Technical Data

Original Instructions

Allen-Bradley
by ROCKWELL AUTOMATION

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

Topic	Page
1768 CompactLogix Power Supplies	2
1769 Compact I/O Power Supplies	6
Additional Resources	11

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.

Topic	Page
Removed the EAC certification	8

1769 Compact I/O Power Supplies

Each 1769-L3*x* 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

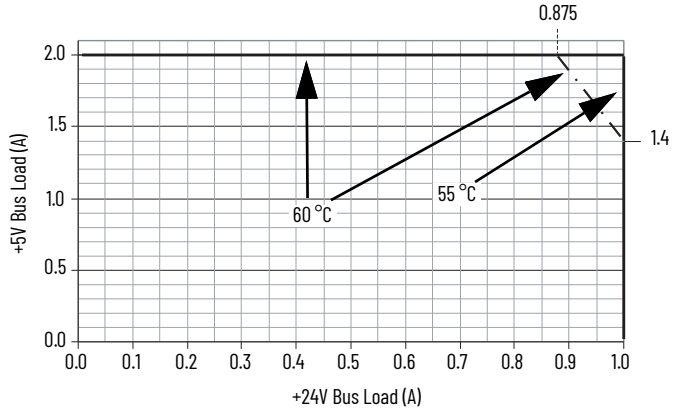
Attribute	1769-PA2, 1769-PA2K(1)	1769-PA4, 1769-PA4K(1)	1769-PB2, 1769-PB2K(1)	1769-PB4, 1769-PB4K(1)
Temperature, operating IEC 60068-2-1 (Test Ad, Operating Cold IEC 60068-2-2 (Test Bd, Operating Dry Heat) IEC 60068-2-14 (Test Nb, Operating Thermal Shock)	0 °C < Ta < 60 °C (32 °F < Ta < 140 °F)			
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.

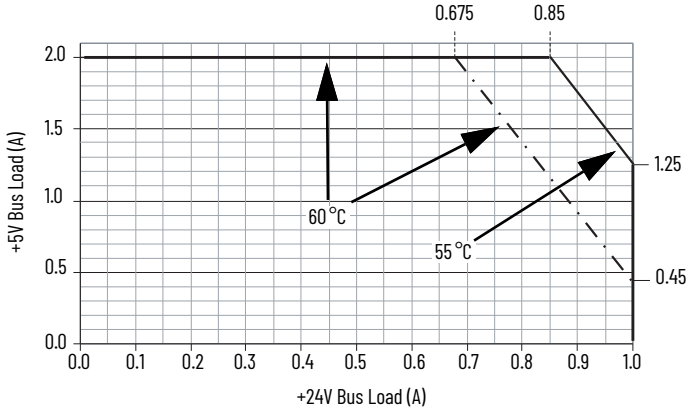
Temperature Derating - 1769 Compact I/O Power Supplies

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

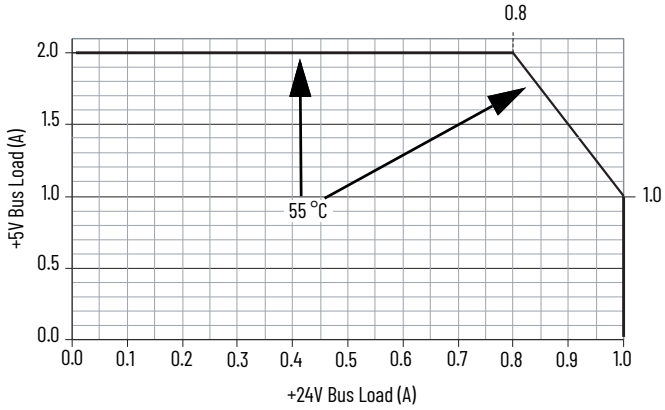
1769-PA2, 1769-PA2K Output Derating
With User +24V Current Draw at 0 A



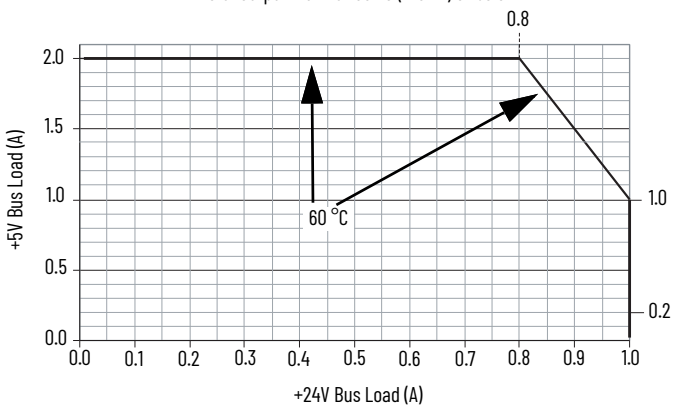
1769-PA2, 1769-PA2K Output Derating
With User +24V Current Draw at 0.2 A



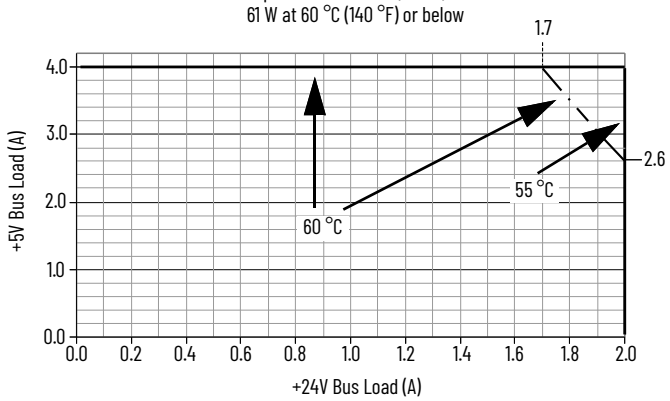
1769-PA2, 1769-PA2K Output Derating
With User +24V Current Draw at 0.25 A



