

Product Details and Certifications

Cross Reference RA Part Number: 1606-XL120D A



Product: **1606-XL120D**

Description: Standard Power Supply, 24V DC, 120 W, 120/240V AC / 210-375V DC Input Voltage



Representative Photo Only (actual product may vary based on configuration sections)

POWER SUPPLY DATA

| | |
|----------------------|-----------------------------------|
| Bulletin Number | 1606 Switched Mode Power Supplies |
| Input Voltage | 120/240V AC / 210-375V DC |
| Output Voltage | 24V DC |
| Rated Output Watts | 120 W |
| Operational Range | 85...132/176..264V AC |
| Range Output Current | 5 A |
| Power Boost | 6 A |
| No. of Phases | Single Phase |

CERTIFICATIONS AND APPROVALS

UL
CE
IEC/EN
EMC

For UL Certifications Directory:

<http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm>

| Bulletin | 1606-XLP | 1606-XL | 1606-XLS | 1609 | 1497 |
|------------------------------------|--|--|---|---|---|
| Type | Switched Mode Power Supply Single Phase | Switched Mode Power Supply Single/Three Phase | Switched Mode Power Supply Single/Three Phase | Uninterruptible Power Supply | Control Circuit Transformer |
| Features | <ul style="list-style-type: none"> Low inrush current Wide range input; auto select input Superior overload design (continuous current, no hiccup) NEC Class 2 "Limited Power" Superior efficiency and temperature rating | <ul style="list-style-type: none"> Low inrush current PFC Choke Wide range input; auto select input Superior overload design (continuous current, no hiccup) NEC Class 2 "Limited Power" Selectable operating mode (single/parallel) Superior efficiency and temperature rating Output signals | <ul style="list-style-type: none"> Ultra-small size Extra-low inrush current Active Power Factor Correction Wide range AC/DC input; auto select input Superior reserve power (can support 150% rated power for 3..5 seconds) Superior efficiency and temperature rating DC OK and Overload LED | <ul style="list-style-type: none"> Rugged industrial design DIN Rail or Back of Panel mountable Elevated temperature performance (up to 50°C) Comprehensive network management Remote monitoring/configuration "Dry contact" I/O Line interactive Pure sine wave output | <ul style="list-style-type: none"> Wide VA range Enclosed construction 63...350 VA Terminal covers finger safe Optional fuse covers available Dual primary and secondary fuse block available to 500 VA Class B insulation (130°C) All welded construction |
| Output Power (Watts/VA) | 25...100 W | 60...960 W | 80...480 W | 325 W/500 VA | 63..2000 VA |
| Input Voltage / Primary Voltage | 85...264V AC 85...375V DC | 85...132/176...264/340...576V AC 160...375/450...820V DC | 85...276/323...552V AC 88...375/450...780V DC | 120, 208/230V AC | 208...600V |
| Efficiency | 80...90% | 87...93% | 91.6...95% | 96% | — |
| Output Voltage / Secondary Voltage | 5, 10...12, 12, 15, 24, 48V DC | 24, 36, 48V DC | 24V DC | 120, 208/230V AC | 24...120V Multi-tap 115...230V (50 Hz) |
| Rated Output Current | 1.3...4.2 A | 2.5...40 A | 3.4...20 A | 4.2 A | — |
| Operating Temperature Range (Tamb) | -10...+70°C >60°C with derating | -10...+70°C >60°C with derating | -25...+70°C >60°C with derating | 0...50°C | — |
| Non-Operating Temperature Range | -40...+85°C | | | -20...+60°C | — |
| Insulation | — | — | — | — | Class B 130°C |
| Certifications | cULs, CE | cULs, CE | cULs, CE | UL, CSA, CE | cULs, CE |
| Standards | EN 50081-1, EN 61000-6-2, EN 61000-3-2 (A14) UL 508 UL 1950 | EN 55011 (Class B), EN 55022 (Class B), EN 61000-6-2, EN 61000-3-2 (A14), EN 50081-1 UL 508 UL 1950 | EN 55011 (Class B), EN 55022 (Class B), EN 61000-6-2, EN 61000-3-2 (A14), EN 50081-1 UL 508 UL 1950 | EN 50091-1-1, EN 50091-2 (Class 2) UL 1778 | EN 60529 |
| Special Application Products | <ul style="list-style-type: none"> Compact Redundancy Module for 10...60V DC 50 W Device with Removable Terminal Blocks Buffer Module for Extended Ride-Through Redundant Power Supplies Redundancy Modules | | | | |
| Product Selection | Page 11 | Page 11 | Page 11 | Page 23 | Page 27 |

Switched Mode Power Supplies

Product Overview/Product Sizing



Bulletin 1606 — Power Supplies ❄️

- Quick mounting and connecting, innovative DIN-Rail mount, smallest in class
- Low inrush current limiting
- PFC Active or Passive
- Wide range input; auto select input
- Superior overload design (continuous current, no hiccup)
- NEC Class 2 'Limited Power' options
- Selectable operating mode (single/parallel)
- Superior efficiency and temperature rating

Special Modules

- Brownout buffer, DC to DC converter, N+1 redundancy

Standards Compliance

- World-wide Certifications‡
- NEC Class 2
- Class 1 Div. 2 (T3A)
- cULus, CE, C-Tick
- SEMI F47 Compatible
- ABS/GL/RINA (Marine)

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Certifications



* Not all features apply to all power supplies; see individual power supply descriptions for specifics

❄️ A more detailed list of performance specifications can be found at the Allen-Bradley web site

http://www.ab.com/industrialcontrols/products/power_supplies/index.html

‡ Dual UL rating with cURus 60950 relating to certified use in information technology.

