

|               |     |
|---------------|-----|
| Power Supply  | 124 |
| Finger Guards | 126 |
| Accessories   | 130 |
|               |     |



Everything that you need for your fan. ebm-papst provides an extensive range of accessories for optimum fan operation: From temperature sensing for speed-controlled fans to finger guards of all types, switched-mode power supply, connecting cable, filter, screens, spacers and assembly parts. In addition to the accessories and assembly parts listed in this catalogue, ebm-papst also supplies numerous special parts for fan operation. The sales experts at ebm-papst will be happy to assist you in your enquiries concerning fan assembly and application.

From selection to accessories: Insist on the efficient and reliable service provided by ebm-papst.

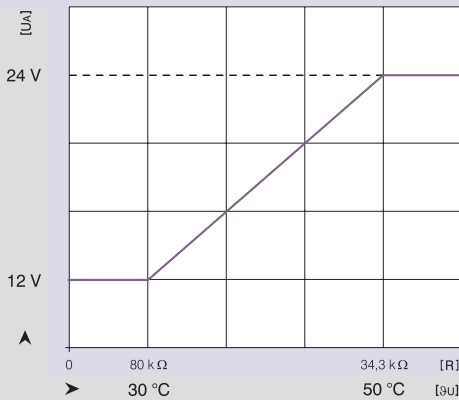
# Power Supply PS60



- Convection-cooled switched-mode power supply, specially designed for operating electronically commutated fans or motors.
- Up to 6 consumers with a total of 60 watts power consumption can be directly connected to the output plug connector.
- 24 V DC nominal voltage. Output voltage adjustable from 12 to 24 V via external resistor or potentiometer.
- Temperature-dependent fan operation. The required voltage is set via an external temperature sensor.
- Plastic housing.

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The power unit features a control input for selecting the voltage. The output voltage can be set via an external resistor from 12 to 24 V. When using a 100 kΩ NTC sensor (Accessory LZ 370) a temperature/voltage curve of 30 to 50 °C is produced. An efficient and practice-oriented reduction of the air flow performance and noise emitted by the fan can be achieved in this temperature range.

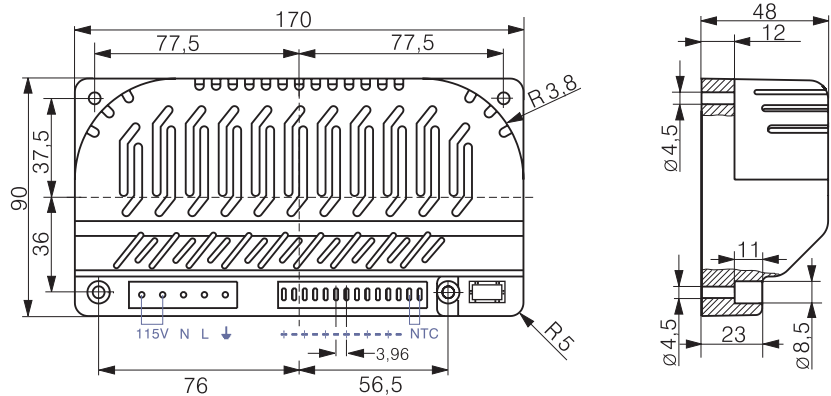


If the control input is open or the sensor has been torn off, 24 V DC are available at the output.

Option: PCB with additional functions e.g. speed monitoring with alarm signal output for critical speeds.

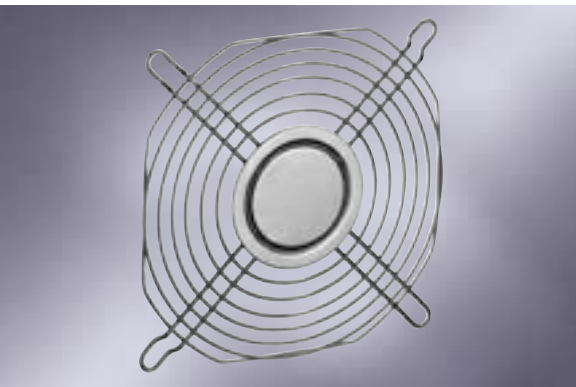
The power unit is an integrated device. For installation and operation, observe the relevant DIN/VDE (German Industrial Standards/Association of German Electricians) and country-specific regulations.

