TRUMPower

TMC400 Series

400 Watts AC/DC Medical & ITE Power Supplies

FEATURES

- 90~264 VAC Input with Active PFC
- 4" x 7" x 1.58" Compact Size
- 0.98 Power Factor
- Low Leakage Current
- Efficiency up to 92%

INPUT SPECIFICATIONS

Input Voltage Range	90~264 VAC
Input Frequency	47~63Hz
Input Current	4.2A rms @ 115 VAC, 60Hz 2.1A rms @ 240 VAC, 50Hz
Inrush Current	20A @ 115 VAC or 40A @ 230 VAC, at 25°C cold start
Earth Leakage Current	220μA max. @ 264 VAC, 63Hz

OUTPUT SPECIFICATIONS

Output Power Ratings	See table
Output Voltage	See table
Tolerance	2%
Ripple and Noise*	1% peak to peak max.
Remote Sense	Compensation for cable losses up to 0.5V
Overvoltage Protection	Set at 115-140% of its nominal output voltage
Overcurrent Protection	Protected to short-circuit conditions
Thermal Shutdown	Protected to over-temperature conditions
Temperature Coefficient	±0.04%/°C max.
Transient Response	Max. excursion of 4% or better on all models, recovering to 1% of final value within 500 us after a 25% step load change
Standby Power	5V, 100mA max. @ P4 connector
Fan Power	12V, 250mA max. @ P5 connector

* Peak to peak with 20MHz bandwidth and 10μF tantalum capacitor in parallel with a 0.1μF ceramic capacitor at rated line voltage and load ranges

GENERAL SPECIFICATIONS

Switching Frequency	85KHz typical
Power Factor	0.98 typical, with active PFC
Efficiency	89% typical @ 115 VAC, 92% typical @ 230 VAC
Hold-up Time	12ms at 110 VAC
Line Regulation	±0.5% max. at full load
Operating Temperature	-10°C to +70°C
Derating	Derate from 100% @ +50°C linearly to 50% @ +70°C
Storage Temperature	-40°C to +85°C
Relative Humidity	5% to 95% non-condensing
Withstand Voltage	4000 VAC from input to output 1500 VAC from input to ground 500 VAC from output to ground
MTBF	350K hours minimum at full load, 25°C ambient, calculated per MIL-HDBK-217F

MODELS LIST

Product No. [1]	Output				
	Voltage	@ Convection		@ 7 CFM Forced Air	
		Max. Current	Max. Power	Max. Current	Max. Power
TMC400-S12	12V	25.00A	300W	33.34A	400W
TMC400-S15	15V	20.00A	300W	26.67A	400W
TMC400-S18	18V	16.67A	300W	22.23A	400W
TMC400-S24	24V	12.50A	300W	16.67A	400W
TMC400-S28	28V	10.72A	300W	14.29A	400W
TMC400-S36	36V	8.34A	300W	11.12A	400W
TMC400-S48	48V	6.25A	300W	8.34A	400W

NOTES:
1. U-bracket format is standard. Add suffix "C" for enclosed format with cooling fan, e.g. TMC400-S12C.
2. All models may be operated at no-load.

STANDARDS & COMPLIANCES

EN55011, EN55022	Class B conducted, Class A radiated
FCC	Class B conducted, Class A radiated
VCCI	Class B conducted, Class A radiated
EN61000-3-2	Harmonic distortion, Class A & D
EN61000-3-3	Line flicker
EN61000-4-2	ESD, ±8 KV air and ±6 KV contact
EN61000-4-3	Radiated immunity, 3V/m
EN61000-4-4	Fast transient/burst, ±2 KV
EN61000-4-5	Surge, ±1 KV diff., ±2 KV com.
EN61000-4-6	Conducted immunity, 3 Vrms
EN61000-4-8	Magnetic field immunity, 3A/m
EN61000-4-11	Voltage dips immunity, 30% reduction for 500ms, 60% reduction for 100ms, >95% reduction for 10ms
Safety Standards	UL/IEC/EN 60601-1 (3rd Edition), ANSI/AAMI ES 60601-1 (1st Edition), CSA C22.2 No. 60601-1 (2nd Edition), IEC/EN 60950-1 (2nd Edition)
Agency Approvals	UL, TUV, CB, CE
Other Compliance	RoHS

