









(Standard)

















ANSI/AAMI ES60601-1 BS EN/EN60601-1 IEC60601-1 TPT004 (except -C type)

Features

- 5"×3" compact size
- Medical safety approved (2 x MOPP) according to ANSI/AAMI ES60601-1 and IEC/BS EN/EN 60601-1
- Suitable for BF application with appropriate system consideration
- · 100W convection, 145W force air
- EMI Class B for Class I configuration
- No load power consumption<0.75W by PS-ON control (G model)
- · Extremely low leakage current
- 5Vdc standby output, Power Good, Power Fail
- Protections: Short circuit / Overload / Over voltage / Over temperature
- · Lifetime > 85K hours
- 3 years warranty

Applications

- Oral irrigator
- Hemodialysis machine
- Medical monitors
- · Sleep apnea devices
- · Pumps machine

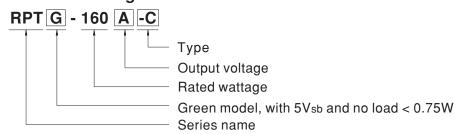
GTIN CODE

MW Search: https://www.meanwell.com/serviceGTIN.aspx

Description

RPT(G)-160 is a 145W highly reliable PCB type medical power supply with a high power density on the 5" by 3" footprint. It accepts $90\sim264$ VAC input and offers triple output voltages. The extremely low leakage current is less than $160\,\mu\text{A}$. In addition, it conforms to international medical regulations (2*MOPP) and EMC BS EN/EN55011, perfectly fitting all kinds of BF rated "patient contact" medical system equipment. RPT(G)-160 series also offers the enclosed style model [RPT(G)-160-C].

