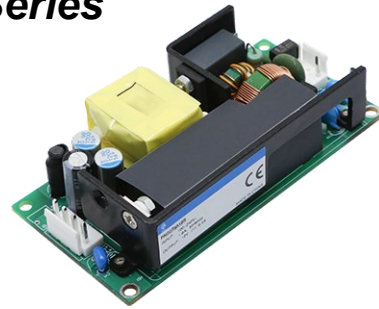




PHI-CON

75 W AC-DC Power Supply PAC075A-Series

- 85 ... 264 V_{AC} / 88 ... 370 V_{DC} universal input
- Continuous short circuit-, over current-, over voltage- & over temperature protection
- 4 kV_{AC} input/output isolation
- EN 62368-1, IEC 62368-1, Safety class I
- MTBF > 300000 h
- Adjustable output voltage
- Small outlines 50.8 mm x 101.6 mm x 27 mm



Model guide

Type	Output voltage		Output Current [A] max.	Output power [W] max.	Efficiency@ full load & Vin 230 V _{AC} [%] typ.	Capacitive load [μF] max.
	[V _{DC}] nom.	Adjust-range [V _{DC}]				
PAC075A03S	03	-	12	39.6	82	8500
PAC075A05S	05	4.5...5.5	12	60	84	8500
PAC075A09S	09	8.1...9.9	8.4	75.6	86	7500
PAC075A12S	12	10.8...13.2	6.4	76.8	88	6800
PAC075A15S	15	13.5...16.5	5.0	75	88	4700
PAC075A24S	24	21.6...26.4	3.2	76.8	89	2200
PAC075A27S	27	24.3...29.7	2.8	75.6	89	1200
PAC075A48S	48	43.2...52.8	1.6	76.8	90	680

Specifications

Input		
Voltage range	85 ... 264 V _{AC} or 88 ... 370 V _{DC} Power derating see diagram	
Frequency	47 ... 63 Hz	
Full load input current	115 V _{AC}	≤ 1.6 A
	230 V _{AC}	≤ 0.9 A
Inrush current	115 V _{AC}	25 A typ.
	230 V _{AC}	45 A typ.
Standby power @ 230 V _{AC}	≤ 0.5 W	
Hot plug	Not possible	
Isolation		
Isolation voltage	Input to output	4000 V _{AC} (1 Minute, < 8 mA)
	Input to PE	2000 V _{AC} (1 Minute, < 5 mA)
	Output to PE	500 V _{AC} (1 Minute, < 10mA)
Isolation resistance	Input to output	50 MΩ
	Input to PE Output to PE	@ 500 V _{DC} , Ta 25±5 °C, RH 95 %, not condensation
Impulse voltage withstand	Input to output	5 kVp, impulse 1.2 μs/50 μs
	Input to PE	
Leakage current	≤ 0.5 mA @ 240 V _{AC} , 60 Hz,	
Output		
Voltage tolerance	PAC075A03S	± 3 %, typ.
	All others	± 2 %, typ.
Line regulation @ full load	Vout: 12V	± 0.8 %, typ.
	All others	± 0.5 %, typ.
Load regulation@ 0 to 100 % load change	± 1 %, typ.	
Minimum load	Not required	
Ripple & noise (BW 20 MHz)	≤ 200 mVp-p (see Figure 1)	
Hold up time @ full load	Vin 115 V _{AC}	12 ms, typ.
	Vin 230 V _{AC}	90 ms, typ.
Start up delay time @ Vin 85...230 V _{AC} and full load	500 ms, typ.	
Temperature coefficient	0.03 % / °C	
Protection		
Output over voltage protection (Output voltage clamp or hiccup)	PAC075A03S	≤ 5.25 V
	PAC075A05S	≤ 7.25 V
	PAC075A09S	≤ 13 V
	PAC075A12S	≤ 16 V
	PAC075A15S	≤ 21 V
	PAC075A24S	≤ 35 V
	PAC075A27S	≤ 39 V
	PAC075A48S	≤ 60 V

