PM20-48S DC-DC Converters

The PM20 is a DC-DC converter which provides a regulated output at power levels up to 20 watts. It accepts a wide range DC input and provides a fully isolated, regulated output. In operation, either (or neither) input pin, as well as either (or neither) output pin can be grounded. * PM20 units provide full output power for ambient temperatures up to 60°C, with linear derating from 60°C to zero power at 105°C. In forced air applications, full output power can be maintained as long as the chassis temperature, as measured in the center of the unit's label, is maintained at less then or equal to 100°C.

Note: For safety agency approval of the end use equipment to safety standards (such as UL 1950 3rd Edition, CAN/CSA C22.2 No. 950-95, DIN VDE 0805 and EN 60950), the output of the converter is ELV if the input to the converter is ELV; the output of the converter is SELV only if its input is SELV. The input and output are to be both floating or both grounded. The converter is to be protected by the specified fuse, provided in the ungrounded leg. The CE mark on the product is applied to show conformance to the requirements outlined in the European Union's low voltage directive (72/23/EEC) as amended by the CE mark directive (93/68/EEC).

Specifications:

ITEMS \ MODEL		PM20-48S Series			
		PM20-48S03	PM20-48S05	PM20-48S12	PM20-48S15
Nominal Output Voltage	V	3.3	5	12	15
Voltage Accuracy	-	± 1%			
Output Current (Power) @ 60°C	A/W	5.00 (16.5)	4.00 (20.0)	1.67 (20.0)	1.33 (20.0)
Operating Temperature*	-	-25°C to + 105°C. Derate linearly above + 60°C to 0 watts at 105°C			
Output Voltage Adjustment Range	V	3.3 – 3.6	4.5 – 5.5	10.8 – 13.2	13.5 – 16.5
Output Ripple (20MHz BW)	mV	20mV RMS / 75 mV p-p		25mV RMS / 100 mV p-p	
Line Regulation	mV	6.6	10	24	30
Load Regulation (10% - 100%)	mV	33	50	120	150
Remote Voltage Programming	-	±10% Programming			
Remote On /Off	-	Logic 1 or open enables unit, logic 0 or short shuts unit down. Referenced to -Vin			
Temperature Coefficient	-	± 0.015% / °C			
Overshoot	-	No overshoot at turn on, turn off, power failure or removal of a short circuit			
Input Voltage Range	-	36 – 75 Vdc			
Efficiency (Typical)	%	76	79	81	
No Load Input Power	W	0.4			
Conducted EMI	-	EN55022 Level B, FCC Level B, with external filter			
Max. Capacitive Load***	uF	100,000	75,000	480	460
Short Circuit Protection	-	Self Protecting into Short Circuit			
Overvoltage Clamp Point (fixed)	V	4.7 max.	6.5 max.	14 max.	17.5 max
Isolation (Input to Output)	-	900Vac, 1500Vdc, 10MΩ			
Regulatory Agency Compliance**	-	ETSI-300-132-2, Bellcore GR-1089, UL1950 3rd Edition, CAN/CSA C22.2 No. 950-95, EN 60950, VDE 0805			
Mounting & Connections	-	0.040" diameter, 0.22" long solderable pins			
Cover	-	0.032" anodized aluminum			
Size (W.H.D.)	in	1.6" x 2.0" x 0.335"			
Storage Temperature	-	-40°C to + 105°C			
Cooling	-	Convection cooling allows full o/p rating. Contact factory for rating w/external forced air			
Vibration	-	2.5G RMS,10Hz – 50 Hz, random vibration, 10 minutes per axis			
Relative Humidity	-	5% - 95%, non-condensing			
Altitude	-	10,000 feet max. operating / 45,000 feet max. storage			
Fungus Proofing	-	Units are inherently fungus inert			
Thermal Cycling	-	1 hour @ -25°C ramped to 1 hour @ +25°C ramped to 1 hour @ +100°C, 10 cycles ramp = 5°C/ minute			
Warranty	-	2 year warranty includes parts and labor			

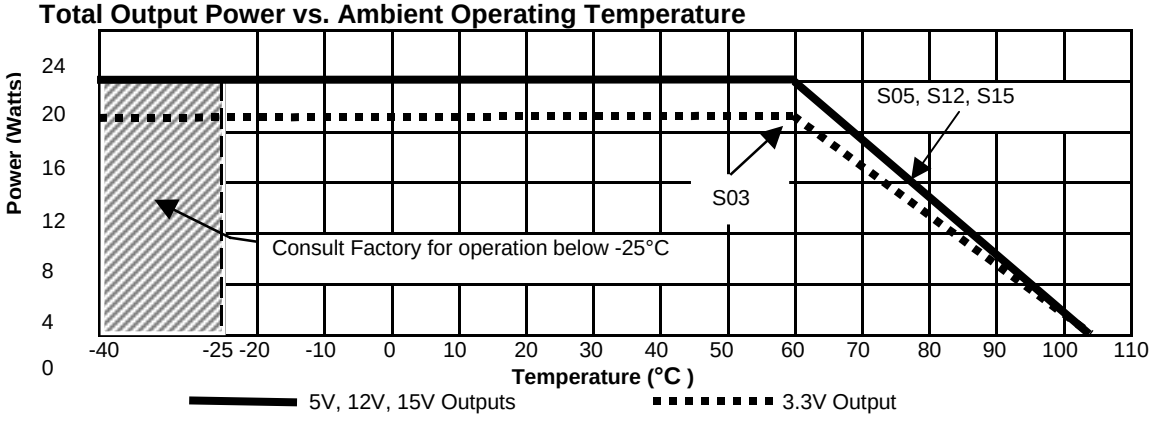
*Operations at -40°C requires a 30 min. warm up period to comply with all specs.