For optimum cooling vertical assembly; observe clearance of min. 80 mm. The place of installation must fulfill the conditions for fireproof housings as per EN 60335 and EN 60950. Installation should only be carried out by skilled personnel.



|                                |  |  |
|--------------------------------|--|--|
| Electrical connection          | Mains input:                                     | N / L / PE                                 |
|                                |  | Bridge for 115 V mains voltage             |
|                                | Outputs:   | 6x plus / minus                            |
|                                | Connection:                                      | Standard plug e.g.: AMP                    |
|                                |  | MTA-connector SL156                        |
| Nominal input voltage          | 115 V AC 60 Hz or<br>230 V AC 50 Hz switchable   |  |
| Voltage range                  | 110 V AC (-10 % + 15 %)                          | 57 Hz ... 63 Hz                            |
| 110 V nominal voltage          | Operation down to 90 VAC with<br>limited output  |  |
| Voltage range                  | 230 V AC (-20 % + 15 %)                          | 47 Hz ... 53 Hz                            |
| 230 V Nominal voltage          |  |  |
| Nominal output voltage         | 24 V $\pm$ 2 %                                   | (12 ... 24 V $\pm$ 2 %)                    |
| Starting inrush current        | < 20 A (cold start)                              |  |
| Control line / load            | $\leq$ 0.2 %                                     | $\leq$ 0.1 %                               |
| Output current / output power  | 2.5 A with UA = 24 V<br>1.25 A with UA = 12 V    | 60 W with UA = 24 V<br>30 W with UA = 12 V |
| Operating efficiency           | > 85 % at nominal load                           |  |
| Reliability (Siemens Standard) | L10 = 70 000 h at 40 °C /<br>40 000 h at 70 °C   |  |
| Protection type and class      | IP 20 / 1  |  |
| Degree of contamination        | 2 (EN 50178)                                     |  |
| Galvanic separation            | 3000 V AC  |  |
| Basic safety standards         | EN 60950 / VDE 0805 /<br>UL 1950 / CE            |  |
| Protective functions           | Output – free running and<br>short circuit proof |  |
| Operating mode                 | Continuous operation                             |  |
| Operating temperature          | -25 °C ... +55 °C                                |  |
| Max. operating temperature     | + 70 °C housing temperature                      |  |
| EMV: Emission / noise immunity | EN 50081-1 / EN 50081-2                          |  |
| Mass                           | 300 g  |  |

# Finger Guards

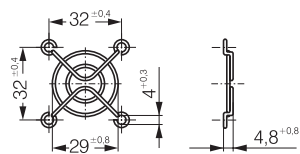


- Finger guards as per EN 294, of rust-proof steel wire for equipment fans.
- Further finger guards that do not conform to EN 294 can be supplied on request.

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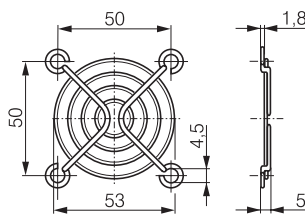
LZ29-1

