



PHI-CON

65 W AC-DC Power Supply PACC65B-Series

- 85 ... 264 V_{AC} / 100 ... 370 V_{DC} universal input
- Continuous short circuit-, over current-, over voltage protection
- 4 kV_{AC} input/output isolation
- EN 62368-1, Safety class II
- Designed to meet EN 61558-1 Over-voltage class III
- Designed to meet medical equipment
- 0.3 W no load power consumption
- Small outlines 91.4 x 60.5 x 33.3 mm



Model guide

Type	Output voltage		Output Current [A]	Output Power [W]	Efficiency@ full load & Vin 230 V _{AC} [%] typ.	Capacitive load [μF] max.
	[V _{DC}] nom.	Adjust-range [V _{DC}]				
PACC65B03S	3.3	2.97..3.63	10	33	84	20000
PACC65B05S	5	4.5..5.5	10	50	85	20000
PACC65B12S	12	10.2..13.8	5.42	65	89	8000
PACC65B15S	15	13.5..18	4.34	65	90	7000
PACC65B24S	24	21.6..28.5	2.71	65	90	1500
PACC65B36S	36	32.4..39.6	1.81	65	91	1000
PACC65B48S	48	43.2..52.8	1.36	65	91	470

Specifications

Input	
Voltage range	85 .. 264 V _{AC} or 120 .. 370 V _{DC} Power derating see diagram
Frequency	47 .. 63 Hz
Full load input current	≤ 1.65 A @ 115 V _{AC} ≤ 0.95 A @ 230 V _{AC}
Inrush current	40 A typ. @ 115 V _{AC} 60 A typ. @ 230 V _{AC}
Standby power @ 230 V _{AC}	≤ 0.3 W
Hot plug	Not possible
Isolation I/O	
Isolation voltage	4000 V _{AC} (1 Minute, < 5 mA)
Isolation resistance	100 MΩ @ 500 V _{DC}
Leakage current	≤ 75 μA @ 240 V _{AC} , 60 Hz,
Clearance distance	7.6 mm
Creepage distance	8 mm
Output	
Voltage tolerance	PACC65B03S ± 2 %, typ. PACC65B05S All others ± 1 %, typ.
Line regulation	PACC65B03S ± 0.8 %, typ PACC65B05S All others ± 0.5 %, typ
Load regulation @ 0 to 100 % load change	± 1 %, typ.
Minimum load	Not required
Ripple & noise (BW 20 MHz)	PACC65B03S, PACC65B05S, PACC65B12S, PACC65B15S ≤ 100 mVp-p PACC65B24S ≤ 120 mVp-p PACC65B36S, PACC65B48S ≤ 150 mVp-p
Hold up time	115 V _{AC} ≥ 10 ms 230 V _{AC} ≥ 45 ms
Temperature coefficient	0.02 % / °C
Protection	
Short circuit	Continuous, auto recovery time <3s after the short circuit disappear
Over current	120 % of rated current

Over voltage protection (Output voltage turn off, re-power on for recover)	PACC65B03S	≤ 5.25 V
	PACC65B05S	≤ 7 V
	PACC65B12S	≤ 16 V
	PACC65B15S	≤ 22 V
	PACC65B24S	≤ 32.4 V
	PACC65B36S	≤ 42.4 V
	PACC65B48S	≤ 57 V
Safety standard	EN 62368-1	
Safety designed to meet	EN 60335-1, EN 61558-1, IEC 62368-1, UL 62368-1	
Safety Class	Class II	
EMC		
CE	EN 55032, EN 55011, CISPR 32	Class B
RE	EN 55032, EN 55011, CISPR 32	Class B
ESD	EN-, IEC 61000-4-2	Contact ±8 kV Perf. Crit. A Air ±15 kV Perf. Crit. A
RS	EN-, IEC 61000-4-3	20 V/m Perf. Crit. A
EFT	EN-, IEC 61000-4-4	±2 kV Perf. Crit. A
Surge	EN-, IEC 61000-4-5	Line to line ±2 kV Perf. Crit. A
CS	EN-, IEC 61000-4-6	20 Vrms Perf. Crit. A
Voltage dips, short interruptions and voltage variations immunity EN-, IEC 61000-4-11	100 % dip 1 periods, 30 % dip 25 periods, 100 % interruptions 250 periods Perf. Crit. B	
General		
Reliability MTBF MIL-HDBK-217 @ 25 °C	> 300000 h	
Environmental		
Operating ambient temperature	-40 ... 70 °C	
Storage temperature	-40 ... 70 °C	
Power derating	see diagram	
Storage humidity	≤ 90 %	
Altitude operating & storage	5000 m	
Cooling (see derating diagram)	Free air convection	
Physical		
Dimensions	91.4 x 60.5 x 33.3 mm	
Weight	150 g	
Case material	Metal	

Note: All specifications were measured at Ta 25 °C, humidity < 75 %, nominal input voltage (230 V_{AC}) and rated output load unless otherwise specified.



