

600 W PFC Power Supply PACC600A-Series



PHI-CON

- 80 ... 277 V_{AC} / 110...390 V_{DC} universal input range
- Active PFC
- Metal case
- Base PCB with conformal coating
- Continuously short circuit protected via constant current limiting
- Over temperature protection
- Output over voltage protection
- ON/OFF Remote control with isolated input
- Standby output 5 V
- Input - output isolation voltage 4 kV_{AC}
- Safety standard EN 62368-1 Class I
- EN 55032 Class B



Model guide

Type	Power output			Standby output		Output		Efficiency at full load & Vin 230 V _{AC} [%] typ.	Capacitive load [μF] max.
	Nominal I [V _{DC}]	trim range [V _{DC}]	Current [A] max.	[V _{DC}]	[A] max.	Power [W] max.	Ripple & noise @ BW 20 MHz [mVp-p]		
PACC600A12S	12	11.8...12.6	50	5	1	600	120	92	50000
PACC600A15S	15	14.7...15.8	40	5	1	600	120	92	50000
PACC600A24S	24	23.5...25.2	25	5	1	600	200	94	50000
PACC600A27S	27	26.4...28.4	22.3	5	1	602	200	94	50000
PACC600A36S	36	35.3...37.8	16.7	5	1	601	200	94	50000
PACC600A48S	48	47...50.4	12.6	5	1	605	200	94	50000

Specifications

Input	
Voltage range	80...277 V _{AC} or 110...390 V _{DC} Power derating see diagram
Line frequency range	47...63 Hz
Full load input current	≤ 7.5 A at 115 V _{AC} , ≤ 3.5 A at 230 V _{AC}
Inrush current at cold start	≤ 15 A @ 115...230 V _{AC} , Ta 25°C
Hot plug	Not available
Power factor at full load	≥ 0.99 @ 115 ... 230 V _{AC}
Standby power consumption (standby output unloaded)	0.5 W, typ.
Remote control input (see Figure 2)	Power ON ≤ 0.8 V _{DC}
	Power OFF 4...10 V _{DC}
Remote control input OFF current	2.5...8.5 mA
Isolation voltage	
Input to output	≥ 4 kV _{AC} , 1 Min, leakage < 5 mA
Input to protection GND	≥ 1.5 kV _{AC} , 1 Min, leakage < 5 mA
Output to protection GND	≥ 1.5 kV _{AC} , 1 Min, leakage < 5 mA
Isolation resistance	
Input to output	10 ⁸ Ω at 500 V _{DC} ,
Input to protection GND	10 ⁸ Ω < RH 95 %, non condensing
Output to protection GND	10 ⁸ Ω
Leakage current at 240 V _{AC}	< 0.1 mA
Output	
Output tolerance at full load	Power output ± 1 %, typ. Standby output ± 2 %, typ.
Line regulation at full load	± 0.3 %, typ. ± 0.5 %, typ.
Load regulation over full load range	± 0.5 %, typ. ± 2 %, typ.
Sense dropout compensation	500 mV
Power ON feedback	(see Figure 3)
Temperature coefficient	± 0.03 % / °C, typ.
Ripple & noise (BW 20 MHz) (see Figure 1)	PACC600A12S: ≤ 150 mVp-p PACC600A15S: ≤ 150 mVp-p All others: ≤ 200 mVp-p
Minimum load	Not required
Continuous short circuit protection	Hiccup mode, constant current works 1 s, turn off 10 s, auto restart
Over temperature protection	Output voltage turn off, self-recovery after temperature drops
Over current protection	110...250 % of rated current
Over voltage protection, (Output voltage turn off, re-power ON for recover)	PACC600A12S: ≤ 16 V PACC600A15S: ≤ 20 V PACC600A24S: ≤ 32 V PACC600A27S: ≤ 35 V PACC600A36S: ≤ 47 V PACC600A48S: ≤ 60 V

