input Type	Repeatability for 10 Hz Filter
Thermocouple J	±0.1 °C [±0.18 °F]
Thermocouple N (-110...+1300 °C [-166...+2372 °F])	±0.1 °C [±0.18 °F]
Thermocouple N (-210...-110 °C [-346...-166 °F])	±0.25 °C [±0.45 °F]
Thermocouple T (-170...+400 °C [-274...+752 °F])	±0 .1 °C [±0.18 °F]
Thermocouple T (-270...-170 °C [-454...-274 °F])	±1.5 °C [±2.7 °F]
Thermocouple K (-270...+1370 °C [-454...+2498 °F])	±0.1 °C [±0.18 °F]
Thermocouple K (-270...-170 °C [-454...-274 °F])	±2.0 °C [±3.6 °F]
Thermocouple E (-220...+1000 °C [-364...+1832 °F])	±0.1 °C [±0.18 °F]
Thermocouple E (-270...-220 °C [-454...-364 °F])	±1.0 °C [±1.8 °F]
Thermocouples S and R	±0.4 °C [±0.72 °F]
Thermocouple C	±0.2 °C [±0.36 °F]
Thermocouple B	±0.7 °C [±1.26 °F]
±50 mV	±6 µV
±100 mV	±6 µV

(1) Repeatability is the ability of the input module to register the same reading in successive measurements for the same input signal.
(2) Repeatability at any other temperature in the 0...60 °C (32...140 °F) range is the same as long as the temperature is stable.

1762-IT4 Accuracy

Input Type(1)	With Auto-calibration Enabled		Without Auto-calibration
	Maxiumum Accuracy for 10 Hz, 50 Hz, and 60 Hz Filters		Maximum Temperature Drift(2)
	@ 25 °C [77 °F] Ambient	@ 0...60 °C [32...140 °F] Ambient	@ 0...60 °C [32...140 °F] Ambient
Thermocouple J (-210...+1200 °C [-346...+2192 °F])	±0.6 °C [±1.1 °F]	±0.9 °C [±1.7 °F]	±0.0218 °C/ °C [±0.0218 °F/ °F]
Thermocouple N (-200...+1300 °C [-328...+2372 °F])	±1 °C [±1.8 °F]	±1.5 °C [±2.7 °F]	±0.0367 °C/ °C [±0.0367 °F/ °F]
Thermocouple N (-210...-200 °C [-346...-328 °F])	±1.2 °C [±2.2 °F]	±1.8 °C [±3.3 °F]	±0.0424 °C/ °C [±0.0424 °F/ °F]
Thermocouple T (-230...+400 °C [-382...+752 °F])	±1 °C [±1.8 °F]	±1.5 °C [±2.7 °F]	±0.0349 °C/ °C [±0.0349 °F/ °F]
Thermocouple T (-270...-230 °C [-454...-382 °F])	±5.4 °C [±9.8 °F]	±7.0 °C [±12.6 °F]	±0.3500 °C/ °C [±0.3500 °F/ °F]
Thermocouple K (-230...+1370 °C [-382...+2498 °F])	±1 °C [±1.8 °F]	±1.5 °C [±2.7 °F]	±0.4995 °C/ °C [±0.4995 °F/ °F]
Thermocouple K (-270...-225 °C [-454...-373 °F])	±7.5 °C [±13.5 °F]	±10 °C [± 18 °F]	±0.0378 °C/ °C [±0.0378 °F/ °F]
Thermocouple E (-210...+1000 °C [-346...+1832 °F])	±0.5 °C [±0.9 °F]	±0.8 °C [±1.5 °F]	±0.0199 °C/ °C [±0.0199 °F/ °F]
Thermocouple E (-270...-210 °C [-454...-346 °F])	±4.2 °C [±7.6 °F]	±6.3 °C [±11.4 °F]	±0.2698 °C/ °C [±0.2698 °F/ °F]
Thermocouple R	±1.7 °C [±3.1 °F]	±2.6 °C [±4.7 °F]	±0.0613 °C/ °C [±0.0613 °F/ °F]
Thermocouple S	±1.7 °C [±3.1 °F]	±2.6 °C [± 4.7 °F]	±0.0600 °C/ °C [±0.0600 °F/ °F]
Thermocouple C	±1.8 °C [±3.3 °F]	±3.5 °C [±6.3 °F]	±0.0899 °C/ °C [±0.0899 °F/ °F]
Thermocouple B	±3.0 °C [±5.4 °F]	±4.5 °C [±8.1 °F]	±0.1009 °C/ °C [±0.1009 °F/ °F]
±50 mV	±15 µV	±25 µV	±0.44 µV/ °C [±0.80 µV/ °F]
±100 mV	±20 µV	±30 µV	±0.69 µV/ °C [±01.25 µV/ °F]