■ Model Encoding



Type	Description	Note
Blank	PCB Type	In Stock
С	Enclosed casing type	Optional



MODEL			RPT(G)-10	60A		RPT(G)-1	60B		RPT(G)-1	50C		RPT(G)-1	60D	
MODEL	OUTDUT NU	MDED	` '	1	CH3	· '		CH3	. ,		CH2	. ,	_	CH2
	OUTPUT NU		CH1	CH2	CH3	CH1	CH2	CH3	CH1	CH2	CH3	CH1	CH2	CH3
	DC VOLTAG		5V	12V	-5V	5V	12V	-12V	5V	15V	-15V	5V	12V	24V
		RATED (20.5CFM)		5.5A	1A	14A	5A	1A	14A	3.6A	1A	11A	5A	1.2A
	CURRENT	RANGE (20.5CFM)				0.6 ~ 14A		0.1 ~ 1A		0.1 ~ 3.6A		0.3 ~ 11A	_	0.15 ~ 1.2
		RANGE (convection)		0.2 ~ 3.8A	0.1 ~ 0.6A		0.2 ~ 3.4A	0.1 ~ 0.8A		0.1 ~ 2.6A	0.1 ~ 0.8A		0.2 ~ 2.6A	0.15 ~ 1/
	RATED	20.5CFM Note.2				146W			143W			147.8W		
OUTPUT	POWER Convection Note.3					98.4W			99W			98.2W	1.00 1.	
	RIPPLE & NOISE (max.) Note.4				120mvp-p	60mVp-p	100mvp-p	100mVp-p	60mvp-p	80mVp-p	100mvp-p	80mVp-p	100mVp-p	120mvp-
	VOLTAGE ADJ. RANGE VOLTAGE TOLERANCE Note.5		CH1:5 ~ 5		F + 70/	± 2 00/	+ F 00/	4 . 50/	± 2 00/	± 4 00/	±8.0%	±2.00/	→ F 00/	.7 .50/
			±2.0% ±0.5%	±5.0% ±1.0%	-5,+7% ±1.0%	±2.0% ±0.5%	±5.0% ±1.0%	-4,+5% ±1.0%	±2.0% ±0.5%	±4.0% ±1.0%	±8.0% ±1.0%	±2.0% ±0.5%	±5.0% ±1.0%	+7,-5% ±1.0%
	LOAD REGUL		±1.5%	±3.0%	-5,+6%	±1.5%	±3.0%	-4,+5%	±2.0%	±3.0%	±8.0%	±1.5%	±3.0%	-3,+4%
	SETUP, RISE			0ms/230V/			ns/115VAC		1 - 2.0 /0	_ ± 3.0 /0	0.0 /6	1.5/0	1 - 3.0 /6	-5,14/0
	HOLD UP TI		30ms/230			AC at full lo		at iuii ioau						
	VOLTAGE RA		90 ~ 264V		27 ~ 370VD		au							
	FREQUENCY		47 ~ 63Hz		.1 - 31000	0								
	POWER FAC		PF>0.93/2		DE>0 08	/115VAC at	full load							
INPUT	EFFICIENCY		84%	JUVAU	1170.30	84%	iuii iudu		83%			83%		
3.	AC CURREN		1.8A/115\	/AC n	.9A/230VA				3370			5570		
		RRENT (Typ.)		ART 35A/1		70A/230V	'AC							
		RRENT (max.) Note.7					Touch curre	nt < 100 <i>µ</i> /	A/264VAC					
		,		% rated ou	•									
	OVERLOAD				 	ecovers au	tomatically	after fault	condition is	removed				
PROTECTION					.,		,							
	OVER VOLTA	AGE	Ch1: 5.7 ~ 6.8V Protection type: Shut down o/p voltage, re-power on to recover											
			TSW1: Shut down o/p voltage, recovers automatically after temperature goes down											
	OVER TEMP	ERATURE	TSW2: Shut down o/p voltage, re-power on to recover											
	5V STANDBY (G model)		5Vsb : 5V@0.6A without fan, 0.8A with fan 20.5CFM ; Tolerance ± 2%, ripple : 50mVp-p(max.)											
FUNCTION	PS-ON INPUT SIGNAL (G model)													
	POWER GOOD / POWER FAIL													
	WORKING T	EMP.	-20 ~ +70°C (Refer to "Derating Curve")											
	WORKING H	UMIDITY	20 ~ 90% RH non-condensing											
ENVIRONMENT	STORAGE T	EMP., HUMIDITY	-40 ~ +85°C, 10 ~ 95% RH non-condensing											
	TEMP. COEF	FICIENT	±0.03%/°C (0~50°C)											
	VIBRATION		10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes											
	OPERATING	ALTITUDE Note.8												
	SAFETY STA	NDARDS	IEC 60601-1:2005+A1, TUV BS EN/ EN 60601-1:2006+A1+A12+A2, ANSI/AAMI ES60601-1:2005+A2											
	ISOLATION I	FVFI	CAN/CSA C22.2 No. 60601-1:2014+A2, EAC TP TC 004 approved; Design refer to BS EN/EN60335-1(by request) Primary-Secondary: 2xMOPP, Primary-Earth:1xMOPP, Secondary-Earth:1xMOPP											
	WITHSTAND		I/P-O/P:4KVAC I/P-FG:2KVAC O/P-FG:1.5KVAC											
		RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25°C / 70% RH											
	IOOLATION NEOIOTANGE		Paramete		1 0.100111	2111107 000	Standard				Test Leve	el / Note		
			Conducte	d emission				155011 (CIS	SPR11)		Class B			
	EMC EMIS	SION	Radiated	emission			BS EN/EN	155011 (CIS	PR11)		Class B			
			Harmonic current BS EN/EN61000-3-2 Class A											
SAFETY &			Voltage flicker BS EN/EN61000-3-3											
EMC			BS EN/EN55035, BS EN/EN60601-1-2											
(Note 10)			Paramete	r			Standard				Test Leve	el / Note		
			ESD BS EN/EN61000-4-2 Level 4, 15KV air ; Level 4						evel 4, 8KV	contact				
			RF field susceptibility BS EN/EN61000-4-3 Level 3, 10V/m(80MHz-2.7						IHz~2.7GHz	<u>.</u>)				
					ty								85MHz~5.7	BGHz)
	EMC IMMU	INITY	EFT burs					161000-4-4			Level 3, 2			
				sceptibility				161000-4-5					e-Line	
				ed suscepti				161000-4-6			Level 3, 1			
			wagnetic	field immu	nity		R2 FN/FV	161000-4-8			Level 4, 3		11.05	
			Voltage d	ip, interrup	otion		BS EN/EN	161000-4-1	1			periods, 30% ruptions 250	5 dip 25 period) periods	S,
	MTBF		1719.1K h	rs min.	Telcordia S	R-332 (Be	llcore); 17	5.1K hrs m	in. MIL-	HDBK-217	7F (25°C)			
OTHERS	DIMENSION	(L*W*H)		127*76.2*			5" inch							
	PACKING		0.33Kg; 3	6pcs/12.9K	g/0.96CUF	T								
	1	eters NOT special	lly mention	ed are mea	asured at 2	30VAC inp	out, rated lo	ad and 25	°C of ambi	ent temper	ature.			

