

## Power supply unit, 1-phase, 100-240VAC/24VDC, 10A

Powering Business Worldwide™

PSG240E24RM Part no. Article no. 172893 Catalog No. PSG240E24RM

## **Delivery program**

Product range		Power supplies PSG
Subrange		power supply unit
Description		Power Boost via 1.5-fold rated operational current for 5 s PELV (EN 60204), SELV (EN 60950)
Phases		Single-phase
Input voltage range		85 - 264 V AC (120 - 375 V DC)
Nominal input voltage		100 - 240 V AC 125 - 250 V DC
Rated output voltage		24 V DC (± 2%)
Rated output current	А	10
Setting range for the output voltage		24 - 28 V DC
Rated output power	W	240

# **Technical data**

### Input characteristics

Nominal input voltage			100 - 240 V AC 125 - 250 V DC
Input voltage range		V	85 - 264 V AC 120 - 375 V DC
Supply frequency			
Rated value		Hz	50/60
Range		Hz	47 - 63
Nominal current	In	Α	< 2.5 bei 115 V AC < 1.3 bei 230 V AC
Inrush current limitation I <sup>2</sup> t (+25 °C)		Α	< 35 A at 115 V AC < 35 A at 230 V AC
Mains buffering at nominal load		ms	
Mains failure bridging		ms	> 20 at 115 V AC > 125 at 230 V AC
Run-up time after mains voltage applied		ms	< 1000
Internal input fuse (device protection, not accessible)			T4 AH/250 V
Back-up fuse			10, 16 A (recommended)
Tripping characteristic			В
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			

output characteristics		
Rated output power	W	240
Rated output voltage		24 V DC (± 2%)
Tolerance		±2 %
Setting range for the output voltage		24 - 28 V DC
Derating from T <sub>amb</sub> > +50 °C		> 50 °C (2.5% / °C)
Capacitive load starting		Max 10000 μF
Heat dissipation	W	30
Efficiency	%	> 90 at 115 V AC & 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)
General characteristics		

#### **General characteristics**

Housing	Aluminium
Status indication	green LED for "DC OK"
MTBF (mean time between failures)	> 500,000 h

Height		mm	121
Width		mm	85
Depth		mm	124.1
Weight		kg	1.1
Terminations			Screw terminal, pluggable
Stripping length		mm	7
Terminal capacity			
flexible with ferrules/solid		mm <sup>2</sup>	1.3 - 2.1 mm <sup>2</sup> (AWG 16 - 14)
Tightening torque		Nm	0.5
Ambient air temperature range		°C	
Operation		°C	-20 - +80 (> 50 °C derating)
Storage, transport	9	°C	
Storage	9	°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 $^2$ (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 $^2$ ) 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			l <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) Equipping power installations with electronic apparatus: EN 50178/IEC 62103 Safety extra-low voltage: PELV (EN 60204), SELV (EN 60950) Protection against electric shock: DIN 57100-410 CE: according to EMC Directive 2014/30/EU and Low Voltage Directive 2014/35/EU RoHS-compliant: RoHS Directive 2011/65/EU ITE: EN 55022, EN 61000-3-2, EN 61000-3-3, EN 55024 Industrial: EN 55011 Mains harmonics limitation: EN 601000-3-2 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 UL508 Class2: UL/c-UL recognized to UL1310 and CSA C22.2 No. 223   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	In	Α	0
Heat dissipation per pole, current-dependent	P <sub>vid</sub>	W	0
Equipment heat dissipation, current-dependent	$P_{vid}$	W	0
Static heat dissipation, non-current-dependent	$P_{vs}$	W	30
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.
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.
10.2.3.3Verification of resistanceofinsulatingmaterialstoabnormalheatandfireduetointernalelectriceffects			Meets the product standard's requirements.
10.2.4 Resistance to ultra-violet (UV) radiation			Meets the product standard's requirements.

