SERIES: PSK-60 | **DESCRIPTION:** INTERNAL AC-DC POWER SUPPLY

FEATURES

- universal input voltage range (85~264 VAC)
- IEC/EN/UL 62368 certified
- meets CISPR32/EN 55032 Class B without external components
- 4,000 VAC isolation rating
- short-circuit, over-current, over-voltage protections

MODEL	output voltage (Vdc)	output current max (A)	output power max (W)	ripple and noise max (mVp-p)	efficiency typ (%)
PSK-60-5	5	10.0	50	120	84
PSK-60-12	12	5.0	60	120	87
PSK-60-15	15	4.0	60	120	88
PSK-60-24	24	2.5	60	120	89
PSK-60-48	48	1.25	60	120	90

PART NUMBER KEY

PSK-60 - XX- X

- PSK-60: Base Number
- XX: Output Voltage
- X: Mounting Style

blank = board mount
T = chassis mount
DIN = DIN-rail mount

Please read our datasheet & drawing disclaimer here.

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INPUT

parameter	conditions/description	min	typ	max	units
voltage	ac input dc input	85 100		264 370	Vac Vdc
frequency		47		63	Hz
current	at 115 Vac at 230 Vac			1.8 1.0	A
inrush current	at 115 Vac at 230 Vac		45 90		A
no load power consumption	at 230 Vac			0.5	W

OUTPUT

parameter	conditions/description	min	typ	max	units
capacitive load	5 Vdc output 12 Vdc output 15 Vdc output 24 Vdc output 48 Vdc output			20,000 4,000 3,000 1,800 470	µF
initial set point accuracy	at full load		±2		%
line regulation	rated load		±0.5		%
load regulation	0%~100% load		±1.0		%
hold-up time	at 115 Vac at 230 Vac		8 65		ms
temperature coefficient			±0.02		%/°C

PROTECTIONS

parameter	conditions/description	min	typ	max	units
over voltage protection	5 Vdc output, clamp or hiccup 12 Vdc output, clamp or hiccup 15 Vdc output, clamp or hiccup 24 Vdc output, clamp or hiccup 48 Vdc output, clamp or hiccup			9 16 25 35 60	Vdc
over current protection	auto recovery	110			%
short circuit protection	hiccup, continuous, auto recovery				

SAFETY & COMPLIANCE

parameter	conditions/description	min	typ	max	units
isolation voltage	input to output	4,000			Vac
safety approvals	UL/cUL, EN, IEC 62368				
safety class	Class II				
EMI/EMC	CISPR 32/EN 55032 Class B				
ESD	IEC/EN 61000-4-2 Contact ±6KV/Air ±8KV, perf. Criteria B				
radiated immunity	IEC/EN 61000-4-3 10 V/m, perf. Criteria A				
EFT/burst	IEC/EN 61000-4-4 ±4KV, perf. Criteria B				
surge	IEC/EN 61000-4-5 line to line ±2KV/line to ground ±4KV, perf. Criteria B (see recomended EMC circuit) IEC/EN 61000-4-5 ±1KV line to line, perf. Criteria B				
conducted immunity	IEC/EN 61000-4-6 10 Vr.m.s, perf. Criteria A				
voltage dips and interruption	IEC/EN 61000-4-11 0%, 70%, perf. Criterial B				
MTBF	per MIL-HDBK-217F at 25 °C	300,000			hours
RoHS	yes				

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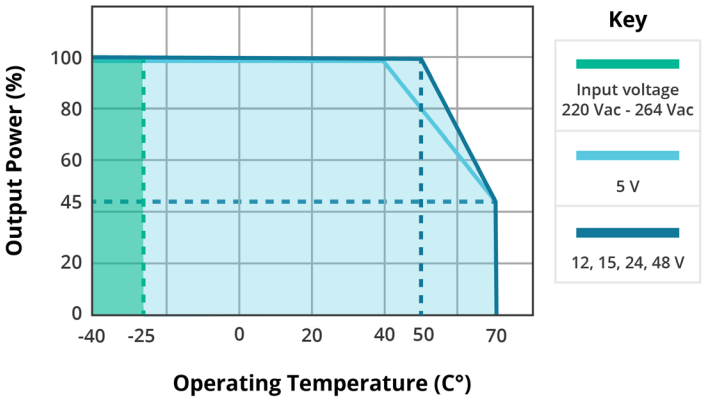
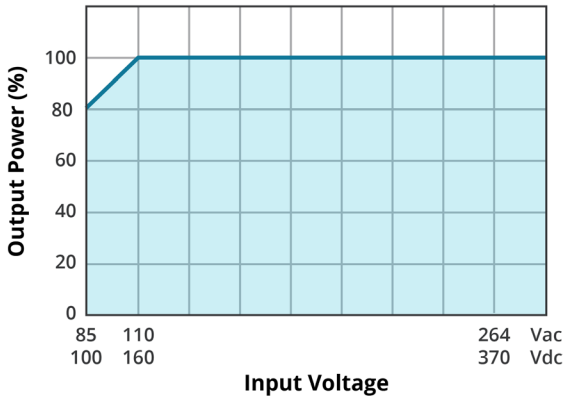
DERATING CURVES

