



## POWER SUPPLY 3-PHASE, 36 V DC DIMENSION Q SERIES

QT20.361

PSU 3PH 380-480V ac I/P 36V dc 13.3A 480W O/P

- Output current of 13.3 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.

#### Bonus power

The power supply has bonus power that enables high power outlet with retained 36 V DC for 4 seconds, which is a major advantage when connected loads have high starting currents, such as the case with motors. How often you can use the bonus effect depends on the application. With the following diagram and formula, the repeat time can be calculated for each application. The bonus power is available as soon as the power supply is started and directly after a short circuit.

| Bonus power     | Operating characteristics   |
|-----------------|---|
| Po              | Nominal load current  |
| Ppeak           | Peak current  |
| To              | Time between bonus power  |
| Tpeak           | Peak current in time  |
| Operating cycle | $T_{peak} / (T_{peak} + T_o)$   |
| To              | $T_{peak} - (\text{operating cycle} * T_{peak}) / \text{operating cycle}$ |

E.g. Nominal load current (Po) is 6.6 A, Po = 50% of In. Peak current (Ppeak) is 16A = 120%. Peak time is 3 seconds.

Draw a vertical line at 120% of duty cycle, where the line crosses the Po = 50% horizontal draw a line to the duty cycle value. In this case, the value is about 0.68.  $3 - (3 \times 0,68) / 0,68 = 1.41$ . In this example, one can repeat the bonus effect with a gap of 1.41 seconds.

SPECIFICATIONS

|   |                                  |
|---|----------------------------------|
| Active Transient                              | Yes                              |
| Approvals                                     | CB, CE, CSA US, cRUus, cULus, GL |
| DC relay output                               | Yes                              |
| Depth   | 127                              |
| Effect  | 480                              |
| Efficiency At 400 V AC, full load. Typical    | 94.8                             |
| Efficiency At 400 V AC. Typical               | 94                               |
| Height  | 124                              |
| Hold-up time at 400 V AC, full load. Typical. | 22                               |
| Input voltage AC                              | 380-480 V                        |
| Input voltage ac max                          | 552                              |
| Input voltage ac min                          | 323                              |
| Input voltage range                           | Wide-range                       |
| Inrush current at 400 V ac typical            | 3                                |
| IP Class                                      | IP20                             |
| Lifetime at 400 V ac, full load and +40 ° C   | 51000                            |
| MTBF (IEC 61709) 400 V ac, max loan, +40 °C   | 690000                           |
| Number of phases                              | 3                                |
| Output Current                                | 13.3                             |
| Output voltage                                | 36                               |
| Output voltage max                            | 42                               |
| Output voltage min                            | 36                               |
| Power consumption at 400 V ac                 | 0.79                             |
| Power Factor at 400 V AC, full load. Typical  | 0.94                             |
| Power Reduction Of 60 To 70 ° C               | 12                               |
| Ripple. max                                   | 100                              |
| Series  | Dimension Q                      |
| Supply Frequency                              | 50-60 ±6 %                       |
| Temperature Range Without Derating From       | -25                              |
| Temperature Range Without Derating To         | 60                               |
| Weight  | 0.87                             |
| Width   | 65                               |

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

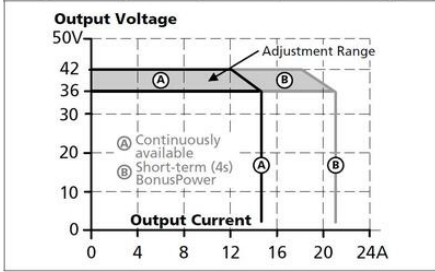


Fig. 15-1 Output current vs. ambient temp.

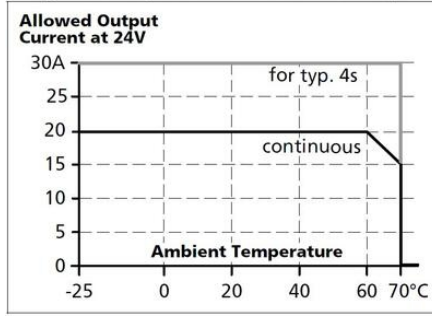


Fig. 6-2 Bonus time vs. output power

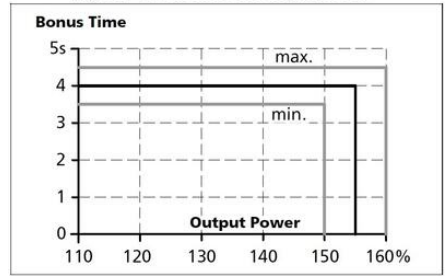


Fig. 9-1 Efficiency vs. output current at 36V, typ.