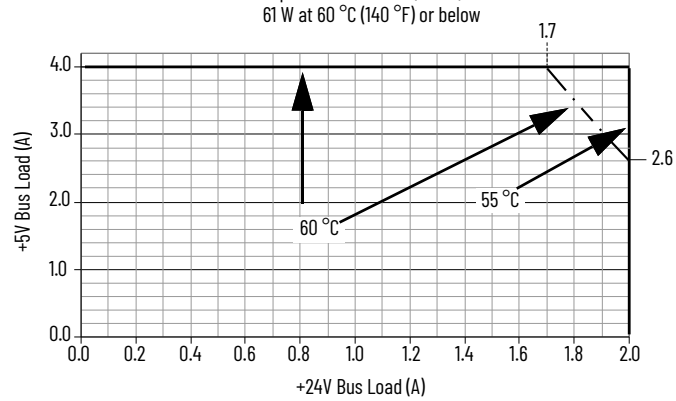
1769-PB2, 1769-PB2K Output Derating
Total Output: 29 W at 60 °C (140 °F) or below



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



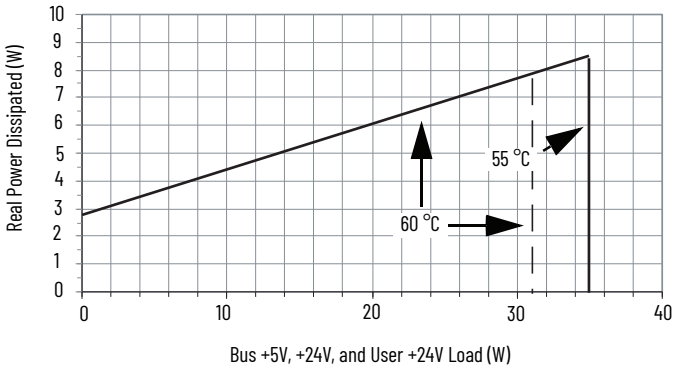
1769-PB4, 1769-PB4K Output Derating
Total Output: 68 W at 55 °C (131 °F) or below
61 W at 60 °C (140 °F) or below



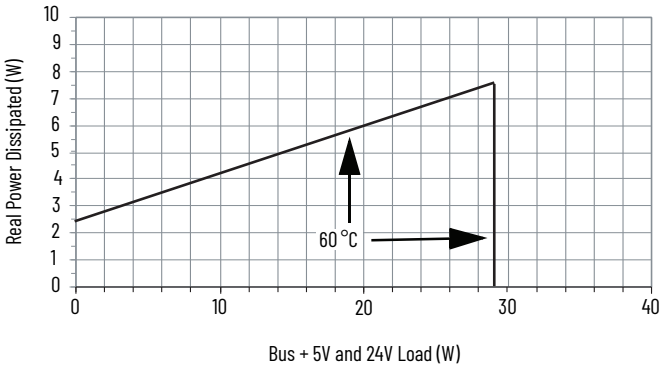
Power Dissipation - 1769 Compact I/O Power Supplies

The following graphs indicate the real electrical power dissipation of the 1969 power supplies in function of the electrical load.

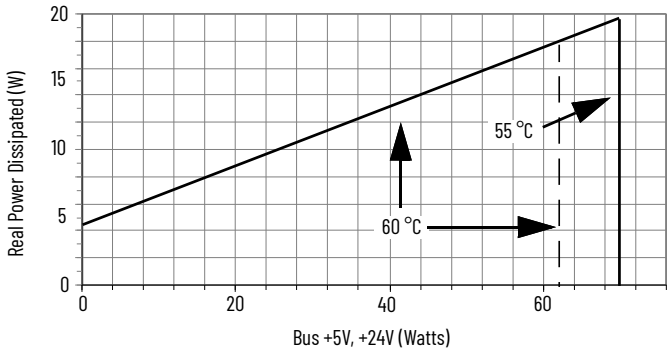
1769-PA2, 1769-PA2K Power Dissipation



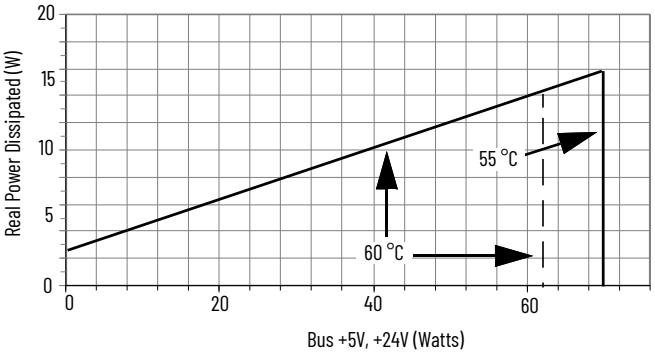
1769-PB2, 1769-PB2K Power Dissipation



1769-PA4, 1769-PA4K Power Dissipation



1769-PB4, 1769-PB4K Power Dissipation



Mounting Dimensions - 1769 Compact I/O Power Supplies

