

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

QT20.361

POWER SUPPLY 36VDC 480W 13A



- 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.

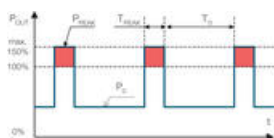
High efficiency for long life and low temperature.

The power supply can be connected for two-phase operation Within up to +40°C. At higher temperatures, the load current is reduced.

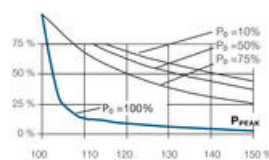
**Bonus power**

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



|                   |  |
|-------------------|--|
| P <sub>o</sub>    | Nominal load current   |
| P <sub>peak</sub> | Peak current   |
| T <sub>o</sub>    | Time between bonus power   |
| T <sub>peak</sub> | Peak current in time   |
| Operating cycle   | T <sub>peak</sub> / (T <sub>peak</sub> + T <sub>o</sub> )                    |
| T <sub>o</sub>    | T <sub>peak</sub> - (operating cycle * T <sub>peak</sub> ) / 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

|   |            |
|---|------------|
| <b>Input voltage range</b>                          | Wide-range |
| <b>Number of phases</b>                             | 3          |
| <b>Input voltage AC</b>                             | 380-480 V  |
| <b>Input voltage ac min</b>                         | 323 V AC   |
| <b>Input voltage ac max</b>                         | 552 V AC   |
| <b>Inrush current at 400 V ac typical</b>           | 3 A        |
| <b>Power Factor at 400 V AC, full load. Typical</b> | 0,94       |
| <b>Supply Frequency</b>                             | 50-60 ±6 % |
| <b>Power consumption at 400 V ac</b>                | 0,79 A     |
| <b>Type Power Supply</b>                            | AC-DC      |
| <b>Output voltage</b>                               | 36 V DC    |
| <b>Output voltage min</b>                           | 36 V DC    |
| <b>Output voltage max</b>                           | 42 V DC    |
| <b>Output Current</b>                               | 13,3 A     |
| <b>Effect</b>                                       | 480 W      |
| <b>Power Reduction Of 60 To 70 ° C</b>              | 12 W/°C    |
| <b>Ripple. max</b>                                  | 100 mV pp  |
| <b>Temperature Range Without Derating From</b>      | -25 °C     |
| <b>Temperature Range Without Derating To</b>        | 60 °C      |
| <b>Efficiency At 400 V AC. Typical</b>              | 94 %       |
| <b>Efficiency At 400 V AC, full load. Typical</b>   | 94,8 %     |
| <b>Lifetime at 400 V ac, full load and +40 ° C</b>  | 51000 h    |
| <b>MTBF (IEC 61709) 400 V ac, max loan, +40 °C</b>  | 690000 h   |
| <b>Width</b>  | 65 mm      |
| <b>Height</b>                                       | 124 mm     |
| <b>Depth</b>  | 127 mm     |
| <b>Weight</b>                                       | 0,87 kg    |

|   |                                  |
|---|----------------------------------|
| Clamp type                                    | Spring-clamp                     |
| Series  | Dimension Q                      |
| Approvals                                     | CB, CE, CSA US, cRUus, cULus, GL |
| DC relay output                               | Yes                              |
| Material Protection                           | Aluminium                        |
| Hold-up time at 400 V AC, full load. Typical. | 22 ms                            |
| IP Class                                      | IP20                             |
| Active Transient                              | Yes                              |

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

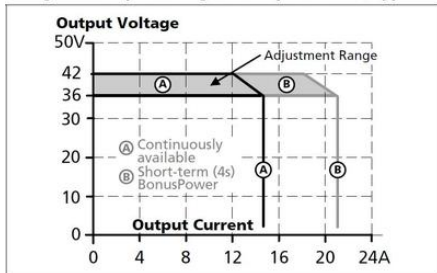


Fig. 15-1 Output current vs. ambient temp.

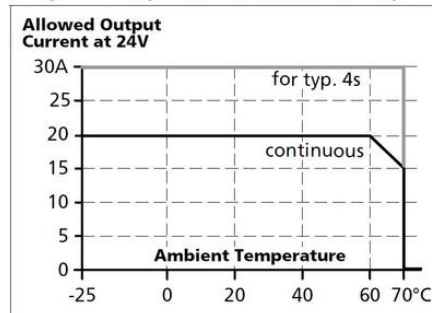


Fig. 6-2 Bonus time vs. output power

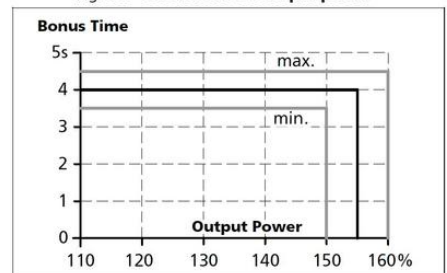


Fig. 9-1 Efficiency vs. output current at 36V, typ.

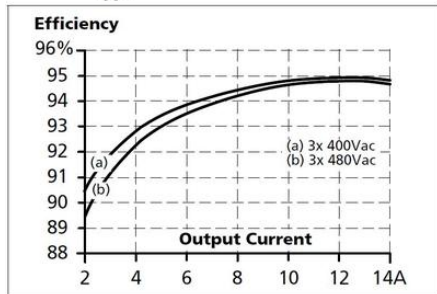
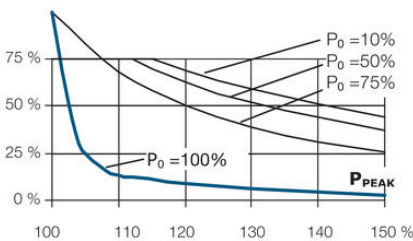
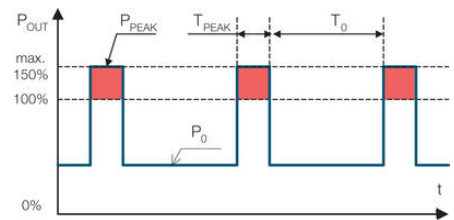
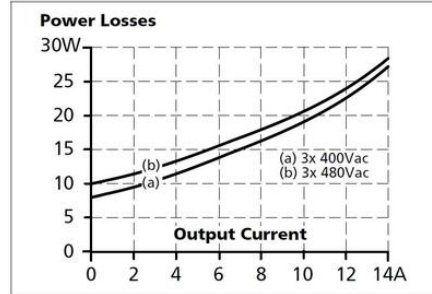


Fig. 9-2 Losses vs. output current at 36V, typ.



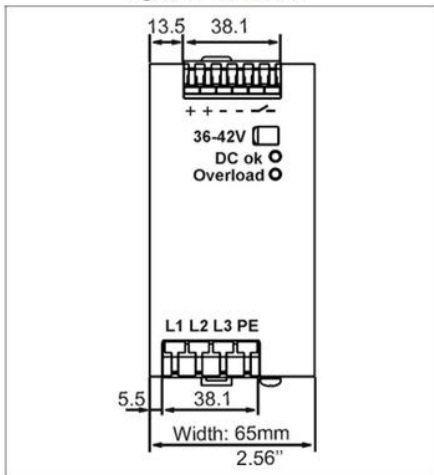
Maximal wire length<sup>1)</sup> for a fast (magnetic) tripping:

|       | 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

