

# 1756 ControlLogix Power Supplies Specifications

Standard Power Supplies Catalog Numbers 1756-PA72, 1756-PA75, 1756-PB72, 1756-PB75, 1756-PC75, 1756-PH75

Standard Slim Power Supplies Catalog Numbers 1756-PA50, 1756-PB50

ControlLogix-XT Power Supplies Catalog Numbers 1756-PAXT, 1756-PBXT

ControlLogix-XT Slim Power Supplies Catalog Numbers 1756-PA30XT, 1756-PB30XT

Redundant Power Supplies Catalog Numbers 1756-PA75R, 1756-PB75R

Redundant Power Supplies Chassis Adapter Catalog Number 1756-PSCA2

ControlLogix-XT Redundant Power Supplies Catalog Numbers 1756-PAXTR, 1756-PBXTR

ControlLogix-XT Redundant Power Supplies Chassis Adapter Catalog Number 1756-PSCA2XT

Redundant Power Supply Power Cable Catalog Numbers 1756-CPR2, 1756-CPR2D, 1756-CPR2U

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ControlLogix® power supplies are used with the 1756 chassis to provide 1.2V, 3.3V, 5V, and 24V DC power directly to the chassis backplane. Standard, Slim, ControlLogix-XT™, and redundant power supplies are available.



## Summary of Changes

This manual contains new and updated information.

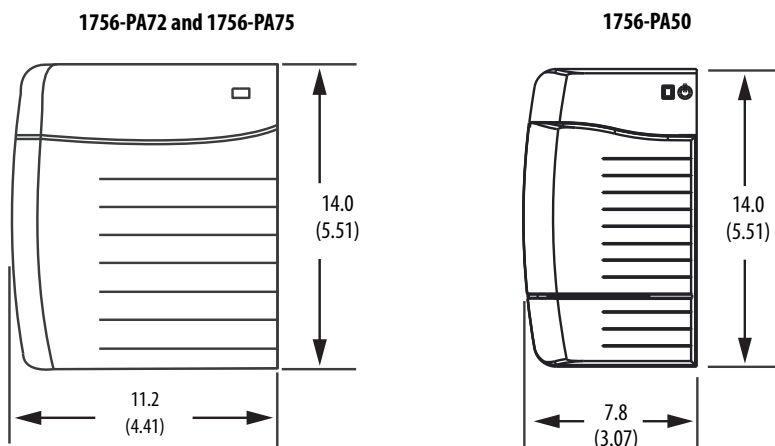
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|--|------------------|
| Updated specifications as required per current boilerplate   | Throughout       |
| Added Mounting Dimensions, Technical Specifications, Environmental Specifications, and Certifications tables for ControlLogix Standard Slim Power Supplies | 2, 3, 4, 5, 6, 7 |
| Added Mounting Dimensions, Technical Specifications, Environmental Specifications, and Certifications tables for ControlLogix-XT Slim Power Supplies       | 8, 9, 10         |
| Added 1756-CPR2D and 1756-CPR2U ControlLogix redundant power supply cables   | 11               |

The following components were added to this technical data:

- ControlLogix Standard Slim AC Power Supply (catalog number 1756-PA50)
- ControlLogix Standard Slim DC Power Supply (catalog number 1756-PB50)
- ControlLogix-XT Slim AC Power Supply (catalog number 1756-PA30XT)
- ControlLogix-XT Slim DC Power Supply (catalog number 1756-PB30XT)
- ControlLogix Redundant Power Supply Cable (catalog number 1756-CPR2D)
- ControlLogix Redundant Power Supply Cable (catalog number 1756-CPR2U)

## Standard AC Power Supplies

### Mounting Dimensions



Dimensions are in cm (in.).

### Technical Specifications - Standard AC Power Supplies

| Attribute                          | 1756-PA50  | 1756-PA72/C | 1756-PA75/B |
|------------------------------------|--|-------------|-------------|
| Input voltage range <sup>(1)</sup> | 85...265V AC   |             |             |
| Input voltage, nom                 | 120V/240V AC   |             |             |
| Input frequency range              | 47...63 Hz   |             |             |
| Input power, max                   | 81 W/91VA @ 50 °C (122 °F)<br>68 W/77VA @ 60 °C (140 °F) | 100VA/100 W |             |

## Technical Specifications - Standard AC Power Supplies

| Attribute                       | 1756-PA50  | 1756-PA72/C  | 1756-PA75/B |
|---------------------------------|--|--|-------------|
| Output power, max               | 60 W @ 0...+50 °C (+32...+122 °F) <sup>(2)</sup><br>50 W @ 0...+60 °C (+32...+140 °F) <sup>(3)</sup>                             | 75 W @ 0...+60 °C (+32...+140 °F) <sup>(5)</sup>   |             |
| Inrush current, max             | 20 A   |  |             |
| Current capacity @ 1.2V DC      | 1.5 A  |  |             |
| Current capacity @ 3.3V DC      | 2 A  | 4 A  |             |
| Current capacity @ 5.1V DC      | 8 A  | 10 A   | 13 A        |
| Current capacity @ 24V DC       | 2.5 A  | 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 at 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<br>(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<br>Series B<br>Series C   | Series B<br>Series C   |             |
| Wire size                       | 2.5 mm <sup>2</sup> (14 AWG) solid or stranded copper wire rated at 90 °C (194 °F), or greater, 1.2 mm (3/64 in.) insulation max |  |             |
| Wire category                   | 1 - on power ports <sup>(4)</sup>  |  |             |
| Conductor screw torque          | 0.8 N·m (7 lb·in)  |  |             |
| North American temperature code | T4   |  |             |
| Enclosure type rating           | None (open-style)  |  |             |

(1) UL certification for 120/240V AC, 50/60 Hz nominal. Rockwell Automation specified 85...265V AC, 47...63 Hz.

(2) The combination of all output power (5.1V backplane, 24V backplane, 3.3V backplane, and 1.2V backplane) cannot exceed 60 W @ 50 °C (122 °F) maximum temperature.

(3) The combination of all output power (5.1V backplane, 24V backplane, 3.3V backplane, and 1.2V backplane) cannot exceed 50 W @ 60 °C (140 °F) maximum temperature.

(4) 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](#).

(5) The combination of all output power (5.1V backplane, 24V backplane, 3.3V backplane, and 1.2V backplane) cannot exceed 75 W.

## Environmental Specifications - Standard AC Power Supplies

| Attribute   | 1756-PA50                                      | 1756-PA72/C, 1756-PA75/B |
|---|--|--------------------------|
| Temperature, operating<br>IEC 60068-2-1 (Test Ad, Operating Cold),<br>IEC 60068-2-2 (Test Bd, Operating Dry Heat),<br>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, non-operating<br>IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold),<br>IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat),<br>IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock) | -40...+85 °C (-40...+185 °F)                   |                          |
| Relative humidity<br>IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)   | 5...95% noncondensing                          |                          |
| Vibration<br>IEC 60068-2-6 (Test Fc, Operating)   | 2 g @ 10...500 Hz                              |                          |
| Shock, operating<br>IEC 60068-2-27 (Test Ea, Unpackaged Shock)  | 30 g   |                          |
| Shock, nonoperating<br>IEC 60068-2-27 (Test Ea, Unpackaged Shock)   | 50 g <sup>(1)</sup>                            |                          |
| Emissions   | IEC 61000-6-4                                  |                          |
| ESD immunity<br>IEC 61000-4-2   | 6 kV contact discharges<br>8 kV air discharges |                          |

**Environmental Specifications - Standard AC Power Supplies**

| Attribute  | 1756-PA50   | 1756-PA72/C, 1756-PA75/B |
|--|---|--------------------------|
| Radiated RF immunity<br>IEC 61000-4-3              | 10V/m with 1 kHz sine-wave 80% AM from 80...2000 MHz<br>10V/m with 200 Hz 50% Pulse 100% AM @ 900 MHz<br>10V/m with 200 Hz 50% Pulse 100% AM @ 1890 MHz<br>3V/m with 1kHz sine-wave 80% AM from 2000...2700 MHz         |                          |
| EFT/B immunity<br>IEC 61000-4-4                    | ±4 kV at 5 kHz on power ports   |                          |
| Surge transient immunity<br>IEC 61000-4-5          | ±1 kV line-line (DM) and ±2 kV line-earth (CM) on power ports   |                          |
| Conducted RF immunity<br>IEC 61000-4-6             | 10V rms with 1 kHz sine-wave 80% AM from 150 kHz...80 MHz   |                          |
| Voltage variation<br>IEC 61000-4-11                | 30% dips for 1 period at 0° and 180° on AC supply ports<br>60% dips for 5 and 50 periods on AC supply ports<br>±10% fluctuations for 15 min on AC supply ports<br>>95% interruptions for 250 periods on AC supply ports |                          |
| Damped oscillatory wave immunity<br>IEC 61000-4-18 | ±2.5 kV line-line (DM) and ±2.5 kV line-earth (CM) on power ports   | N/A                      |

(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 are limited to a maximum nonoperating shock value of 30 g.

