



CompactLogix Power Supplies Specifications

1768 CompactLogix Catalog Numbers 1768-PA3, 1768-PB3

1769 Compact I/O Catalog Numbers 1769-PA2, 1769-PA2K, 1769-PA4, 1769-PA4K, 1769-PB2, 1769-PB2K, 1769-PB4, 1769-PB4K

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Summary of Changes

This publication contains the following new or updated information. This list includes substantive updates only and is not intended to reflect all changes.

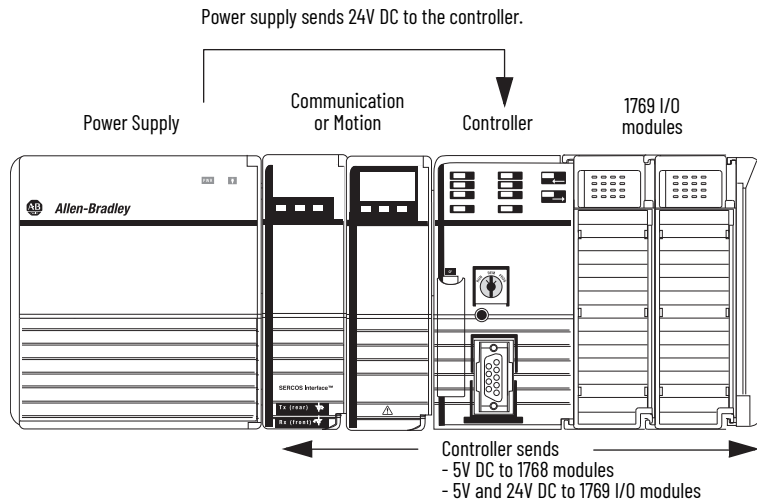
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Added the following catalog numbers: 1769-PA2K, 1769-PB2K, 1769-PA4K, 1769-PB4K	Throughout
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1768 CompactLogix Power Supplies

Each 1768 backplane requires one 1768 CompactLogix power supply. The power supply is a dual-input supply that operates in multiple ranges, offers a 24V DC external power source, and sends 24V DC to the 1768 CompactLogix controller in slot 0.

The controller converts the 24V DC to 5V DC and 24V DC and distributes it as follows:

- 5V and 24V power to 1769 I/O modules on the right side of the controller
- 24V power to 1768 modules on the left side of the controller



1768 modules do not have a distance rating from the 1768 power supply.

The distance rating for 1769 I/O modules in a 1768 system is from the controller and not the 1768 power supply.

Technical Specifications - 1768 CompactLogix Power Supplies

Attribute	1768-PA3	1768-PB3
Input voltage range	85...265V AC 108...132V DC	16.8...31.2V DC
Input voltage, nom	120V/220V AC	24V DC
Input frequency range	47...63 Hz	DC
Input power, max	120VA/120 W	112 W
Output power, max	90 W 24V DC to backplane: 3.5 24V DC to user-accessible terminal block: 0.25 A	
Output power, min	6 W 24V DC to backplane: 0.25 A 24V DC to user-accessible terminal block: 0.0 A	
Power dissipation	30 W	22 W
Inrush current, max	50 A @ 85...132V AC 80 A @ 195...265V AC	50 A @ 16.8...31.2V DC ⁽¹⁾
Isolation voltage	250V, reinforced insulation type, input to system and 24V DC AUX Tested at 4250V DC for 60 s 150V, basic insulation type, 24V DC AUX to system Tested at 2200V DC for 60 s	
Internal overcurrent protection	Non-replaceable fuse is soldered in place	
Recommended external overcurrent protection	4...6 A @ 28.5...36.7 A ² S	8...12 A @ 166...250 A ² S
Overcurrent protection	15 A, user supplied	
Weight, approx.	0.98 kg (2.15 lb)	1.01 kg (2.22 lb)
Dimensions (HxWxD), approx.	131.25 x 132.75 x 105.50 mm (5.17 x 5.23 x 4.15 in.)	
Module location	DIN rail or panel mount	
Mounting screw torque	1.16 N•m (10 lb•in) - use M4 or #8 screws	
Wire category	1 - on power ports ⁽²⁾	
Wire size, input power terminal	14 AWG (2.5 mm ²) solid or stranded copper wire rated at 75 °C (167 °F) or greater, 1.2 mm (3/64 in.) insulation maximum	
Wire size, output power terminal	14 AWG (2.5 mm ²)...22 AWG (0.25 mm ²) solid or stranded copper wire rated at 75 °C (167 °C) or greater, 1.2 mm (3/64 in.) insulation max	
Conductor screw torque	0.6 N•m (5 lb•in)	
North American temperature code	T4	
Output #1: 24V DC to backplane		
Ride-through interval time, min	25 ms @ 90 W	5 ms @ 90 W
Full power hold-up interval	5 ms @ 90 W	
Extended hold-up interval	8...12 s @ 1.25 W	
Output #2: 24V DC to front panel terminal block		
Voltage	18...27.60V @ front panel	
Output disable	Disable output during hold-up periods	
Enclosure type rating	None (open-style)	