Protection		
Short circuit	Continuous, hiccup, auto restart	
Over current, hiccup, auto restart	≥ 110 % of rated current	
General		
Switching frequency	65 kHz	
Reliability MTBF MIL-HDBK-217 @ 25 °C	> 300 000 h	
Safety standards PAC075A12S, PAC075A15S	EN-, IEC-, UL-, BS EN 62368-1	
Safety standards All others	EN-, IEC-, BS EN 62368-1	
Safety Class I	PE Must be connected	
EMC		
CE	EN 55032, CISPR 32	Class B
RE	EN 55032, CISPR 32	Class A
Harmonic current	EN-, IEC 61000-3-2	Class A
Voltage flicker	EN-, IEC 61000-3-3	Class A
ESD	EN-, IEC 61000-4-2	Contact: ±8 kV Perf. Crit. B
		Air: ±15 kV Perf. Crit. B
RS	EN-, IEC 61000-4-3	10 V/m Perf. Crit. A
EFT	EN-, IEC 61000-4-4	±4 kV Perf. Crit. B
Surge	EN-, IEC 61000-4-5	Line to line: ±2 kV Perf. Crit. B
		Line to GND: ±4 kV Perf. Crit. B
CS	EN-, IEC 61000-4-6	10 Vrms Perf. Crit. A
Voltage dips, short interruptions and voltage variations immunity EN-, IEC 61000-4-11	100% dip 1 period, 30% dips 25 periods, 100% interruptions 250 periods Perf. Crit. B	
Environmental		
Operating ambient temperature	-40 ... 85 °C	
Storage temperature	-40 ... 105 °C	
Power derating	see diagram	
Storage humidity	≤ 90 %	
Altitude operating & storage	5000 m	
Cooling (see derating diagram)	Free air convection	
Physical		
Dimensions	101.6 x 50.8 x 27mm	
Weight	140 g	
Case material	Non (Open frame)	
Soldering temperature & Time	Wave: ≤ 265 °C duration, ≤ 10 s Manual: ≤ 370 °C duration, ≤ 5 s	

Note:

1. All specifications were measured at Ta 25 °C, humidity < 75 %, nominal input voltage (230 V_{AC}) and rated output load unless otherwise specified.
2. See also notes on page 4.



PHI-CON

75 W AC-DC Power Supply PACO75A-Series

Part number information								
PHI-CON	AC/DC-Converter open Frame	Output Power		Series	Output voltage		Rev.	Output
P	ACO	75	75 W	A	03	3.3V	-	S single
					05	5V		
					09	9V		
					12	12V		
					15	15V		
					24	24V		
					27	27V		
					48	48V		
Example:	PACO75A12S	PHI-CON AC/DC Converter, open frame, Pout: 75 W, Vout: 12 V, single output						

Figure 1 Output ripple and noise measure circuit

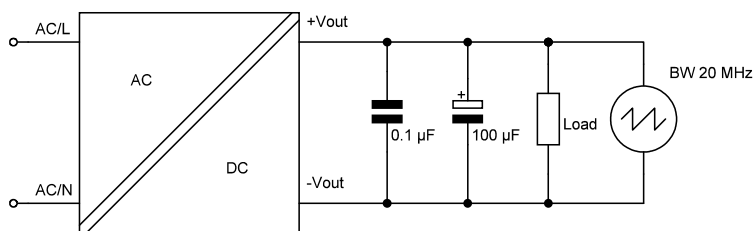
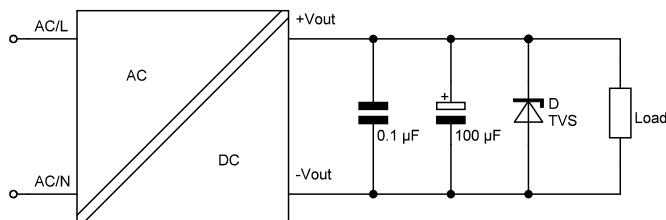


Figure 2 Typical circuit



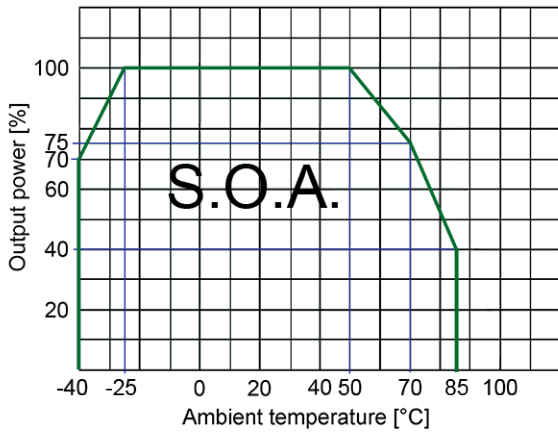
Type	D-TVS
PACO75A03S	SMBJ7.0A
PACO75A05S	SMBJ7.0A
PACO75A09S	SMBJ12A
PACO75A12S	SMBJ20A
PACO75A15S	SMBJ20A
PACO75A24S	SMBJ30A
PACO75A27S	SMBJ30A
PACO75A48S	SMBJ64A