Fan series 400



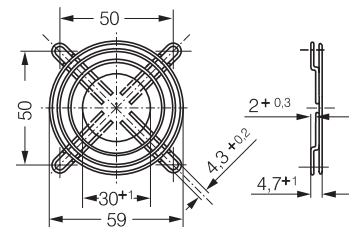
LZ31

Fan series 500



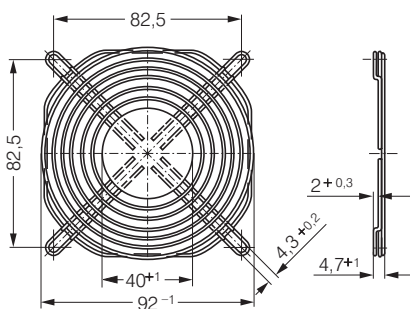
LZ28-1

Fan series 600



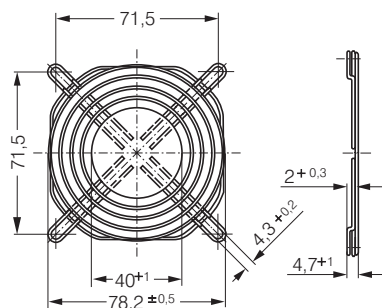
LZ23-1

Fan series 3000



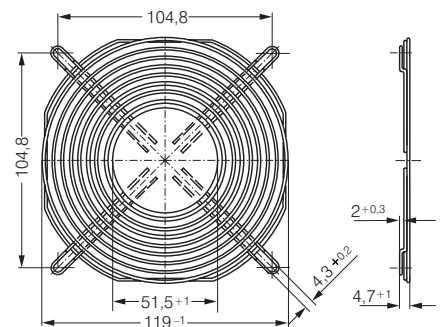
LZ32-4

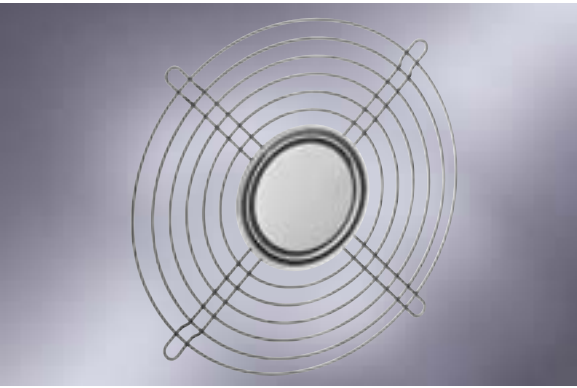
Fan series 8000



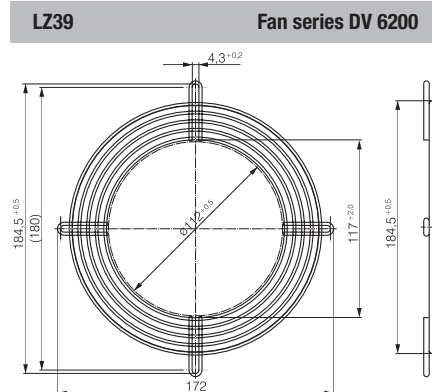
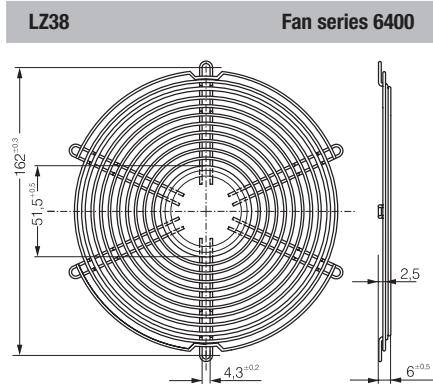
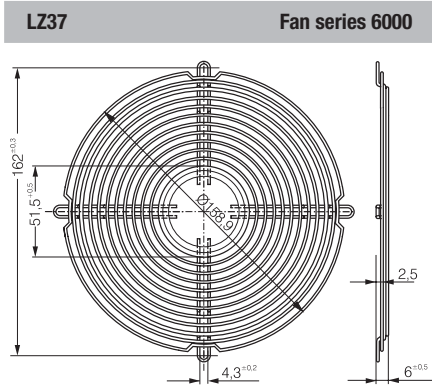
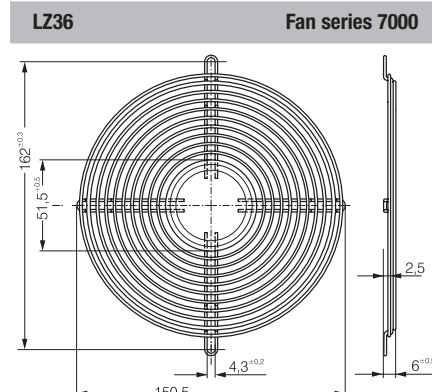
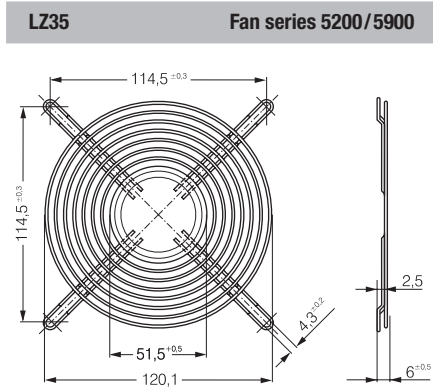
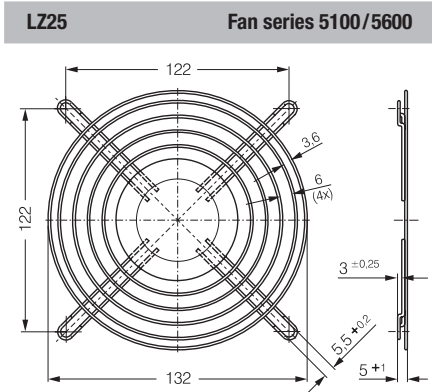
LZ30-4