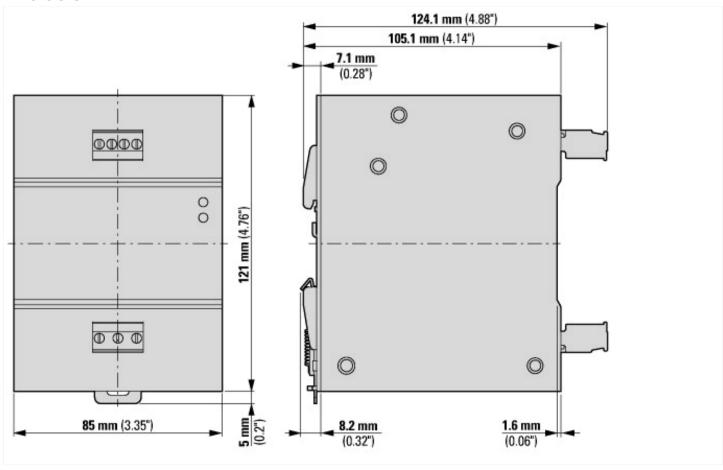
10.2.5 Lifting	Does not apply, since the entire switchgear needs to be evaluated.
10.2.6 Mechanical impact	Does not apply, since the entire switchgear needs to be evaluated.
10.2.7 Inscriptions	Meets the product standard's requirements.
10.3 Degree of protection of ASSEMBLIES	Meets the product standard's 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**

