



# 1756 ControlLogix Power Supplies Specifications

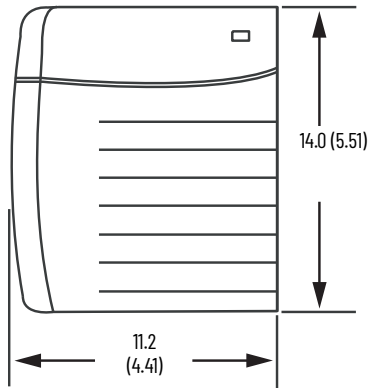
Standard Power Supplies	1756-PA72, 1756-PA72K, 1756-PA75, 1756-PA75K, 1756-PB72, 1756-PB72K, 1756-PB75, 1756-PB75K, 1756-PC75, 1756-PH75
Standard Slim Power Supplies	1756-PA50, 1756-PA50K, 1756-PB50, 1756-PB50K
ControlLogix-XT Power Supplies	1756-PAXT, 1756-PBXT
ControlLogix-XT Slim Power Supplies	1756-PA30XT, 1756-PB30XT
Redundant Power Supplies	1756-PA75R, 1756-PA75RK, 1756-PB75R, 1756-PB75RK
Redundant Power Supplies Chassis Adapter	1756-PSCA2, 1756-PSCA2K
ControlLogix-XT Redundant Power Supplies	1756-PAXTR, 1756-PBXTR
ControlLogix-XT Redundant Power Supplies Chassis Adapter	1756-PSCA2XT
Redundant Power Supply Power Cable	1756-CPR2, 1756-CPR2D, 1756-CPR2U

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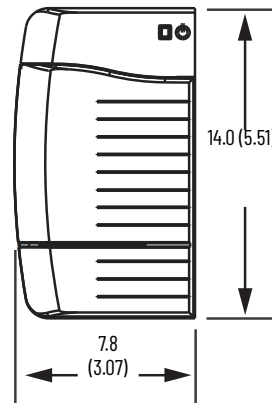
# Standard DC Power Supplies

## Mounting Dimensions

1756-PB72, 1756-PB72K, 1756-PB75,  
1756-PB75K, 1756-PC75, 1756-PH75



1756-PB50, 1756-PB50K



Dimensions are in cm (in.).

## Technical Specifications - Standard DC Power Supplies

Attribute	1756-PB50, 1756-PB50K	1756-PB72/C, 1756-PB72K/C	1756-PB75/B, 1756-PB75K/B	1756-PC75/B	1756-PH75/B
Input voltage range	18...32V DC <sup>(2)</sup>			30...60V DC <sup>(5)</sup>	90...143V DC <sup>(6)</sup>
Input voltage, nom	24V DC			48V DC	125V DC
Input power, max	85 W @ 50 °C (122 °F) 70 W @ 60 °C (140 °F)		95 W		
Output power, max	60 W @ 0...50 °C (32...122 °F) 50 W @ 0...60 °C (32...140 °F)		75 W @ 0...60 °C (32...140 °F) <sup>(4)</sup>		
Inrush current, max	30 A				
Hold up time <sup>(1)</sup>	30 ms @ 18...32V DC, 60 W 40 ms @ 18...32V DC, 50 W		35 ms @ 18V DC 40 ms @ 24V DC 40 ms @ 32V DC		50 ms @ 30...60V DC nom 50 ms @ 90...143V DC nom
Current capacity @ 1.2V	1.5 A				
Current capacity @ 3.3V	2 A		4 A		
Current capacity @ 5.1V	8 A @ 50 °C (122 °F) 6 A @ 60 °C (140 °F)		10 A	13 A	
Current capacity @ 24V	2.5 A @ 50 °C (122 °F) 2.0 A @ 60 °C (140 °F)		2.8 A		
Isolation voltage	250V (continuous), Reinforced Insulation Type, Power Input to Backplane Type tested @ 3150V DC for 60 s		250V (continuous), Reinforced Insulation Type, Power Input to Backplane Type tested @ 3500V DC for 60 s		
Weight, approx	0.77 kg (1.7 lb)		0.95 kg (2.10 lb)		
Dimensions (HxWxD), approx	14.0 x 7.8 x 14.5 cm (5.51 x 3.07 x 5.71 in.)		14.0 x 11.2 x 14.5 cm (5.51 x 4.41 x 5.71 in.)		
Module location	Left side of 1756 chassis				
Chassis	1756-A4, 1756-A7, 1756-A10, 1756-A13, 1756-A17				
Chassis compatibility	Series A Series B Series C		Series B Series C		
Wire size	2.5 mm <sup>2</sup> (14 AWG) solid or stranded copper wire that is rated at 90 °C (194 °F), or greater, 1.2 mm (3/64 in.) insulation max				
Wire category	1 - on power ports <sup>(3)</sup>				
Conductor screw torque	0.565 N•m (5 lb•in)				
North American temperature code	T4				