****Regulatory Agency compliance testing is in process. Check individual unit's label for appropriate agency logos.**

Note: Regulation values pertain to operation with output currents above 10% of rated load current on main output.

*** Under full load with low input line voltage

Total Output Power vs. Ambient Operating Temperature



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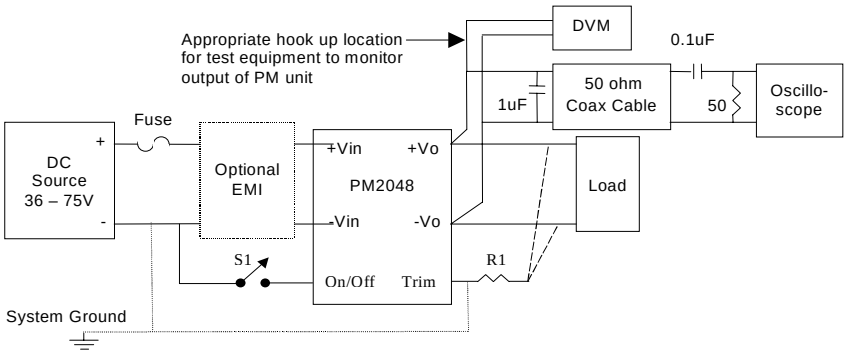
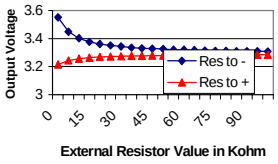
Recommended Circuit Hook up:



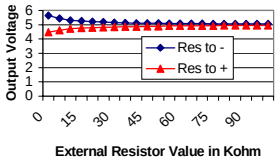
Notes:

1. Input can have -Vin, +Vin or neither terminal grounded. Input ground connection should be placed as close to PM unit input as possible.
2. Output can have -Vo, +Vo or neither terminal grounded. Output ground connection should be placed as close to PM unit input as possible.
3. An optional low impedance capacitor can be added at the input terminals of the PM20 unit to reduce reflected ripple current to the DC source.
4. Recommended input fusing: 3A (Buss PCB3, or equivalent).
5. Remote on/off control: low impedance path, or logic 0, referenced to –Vin disables unit output. Open circuit, or logic 1, referenced to –Vin enables output.
6. Output voltage programming:Resistor connected from Pin 8 to either –V or +V will generate increased or decreased output voltages, respectively, as follows.

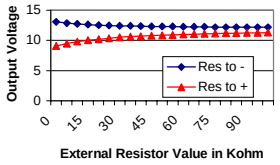
PM2048S03 Voltage Trim Adjust



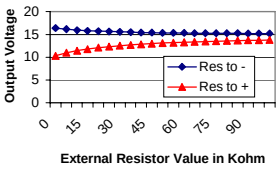
PM2048S05 Voltage Trim Adjust



PM2048S12 Voltage Trim Adjust

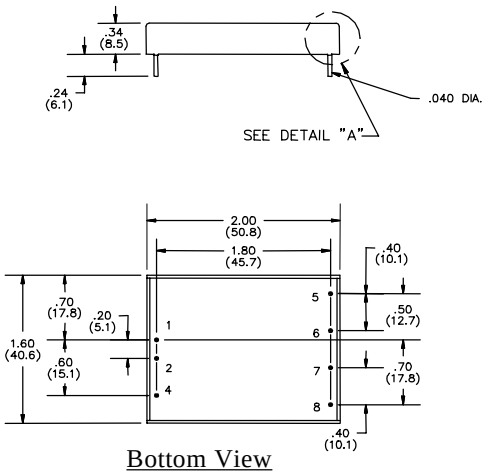


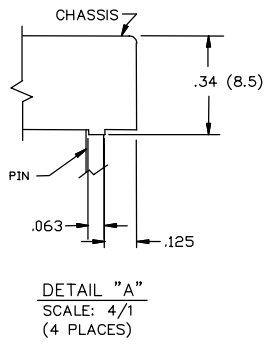
PM2048S15 Voltage Trim Adjust



Mechanical Information:

PM20 units are designed for installation on the PCB. The chassis has four tabs built in to provide clearance between the unit body and the PCB to allow for wave soldering. During wave soldering, the top surface of the board to which the PM unit is mounted (measured ½" from the edge of the PM unit) should be maintained at a temperature of no more than 180°C for no more than 30 seconds. The chassis of the PM unit is electrically isolated from both the input and output circuitry and should be left floating in a typical installation.





CONNECTIONS		
PIN NO.	FUNCTION	
	SINGLE	DUAL
1	+Vin	+Vin
2	–Vin	–Vin
3		
4	ON/OFF	ON/OFF
5		+Vo
6	+Vo	COMMON
7	–Vo	–Vo
8	TRIM	TRIM