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CE

RoHS Compliant

Features

- RoHS lead-solder-exemption compliant
- Automatic 115/230 input voltage selection
- All outputs fully regulated
- Remote sense, overvoltage protection, and overtemperature protection
- Power Fail signal included
- Greater than 100,000 Hour MTBF
- U-Channel chassis: 8.50" x 4.50" x 2.00" (215.9mm x 114.3mm x 50.8mm)
- Optional cover
- Metric and SAE mounting inserts

Description

Power-One's MAP130 Series of single and multiple output power supplies provide fully-regulated outputs with high peak current capabilities in a compact 4.50" x 8.50" x 2.00" U-channel chassis. Other standard features include autos-elect AC input, EMI level B filtering, power fail, thermal shutdown (with warning), remote sense, and metric and SAE mounting inserts.

This convection-cooled series is designed for use in commercial and industrial environments in temperatures up to 50 °C. All products are approved to the latest international regulatory standards and display the CE Mark.

Single Output Model Selection

MODEL	OUTPUT VOLTAGE	ADJUSTMENT RANGE	CONTINUOUS CURRENT	PEAK CURRENT (NOTE 3)	LINE REGULATION	LOAD REGULATION	TYPICAL RIPPLE & NOISE %p-p (NOTE 1)	INITIAL SETTING ACCURACY
MAP130-1005	5V	4.75V to 5.50V	26A	30A	0.2%	1%	1%	5.1V to 5.2V
MAP130-1012	12V/15V	11.4V to 15.75V	12A/10A (Note 2)	13.8A/11A	0.2%	1%	1%	12.0V to 12.2V
MAP130-1024	24V/28V	22.5V to 30.0V	6.2A/5.4A (Note 2)	6.8A/5.9A	0.2%	1%	1%	23.9V to 24.1V

NOTES: 1) Typical peak to peak noise expressed as a percentage of output voltage, 20MHz bandwidth.
2) MAP130-1012 output currents are expressed as 12V/15V operation. MAP130-1024 output currents are expressed as 24V/28V operation.
3) Peak load for 60 seconds or less are acceptable, 10% duty cycle, maximum.

Multiple Output Model Selection – 130W Continuous Output Power

MODEL	OUTPUT VOLTAGE	ADJUSTMENT RANGE	OUTPUT CURRENT	PEAK CURRENT (NOTE 1)	LINE REGULATION	LOAD REGULATION	TYPICAL RIPPLE & NOISE %p-p (NOTE 2)	INITIAL SETTING ACCURACY
MAP130-4000	+5V	4.75V to 5.50V	20A	30A	0.2%	1%	1%	5.1V to 5.2V
	+12V	11.5V to 12.5V	5A	10A	0.5%	2%	1%	11.75V to 12.0V
	-5V	Fixed	1A	1A	0.5%	2%	1%	-4.8V to -5.2V
	-12V	Fixed	1A	1A	0.5%	2%	1%	-11.6V to -12.4V
MAP130-4001	+5V	4.75V to 5.50V	20A	30A	0.2%	1%	1%	5.1V to 5.2V
	+24V	23.0V to 25.0V	3.5A	5A	0.5%	2%	1%	23.9V to 24.1V
	-12V	Fixed	1A	1A	0.5%	2%	1%	-11.6V to -12.4V
	+12V	Fixed	1A	1A	0.5%	2%	1%	-11.6V to -12.4V
MAP130-4002	+5V	4.75V to 5.50V	20A	30A	0.2%	1%	1%	5.1V to 5.2V
	+12V	11.5V to 12.5V	5A	10A	0.5%	2%	1%	11.9V to 12.1V
	-12V	Fixed	1A	1A	0.5%	2%	1%	-11.6V to -12.4V
	+12V	Fixed	1A	1A	0.5%	2%	1%	11.6V to 12.4V

Model numbers highlighted in yellow or shaded are not recommended for new designs.