(1) Excludes X-capacitor charging current.

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

Environmental Specifications - 1768 CompactLogix Power Supplies

Attribute	1768-PA3	1768-PB3
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, storage 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 at 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 61000-4-2	CISPR 11: Group 1, Class A	
ESD immunity	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 30...2000 MHz 10V/m with 200 Hz 50% Pulse 100% AM at 900 MHz 10V/m with 200 Hz 50% Pulse 100% AM at 1890 MHz 1V/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 power ports	
Surge transient immunity IEC 61000-4-5	±2 kV line-line (DM) and ±4 kV line-earth (CM) on AC power ports ±1 kV line-line (DM) and ±2 kV line-earth (CM) on DC power ports	±1 kV line-line (DM) and ±2 kV line-earth (CM) on DC power ports
Conducted RF immunity IEC 61000-4-6	10V rms with 1 kHz sine wave 80% AM from 150 kHz...80 MHz	
Voltage variation	IEC 61000-4-11: 30% dips for 1 period at 0° and 180° on AC supply ports 60% dips for 5 and 50 periods on AC supply ports ±10% fluctuations for 15 min on AC supply ports > 95% interruptions for 250 periods on AC supply ports	IEC 61000-4-29: 60% dip for 100 ms on DC supply ports 30% dip for 10 ms on DC supply ports 100% dip for 10 ms on DC supply ports ±20% fluctuations for 15 min on DC supply ports 5 s interruptions on DC supply ports

Certifications - 1768 CompactLogix Power Supplies

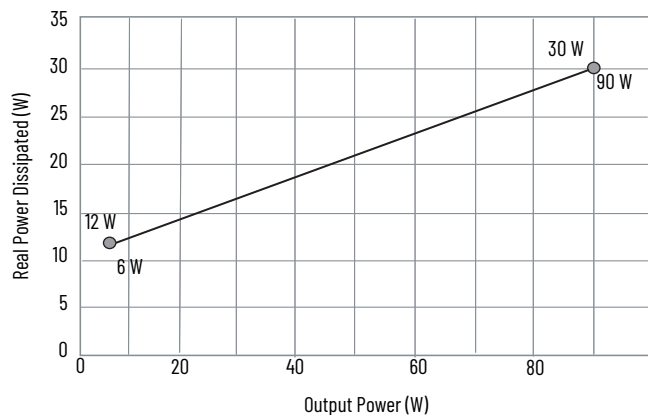
Certification ⁽¹⁾	1768-PA3, 1768-PB3
c-UL-us	UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584. UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.
CE	European Union 89/336 EEC EMC Directive, compliant with: <ul style="list-style-type: none"> EN 50082-2; Industrial Immunity 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 73/23/EEC LVD Directive, compliant with: <ul style="list-style-type: none"> EN 1010-1; Meas./Control/Lab
RCM	Australian Radiocommunications Act, compliant with: EN 61000-6-4; Industrial Emissions

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

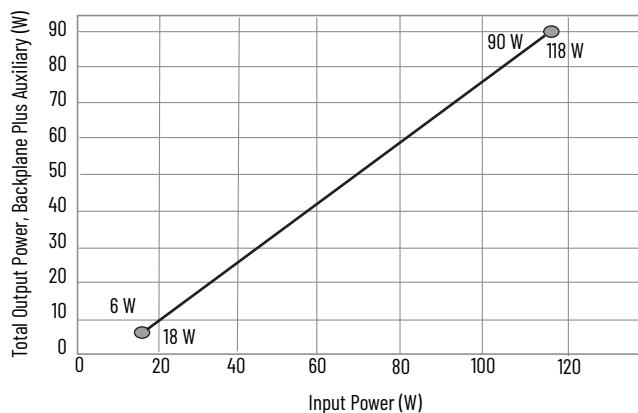
Power Dissipation and Requirements - 1768 CompactLogix Power Supplies

The following graphs show power dissipation and input power requirements for the 1768 power supplies.

