

PEL power supplies

Our powerful miniature units ensure optimum power supply for miniature controllers. Versions with a 12, 18 and 24 V output voltage are available, enabling them to be used in a whole range of different ways - making them a powerful and flexible option that's still light and compact. Our real all-rounders, these power supply units are suitable for a highly diverse range of applications (solar, measurement and control technology as well as industrial and building automation). When hooked up to public supply networks, our primary switched-mode regulators ensure a secure connection - wherever they are used. The DIN rail fastening method and spring-loaded terminals make for quick and easy mounting.

24 Vdc
18 Vdc
12 Vdc



Single phase, primary switched mode power supply

PEL



General Data

| |
|--------------------------------------|
| Input rated voltage 100 - 240 Vac |
| Output rated voltage 12 - 24 Vdc |
| Output rated current 1.3 - 6.5 A |
| Ambient temperature -25° C to +55° C |
| Efficiency up to 88 % |
| Protection index IP 20 |

Advantages

| |
|---|
| Stabilised and adjustable output voltage |
| DC OK signalling via LEDs |
| Parallel connection option |
| Service-friendly spring-loaded connector system |
| Panel installation on mounting rails |

Applications

Primary switch mode power supply is concentrated on the core task of voltage and current supply. Flat step profile optimized for installation in control panels in the building automation.

Standards

Primary switched mode power supply to UL 60950, UL 508

Safety:
EN 61558-2-17, EN 60950 (SELV)

EMC:
EN 61204-3

Certifications



UL/CSA 60950 recognised, UL508 listed, Germanischer Lloyd

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SWITCHED MODE POWER SUPPLIES/ PEL SERIES



Single phase, primary switched mode power supply **PEL**

| Type | PEL 230/12-2 | PEL 230/12-4 | PEL 230/12-6,5 | PEL 230/18-1,1 |
|--|---------------------------------------|---|---|---------------------------------------|
| Electrical data | | | | |
| Input | | | | |
| Input rated voltage | 100 - 240 Vac | 100 - 240 Vac | 100 - 240 Vac | 100 - 240 Vac |
| Input voltage range | 85 - 264 Vac (120 - 373 Vdc) | 85 - 264 Vac (120 - 373 Vdc) | 85 - 264 Vac (120 - 373 Vdc) | 85 - 264 Vac (120 - 373 Vdc) |
| Input rated current (rated load) | 0.7 / 0.4 A (110 / 230 Vac) | 0.9 / 0.5 A (110 / 230 Vac) | 1.6 / 0.9 A (110 / 230 Vac) | 0.6 / 0.4 A (110 / 230 Vac) |
| Rated frequency range | 44 - 66 Hz / 0 Hz | 44 - 66 Hz / 0 Hz | 44 - 66 Hz / 0 Hz | 44 - 66 Hz / 0 Hz |
| Starting current limiter | <30 A, NTC | <30 A, NTC | <30 A, NTC | <30 A, NTC |
| Input fuse internal | 2 A (slow-blow) | 2 A (slow-blow) | 4 A (slow-blow) | 2 A (slow-blow) |
| Recommended back-up fuse (circuit breaker) | 6 A, 10 A, 16 A, characteristics B, C | 6 A, 10 A, 16 A, characteristics B, C | 6 A, 10 A, 16 A, characteristics B, C | 6 A, 10 A, 16 A, characteristics B, C |
| Mains buffering | 10 / 80 ms | 10 / 80 ms | 15 / 100 ms | 10 / 80 ms |
| Output | | | | |
| Output rated voltage | 12 Vdc ±2 % | 12 Vdc ±2 % | 12 Vdc ±2 % | 18 Vdc ±2 % |
| Output voltage range | 10.5 - 15.5 Vdc | 10.5 - 15.5 Vdc | 10.5 - 15.5 Vdc | 15.5 - 19.0 Vdc |
| Output rated current | 2.00 A | 4.00 A | 6.50 A | 1.10 A |
| Overload behaviour | Constant current | Constant current | Constant current | Constant current |
| Ripple factor | typ. 100 mVss | typ. 100 mVss | typ. 100 mVss | typ. 100 mVss |
| Parallel connection | Yes | Yes | Yes | Yes |
| Serial operation | Yes | Yes | Yes | Yes |
| Efficiency | typ. 80 % | typ. 85 % | typ. 87 % | typ. 80 % |
| Signalling | | | | |
| Power Good (DC OK) | LED green | LED green | LED green | LED green |
| Feedback voltage max. | 25 Vdc | 25 Vdc | 25 Vdc | 25 Vdc |
| Standards | | | | |
| Classification | Primary switched mode power supply | Primary switched mode power supply | Primary switched mode power supply | Primary switched mode power supply |
| Approvals | | | | |
| Approvals | cURus, cULus, GL | cURus (prepared), cULus (prepared), GL | cURus (prepared), cULus (prepared), GL | cURus, cULus, GL |
| Environment | | | | |
| Ambient temperature | -25° C to +55° C | -25° C to +55° C | -25° C to +55° C | -25° C to +55° C |
| Storage temperature | -25° C to +85° C | -25° C to +85° C | -25° C to +85° C | -25° C to +85° C |
| Derating | -3 %/K > +45° C | -3 %/K > +45° C | -3 %/K > +45° C | -3 %/K > +45° C |
| Current capacity by any mounting position | max. 1.4 A | max. 2.4 A | max. 3.9 A | max. 0.8 A |
| Safety and protection | | | | |
| Protection index | IP 20 | IP 20 | IP 20 | IP 20 |
| Safety class | II, (in closed cabinet) | II, (in closed cabinet) | II, (in closed cabinet) | II, (in closed cabinet) |
| Order numbers | | | | |
| Order Number | PEL 230/12-2 | PEL 230/12-4 | PEL 230/12-6,5 | PEL 230/18-1,1 |