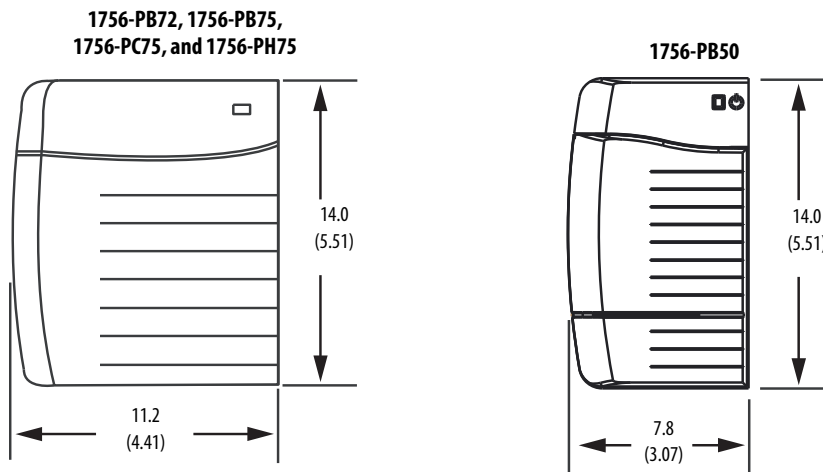
**Certifications - Standard AC Power Supplies**

| Certification <sup>(1)</sup> | 1756-PA50  | 1756-PA72/C   | 1756-PA75/B |
|------------------------------|--|---|-------------|
| UL                           | N/A  | UL Listed Industrial Control Equipment. See UL File E65584.   |             |
| c-UL-us                      | UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584.<br>UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.   | N/A   |             |
| CSA                          | N/A  | CSA Certified Process Control Equipment. See CSA File LR54689C.<br>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 2004/108/EC 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 2006/95/EC LVD, compliant with: <ul style="list-style-type: none"> <li>EN 61010-2-201; Control Equipment Safety Requirements</li> </ul> | European Union 2004/108/EC 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 2006/95/EC 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>   |   |             |
| 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<br>Russian Customs Union TR CU 004/2011 LV Technical Regulation  |   |             |

(1) See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

## Standard DC Power Supplies

### Mounting Dimensions



Dimensions are in cm (in.).

### Technical Specifications - Standard DC Power Supplies

| Attribute                  | 1756-PB50  | 1756-PB72/C   | 1756-PB75/B          | 1756-PC75/B                | 1756-PH75/B                 |
|----------------------------|--|---|----------------------|----------------------------|-----------------------------|
| Input voltage range        | 18...32V DC <sup>(1)</sup>   |   |                      | 30...60V DC <sup>(4)</sup> | 90...143V DC <sup>(5)</sup> |
| Input voltage, nom         | 24V DC   |   |                      | 48V DC                     | 125V DC                     |
| Input power, max           | 85 W @ 50 °C (122 °F)<br>70 W @ 60 °C (140 °F)   | 95 W  |                      |                            |                             |
| Output power, max          | 60 W @ 0...50 °C (32...122 °F)<br>50 W @ 0...60 °C (32...140 °F)   | 75 W @ 0...60 °C (32...140 °F) <sup>(3)</sup>   |                      |                            |                             |
| Inrush current, max        | 30 A   |   |                      |                            |                             |
| Current capacity @ 1.2V    | 1.5 A  |   |                      |                            |                             |
| Current capacity @ 3.3V    | 2 A  | 4 A   |                      |                            |                             |
| Current capacity @ 5.1V    | 8 A  | 10 A  | 13 A                 |                            |                             |
| Current capacity @ 24V     | 2.5 A  | 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<br>Series B<br>Series C   |   | Series B<br>Series C |                            |                             |
| Wire size                  | 2.5 mm <sup>2</sup> (14 AWG) solid or stranded copper wire rated at 90 °C (194 °F), or greater, 1.2 mm (3/64 in.) insulation max |   |                      |                            |                             |
| Wire category              | 1 - on power ports <sup>(2)</sup>  |   |                      |                            |                             |
| Conductor screw torque     | 0.8 N·m (7 lb·in)  |   |                      |                            |                             |

**Technical Specifications - Standard DC Power Supplies**

| Attribute                       | 1756-PB50         | 1756-PB72/C | 1756-PB75/B | 1756-PC75/B | 1756-PH75/B |
|---------------------------------|-------------------|-------------|-------------|-------------|-------------|
| North American temperature code | T4                |             |             |             |             |
| ATEX temperature code           | T4                |             |             | N/A         |             |
| IEC temperature code            | T4                |             |             | N/A         |             |
| Enclosure type rating           | None (open-style) |             |             |             |             |

- (1) UL certification for 24V DC nominal. Automation specified 18...32V DC. Rockwell
- (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](#).
- (3) The combination of all output power (5.1V backplane, 24V backplane, 3.3V backplane, and 1.2V backplane) cannot exceed 75 W.
- (4) UL Certification for 48V DC nominal. Rockwell Automation specified 30...60V DC.
- (5) UL certification for 125V DC nominal. Rockwell Automation specified 90...143V DC.

**Environmental Specifications - Standard DC Power Supplies**

| Attribute  | 1756-PB50  | 1756-PB72/C, 1756-PB75/B | 1756-PC75/B, 1756-PH75/B |
|--|--|--------------------------|--------------------------|
| Temperature, operating<br>IEC 60068-2-1 (Test Ad, Operating Cold),<br>IEC 60068-2-2 (Test Bd, Operating Dry Heat),<br>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<br>IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold),<br>IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat),<br>IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock) | -40...+85 °C (-40...+185 °F)   |                          |                          |
| Relative humidity<br>IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)  | 5...95% noncondensing  |                          |                          |
| Vibration<br>IEC 60068-2-6 (Test Fc, Operating)  | 2 g @ 10...500 Hz  |                          |                          |
| Shock, operating<br>IEC 60068-2-27 (Test Ea, Unpackaged Shock)   | 30 g   |                          |                          |
| Shock, nonoperating<br>IEC 60068-2-27 (Test Ea, Unpackaged Shock)  | 50 g <sup>(1)</sup>  |                          |                          |
| Emissions  | IEC 61000-6-4  |                          |                          |
| ESD immunity<br>IEC 61000-4-2  | 6 kV contact discharges<br>8 kV air discharges   |                          |                          |
| Radiated RF immunity<br>IEC 61000-4-3  | 10V/m with 1 kHz sine-wave 80% AM from 80...2000 MHz<br>10V/m with 200 Hz 50% Pulse 100% AM @ 900 MHz<br>10V/m with 200 Hz 50% Pulse 100% AM @ 1890 MHz<br>3V/m with 1 kHz sine-wave 80% AM from 2000...2700 MHz     |                          |                          |
| EFT/B immunity<br>IEC 61000-4-4  | ±4 kV at 5 kHz on power ports  |                          |                          |
| Surge transient immunity<br>IEC 61000-4-5  | ±1 kV line-line (DM) and ±2 kV line-earth (CM) on power ports  |                          |                          |
| Conducted RF immunity<br>IEC 61000-4-6   | 10V rms with 1 kHz sine-wave 80% AM from 150 kHz...80 MHz  |                          |                          |
| Voltage variation<br>IEC 61000-4-29  | 10 ms interruption on DC supply ports<br>60% dips for 100 ms on DC supply ports<br>100% dips for 50 ms on DC supply ports<br>±20% fluctuations for 15 min on DC supply ports<br>5 s interruptions on DC supply ports |                          |                          |

- (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 are limited to a maximum nonoperating shock value of 30 g.