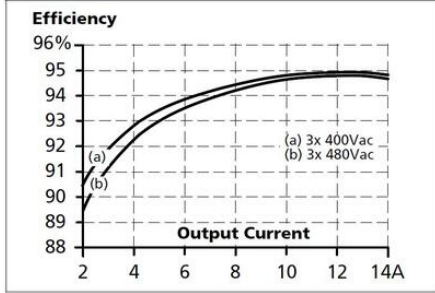
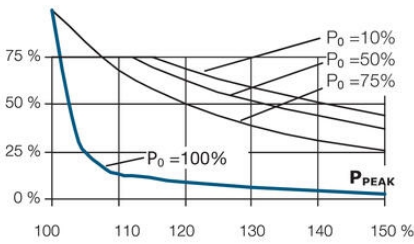
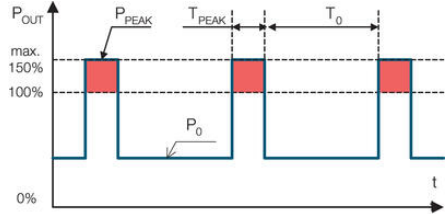
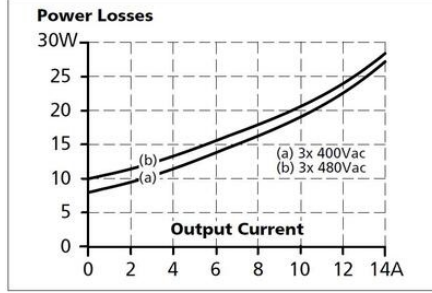


Fig. 9-2 Losses vs. output current at 36V, typ.



Maximal wire length<sup>1)</sup> for a fast (magnetic) tripping:

|       | 0.75mm <sup>2</sup> | 1.0mm <sup>2</sup> | 1.5mm <sup>2</sup> | 2.5mm <sup>2</sup> |
|-------|---------------------|--------------------|--------------------|--------------------|
| C-2A  | 69m                 | 86m                | 123m               | 200m               |
| C-3A  | 21m                 | 28m                | 39m                | 63m                |
| C-4A  | 9m                  | 13m                | 18m                | 29m                |
|       |                     |                    |                    |                    |
| B-6A  | 11m                 | 16m                | 24m                | 33m                |
| B-10A | 1m                  | 1m                 | 1m                 | 1m                 |

Fig. 13-1 Front side

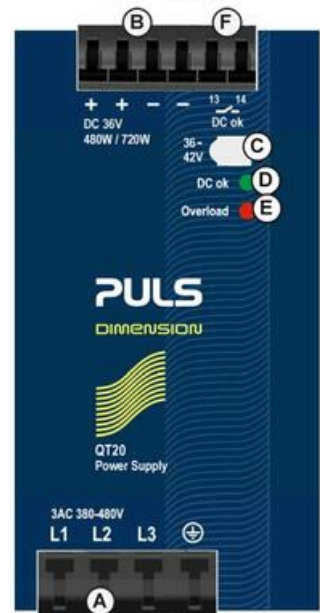
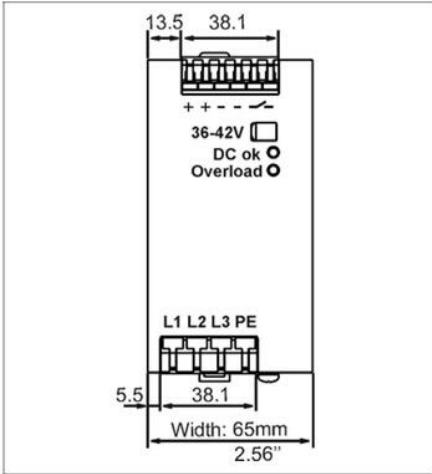


Fig. 20-1 Front view



Side view

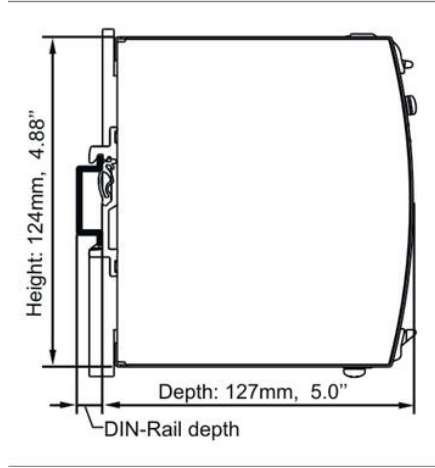


Fig. 6-1 Output voltage vs. output current, typ.