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Part number information										
PHI-CON	AC/DC-Converter with metal cover	Output Power		Series	Output voltage		Rev.	Output		Option
P	ACC	65	65 W	B	03	3.3 V	-	S	single	Open frame version is also available. P/N: PACO65BxxS
					05	5 V				
					12	12 V				
					15	15 V				
					24	24 V				
					36	36 V				
					48	48 V				
Example:		PACC65B12S		PHI-CON AC/DC Converter, Cover version, Pout: 65 W, Vout: 12 V, single output,						

Figure 1 Output ripple and noise measure circuit

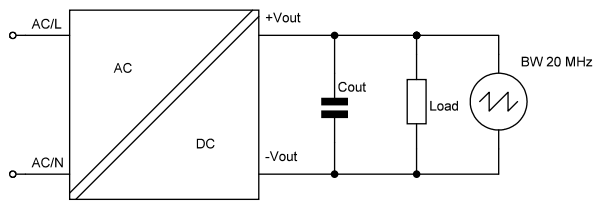
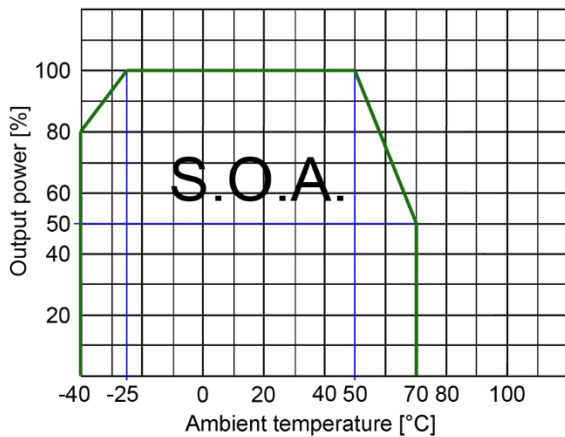
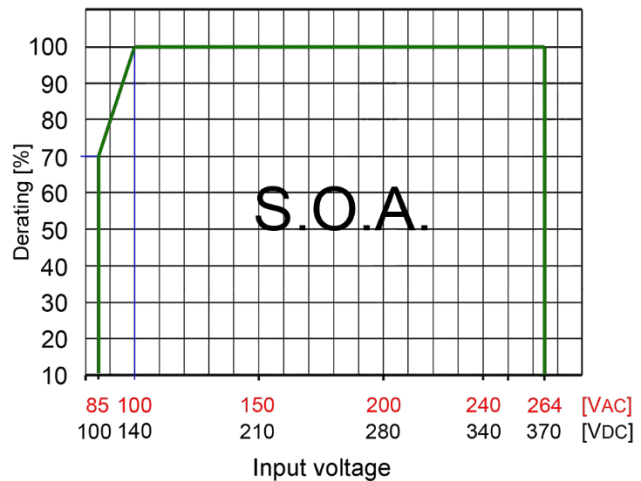


Table for Figure 1	
Type	Cout (MLCC)
PACC65B03S	10 μ F
PACC65B05S	10 μ F
PACC65B12S	10 μ F
PACC65B15S	10 μ F
PACC65B24S	1 μ F
PACC65B36S	0.1 μ F
PACC65B48S	0.1 μ F

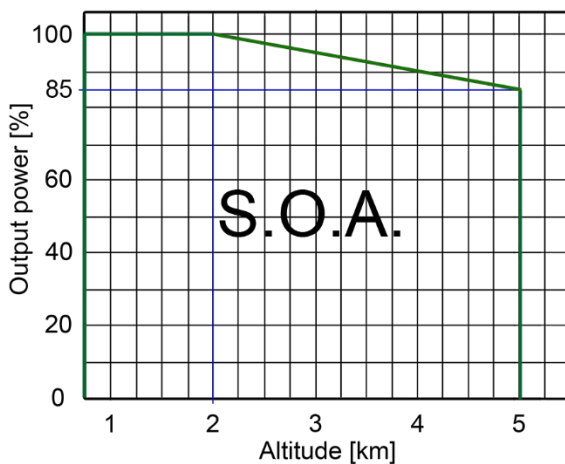
PACC65BxxS Temperature vs output current derating diagram at Vin 85..264 VAC



