

GL4024P Primary Switched Battery Charging and Power Supply Unit with DC On/Ready Contact



- Compact design for DIN rail mounting
- Battery charging and low voltage supply
- Output voltage adjustable
- DC On (Power Ready) Contact
- LEDs for DC On and DC Low
- Parallel operation
- Power Factor PFC 0,7
- Efficiency factor 92 %
- Operating temperature range -25 ... +71 ° Celsius

Application:

The battery charging and power supply unit GL4024P is used for charging high-quality lead or nickel-cadmium batteries and/or for supplying 24V DC circuits. The charging unit is especially suitable for use with diesel generators, where operating safety and long-term stability are necessary.

The primary clocked switching power supply is intended for use on the top-hat rail due to its high efficiency, low weight and low heat development. It is designed such that heat transport is vertical, meaning that other electronic units can be mounted on the hat rail about 5-15 cm away from the power supply unit (depends on amount of heat), thus saving space.

The output of the GL4024P is connected to the battery or DC supply via protective equipment. The output voltage / final charging voltage is also kept stable during large mains fluctuations (3x 340 - 575 VAC) and high temperature variations.

When the unit is operated for longer periods at high currents and in heated environments, the charging current set is reduced automatically in order to reduce the thermal load on the components.

Charging:

Normal Charging:

The empty battery is first charged at the constant current set. Before the preset final charging voltage is reached, the current gradually decreases. The gassing of the battery is limited and the continually reduced current causes the voltage to rise slowly until it reaches the final charging voltage. This characteristic I / U curve ensures the gradual charging of the battery.

Settings, DC On Contact, etc.:

The GL4024P charging unit is set to a battery voltage of 26.6V in no-load operation before leaving the factory. The final charging voltage is adjusted in no-load operation using the adjuster on the front of the unit.

In mounting you should make sure that the PE connection is connected so that the unit meets the interference requirements according to VDE and EN.

The LED's on the front panel indicates that the charging and power supply unit is ready for operation (DC On or DC Low). **An additional DC On contact allows the monitoring of the charger. At fault (DC Out > = 17.6 to 19.4 V) opens the normally open contact.**

We recommend choosing the unit power output by + 30% to guarantee most availability.

Technical Data:

Input

| | |
|--------------------------------|---|
| Nominal voltage | 3× AC 400–500 V |
| Operation voltage range | 3× AC 340–575 V; 3× DC 480–820 V |
| Line frequency | 47 Hz – 63 Hz |
| Rated current | $U_i = AC 400 V: 2.4 A / U_i = AC 480 V: 1.6 A$ |
| Inrush current | 30 A |
| Internal fuse | T6, 3 A / per phase |
| External fuse | Automatic: 3 × B 16 A, C 10 A |
| Power Factor Correction P.F.C. | 0.7 |

Load Side

| | |
|-------------------------|----------------------------|
| Rated voltage output | DC 24 V |
| Rated current output | 40 A |
| Voltage trim range | 22.5–28.5 V |
| Accuracy | 1 % |
| Line regulation | ±1 % |
| Load regulation | Single ±1 %, Parallel ±5 % |
| Rise time | 1 s |
| Temperature coefficient | ±0.03 % / °C |
| Ripple & Noise | 80 mV |

| | |
|-----------------------------------|---|
| Hold up time | 15 ms |
| Status indication DC ON LED green | ≥17.6–19.4 V |
| Status indication DC LOW LED red | ≤17.6–19.4 V |
| Parallel/redundant operation | max 2 devices with 92 % load current each, connection P and G for distributed current |
| Efficiency | 92 % |
| Rated over load protection | Rated over load protection: 110 % –130 % |
| Over voltage protection | 125–137 % |
| Short circuit characteristics | Hiccup-mode |