3. The rated power includes 5Vsb @ 0.6A.

NOTE

- 4. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1 μ F & 47 μ F parallel capacitor.
- 5. Tolerance : includes set up tolerance, line regulation and load regulation.6. Derating may be needed under low input voltages. Please check the derating curve for more details.
- 8. The ambient temperature derating of 3.5°C/1000m with fanless models and of 5°C/1000m with fan models for operating altitude higher than 2000m(6500ft). 9. HS1,HS2 & HS3 can not be shorted.
- 10. The power supply is considered a component which will be installed into a final equipment. All the EMC tests are been executed by mounting the unit on a 360mm*360mm metal plate with 1mm of thickness. The final equipment must be re-confirmed that it still meets EMC directives. For guidance on how to perform these EMC tests, please refer to "EMI testing of component power supplies." (as available on https://www.meanwell.com//Upload/PDF/EMI_statement_en.pdf)
- Product Liability Disclaimer: For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx



SPECIFICATION for Enclosed Type(optional)

MODEL			RPT(G)-16	0A-C		RPT(G)-16	60B-C		RPT(G)-16	60C-C		RPT(G)-16	60D-C		
	OUTPUT NU	MBER	CH1	CH2	CH3	CH1	CH2	CH3	CH1	CH2	CH3	CH1	CH2	CH3	
	DC VOLTAG	E	5V	12V	-5V	5V	12V	-12V	5V	15V	-15V	5V	12V	24V	
		RATED (20.5CFM)	13.3A	5.2A	0.95A	13.3A	4.8A	0.95A	13.3A	3.4A	0.95A	10.5A	4.8A	1.14A	
	CURRENT	RANGE (20.5CFM)	0.6 ~ 13.3A	0.2 ~ 5.2A	0.1 ~ 0.95A	0.6 ~ 13.3A	0.2 ~ 4.8A	0.1 ~ 0.95A	0.6 ~ 13.3A	0.1 ~ 3.4A	0.1 ~ 0.95A	0.3 ~ 10.5A	0.2 ~ 4.8A	0.15 ~ 1.1	
		RANGE (convection)	0.6 ~ 8.5A	0.2 ~ 3.6A	0.1 ~ 0.57A	0.6 ~ 8.5A	0.2 ~ 3.2A	0.1 ~ 0.76A	0.6 ~ 8.5A	0.1 ~ 2.5A	0.1 ~ 0.76A	0.3 ~ 7.6A	0.2 ~ 2.5A	0.15 ~ 0.9	
	RATED	20.5CFM Note.2													
	POWER	Convection Note.3	91.6W 93W					94.4W			93.8W				
OUTPUT	RIPPLE & NOISE (max.) Note.4		60mVp-p	80mVp-p	120mVp-p	60mVp-p	100mVp-p	100mVp-p	60mVp-p	80mVp-p	100mVp-p	80mVp-p	100mVp-p	120mVr	
	VOLTAGE ADJ. RANGE		CH1:5 ~ 5.												
	VOLTAGE TO	LERANCE Note.5	±2.0%	±5.0%	-5,+7%	±2.0%	±5.0%	-4,+5%	±2.0%	±4.0%	±8.0%	±2.0%	±5.0%	+7,-5%	
	LINE REGUL	.ATION	±0.5%	±1.0%	±1.0%	±0.5%	±1.0%	±1.0%	±0.5%	±1.0%	±1.0%	±0.5%	±1.0%	±1.0%	
	LOAD REGULATION		±1.5%	±3.0%	-5,+6%	±1.5%	±3.0%	-4,+5%	±2.0%	±3.0%	±8.0%	±1.5%	±3.0%	-3,+4%	
	SETUP, RISE	TIME	1800ms, 3	0ms/230V/	AC 35	500ms, 30m	ns/115VAC a	at full load		ı					
	HOLD UP TII		30ms/230		20ms/115VA	•									
	VOLTAGE R		90 ~ 264V		27 ~ 370VD										
	FREQUENC		90~264VAC 127~370VDC 47~63Hz												
	POWER FAC		PF>0.93/2		PF>0.98	/115VAC at	full load								
INPUT	EFFICIENCY		84%			84%			83%			83%			
	AC CURREN		1.8A/115V	/AC n	.9A/230VA(00,0			00,0			
				ART 35A/1		70A/230V	AC								
	INRUSH CURRENT (Typ.) LEAKAGE CURRENT (max.) Note.7						ouch curre	nt < 100 W	1/264VAC						
	ELANAGE OU	trent (max.) Note.7		-		2047710 , 1	oudii duii d	1100 /201	1/20+1/10						
PROTECTION	OVERLOAD			% rated ou	<u> </u>	ocovore au	tomatically	after fault (condition is	romovod					
			Protection type: Hiccup mode, recovers automatically after fault condition is removed												