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Multiple Output Model Selection (Cont.) – 130W Continuous Output Power

MODEL	OUTPUT VOLTAGE	ADJUSTMENT RANGE	OUTPUT CURRENT	PEAK CURRENT (NOTE 1)	LINE REGULATION	LOAD REGULATION	TYPICAL RIPPLE & NOISE %p-p (NOTE 2)	INITIAL SETTING ACCURACY
MAP130-4003	+5V	4.75V to 5.50V	20A	30A	1%	1%	1%	5.1V to 5.2V
	+15V	14.0V to 16.0V	4A	8A	1%	2%	1%	15.0V to 15.1V
	-5V	Fixed	1A	1A	2%	2%	1%	-4.8V to -5.2V
	-15V	Fixed	1A	1A	2%	2%	1%	-14.7V to -15.3V
MAP130-4004	+5V	4.75V to 5.50V	20A	30A	0.2%	1%	1%	5.15V to 5.2V
	+24V	23.0V to 25.0V	3.5A	5A	0.5%	2%	1%	23.9V to 24.1V
	-15V	Fixed	1A	1A	0.5%	2%	1%	-14.5V to -15.5V
	+15V	Fixed	1A	1A	0.5%	2%	1%	14.5V to 15.5V
MAP130-4010	+5V	4.75V to 5.50V	20A	30A	0.2%	1%	1%	5.1V to 5.25V
	+12V	11.5V to 12.8V	5A	10A	0.5%	2%	1%	11.75V to 12.0V
	-5V	Fixed	1A	1A	0.5%	2%	1%	-4.8V to -5.2V
	-12V	Fixed	3A	3A	0.5%	2%	1%	-11.6V to -12.4V
MAP130-4020	+5V	4.75V to 5.50V	20A	30A	0.2%	1%	1%	5.1V to 5.25V
	+12V	11.5V to 12.8V	5A	10A	0.5%	2%	1%	11.75V to 12.0V
	-12V	Fixed	1A	1A	0.5%	2%	1%	-11.6V to -12.4V
	-5V	Fixed	3A	3A	0.5%	2%	1%	-4.8V to -5.2V

NOTES: 1) Peak loads up to 165 Watts, (total of all outputs), for 60 seconds or less are acceptable, (10% duty cycle max.).
2) Maximum peak to peak noise expressed as a percentage of output voltage, 20MHz bandwidth.

Model numbers highlighted in yellow or shaded are not recommended for new designs.

Input Specifications

PARAMETER	CONDITIONS/DESCRIPTION		MIN	NOM	MAX	UNITS
Input Voltage- AC	Auto-ranging.	Low Range	90	115	132	VAC
		High Range	175	230	264	
Input Frequency	AC Input.		47		63	Hz
Brown out Protection	Lowest AC input voltage that regulation is maintained with full rated loads.		90			VAC
Hold-up Time	Nominal AC input voltage (115 VAC).	130W load:	40			mS
Input Current	90 VAC, 130W load.			3.3		ARMS
Input Protection	Non-user serviceable internally located AC input line fuse.					
Inrush Surge Current	Internally limited by thermistor. Vin = 264 VAC (one cycle). 25° C.				38	APK
Operating Frequency	Switching frequency of main transformer (variable).	Range:	16		120	kHz

Output Specifications

PARAMETER	CONDITIONS/DESCRIPTION	MIN	NOM	MAX	UNITS
Efficiency	Full Load, 115VAC. Varies with distribution of loads among outputs.	71		80	%
Minimum Loads	MAP130-1012. MAP130-1024. MAP130-1005 and all multiple output models, main channel only.	1.25 0.63 3.00			Amps
Ripple and Noise	Full load, 20MHz bandwidth.	See Model Selection Chart			
Output Power	Continuous output power, all multiple output models. Peak output power (60s maximum, 10% duty cycle), all multiple output models.			130 165	Watts
Overshoot /Undershoot	Output voltage overshoot/undershoot at turn-on / turn-off			1	%
Regulation	Varies by output, Total regulation includes: line changes from 90-132 VAC or 175-264, changes in load starting at 20% load and changing to 100% load.	See Model Selection Chart			
Transient Response	Recovery time to within 1% of initial set point due to a 50-100% load change, 4% max. deviation. (Main output only on multi-output units)			500	µS
Turn-on Delay	Time required for initial output voltage stabilization.			2	Sec
Turn-on Rise Time	Time required for output voltage to rise from 10% to 90%.			20	mS

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Interface Signals and Internal Protection