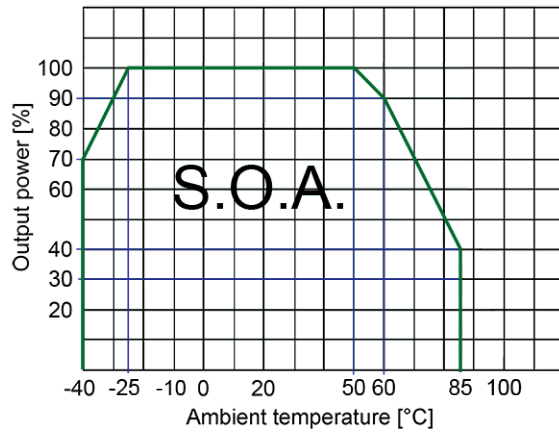
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75 W AC-DC Power Supply PACO75A-Series

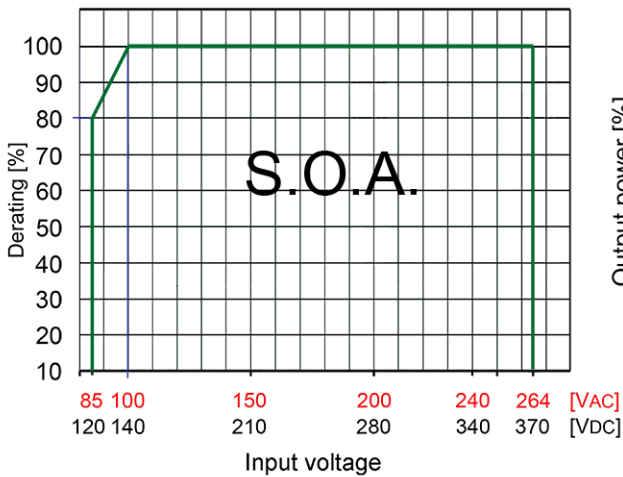
Temperature vs output current derating diagram
PACO75A03S & PACO75A05S at 85...264 V_{AC}



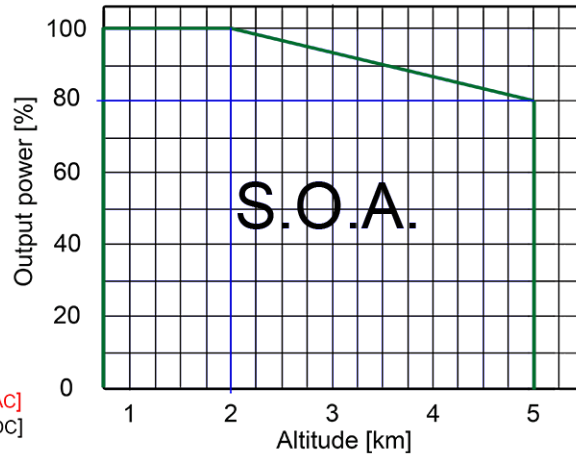
Temperature vs output current derating diagram
all others PACO75AxxS at 85...264 V_{AC}



