

Technical data sheet

Power supply · LEPOS Power, 3-phase, regulated, 960 W

Primary switchmode power supply, three-phase

Input: wide-range input AC 340-550 V

Output: DC 24 V / 40 A, adjustable



Identification

Type	LEPOS-PWR-960-24
Part No.	722727

Product version

Datasheet version	00
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Input

Number of phases	3
Rated voltage U_N	3 × AC 380–480 V
Operation voltage range	3 × AC 340-550 V / 3 × DC 480-780 V Two-phase operation possible with connection L1, L3, FG or L2, L3, FG - Two-phase operation is permitted under certain output current restrictions. (For details, please refer to the derating curves).
Frequency range	47 Hz – 63 Hz
Rated current I_N	typ. 2 A @ AC 400 V typ. 1.4 A @ AC 500 V
Inrush current	Cold start 60 A
Leak current	<3.5 mA / AC 530 V
Internal fuse	T6,3 A / AC 500 V
External protection	Mini-circuit breaker: C 16 A
Power factor correction P.F.C.	typ. PF ≥0.88 @ AC 400 V (at full load) / typ. PF ≥0.86 @ AC 500 V (at full load)

Output

Output voltage/current	DC 24 V/40 A
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Part No. [722727](#) • Datasheet version: 00

page 1 of 6

Technical data sheet

Power supply · LEPOS Power, 3-phase, regulated, 960 W

Rated voltage U_N	DC 24 V
Rated current I_N	40 A
Max. output current	52 A, 3 s
Power Dissipation	<72 W @ AC 400 V
Setting range $U_{out\ min.}/U_{out\ max.}$	24-28 V
Accuracy	$\pm 1\ %$
Load regulation	$\pm 1\ %$
Line regulation	$\pm 0.5\ %$
Rise time	1000 ms (setup), 100 ms (switch-on time) @ AC 400 V (at full load) / 800 ms (setup), 100 ms (switch-on time) @ AC 500 V (at full load)
Temperature coefficient	$\pm 0.03\ % / ^\circ C$ (0-50 $^\circ C$)
Ripple and noise	180 mV Ripple and noise are measured with 20 MHz bandwidth, the probe is terminated with a 0.1 μF MKP parallel capacitor.
Hold up time	>20 ms @ AC 400 V >20 ms @ AC 500 V (at full load)
Parallel / redundant mode	Current distribution with P+, P-, max. 4 devices / via external decoupling diode e.g. 722999
Efficiency	94 %
Overtemperature protection	105 $^\circ C$ +/- 5 $^\circ C$, switch-off with auto reset
Over voltage protection	29–33 V, protection: hiccup mode, autoreset after fault rectification
Rated over load protection	105-130 % nominal output power, protection: constant current limitation, device switches to hiccup mode after 3 seconds
Short circuit	Constant current limitation, device switches to hiccup mode after 3 seconds

Status indication

Status indication DC ON LED green	DC 22-28 V
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Monitoring

DC ON Control (Rdy)	N/O contact
Switching voltage	AC/DC 30 V
Switching current	AC/DC 1 A
Switching capacity	30 VA / 30 W
Isolation voltage	AC 500 V

General

Insulation voltage input / output	AC 3.0 kV _{eff}
Insulation voltage input / ground	AC 2.0 kV _{eff}
Insulation voltage output / ground	AC 500 V / DC 500 V
Insulation resistance at DC 500 V	100 M Ω
Derating	>50 $^\circ C$: -19.2 W/ $^\circ C$
Cooling	Air convection, 15 mm distance right/left, 40 mm top, 20 mm bottom
Housing material	Metal
Mounting	DIN rail mountable TS35 (EN 60715)
Max. altitude operation	2000 m

Technical data sheet

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Installation position	Vertical
MTBF	59.500 h - MIL-HDBK-217F (25 °C) / >550.040 h - Telcordia SR-332 (Bellcore)
Degree of protection	IP20
Protection class	I
Weight/unit	2.47 kg
Connection type	Screw terminal 0.20 mm ² – 2.5 mm ² AWG 24 – AWG 12
Dimensions (w × h × d)	110.0 mm × 125.2 mm × 152.3 mm
PU (units)	1