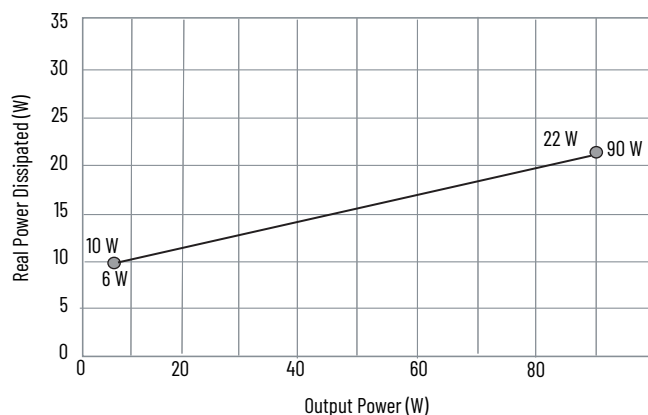
1768-PA3 Power Dissipation



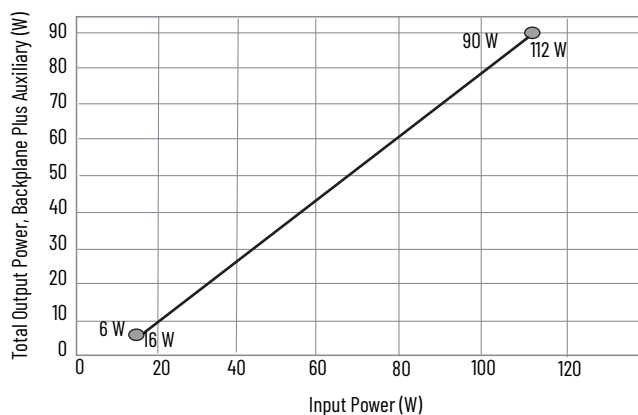
1768-PA3 Input Power Requirements



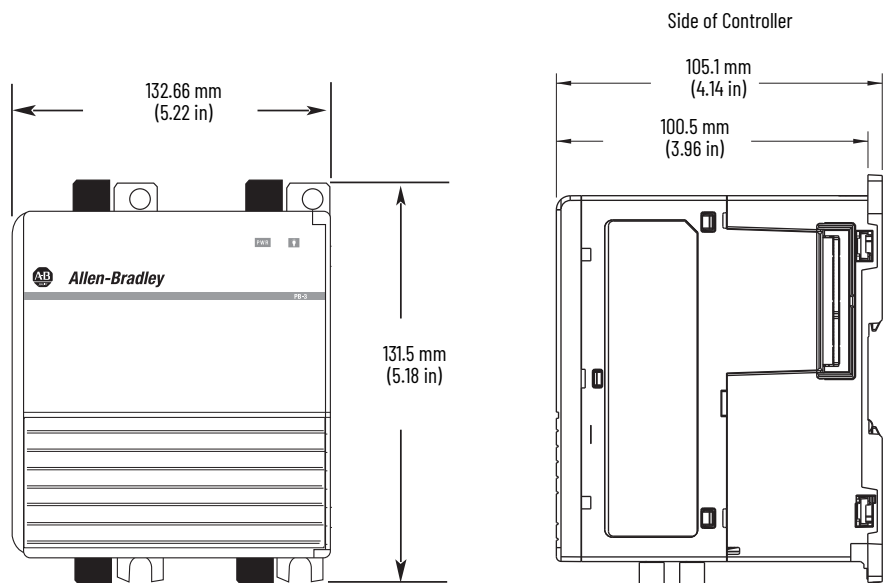
1768-PB3 Power Dissipation



1768-PB3 Input Power Requirements



Mounting Dimensions - 1768 CompactLogix Power Supplies



1769 Compact I/O Power Supplies

Each 1769-L3x controller and additional bank of I/O modules requires a 1769 power supply. Place 1769 I/O modules to the left or right of the 1769 power supply. As many as eight I/O modules can be placed on each side of the power supply.