General	
Safety Standard	EN 62368-1
Designed to meet Safety Standard	IEC 62368-1, UL 62368-1, EN 60355-1, EN 61558-1
Safety Class	Class I
Hold up time	≥ 15 ms @ Vin: 230 V _{AC}
Switching frequency	100 kHz, typ.
Reliability calculated MTBF (MIL-HDBK-217F@25°C)	> 300 000 h
EMC compliance	
CE	EN 55032, CISPR32 Class B
RE	EN 55032, CISPR32 Class B
Harmonic current	EN-, IEC 61000-3-2 Class A & Class D
Voltage flicker	EN-, IEC 61000-3-3
ESD	EN-, IEC 61000-4-2 Contact ± 8 kV, perf. crit. A Air ± 15 kV, perf. crit. A
RS	EN-, IEC 61000-4-3 10 V/m perf. crit. A
EFT	EN-, IEC 61000-4-4 ± 4 kV perf. crit. A
Surge	EN-, IEC 61000-4-5 ± 2 kV line to line perf. crit. A ± 4 kV line to GND perf. crit. A
CS	EN-, IEC 61000-4-6 10 Vrms perf. crit. A
Voltage dips, short interruptions and voltage variations immunity EN-, IEC 61000-4-11	0...70 % perf. crit. B
Environmental	
Operating ambient temperature	-40...70 °C (see derating diagram)
Operating humidity	20...95 %, non condensing
Storage temperature	-40...85 °C, non condensing
Storage humidity	10...95 %, non condensing
Forced cooling	Via integrated fan
Operating derating	
Ta 50...70 °C	2.5 % / °C, (see derating diagram)
Vin 80...85 V _{AC}	2 % / V _{AC} , (see derating diagram)
Vin 80...100 V _{AC}	1.33 % / V _{AC} , (see derating diagram)
Operating altitude	5000 m (see derating diagram)
Physical	
Dimensions [mm]	203.1 x 101.6 x 40.6
Weight [g]	950
Case material	Aluminium (AL1100, SGCC)

600 W PFC Power Supply PACC600A-Series

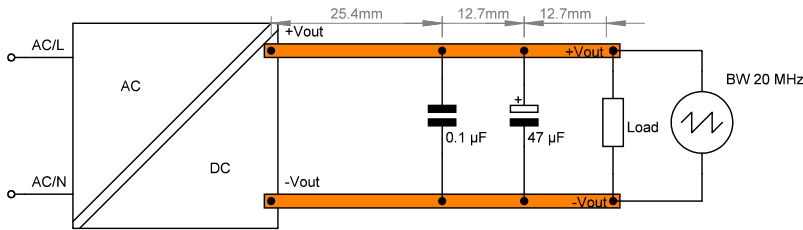


Part number structure									
PHI-CON	Type of current		Mounting	Output power		Series	Output voltage		Outp. Qty.
P	AC		C	600		A	12		S
	AC	AC-Converter	Case	600	600 W	A	12	12 V _{DC}	S single
								15 V _{DC}	
								24 V _{DC}	
								48 V _{DC}	

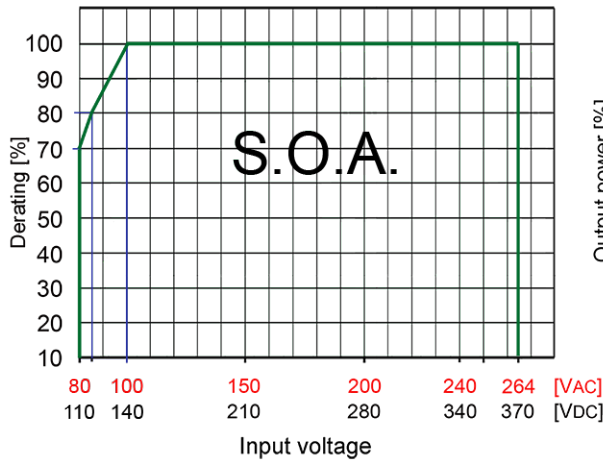
Note:

1. All specifications measured at Ta 25 °C, humidity <75 %, 230 V_{AC} input voltage and rated output load unless otherwise specified.
2. The metal case must be connected with protection earth by using

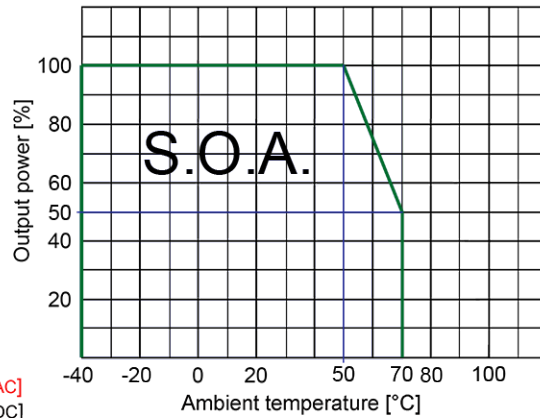
Figure 1 Measure circuit for output ripple & noise voltage



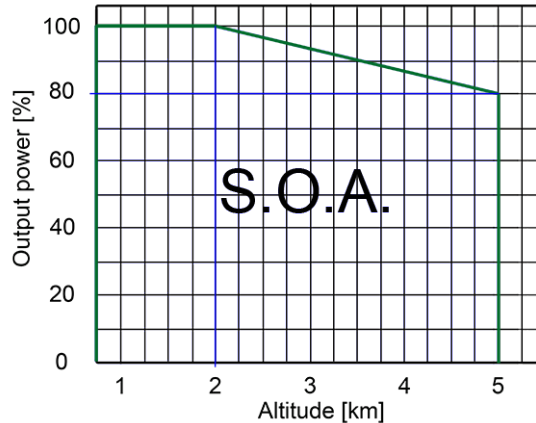
Input voltage vs output current derating