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         10           Max. output current 2         A         0           Max. output current 3         A         0           Secondary output outgage sigistable         V         Yes           Nominal value output voltage 1         V         0           Nominal value output voltage 2         V         0           Nominal value output voltage 3         V         0           Nominal value output current 3         A         10           Rated supply voltage at AC 50 Hz         Yes         5-264           Rated supply voltage at AC 50 Hz         Yes         9-2           Rated supply voltage at AC 50 Hz         Yes         9-2           Shabibised <th colspan="4">Low-voltage industrial components (EG000017) / DC-power supply (EC002540)</th>	Low-voltage industrial components (EG000017) / DC-power supply (EC002540)			
1st seondary output voltage         V         24 - 28           2nd secondary output voltage         V         0 - 0           3rd secondary output voltage         V         0 - 0           Max. output current 1         A         0           Max. output current 2         A         0           Max. output current 3         A         0           Secondary output gadjustable         V         2           Nominal value output voltage 1         V         2           Nominal value output voltage 2         V         0           Nominal value output voltage 3         V         0           Nominal value output current 1         A         10           Nominal value output current 2         A         0           Nominal value output current 3         A         0           Rated supply voltage at AC 50 Hz         S         28-24           Rated supply voltage at AC 50 Hz         S         28-24           Rated supply voltage at AC 50 Hz         S         28-24           Rated supply voltage at AC 50 H	Electric engineering, automation, process control engineering / Power supply / Power su	upply (other) / DC-po	wer supply (ecl@ss8.1-27-04-90-02 [AFZ644012])	
2nd secondary output voltage         V         0 - 0           Max. output current 1         A         10           Max. output current 2         A         0           Max. output current 3         A         0           Secondary voltage adjustable         A         0           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         10           Nominal value output current 2         A         10           Nominal value output current 3         A         0           Reted supply voltage at AC 50 Hz         A         2           Reted supply voltage at DC         Y <td>Voltage type of supply voltage</td> <td></td> <td>AC</td>	Voltage type of supply voltage		AC	
3rd secondary output violtage         V         0 - 0           Max. output current 1         A         10           Max. output current 2         A         0           Max. output current 3         A         0           Scondary voitage adjustable         V         7es           Nominal value output voltage 1         V         2           Nominal value output voltage 2         V         0           Nominal value output current 1         A         10           Nominal value output current 2         A         0           Nominal value output current 3         A         0           Short-circul-proof         S         28           Rated supply voltage at AC 50 Hz         V         8-284           Rated supply voltage at DC         V         9         9           Output voltage stabilized         V         20         0           Power output         X         20         0           Shabilized	1st secondary output voltage	V	24 - 28	
Max. output current 1         A         10           Max. output current 2         A         0           Max. output current 3         A         0           Secondary voltage algustable         Pos         Yes           Nominal value output voltage 1         V         2         4           Nominal value output voltage 3         V         0         0           Nominal value output current 1         A         10           Nominal value output current 2         A         0         0           Nominal value output current 3         A         0         0           Short-circut-proof         Yes         8         2           Rated supply voltage at AC 50 Hz         V         3         5-264           Rated supply voltage at DC         V         0         0         0           Output voltage stabilized         V         29         2           Power consumption         V         29         2           Slabitized         Yes	2nd secondary output voltage	V	0 - 0	
Max. output current 2         A         0           Max. output current 3         A         0           Secondary voltage adjustable         V         24           Nominal value output voltage 1         V         0           Nominal value output voltage 2         V         0           Nominal value output current 1         A         10           Nominal value output current 2         A         0           Nominal value output current 3         A         0           Short-circli-proof         Y         85 - 264           Rated supply voltage at AC 50 Hz         V         85 - 264           Rated supply voltage at AC 50 Hz         Y         9 - 0           Rated supply voltage at AC 50 Hz         Y         9 - 0           Stabilized         Y         9 - 2           Power consumption         Y         9 - 2           Power output         Y         9 - 2           Stabilized         Y         9 - 2	3rd secondary output voltage	V	0 - 0	
Max. output current 3         A         0           Secondary voltage adjustable         Ves           Nominal value output voltage 1         V         24           Nominal value output voltage 3         V         0           Nominal value output current 1         A         10           Nominal value output current 2         A         0           Nominal value output current 3         A         0           Short-circul-proof         A         0           Rated supply voltage at AC 50 Hz         V         85-284           Rated supply voltage at AC 50 Hz         V         85-284           Rated supply voltage at AC 50 Hz         V         9-0           Rated supply voltage at AC 50 Hz         V         85-284           Rated supply voltage at AC 50 Hz         V         9-0           Rated supply voltage at AC 50 Hz         V         9-0           Rated supply voltage at AC 50 Hz         V         9-0           Rated supply voltage at AC 50 Hz         V         9-0           Rated supply voltage at AC 50 Hz         V         9-0           Rated supply voltage at AC 50 Hz         V         9-0           Rated supply voltage at AC 50 Hz         V         9-0           Stabilizard </td <td>Max. output current 1</td> <td>А</td> <td>10</td>	Max. output current 1	А	10	