**Certifications - Standard DC Power Supplies**

| <b>Certification<sup>(1)</sup></b> | <b>1756-PB50</b>   | <b>1756-PB72/C, 1756-PB75/B</b>   | <b>1756-PC75/B, 1756-PH75/B</b>                             |
|------------------------------------|--|---|---|
| UL                                 | N/A  |   | UL Listed Industrial Control Equipment. See UL File E65584. |
| c-UL-us                            | UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584.<br>UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for US and Canada. See UL File E194810.   |   | N/A   |
| CSA                                | N/A  | CSA Certified Process Control Equipment. See CSA File LR54689C.<br>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  |   | N/A   |
| CE                                 | European Union 2004/108/EC 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 2006/95/EC LVD, compliant with: <ul style="list-style-type: none"> <li>EN 61010-2-201; Control Equipment Safety Requirements</li> </ul> | European Union 2004/108/EC 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 2006/95/EC 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 94/9/EC ATEX Directive, compliant with: <ul style="list-style-type: none"> <li>EN 60079-0; General Requirements</li> <li>EN 60079-15; Potentially Explosive Atmospheres, Protection "n"</li> <li>II 3 G Ex nA IIC T4 Gc</li> <li>DEMKO13ATEX1325026X</li> </ul>   | N/A   |   |
| IECEx                              | IECEx System, compliant with: <ul style="list-style-type: none"> <li>IEC 60079-0; General Requirements</li> <li>IEC 60079-15; Potentially Explosive Atmospheres, Protection "n"</li> <li>II 3 G Ex nA IIC T4 Gc</li> <li>IECEx UL 14.0008X</li> </ul>  | N/A   |   |
| 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<br>Russian Customs Union TR CU 004/2011 LV Technical Regulation  |   |   |

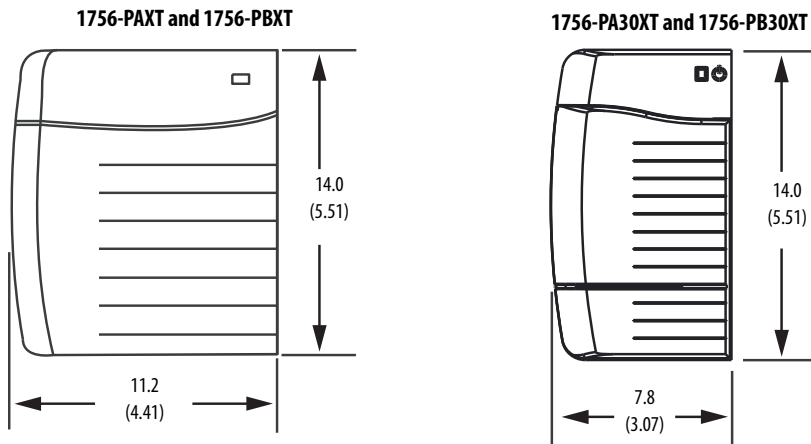
(1) When marked. See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

## 1756 ControlLogix-XT Power Supplies

The ControlLogix-XT products include control and communication system components that, when used with FLEX I/O-XT™ products, provide a complete control system solution that you can use in environments where temperatures range from -20...+70 °C (-4...+158 °F).

When used independently, the ControlLogix-XT system can withstand environments where the temperature ranges from -25...+70 °C (-13...+158 °F).

### Mounting Dimensions



Dimensions are in cm (in.).

### Technical Specifications - ControlLogix-XT Power Supplies

| Attribute                  | 1756-PAXT   | 1756-PA30XT   | 1756-PBXT   | 1756-PB30XT   |
|----------------------------|---|---|---|---|
| Input voltage range        | 85...265V AC <sup>(1)</sup>   |   | 18...32V DC   | 18...32V DC <sup>(3)</sup>  |
| Input voltage, nom         | 120/240V AC   |   | 24V DC  |   |
| Input frequency range      | 47...63 Hz  |   | N/A   |   |
| Input power, max           | 82VA 64 W   | 60VA 50 W   | 54 W  | 50 W  |
| Output power, max          | 42 W @ -25...+70 °C<br>(-13...+158 °F)  | 30 W @ -25...+70 °C<br>(-13...+158 °F)  | 42 W @ -25...+70 °C<br>(-13...+158 °F)  | 30 W @ -25...+70 °C<br>(-13...+158 °F)  |
| Inrush current, max        | 20 A  |   | 30 A  |   |
| Current capacity @ 1.2V    | 1.5 A   |   |   |   |
| Current capacity @3.3V     | 4 A   | 2 A   | 4 A   | 2 A   |
| Current capacity @ 5.1V    | 8 A   | 6 A   | 8 A   | 6 A   |
| Current capacity @ 24V     | 1.75 A  | 1.25 A  | 1.75 A  | 1.25 A  |
| Isolation voltage          | 250V (continuous),<br>Reinforced Insulation Type,<br>Power Input to Backplane<br>Type tested @ 3260V DC for<br>60 s | 250V (continuous),<br>Reinforced Insulation Type,<br>Power Input to Backplane<br>Type tested @ 3150V DC for<br>60 s | 250V (continuous),<br>Reinforced Insulation Type,<br>Power Input to Backplane<br>Type tested @ 3260V DC for<br>60 s | 250V (continuous),<br>Reinforced Insulation Type,<br>Power Input to Backplane<br>Type tested @ 3150V DC for<br>60 s |
| Weight, approx             | 0.95 kg (2.10 lb)   | 0.77 kg (1.7 lb)  | 0.95 kg (2.10 lb)   | 0.77 kg (1.7 lb)  |
| Dimensions (HxWxD), approx | 14.0 x 11.2 x 14.5 cm<br>(5.51 x 4.41 x 5.71 in.)   | 14.0 x 7.8 x 14.5 cm<br>(5.51 x 3.07 x 5.71 in.)  | 14.0 x 11.2 x 14.5 cm<br>(5.51 x 4.41 x 5.71 in.)   | 14.0 x 7.8 x 14.5 cm<br>(5.51 x 3.07 x 5.71 in.)  |
| Module location            | Left side of 1756 chassis   |   |   |   |



### Technical Specifications - ControlLogix-XT Power Supplies

| Attribute                       | 1756-PAXT   | 1756-PA30XT | 1756-PBXT | 1756-PB30XT |
|---------------------------------|---|-------------|-----------|-------------|
| Chassis                         | 1756-A4LXT, 1756-A5XT, 1756-A7LXT, 1756-A7XT  |             |           |             |
| Wire size                       | 2.5 mm <sup>2</sup> (14 AWG) solid or stranded copper wire rated at 90 °C (194 °F), or greater, 1.2 mm (3/64 in.) insulation, max |             |           |             |
| Wire category                   | 1 - on power ports <sup>(2)</sup>   |             |           |             |
| Conductor screw torque          | 0.8 N·m (7 lb·in)   |             |           |             |
| North American temperature code | T4  | T4          | T4A       | T4          |
| ATEX temperature code           | N/A   |             | T4        |             |
| IEC temperature code            | N/A   |             | T4        |             |
| Enclosure type rating           | None (open-style)   |             |           |             |

(1) UL certification for 120/240V AC, 50/60 Hz nominal. Rockwell Automation specified 85...265V AC, 47...63 Hz.

(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](#).

(3) UL certification for 24V DC nominal. Rockwell Automation specified 18...32V DC.

### Environmental Specifications - ControlLogix-XT Power Supplies

| Attribute  | 1756-PAXT  | 1756-PA30XT | 1756-PBXT | 1756-PB30XT |
|--|--|-------------|-----------|-------------|
| Temperature, operating<br>IEC 60068-2-1 (Test Ad, Operating Cold),<br>IEC 60068-2-2 (Test Bd, Operating Dry Heat),<br>IEC 60068-2-14 (Test Nb, Operating Thermal Shock)  | -25 °C < T <sub>a</sub> < +70 °C (-13 °F < T <sub>a</sub> < +158 °F)   |             |           |             |
| Temperature, surrounding air, max  | 70 °C (158 °F)   |             |           |             |
| Temperature, nonoperating<br>IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold),<br>IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat),<br>IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock) | -40...+85 °C (-40...+185 °F)   |             |           |             |
| Relative humidity<br>IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)  | 5...95% noncondensing  |             |           |             |
| Vibration<br>IEC 60068-2-6 (Test Fc, Operating)  | 2 g @ 10...500 Hz  |             |           |             |
| Shock, operating<br>IEC 60068-2-27 (Test Ea, Unpackaged Shock)   | 30 g   |             |           |             |
| Shock, nonoperating<br>IEC 60068-2-27 (Test Ea, Unpackaged Shock)  | 50 g <sup>(1)</sup>  |             |           |             |
| Emissions  | IEC 61000-6-4  |             |           |             |
| ESD immunity<br>IEC 61000-4-2  | 6 kV contact discharges<br>8 kV air discharges   |             |           |             |
| Radiated RF immunity<br>IEC 61000-4-3  | 10V/m with 1 kHz sine-wave 80% AM from 80...2000 MHz<br>10V/m with 200 Hz 50% Pulse 100% AM at 900 MHz<br>10V/m with 200 Hz 50% Pulse 100% AM at 1890 MHz<br>3V/m with 1 kHz sine-wave 80% AM from 2000...2700 MHz |             |           |             |
| EFT/B immunity<br>IEC 61000-4-4  | ±4 kV at 5 kHz on power ports  |             |           |             |
| Surge transient immunity<br>IEC 61000-4-5  | ±1 kV line-line (DM) and ±2 kV line-earth (CM) on power ports  |             |           |             |
| Conducted RF immunity<br>IEC 61000-4-6   | 10V rms with 1 kHz sine-wave 80% AM from 150 kHz...80 MHz  |             |           |             |