Fan series 9000/4000

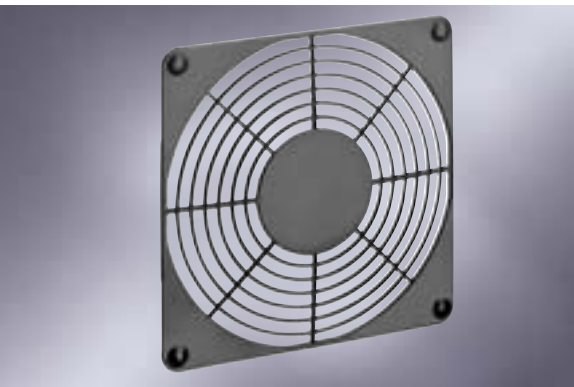




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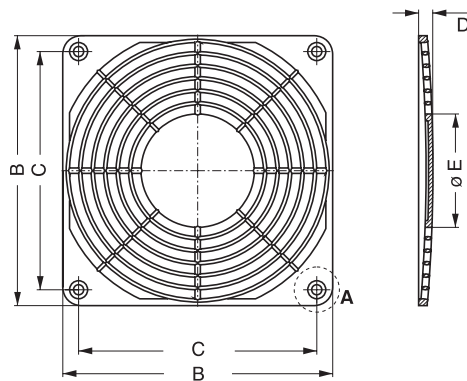
# Finger Guards



