

Power supply unit, 3-phase, 400-500VAC/24VDC, 20A



**Part no.** PSG480F24RM  
**172885**  
**EL Number** 4560883  
**(Norway)**

General specifications	
Product name	Eaton PSG power supply unit
Part no.	PSG480F24RM
EAN	4015081694730
Product Length/Depth	175 millimetre
Product height	170 millimetre
Product width	155 millimetre
Product weight	1.485 kilogram
Certifications	Mains harmonics limitation: EN 601000-3-2 Class2: UL1310 and CSA-C22.2 No. 223 PELV (EN 60204) Electrical equipment of machines: IEC60204-1 (Overvoltage category III) 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 IEC/EN 61204-3 EN 50178/IEC 62103 SELV (EN 60950) ITE: EN 55022, EN 61000-3-2, EN 61000-3-3, EN 55024 RoHS EN 55011 2014/35/EU Protection against electric shock: DIN 57100-410 UL 508 IEC Rated CSA Std. C22.2 EAC EN Listed
Product Tradename	PSG
Product Type	Power supply unit
Product Sub Type	None
Catalog Notes	PELV (EN 60204), SELV (EN 60950) Power Boost via 1.5-fold rated operational current for 5 s Temperature derating: Vertical: > 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 Output voltage stabilized Stabilized Mains overvoltage protection (against internal overvoltage) Short-circuit-proof
Fitted with:	Not accessible internal input fuse (T3.15 AH/500 V) for device protection
Functions	Secondary voltage adjustable Transient overvoltage protection (varistor)
Number of phases	3
General information	
Degree of Protection	IP20 NEMA 1
Environmental class	3K3 (Climatic class, according to EN 60721)
Mounting Method	Rail mounting possible
Product category	Power supply
Voltage type	AC
Connection	L1 +, L2 -, L3 nc, PE #, Input characteristics, DC duty L1 +, L2 nc, L3 -, PE #, Input characteristics, DC duty
Connection type	Screw connection
LED indicator	Status indication of "DC OK": Green LED
Power consumption	500 VA
Rated operational current (Ie)	Max. 1 A at 3 x 400 V AC

		Max. 0.75 A at 3 x 500 V AC
<b>Ambient conditions, mechanical</b>		
Shock resistance		30 g (300 m/s <sup>2</sup> ) in all directions, Mechanical, According to IEC/EN 60068-2-27
Vibration resistance		10 - 500 Hz at 30 m/s <sup>2</sup> (3 G max ) for 60 min. in X-axis, Y-axis, Z-axis directions, (IEC/EN 60068-2-6)
<b>Climatic environmental conditions</b>		
Ambient operating temperature - min		-25 °C
Ambient operating temperature - max		80 °C
Ambient storage temperature - min		-25 °C
Ambient storage temperature - max		85 °C
Climatic proofing		< 95 % relative humidity at +25 °C, no condensation
<b>Terminal capacities</b>		
Terminal capacity (flexible with ferrule)		Secondary side: 3.3 - 5.3 mm <sup>2</sup> Primary side: 0.82 - 8.4 mm <sup>2</sup>
Terminal capacity (flexible with ferrule AWG)		Secondary side: 12 - 10 Primary side: 18 - 8
Stripping length (main cable)		7 mm
Tightening torque		0.9 Nm, Screw terminals, Primary side 0.9 Nm, Screw terminals, Secondary side
<b>Safety</b>		
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 (input) 1.5 kV AC (output) 4 kV AC (input/output)
Mean time between failures (MTBF)		> 300,000 h
<b>Input characteristics</b>		
Input voltage at AC 50 Hz - min		320 V
Input voltage at AC 50 Hz - max		600 V
Input voltage at DC - min		450 V
Input voltage at DC - max		800 V
Inrush current		Voltage source up to 3 kVA: < 50 A with 3 x 400 V AC & 3 x 500 V AC (Inrush current limitation I <sup>2</sup> t (+25 °C)) Voltage source up to 18 kVA: < 120 A with 3 x 400 V AC & 3 x 500 V AC (Inrush current limitation I <sup>2</sup> t (+25 °C))
Leakage current at ground IPE - max		< 3.5 mA (at 500 V AC)
Mains failure bridging		> 20 ms (with 3 x 500 V AC) > 20 ms (with 3 x 400 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		47 Hz, Input, min. Range 50/60 Hz, Input, Rated value 63 Hz, Input, max. Range
Supply voltage at AC, 50 Hz - min		320 V AC
Supply voltage at AC, 50 Hz - max		600 V AC
Supply voltage at DC - min		0 V DC
Supply voltage at DC - max		0 V DC
Tripping characteristic		B
<b>Output characteristics</b>		
Residual ripple		< 50 mV / < 150 mV
Capacitive load		10000 µF max. Capacitive load starting, Output characteristics
Efficiency		> 90 % (3 x 500 V AC) > 90 % (3 x 400 V AC)
Output		Parallel switching for redundancy, with 0 ring diode (PSG480R24RM/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		53 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	320 - 600
Rated supply voltage AC 60 Hz	V	320 - 600
Rated supply voltage DC	V	0 - 0
Output voltage stabilized		Yes
Power consumption	VA	500
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	140
Built-in height		mm	121
Direct mounting possible			No
Width		mm	155
Height		mm	170
Depth		mm	175
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