**Environmental Specifications - ControlLogix-XT Power Supplies**

| Attribute  | 1756-PAXT   | 1756-PA30XT   | 1756-PBXT   | 1756-PB30XT   |
|--|---|---|---|---|
| Voltage variation<br>IEC 61000-4-11                | 30% dips for 1 period at 0° and 180° on AC supply ports<br>60% dips for 5 and 50 periods on AC supply ports<br>±10% fluctuations for 15 min on AC supply ports<br>>95% interruptions for 250 periods on AC supply ports |   | N/A   |   |
| Voltage variation<br>IEC 61000-4-29                | N/A   |   | 10ms interruption on DC supply ports<br>60% dips for 100 ms on DC supply ports<br>100% dips for 50 ms on DC supply ports<br>±20% fluctuations for 15 min on DC supply ports<br>5 s interruptions on DC supply ports |   |
| Damped oscillatory wave immunity<br>IEC 61000-4-18 | N/A   | ±2.5 kV line-line (DM) and ±2.5 kV line-earth (CM) on power ports | N/A   | ±2.5 kV line-line (DM) and ±2.5 kV line-earth (CM) on power ports |

(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 are limited to a maximum nonoperating shock value of 30 g.

**Certifications - ControlLogix-XT Power Supplies**

| Certification <sup>(1)</sup> | 1756-PAXT  | 1756-PA30XT   | 1756-PBXT  | 1756-PB30XT   |
|------------------------------|--|---|--|---|
| c-UL-us                      | UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584.<br>UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for US and Canada. See UL File E194810.   |   |  |   |
| CE                           | European Union 2004/108/EC EMC Directive, compliant with:<br>• EN 61326-1; Meas./Control/Lab., Industrial Requirements<br>• EN 61000-6-2; Industrial Immunity<br>• EN 61000-6-4; Industrial Emissions<br>• EN 61131-2; Programmable Controllers (Clause 8, Zone A & B)<br>European Union 2006/95/EC LVD, compliant with:<br>• EN 61131-2; Programmable Controllers (Clause 11) | European Union 2004/108/EC EMC Directive, compliant with:<br>• EN 61326-1; Meas./Control/Lab., Industrial Requirements<br>• EN 61000-6-2; Industrial Immunity<br>• EN 61000-6-4; Industrial Emissions<br>• EN 61131-2; Programmable Controllers (Clause 8, Zone A & B)<br>European Union 2006/95/EC LVD, compliant with:<br>• EN 61010-2-201; Control Equipment Safety Requirements | European Union 2004/108/EC EMC Directive, compliant with:<br>• EN 61326-1; Meas./Control/Lab., Industrial Requirements<br>• EN 61000-6-2; Industrial Immunity<br>• EN 61000-6-4; Industrial Emissions<br>• EN 61131-2; Programmable Controllers (Clause 8, Zone A & B)<br>European Union 2006/95/EC LVD, compliant with:<br>• EN 61131-2; Programmable Controllers (Clause 11) | European Union 2004/108/EC EMC Directive, compliant with:<br>• EN 61326-1; Meas./Control/Lab., Industrial Requirements<br>• EN 61000-6-2; Industrial Immunity<br>• EN 61000-6-4; Industrial Emissions<br>• EN 61131-2; Programmable Controllers (Clause 8, Zone A & B)<br>European Union 2006/95/EC LVD, compliant with:<br>• EN 61010-2-201; Control Equipment Safety Requirements |
| RCM                          | Australian Radiocommunications Act, compliant with:<br>EN 61000-6-4; Industrial Emissions  |   |  |   |
| Ex                           | N/A  |   | European Union 94/9/EC ATEX Directive, compliant with:<br>• EN 60079-0; General Requirements<br>• EN 60079-15; Potentially Explosive Atmospheres, Protection "n"<br>• II 3 G Ex nA IIC T4 Gc X<br>• DEMK013ATEX1325026X  |   |
| IECEx                        | N/A  |   | IECEx System, compliant with:<br>• IEC 60079-0; General Requirements<br>• IEC 60079-15; Potentially Explosive Atmospheres, Protection "n"<br>• II 3 G Ex nA IIC T4 Gc<br>• IECEx UL 14.0008X   |   |
| KC                           | Korean Registration of Broadcasting and Communications Equipment, compliant with:<br>• Article 58-2 of Radio Waves Act, Clause 3   |   |  |   |
| EAC                          | Russian Customs Union TR CU 020/2011 EMC Technical Regulation<br>Russian Customs Union TR CU 004/2011 LV Technical Regulation  |   |  |   |

(1) When marked. See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

## Redundant Power Supplies

To build a redundant power supply system, you need the following.

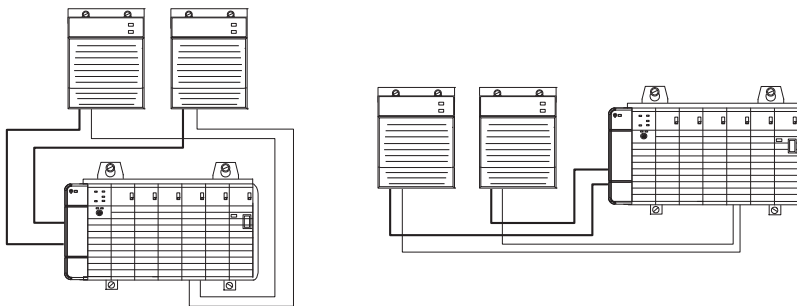
| Cat. No.  | Description  | Amount |
|---|--|--------|
| 1756-PA75R/A, 1756-PAXTR,<br>1756-PB75R/A, or 1756-PBXTR                              | Redundant power supply   | 2      |
| 1756-CPR2 <sup>(1)</sup><br>1756-CPR2D <sup>(2)</sup> or<br>1756-CPR2U <sup>(2)</sup> | Redundant power supply cable (Length = 0.91 m [3 ft])            | 2      |
| 1756-PSCA2 or 1756-PSCA2XT  | Redundant power supply chassis adapter <sup>(3)</sup>            | 1      |
| User-supplied   | Annunciator wiring <sup>(4)</sup> (Length, max = 10 m [32.8 ft]) | 2      |

- (1) Cable bend radius is 12.7 cm (5.0 in.).
- (2) Requires 10.16 cm (4.0 in.) of clearance next to the chassis adapter.
- (3) The 1756-PSCA2 or 1756-PSCA-2XT chassis adapter is a passive device. The adapter funnels power from the redundant power supplies to the single power connector on the ControlLogix series B chassis backplane.
- (4) Optional user-provided annunciator wiring can be connected to the solid-state relay for status and troubleshooting.

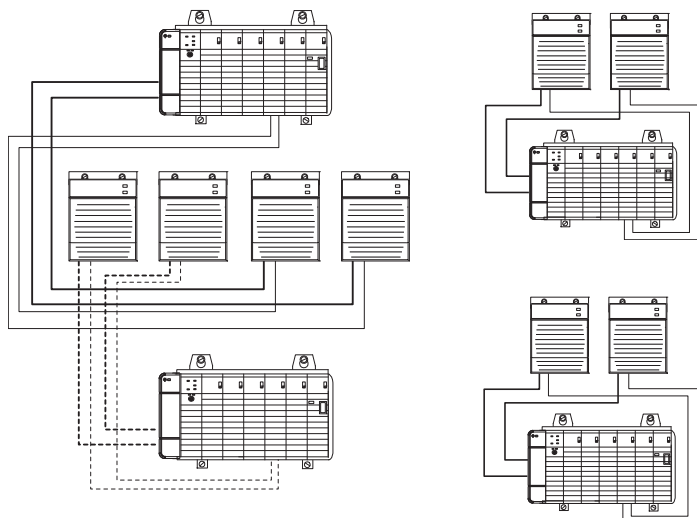
## System Configuration Recommendations

We recommend that you use one of these methods to configure your redundant power supply system.

