POWER SUPPLY 3-PHASE, 24 V DC DIMENSION Q SERIES

QT40.241
POWER SUPPLY 24VDC 960W 40A

- Output current of 40 A
- Up to 95.3% efficiency
- Remote Function
- Maximum performance
- Integrated primary fuses

PRODUCT DESCRIPTION

Pulse Dimension Q is a series power supply with very high performance and reliability.

QT40.241 have built primary fuses that make it possible to connect the unit without the need for intermediate fuses up to 32 A (UL) which saves space and money. The efficiency is high over a wide load range, which results in reduced power consumption and longer life regardless of load current. An average efficiency is 94.7% with a peak value of 95.3%. The power loss at idle is very low, 9.5 W.

The bonus power provides 50% extra reserve with retained 24 V dc (60 A) which is an advantage when connected loads have high starting currents and to bridge temporary current peaks. The bonus power is limited to 4 seconds to avoid constant overloading of the power supply and wiring. In addition to the bonus effect leave the unit a very high short-circuit current (ms) that helps to secondary fuses. See technical data for example.

Active transient ensure operation also in very störrik electrical environment and also has QT40.241 active inrush current protection, which means a very low starting current, even if the unit has been in operation for a longer time. Especially useful for redundant / parallel-connected systems.

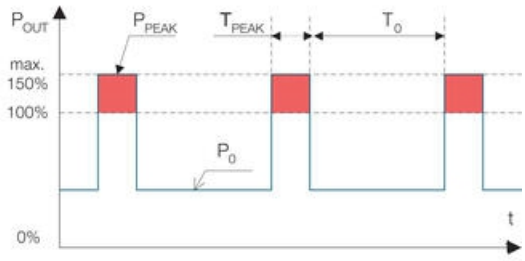
Simple diagnostics via DC-OK relay that falls on the output voltage deviates more than 10% from the set value, a green LED indicates DC-OK, Red LED indicates overload.

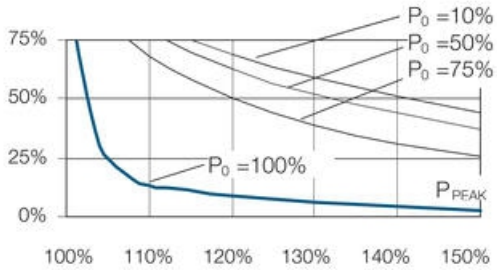
The unit can also be remote controlled for on / off function, three different connection options available. See the "Technical data". Can be used instead of expensive DC contactors when you need to break up the 24 V side (NB. The remote control function has no safety circuit and therefore should not be used in the security context).

Active PFC reduces power consumption, harmonics close to zero, in addition, the power distribution in phases much smoother at power asymmetry.
Bonus power
The power supply has bonus power that enables high power extraction with retained 24 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 bonus power can be utilised 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.

We recommend free space of 40 mm above and 20 mm under the power supply, and 5 mm at the sides.

Bonus power	Operating cycle

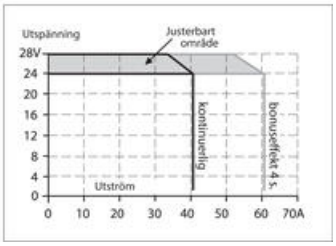




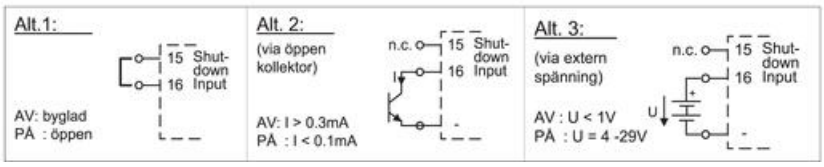
Po	Nominal load current
Ppeak	Peak current
To	Time between bonus power
Tpeak	Peak current I time
Operating cycle	Tpeak / (Tpeak + To)
To=	Tpeak - (operating cycle * Tpeak) / operating cycle

Example: Peak current (Ppeak) is 50 A =125%. The peak time is 3 seconds. Nominal load current (Po) is 30 A. 30 A =75% of I_{nom}. According to the diagram, the operating cycle is about 0.45. To = 3 - (0.45 * 3) / 0.45 = 3.6. Maximum repeat time of bonus power is 3.6 seconds.

