



## Power supply unit, 1-phase, 100-240VAC/24VDC, 2.5A

**Part no.** PSG60E24RM  
**Article no.** 172891  
**Catalog No.** PSG60E24RM

## Delivery program

|                                      |  |   |                                                                                                |
|--------------------------------------|--|---|------------------------------------------------------------------------------------------------|
| Product range                        |  |   | Power supplies PSG                                                                             |
| Subrange                             |  |   | power supply unit                                                                              |
| Description                          |  |   | Power Boost via 1.5-fold rated operational current for 5 s<br>PELV (EN 60204), SELV (EN 60950) |
| Phases                               |  |   | Single-phase                                                                                   |
| Input voltage range                  |  |   | 85 - 264 V AC<br>(120 - 375 V DC)                                                              |
| Nominal input voltage                |  |   | 100 - 240 V AC<br>125 - 250 V DC                                                               |
| Rated output voltage                 |  |   | 24 V DC (± 2%)                                                                                 |
| Rated output current                 |  | A | 2.5                                                                                            |
| Setting range for the output voltage |  |   | 24 - 28 V DC                                                                                   |
| Rated output power                   |  | W | 60                                                                                             |

## Technical data

### Input characteristics

|                                                         |       |    |                                                             |
|---------------------------------------------------------|-------|----|-------------------------------------------------------------|
| Nominal input voltage                                   |       |    | 100 - 240 V AC<br>125 - 250 V DC                            |
| Input voltage range                                     |       | V  | 85 - 264 V AC<br>120 - 375 V DC                             |
| Supply frequency                                        |       |    |                                                             |
| Rated value                                             |       | Hz | 50/60                                                       |
| Range                                                   |       | Hz | 47 - 63                                                     |
| Nominal current                                         | $I_n$ | A  | < 1.4 bei 115 V AC<br>< 0.8 bei 230 V AC                    |
| Inrush current limitation $I^2t$ (+25 °C)               |       | A  | < 20 A at 115 V AC<br>< 35 A at 230 V AC                    |
| Mains buffering at nominal load                         |       | ms |                                                             |
| Mains failure bridging                                  |       | ms | > 20 at 115 V AC<br>> 125 at 230 V AC                       |
| Run-up time after mains voltage applied                 |       | ms | < 2000                                                      |
| Internal input fuse (device protection, not accessible) |       |    | T3.15 AH/250 V                                              |
| Back-up fuse                                            |       |    | 6, 10, 16 A (recommended)                                   |
| Tripping characteristic                                 |       |    | B                                                           |
| Leakage Current                                         |       |    | < 1 mA at 240 V AC                                          |
| Short-term interruption                                 |       |    | 100% voltage dip, 1 cycle (20 ms at 50 Hz), automatic start |

### Output characteristics

|                                      |  |   |                          |
|--------------------------------------|--|---|--------------------------|
| Rated output power                   |  | W | 60                       |
| Rated output voltage                 |  |   | 24 V DC (± 2%)           |
| Tolerance                            |  |   | ±2 %                     |
| Setting range for the output voltage |  |   | 24 - 28 V DC             |
| Nominal current                      |  | A | 2,5                      |
| Derating from $T_{amb} > +50$ °C     |  |   | > 50 °C (2.5% / °C)      |
| Capacitive load starting             |  |   | Max 8000 µF              |
| Heat dissipation                     |  | W | 7.4                      |
| Efficiency                           |  | % | > 90 with 115 & 230 V AC |
| Residual ripple and switching peaks  |  |   | < 50 mVpp / < 150 mVpp   |