Derating vs input voltage at 25 °C



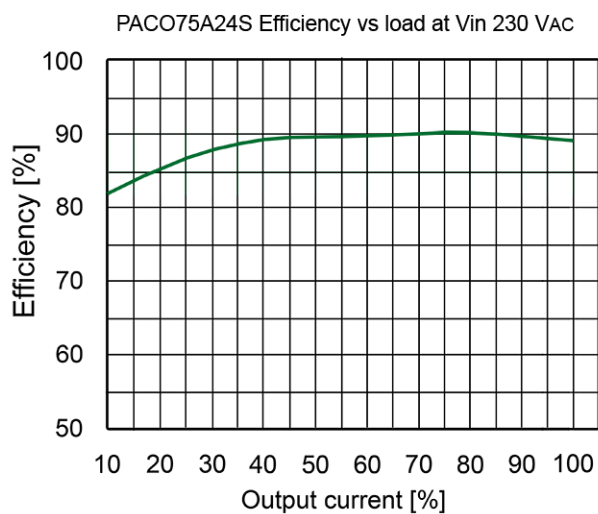
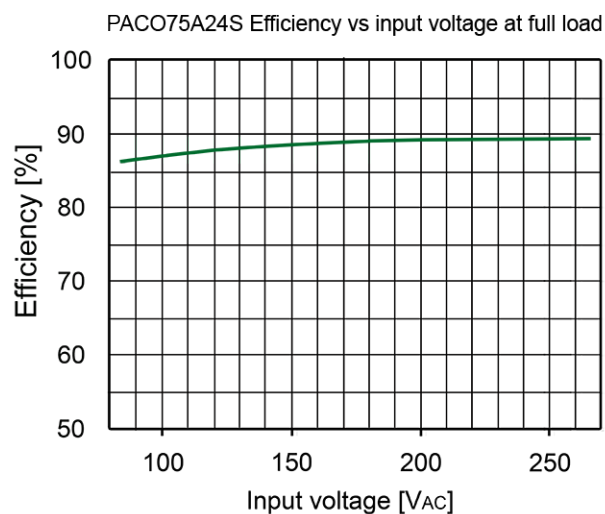
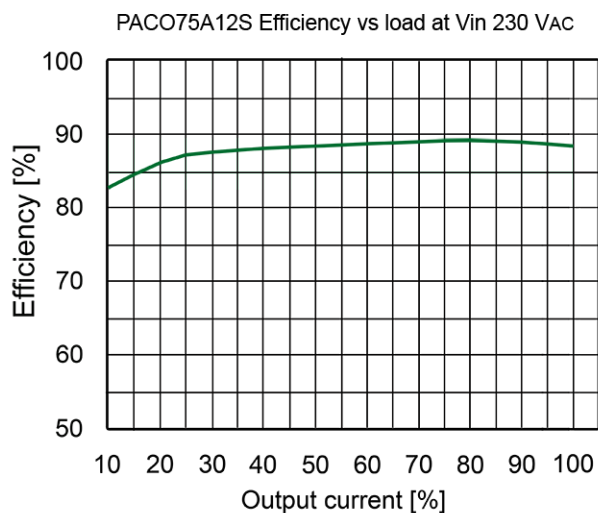
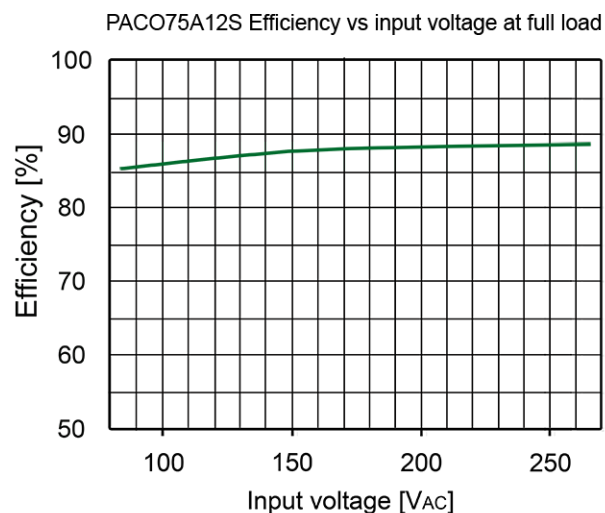
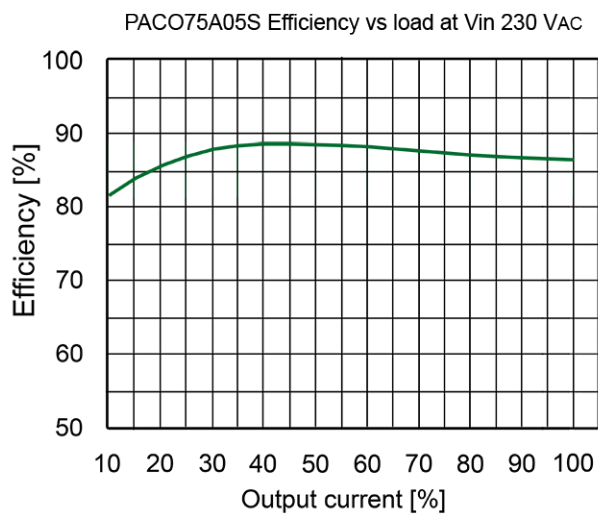
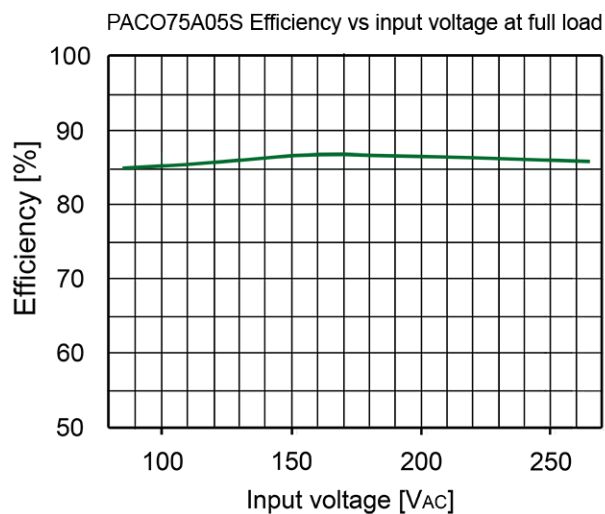
Altitude vs output power derating