PARAMETER	CONDITIONS/DESCRIPTION		MIN	NOM	MAX	UNITS
Overvoltage Protection	Provided on single output units and only the main output of multiple output units.	MAP130-1012 MAP130-1024 MAP130-4004 All other models.	17.0 32.0 6.2 5.5		22.0 37.0 7.4 6.8	VDC
Overcurrent Protection	All models have inherent short circuit protection. Units will automatically restart at the removal of the fault.					
Remote Sense	Total voltage compensation for main output cable losses.				250	mV
Power Fail Warning (Note 1)	Logic LO (denotes power fail detected).				0.7	V
	Logic HI with internal pull-up to output.			10		kΩ
	Power Fail trip point, maximum load, decreasing line.		86		94	VAC
	Time before regulation dropout, at full load, due to loss of input power.		5			mS
Overtemperature Warning (Note 2)	Warning prior to system shutdown due to excessive internal temperatures. Shifts Power Fail signal to a logic LO state.		20			mS

NOTES: 1) Power Fail not available on MAP130-1012 and MAP130-1024.
2) MAP130-1012 and MAP130-1024 have overtemperature protection, but do not have the warning feature.

Safety, Regulatory, and EMI Specifications

PARAMETER	CONDITIONS/DESCRIPTION		MIN	NOM	MAX	UNITS
Agency Approvals	UL1950. CSA 22.2 No. 234/950. EN60950 (TÜV).			Approved		
Dielectric Withstand Voltage	Input to Output, 1 second.		2600			VDC
Electromagnetic Interference,	FCC CFR title 47 Part 15 Sub-Part B - Conducted EN55022 / CISPR 22 Conducted EN55022 / CISPR 22 Radiated (Note 1)		B B B			Class
ESD Susceptibility	Per EN61000-4-2, level 4		8			kV
Radiated Susceptibility	Per EN61000-4-3, level 3		10			V/M
EFT/Burst	Per EN61000-4-4, level 3 (Note 2)		±2			kV
Input Transient Protection	Per EN61000-4-5 class 3	Line to Line Line to Ground	1 2			kV
Insulation Resistance	Input to output		7			MΩ
Leakage Current	Per EN60950 (264 VAC)				700	µA

NOTES: 1) MAP130-1005 meets Class A, radiated.
2) MAP130-1005, MAP130-4003, and MAP130-4010, meet level 2, ±1kV.