Single phase, primary switched mode
power supply
PEL

| Type | PEL 230/24-1,3 | PEL 230/24-2,5 | PEL 230/24-4 |
|--|---------------------------------------|---------------------------------------|--|
| Electrical data | | | |
| <u>Input</u> | | | |
| Input rated voltage | 100 - 240 Vac | 100 - 240 Vac | 100 - 240 Vac |
| Input voltage range | 85 - 264 Vac (120 - 373 Vdc) | 85 - 264 Vac (120 - 373 Vdc) | 85 - 264 Vac (120 - 373 Vdc) |
| Input rated current (rated load) | 0.7 / 0.4 A (110 / 230 Vac) | 1.4 / 0.6 A (110 / 230 Vac) | 1.6 / 0.9 A (110 / 230 Vac) |
| Rated frequency range | 44 - 66 Hz / 0 Hz | 44 - 66 Hz / 0 Hz | 44 - 66 Hz / 0 Hz |
| Starting current limiter | <30 A, NTC | <30 A, NTC | <30 A, NTC |
| Input fuse internal | 2 A (slow-blow) | 2 A (slow-blow) | 2 A (slow-blow) |
| Recommended back-up fuse (circuit breaker) | 6 A, 10 A, 16 A, characteristics B, C | 6 A, 10 A, 16 A, characteristics B, C | 6 A, 10 A, 16 A, characteristics B, C |
| Mains buffering | 10 / 80 ms | 10 / 80 ms | 15 / 100 ms |
| <u>Output</u> | | | |
| Output rated voltage | 24 Vdc ±2 % | 24 Vdc ±2 % | 24 Vdc ±2 % |
| Output voltage range | 22.8 - 26.4 Vdc | 22.8 - 26.4 Vdc | 22.8 - 26.4 Vdc |
| Output rated current | 1.30 A | 2.50 A | 4.00 A |
| Overload behaviour | Constant current | Constant current | Constant current |
| Ripple factor | typ. 100 mVss | typ. 100 mVss | typ. 100 mVss |
| Parallel connection | Yes | Yes | Yes |
| Serial operation | Yes | Yes | Yes |
| Efficiency | typ. 82 % | typ. 88 % | typ. 88 % |
| <u>Signalling</u> | | | |
| Power Good (DC OK) | LED green | LED green | LED green |
| Feedback voltage max. | 30 Vdc | 30 Vdc | 30 Vdc |
| <u>Standards</u> | | | |
| Classification | Primary switched mode power supply | Primary switched mode power supply | Primary switched mode power supply |
| <u>Approvals</u> | | | |
| Approvals | cURus, cULus, GL | cURus, cULus, GL | cURus (prepared), cULus (prepared), GL |
| <u>Environment</u> | | | |
| Ambient temperature | -25° C to +55° C | -25° C to +55° C | -25° C to +55° C |
| Storage temperature | -25° C to +85° C | -25° C to +85° C | -25° C to +85° C |
| Derating | -3 %/K > +45° C | -3 %/K > +45° C | -3 %/K > +45° C |
| Current capacity by any mounting position | max. 0.9 A | max. 1.6 A | max. 2.4 A |
| <u>Safety and protection</u> | | | |
| Protection index | IP 20 | IP 20 | IP 20 |
| Safety class | II, (in closed cabinet) | II, (in closed cabinet) | II, (in closed cabinet) |
| <u>Order numbers</u> | | | |
| Order Number | PEL 230/24-1,3 | PEL 230/24-2,5 | PEL 230/24-4 |

