

## POWER SUPPLY 3-PHASE, 48 V DC DIMENSION X SERIES

XT40.481

POWER SUPPLY 400V 48VDC 960W

- Output current of 20 A
- Up to 96% efficiency
- Semi Regulated
- Replaces linear transformers
- Very high short-circuit current



### PRODUCT DESCRIPTION

Dimension X series is a series of semi-regulated power supplies. A so-called semi-controlled unit means that the output voltage is regulated within the specified input voltage range. Outside this range decreases / increases the output voltage compared to the input voltage.

The unit has a bonus effect of 25% (25 A) to cope with high starting currents, as well as a very high short-circuit current enables safe trips for eg MCB. The unit leaves up to 90 A at 100 ms. Lasts short circuit longer than 100 ms, the unit shuts off automatically. See chart below for details. Recovery occurs in the front, or by disconnecting the primary voltage.

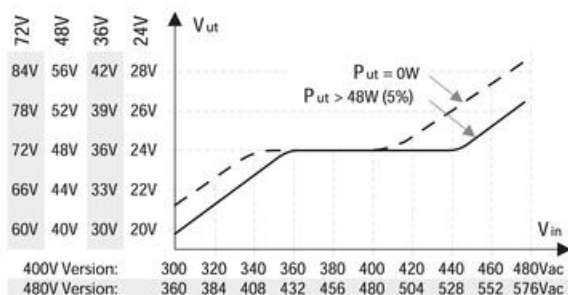
A yellow LED indicates the status and warns of the following errors; phase failure, over-temperature and high load current.

The unit has a low weight (1.4 kg), no inrush current and active transient filter that protects the secondary side from transients on the primary side.

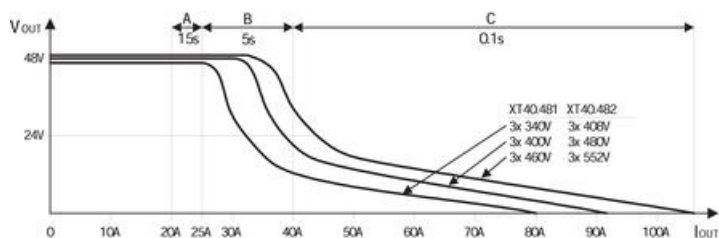
Typical applications include motors, solenoids or other "power hungry" loads that do not have requirements for accurate voltage regulation. X series are a great alternative to traditional transformers. With lower energy costs and easier installation, along with an attractive price concept means a low total cost.

We recommend free space of 40 mm above and 20 mm under the power supply, and 5 mm at the sides. (if neighbouring products are counted as a heat source spacing of 15 mm is recommended).

Input voltage range/regulation



## Output characteristics



## SPECIFICATIONS

|  |                 |
|--|-----------------|
| Number of phases                             | 3               |
| Input voltage AC                             | 400 V           |
| Input voltage ac min                         | 360 V AC        |
| Input voltage ac max                         | 440 V AC        |
| Inrush current at 400 V ac typical           | 4 A             |
| Power Factor at 400 V AC, full load. Typical | 0,93            |
| Supply Frequency                             | 50-60 $\pm 6$ % |
| Power consumption at 400 V ac                | 1,65 A          |
| Type Power Supply                            | AC-DC           |
| Output voltage                               | 48 V DC         |
| Output voltage min                           | 48 V DC         |
| Output voltage max                           | 48 V DC         |
| Output Current                               | 20 A            |
| Effect                                       | 960 W           |
| Power Reduction Of 60 To 70 ° C              | 24 W/°C         |
| Ripple. max                                  | 300 mV pp       |
| Temperature Range Without Derating From      | -25 °C          |
| Temperature Range Without Derating To        | 60 °C           |
| Efficiency At 400 V AC, full load. Typical   | 96 %            |
| Lifetime at 400 V ac, full load and +40 ° C  | 77000 h         |
| MTBF (IEC 61709) 400 V ac, max loan, +40 °C  | 541000 h        |
| Width  | 96 mm           |
| Height                                       | 124 mm          |
| Depth  | 159 mm          |

|  |                 |
|--|-----------------|
| <b>Weight</b>  | 1,4 kg          |
| <b>Series</b>  | Dimension X     |
| <b>Approvals</b>                                     | CB, CE, CSA, UL |
| <b>Material Protection</b>                           | Aluminium       |
| <b>Hold-up time at 400 V AC, full load. Typical.</b> | 3 ms            |
| <b>IP Class</b>                                      | IP20            |
| <b>Active Transient</b>                              | Yes             |