Scondary voltage adjustable         Yes           Nominal value output voltage 1         V         24           Nominal value output voltage 2         V         0           Nominal value output current 3         V         0           Nominal value output current 2         A         10           Nominal value output current 3         A         0           Short-circuit-proof         V         85- 284           Rated supply voltage at AC 50 Hz         V         85- 284           Rated supply voltage at AC 50 Hz         V         9- 0           Rated supply voltage at AC 50 Hz         V         9- 29           Rated supply voltage at AC 50 Hz         V         9- 29           Rated supply voltage at AC 50 Hz         V         9- 9           Power consumption         VA         29           Power output         Va         29           Stabilized         Yes         Yes           Type of electric connection         Yes         Yes           Wall mounting possible         Yes         Yes           Width in number of modular spacings         Yes         Yes           Built-in width         Mm         85           Built-in width         Yes         Yes	Max. output current 2	Α	0	
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         10           Nominal value output current 2         A         0           Nominal value output current 3         A         0           Short-circiul-proof         Ye         85-284           Rated supply voltage at AC 50 Hz         V         85-284           Rated supply voltage at AC 50 Hz         Ye         9-0           Gutput voltage stabilized         V         9-9           Power consumption         Ye         9-9           Power output         Ye         40           Stabilized         Ye         9-9           Power output         Ye         9-9           Stabilized         Ye         9-9           Type of electric connection         Ye         Ye           Rail mounting possible         Ye         Ye           Width in number of modular spacings         Ye         Ye           Built-in width         Ye         Ye           Built-in width         Ye         Ye           Built-in width	Max. output current 3	Α	0	
Nominal value output voltage 2         V         0           Nominal value output voltage 3         V         0           Nominal value output current 1         A         10           Nominal value output current 2         A         0           Nominal value output current 3         A         0           Short-circuit-proof         Yes         Yes           Rated supply voltage at AC 50 Hz         V         85-264           Rated supply voltage at AC 50 Hz         V         85-264           Rated supply voltage at AC 50 Hz         V         9-0           Rated supply voltage at AC 50 Hz         V         9-2           Rated supply voltage at AC 50 Hz         V         9-2           Rated supply voltage at AC 50 Hz         V         9-0           Rated supply voltage at AC 50 Hz         V         9-0           Rated supply voltage at AC 50 Hz         V         9-0           Rated supply voltage at AC 50 Hz         V         9-0           Rated supply voltage at AC 50 Hz         V         9-0           Subject to supply voltage at AC 50 Hz         V         9-0           Power consumption         V         9-0           Vulley to voltage at AC 50 Hz         N         9-0	Secondary voltage adjustable		Yes	
Nominal value output voltage 3         V         0           Nominal value output current 1         A         10           Nominal value output current 2         A         0           Nominal value output current 3         A         0           Short-circuit-proof         Yes         Yes           Rated supply voltage at AC 50 Hz         V         85 - 264           Rated supply voltage at AC 60 Hz         V         0 - 0           Rated supply voltage at DC         V         99           Output voltage stabilized         VA         299           Power consumption         W         240           Power output         V         20           Stabilized         Yes           Power output         Yes           Stabilized         Yes           Wall mounting possible         Yes           Wall mounting possible         Yes           Wall mounting possible         Yes           Width in number of modular spacings         Yes           Built-in width         Mm         85           Built-in width         Mm         85           Built-in leight         Yes         Yes           Width         Yes         Yes	Nominal value output voltage 1	V	24	
Nominal value output current 1         A         10           Nominal value output current 2         A         0           Nominal value output current 3         A         0           Short-circuit-proof         W         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         VA         299           Power consumption         VA         240           Power output         VA         240           Stabilized         V         240           Type of electric connection         V         240           Wall mounting possible         V         240           Wall mounting possible         Yes           Wall mounting possible         Yes           Width in number of modular spacings         Y         Yes           Built-in width         mm         85           Built-in height         mm         85           Built-in leight         mm         85           Built-in height         mm         85           Width         mm         85	Nominal value output voltage 2	V	0	
Nominal value output current 2         A         0           Nominal value output current 3         A         0           Short-circuit-proof         Yes         Yes           Rated supply voltage at AC 50 Hz         V         85-284           Rated supply voltage at AC 60 Hz         V         6-2-284           Rated supply voltage at DC         V         0-0           Output voltage stabilized         Yas         299           Power consumption         W         240           Yes         Yes         Yes           Type of electric connection         Yes         Yes           Rail mounting possible         Yes         Yes           Will mounting possible         Yes         Yes           Width in number of modular spacings         Yes         Yes           Built-in width         Mm         85           Built-in height         mm         121           Direct mounting possible         mm         121           Width         mm         85           Built-in height         mm         121           Direct mounting possible         mm         121           Width         mm         121           Width         mm	Nominal value output voltage 3	V	0	