Environmental Specifications

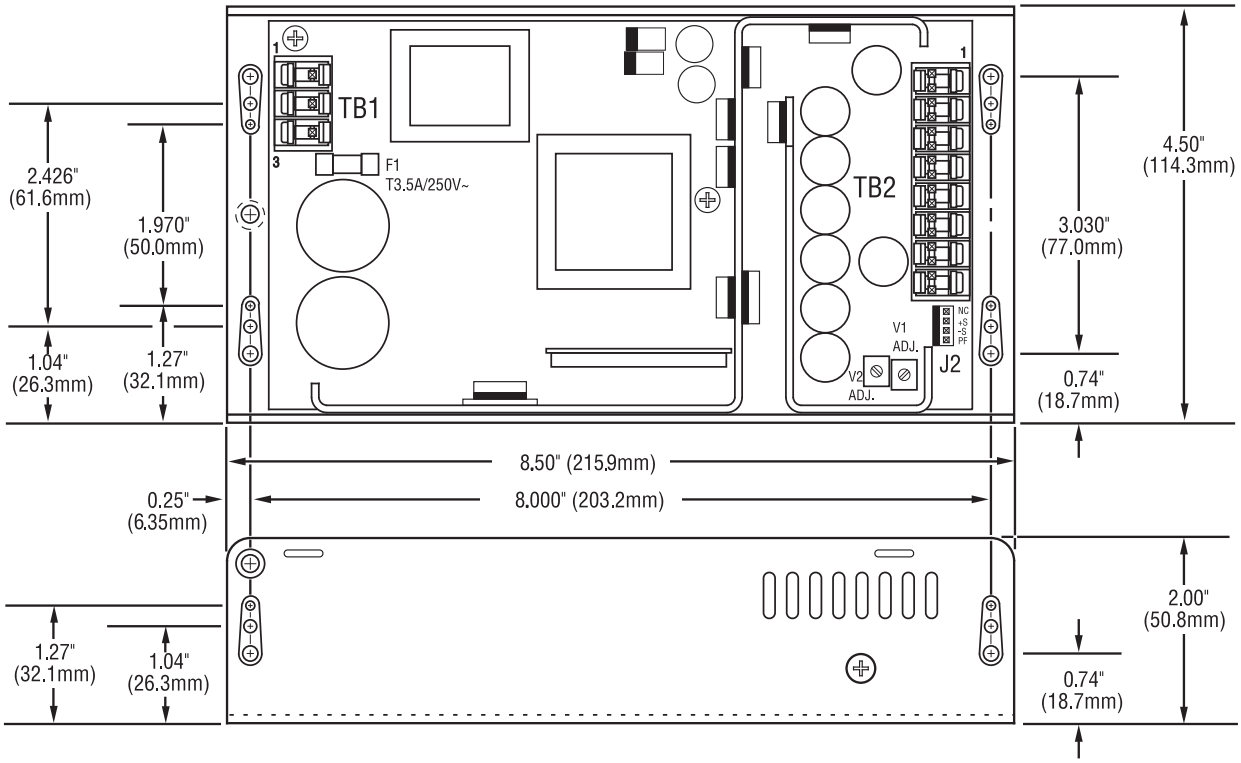
PARAMETER	CONDITIONS/DESCRIPTION		MIN	NOM	MAX	UNITS
Altitude	Operating Non-Operating				10K 40K	Feet
Operating Temperature	 Derate linearly above 50°C by 2.5% per °C	At 100% load: At 50% load:	0		50 70	°C °C
Storage Temperature			-40		85	°C
Temperature Coefficient	0°C to 70°C (after 15 minute warm-up period)			±0.02	±0.05	%/°C
Relative Humidity	Non-Condensing		5		95	%RH
Shock	Operating, peak acceleration				20	GPK
Vibration	Random vibration, 10Hz to 2kHz, 3 axis				6	GRMS

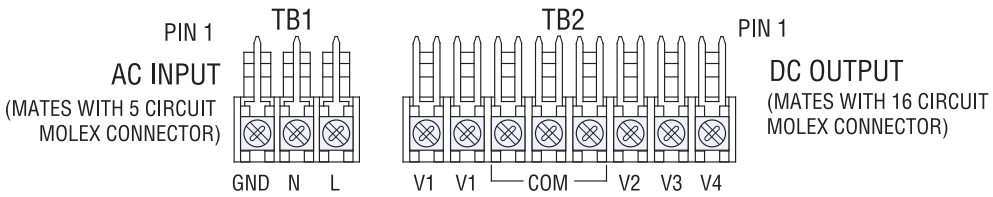
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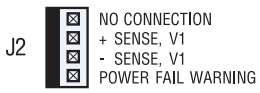
DESCRIPTION	NOTES	DIMENSIONS
Cover	Add 'C' suffix to model number or order part number 412-59586-G separately. For convection cooled applications with covers, derate output power as follows: Derate all multiple output models and MAP130-1005 to 120 watts. Derate MAP130-1012 and MAP130-1024 to 140 watts.	8.50" x 4.50" x 2.40" (215.9mm x 114.3mm x 61.0mm)

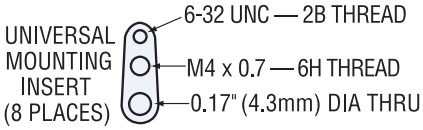
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OVERALL SIZE: 8.50" x 4.50" x 2.00" (215.9mm x 114.3mm x 50.8mm)
WEIGHT: 2.5 lb (1.13 kg)









INPUT & OUTPUT CONNECTIONS: 6-32 SCREW WIRE CLAMPS ON 0.312" (7.9mm) CENTERS, 0.045" (1.1mm) SQUARE PINS ON 0.156" (3.96mm) CENTERS; MATES WITH MOLEX SERIES 2139, 6442, & 41695

POWER FAIL CONNECTIONS, J2: 0.035" (0.89mm) SQUARE PINS ON 0.100" (2.54mm) CENTERS; MATES WITH MOLEX SERIES 2695 & 6471

CHASSIS: 0.090" (2.286mm) ALUMINUM ALLOY WITH CLEAR FINISH

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