## Technical Specifications - Standard DC Power Supplies (Continued)

Attribute	1756-PB50, 1756-PB50K	1756-PB72/C, 1756-PB72K/C	1756-PB75/B, 1756-PB75K/B	1756-PC75/B	1756-PH75/B
ATEX temperature code	T4			-	
IEC temperature code	T4			-	
Enclosure type rating	None (open-style)				

- (1) The hold up time is the time between input voltage removal and DC power failure.
- (2) UL certification for 24V DC nominal. Rockwell Automation specified 18...32V DC.
- (3) 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](#).
- (4) The combination of all output power (5.1V backplane, 24V backplane, 3.3V backplane, and 1.2V backplane) can't exceed 75 W.
- (5) UL Certification for 48V DC nominal. Rockwell Automation specified 30...60V DC.
- (6) UL certification for 125V DC nominal. Rockwell Automation specified 90...143V DC.

## Environmental Specifications - Standard DC Power Supplies

Attribute	1756-PB50, 1756-PB50K	1756-PB72/C, 1756-PB72K/C 1756-PB75/B, 1756-PB75K/B	1756-PC75/B, 1756-PH75/B
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 <sup>(1)</sup>		
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 power ports		
Surge transient immunity IEC 61000-4-5	±1 kV line-line (DM) and ±2 kV line-earth (CM) on 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 61000-4-29	10 ms interruption on DC supply ports <sup>(2)</sup> 60% dips for 100 ms on DC supply ports 100% dips for 50 ms on DC supply ports ±20% fluctuations for 15 min on DC supply ports 5 s interruptions on DC supply ports <sup>(3)</sup>		

- (1) Series C chassis have a maximum nonoperating shock value of 30 g. If you select a Series C chassis for use with your power supply, you're limited to a maximum nonoperating shock value of 30 g.
- (2) Short interruption test verifies ride-through. The supply remains fully functional under this condition.
- (3) Long interruption test verifies that repetitive inrush surge currents do not create any unsafe conditions. The supply fully shuts down and starts up in this test.

## Certifications - Standard DC Power Supplies

Certification <sup>(1)</sup>	1756-PB50, 1756-PB50K	1756-PB72/C, 1756-PB72K/C 1756-PB75/B, 1756-PB75K/B	1756-PC75/B, 1756-PH75/B
UL	-		UL Listed Industrial Control Equipment. See UL File E65584.
c-UL-us	UL Listed Industrial Control Equipment, which is certified for US and Canada. See UL File E65584. UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, which are certified for US and Canada. See UL File E194810.		-
UKCA	In conformity with the following UK Statutory Instruments and their amendments: <ul style="list-style-type: none"> <li>• 2016 No. 1091, Electromagnetic Compatibility Regulations</li> <li>• 2016 No. 1101, Electrical Equipment (Safety) Regulations</li> <li>• 2016 No. 1107, Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations</li> <li>• 2012 No. 3032, Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment</li> </ul>		
CSA	-	CSA Certified Process Control Equipment. See CSA File LR54689C. CSA Certified Process Control Equipment for Class I, Division 2 Group A,B,C,D Hazardous Locations. See CSA File LR69960C.	
FM	FM Approved Equipment for use in Class I 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"> <li>• EN 61326-1; Meas./Control/Lab., Industrial Requirements</li> <li>• EN 61000-6-2; Industrial Immunity</li> <li>• EN 61131-2; Programmable Controllers (Clause 8, Zone A &amp; B)</li> <li>• EN 61000-6-4; Industrial Emissions</li> </ul> European Union 2014/35/EU LVD, compliant with: <ul style="list-style-type: none"> <li>• EN 61010-2-201; Control Equipment Safety Requirements</li> </ul>	European Union 2014/30/EU EMC Directive, compliant with: <ul style="list-style-type: none"> <li>• EN 61326-1; Meas./Control/Lab., Industrial Requirements</li> <li>• EN 61000-6-2; Industrial Immunity</li> <li>• EN 61000-6-4; Industrial Emissions</li> <li>• EN 61131-2; Programmable Controllers (Clause 8, Zone A &amp; B)</li> </ul> European Union 2014/35/EU LVD, compliant with: <ul style="list-style-type: none"> <li>• EN 61131-2; Programmable Controllers (Clause 11)</li> </ul>	
RCM	Australian Radiocommunications Act, compliant with: <ul style="list-style-type: none"> <li>• EN 61000-6-4; Industrial Emissions</li> </ul>		
Ex	European Union 2014/34/EU ATEX Directive, compliant with: <ul style="list-style-type: none"> <li>• IEC 60079-0 Edition 7; General Requirements</li> <li>• EN IEC 60079-7; Potentially Explosive Atmospheres, Protection "e"</li> <li>• II 3 G Ex ec IIC T4 X Gc</li> <li>• UL 22 ATEX 2819X</li> </ul>		-
IECEx	IECEx System, compliant with: <ul style="list-style-type: none"> <li>• IEC 60079-0 Edition 7; General Requirements</li> <li>• IEC 60079-7; Potentially Explosive Atmospheres, Protection "e"</li> <li>• II 3 G Ex ec IIC T4 Gc</li> <li>• IECEx UL 22.0064X</li> </ul>		-
UKex	In conformity with the following UKex Statutory Instruments and their amendments: <ul style="list-style-type: none"> <li>• Schedule 1 of the UKEX Regulation 2016 No. 1107</li> <li>• Equipment protection by increased safety "e", reference certificate number UL22UKEX2605X</li> <li>• Zone 2 classification according to UKEX Regulation 2016 No. 1107</li> </ul>		-
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: <ul style="list-style-type: none"> <li>• Article 58-2 of Radio Waves Act, Clause 3</li> </ul>		
EAC	Russian Customs Union TR CU 020/2011 EMC Technical Regulation Russian Customs Union TR CU 004/2011 LV Technical Regulation		
CCC	CCC 202012230911830, 202012230911998, 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](http://rok.auto/certifications) for Declarations of Conformity, Certificates, and other certification details.