How to Select a Bulletin 1606 Power Supply

The Bulletin 1606 line of Power Supplies is designed with "reserve power" thereby eliminating the need to oversize your power supply to start high inrush loads.

Steps to size a Power Supply

1. Determine the "Average" continuous current of the load and the typical inrush current.
2. Select a power supply where the rated load is at/or below the current of the device and the Peak Current is less than the short-circuit rating of the power supply.

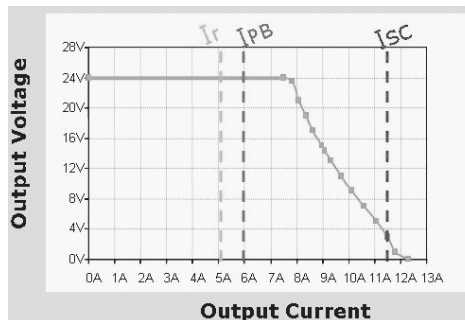
Notes:

- PowerBoost will deliver up to 25% additional current continuously at 40 deg C or less.
- ReservePower will deliver 150% of rated current for up to 4 sec.

Example:

Application: Single Phase 120V input, 24V output, 6 A continuous current @ 35 °C, with 9 A inrush current **Solution:** 1606-XL120D

Output Characteristic for XL120D (5 A) Power Supply



I_{RATED} : 5 A
 $I_{SHORT\ CIRCUIT}$: >10 A
 $I_{POWER\ BOOST}$: 6 A

| Cat. No. | I_{RATED} | $I_{SHORT\ CIRCUIT\ (25^{\circ}C)}$ | $I_{POWER\ BOOST\ OF\ I_{RESERVEPOWER}}$ |
|--------------------|--------------|-------------------------------------|--|
| 1606-XLS80E | 3.4 A | 5.2 A | 5.4 A§ |
| 1606-XLS120E | 5.0 A | 9.0 A | 7.5 A§ |
| 1606-XLS240E | 10 A | 21 A | 15 A§ |
| 1606-XLS480E-3 | 20 A | 29 A | 30 A§ |
| 1606-XLSDNET4 | 3.8 A | 4.0 A | — |
| 1606-XLSDNET8 | 8.0 A | 7.0 A | — |
| 1606-XLP25A | 5.0 A | 5.0 A | — |
| 1606-XLP30B | 3.0 A | 4.0 A | — |
| 1606-XLP30E | 1.3 A | 1.9 A | — |
| 1606-XLP36C | 2.8 A | 2.0 A | — |
| 1606-XLP50B | 4.2 A | 4.3 A | — |
| 1606-XLP50E | 2.1 A | 3.1 A | — |
| 1606-XLP50EZ | 2.1 A | 3.1 A | — |
| 1606-XLP50F | 1.0 A | 1.7 A | — |
| 1606-XLP72E | 3.0 A | 4.5 A | — |
| 1606-XLP90B | 8.0 A | 8.0 A | — |
| 1606-XLP95E | 3.9 A | 7.0 A | — |
| 1606-XLP100E | 4.2 A | 7.1 A | — |
| 1606-XLP100F | 2.1 A | 3.6 A | — |
| 1606-XL60D | 2.5 A | 4.5 A* | — |
| 1606-XL120D | 5.0 A | 10 A* | 6.0 A |
| 1606-XL180B | 15 A | 21 A* | — |

| Cat. No. | I_{RATED} | $I_{SHORT\ CIRCUIT\ (25^{\circ}C)}$ | $I_{POWER\ BOOST\ OF\ I_{RESERVEPOWER}}$ |
|----------------|-------------|-------------------------------------|--|
| 1606-XL240E | 10 A | 18 A* | 12 A |
| 1606-XL240EP | 10 A | 18 A* | 12 A |
| 1606-XL240FP | 5.0 A | 10 A* | 6.0 A |
| 1606-XL480E | 20 A | N/A> | 25 A |
| 1606-XL480EP | 20 A | 22 A | 25 A |
| 1606-XL480EPT | 20 A | 22 A | 25 A |
| 1606-XL480GP | 13.3 A | 12 A | 16.6 A |
| 1606-XL480F | 10 A | 24 A | 12.5 A |
| 1606-XL120E-3 | 5.0 A | 11 A* | 6.0 A |
| 1606-XL240E-3 | 10 A | 22 A* | 12 A |
| 1606-XL480E-3 | 20 A | N/A> | 25 A |
| 1606-XL480E-3W | 20 A | 25 A | 25 A |
| 1606-XL480F-3H | 10 A | N/A> | 12.5 A |
| 1606-XL720E-3 | 30 A | N/A> | 33 A |
| 1606-XL960E-3 | 40 A | 44 A | 45 A |
| 1606-XL960E-3S | 40 A | 44 A | 45 A |
| 1606-XLDNET4 | 4.0 A | 3.8 A* | — |
| 1606-XLDNET8 | 8.0 A | 6.0 A* | — |
| 1606-XL60DR | 2.5 A | 4.5 A* | — |
| 1606-XL120DR | 5.0 A | 10 A* | 6.0 A |
| 1606-XL240DR | 10 A | 18 A* | 12 A |

§ Products with ReservePower.

