

Power supply unit, 1-phase, 100-240VAC/24VDC, 20A



Part no. PSG480E24RM
172894
EL Number 4560892
(Norway)

General specifications		
Product name		Eaton PSG power supply unit
Part no.		PSG480E24RM
EAN		4015081694822
Product Length/Depth		180 millimetre
Product height		170 millimetre
Product width		165 millimetre
Product weight		1.49 kilogram
Certifications		Mains harmonics limitation: EN 601000-3-2 PELV (EN 60204) Class2: UL1310 and CSA-C22.2 No. 223 ITE: EN 55022, EN 61000-3-2, EN 61000-3-3, EN 55024 IEC/EN 61204-3 RoHS Protection against electric shock: DIN 57100-410 EN 55011 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 2014/30/EU SELV (EN 60950) EN 50178/IEC 62103 2014/35/EU Electrical equipment of machines: IEC60204-1 (Overvoltage category III) EN Listed UL 508 IEC Rated CSA Std. C22.2 EAC
Product Tradename		PSG
Product Type		Power supply unit
Product Sub Type		None
Catalog Notes		PELV (EN 60204), SELV (EN 60950) Power Boost via 2-fold rated operational current for 2 s Temperature derating: > 50 °C (2.5% / °C), > 70 °C (5% / °C), Derating from Tamb > +50 °C
Features & Functions		
Electric connection type		Screw connection
Enclosure material		Aluminum
Features		Modular version Short-circuit-proof Output voltage stabilized Stabilized Mains overvoltage protection (against internal overvoltage)
Fitted with:		Not accessible internal input fuse (T8 AH/250 V) for device protection
Functions		Secondary voltage adjustable Transient overvoltage protection (varistor)
Number of phases		1
General information		
Degree of Protection		IP20 NEMA 1
Environmental class		3K3 (Climatic class, according to EN 60721)
Mounting Method		Rail mounting possible
Pollution degree		2
Product category		Power supply
Voltage type		AC
Connection type		Screw connection
LED indicator		Status indication of "DC OK": Green LED
Power consumption		600 VA
Rated operational current (Ie)		Max. 5 A at 115 V AC Max. 3 A at 230 V AC

Ambient conditions, mechanical		
Shock resistance		30 g (300 m/s ²) in all directions, Mechanical, According to IEC/EN 60068-2-27
Vibration resistance		10 - 500 Hz at 30 m/s ² (3 G max) for 60 min. in X-axis, Y-axis, Z-axis directions, (IEC/EN 60068-2-6)
Climatic environmental conditions		
Ambient operating temperature - min		-20 °C
Ambient operating temperature - max		75 °C
Ambient storage temperature - min		-25 °C
Ambient storage temperature - max		85 °C
Climatic proofing		< 95 % relative humidity at +25 °C, no condensation
Terminal capacities		
Terminal capacity (flexible with ferrule)		Primary side: 0.82 - 5.3 mm ² Secondary side: 3.3 - 5.3 mm ²
Terminal capacity (flexible with ferrule AWG)		Primary side: 18 - 10 Secondary side: 12 - 10
Stripping length (main cable)		7 mm
Tightening torque		0.5 Nm, Screw terminals, Primary side 0.5 Nm, Screw terminals, Secondary side
Safety		
Protection class		1 (with PE connection)
Current limitation		Overcurrent = 150 % of max. output power, at short-circuit, safety and safety features
Insulation resistance		1.5 kV AC (routine test, input) 4 kV AC (type test, input/output) 1.5 kV AC (type test, output) 1.5 kV AC (type test, input) 3 kV AC (routine test, input/output) 500 V AC (routine test, output)
Mean time between failures (MTBF)		> 500,000 h
Input characteristics		
Input voltage at AC 50 Hz - min		85 V
Input voltage at AC 50 Hz - max		264 V
Input voltage at DC - min		120 V
Input voltage at DC - max		375 V
Inrush current		< 35 A at 230 V AC (Inrush current limitation I ² t (+25 °C)) < 35 A at 115 V AC (Inrush current limitation I ² t (+25 °C))
Leakage current at ground IPE - max		< 1 mA (at 240 V AC)
Mains failure bridging		> 20 ms (at 115 V AC) > 125 ms (at 230 V AC)
Ramp/run-up time		< 1000 ms
Short-term interruption		100% voltage dip, 1 cycle (20 ms at 50 Hz), automatic start, Input characteristics
Supply frequency		50/60 Hz, Input, Rated value 63 Hz, Input, max. Range 47 Hz, Input, min. Range
Supply voltage at AC, 50 Hz - min		85 V AC
Supply voltage at AC, 50 Hz - max		264 V AC
Supply voltage at DC - min		0 V DC
Supply voltage at DC - max		0 V DC
Tripping characteristic		B
Output characteristics		
Residual ripple		< 50 mV / < 150 mV
Capacitive load		10000 µF max. Capacitive load starting, Output characteristics
Efficiency		> 90 % (230 V AC) > 90 % (115 V AC)
Output		Parallel switching for redundancy, with 0 ring diode (PSG960R24RM)
Output current at AC, 50 Hz - max		20 A
Output voltage at DC - min		24 V
Output voltage at DC - max		28 V
Rated output power		480 W
Voltage tolerance		± 2 %, Rated output voltage

Design verification		
Equipment heat dissipation, current-dependent Pvid		0 W
Heat dissipation capacity Pdis		0 W
Heat dissipation per pole, current-dependent Pvid		0 W
Rated operational current for specified heat dissipation (In)		0 A
Static heat dissipation, non-current-dependent Pvs		59 W
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.
10.2.3.3 Resist. of insul. mat. to abnormal heat/fire by internal elect. 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.
10.9.2 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 9.0

Low-voltage industrial components (EG000017) / DC-power supply (EC002540)		
Electric engineering, automation, process control engineering / Power supply devices / Power supply device / Continuous current supply (ecl@ss13-27-04-07-01 [AFX040008])		
Voltage type (supply voltage)		AC
1st secondary output voltage	V	24 - 24
2nd secondary output voltage	V	0 - 0
3rd secondary output voltage	V	0 - 0
Max. output current 1	A	20
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	20
Nominal value output current 2	A	0
Nominal value output current 3	A	0
Short-circuit-proof		Yes
Rated supply voltage AC 50 Hz	V	85 - 264
Rated supply voltage AC 60 Hz	V	85 - 264
Rated supply voltage DC	V	0 - 0
Output voltage stabilized		Yes
Power consumption	VA	600
Power output	W	480
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	144
Built-in height		mm	121
Direct mounting possible			No
Width		mm	165
Height		mm	170
Depth		mm	180
Suitable for safety functions			No
SIL according to IEC 61508			None
Performance level according to EN ISO 13849-1			None
Degree of protection (IP)			IP20
Degree of protection (NEMA)			1