Each 1769 module also has a power supply distance rating (the number of modules from the power supply). Each module must be located within its distance rating. See the specifications for the module to determine its distance rating.

Technical Specifications - 1769 Compact I/O Power Supplies

Attribute	1769-PA2, 1769-PA2K	1769-PA4, 1769-PA4K	1769-PB2, 1769-PB2K	1769-PB4, 1769-PB4K
Input voltage range	85...265V AC	85...265V AC or 170...265V AC, switch selectable	19.2...31.2V DC	
Input voltage, nom	120V/220V AC	120V/220V AC	24V DC	
Power consumption	100VA @ 120V AC 130VA @ 240V AC	200VA @ 120V AC 240VA @ 240V AC	50VA @ 24V DC	100VA @ 24V DC
Power dissipation	8 W @ 60° C (140° F)	18 W @ 60° C (140° F)	7.5 W @ 60° C (140° F)	14.5 W @ 60° C (140° F)
Current capacity @ 5V	2.0 A	4.0 A	2.0 A	4.0 A
Current capacity @ 24V	0.8 A	2.0 A	0.7 A	1.7 A
Inrush current, max	25 A @ 132V AC		30 A @ 31.2V DC	
Isolation voltage	265V (continuous), reinforced insulation type (IEC Class 1 grounding required) Routine tested @ 2596V DC for 1 s, AC power input to system and AC power input to 24V DC user power	265V (continuous), reinforced insulation type (IEC Class 1 grounding required) Routine tested at 2596V DC for 1 s, AC power input to system	75V (continuous), reinforced insulation type (IEC Class 1 grounding required) Routine tested at 1697V DC for 1 s, DC power input to system	
Fuse type	Wickmann 19195-3.15A Littelfuse 02183.15MXP		Wickmann 19193-6.3A Littelfuse 021706.3MXP	
Weight, approx.	525 g (1.16 lb)	630 g (1.39 lb)	525 g (1.16 lb)	630 g (1.39 lb)
Dimensions (HxWxD), approx.	118 x 70 x 87 mm (4.65 x 2.76 x 3.43 in.)			
Module location	DIN rail or panel mount			
Mounting screw torque	1.16 N•m (10 lb•in) - use M4 or #8 screws			
Power supply distance rating	8 8 I/O modules can be connected on either side of the power supply for a maximum of 16 modules			
Wire category ⁽¹⁾	1 - on power ports		2 - on power ports	
Wire size	14 AWG (2.5 mm ²) solid copper wire rated at 90 °C (194 °F) or greater, 1.2 mm (3/64 in.) insulation max			
North American temperature code	T3C			
IEC temperature code	-		T4	
Enclosure type rating	None (open-style)			

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

Environmental Specifications - 1769 Compact I/O Power Supplies

Attribute	1769-PA2, 1769-PA2K ⁽¹⁾	1769-PA4, 1769-PA4K ⁽¹⁾	1769-PB2, 1769-PB2K ⁽¹⁾	1769-PB4, 1769-PB4K ⁽¹⁾
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, 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 Thermal Shock)	-40 < Ta < +85 °C (-40 < Ta < +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)	DIN rail mount: 20 g Panel mount: 30 g			
Shock, nonoperating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	DIN rail mount: 30 g Panel mount: 40 g			
Emissions CISPR 11	Group 1, Class A			
ESD immunity IEC61000-4-2	6 kV contact 8 kV air discharges			
Radiated RF immunity IEC61000-4-3	10V/m with 1 kHz sine wave 80% AM from 80...2000 MHz 10V/m with 200 Hz 50% Pulse 100% AM at 900 MHz 10V/m with 200 Hz 50% Pulse 100% AM at 1890 MHz 10V/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 AC power ports ±2 kV at 5 kHz on 24V DC PWR OUT ports	±2 kV at 5 kHz on AC power ports	±2 kV at 5 kHz on DC power ports	
Surge transient immunity IEC61000-4-5	±2 kV line-line (DM) and ±4 kV line-earth (CM) on AC power ports ±500V line-line (DM) and ±500V line-earth (CM) on 24V DC PWR OUT ports	±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 DC power ports	
Conducted RF Immunity IEC61000-4-6	10V rms with 1 kHz sine wave 80% AM from 150 kHz...80 MHz			
Voltage variation	IEC 61000-4-11: 30% dips for 1 period at 0° and 180° on AC supply ports 60% dips for 5 and 50 periods on AC supply ports ±10% fluctuations for 15 min on AC supply ports >95% interruptions for 250 periods on AC supply ports		IEC 61000-4-29: 10 ms interruption on DC supply ports	