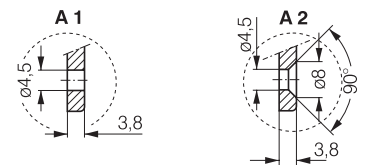
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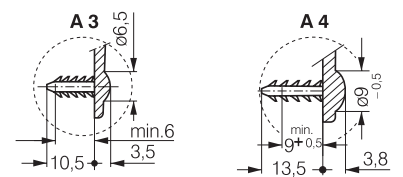
| Fan series | Finger Guards | Fan series | Finger Guards | Finger Guards | Mounting | B                    | C                     | D   | E  |
|------------|---------------|------------|---------------|---------------|----------|----------------------|-----------------------|-----|----|
| 8000       | LZ32-2        | 4000       | LZ30-5        | LZ32-2        | A1       | 80 <sup>-0.5</sup>   | 71.5 <sup>±0.2</sup>  | 7.0 | 34 |
| 8000       | LZ32-3        | 4000       | LZ30-6        | LZ32-3        | A3       | 80 <sup>-0.5</sup>   | 71.5 <sup>±0.2</sup>  | 7.0 | 34 |
| 8000       | LZ32P         | 4000       | LZ30P         | LZ23-2        | A1       | 92.5 <sup>-0.5</sup> | 82.5 <sup>±0.2</sup>  | 6.5 | 46 |
| 3000       | LZ23-2        | 5200       | LZ33-1        | LZ23-3        | A3       | 92.5 <sup>-0.5</sup> | 82.5 <sup>±0.2</sup>  | 6.5 | 46 |
| 3000       | LZ23-3        | 5200       | LZ33-2        | LZ30-5        | A2       | 119 <sup>-0.5</sup>  | 105 <sup>±0.2</sup>   | 6.5 | 50 |
| 9000       | LZ30-5        | 5900       | LZ33-1        | LZ30-6        | A4       | 119 <sup>-0.5</sup>  | 105 <sup>±0.2</sup>   | 6.5 | 50 |
| 9000       | LZ30-6        | 5900       | LZ33-2        | LZ33-1        | A2       | 127 <sup>-0.5</sup>  | 113.5 <sup>±0.2</sup> | 6.5 | 50 |
| 9000       | LZ30P         | RG125      | LZ34          | LZ33-2        | A4       | 127 <sup>-0.5</sup>  | 113.5 <sup>±0.2</sup> | 6.5 | 50 |



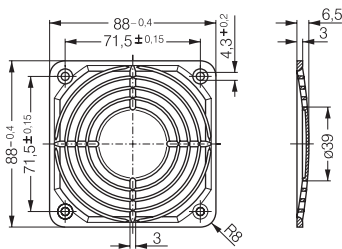
### Screw connection



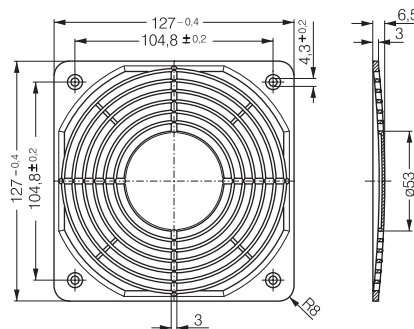
### Barbed inserts



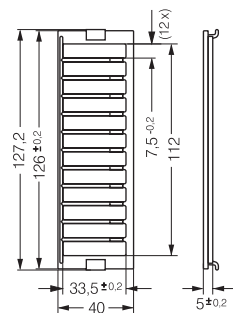
### LZ32P



### LZ30P



### LZ34



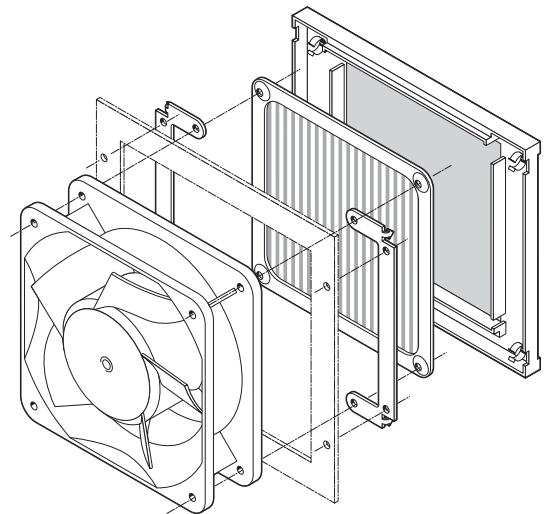


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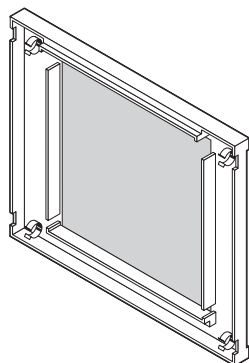
| Fan series | Finger Guards |
|------------|---------------|
| 8300       | LZ212         |
| 8300       | LZ260         |
| 8400       | LZ261         |
| 3300       | LZ212         |
| 3300       | LZ260         |
| 9000       | LZ210         |
| 9000       | LZ40N         |