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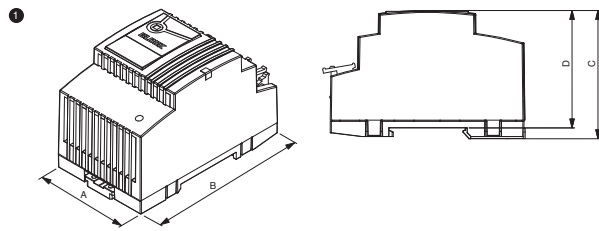
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Single phase, primary switched mode power supply **PEL**

| Mechanical data | Typ | Connections output, (spring clamp terminal) | Connections input, (spring clamp terminal) | Mounting position | Fixing method | Weight | Dimension picture (in mm) | | | |
|-----------------|----------------|---|--|-------------------|-----------------------|---------|---------------------------|----|----|----|
| | | | | | | | A | B | C | D |
| | PEL 230/12-2 | max. 2.5 mm ² | max. 2.5 mm ² | vertical | DIN Rail system TH 35 | 0.17 kg | 54 | 89 | 59 | 54 |
| | PEL 230/12-4 | max. 2.5 mm ² | max. 2.5 mm ² | vertical | DIN Rail system TH 35 | 0.24 kg | 72 | 89 | 59 | 54 |
| | PEL 230/12-6,5 | max. 2.5 mm ² | max. 2.5 mm ² | vertical | DIN Rail system TH 35 | 0.30 kg | 90 | 89 | 59 | 54 |
| | PEL 230/18-1,1 | max. 2.5 mm ² | max. 2.5 mm ² | vertical | DIN Rail system TH 35 | 0.17 kg | 54 | 89 | 59 | 54 |
| | PEL 230/24-1,3 | max. 2.5 mm ² | max. 2.5 mm ² | vertical | DIN Rail system TH 35 | 0.17 kg | 54 | 89 | 59 | 54 |
| | PEL 230/24-2,5 | max. 2.5 mm ² | max. 2.5 mm ² | vertical | DIN Rail system TH 35 | 0.24 kg | 72 | 89 | 59 | 54 |
| | PEL 230/24-4 | max. 2.5 mm ² | max. 2.5 mm ² | vertical | DIN Rail system TH 35 | 0.30 kg | 90 | 89 | 59 | 54 |

Dimension pictures



Redundant module
PELR



General Data

| |
|--------------------------------------|
| Input rated voltage 12 - 24 Vdc |
| Output rated voltage 12 - 24 Vdc |
| Output rated current 2 x 5/1 x 10 A |
| Ambient temperature -25° C to +55° C |
| Efficiency typ. 97 % |
| Protection index IP 20 |

Advantages

| |
|---|
| Signalling via LEDs |
| Service-friendly spring-loaded connector system |
| Panel installation on mounting rails |

Applications

Redundancy module for decoupling two power supplies for building a fail-safe delivery system. set of machines and equipment requiring high operational reliability.

Standards

Redundancy module
to UL 60950, UL 508

Safety:
EN 60950 (SELV), EN 60204 (PELV)

EMC:
EN 61000-6-3 (Interference emissions), EN 61000-6-2 (Interference immunity)

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Redundant module **PELR**

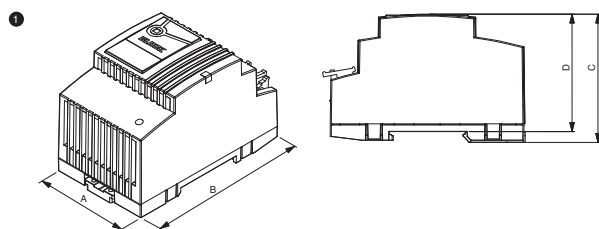
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|----------------------|-------------------------------------|-----------------------------|
| Electrical data | Type | PELR 24/24-5 |
| | Input | |
| | Input rated voltage | 24 Vdc |
| | Input voltage range | 11 - 30 Vdc |
| | Input rated current | 2 x 5 A / 1 x 10 A |
| | Output | |
| | Output voltage | U _{in} -0,7 V@10 A |
| | Output rated current | 10.00 A |
| | Internal fuse | No |
| | Parallel connection | Yes |
| | max. Power loss idling/nominal load | 1 / 7 W (10 A) |
| | Efficiency | 97 % |
| | Signalling | |
| | Operating status | LED green |
| | Feedback voltage max. | 35 Vdc |
| | Standards | |
| | Classification | Redundancy module |
| | Environment | |
| | Ambient temperature | -25° C bis +55° C |
| | Storage temperature | -25° C to +85° C |
| | Safety and protection | |
| Protection index | IP 20 | |
| Safety class | III | |
| Order numbers | | |
| Order Number | PELR 24/24-5 | |



Redundant module
PELR

| Mechanical data | Typ | Connections input, (spring clamp terminal, pluggable) | Connections output, (spring clamp terminal, pluggable) | Mounting position | Fixing method | Weight | Dimension picture (in mm) | | | |
|-----------------|--------------|---|--|-------------------|-----------------------|---------|---------------------------|----|----|----|
| | | | | | | | A | B | C | D |
| | PELR 24/24-5 | max. 2.5 mm ² | max. 2.5 mm ² | vertical | DIN Rail system TH 35 | 0.16 kg | 72 | 89 | 59 | 54 |

Dimension pictures



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