Output characteristic



Remote control function



SPECIFICATIONS

Input voltage range	Wide-range
Number of phases	3
Input voltage AC	380-480 V

Input voltage ac min	323 V AC
Input voltage ac max	576 V AC
Inrush current at 400 V ac typical	5 A
Power Factor at 400 V AC, full load. Typical	0,88
Supply Frequency	50-60 ±6 %
Power consumption at 400 V ac	1,65 A
Type Power Supply	AC-DC
Output voltage	24 V DC
Output voltage min	24 V DC
Output voltage max	28 V DC
Output Current	40 A
Effect	960 W
Power Reduction Of 60 To 70 ° C	24 W/°C
Ripple. max	100 mV pp
Temperature Range Without Derating From	-25 °C
Temperature Range Without Derating To	60 °C
Efficiency At 400 V AC. Typical	94,7 %
Efficiency At 400 V AC, full load. Typical	95,3 %
Lifetime at 400 V ac, full load and +40 ° C	69000 h
MTBF (IEC 61709) 400 V ac, max loan, +40 °C	375000 h
Width	110 mm
Height	124 mm
Depth	127 mm
Weight	1,5 kg
Clamp type	Screw on
Series	Dimension Q
Approvals	CB, CE, CSA, GL, UL
DC relay output	Yes
Material Protection	Aluminium
Hold-up time at 400 V AC, full load. Typical.	25 ms
IP Class	IP20

Active Transient	Yes

Fig. 6-1 **Output voltage vs. output current in "single use" mode, typ.**

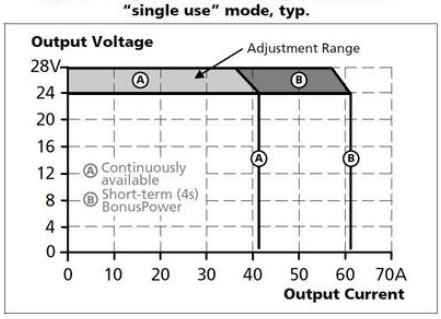


Fig. 6-4 **Dynamic overcurrent capability, typ.**

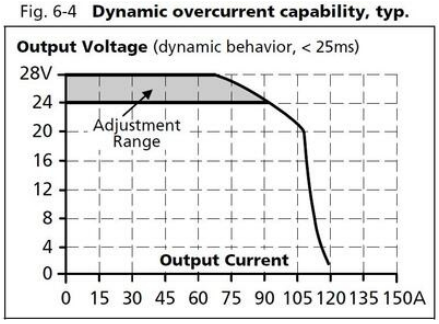


Fig. 17-1 **Output current vs. ambient temp.**

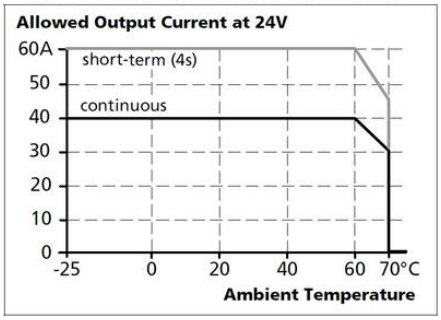


Fig. 6-3 **Bonus time vs. output power**

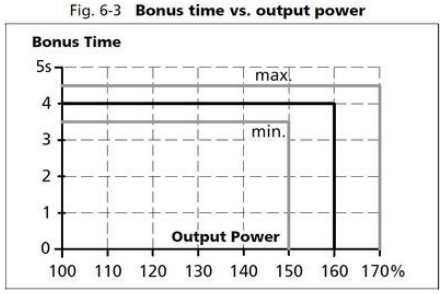


Fig. 11-1 **Efficiency vs. output current at 24V, typ.**

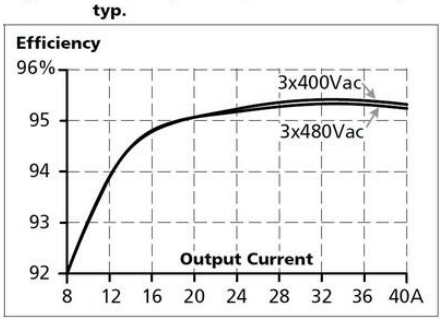
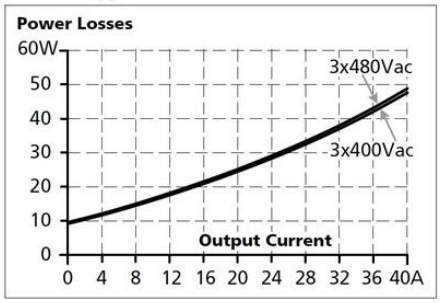