* Short circuit current values are temperature dependent for the selected product; i.e., the higher the ambient temperature, the lower the short circuit current.

> Hiccup Overload design.

Bulletin 1606-(number from table) % Power Supply Quick Guide

| | 30...40 W | 50 W | 60 W | 72...80 W | 90...100 W | 120 W | 180 W | 240 W | 480 W | 720 W | 960 W |
|-----------------|-----------|-------------------|--------|------------------|---------------------|-------------------|--------|------------------------------|---|------------|-----------------------|
| 5...5.5V | XLP25A | — | — | — | — | — | — | — | — | — | — |
| 10...12V | XLP30B | — | — | — | — | — | — | — | — | — | — |
| 12...15V | — | XLP50B | — | — | XLP90B | — | XL180B | — | — | — | — |
| (+/-)12 and 15V | XLP36C | — | — | — | — | — | — | — | — | — | — |
| 24...28V 1-Ph | XLP30E | XLP50E XLP50EZ | XL60D | XLP72E XLS80E | XLP95E XLP100E | XLS120E XL120D | — | XLS240E XL240E XL240EP | XL480E XL480EP XL480EPT | — | — |
| 24...28V 3-Ph | — | — | — | — | — | XL120E-3 | — | XL240E-3 | XLS480E-3 XL480E-3 XL480E-3W XL480F-3H | XL720E-3 | XL960E-3 XL960E-3S |
| 36...43V | — | — | — | — | — | — | — | — | XL480GP | — | — |
| 48...56V | — | XLP50F | — | — | XLP100F | — | — | XL240FP | XL480F | — | — |
| 24V Redundant | — | — | XL60DR | — | — | XL120DR | — | XL240DR XLPRED | XLSRED XLRED20-30 | XLRED20-30 | XLRED40 |
| DeviceNet | — | — | — | — | XLSDNET4 XLDNET4 | — | — | XLSDNET8 XLDNET8 | — | — | — |

% Example: For a 24...28 Volt, 3-Phase, 120 Watt power supply, the Catalog Number would be 1606-XL120E-3.

Special Applications

Meets NEC Class 2

- 1606-XLP25A
- 1606-XLP30B
- 1606-XLP30E
- 1606-XLP36C
- 1606-XLP50B
- 1606-XLP50E
- 1606-XLP50EZ
- 1606-XLP50F
- 1606-XLP72E
- 1606-XLP90B
- 1606-XLP95E
- 1606-XL60D
- 1606-XLDNET4
- 1606-XL60DR
- 1606-XLSDNET4

Meets ABS/GL/RINA (Marine)

- 1606-XLP25A
- 1606-XLP30E
- 1606-XLP36C
- 1606-XLP50E
- 1606-XLP50EZ
- 1606-XLP72E
- 1606-XLP90B
- 1606-XLP100E
- 1606-XLP100F
- 1606-XLPRED

Meets Hazardous Location Rating, Class 1 Div. 2

- 1606-XLS80E
- 1606-XLS120E
- 1606-XLS240E
- 1606-XLS480E-3
- 1606-XLSDNET4
- 1606-XLSDNET8
- 1606-XLSRED
- 1606-XLP25A
- 1606-XLP30B
- 1606-XLP30E
- 1606-XLP50B
- 1606-XLP50E
- 1606-XLP50EZ
- 1606-XLP72E
- 1606-XLP90B
- 1606-XLP95E
- 1606-XLP100E
- 1606-XLPRED
- 1606-XL240E
- 1606-XL240EP

Meets Semiconductor F47 Sag Immunity Requirements

| Product | Input Mains Voltage | Output Current Range |
|------------------|---------------------|------------------------|
| • 1606-XLS80E | Full Range | Full Range |
| • 1606-XLS120E | Full Range | Full Range |
| • 1606-XLS240E | Full Range | Full Range |
| • 1606-XLS480E-3 | Full Range | Full Range |
| • 1606-XLSDNET4 | Full Range | Full Range |
| • 1606-XLSDNET8 | Full Range | Full Range |
| • 1606-XLP30E | AC 200V or higher | Full Range up to 1.3 A |
| • 1606-XLP50E | AC 200V or higher | Full Range up to 2.1 A |
| • 1606-XLP100E | AC 200V or higher | Full Range up to 4.2 A |
| • 1606-XL60D | AC 120V or higher | Full Range up to 2.5 A |
| • 1606-XL120D | AC 120V or higher | Full Range up to 5 A |
| • 1606-XLDNET4 | AC 120V or higher | Up to 3 A |
| • 1606-XL480E | AC 200V or higher | Full Range up to 20 A |

Meets ODVA Requirements

- 1606-XLSDNET4
- 1606-XLSDNET8

Switched Mode Power Supplies

Cat. No. Explanation

Power Supply Cat. No. Explanation

Important: The following cat. no. breakdown is for explanation purposes only. It is not a product configurator. Not all combinations of fields are valid product cat. nos. First, select the desired power supply using the product selection table on page 11. Then, use this breakdown for verification and explanation only.