Derating vs input voltage



Altitude vs output power derating



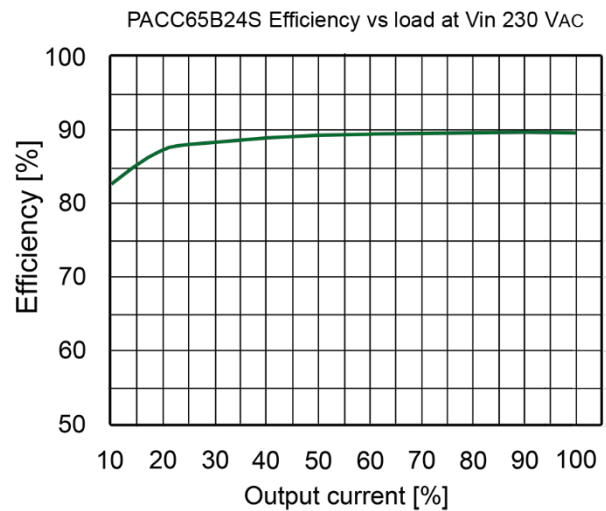
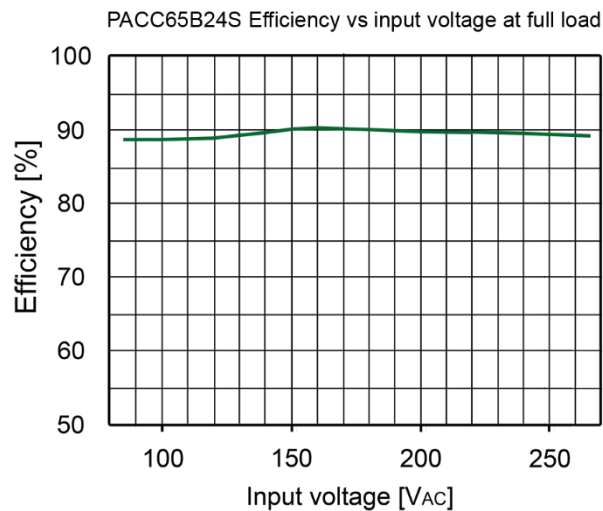
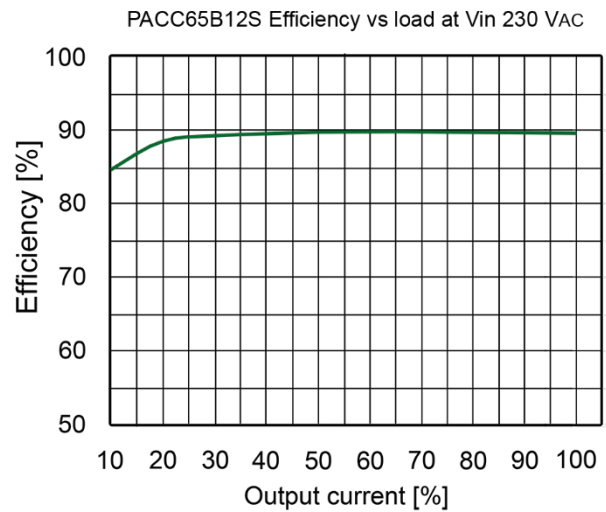
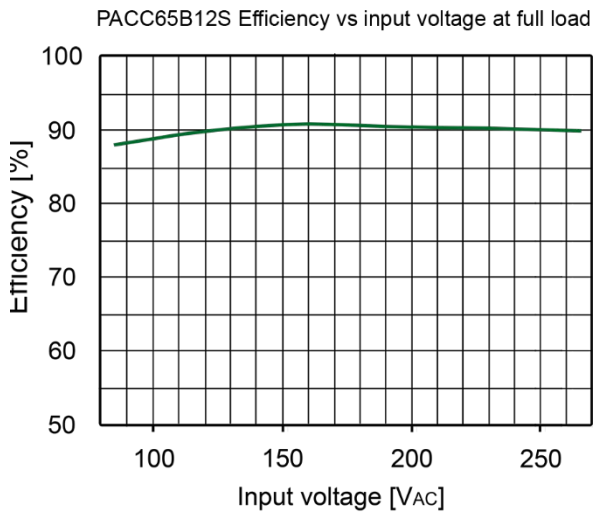
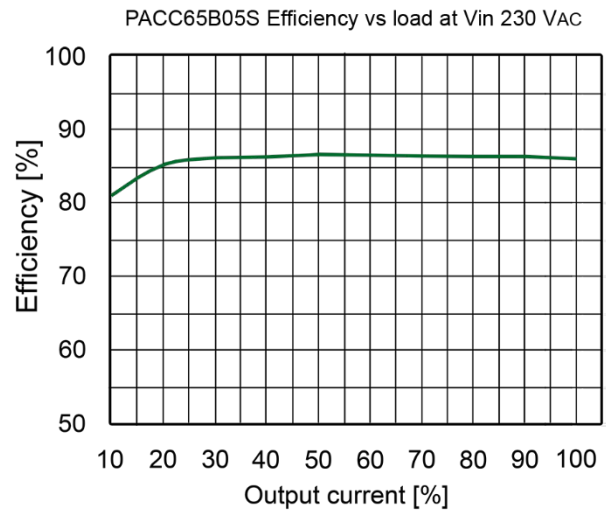
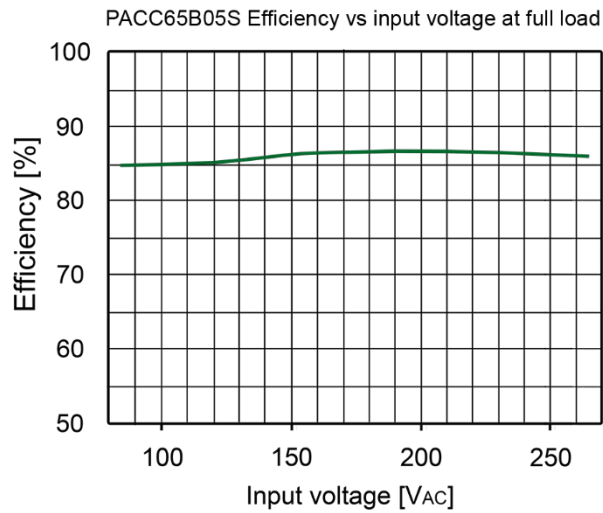
Note:

1. With an AC input between 85...100 V_{AC} and a DC input between 100...140 V_{DC}, the output power must be derated as per temperature derating curves.
2. This product is suitable for applications using free air convection cooling



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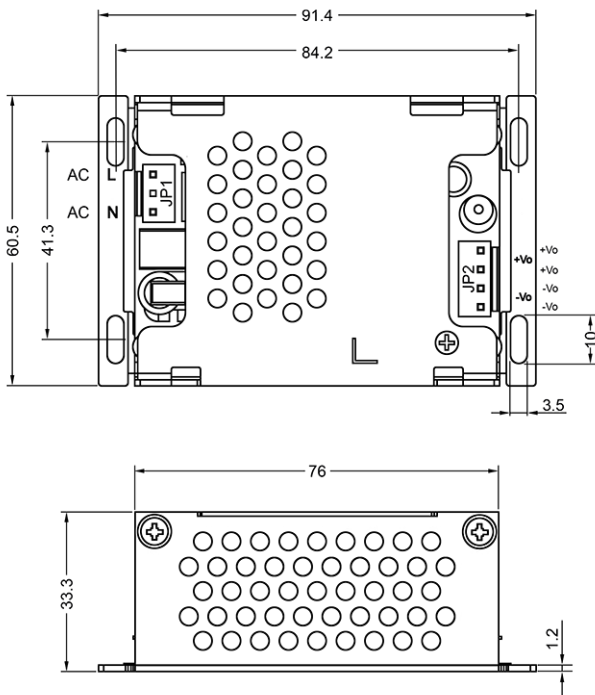




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Mechanical dimensions



Connector pin assignment		
Connector	Modul connector	User connector
JP1	B3P-VH	Housing: VHR-3M Terminals: SVH-21T-P1.1
JP2	B4P-VH	Housing: VHR-4N or VHR-4M Terminals: SVH-21T-P1.1
All connectors JST (Japan Solderless Terminals) or equivalent		

Unit in mm
General tolerances ± 0.5 mm

Note:

1. The layout of the device is for reference only, please refer to the actual product.

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