(1) Catalog numbers followed by a "K" indicate a conformal coating option.

Certifications - 1769 Compact I/O Power Supplies

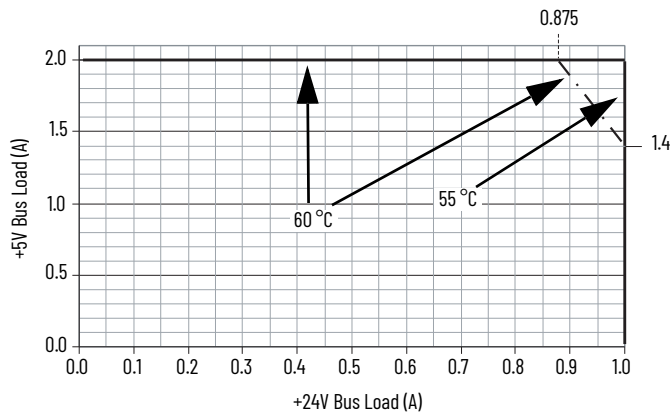
Certification ⁽¹⁾	1769-PA2, 1769-PA2K, 1769-PA4, 1769-PA4K	1769-PB2, 1769-PB2K, 1769-PB4, 1769-PB4K
c-UL-us	UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E337454 UL Listed for Class 1, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E334470	
CE	European Union 2014/30/EU EMC Directive, compliant with: <ul style="list-style-type: none"> EN 61131-2:2007 Programmable controllers - Part 2 - Equipment requirements and tests (pertinent LVD sections only) EN 61000-6-2 Electromagnetic Compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments EN 61000-6-4:2007 + A1:2011 Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments European Union 2011/65/EU RoHS, compliant with: <ul style="list-style-type: none"> EN IEC 63000; Technical documentation 	European Union 2014/30/EU EMC Directive, compliant with: <ul style="list-style-type: none"> EN 61000-6-2 Electromagnetic Compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments EN 61000-6-4:2007 + A1:2011 Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments European Union 2011/65/EU RoHS, compliant with: <ul style="list-style-type: none"> EN IEC 63000; Technical documentation
RCM	Australian Radiocommunications Act, compliant with: EN 61000-6-4; Industrial Emissions	
ATEX	–	European Union 2014/34/EU ATEX Directive, compliant with: <ul style="list-style-type: none"> EN 60079-7; Explosive atmospheres. Equipment protection by increased safety "e" (Zone 2) EN 60079-0; General Requirements (Zone 2) Demko 12 ATEX 1116807X (from Rev. 5)
UKEX	–	Schedule 1 of UK regulation 2016 No. 1107: <ul style="list-style-type: none"> EN 60079-7; Explosive atmospheres. Equipment protection by increased safety "e" (Zone 2) EN 60079-0; General Requirements (Zone 2) UL22UKEX2516X (from Rev. 0)
IECEX	–	IECEX System, compliant with: <ul style="list-style-type: none"> IEC 60079-7; Explosive atmospheres. Equipment protection by increased safety "e" (Zone 2) IEC 60079-0; General Requirements (Zone 2) II 3 G Ex ec IIC T4 Gc IECEX UL 21.0112X
EAC	Russian Customs Union TR CU 020/2011 EMC Technical Regulation Russian Customs Union TR CU 004/2011 LV Technical Regulation	
UKCA	<ul style="list-style-type: none"> 2016 No. 1101 Electrical Equipment (Safety) Regulations (LV) 2016 No. 1091 Electromagnetic Compatibility Regulations (EMC) 2012 No. 3032 Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations (RoHS) 	<ul style="list-style-type: none"> 2016 No. 1091 Electromagnetic Compatibility Regulations (EMC) 2016 No. 1107 Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations (Ex) 2012 No. 3032 Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations (RoHS)
CCC	–	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
Morocco	<ul style="list-style-type: none"> Arrêté ministériel n° 6404-15 du 1 er muharram 1437 Arrêté ministériel n° 6404-15 du 29 ramadan 1436 	
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: <ul style="list-style-type: none"> Article 58-2 of Radio Waves Act, Clause 3 	