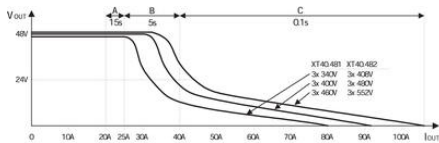


Fig. 9-1 Efficiency vs. output current

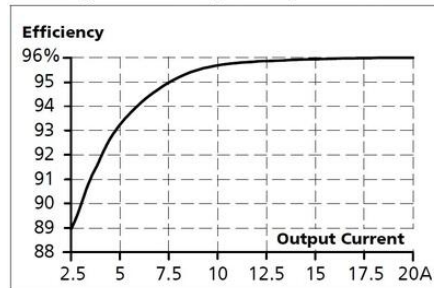


Fig. 9-2 Losses vs. output current

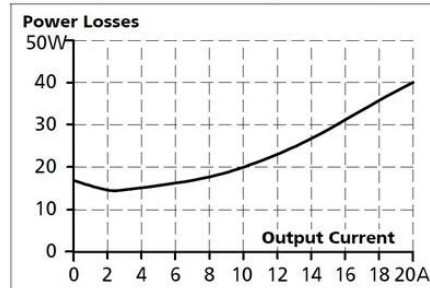


Fig. 5-1 Output voltage vs. input voltage and input current

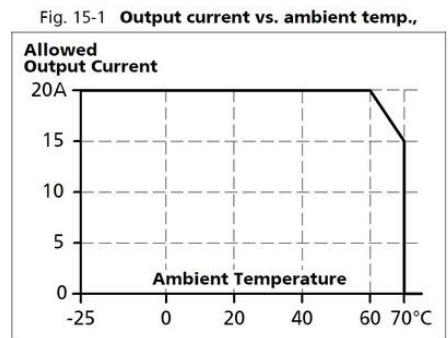


Fig. 15-1 Output current vs. ambient temp., Allowed Output Current

25. COMPARISON BETWEEN THE XT40, A TRANSFORMER AND A TRADITIONAL SWITCHED-MODE POWER SUPPLY

|                           | XT40 Semi-regulated power supply | Traditional switched-mode power supply | Transformer power supply |
|---------------------------|----------------------------------|--|--------------------------|
| Input voltage range       | +                                | ++                                     | -                        |
| Inrush current surge      | ++                               | +                                      | -                        |
| Hold-up time              | -                                | +                                      | -                        |
| Phase-loss operation      | -                                | +                                      | -                        |
| Efficiency                | +++                              | ++                                     | -                        |
| Output voltage regulation | +                                | ++                                     | -                        |
| Output adjustment range   | -                                | ++                                     | +                        |
| Ripple & noise voltage    | -                                | ++                                     | -                        |
| Error diagnostics         | ++                               | ++                                     | -                        |
| Harmonic distortion (THD) | +                                | +                                      | -                        |
| EMC                       | ++                               | ++                                     | +                        |
| Ease of installation      | ++                               | ++                                     | -                        |
| Size                      | +++                              | +                                      | -                        |
| Weight                    | +++                              | +                                      | -                        |

Fig. 22-2 Side view

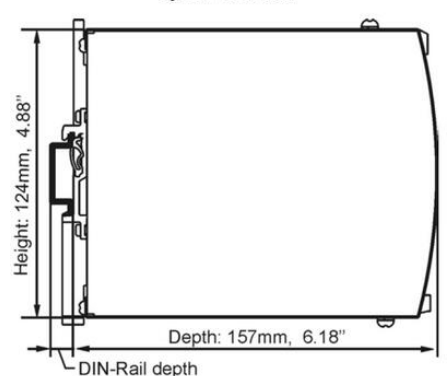
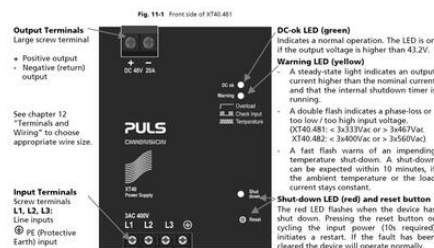
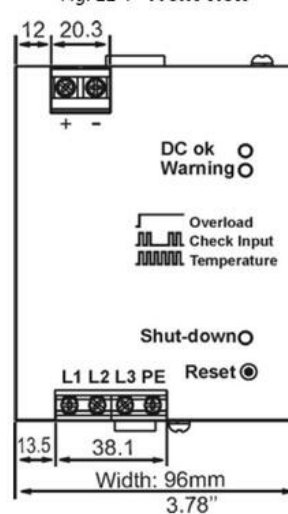