TEMPERATURE DERATING CURVE

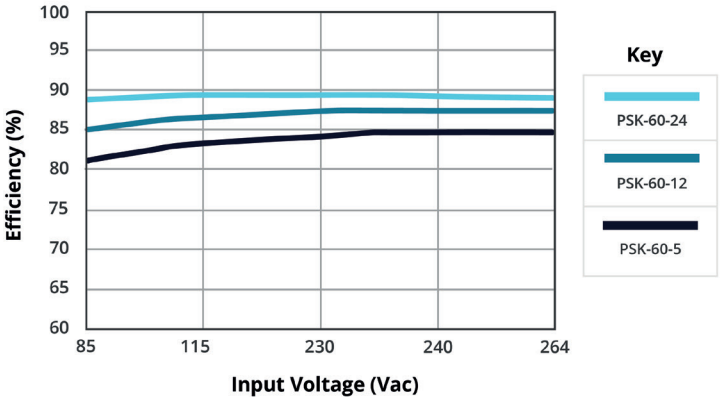


INPUT VOLTAGE DERATING CURVE (25 °C)

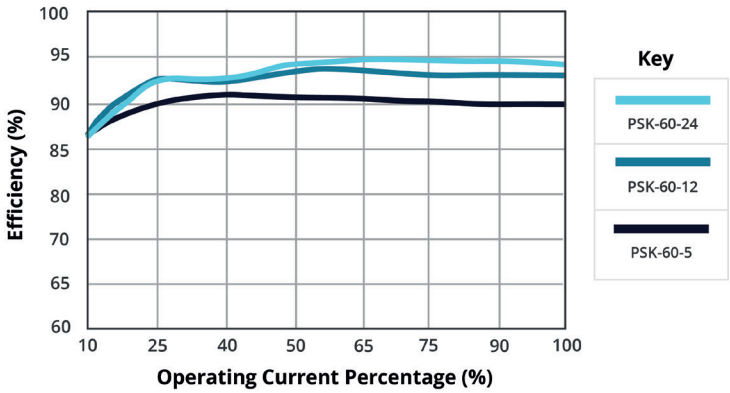


EFFICIENCY CURVES

EFFICIENCY VS INPUT VOLTAGE (Full load)



EFFICIENCY VS OUTPUT LOAD (Vin = 230 Vac)



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ENVIRONMENTAL

parameter	conditions/description	min	typ	max	units
operating temperature		-40		70	°C
storage temperature		-40		85	°C
storage humidity		0		95	%

SOLDERABILITY

parameter	conditions/description	min	typ	max	units
wave soldering	5~10 seconds (±5 °C)			260	°C
manual welding	3~5 seconds (±10 °C)			360	°C

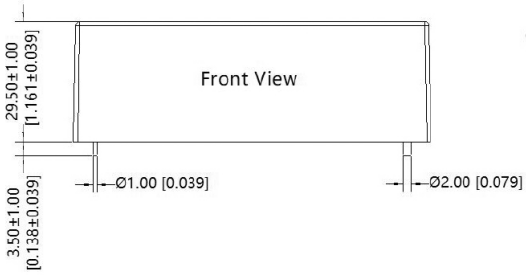
MECHANICAL

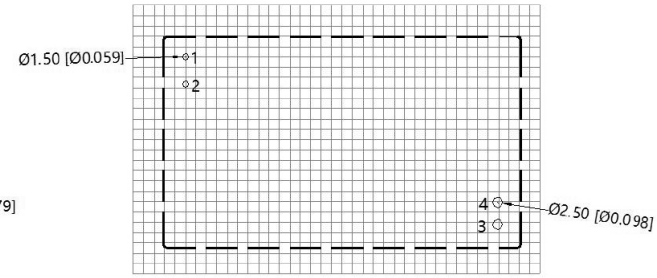
parameter	conditions/description	min	typ	max	units
dimensions	87.00 x 52.00 x 29.50 (board mount) 135.00 x 70.00 x 37.90 (chassis mount) 137.00 x 70.00 x 42.40 (DIN-rail)				mm mm mm
weight	board mount chassis mount DIN-rail		210 290 360		g g g
cooling	free air convection				
case material	black plastic, flame-retardant and heat-resistant (UL94V-0)				

