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POWER SUPPLY 3-PHASE, 48 V DC DIMENSION X SERIES 20A

XT40.481
PSU 3PH 400V ac I/P 48V dc 20A 960W O/P

- 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

TECHNICAL DATA

INPUT DATA

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

Number of phases	3

OUTPUT DATA

Output voltage	48 V DC
Output voltage min	48 V DC
Output voltage max	48 V DC
Output current	20 A
Power	960 W

EFFICIENCY / LIFETIME / MTBF

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

DIMENSIONS

Width	96 mm
Height	124 mm
Depth	159 mm
Weight	1.4 kg

OTHER

Approvals	CB, CE, CSA, UL
Hold time at 400 V ac, typical full load	3 ms
IP class	IP20
Material protection	Aluminium
Supply frequency	50-60 ±6 %
Ripple max	300 mV pp
Series	Dimension X
Power consumption at 400 V ac	1.65 A
Power drop from +60 °C to + 70 °C	24 W/°C
Temperature min without derating	-25 °C
Temperature max without derating	60 °C

Type Power Supply	AC-DC
Active Transient	Yes

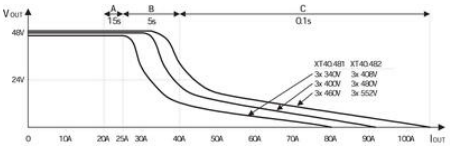


Fig. 5-1 **Output voltage vs. input voltage and input current**

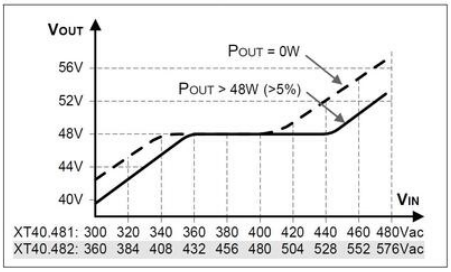


Fig. 15-1 **Output current vs. ambient temp.,**

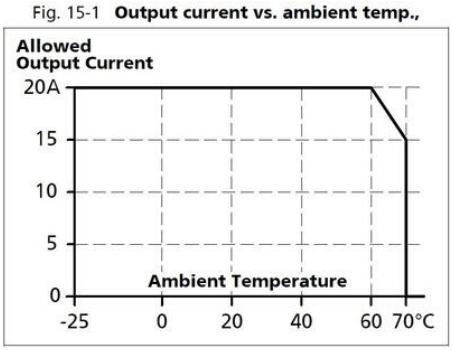


Fig. 9-1 **Efficiency vs. output current**

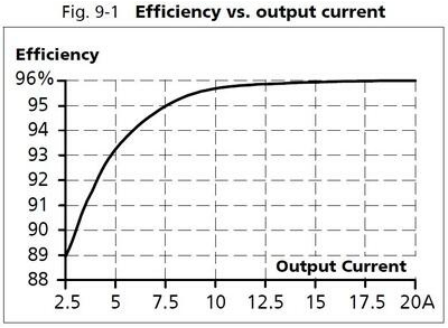
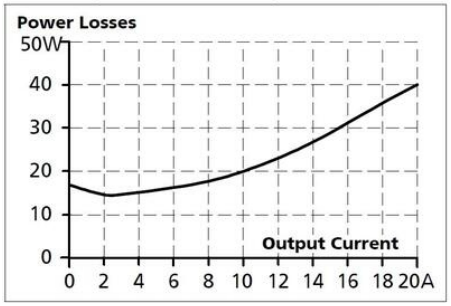


Fig. 9-2 **Losses vs. output current**



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 (PFC)	+	+	-
EMC	++	++	+
Ease of installation	++	++	-
Size	+++	++	-
Weight	+++	+	-
	+++...very, very good	++...very good	+...good -...poor

Fig. 11-1 Front side of XT40.481

DC-ok LED (green)
Indicates a normal operation. The LED is on if the output voltage is higher than 43.2V.

Warning LED (yellow)
- A steady-state light indicates an output current higher than the nominal current and that the internal shutdown timer is running.
- A double flash indicates a phase-loss or too low / too high input voltage. (XT40.481: < 3x333Vac or > 3x467Vac XT40.482: < 3x400Vac or > 3x560Vac)
- A fast flash warns of an impending temperature shut-down. A shut-down can be expected within 10 minutes, if the ambient temperature or the load current stays constant.

Shut-down LED (red) and reset button
The red LED flashes when the device has shut down. Pressing the reset button or cycling the input power (10s required) initiates a restart. If the fault has been cleared the device will operate normally.