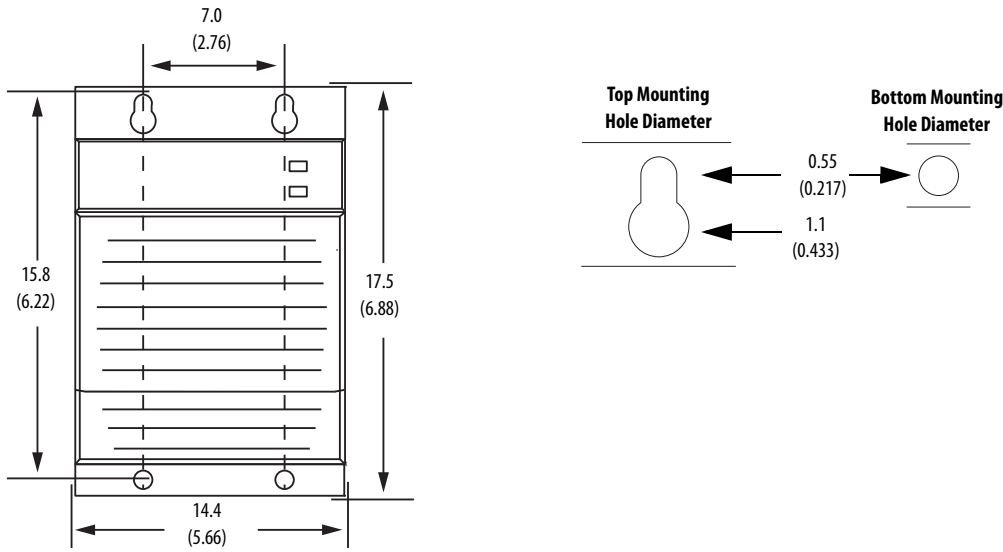
Recommended Configurations for a System That Uses One Chassis



Recommended Configurations for a System That Uses Two Chassis



### Mounting Dimensions



Dimensions are in cm (in.).

### Redundant Power Supply Features

The redundant power supplies offer the same features as the standard power supplies, and the following:

- Redundant operation
- Automatic chassis load sharing between the redundant power supplies
- Status indicators for visual operating status of the pair
- Solid-state relay for system recognition of supply status when wired to an input module
- The ControlLogix redundant power supply system is designed to account for operational anomalies in only the power supply (the chassis adapter and power supply cables are excluded)

### Technical Specifications - ControlLogix Redundant Power Supplies

| Attribute                  | 1756-PA75R   | 1756-PB75R                 |
|----------------------------|--|----------------------------|
| Input voltage range        | 85...265V AC <sup>(1)</sup>  | 18...32V DC <sup>(2)</sup> |
| Input voltage              | 120V/240V AC, 50/60 Hz   | 24V DC                     |
| Input frequency range      | 47...63 Hz   | N/A                        |
| Input power, max           | 120VA 115 W  | 110 W                      |
| Output power, max          | 75 W @ 0...60 °C (32...140 °F)   |                            |
| Inrush current, max        | 20 A   | 30 A                       |
| Current capacity @ 1.2V    | 1.5 A  |                            |
| Current capacity @ 3.3V    | 4 A  |                            |
| Current capacity @ 5.1V    | 13 A   |                            |
| Current capacity @ 24V     | 2.8 A  |                            |
| Annunciator power          | 240V AC 50/60 Hz, 240V DC, 50 mA, resistive only   | 90V DC for ATEX/IECEx      |
| Isolation voltage          | 250V (continuous), Reinforced Insulation Type, Power Input to Backplane, Power Input to Annunciator, Annunciator to Backplane Type tested at 3250V DC for 60 s |                            |
| Dimensions (HxWxD), approx | 17.5 x 14.5 x 13.7 cm (6.9 x 5.7 x 5.4 in.)  |                            |

**Technical Specifications - ControlLogix Redundant Power Supplies**

| Attribute                       | 1756-PA75R   | 1756-PB75R |
|---------------------------------|--|------------|
| Weight, approx                  | 1.45 kg (3.2 lb)   |            |
| Chassis                         | 1756-A4, 1756-A7, 1756-A10, 1756-A13, 1756-A17   |            |
| Wire size                       | Power:<br>2.5 mm <sup>2</sup> (14 AWG) solid or stranded copper wire rated at 90 °C (194 °F), or greater, 1.2 mm (3/64 in.) insulation max<br><br>Annunciator:<br>0.25...2.5 mm <sup>2</sup> (22...14 AWG) solid or stranded copper wire rated at 90 °C (194 °F), or greater, 1.2 mm (3/64 in.) insulation max |            |
| Wire category <sup>(3)</sup>    | 3 - on annunciator ports<br>1 - on power ports<br>3 - on 1756-CPR2 connections   |            |
| Pilot duty rating               | Annunciator - not rated  |            |
| Conductor screw torque          | 0.79 N·m (7 lb·in)   |            |
| North American temperature code | T3C  | T4         |
| ATEX temperature code           | N/A  | T4         |
| IEC temperature code            | N/A  | T4         |
| Enclosure type rating           | None (open-style)  |            |

(1) UL certification for 120/240V AC, 50/60 Hz nominal. Rockwell Automation specified 85...265V AC, 47...63 Hz.

(2) UL certification for 24V DC nominal. Rockwell Automation specified 18...32V DC.

(3) Use this conductor category information to plan conductor routing. See the Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#).

**Environmental Specifications - Redundant Power Supplies**

| Attribute  | 1756-PA75R  | 1756-PB75R |
|--|---|------------|
| Temperature, operating<br>IEC 60068-2-1 (Test Ad, Operating Cold),<br>IEC 60068-2-2 (Test Bd, Operating Dry Heat),<br>IEC 60068-2-14 (Test Nb, Operating Thermal Shock)  | 0...60 °C (32...140 °F)   |            |
| Temperature, surrounding air, max  | 60 °C 140 °F)   |            |
| Temperature, nonoperating<br>IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold),<br>IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat),<br>IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock) | -40...+85 °C (-40...+185 °F)  |            |
| Relative humidity<br>IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)  | 5...95% noncondensing   |            |
| Vibration<br>IEC 60068-2-6 (Test Fc, Operating)  | 2 g @ 10...500 Hz   |            |
| Shock, operating<br>IEC 60068-2-27 (Test Ea, Unpackaged Shock)   | 30 g  |            |
| Shock, nonoperating<br>IEC 60068-2-27 (Test Ea, Unpackaged Shock)  | 50 g  |            |
| Emissions  | IEC 61000-6-4   |            |
| ESD immunity<br>IEC 61000-4-2  | 6 kV contact discharges<br>8 kV air discharges  |            |
| Radiated RF immunity<br>IEC 61000-4-3  | 10V/m with 1 kHz sine-wave 80% AM from 80...2000 MHz<br>10V/m with 200 Hz 50% Pulse 100% AM @ 900 MHz<br>10V/m with 200 Hz 50% Pulse 100% AM at 1890 MHz<br>3V/m with 1 kHz sine-wave 80% AM from 2000...2700 MHz |            |
| EFT/B immunity<br>IEC 61000-4-4  | ±4 kV at 5 kHz on power ports<br>±4 kV at 5 kHz on annunciator ports  |            |
| Surge transient immunity<br>IEC 61000-4-5  | ±1 kV line-line (DM) and ±2 kV line-earth (CM) on power ports   |            |
| Conducted RF immunity<br>IEC 61000-4-6   | 15V rms with 1 kHz sine-wave 80% AM from 150 kHz...80 MHz   |            |

**Environmental Specifications - Redundant Power Supplies**

| Attribute                           | 1756-PA75R  | 1756-PB75R   |
|-------------------------------------|---|--|
| Conducted audio immunity<br>IEC 945 | 2 W max from rated frequency to the 200th harmonic on AC supply ports   |  |
| Voltage variation<br>IEC 61000-4-11 | 30% dips for 1 period at 0° and 180° on AC supply ports<br>60% dips for 5 and 50 periods on AC supply ports<br>±10% fluctuations for 15 min on AC supply ports<br>>95% interruptions for 250 periods on AC supply ports | N/A  |
| Voltage variation<br>IEC 61000-4-29 | N/A   | 10 ms interruption on DC supply ports<br>60% dips for 100 ms on DC supply ports<br>100% dips for 50 ms on DC supply ports<br>±20% fluctuations for 15 min on DC supply ports<br>5 s interruptions on DC supply ports |