Fig. 11-2 **Losses vs. output current at 24V, typ.**



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

	0.75mm²	1.0mm²	1.5mm²	2.5mm²
C-2A	28m	38m	54m	78m
C-3A	26m	35m	50m	74m
C-4A	19m	26m	38m	58m
C-6A	12m	16m	24m	32m
C-8A	9m	12m	17m	25m
C-10A	7m	10m	15m	21m
C-13A	4m	5m	7m	11m
B-6A	19m	26m	35m	59m
B-10A	11m	17m	26m	37m
B-13A	10m	13m	21m	32m
B-16A	8m	11m	14m	24m
B-20A	4m	6m	8m	14m

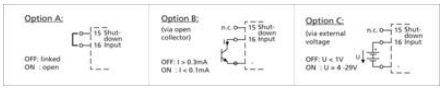


Fig. 15-1 **Front side**

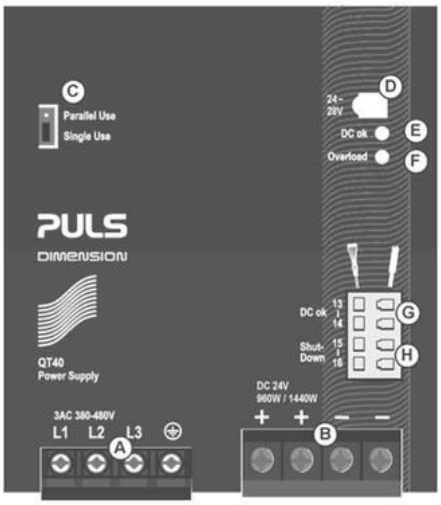
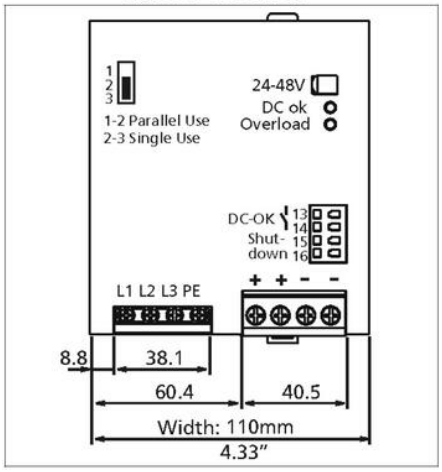