1606 - XL 120 D -
a *b* *c* *d* *e*

| <i>a</i> | |
|-----------|------------------------|
| Code | Description |
| XLP | Compact family |
| XL | Standard family |
| XLS | Performance family |

| <i>b</i> | |
|------------|--------------|
| Code | Description |
| 25 | 25 W |
| 30 | 30 W |
| 36 | 36 W |
| 40 | 40 W |
| 50 | 50 W |
| 60 | 60 W |
| 72 | 72 W |
| 80 | 80 W |
| 90 | 90 W |
| 95 | 95 W |
| 100 | 100 W |
| 120 | 120 W |
| 180 | 180 W |
| 240 | 240 W |
| 480 | 480 W |
| 720 | 720 W |
| 960 | 960 W |

| <i>c</i> | |
|----------|-----------------------------|
| Code | Description |
| A | 5V DC |
| B | 10...12V DC or 12...15 V DC |
| C | Dual +/- 12 and 15V DC |
| D | 24V DC |
| E | 24...28V DC |
| F | 48...56V DC |
| G | 36...43V |

| <i>d</i> | |
|----------|--------------------------|
| Code | Description |
| R | Redundancy module |
| P | Power factor correction |
| S | Special output signals |
| L | Load sharing |
| T | Remote shutdown |
| Z | Removeable Terminations |
| X | Semi-Regulated |
| | Can be left blank |

| <i>e</i> | |
|----------|--|
| Code | Description |
| -3 | Three phase |
| -3H | Three phase, input voltage 400V AC and 450...700V DC |
| -3W | Three phase, wide input range |
| -3S | Three phase, special output signals |