MECHANICAL DRAWING (BOARD MOUNT)

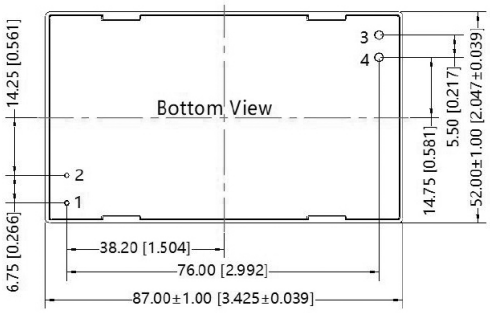
units: mm [inch]
pin diameter tolerance: ± 0.1 [±0.004]

PIN CONNECTIONS	
PIN	Function
1	AC(L)
2	AC(N)
3	+Vo
4	-Vo





Note : Grid 2.54*2.54mm



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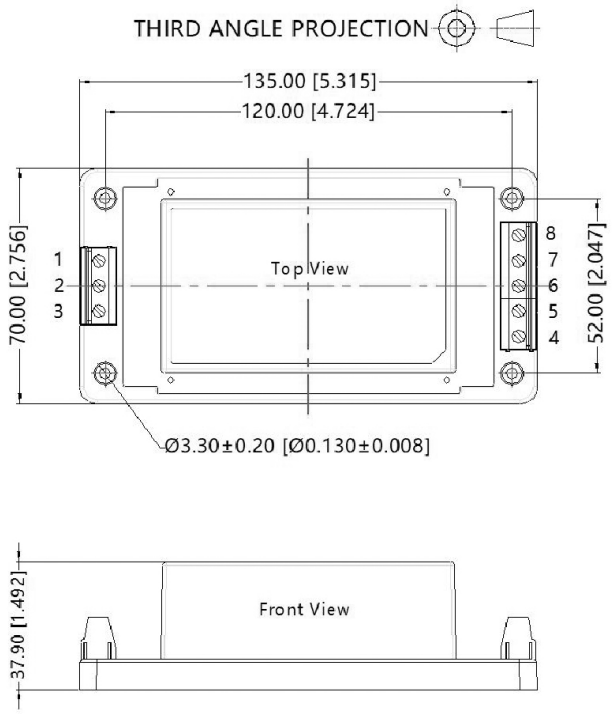
MECHANICAL DRAWING (CHASSIS MOUNT)

units: mm [inch]
tolerance: ± 1.00 [±0.040]
wire range: 24 - 12 AWG
tightening torque: 0.4 N·m

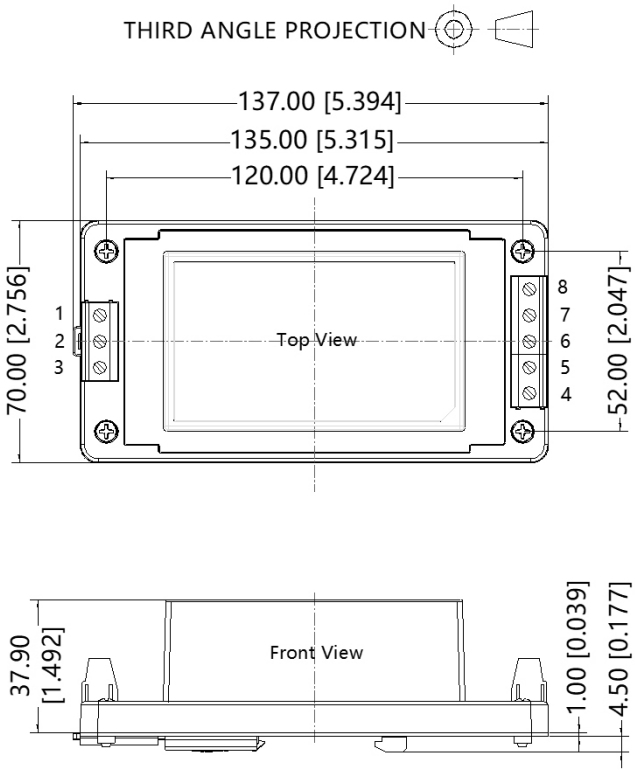
PIN CONNECTIONS	
PIN	Function
1	AC(L)
2	NC
3	AC(N)
4	+Vo
5	-Vo
6	NC
7	NC
8	NC