	OVER VOLTA	AGE	Ch1: 5.7 ~ 6.8V												
			Protection type: Shut down o/p voltage, re-power on to recover												
	OVER TEMP	ERATURE	TSW1: Shut down o/p voltage, recovers automatically after temperature goes down												
			TSW2: Shut down o/p voltage, re-power on to recover												
FUNCTION	5V STANDB	,	5Vsb : 5V@0.6A without fan, 0.8A with fan 20.5CFM ; Tolerance ± 2%, ripple : 50mVp-p(max.)												
FUNCTION		SIGNAL (G model)													
		DD / POWER FAIL	-500ms>PG>10ms PF>1ms -20 ~ +70°C (Refer to "Derating Curve")												
	WORKING T					Curve")	')								
	WORKING H	UMIDITY	20 ~ 90% RH non-condensing												
ENVIRONMENT		EMP., HUMIDITY	-40 ~ +85°C, 10 ~ 95% RH non-condensing												
	TEMP. COEF	FICIENT		±0.03%/°C (0~50°C)											
	VIBRATION				in./1cycle, 6	30min. each	n along X, Y	, Z axes							
		ALTITUDE Note.8			2021 1 51	0.70.70.00	0.4 TUD / D.O.	EN/EN/00	201.1/2		(=11)				
	SAFETY STA		Design refer to IEC60601-1, EAC TP TC 004, TUV BS EN/EN60601-1 (Pending for CB/TUV)												
	ISOLATION		Primary-Secondary: 2xMOPP, Primary-Earth:1xMOPP, Secondary-Earth:1xMOPP												
	WITHSTAND		I/P-O/P:4KVAC I/P-FG:2KVAC O/P-FG:1.5KVAC I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25°C / 70% RH												
	ISOLATION	RESISTANCE			FG:100M C	Ohms / 500\									
			Paramete				Standard				Test Leve	el / Note			
				d emission				55011 (CIS			Class B				
	EMC EMIS	SION	Radiated emission BS EN/EN5501					· · · · · · · · · · · · · · · · · · ·							
SAFETY &			Harmonic current BS EN/EN61000-3-2 Class A												
EMC			Voltage flicker BS EN/EN61000-3-3												
(Note 10)					S EN/EN60	601-1-2									
			Parameter Standard Test Level / Note												
			ESD BS EN/EN61000-4					161000-4-2					evel 4, 8KV		
			RF field susceptibility BS EN/EN61000-4-3								,	Hz~2.7GHz	,		
			Table 9, 9~28V/m(385MHz~5.78							8GHZ)					
	EMC IMMUNITY	EFT bursts BS EN/EN61000-4-4 Level 3, 2KV Surge susceptibility BS EN/EN61000-4-5 Level 3, 2KV/Line-FG						C · 1K\// !-	o Lina						
			d suscepti				161000-4-5 161000-4-6					G, INV/LIN	ie-riile		
				field immu	•						Level 3, 1				
			waynetic	neiu IIIIIII	iiity		DO EIN/EIN	161000-4-8			Level 4, 3		dip 25 period	le	
			Voltage d	ip, interrup	otion		BS EN/EN	161000-4-1	1			ruptions 250		10,	
			1710 11/ h	re min	Telcordia SI	R-332 (Rell	core) · 175	1K hrs min	MII -HI	DBK-217F (,		
	MTBF		/ 9 K n												
OTHERS	MTBF DIMENSION		1719.1K h				9"*1.69" inc		. 14112 112	JOIN ZITT	(200)				

- 2. The rated power includes 5Vsb @ 0.8A.
- 3. The rated power includes 5Vsb @ 0.6A.
- 4. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1 μ F & 47 μ F parallel capacitor.
- 5. Tolerance : includes set up tolerance, line regulation and load regulation.6. Derating may be needed under low input voltages. Please check the derating curve for more details.7. Touch current was measured from primary input to DC output.
- 8. The ambient temperature derating of 3.5° C/1000m with fanless models and of 5° C/1000m with fan models for operating altitude higher than 2000m(6500ft).