# Power Load and Transformer Sizing

The following graphs show the input power requirements for slim and standard power supplies, given the power that they're providing to the modules in the chassis.

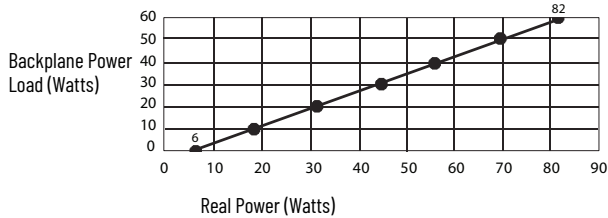
Follow these steps to determine the power requirements for your chassis.

1. Calculate the Backplane Power load by adding the power draw (in watts) for all planned modules.  
For module power draws, refer to the module specification tables in the ControlLogix Selection Guide, publication [1756-SG001](#).
2. Locate the Backplane Power load on the vertical (y) axis of the graph and determine the corresponding Real Power (input-power) rating on the horizontal (x) axis.

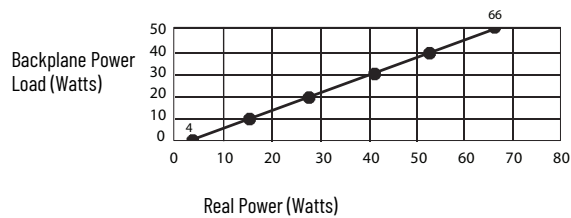
The Real Power value is the amount of power that is consumed by the power supply.

## Slim Power Supply Power Requirements

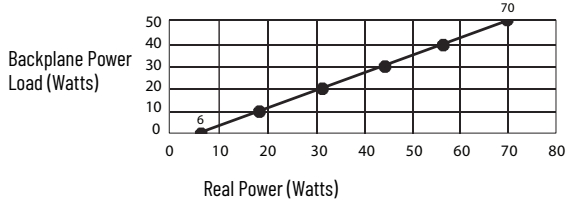
1756-PA50, 1756-PA50K @ 50 °C (AC)



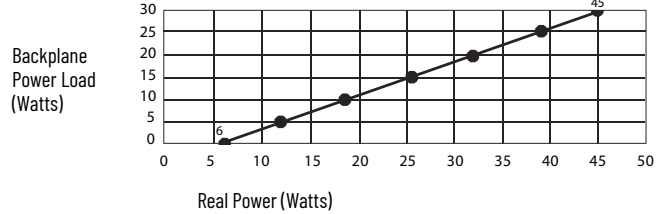
1756-PB50, 1756-PB50K @ 60 °C (DC)



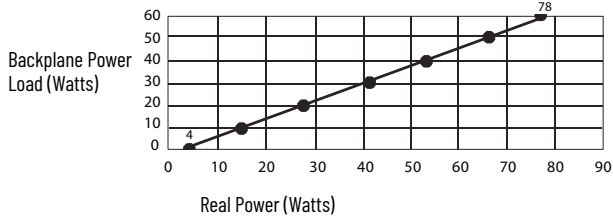
1756-PA50, 1756-PA50K @ 60 °C (AC)



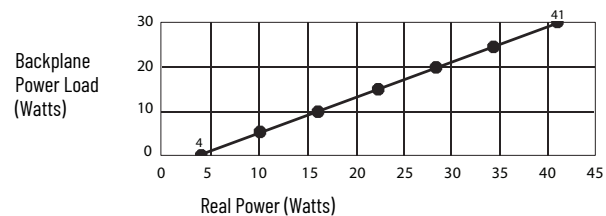
1756-PA30XT (AC)



1756-PB50, 1756-PB50K @ 50 °C (DC)



1756-PB30XT (DC)



$$\text{Apparent Power (Watts)} = \text{Transformer Load (VA)} = \text{Real Power (Watts)}$$