(1) The module uses the National Institute of Standards and Technology (NIST) ITS-90 standard for thermocouple linearization.
(2) Temperature drift with auto-calibration is slightly better than without auto-calibration.

For more detailed 1762-IT4 accuracy information, see the MicroLogix 1200 Thermocouple/mV Input Module User Manual, publication 1762-UM002.

Output Specifications – 1762-IF20F2, 1762-0F4

Specification	1762-IF20F2	1762-0F4
Number of outputs	2 single-ended (unipolar)	4 single-ended (unipolar)(2)
Update time (typical)	4.5 ms	2.5 ms
D/A converter type	Resistor string	R-2R ladder voltage switching
Resistive load on current output	0…500 Ω (includes wire resistance)	0…500 Ω (includes wire resistance)
Load range on voltage output	> 1 kΩ	> 1 kΩ
Reactive load, current output	< 0.1 mH	< 0.1 mH
Reactive load, voltage output	< 1 µF	< 1 µF
Typical overall accuracy(1)	±1.17% full scale @ -20…+65 °C(2) ±0.5% full scale @ 25 °C	±1.17% full scale @ -20…+65 °C(2) ±0.5% full scale @ 25 °C
Output ripple range 0…500 Hz (referred to output range)	< ±0.1%	< ±0.1%
Non-linearity (in percent full scale)	< ±0.59%(2)	< ±0.59%(2)
Open and short-circuit protection	Continuous	Continuous
Output protection	±32 mA	±32 mA

(1) Includes offset, gain, non-linearity, and repeatability error terms.
(2) Only applicable to series B and series C I/O modules.

Table 29 - Valid Input/Output Data Word Formats/Ranges for 1762-IF20F2

Normal Operating Range	Full Scale Range	RAW/Proportional Data	Scaled-for-PID
0…10V DC	10.5V DC	32,760	16,380
	0.0V DC	0	0
4…20 mA	21.0 mA	32,760	16,380
	20.0 mA	31,200	15,600
	4.0 mA	6,240	3,120
	0.0 mA	0	0

Environmental Specifications

Attribute	Value
Temperature, storage	-40…+85 °C (-40…+185 °F)
Temperature, operating	-20…+65 °C (-4…+149 °F)(1)
Operating humidity	5…95% noncondensing
Operating altitude	2000 m (6561 ft.)
Vibration	Operating: 10…500 Hz, 5 g, 0.030 in. max peak-to-peak
Shock	Operating: 30 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…1000 MHz 3V/m with 1 kHz sine wave 80% AM from 1.4…2.0 GHz 1V/m with 1 kHz sine wave 80% AM from 2.0…2.7 GHz
EFT/B immunity	IEC 61000-4-4: ±2 kV @ 5 kHz on signal ports
Surge transient immunity	IEC 61000-4-5: ±1 kV line-earth(CM) on shielded ports
Conducted RF immunity	IEC 61000-4-6: 10V rms with 1 Hz sine wave 80% AM from 150 kHz…80 MHz(2)

(1) See the module's Installation Instruction for exact operating temperature range.
(2) For grounded thermocouples, the 10V level is reduced to 3V.

Certifications

Certification (when product is marked)[1]	Value
UL	UL Listed for Class I Division 2 Group A, B, C, D Hazardous Locations
cUL	UL Listed for Class I Division 2 Group A, B, C, D Hazardous Locations, certified for Canada.
CE	European Union 2014/30/EU EMC Directive, compliant with: EN 61000-6-2; Industrial Immunity EN 61000-6-4; Industrial Emissions EN 61131-2; Programmable Controllers (Clause 8, Zone A & B)
RCM	Australian Radiocommunications Act, compliant with: AS/NZS CISPR 11; Industrial Emissions
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: Article 58-2 of Radio Waves Act, Clause 3

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