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

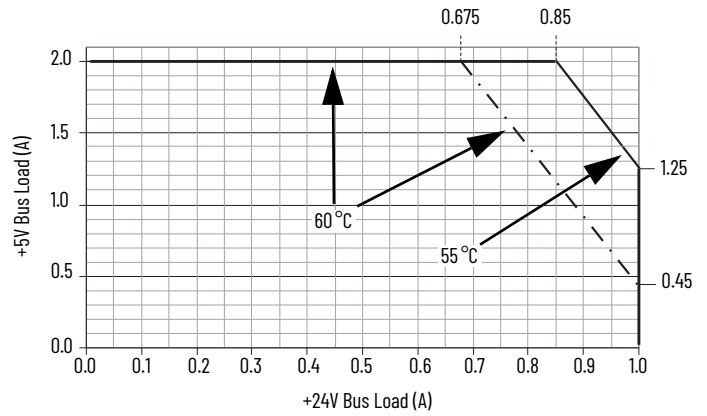
Temperature Derating - 1769 Compact I/O Power Supplies

The following graphs indicate how much current can be drawn from the power supply at the indicated case temperature without damaging it.

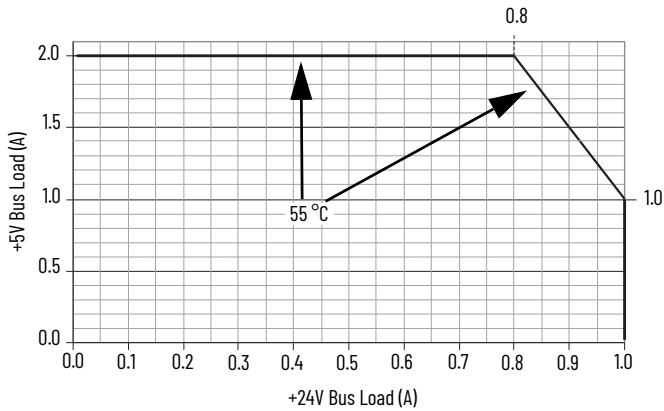
1769-PA2, 1769-PA2K Output Derating
With User +24V Current Draw at 0 A



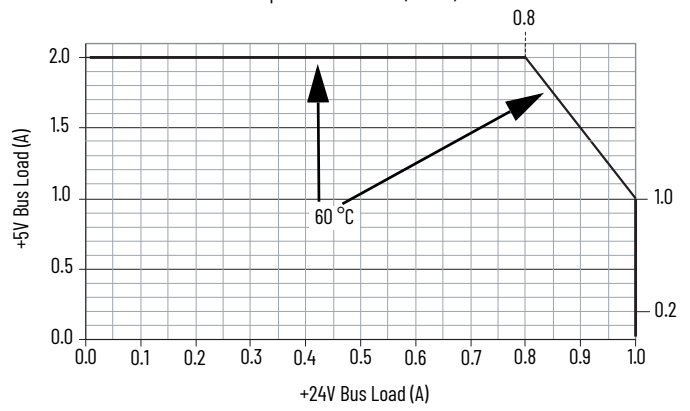
1769-PA2, 1769-PA2K Output Derating
With User +24V Current Draw at 0.2 A



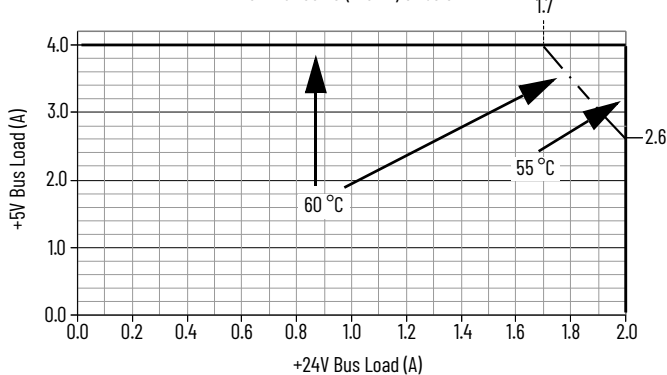
1769-PA2, 1769-PA2K Output Derating
With User +24V Current Draw at 0.25 A