|                                              |   |                 |                                                                                                |
|----------------------------------------------|---|-----------------|------------------------------------------------------------------------------------------------|
| Can be switched in parallel                  |   |                 | for redundancy, with 0 ring diode (PSG480R24RM/PSG960R24RM)                                    |
| <b>General characteristics</b>               |   |                 |                                                                                                |
| Housing                                      |   |                 | Aluminium                                                                                      |
| Status indication                            |   |                 | green LED for "DC OK"                                                                          |
| MTBF (mean time between failures)            |   |                 | > 1,000,000 h                                                                                  |
| Height                                       |   | mm              | 121                                                                                            |
| Width                                        |   | mm              | 32                                                                                             |
| Depth                                        |   | mm              | 125                                                                                            |
| Weight                                       |   | kg              | 0.37                                                                                           |
| Terminations                                 |   |                 | Screw terminal, pluggable                                                                      |
| Stripping length                             |   | mm              | 7                                                                                              |
| Terminal capacity                            |   |                 |                                                                                                |
| flexible with ferrules/solid                 |   | mm <sup>2</sup> | 0.32 - 3.3 mm <sup>2</sup> (AWG 22 -12)                                                        |
| Tightening torque                            |   | Nm              | 0.5                                                                                            |
| Ambient air temperature range                |   | °C              |                                                                                                |
| Operation                                    |   | °C              | -20 - +80 (> 50 °C derating)                                                                   |
| Storage, transport                           | 8 | °C              |                                                                                                |
| Storage                                      | 8 | °C              | -25 - +85                                                                                      |
| damp heat                                    |   |                 | < 95 % relative humidity at +25 °C, no condensation                                            |
| Vibrations (IEC/EN 60068-2-6)                |   |                 | 10 - 500 Hz at 30 m/s <sup>2</sup> (3 G max ) for 60 min. in X-axis, Y-axis, Z-axis directions |
| Mechanical shock resistance (IEC 60068-2-27) |   |                 | 30 g (300 m/s <sup>2</sup> ) in all directions                                                 |
| Pollution degree                             |   |                 | 2                                                                                              |
| Climatic class (IEC)                         |   |                 | 3K3 according to EN 60721                                                                      |

Safety and safety features

|                                     |  |  |                                                          |
|-------------------------------------|--|--|----------------------------------------------------------|
| Transient overvoltage protection    |  |  | Varistor                                                 |
| Current limitation at short-circuit |  |  | I <sub>Überstrom</sub> = 150 % der max. Ausgangsleistung |
| Overvoltage protection              |  |  | Yes, against internal overvoltage                        |
| Insulation voltage                  |  |  |                                                          |
| Input/Output                        |  |  | 4 kV AC (type test), 3 kV AC (routine test)              |
| Input/PE                            |  |  | 1.5 kV AC (type test), 1.5 kV AC (routine test)          |
| Output/PE                           |  |  | 1.5 kV AC (type test), 500 V AC (routine test)           |
| Degree of Protection                |  |  | IP20                                                     |
| Protection class                    |  |  | Class I with PE connection                               |

Standards

|  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--|--|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  |  |  | Electrical equipment of machines: IEC60204-1 (Overvoltage category III)<br>Equipping power installations with electronic apparatus: EN 50178/IEC 62103<br>Safety extra-low voltage: PELV (EN 60204), SELV (EN 60950)<br>Protection against electric shock: DIN 57100-410<br>CE: according to EMC Directive 2014/30/EU and Low Voltage Directive 2014/35/EU<br>RoHS-compliant: RoHS Directive 2011/65/EU<br>ITE: EN 55022, EN 61000-3-2, EN 61000-3-3, EN 55024<br>Industrial: EN 55011<br>Mains harmonics limitation: EN 601000-3-2<br>Electrical Safety (of IT equipment) : SIQ to EN60950-1, UL/c-UL recognized to UL 60950-1, CSA C22.2 No. 60950-1, CB scheme to IEC 60950-1<br>UL508<br>Class2: UL/c-UL recognized to UL1310 and CSA C22.2 No. 223  <br>Component power supply unit for general use: EN61204-3 |
|--|--|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Design verification as per IEC/EN 61439

|                                                          |                   |    |                                            |
|----------------------------------------------------------|-------------------|----|--------------------------------------------|
| Technical data for design verification                   |                   |    |                                            |
| Rated operational current for specified heat dissipation | I <sub>n</sub>    | A  | 0                                          |
| Heat dissipation per pole, current-dependent             | P <sub>vid</sub>  | W  | 0                                          |
| Equipment heat dissipation, current-dependent            | P <sub>vid</sub>  | W  | 0                                          |
| Static heat dissipation, non-current-dependent           | P <sub>vs</sub>   | W  | 7.4                                        |
| Heat dissipation capacity                                | P <sub>diss</sub> | W  | 0                                          |
| Operating ambient temperature min.                       |                   | °C | -20                                        |
| Operating ambient temperature max.                       |                   | °C | 80                                         |
| IEC/EN 61439 design verification                         |                   |    |                                            |
| 10.2 Strength of materials and parts                     |                   |    |                                            |
| 10.2.2 Corrosion resistance                              |                   |    | Meets the product standard's requirements. |