Switched Mode Power Supplies

Product Selection/Accessories

Bulletin 1606 Product Selection Table

| | Output Power | Output Voltage | Output Current | Input Circuit Protection/UL Test Level | Inrush Current | Parallel Operation (inclined Characteristics) | Meets EN 61000-3-2 (PFC Harmonics) | Cat. No. |
|------------------------------------|----------------------|----------------------------|--|---|--|---|------------------------------------|-----------------|
| Performance Single and Three Phase | 80 W | 24...28V DC | 3.4 A | 6 A SLOW BLOW FUSE OR 1492-SPU1C060/20 A* | <7.0 A | Yes | Yes | 1606-XLS80E |
| | 120 W | 24...28V DC | 5.0 A | 6 A SLOW BLOW FUSE OR 1492-SPU1C060/20 A* | <4.9 A | Yes | Yes | 1606-XLS120E |
| | 240 W | 24...28V DC | 10 A | 6 A SLOW BLOW FUSE OR 1492-SPU1C060/20 A* | <7.6 A | Yes | Yes | 1606-XLS240E |
| | 480 W | 24...28V DC | 20 A | 6 A (X3) SLOW BLOW FUSE OR 1492-SP3C060 | <4.0 A | Yes | Yes | 1606-XLS480E-3 |
| | 91 W | 24V DC | 3.8 A | 6 A SLOW BLOW FUSE OR 1492-SPU1C060/20 A* | <4.9 A | Yes | Yes | 1606-XLSDNET4 |
| | 192 W | 24V DC | 8.0 A | 6 A SLOW BLOW FUSE OR 1492-SPU1C060/20 A* | <7.6 A | Yes | Yes | 1606-XLSDNET8 |
| Compact Single Phase | 25 W | 5...5.5V DC | 5.0 A | 10 A SLOW BLOW FUSE OR 1492-SPU1C100/15 A* | <18 A | — | N/A | 1606-XLP25A |
| | 30 W | 10...12V DC | 3.0 A | 10 A SLOW BLOW FUSE OR 1492-SPU1C100/15 A* | <18 A | — | N/A | 1606-XLP30B |
| | | 24...28V DC | 1.3 A | 10 A SLOW BLOW FUSE OR 1492-SPU1C100/15 A* | <18 A | — | N/A | 1606-XLP30E |
| | 36 W | +/- 12/15V DC | 2.8 A | 10 A SLOW BLOW FUSE OR 1492-SPU1C100/15 A* | <18 A | — | N/A | 1606-XLP36C |
| | 50 W | 12...15V DC | 4.2 A | 10 A SLOW BLOW FUSE OR 1492-SPU1C100/15 A* | <18 A | — | N/A | 1606-XLP50B |
| | | 24...28V DC | 2.1 A | 10 A SLOW BLOW FUSE OR 1492-SPU1C100/15 A* | <18 A | — | N/A | 1606-XLP50E |
| | | 24...28V DC | 2.1 A | 10 A SLOW BLOW FUSE OR 1492-SPU1C100/15 A* | <18 A | — | N/A | 1606-XLP50EZ |
| | | 48...56V DC | 1.0 A | 10 A SLOW BLOW FUSE OR 1492-SPU1C100/15 A* | <18 A | — | N/A | 1606-XLP50F |
| | 72 W | 24...28V DC | 3.0 A | 10 A SLOW BLOW FUSE OR 1492-SPU1C100/15 A* | <30 A | — | N/A | 1606-XLP72E |
| | 90 W | 12...15V DC | 8.0 A | 10 A SLOW BLOW FUSE OR 1492-SPU1C100/15 A* | <30 A | Yes | Yes | 1606-XLP90B |
| | 95 W | 24...28V DC | 3.9 A | 10 A SLOW BLOW FUSE OR 1492-SPU1C100/15 A* | <30 A | —‡ | Yes | 1606-XLP95E |
| | 100 W | 24...28V DC | 4.2 A | 10 A SLOW BLOW FUSE OR 1492-SPU1C100/15 A* | <30 A | Yes‡ | Yes | 1606-XLP100E |
| | | 48...56V DC | 2.1 A | 10 A SLOW BLOW FUSE OR 1492-SPU1C100/15 A* | <30 A | Yes‡ | Yes | 1606-XLP100F |
| Standard Single Phase | 60 W | 24V DC | 2.5 A | 10 A SLOW BLOW FUSE OR 1492-SPU1C100/16 A* | <18 A | — | Yes | 1606-XL60D |
| | 120 W | | 5.0 A | 10 A SLOW BLOW FUSE OR 1492-SPU1C100/16 A* | <11 A | — | Yes | 1606-XL120D |
| | 180 W | 12...15V DC | 15 A | 10 A SLOW BLOW FUSE OR 1492-SPU1C100/10 A* | <21 A | — | No | 1606-XL180B |
| | 240 W | 24...28V DC | 10 A | 10 A SLOW BLOW FUSE OR 1492-SPU1C100/10 A* | <21 A | — | No | 1606-XL240E |
| | | | 5.0 A | 10 A SLOW BLOW FUSE OR 1492-SPU1C100/10 A* | <21 A | — | Yes | 1606-XL240EP |
| | 480 W | 24...28V DC | 20 A | 10 A SLOW BLOW FUSE OR 1492-SPU1C100/16 A* | <23 A | Yes‡ | No | 1606-XL480E |
| | | | | 10 A SLOW BLOW FUSE OR 1492-SPU1C100 | <18 A @ 25°C | Yes‡ | Yes | 1606-XL480EP |
| | | | 13.3 A | 10 A SLOW BLOW FUSE OR 1492-SPU1C100 | <18 A @ 25°C | Yes‡ | Yes | 1606-XL480EPT |
| | | | | 10 A | 10 A SLOW BLOW FUSE OR 1492-SPU1C100 | <18 A @ 25°C | Yes‡ | No |
| | Standard Three Phase | 120 W | 24...28V DC | 5.0 A | 10 A (X3) SLOW BLOW FUSE OR 1492-SP3C100 | <25 A | — | Yes |
| 240 W | | 10 A | | 6 A (X3) SLOW BLOW FUSE OR 1492-SP3C060/15 A* | <17 A | Yes‡ | Yes | 1606-XL240E-3 |
| | | 20 A | | 10 A (X3) SLOW BLOW FUSE OR 1492-SP3C100 | <11 A | Yes‡ | Yes | 1606-XL480E-3 |
| 480 W | | 20 A | | 6 A (X3) SLOW BLOW FUSE OR 1492-SP3C060/16 A* | <7 A | Yes‡ | Yes | 1606-XL480E-3W |
| | | 10 A | | 10 A (X3) SLOW BLOW FUSE OR 1492-SP3C100 | <15 A | Yes‡ | Yes | 1606-XL480F-3H |
| 720 W | | 24...28V DC | 30 A | 10 A (X3) SLOW BLOW FUSE OR 1492-SP3C100 | <17 A | Yes‡ | Yes | 1606-XL720E-3 |
| | | | 40 A | 10 A (X3) SLOW BLOW FUSE OR 1492-SP3C100 | <30 A | Yes‡ | Yes | 1606-XL960E-3 |
| 960 W | 24...28V DC | 40 A | 10 A (X3) SLOW BLOW FUSE OR 1492-SP3C100 | <30 A | Active current sharing | Yes | 1606-XL960E-3S | |
| 1606-XL Special Modules | | | | | | | | |
| Special Modules | 480 W | 23...27.8V DC | 20 A | N/A | — | — | N/A | 1606-XLBUFFER |
| | 40 W | 5.1V DC | 8.0 A | N/A | <5 A | — | No | 1606-XLDC40A |
| | 96 W | 24V DC | 4.0 A | 10 A SLOW BLOW FUSE OR 1492-SPU1C100/16 A* | <11 A | — | Yes | 1606-XLDNET4 |
| | 196 W | 24V DC | 8.0 A | 10 A SLOW BLOW FUSE OR 1492-SPU1C100/10 A* | <21 A | — | No | 1606-XLDNET8 |
| | 60 W | 24V DC | 2.5 A | 10 A SLOW BLOW FUSE OR 1492-SPU1C100/16 A+* | <18 A | Yes‡ | N/A | 1606-XL60DR |
| | 120 W | | 5.0 A | 10 A SLOW BLOW FUSE OR 1492-SPU1C100/16 A+* | <11 A | Yes‡ | Yes | 1606-XL120DR |
| | 240 W | | 10 A | 10 A SLOW BLOW FUSE OR 1492-SPU1C100/10 A+* | <21 A | Yes‡ | No | 1606-XL240DR |
| | 720 W | V _{in} -.5V typ | 30 A | N/A* | N/A | — | N/A | 1606-XLRED20-30 |
| | 960 W | V _{in} -.6V typ | 40 A | N/A§ | N/A | — | N/A | 1606-XLRED40 |
| | 384 W | V _{in} 1 -.9V typ | 16 A> | N/A | N/A | — | N/A | 1606-XLPRED |
| | 480 W | V _{in} 1 -.9V typ | 20 A> | N/A | N/A | — | N/A | 1606-XLSRED |