Fig. 22-1 Front view



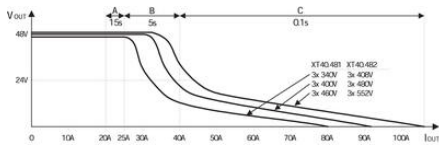


Fig. 9-1 Efficiency vs. output current

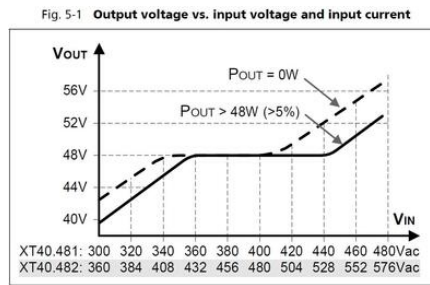


Fig. 9-2 Losses vs. output current

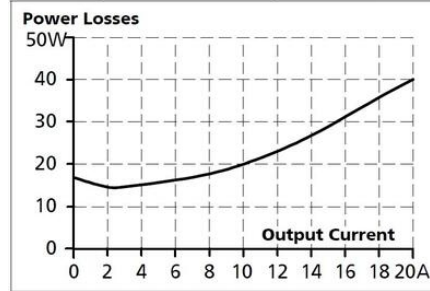
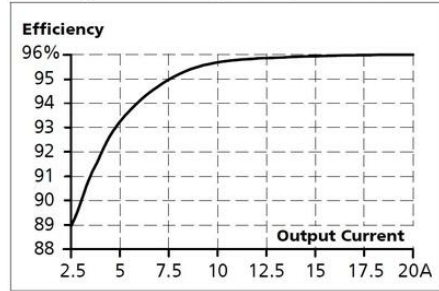
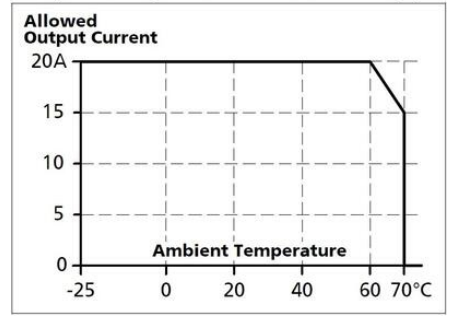


Fig. 15-1 Output current vs. ambient temp.,



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|---------------------------|----------------------------------|--|--------------------------|
| Input voltage range       | +                                | ++                                     | -                        |
| Inrush current surge      | ++                               | +                                      | -                        |
| Hold-up time              | -                                | +                                      | -                        |
| Phase-loss operation      | -                                | +                                      | -                        |
| Efficiency                | +++                              | ++                                     | -                        |
| Output voltage regulation | +                                | ++                                     | -                        |
| Output adjustment range   | -                                | ++                                     | -                        |
| Ripple & noise voltage    | -                                | ++                                     | -                        |
| Error diagnostics         | ++                               | ++                                     | -                        |
| Harmonic distortion (THD) | +                                | +                                      | -                        |
| EMC                       | ++                               | ++                                     | +                        |
| Size of installation      | ++                               | ++                                     | -                        |
| Size                      | +++                              | ++                                     | -                        |
| Weight                    | +++                              | +                                      | -                        |

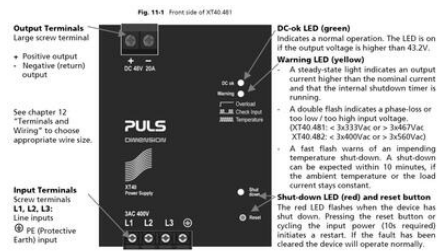


Fig. 22-1 Front view

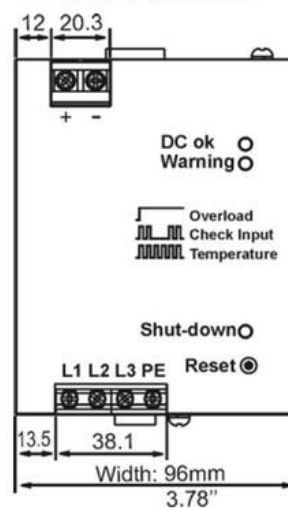


Fig. 22-2 Side view