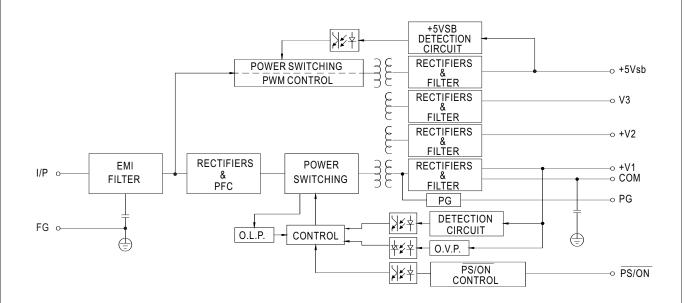
NOTE

- HS1,HS2 & HS3 can not be shorted.
 The power supply is considered a component which will be installed into a final equipment. All the EMC tests are been executed by mounting the unit on a 360mm*360mm metal plate with 1mm of thickness. The final equipment must be re-confirmed that it still meets EMC directives. For guidance on how to perform these EMC tests, please refer to "EMI testing of component power supplies." (as available on https://www.meanwell.com//Upload/PDF/EMI_statement_en.pdf)
- ** Product Liability Disclaimer : For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx



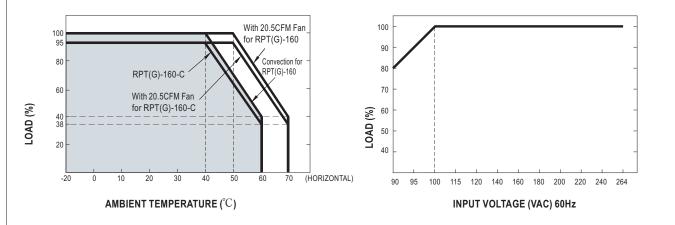
■ Block Diagram

fosc:100KHz

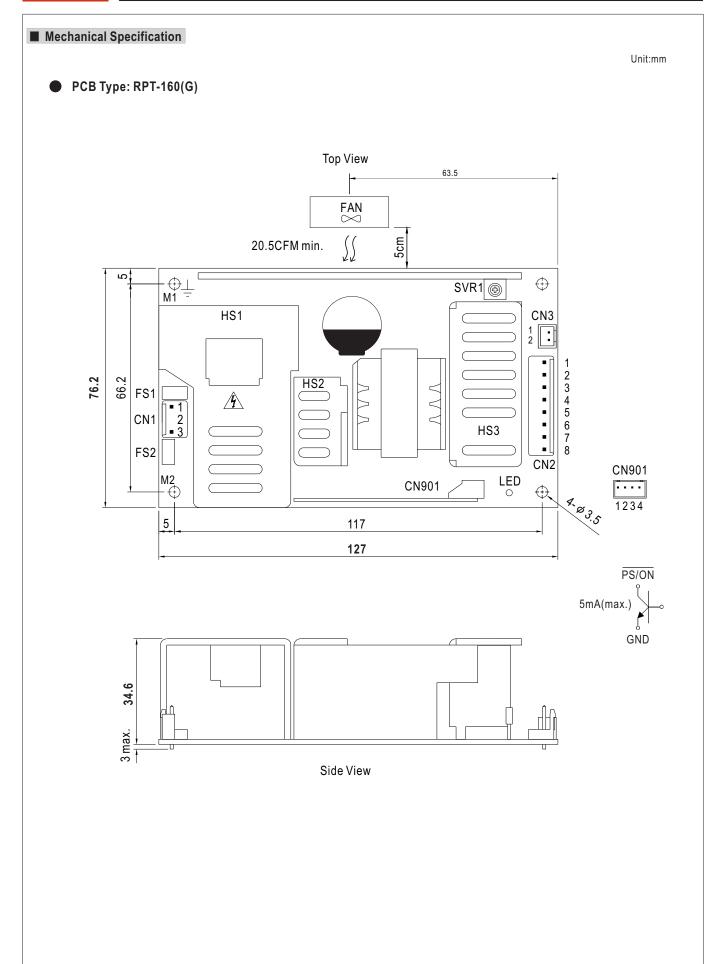


■ Derating Curve

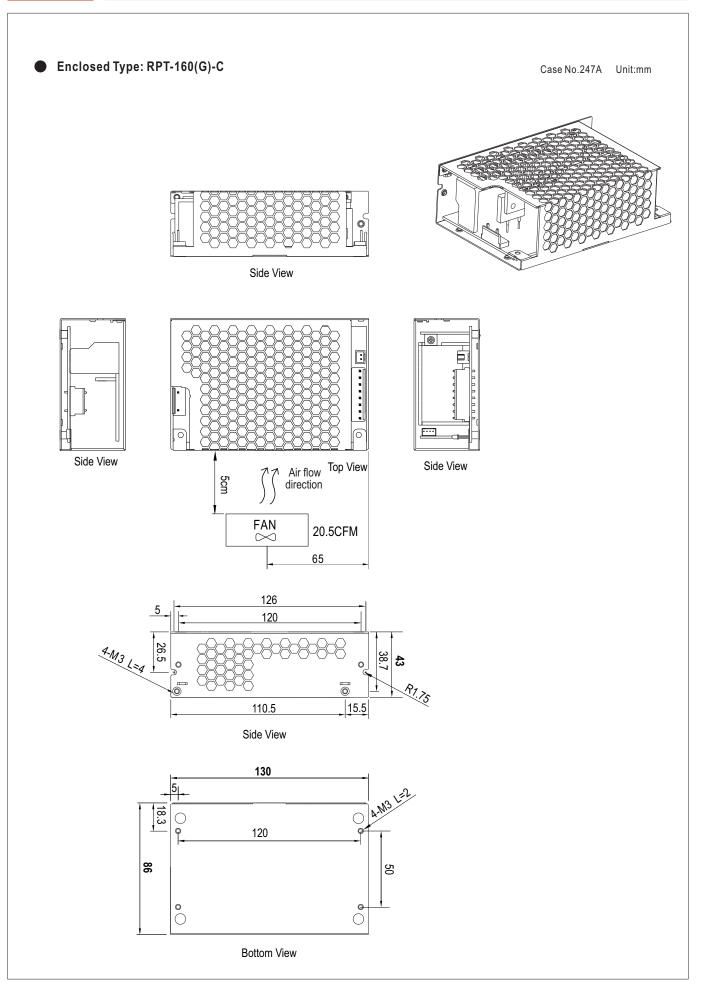
■ Output Derating VS Input Voltage







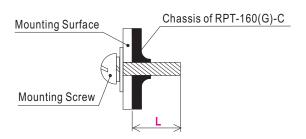






Mounting Instruction

Hole	e No.	Recommended Screw Size	MAX. Penetration Depth L	Recommended mounting torque
1	2	M3	2mm	4~6Kgf-cm



AC Input Connector (CN1): JST B3P-VH or equivalent

Pin No.	Assignment	Mating Housing	Terminal
1	AC/L		
2	No Pin	JST VHR or equivalent	JST SVH-21T-P1.1 or equivalent