Fig. 22-1 **Front view**

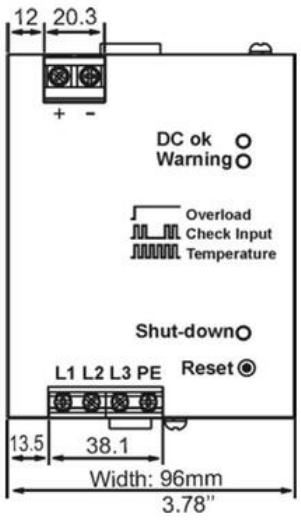
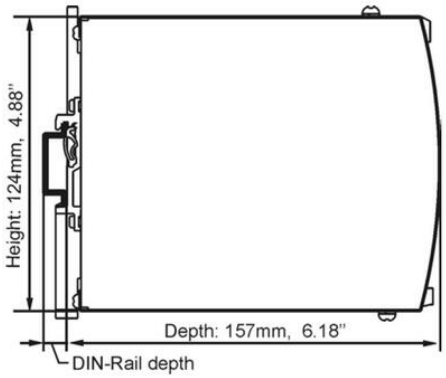


Fig. 22-2 **Side view**



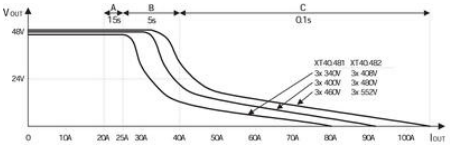


Fig. 5-1 **Output voltage vs. input voltage and input current**

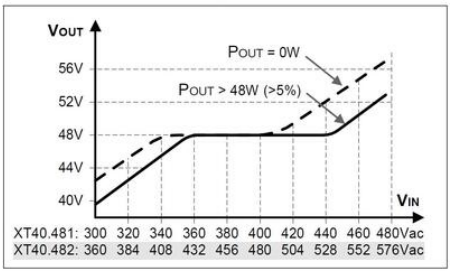


Fig. 15-1 **Output current vs. ambient temp.,**

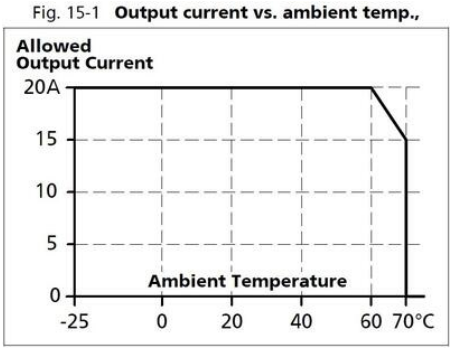


Fig. 9-1 **Efficiency vs. output current**

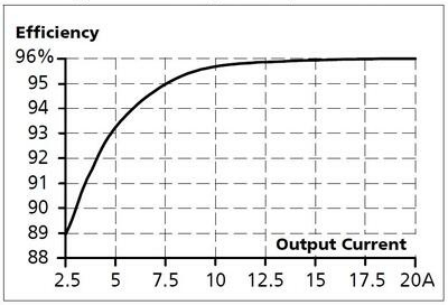
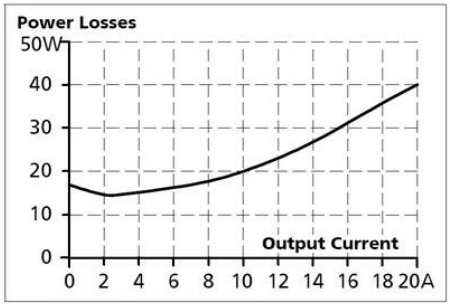


Fig. 9-2 **Losses vs. output current**



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Output adjustment range	-	++	-
Ripple & noise voltage	-	++	-
Error diagnostics	++	++	-
Harmonic distortion (PFC)	+	+	-
EMC	++	++	+
Ease of installation	++	++	-
Size	+++	++	-
Weight	+++	+	-

+++...very, very good ++...very good +...good -...poor

Fig. 11-1 Front side of XT40.481

Fig. 22-1 **Front view**

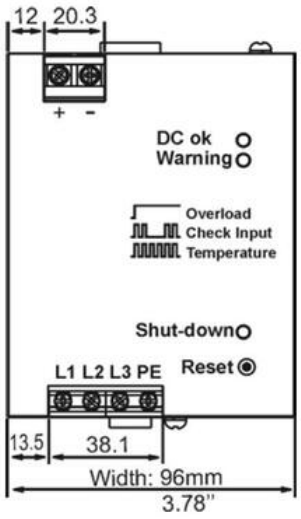

Fig. 22-2 **Side view**