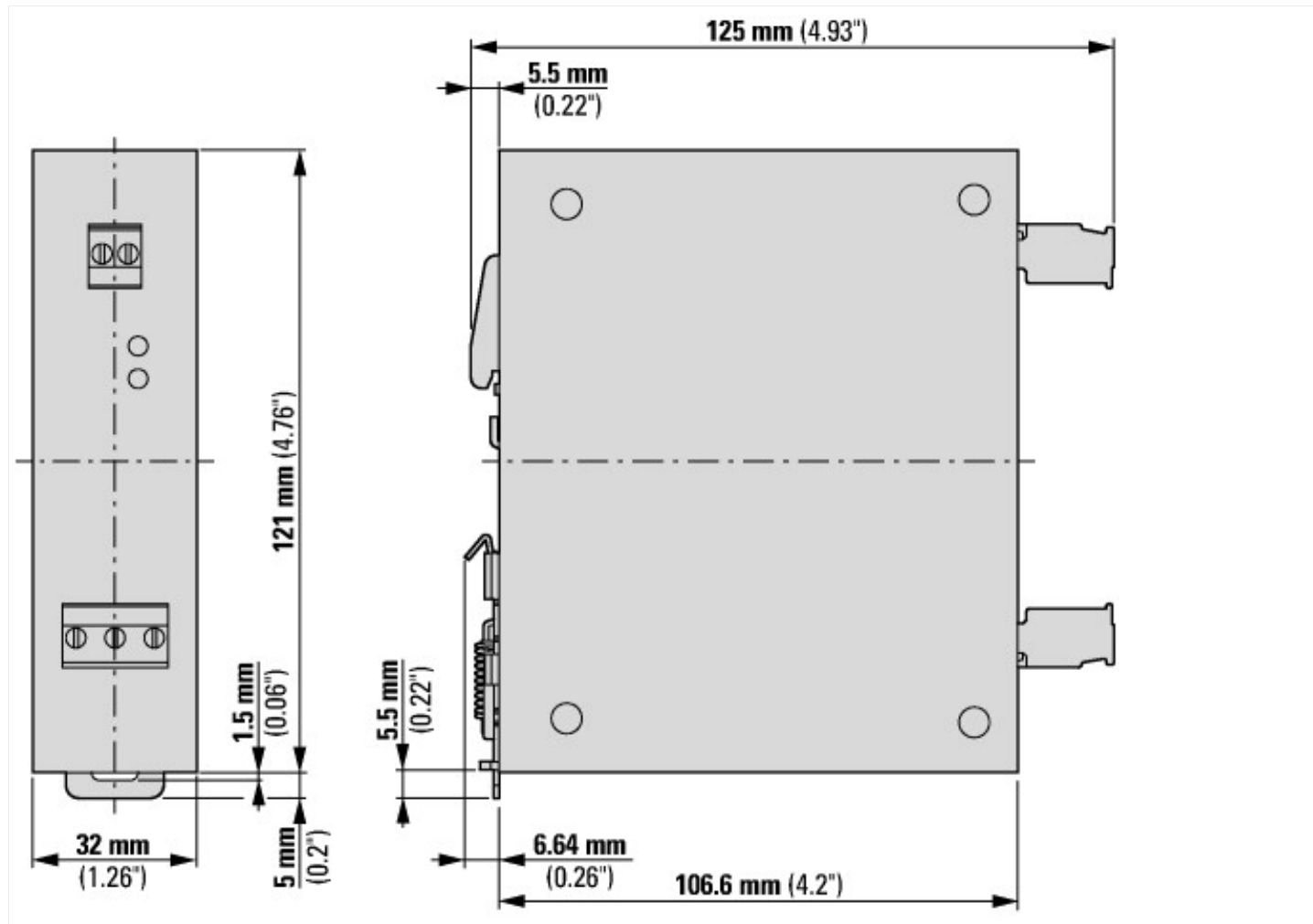
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|------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------|
| 10.2.3.1 Verification of thermal stability of enclosures                                                               |  | Meets the product standard's requirements.                                                                                       |
| 10.2.3.2 Verification of resistance of insulating materials to normal heat                                             |  | Meets the product standard's requirements.                                                                                       |
| 10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects |  | Meets the product standard's requirements.                                                                                       |
| 10.2.4 Resistance to ultra-violet (UV) radiation                                                                       |  | Meets the product standard's requirements.                                                                                       |
| 10.2.5 Lifting                                                                                                         |  | Does not apply, since the entire switchgear needs to be evaluated.                                                               |
| 10.2.6 Mechanical impact                                                                                               |  | Does not apply, since the entire switchgear needs to be evaluated.                                                               |
| 10.2.7 Inscriptions                                                                                                    |  | Meets the product standard's requirements.                                                                                       |
| 10.3 Degree of protection of ASSEMBLIES                                                                                |  | Meets the product standard's requirements.                                                                                       |
| 10.4 Clearances and creepage distances                                                                                 |  | Meets the product standard's requirements.                                                                                       |
| 10.5 Protection against electric shock                                                                                 |  | Does not apply, since the entire switchgear needs to be evaluated.                                                               |
| 10.6 Incorporation of switching devices and components                                                                 |  | Does not apply, since the entire switchgear needs to be evaluated.                                                               |
| 10.7 Internal electrical circuits and connections                                                                      |  | Is the panel builder's responsibility.                                                                                           |
| 10.8 Connections for external conductors                                                                               |  | Is the panel builder's responsibility.                                                                                           |
| 10.9 Insulation properties                                                                                             |  |                                                                                                                                  |
| 10.9.2 Power-frequency electric strength                                                                               |  | Is the panel builder's responsibility.                                                                                           |
| 10.9.3 Impulse withstand voltage                                                                                       |  | Is the panel builder's responsibility.                                                                                           |
| 10.9.4 Testing of enclosures made of insulating material                                                               |  | Is the panel builder's responsibility.                                                                                           |
| 10.10 Temperature rise                                                                                                 |  | The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices. |
| 10.11 Short-circuit rating                                                                                             |  | Is the panel builder's responsibility.                                                                                           |
| 10.12 Electromagnetic compatibility                                                                                    |  | Is the panel builder's responsibility.                                                                                           |
| 10.13 Mechanical function                                                                                              |  | The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.                         |

