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POWER SUPPLY 3-PHASE, 48 V DC DIMENSION Q SERIES

QT20.481
PSU 3PH 380-480V ac I/P 48V dc 10A 480W O/P



- Output current of 10 A
- Up to 94.8% efficiency
- High short-circuit currents
- Several protective filter
- Maximum performance

PRODUCT DESCRIPTION

Puls Dimension Q is a series of power supplies with very small construction dimensions and many technical advantages.
The unit has low inrush current (even during warm start), active PFC, which provides a power factor close to one, extended temperature range, as well as active protection against mains transients. Furthermore, there is a relay output (DC OK) that falls when the output voltage deviates more than 10% from the set value. The bonus power provides 50% extra reserve with retained voltage which is an advantage when connected loads have high starting currents. The unit also provides a high short-circuit current that simplifies tripping of secondary fuses. Both the bonus power and short-circuit current is limited to 4 seconds to avoid constant overloading of the power supply and wiring.
High efficiency for long life and low temperature. The power supply can be connected for two-phase operation Within up to +40°C. At higher temperatures, the load current is reduced.

We recommend clearance of 40 mm and 20 mm below the unit and 5 mm on the sides. (15 mm on the sides if adjacent products are a heat source).

Bonus power
The power supply has a bonus power that enables high power output with maintained 48 V dc for 4 seconds, which is a big advantage when connected loads have high starting current, e.g. motors. How often you can use the bonus power depends on the application. With the diagram and formula below you can calculate the available repeat time for each application. Bonus power is available as soon as the power supply starts and immediately after a short circuit

Bonus power	Operating cycle
Po	Nominal load current
Ppeak	Peak current
To	Time between bonus power
Tpeak	Peak current I time
Operating cycle	Tpeak/ (Tpeak+To)
To	Tpeak- (operating cycle*Tpeak) / operating cycle
E.g. 48 V DC power supply Nominal load current (Po) is 7.5 A. Peak current (Ppeak) is 12A=120 %. Peak time is 3 seconds. 7.5 A=75 % of I_{nom}. According to the diagram the operating cycle is 50%. To= 3- (0.5*3) / 0.5=3. Maximum repeat time of the bonus power is 3 seconds.	

TECHNICAL DATA

INPUT DATA

Input voltage ac	380-480 V
Input voltage ac min	323 V AC
Input voltage ac max	552 V AC
Inrush current at 400 V ac typical	3 A
Input voltage range	Wide-range
Power factor at 400 V ac, full load. Typical	0.94
Number of phases	3

OUTPUT DATA

Output voltage	48 V DC
Output voltage min	48 V DC
Output voltage max	55 V DC
Output current	10 A
Power	480 W

EFFICIENCY / LIFETIME / MTBF

Efficiency at 400 V ac, typical	94.4 %
Efficiency at 400 V ac, full load, typical	95.4 %
Lifetime at 400 V ac, full load and +40 ° C	51000 h
MTBF (IEC 61709) 400 V ac, max loan, +40 °C	690000 h

DIMENSIONS

Width	65 mm
Height	124 mm
Depth	127 mm
Weight	0.87 kg

OTHER

Approvals	CB, CE, CSA US, cRUus, cULus, GL
Hold time at 400 V ac, typical full load	22 ms
IP class	IP20
Clamp type	Spring-clamp
Material protection	Aluminium
Supply frequency	50-60 ±6 %

Ripple max	100 mV pp
Series	Dimension Q
Power consumption at 400 V ac	0.79 A
Power drop from +60 °C to + 70 °C	12 W/°C
Temperature min without derating	-25 °C
Temperature max without derating	60 °C