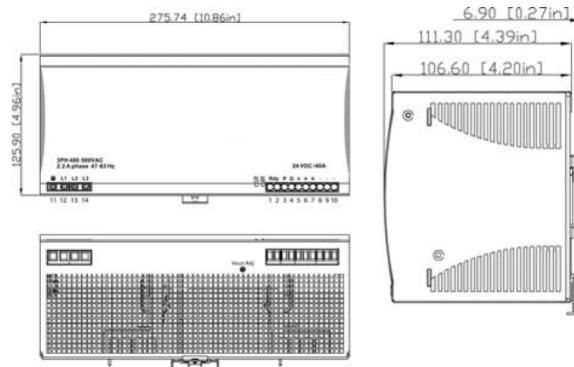
General

| | |
|-----------------------------------|--|
| Switching frequency | approx. 52 kHz |
| Insulation voltage input/output | AC 3.0 kV _{eff} |
| Insulation voltage input / ground | AC 1.5 kV _{eff} |
| Insulation resistance at DC 500 V | 100 MΩ |
| Operation temperature range | -25 °C – 71 °C (derating) |
| Derating | -3.5% / °C starting at 61°C |
| Storage temperature range | -25 °C – 85 °C |
| M.T.B.F. | 352000 h |
| Relative humidity | 20–90% RH, non-condensing |
| Dimensions (w × h × d) | 276.0 × 125.0 × 118.0 mm |
| Cooling | Natural air cooling, 25 mm distance on all sides |
| Installation position | vertical |
| Housing material | metal |
| Protection class | IP 20 |
| Field installation | rail TS 35 (EN 50022) |
| Application height | 3000 m |
| IP rating | I (SELV, PELV) |
| Overvoltage category | II |
| Pollution degree | 2 |
| Weight (kg/piece) | 3.200 |
| Termination | Screw terminal: 0.5–10.0 mm ² , max. 0.62 Nm |
| Approvals | TÜV: EN 60950-1; CE: EN 61000-6-3 / EN 55022 Class B, EN 61000-3-2, EN 61000-3-3, EN 61000-6-2, EN 55024 Class I, Division 2, Groups A, B, C and D |

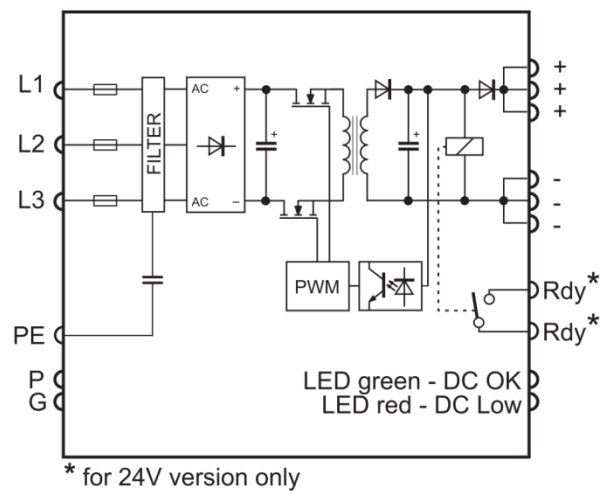
Monitoring

| | |
|---------------------|---------------|
| DC ON Control (Rdy) | Normally open |
| Switching voltage | DC 60 V |
| Switching current | max. 300 mA |
| Insulation voltage | DC 500 V |

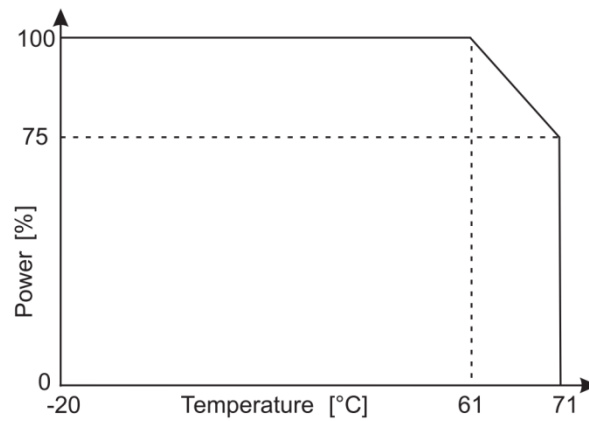
Dimensions



PIN assignment



Derating

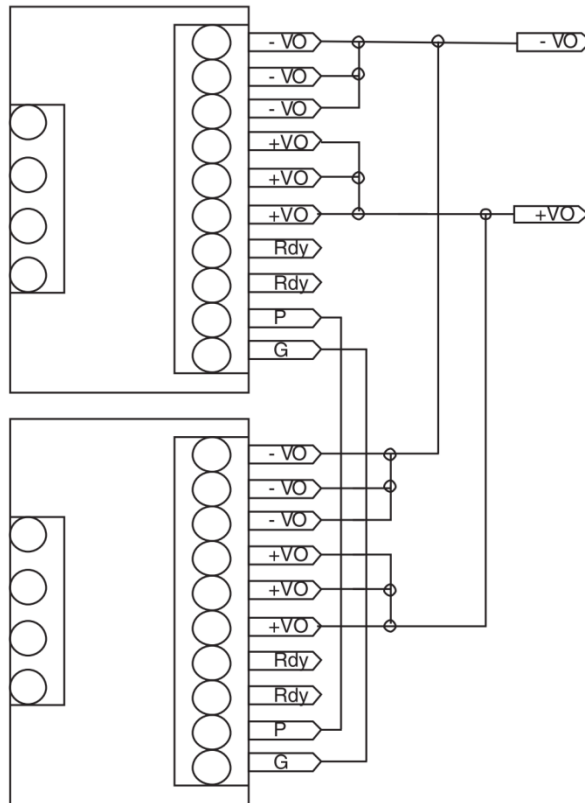


Parallel Mode:

Parallel Mode is available by connecting two GL4024P showing as below.

The parallel connection of different units is not allowed!

Parallel/redundant mode



Short circuit characteristics