- + Used with a pair of identical power supplies to offer N+1 redundancy.
- * To be used alongside 20, 30 and 40 A power supplies.
- ‡ Single/parallel operation (inclined characteristic) selectable (jumper).
- § To be used alongside 40 A power supplies (or smaller).
- ‡ Unit has internal (not accessible/replaceable) input fuse. Additional protection is not required if used on branch circuits ≤ UL test levels. Consult local codes and regulations for installation.
- > See product specifications for proper use.

Accessories







| Description | Cat. No. |
|-------------------------------|----------|
| Back of panel bracket for XL | 1606-XLA |
| Back of panel bracket for XLS | 1606-XLB |






Switched Mode Power Supplies

Compact and Standard Single Phase Specifications



1606-XLP Compact Single Phase and 1606-XL Single Phase Specifications

| |  |  |  |  |  |  |
|--|---|---|---|---|---|---|
| Output Volts/Watts | 24...28V/95 W | 24...28V/100 W | 48...56V/100 W | 24V/60 W | 24V/120 W | 12...15V/180 W |
| Input Voltage* | AC 100...120/220...240V auto select; DC 220...375V | | | AC 100...120/200...240V manual select; DC 160...375V | AC 100...120/200...240V manual select; DC 210...375V | AC 100...120/220...240V; DC 240...375V |
| Operational Range | 85...132/184...264 V AC | | | 85...132/176...264 V AC | | |
| Hold-up Time | >40 ms (AC 230V) >20 ms (AC 100V) | | | >20 ms (AC 196V) | >37 ms (AC 196V) | >81 ms (AC 230V) >84 ms (AC 120V) >45 ms (AC 100V) |
| Rated Input Current | <2.0 A (AC 100V) <0.95 A (AC 220V) | <2.1 A (AC 100V) <1.0 A (AC 220V) | | <1.3 A (115V)/<0.7A (230V) | <2.6 A (115V)/<1.4 A (230V) | <5A (115V)/<2.3 A (230V) |
| Efficiency | typ. 90% | | typ. 91% | typ. 87.5% | typ. 90% | typ. >87% |
| Output Voltage | 24...28V 24.5V preset | | 48...56V 48V preset | 24V | 24V | 12...15V Preset at 12V |
| Rated Output Current | 3.9 A (at 24.5V), 3.2 A (at 28V) | 4.2 A (at 24.5V), 3.6 A (at 28V) | 2.1 A (at 48V), 1.8 A (at 56V) | 2.5 A | 5 A | 15 A (at 12V), 12 A (at 15V) |
| Power Boost | — | — | — | — | 6 A | 18 A |
| Line/Load Regulation (typ.) | <0.036%/<0.43% | <0.036%/<0.40% | <0.017%/<0.40% | <0.04%/<0.21% | <0.04%/<0.21% | <0.06%/<0.50% |
| Ripple/Noise | <50 mV _{pp} | <50 mV _{pp} | <50 mV _{pp} | <25 mV _{pp} | <50 mV _{pp} | <50 mV _{pp} |
| Operating Temperature Range (T_{amb}) | -10...+70 °C >60 °C: 2 W/K derating | | | -10...+70 °C >60 °C with derating | | 0...70 °C >60 °C with derating |
| Non-Operating Temperature Range | -40...+85 °C | | | -40...+85 °C | | |
| MTBF* | appr. 500 000 hours | | | 740 000 hours | 520 000 hours | <425,000 hours |
| Dimensions (W x H x D) | 73 x 75 x 103 mm | | | 49 x 124 x 102 mm | 64 x 124 x 102 mm | 120 x 124 x 102 mm |
| Weight | 360 g | | | 460 g | 620 g | 980 g |
| Certifications/Standards* | 1, 2, 3, 5, 6, 7 | | | 1, 2, 3, 5, 6, 7 | 1, 2, 3, 5, 6, 7 | 1,2,3,5,6 |
| Special Features | NEC Class 2 power supply; Class 1 Div. 2 | Single/parallel operation (inclined characteristic) select on front panel; ABS/GL/RINA (Marine); Class 1 Div. 2; Semi F47 | | Single/parallel operation (inclined characteristic) select on front panel; ABS/GL/RINA (Marine) | NEC Class 2 power supply; Semi F47 | Semi F47 |