Type Power Supply	AC-DC
Active Transient	Yes
DC relay output	Yes

Fig. 6-1 **Output voltage vs. output current, typ.**

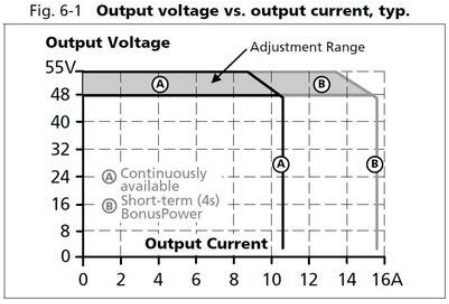


Fig. 15-1 **Output current vs. ambient temp.**

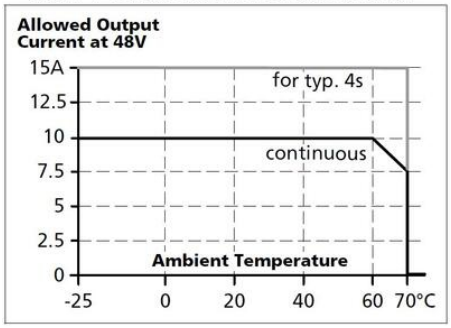


Fig. 9-1 **Efficiency vs. output current at 48V, typ.**

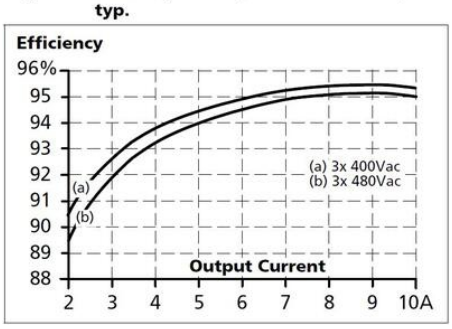
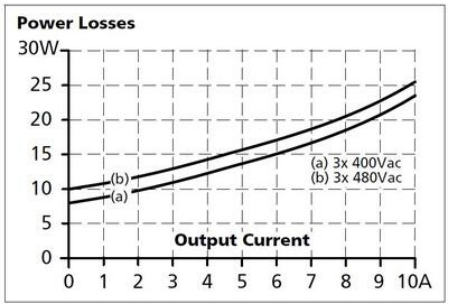


Fig. 9-2 **Losses vs. output current at 48V, typ.**



Maximal wire length*) for a fast (magnetic) tripping:

	0.75mm²	1.0mm²	1.5mm²	2.5mm²
C-2A	56m	69m	104m	163m
C-3A	34m	44m	64m	48m
C-4A	13m	15m	24m	35m
C-6A	2m	4m	4m	9m
B-6A	16m	19m	28m	42m
B-10A	4m	7m	9m	15m
B-13A	3m	4m	7m	10m

Fig. 6-2 **Bonus time vs. output power**

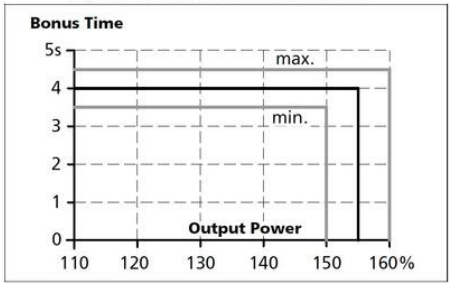


Fig. 13-1 **Front side**

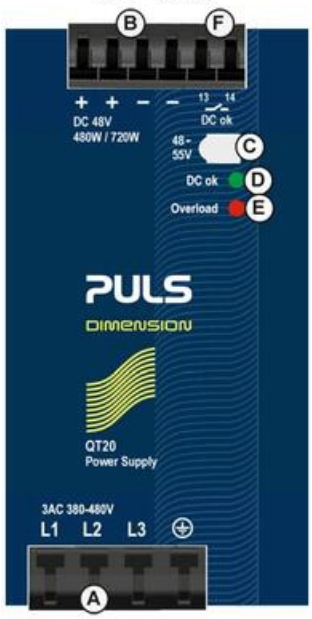
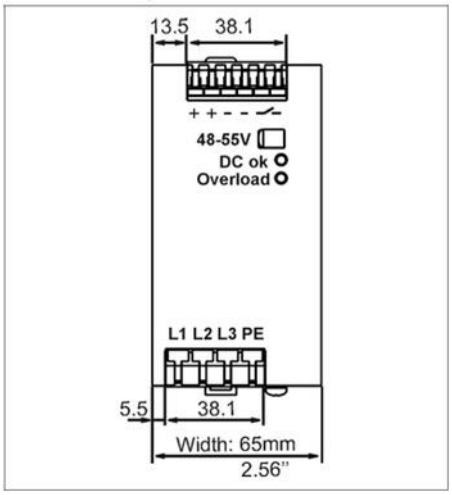
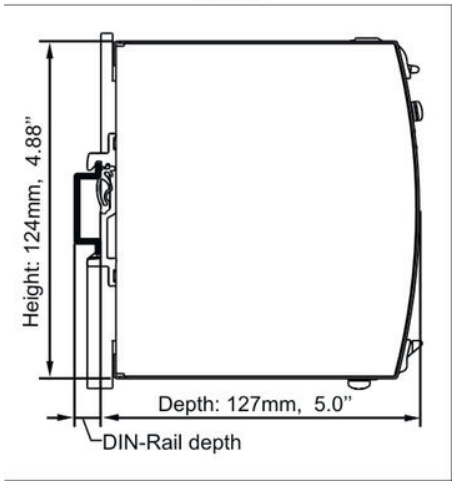