Nominal value output current 3         A         0           Short-circuit-proof         Yes         75-864           Rated supply voltage at AC 50 Hz         V         85-264           Rated supply voltage at DC         V         0-0           Output voltage stabilized         V         79-9           Power consumption         V         29-9           Power output         W         24-0           Stabilized         W         24-0           Type of electric connection         W         24-0           Rail mounting possible         W         24-0           Wall mounting possible         W         24-0           Width in number of modular spacings         W         24-0           Built-in width         W         24-0	Nominal value output current 1	А	10	
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         299           Power output         Yes           Stabilized         Yes           Type of electric connection         Yes           Rail mounting possible         Yes           Wall mounting possible         Yes           Width in number of modular spacings         Yes           Width in number of modular spacings         Yes           Built-in width         Mm         85           Built-in height         Mm         121           Direct mounting possible         Yes           Width         Mm         121           Width	Nominal value output current 2	А	0	
Rated supply voltage at AC 50 Hz         V         85 - 264           Rated supply voltage at AC 60 Hz         V         0 - 0           Rated supply voltage at DC         V         0 - 0           Output voltage stabilized         Yes           Power consumption         VA         299           Power output         W         240           Stabilized         Yes         Screw connection           Rail mounting possible         Yes         No           Wall mounting possible         No         Yes           Width in number of modular spacings         Yes         Yes           Width in number of modular spacings         Yes         Yes           Built-in width         Mm         85           Built-in height         mm         85           Built-in height         mm         121           Direct mounting possible         mm         85           Width         mm         85           Height         mm         85	Nominal value output current 3	Α	0	
Rated supply voltage at AC 60 Hz Rated supply voltage at DC Output voltage stabilized Output voltage stabilized Power consumption Power output Power output Stabilized Type of electric connection Rail mounting possible Wall mounting possible Width in number of modular spacings Built-in width Built-in width Built-in width Built-in width Width in output of modular spacings Wall mounting possible Wall mounting possible Wall mounting possible Width in number of modular spacings Wall mounting bossible Wall mounting bossible Wall mounting possible Wall	Short-circuit-proof		Yes	
Rated supply voltage at DC Output voltage stabilized  Output voltage stabilized  Power consumption  Power output  Stabilized  Yes  Stabilized  Yes  Type of electric connection  Rail mounting possible  Wall mounting possible  Width in number of modular spacings  Built-in width  Built-in height  Direct mounting possible  Width  Width	Rated supply voltage at AC 50 Hz	V	85 - 264	
Output voltage stabilized  Power consumption  VA 299  Power output  Ves  Stabilized  Yes  Type of electric connection  Rail mounting possible  Wall mounting possible  Wall mounting possible  Wall mounting possible  Width in number of modular spacings  Built-in width  Built-in width  Direct mounting possible  Width	Rated supply voltage at AC 60 Hz	V	85 - 264	
Power consumptionVA299Power outputW240StabilizedYesType of electric connectionScrew connectionRail mounting possibleYesWall mounting possibleNoModular versionYesWidth in number of modular spacingsYesBuilt-in widthmm85Built-in heightmm121Direct mounting possiblemm85Widthmm85Widthmm85Widthmm85Widthmm85Widthmm85Widthmm85	Rated supply voltage at DC	V	0 - 0	
Power output Stabilized Stabilized Type of electric connection Rail mounting possible Wall mounting possible Wall mounting possible Wall mounting possible Width in number of modular spacings Built-in width Built-in width Built-in weight Direct mounting possible Width in height Width in height Width in height Width in height Width Width in height Width	Output voltage stabilized		Yes	
Stabilized Type of electric connection Rail mounting possible Wall mounting possible Wall mounting possible Wall mounting possible Wouldar version Width in number of modular spacings Wilt-in width Built-in width Direct mounting possible Width Midth Width Wid	Power consumption	VA	299	
Type of electric connection  Rail mounting possible  Wall mounting possible  Wall mounting possible  Modular version  Modular version  Width in number of modular spacings  Width in number of modular spacings  Built-in width  mm  85  Built-in height  Direct mounting possible  Width  Width  Midth	Power output	W	240	
Rail mounting possible Wall mounting possible Wall mounting possible Modular version Width in number of modular spacings Built-in width Built-in height Direct mounting possible Width Midth Mid	Stabilized		Yes	
Wall mounting possible Modular version Width in number of modular spacings Width in number of modular spacings Wilt-in width Minumber of modular spacings Wilt-in width Minumber of modular spacings Wilt-in width Minumber of modular spacings Minumber	Type of electric connection		Screw connection	
Modular version  Modular version  Width in number of modular spacings  Built-in width  Built-in height  Direct mounting possible  Width  Midth  Midth	Rail mounting possible		Yes	
Width in number of modular spacings6Built-in width85Built-in heightmm121Direct mounting possibleNoWidthmm85Height121Heightmm121	Wall mounting possible		No	
Built-in width         mm         85           Built-in height         mm         121           Direct mounting possible         No         No           Width         mm         85           Height         mm         121	Modular version		Yes	
Built-in height mm 121 Direct mounting possible No Width mm 85 Height 121	Width in number of modular spacings		0	
Direct mounting possible No Width mm 85 Height 121	Built-in width	mm	85	
Widthmm85Heightmm121	Built-in height	mm	121	
Height mm 121	Direct mounting possible		No	
	Width	mm	85	
Depth mm 1241	Height	mm	121	
	Depth	mm	1241	

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)**

IL125008EN Installation Instructions for PSG240E24RM POWER SUPPLY

IL125008EN Installation Instructions for PSG240E24RM POWER SUPPLY

 $ftp://ftp.moeller.net/DOCUMENTATION/AWA\_INSTRUCTIONS/IL125008EN2014\_06.pdf$