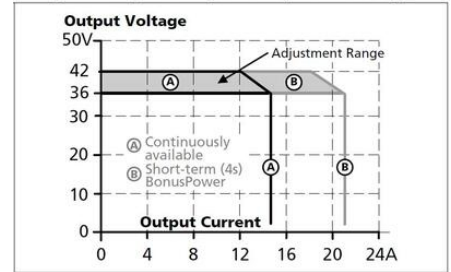


Fig. 15-1 Output current vs. ambient temp.

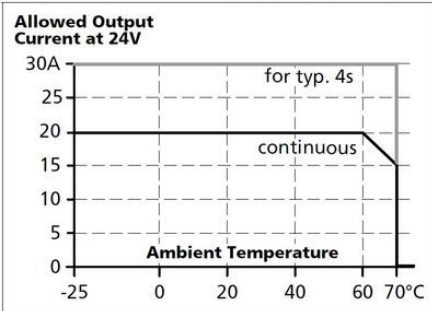


Fig. 6-2 Bonus time vs. output power

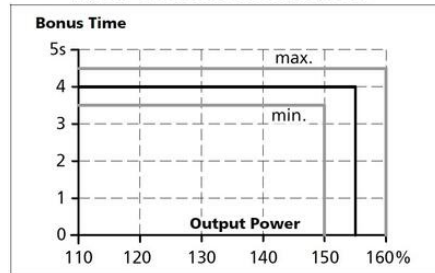


Fig. 9-1 Efficiency vs. output current at 36V, typ.

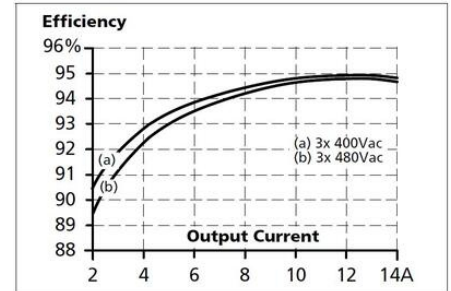
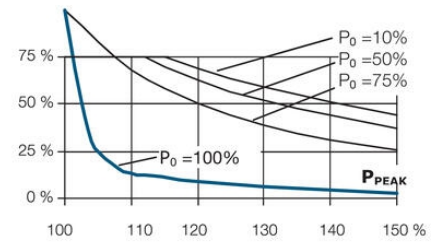
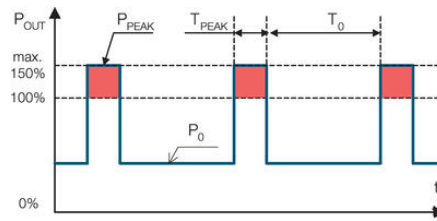
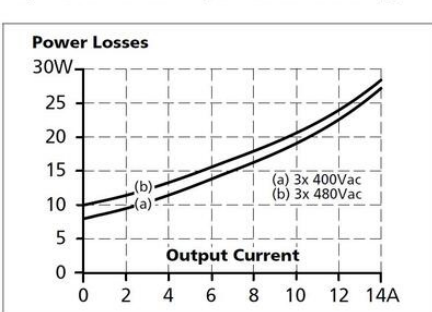


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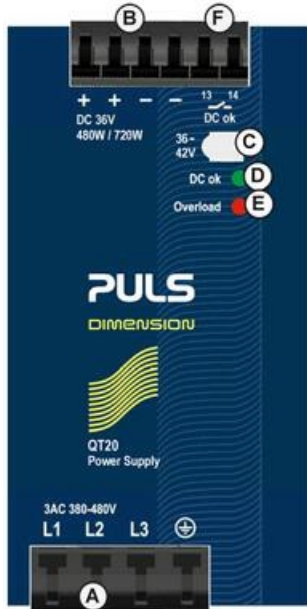
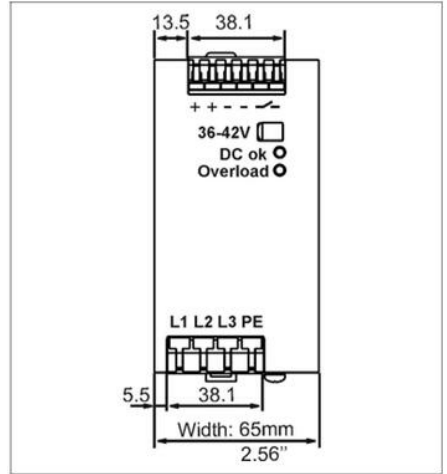


Fig. 20-1 Front view



Side view