| Fan series | Finger Guards |
|------------|---------------|
| 9000       | LZ40-1        |
| 9000       | LZ60          |
| 4000       | LZ210         |
| 4000       | LZ40N         |
| 4000       | LZ40-1        |
| 4000       | LZ60          |
| 4300       | LZ212         |

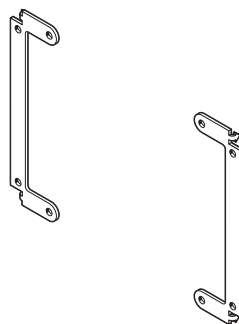
| Fan series | Finger Guards |
|------------|---------------|
| 4300       | LZ260         |
| 5100       | LZ210         |
| 5600       | LZ210         |
| 5200       | LZ210         |
| 5900       | LZ210         |
| 7000       | LZ210         |
| VARIOFAN   | LZ370         |



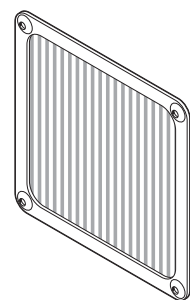
LZ40N Screen



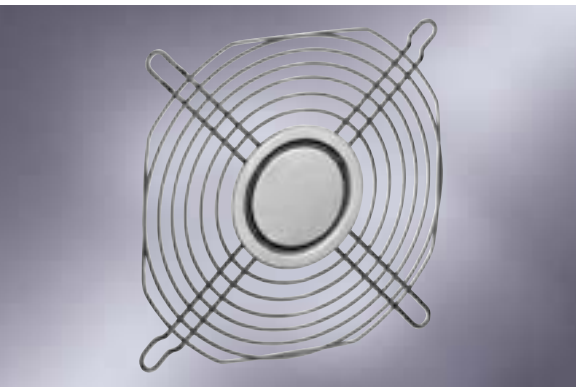
LZ40-1 Bracket



LZ60 Filter



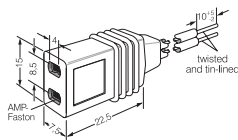




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### LZ120

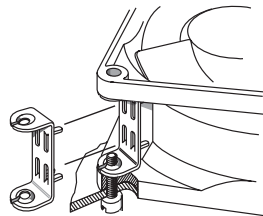


| Type    | Cable length        | Pins   |
|---------|---------------------|--------|
| LZ120   | 610 mm              | 0,5 mm |
| LZ126   | 1000 mm             | 0,5 mm |
| LZ130-1 | 610 mm, UL approved | 0,5 mm |

Additional versions are available on special order

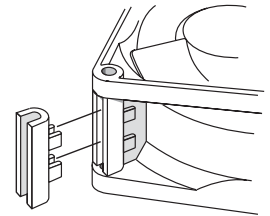
Connecting cable with moulded plug, (PVC, black). Stranded wires with multi-core cable ends. For all types of fan with flat pins 3.0 x 0.5 mm.

### LZ212



Screw clip of rust-resistant spring steel. For mounting fans with threaded pin 3.5 DIN 7970.

### LZ260/LZ261



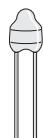
Spacer of fibreglass reinforced plastic. For screw mounting over both fan mounting flanges.

### LZ210



Screw clip of hardened steel. For mounting fans with threaded pin 6-32 UNC and/or 3.5 DIN 7970.

### LZ370



Required performance date:

R<sub>25</sub> = 100 KΩ ±5%

B-value = 4190 ± 2%

P<sub>max</sub> = 0,25 W

Temperature sensor for speed-controlled fan operation. Temperature range 30...50 °C.