Fig. 22-1 **Front view**



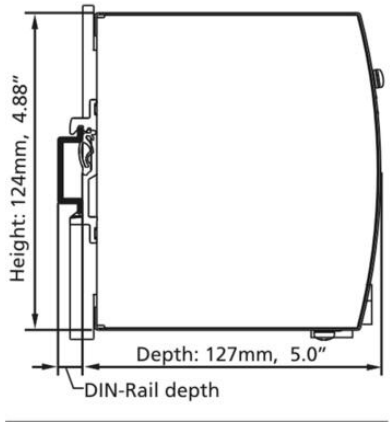


Fig. 6-1 **Output voltage vs. output current in “single use” mode, typ.**

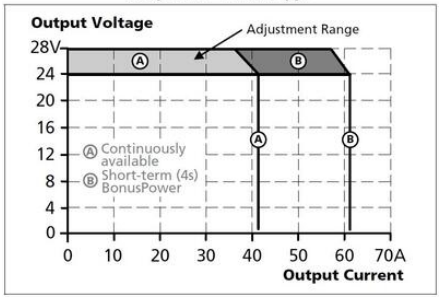


Fig. 6-4 **Dynamic overcurrent capability, typ.**

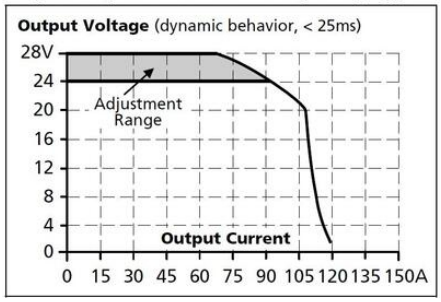


Fig. 17-1 **Output current vs. ambient temp.**

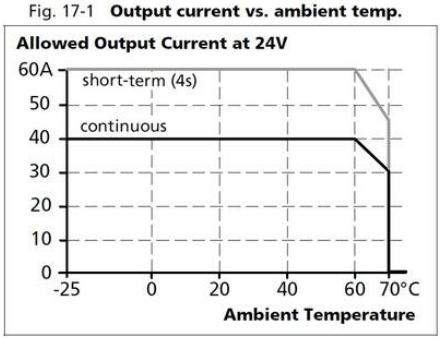


Fig. 6-3 **Bonus time vs. output power**

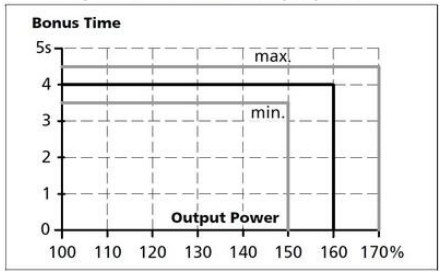


Fig. 11-1 **Efficiency vs. output current at 24V, typ.**

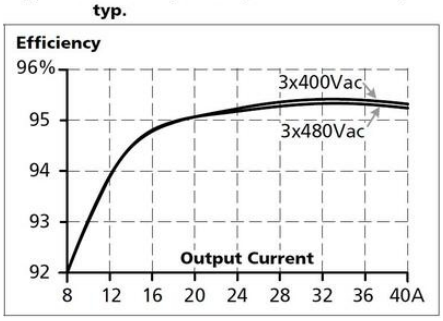
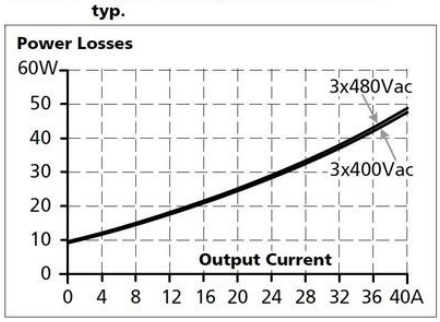


Fig. 11-2 **Losses vs. output current at 24V, typ.**



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C-8A	9m	12m	17m	25m
C-10A	7m	10m	15m	21m
C-13A	4m	5m	7m	11m
B-6A	19m	26m	35m	59m
B-10A	11m	17m	26m	37m
B-13A	10m	13m	21m	32m
B-16A	8m	11m	14m	24m
B-20A	4m	6m	8m	14m

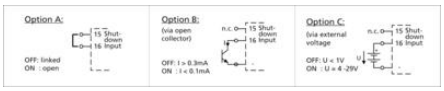


Fig. 15-1 **Front side**

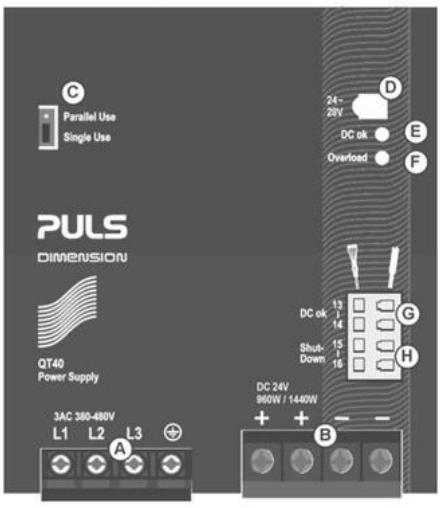
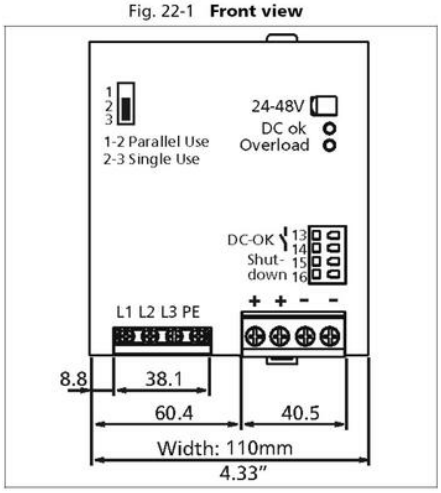
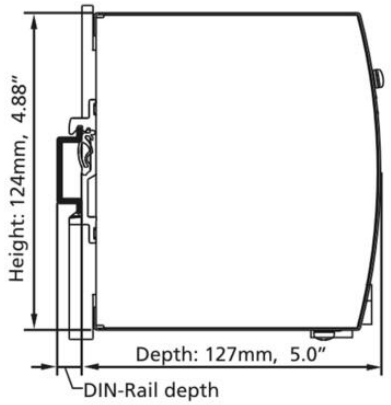


Fig. 22-1 **Front view**




Height: 124mm, 4.88”
Depth: 127mm, 5.0”
DIN-Rail depth