**Certifications - Redundant Power Supplies**

| Certification <sup>(1)</sup> | 1756-PA75R  | 1756-PB75R   |
|------------------------------|---|--|
| c-UL-us                      | UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584.<br>UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.  |  |
| CSA                          | CSA Certified Process Control Equipment. See CSA File LR54689C.<br>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 2004/108/EC 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 2006/95/EC 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                           | N/A   | European Union 94/9/EC ATEX Directive, compliant with: <ul style="list-style-type: none"> <li>• EN 60079-0; General Requirements</li> <li>• EN 60079-15; Potentially Explosive Atmospheres, Protection "n"</li> <li>• II 3 G Ex nA IIC T4 Gc</li> <li>• DEMKO13ATEX1325026X</li> </ul> |
| IECEx                        | N/A   | IECEx System, compliant with: <ul style="list-style-type: none"> <li>• IEC 60079-0; General Requirements</li> <li>• IEC 60079-15; Potentially Explosive Atmospheres, Protection "n"</li> <li>• II 3 G Ex nA IIC T4 Gc</li> <li>• IECEx UL 14.0008X</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<br>Russian Customs Union TR CU 004/2011 LV Technical Regulation   |  |

(1) When marked. See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

**Technical Specifications - ControlLogix-XT Redundant Power Supplies**

| Attribute               | 1756-PAXTR                     | 1756-PBXTR  |
|-------------------------|--------------------------------|-------------|
| Input voltage range     | 85...265V AC <sup>(1)</sup>    | 18...32V DC |
| Input voltage           | 120V/240V AC                   | 24V DC      |
| Input frequency range   | 47...63 Hz                     | N/A         |
| Input power, max        | 75VA 65 W                      | 75 W        |
| Output power, max       | 42 W @ 0...60 °C (32...140 °F) |             |
| Inrush current, max     | 20 A                           | 30 A        |
| Current capacity @ 1.2V | 1.5 A                          |             |

**Technical Specifications - ControlLogix-XT Redundant Power Supplies**

| Attribute                       | 1756-PAXTR   | 1756-PBXTR            |
|---------------------------------|--|-----------------------|
| Current capacity @ 3.3V         | 4 A  |                       |
| Current capacity @ 5.1V         | 8 A  |                       |
| Current capacity @ 24V          | 1.75 A   |                       |
| Annunciator power               | 240V AC 50/60 Hz, 240V DC, 50 mA, resistive only   | 90V DC for ATEX/IECEX |
| Isolation voltage               | 250V (continuous), Reinforced Insulation Type, Power Input to Backplane, Power Input to Annunciator, Annunciator to Backplane Type tested at 3250V DC for 60 s   |                       |
| Dimensions (HxWxD), approx      | 17.5 x 14.5 x 13.7 cm (6.9 x 5.7 x 5.4 in.)  |                       |
| Weight, approx                  | 1.45 kg (3.2 lb)   |                       |
| Chassis                         | 1756-A4, 1756-A7, 1756-A10, 1756-A13, 1756-A17   |                       |
| Wire size                       | Power:<br>2.5 mm <sup>2</sup> (14 AWG) solid or stranded copper wire rated at 90 °C (194 °F), or greater, 1.2 mm (3/64 in.) insulation max<br><br>Annunciator:<br>0.25...2.5 mm <sup>2</sup> (22...14 AWG) solid or stranded copper wire rated at 90 °C (194 °F), or greater, 1.2 mm (3/64 in.) insulation max |                       |
| Wire category <sup>(2)</sup>    | 1 - on power ports<br>3 - on annunciator ports<br>3 - on 1756-CPR2 connections   |                       |
| Pilot duty rating               | Annunciator - not rated  |                       |
| Conductor screw torque          | 0.79 N·m (7 lb·in)   |                       |
| North American temperature code | T4A  |                       |
| ATEX temperature code           | N/A  | T4                    |
| IEC temperature code            | N/A  | T4                    |
| Enclosure type rating           | None (open-style)  |                       |

(1) UL certification for 120/240V AC, 50/60 Hz nominal. Rockwell Automation specified 85...265V AC, 47...63 Hz.

(2) Use this conductor category information to plan conductor routing. See Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#).

**Environmental Specifications - XT Redundant Power Supplies**

| Attribute  | 1756-PAXTR                                     | 1756-PBXTR |
|--|--|------------|
| Temperature, operating<br>IEC 60068-2-1 (Test Ad, Operating Cold),<br>IEC 60068-2-2 (Test Bd, Operating Dry Heat),<br>IEC 60068-2-14 (Test Nb, Operating Thermal Shock)  | -25...+70 °C (13...+158 °F)                    |            |
| Temperature, surrounding air, max  | 70 °C (158 °F)                                 |            |
| Temperature, nonoperating<br>IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold),<br>IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat),<br>IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock) | -40...+85 °C (-40...+185 °F)                   |            |
| Relative humidity<br>IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)  | 5...95% noncondensing                          |            |
| Vibration<br>IEC 60068-2-6 (Test Fc, Operating)  | 2 g @ 10...500 Hz                              |            |
| Shock, operating<br>IEC 60068-2-27 (Test Ea, Unpackaged Shock)   | 30 g   |            |
| Shock, nonoperating<br>IEC 60068-2-27 (Test Ea, Unpackaged Shock)  | 50 g   |            |
| Emissions  | IEC 61000-6-4                                  |            |
| ESD immunity<br>IEC 61000-4-2  | 6 kV contact discharges<br>8 kV air discharges |            |

**Environmental Specifications - XT Redundant Power Supplies**

| Attribute                                 | 1756-PAXTR  | 1756-PBXTR   |
|---|---|--|
| Radiated RF immunity<br>IEC 61000-4-3     | 10V/m with 1 kHz sine-wave 80% AM from 80...2000 MHz<br>10V/m with 200 Hz 50% Pulse 100% AM @ 900 MHz<br>10V/m with 200 Hz 50% Pulse 100% AM at 1890 MHz<br>3V/m with 1 kHz sine-wave 80% AM from 2000...2700 MHz       |  |
| EFT/B immunity<br>IEC 61000-4-4           | ±4 kV at 5 kHz on power ports<br>±4 kV at 5 kHz on annunciator ports  |  |
| Surge transient immunity<br>IEC 61000-4-5 | ±1 kV line-line (DM) and ±2 kV line-earth (CM) on power ports   |  |
| Conducted RF immunity<br>IEC 61000-4-6    | 15V rms with 1 kHz sine-wave 80% AM from<br>150 kHz...80 MHz  | 10V rms with 1 kHz sine-wave 80% AM from<br>150 kHz...80 MHz   |
| Conducted audio immunity<br>IEC 945       | 2 W max from rated frequency to the 200th harmonic on AC supply ports   |  |
| Voltage variation<br>IEC 61000-4-11       | 30% dips for 1 period at 0° and 180° on AC supply ports<br>60% dips for 5 and 50 periods on AC supply ports<br>±10% fluctuations for 15 min on AC supply ports<br>>95% interruptions for 250 periods on AC supply ports | N/A  |
| Voltage variation<br>IEC 61000-4-29       | N/A   | 10 ms interruption on DC supply ports<br>60% dips for 100 ms on DC supply ports<br>100% dips for 50 ms on DC supply ports<br>±20% fluctuations for 15 min on DC supply ports<br>5 s interruptions on DC supply ports |

**Certifications - XT Redundant Power Supplies**

| Certification <sup>(1)</sup> | 1756-PAXTR  | 1756-PBXTR   |
|------------------------------|---|--|
| c-UL-us                      | UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584.<br>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 2004/108/EC 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 2006/95/EC 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                           | N/A   | European Union 94/9/EC ATEX Directive, compliant with: <ul style="list-style-type: none"> <li>EN 60079-0; General Requirements</li> <li>EN 60079-15; Potentially Explosive Atmospheres, Protection "n"</li> <li>II 3 G Ex nA IIC T4 Gc</li> <li>DEMKO13ATEX1325026X</li> </ul> |
| IECEx                        | N/A   | IECEx System, compliant with: <ul style="list-style-type: none"> <li>IEC 60079-0; General Requirements</li> <li>IEC 60079-15; Potentially Explosive Atmospheres, Protection "n"</li> <li>II 3 G Ex nA IIC T4 Gc</li> <li>IECEx UL 14.0008X</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<br>Russian Customs Union TR CU 004/2011 LV Technical Regulation   |  |

(1) When marked. See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.