General ambient conditions

Operation temperature range	-30 °C ... +70 °C Derating >50°C See also the illustration: Derating curve.
Storage temperature range	-40 °C ... +85 °C
Over voltage category	III, in accordance with EN61558, EN50178, EN60664-1, EN62477-1, EN60204-1; altitude up to 2000 meters
Degree of pollution	2
Relative air humidity	20 – 95 % RH, non-condensing
Vibration resistance	2 g / 10 - 500 Hz, 1 hour/direction X,Y,Z non-operating, mounted on DIN-Rail (IEC 60068-2-6)

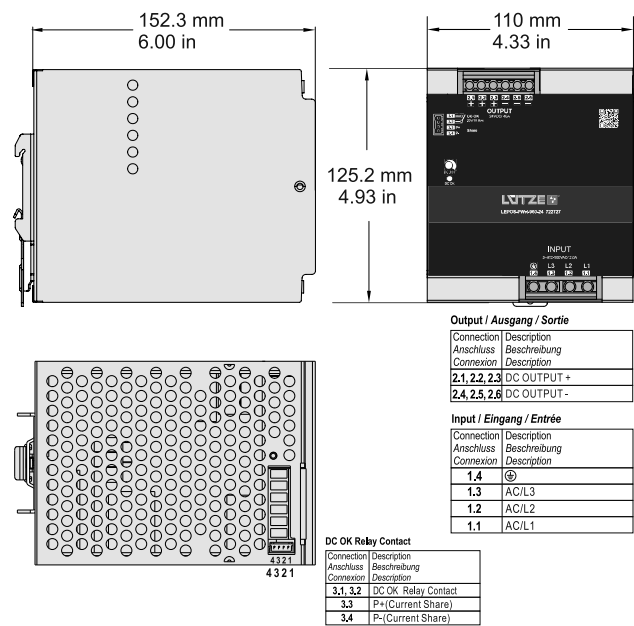
Certifications/Standards

Conformity	CE
Certifications	cULus (E249179)
Standards	EN 55032:2015+A11:2020 EN 55035:2017+A11:2020 EN 61000-3-12:2011 EN 61010-1:2010+A1:2019+AC:2019 EN IEC 61000-3-11:2019 UL 61010-1:2019 UL 61010-2-201:2018

Notes and Comments

Note	All parameters are NOT specifically mentioned for AC 400 V input, rated load and 25 °C ambient temperature. The power supply unit is regarded as a component that is installed in a terminal device. The end device must be reconfirmed that it still complies with the EMC directives. Instructions for carrying out these EMC tests can be found under "EMI testing of power supply components".
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Dimensions



Use

DC OK Relay Contact	
Contact Close	PSU turns on / DC OK.
Contact Open	PSU turns off / DC Fail.
Contact Ratings (max.)	30V/1A resistive load.

Technical data sheet

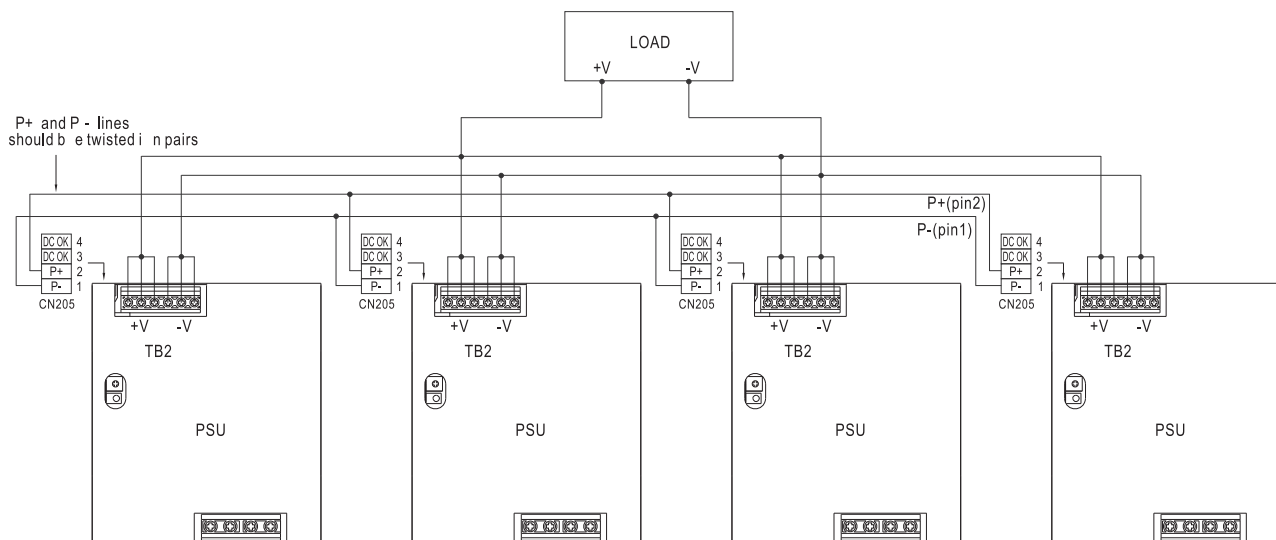
Power supply · LEPOS Power, 3-phase, regulated, 960 W