| |  |  |  |  |  |
|--|---|---|---|---|---|
| Output Volts/Watts | 24...28V/240 W | 24...28V/240 W | 48...56V/240 W | 24...28V/480 W | |
| Input Voltage* | AC 100...120/200...240V manual select; DC 240...375V | | | AC 200...240V; DC 270...370V | AC 100...120/200...240V |
| Operational Range | 85...132/176...264 V AC | | | 184...264 V AC | 85...132/184...264 V AC |
| Hold-up Time | >25 ms (AC 196V) | >20 ms (AC 196V) | >25 ms (AC 196V) | >20 ms (AC 230V) | >30 ms (AC 120/230V) |
| Rated Input Current | <6 A (115V)/<2.8 A (230V) | | | 5 A | 10 A (115V)/5 A (230V) |
| Efficiency | typ. 90% | typ. 89% | typ. 90% | typ. 91% | typ. 90.5% |
| Output Voltage | 24...28V 24.5V preset | 24...28V 24.5V preset | 48...56V 48.5V preset | 24...28V Front panel potentiometer | |
| Rated Output Current | 10 A (at 24V), 8.6 A (at 28V) | | 5 A (at 48V), 4.3 A (at 56V) | 20 A (at 24V), 18 A (at 28V) | |
| Power Boost | 12 A | | 6 A | 25 A (22 A) | |
| Line/Load Regulation (typ.) | <0.036%/<0.18% | <0.036%/<0.18% | <0.017%/<0.18% | <0.036%/<0.21% | <0.036%/<0.20% |
| Ripple/Noise | <30 mV _{pp} | <30 mV _{pp} | <50 mV _{pp} | < 20 mV _{pp} (single operation) <40 mV _{pp} (parallel operation) | |
| Operating Temperature Range (T_{amb}) | 0...+70 °C >60 °C with derating | | | | |
| Non-Operating Temperature Range | -40...+85 °C | | | | |
| MTBF* | 425 000 hours | 225 000 hours | 425 000 hours | 310 000 hours | 519 000 hours |
| Dimensions (W x H x D) | 120 x 124 x 102 mm | | | 220 x 124 x 102 mm | |
| Weight | 980 g | 1195 g | 980 g | 1800 g | 2500 g |
| Certifications/Standards* | 1, 2, 3, 5, 6 | 1, 2, 3, 5, 6, 7 | | 1,2,3,5,6 | 1,2,3,5,6,7 |
| Special Features | Class 1 Div. 2 | Class 1 Div. 2 | PFC choke | Single/parallel operation (inclined characteristic) selectable (jumper); Semi F47; † | PFC choke; Overload behavior selectable (hiccup/continuous current); ‡ |

* 1) = CE, 2) = UL508 (cULus LISTED), 3) = UL1950 (cURus), 5) Safety standards = IEC/EN 60950, EN 50178, 6) EMC standards = EN 55011 (Class B), EN 55022 (Class B), EN 61000-6-2, 7) = EMC standards = EN 61000-3-2 (A14), EN 50081-1

† 47...63Hz

‡ Low inrush current

* MTBF determined by Siemens norm SN 29500 at full load current and 40 °C



Switched Mode Power Supplies

Approximate Dimensions

Approximate Dimensions and Wire Size

Approximate dimensions are shown in inches (mm) unless otherwise indicated. Dimensions are not to be used for manufacturing purposes.