## Redundant Power Supply Chassis Adapter

### Technical Specifications - Redundant Power Supplies Chassis Adapter

| Attribute                       | 1756-PSCA2                   | 1756-PSCA2XT |
|---------------------------------|------------------------------|--------------|
| Current capacity @ 1.2V DC      | 1.5 A                        |              |
| Current capacity @ 3.3V DC      | 4 A                          |              |
| Current capacity @ 5.1V DC      | 15 A                         |              |
| Current capacity @ 24V DC       | 2.8 A                        |              |
| Wire category <sup>(1)</sup>    | 3 - on 1756-CPR2 connections |              |
| North American temperature code | T5                           | T4A          |
| ATEX temperature code           | T4                           |              |
| IEC temperature code            | T4                           |              |
| Enclosure type rating           | None (open-style)            |              |

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

### Environmental Specifications - Redundant Power Supplies Chassis Adapter

| Attribute  | 1756-PSCA2   | 1756-PSCA2XT                 |
|--|--|------------------------------|
| Temperature, operating<br>IEC 60068-2-1 (Test Ad, Operating Cold),<br>IEC 60068-2-2 (Test Bd, Operating Dry Heat),<br>IEC 60068-2-14 (Test Nb, Operating Thermal Shock)  | 0...60 °C (32...140 °F)  | -25...+70 °C (-13...+158 °F) |
| Temperature, surrounding air, max  | 60 °C (140 °F)   | 70 °C (158 °F)               |
| Temperature, nonoperating<br>IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold),<br>IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat),<br>IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock) | -40...+85 °C (-40...+185 °F)   |                              |
| Relative humidity<br>IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)  | 5...95% noncondensing  |                              |
| Vibration<br>IEC 60068-2-6 (Test Fc, Operating)  | 2 g @ 10...500 Hz  |                              |
| Shock, operating<br>IEC 60068-2-27 (Test Ea, Unpackaged Shock)   | 30 g   |                              |
| Shock, nonoperating<br>IEC 60068-2-27 (Test Ea, Unpackaged Shock)  | 50 g   |                              |
| Emissions  | IEC 61000-6-4  |                              |
| ESD immunity<br>IEC 61000-4-2  | 6 kV contact discharges<br>8 kV air discharges   |                              |
| Radiated RF immunity<br>IEC 61000-4-3  | 10V/m with 1 kHz sine-wave 80% AM from 80...2000 MHz<br>10V/m with 200 Hz 50% Pulse 100% AM at 900 MHz<br>10V/m with 200 Hz 50% Pulse 100% AM at 1890 MHz<br>3V/m with 1 kHz sine-wave 80% AM from 2000...2700 MHz |                              |

**Certifications - Redundant Power Supplies Chassis Adapter**

| Certification <sup>(1)</sup> | 1756-PSCA2  | 1756-PSCA2XT   |
|------------------------------|---|--|
| c-UL-us                      | UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584.<br>UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.  |  |
| CSA                          | CSA Certified Process Control Equipment. See CSA File LR54689C.<br>CSA Certified Process Control Equipment for Class I, Division 2 Group A,B,C,D Hazardous Locations. See CSA File LR69960C.  | N/A  |
| FM                           | FM Approved Equipment for use in Class I Division 2 Group A,B,C,D Hazardous Locations   | N/A  |
| CE                           | European Union 2004/108/EC 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> |  |
| RCM                          | Australian Radiocommunications Act, compliant with: <ul style="list-style-type: none"> <li>• EN 61000-6-4; Industrial Emissions</li> </ul>  |  |
| Ex                           | European Union 94/9/EC ATEX Directive, compliant with: <ul style="list-style-type: none"> <li>• EN 60079-0; General Requirements</li> <li>• EN 60079-15; Potentially Explosive Atmospheres, Protection "n"</li> <li>• II 3 G Ex nA IIC T4 Gc</li> <li>• DEMKO13ATEX1325026X</li> </ul>  | European Union 94/9/EC ATEX Directive, compliant with: <ul style="list-style-type: none"> <li>• EN 60079-0; General Requirements</li> <li>• EN 60079-15; Potentially Explosive Atmospheres, Protection "n"</li> <li>• II 3 G Ex nA IIC T4 Gc</li> <li>• DEMKO13ATEX1325026X</li> </ul> |
| IECEx                        | IECEx System, compliant with: <ul style="list-style-type: none"> <li>• IEC 60079-0; General Requirements</li> <li>• IEC 60079-15; Potentially Explosive Atmospheres, Protection "n"</li> <li>• II 3 G Ex nA IIC T4 Gc</li> <li>• IECEx UL 14.0008X</li> </ul>   | IECEx System, compliant with: <ul style="list-style-type: none"> <li>• IEC 60079-0; General Requirements</li> <li>• IEC 60079-15; Potentially Explosive Atmospheres, Protection "n"</li> <li>• II 3 G Ex nA IIC T4 Gc</li> <li>• IECEx UL 14.0008X</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<br>Russian Customs Union TR CU 004/2011 LV Technical Regulation   |  |

(1) When marked. See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

**Power Load and Transformer Sizing**

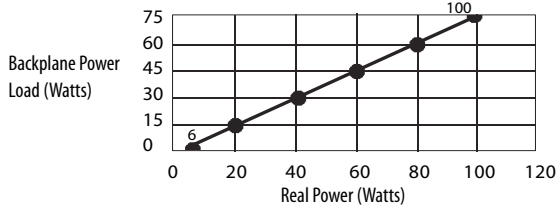
The following graphs show the input power requirements for the power supplies, given the power that they are providing to the modules in the chassis.

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

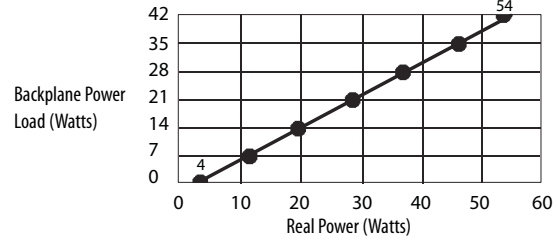
1. Calculate the Backplane Power Load by adding the power draw (in watts) for all planned modules.  
For module power draws, refer to the module specification tables in the ControlLogix Selection Guide, publication [1756-SG001](#).
2. Locate the Backplane Power Load on the vertical (y) axis of the graph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