Fig. 20-1 **Front view**



Side view



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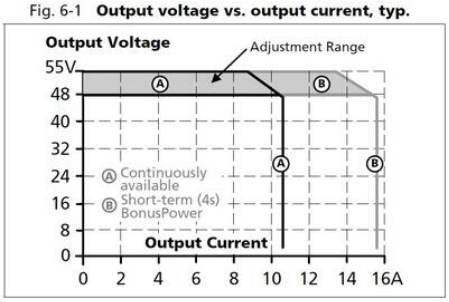


Fig. 15-1 **Output current vs. ambient temp.**

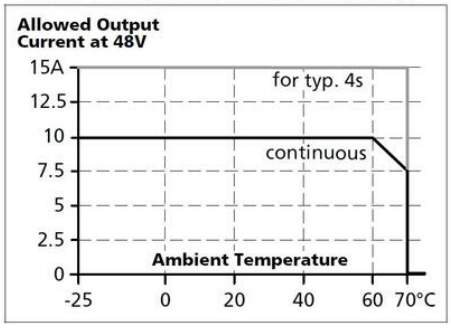
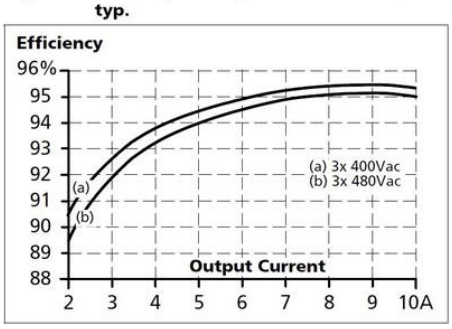


Fig. 9-1 **Efficiency vs. output current at 48V, typ.**



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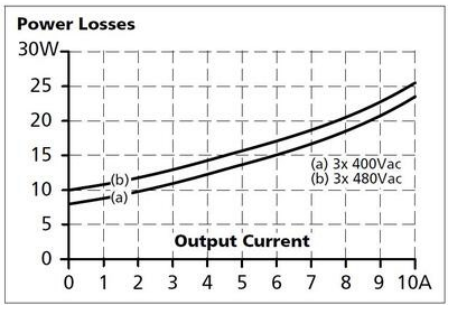

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B-10A	4m	7m	9m	15m
B-13A	3m	4m	7m	10m

Fig. 6-2 **Bonus time vs. output power**

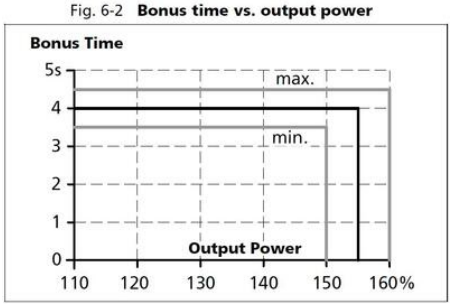
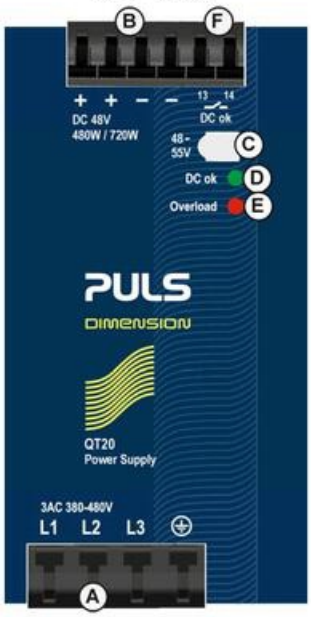


Fig. 13-1 **Front side**



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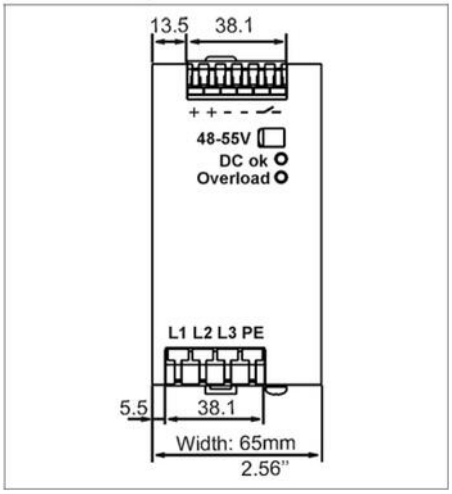

Side view