Use

Note

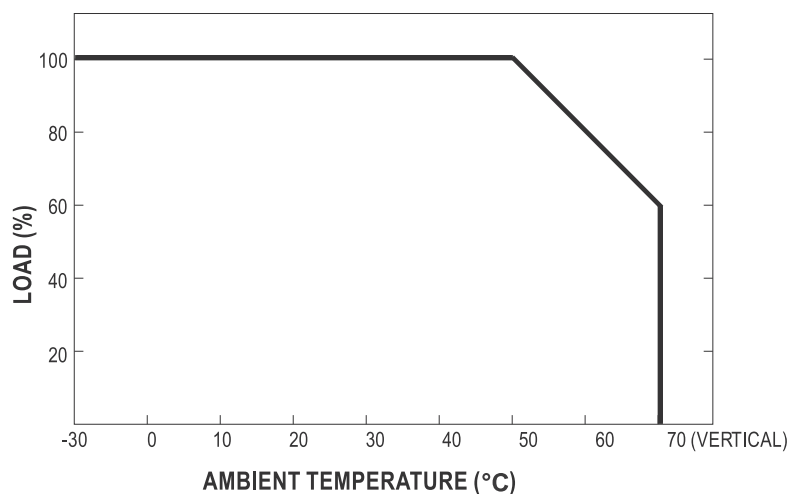
Current Sharing

1. Connection type of parallel operation is as follows (P+,P- parallel connection)
2. The output voltage difference between the parallel units should be less than 0.2V
3. The total output current must not exceed the value calculated of the following equation:
(Output current at parallel operation) = (The rated current per unit)* (Number of unit) x 0.9
4. The maximum quantity of parallel operation is **four** units, if need more quantity of parallel operation, please contact the manufacture.
5. In parallel connection, the minimum output load should be more than 3% of total output load
(Min. load > 5% rated current per unit x number of unit)
6. The power supplies should be paralleled using short and large diameter wiring and then connected to the load.
7. In parallel connection, maybe only one unit(master) operate if total output LEDS & relays will not turn on.
8. Some minor noise may be heard at light load condition under parallel operation.
This is a normal phenomenon and the performance of the PSU will not be influenced.



Derating

Deduction Curve and Temperature

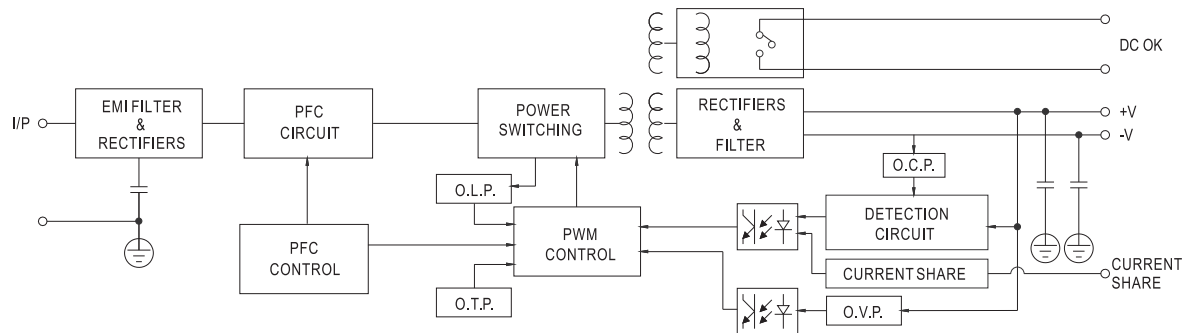


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Circuit diagram

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Characteristic

Minus Output and Input Voltage Curves