3	AC/N	or equivalent	or equivalent

DC Output Connector (CN2): JST B8P-VH or equivalent

	Pin No.	Assignment	Mating Housing	Terminal
	1,2,3,4	COM		
ĺ	5,6	CH1	JST VHR	JST SVH-21T-P1.1
	7	CH2	or equivalent	or equivalent
	8	CH3		

Power Good Connector(CN3):JST B2B-XH or equivalent

Pin No.	Status	Mating Housing	Terminal
1	PG	JST XHP	JST SXH-001T-P0.6
2	GND	or equivalent	or equivalent

5VSB Connector(CN901): JST B-XH or equivalent

Pin No.	Assignment	Mating Housing	Terminal
1	PS/ON	107.77.5	107.07(1.0047
2,4	GND	JST XHP or equivalent	JST SXH-001T or equivalent
3	5VSB	or equivalent	or oquivalent

1.HS1,HS2,HS3 can not be shorted
2.M1 and M2 are Safety ground and should all be grounded.

- Note: 1. The PCB type (Blank Type) model delivers EMI Class B for both conducted emission and radiated emission for the power supply, when configured into either Class I (with FG).
 - 2. The enclosed type (-C type) model is not suitable for configuration within a Class II (no FG) system, but suggested within a Class I (with FG) system.
 - 3. Mounting Instruction for Enclosed type only.

■ INSTALLATION MANUAL

Please refer to: http://www.meanwell.com/manual.html