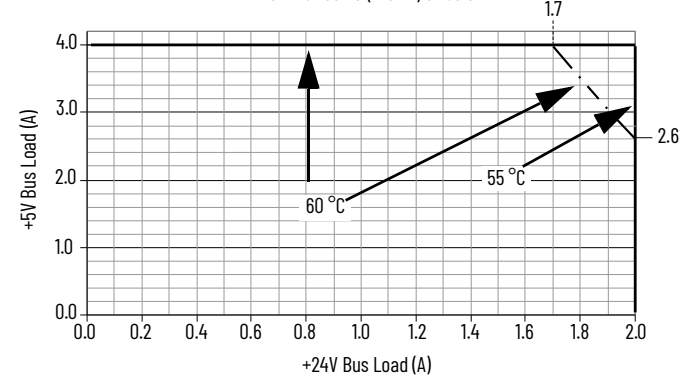
1769-PB2, 1769-PB2K Output Derating
Total Output: 29 W at 60 °C (140 °F) or below



1769-PA4, 1769-PA4K Output Derating
Total Output: 68 W at 55 °C (131 °F) or below
61 W at 60 °C (140 °F) or below



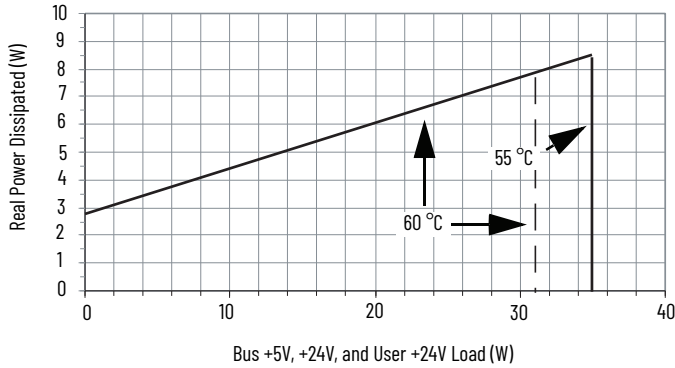
1769-PB4, 1769-PB4K Output Derating
Total Output: 68 W at 55 °C (131 °F) or below
61 W at 60 °C (140 °F) or below



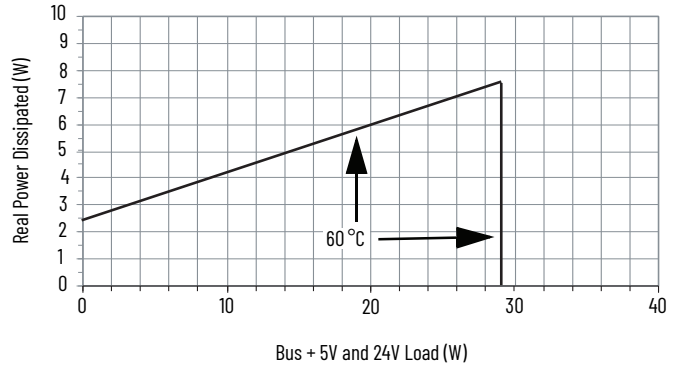
Power Dissipation - 1769 Compact I/O Power Supplies

The following graphs indicate the real electrical power dissipation of the 1769 power supplies in function of the electrical load.