## Technical data ETIM 6.0

|                                                                                                                                                           |    |                  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|----|------------------|
| Low-voltage industrial components (EG000017) / DC-power supply (EC002540)                                                                                 |    |                  |
| Electric engineering, automation, process control engineering / Power supply / Power supply (other) / DC-power supply (ecl@ss8.1-27-04-90-02 [AFZ644012]) |    |                  |
| Voltage type of supply voltage                                                                                                                            |    | AC               |
| 1st secondary output voltage                                                                                                                              | V  | 24 - 28          |
| 2nd secondary output voltage                                                                                                                              | V  | 0 - 0            |
| 3rd secondary output voltage                                                                                                                              | V  | 0 - 0            |
| Max. output current 1                                                                                                                                     | A  | 2.5              |
| Max. output current 2                                                                                                                                     | A  | 0                |
| Max. output current 3                                                                                                                                     | A  | 0                |
| Secondary voltage adjustable                                                                                                                              |    | Yes              |
| Nominal value output voltage 1                                                                                                                            | V  | 24               |
| Nominal value output voltage 2                                                                                                                            | V  | 0                |
| Nominal value output voltage 3                                                                                                                            | V  | 0                |
| Nominal value output current 1                                                                                                                            | A  | 2.5              |
| Nominal value output current 2                                                                                                                            | A  | 0                |
| Nominal value output current 3                                                                                                                            | A  | 0                |
| Short-circuit-proof                                                                                                                                       |    | Yes              |
| Rated supply voltage at AC 50 Hz                                                                                                                          | V  | 85 - 264         |
| Rated supply voltage at AC 60 Hz                                                                                                                          | V  | 85 - 264         |
| Rated supply voltage at DC                                                                                                                                | V  | 0 - 0            |
| Output voltage stabilized                                                                                                                                 |    | Yes              |
| Power consumption                                                                                                                                         | VA | 184              |
| Power output                                                                                                                                              | W  | 60               |
| Stabilized                                                                                                                                                |    | Yes              |
| Type of electric connection                                                                                                                               |    | Screw connection |
| Rail mounting possible                                                                                                                                    |    | Yes              |
| Wall mounting possible                                                                                                                                    |    | No               |
| Modular version                                                                                                                                           |    | Yes              |
| Width in number of modular spacings                                                                                                                       |    | 0                |
| Built-in width                                                                                                                                            | mm | 32               |

|                                          |    |      |
|------------------------------------------|----|------|
| Built-in height                          | mm | 121  |
| Direct mounting possible                 |    | No   |
| Width                                    | mm | 32   |
| Height                                   | mm | 121  |
| Depth                                    | mm | 125  |
| Suitable for safety functions            |    | No   |
| SIL according to IEC 61508               |    | None |
| Performance level acc. to EN ISO 13849-1 |    | None |
| Degree of protection (IP)                |    | IP20 |

## Dimensions



## Additional product information (links)

### IL125007EN Installation Instructions for PSG60E24RM POWER SUPPLY

IL125007EN Installation Instructions for  
PSG60E24RM POWER SUPPLY

[ftp://ftp.moeller.net/DOCUMENTATION/AWA\\_INSTRUCTIONS/IL125007EN2014\\_06.pdf](ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL125007EN2014_06.pdf)