Bulletin 1606 Dimensions Table

| Catalog Number | W | H | D* | Wire Size* (Input and Output unless otherwise noted) | | | | | | |
|--------------------|-------------------|------------------|------------------|---|---|------------------|------------------|-----------------|------------------|------------------|
| 1606-XLS80E | 1.26 in (32 mm) | 4.88 in (124 mm) | 4.02 in (102 mm) | Input* Stranded 20...10 AWG (0.5...4 mm ²) Solid 20...10 AWG (0.5...6 mm ²) Output* Stranded 28...12 AWG (0.3...2.5 mm ²) Solid 28...12 AWG (0.3...4 mm ²) | | | | | | |
| 1606-XLS120E | 1.57 in (40 mm) | 4.88 in (124 mm) | 4.61 in (117 mm) | | | | | | | |
| 1606-XLSDNET4 | | | | | | | | | | |
| 1606-XLS240E | 2.36 in (60 mm) | 4.88 in (124 mm) | 4.61 in (117 mm) | Input/Output* Stranded 20...10 AWG (0.5...4 mm ²) Solid 20...10 AWG (0.5...6 mm ²) | | | | | | |
| 1606-XLS480E-3 | 2.56 in (65 mm) | 4.88 in (124 mm) | 5.00 in (127 mm) | | | | | | | |
| 1606-XLSDNET8 | 2.36 in (60 mm) | 4.88 in (124 mm) | 4.61 in (117 mm) | Input/Output* Stranded 28...12 AWG (0.3...2.5 mm ²) Solid 28...12 AWG (0.3...4 mm ²) | | | | | | |
| 1606-XLSRED | 1.26 in (32 mm) | 4.88 in (124 mm) | 4.02 in (102 mm) | | | | | | | |
| 1606-XLP25A | 1.77 in (45 mm) | 2.95 in (75 mm) | 3.58 in (91 mm) | Input/Output* Stranded 28...12 AWG (0.3...2.5 mm ²) Solid 28...12 AWG (0.3...4 mm ²) | | | | | | |
| 1606-XLP30B | | | | | | | | | | |
| 1606-XLP30E | | | | | | | | | | |
| 1606-XLP36C | | | | | | | | | | |
| 1606-XLP50B | | | | | | | | | | |
| 1606-XLP50E | | | | | | | | | | |
| 1606-XLP50EZ | | | | | | | | | | |
| 1606-XLP50F | | | | | | | | | | |
| 1606-XLP72E | | | | | | | | | | |
| 1606-XLPRED | | | | | | | | | | |
| 1606-XLP95E | | | | | | | | | | |
| 1606-XLP100E | | | | | | | | | | |
| 1606-XLP100F | 2.87 in (73 mm) | 2.95 in (75 mm) | 4.06 in (103 mm) | Input/Output* Stranded 20...10 AWG (0.5...4 mm ²) Solid 20...10 AWG (0.5...6 mm ²) | | | | | | |
| 1606-XLP90B | 1.93 in (49 mm) | 4.88 in (124 mm) | 4.02 in (102 mm) | | | | | | | |
| 1606-XL60D | | | | | | | | | | |
| 1606-XL120D | | | | | | | | | | |
| 1606-XL180B | | | | | | | | | | |
| 1606-XL240E | | | | | 4.72 in (120 mm) | 4.88 in (124 mm) | 4.02 in (102 mm) | | | |
| 1606-XL240EP | | | | | | | | | | |
| 1606-XL240FP | | | | | | | | | | |
| 1606-XL480E | | | | | | | | | | |
| 1606-XL480EP | | | | | | | | | | |
| 1606-XL480EPT | | | | | | | | 8.6 in (220 mm) | 4.88 in (124 mm) | 4.02 in (102 mm) |
| 1606-XL480GP | | | | | | | | | | |
| 1606-XL480F | | | | | | | | | | |
| 1606-XL120E-3 | 2.87 in (73 mm) | 4.88 in (124 mm) | 4.61 in (117 mm) | Input/Output* Stranded 20...10 AWG (0.5...4 mm ²) Solid 20...10 AWG (0.5...6 mm ²) | | | | | | |
| 1606-XL240E-3 | 3.50 in (89 mm) | 4.88 in (124 mm) | 4.61 in (117 mm) | | | | | | | |
| 1606-XL480E-3 | 8.66 in (220 mm) | 4.88 in (124 mm) | 4.02 in (102 mm) | | | | | | | |
| 1606-XL480E-3W | 5.91 in (150 mm) | 4.88 in (124 mm) | 4.76 in (121 mm) | | | | | | | |
| 1606-XL480F-3H | 8.66 in (220 mm) | 4.88 in (124 mm) | 4.02 in (102 mm) | | | | | | | |
| 1606-XL720E-3 | 9.45 in (240 mm) | 4.88 in (124 mm) | 4.41 in (112 mm) | | | | | | | |
| 1606-XL960E-3 | 10.83 in (275 mm) | 4.88 in (124 mm) | 4.61 in (117 mm) | | | | | | | |
| 1606-XL960E-3S | | | | | | | | | | |
| 1606-XLBUFFER | 2.56 in (65 mm) | 4.88 in (124 mm) | 4.02 in (102 mm) | | Input/Output* Stranded 20...10 AWG (0.5...4 mm ²) Solid 20...10 AWG (0.5...6 mm ²) | | | | | |
| 1606-XLDC40A | 1.93 in (49 mm) | 4.88 in (124 mm) | 4.02 in (102 mm) | | | | | | | |
| 1606-XLDNET4 | 2.56 in (65 mm) | 4.88 in (124 mm) | 4.02 in (102 mm) | | Input/Output* Stranded 22...10 AWG (0.2...2.5 mm ²) Solid 22...10 AWG (0.2...2.5 mm ²) | | | | | |
| 1606-XLDNET8 | 4.72 in (120 mm) | 4.88 in (124 mm) | 4.02 in (102 mm) | | | | | | | |
| 1606-XLP50EZ | 1.77 in (45 mm) | 2.95 in (75 mm) | 3.58 in (91 mm) | Input/Output* Stranded 22...12 AWG (0.2...2.5 mm ²) Solid 22...12 AWG (0.2...2.5 mm ²) | | | | | | |
| 1606-XL60DR | 1.93 in (49 mm) | 4.88 in (124 mm) | 4.02 in (102 mm) | | | | | | | |
| 1606-XL120DR | 2.56 in (64 mm) | 4.88 in (124 mm) | 4.02 in (102 mm) | | | | | | | |
| 1606-XL240DR | 4.72 in (120 mm) | 4.88 in (124 mm) | 4.02 in (102 mm) | | | | | | | |
| 1606-XLRED20-30 | 1.89 in (48 mm) | 4.88 in (124 mm) | 4.02 in (102 mm) | Input/Output* Stranded 20...10 AWG (0.5...4 mm ²) Solid 20...10 AWG (0.5...6 mm ²) | | | | | | |
| 1606-XLRED40 | 1.89 in (48 mm) | 4.88 in (124 mm) | 4.61 in (117 mm) | | | | | | | |



* Depth measurement does not include DIN rail.

⊗ The wire sizes indicated refer only to the connection capability of the terminal.

For proper operation, the correct wire size must be used (based on accurate determination of the electrical characteristics and loading of the system).