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75 W AC-DC Power Supply PACO75A-Series

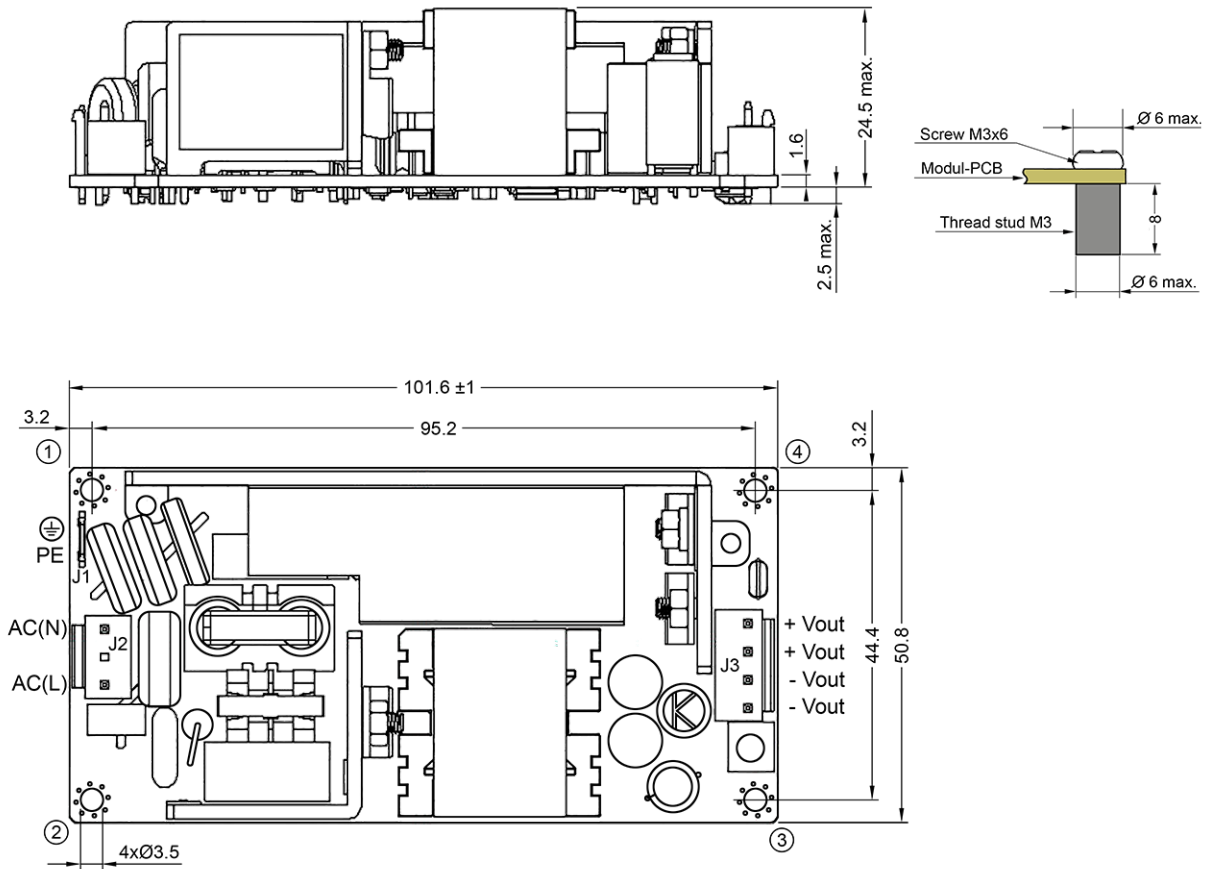




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75 W AC-DC Power Supply PAC075A-Series

Mechanical dimensions



Connector	Function	Modul connector	User connector
J1	PE		FDD 5.5-250 (KST), or equivalent
J2	AC In/N (-Vin)	B3P-VH	Housing: VHR-3M Terminals: SVH-21T-P1.1 or equivalent
	AC In/L (+Vin)		
J3	- Vout	B4P-VH	Housing: VHR-4N or VHR-4M Terminals: SVH-21T-P1.1 or equivalent
	+ Vout		
	+ Vout		

All connectors JST (Japan Solderless Terminals) or equivalent

Note:

- Unit in mm
- General tolerances ± 0.5 mm
- Recommended mounting with screws M3x6 on the PCB holes 1-4
- The layout of the device is for reference only, please refer to the actual product.
- The recommended safety distance between the edge of the PCB and the user components should be ≥ 10 mm.

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Rev: 202208016 f