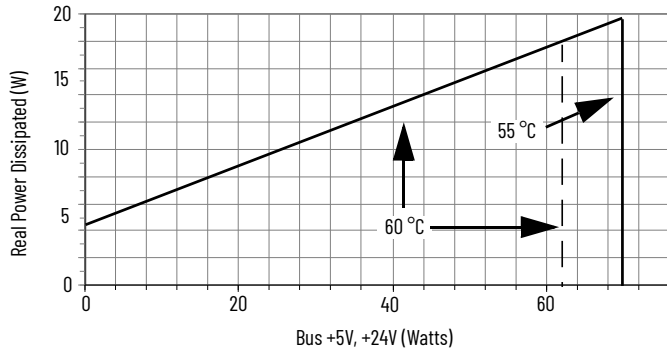
1769-PA2, 1769-PA2K Power Dissipation



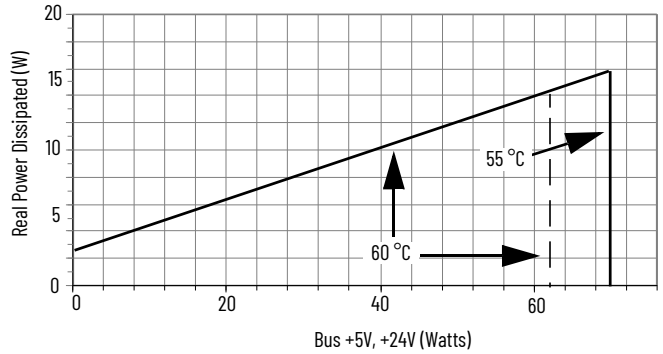
1769-PB2, 1769-PB2K Power Dissipation



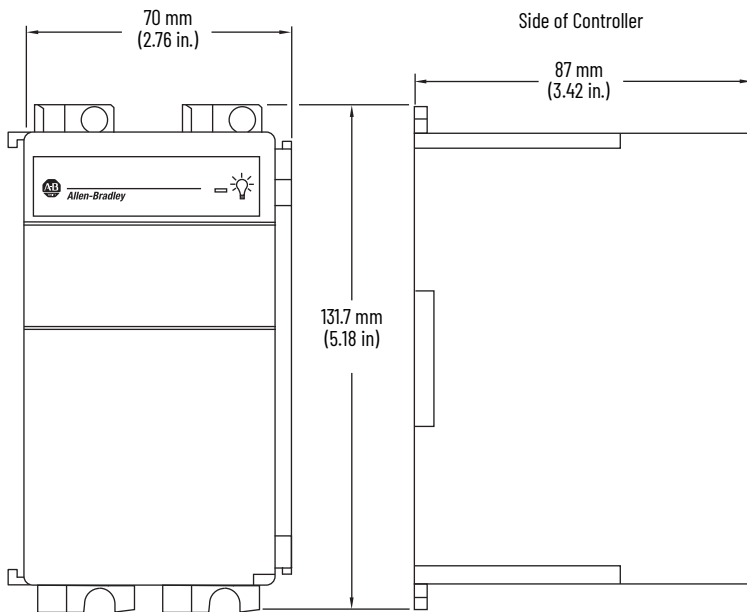
1769-PA4, 1769-PA4K Power Dissipation



1769-PB4, 1769-PB4K Power Dissipation



Mounting Dimensions - 1769 Compact I/O Power Supplies



Additional Resources

These documents contain additional information about related products from Rockwell Automation.

Resource	Description
1768 CompactLogix Power Supplies Installation Instructions, publication 1768-IN001	Describes how to install a 1768 CompactLogix power supply.
Compact I/O Expansion Power Supplies Installation Instructions, publication 1769-IN028	Describes how to install a 1769 CompactLogix power supply.
1768 CompactLogix Controllers User Manual, publication 1768-UM001	Describes how to configure, program, and operate a 1768 CompactLogix system.
CompactLogix System User Manual, publication 1769-UM011	Describes how to configure, program, and operate a 1769 CompactLogix system.
Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1	Provides general guidelines for installing a Rockwell Automation industrial system.
Product Certifications website, rok.auto/certifications .	Provides declarations of conformity, certificates, and other certification details.

You can view or download publications at rok.auto/literature.

Rockwell Automation Support

Use these resources to access support information.

Technical Support Center	Find help with how-to videos, FAQs, chat, user forums, and product notification updates.	rok.auto/support
Knowledgebase	Access Knowledgebase articles.	rok.auto/knowledgebase
Local Technical Support Phone Numbers	Locate the telephone number for your country.	rok.auto/phonesupport
Literature Library	Find installation instructions, manuals, brochures, and technical data publications.	rok.auto/literature
Product Compatibility and Download Center (PCDC)	Download firmware, associated files (such as AOP, EDS, and DTM), and access product release notes.	rok.auto/pcdc





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