Ambient temperature vs output current derating



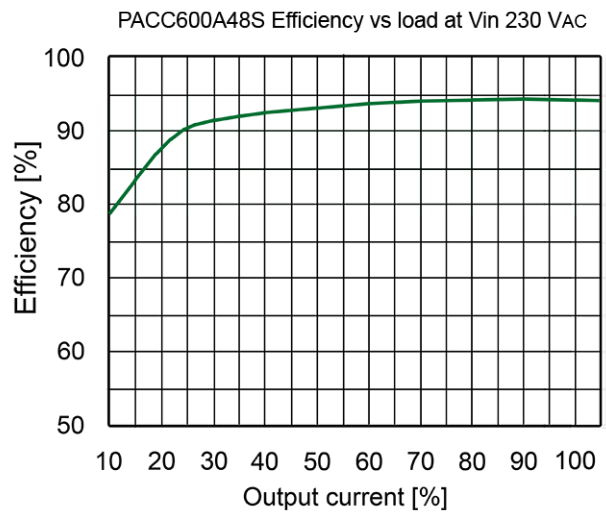
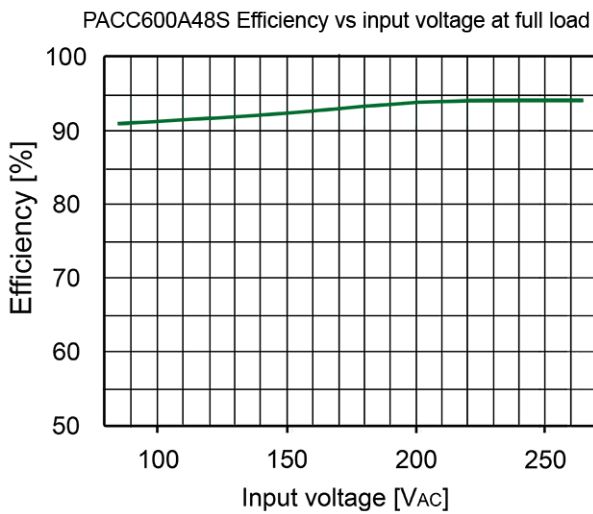
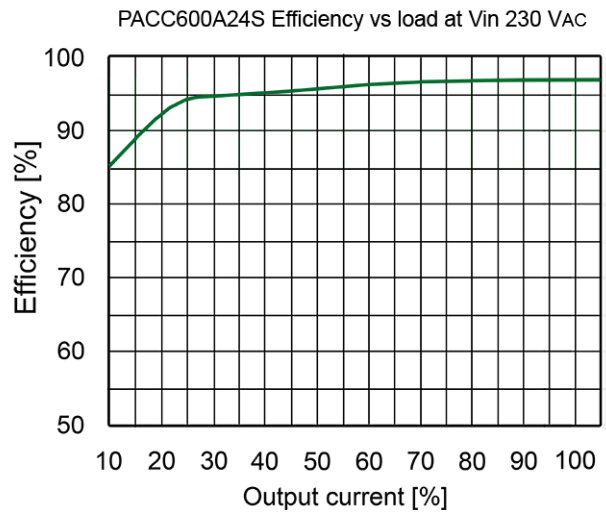
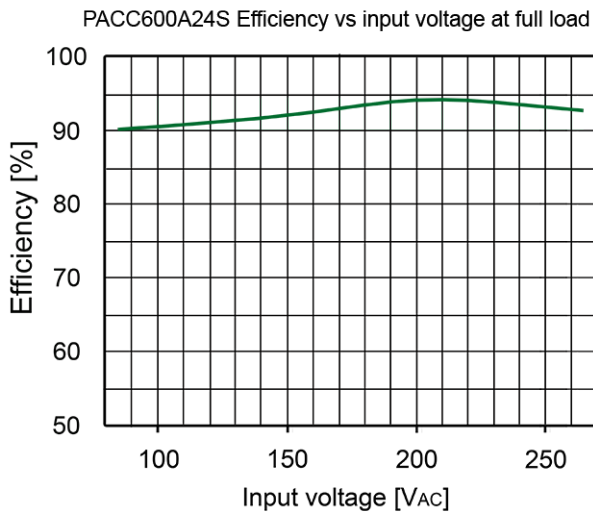
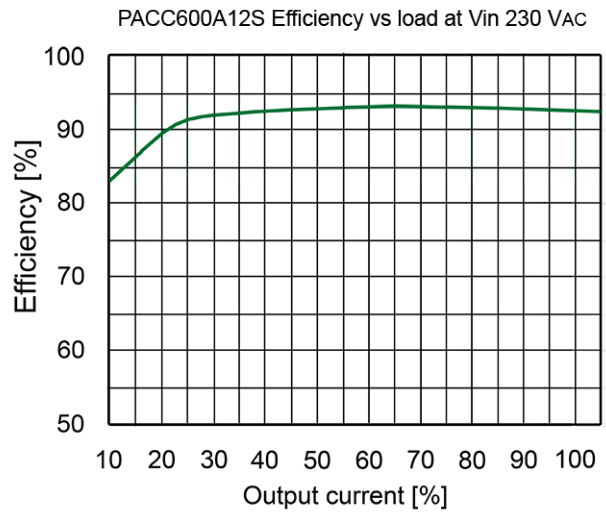
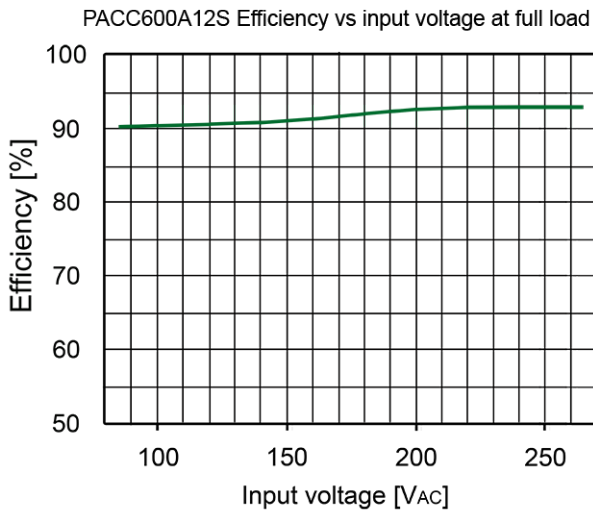
Altitude vs output power derating