MECHANICAL DRAWING (DIN-RAIL MOUNT)

units: mm [inch]
tolerance: ± 1.00 [±0.040]
wire range: 24 - 12 AWG
tightening torque: 0.4 N·m
installed on DIN-RAIL TS35

PIN CONNECTIONS	
PIN	Function
1	AC(L)
2	NC
3	AC(N)
4	+Vo
5	-Vo
6	NC
7	NC
8	NC



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APPLICATION CIRCUIT

Figure 1

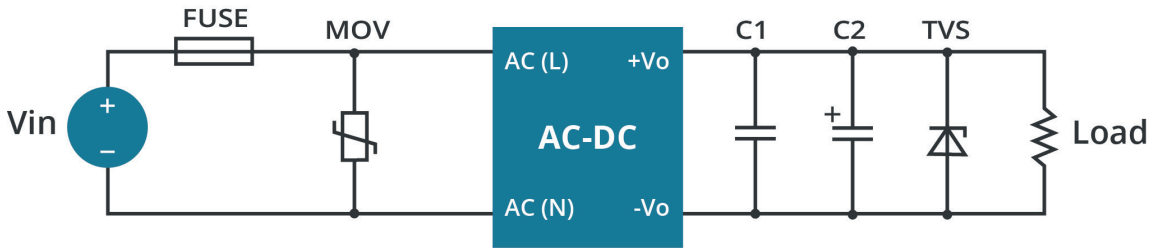

Table 1

Recommended External Circuit Components					
Part no.	C1	C2	FUSE	MOV	TVS
PSK-60-5	1 µF	680 µF	3.15A/250V, slow-blow	S10K300	SMBJ7.0A
PSK-60-12		330 µF			SMBJ20A
PSK-60-15		330 µF			SMBJ20A
PSK-60-24		200 µF			SMBJ30A
PSK-60-48		100 µF			SMBJ64A

EMC RECOMMENDED CIRCUIT

Figure 2

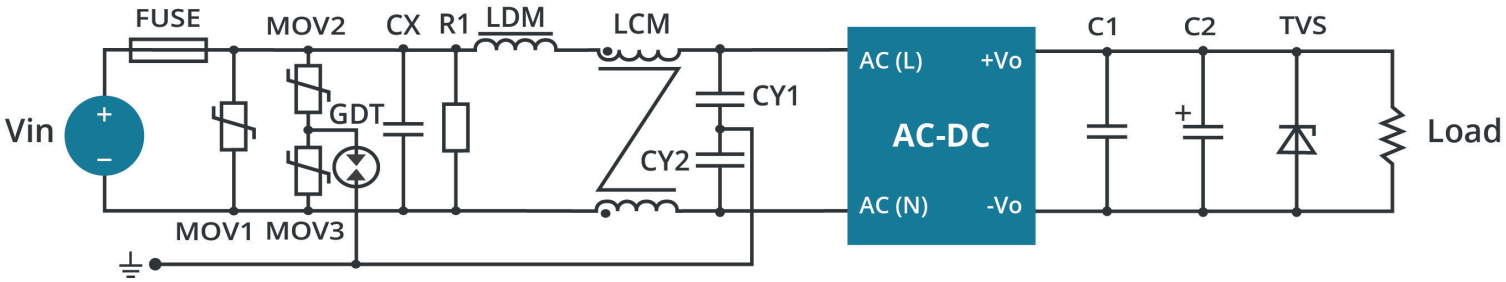

Table 2

Component	Reccomended value
FUSE	3.15A/250V, slow-blow, required
MOV1	S20K300
MOV2/MOV3	S10K300
GDT	EM3600XS
CX	0.22 µF/ 275 Vac
CY1, CY2	1 nF / 400 Vac
R1	1 MΩ / 2 W
LDM	4.7 uH
LCM	2 mH

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REVISION HISTORY

rev.	description	date
1.0	initial release	07/14/2020
1.01	din-rail mechanical drawing updated	03/12/2021
1.02	figure and circuit drawings updated	03/25/2021
1.03	UKCA mark added	06/06/2022

The revision history provided is for informational purposes only and is believed to be accurate.

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