**Standard Power Supply Power Requirements**

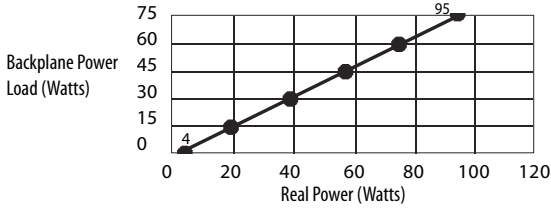
**1756-PA72/C, 1756-PA75/B (AC)**



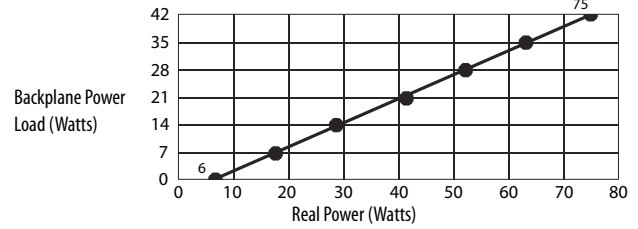
**1756-PBXT (DC)**



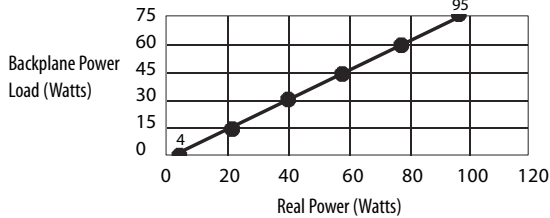
**1756-PB72/C, 1756-PB75/B (DC)**



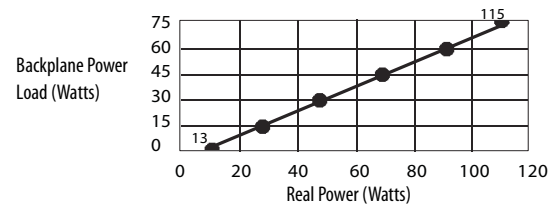
**1756-PBXTR (DC)**



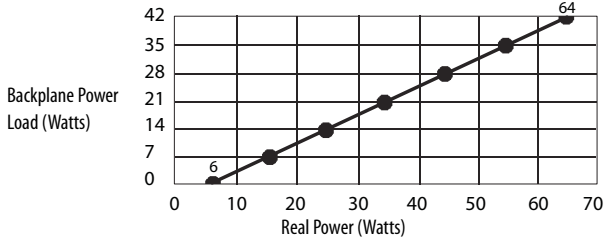
**1756-PH75/B, 1756-PC75/B (DC)**



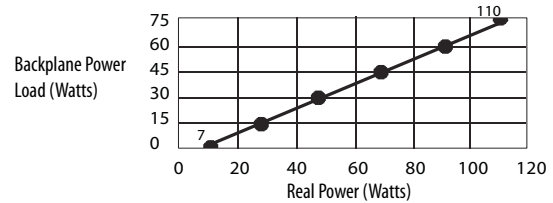
**1756-PA75R/A (AC)**



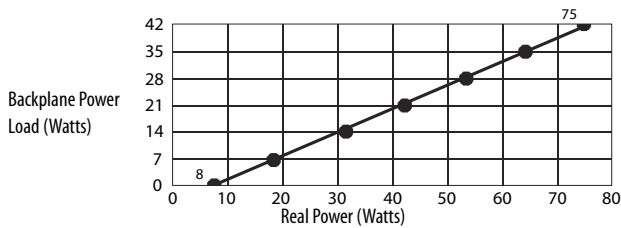
**1756-PAXT (AC)**



**1756-PB75R/A (DC)**



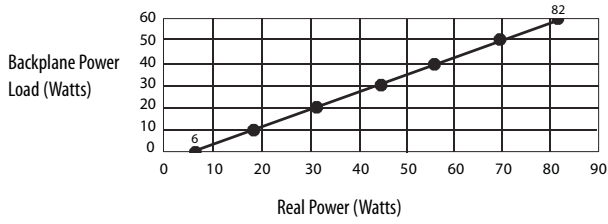
**1756-PAXTR (AC)**



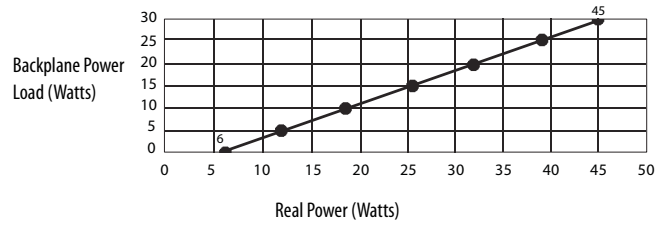
Apparent Power (Watts) = Transformer Load (VA) = Real Power (Watts)

**Slim Power Supply Power Requirements**

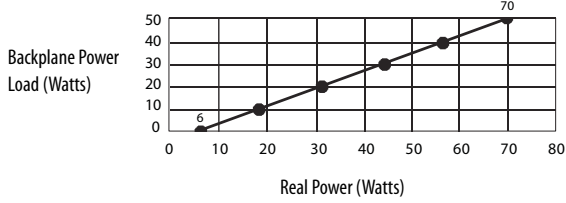
**1756-PA50 @ 50 °C (AC)**



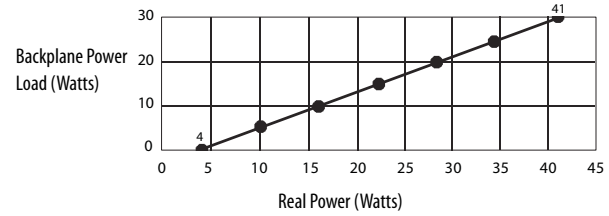
**1756-PA30XT (AC)**



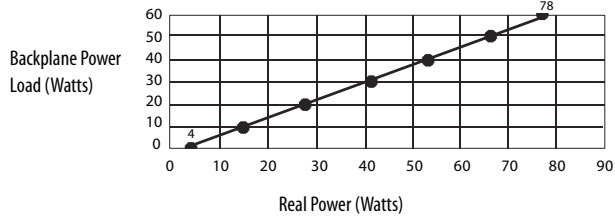
**1756-PA50 @ 60 °C (AC)**



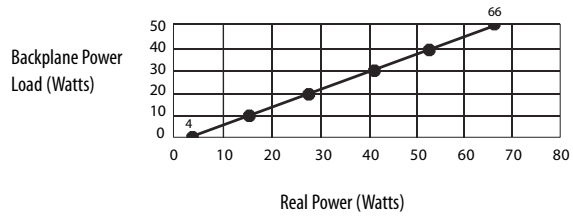
**1756-PB30XT (DC)**



**1756-PB50 @ 50 °C (DC)**



**1756-PB50 @ 60 °C (DC)**



Apparent Power (Watts) = Transformer Load (VA) = Real Power (Watts)

## Additional Resources

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

| Resource   | Description   |
|--|---|
| ControlLogix Chassis Specifications Technical Data, publication <a href="#">1756-TD006</a>   | Provides technical specifications for ControlLogix chassis.                               |
| ControlLogix Selection Guide, publication <a href="#">1756-SG001</a>   | Provides overview of the ControlLogix system and its products.                            |
| ControlLogix Power Supply Installation Instructions, publication <a href="#">1756-IN619</a>  | Provides information on how to install ControlLogix standard power supplies.              |
| ControlLogix Redundant Power Supply Installation Instructions, publication <a href="#">1756-IN620</a>  | Provides information on how to install ControlLogix redundant power supplies.             |
| ControlLogix Chassis Installation Instructions, publication <a href="#">1756-IN621</a>   | Provides information on how to install ControlLogix chassis.                              |
| ControlLogix System User Manual, publication <a href="#">1756-UM001</a>  | Provides information on how to install, configure, program, and use ControlLogix systems. |
| Industrial Automation Wiring and Grounding Guidelines, publication <a href="#">1770.4.1</a>  | Provides general guidelines for installing a Rockwell Automation® industrial system.      |
| Product Certifications website,<br><a href="http://www.rockwellautomation.com/global/certification/overview.page">http://www.rockwellautomation.com/global/certification/overview.page</a> | Provides declarations of conformity, certificates, and other certification details.       |

You can view or download publications at <http://www.rockwellautomation.com/literature/>. To order paper copies of technical documentation, contact your local Allen-Bradley distributor or Rockwell Automation sales representative.

**Notes:**

**Notes:**

## Rockwell Automation Support

Use the following resources to access support information.

|   |   |  |
|---|---|--|
| <b>Technical Support Center</b>                         | Knowledgebase Articles, How-to Videos, FAQs, Chat, User Forums, and Product Notification Updates.                     | <a href="http://www.rockwellautomation.com/knowledgebase">www.rockwellautomation.com/knowledgebase</a>   |
| <b>Local Technical Support Phone Numbers</b>            | Locate the phone number for your country.   | <a href="http://www.rockwellautomation.com/global/support/get-support-now.page">www.rockwellautomation.com/global/support/get-support-now.page</a> |
| <b>Direct Dial Codes</b>                                | Find the Direct Dial Code for your product. Use the code to route your call directly to a technical support engineer. | <a href="http://www.rockwellautomation.com/global/support/direct-dial.page">www.rockwellautomation.com/global/support/direct-dial.page</a>         |
| <b>Literature Library</b>                               | Installation Instructions, Manuals, Brochures, and Technical Data.  | <a href="http://www.rockwellautomation.com/literature">www.rockwellautomation.com/literature</a>   |
| <b>Product Compatibility and Download Center (PCDC)</b> | Get help determining how products interact, check features and capabilities, and find associated firmware.            | <a href="http://www.rockwellautomation.com/global/support/pcdc.page">www.rockwellautomation.com/global/support/pcdc.page</a>                       |

## Documentation Feedback

Your comments will help us serve your documentation needs better. If you have any suggestions on how to improve this document, complete the How Are We Doing? form at [http://literature.rockwellautomation.com/idc/groups/literature/documents/du/ra-du002\\_-en-e.pdf](http://literature.rockwellautomation.com/idc/groups/literature/documents/du/ra-du002_-en-e.pdf).

Rockwell Automation maintains current product environmental information on its website at <http://www.rockwellautomation.com/rockwellautomation/about-us/sustainability-ethics/product-environmental-compliance.page>.

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