600 W PFC Power Supply PACC600A-Series



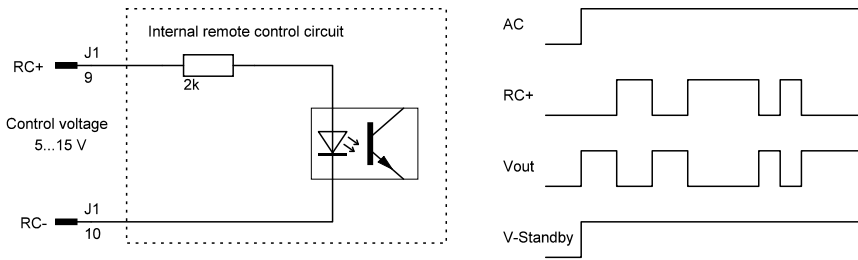
PHI-CON



600 W PFC Power Supply PACC600A-Series



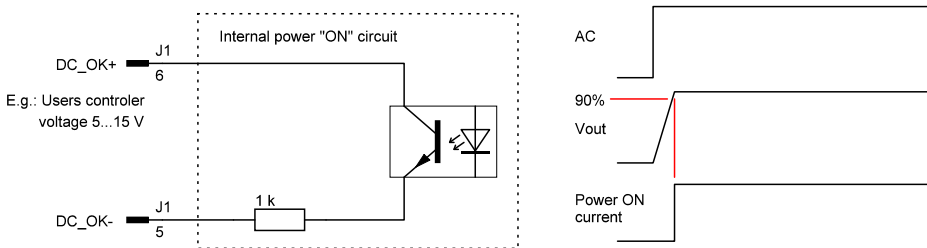
Figure 2 "ON/OFF" Remote control circuit



Note:

1. When the product is working normally, apply voltage (5...15 V) to RC+ and RC- to trigger the remote control ON/OFF function and the output voltage will be off. Withdraw the voltage, the output voltage will be re-established.
2. 5 V standby power supply is not controlled by remote ON/OFF function.
3. An external series resistor can also be used to increase the input level or reduce the control current.

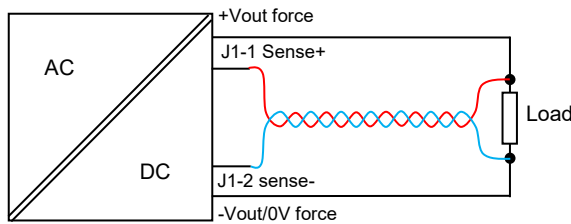
Figure 3 Power "ON" feedback



Note:

1. When the output voltage of the product reaches 90 % of the rated value, DC_OK+ will be connected to DC_OK-.
2. It is recommended that users apply a certain voltage between DC_OK+ and DC_OK- to detect the signal.

Figure 4 Remote sense for voltage dropout compensation



Note:

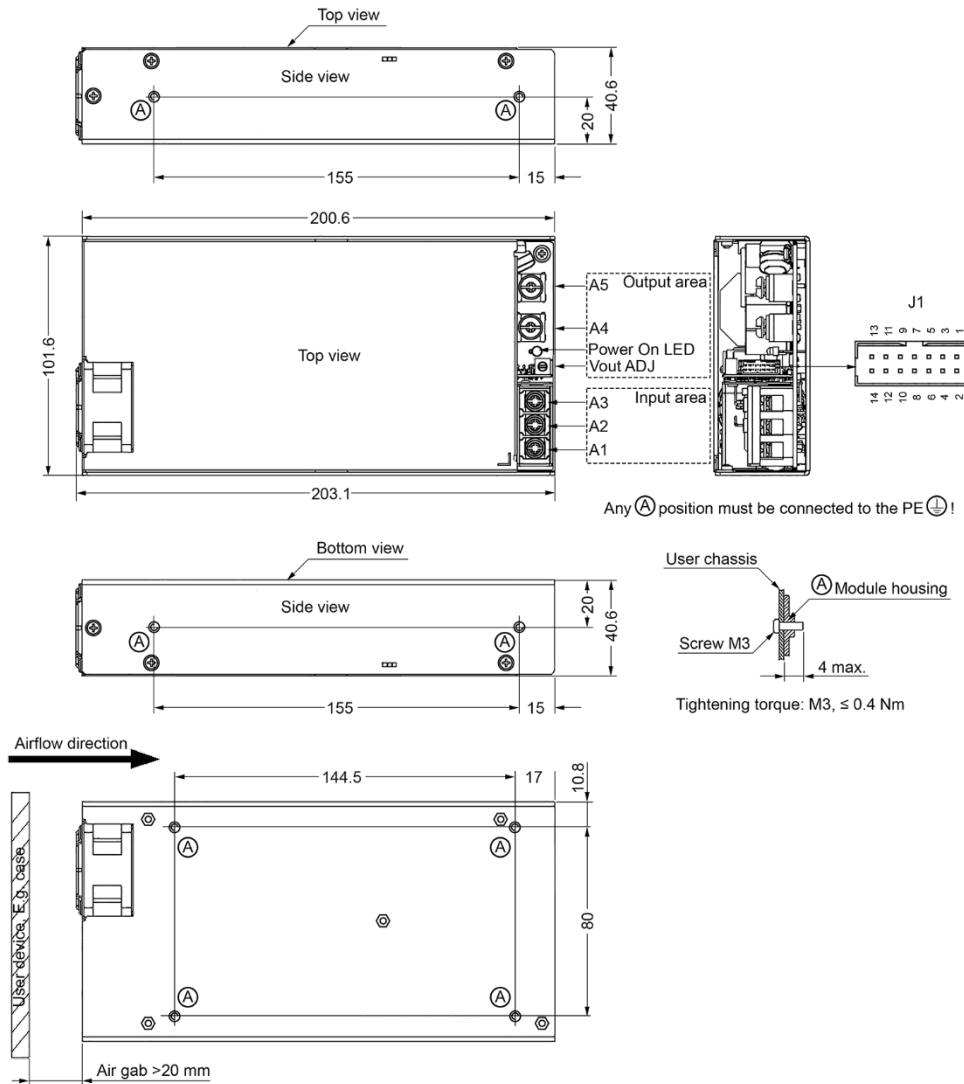
1. The left side represents the modul, the right side represents the user load.
2. Twisted pair wires are needed for S+ & S- line.

600 W PFC Power Supply PACC600A-Series



PHI-CON

Mechanical dimensions



Connection Assignment	
Terminal	Function
A1	PE
A2	AC (N)
A3	AC (L)
A4	+ Vout
A5	- Vout

J1 Connector	
Molex type	
51110-1450 no locking	
5110-1451 locking	
Pin assignment	
Pin	Function
1	- Sense
2	+ Sense
3	N.C.
4	N.C.
5	DC OK-
6	DC OK+
7	+5 V Standby
8	5 V Standby RTN
9	RC+
10	RC-
11	+5 V Standby
12	+5 V Standby
13	5 V Standby RTN
14	5 V Standby RTN

Note:
 Unit: mm
 General tolerances: ± 1 mm
 Input connector wire range: 22-14AWG
 Input connector tightening torque: M4, ≤ 1.2 Nm
 Output connector (-Vo, +Vo) tightening torque: M5, ≤ 2.4 Nm

PHI-CON is a trademark of HY-LINE Holding GmbH.
 Only for professional use by professionals! Not for resale or distribution to the general public in any way! Read the instructions carefully before using!
Life Support Policy: HY-LINE does not authorize the use of any of its products for use in life support devices or systems without the express written approval of an officer of the Company. Life support systems are devices which support or sustain life, and whose failure to perform, when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in significant injury to the user.
 Rev: 20220725f