Tumbler Technologies + TRUMPower

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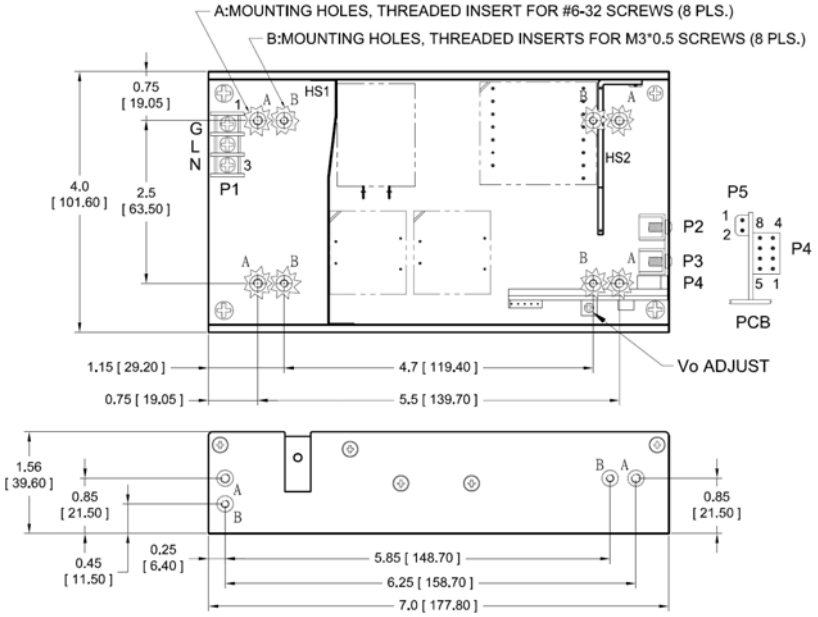
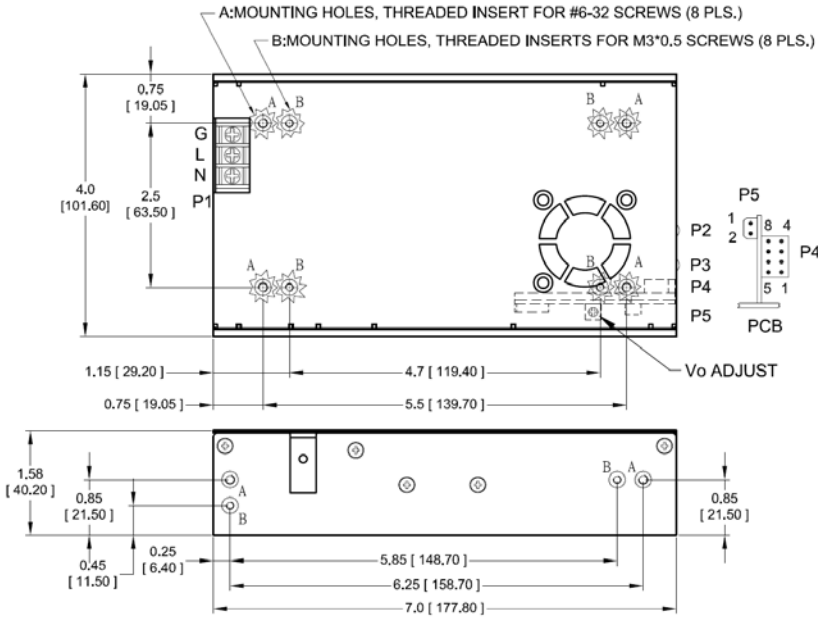
MECHANICAL SPECIFICATIONS

U-Bracket Format



Enclosed Format



NOTES:

1. Dimensions: inches [mm]
2. Tolerance: 0.02 [0.5] maximum
3. Input connector P1 is Dinkle terminal P/N DT-35-B01W-03 with M3, nickel plated screws
4. P2, P3: M3 x 0.5 screw connectors
5. Connector P4: Molex header 87833-08 or equivalent, mating with Molex housing 51110-0850 or equivalent
6. Fan connector P5: Molex header 53048-0210 or equivalent, mating with Molex housing 51021-0200 or equivalent
7. Weight: 1.0 Kg (2.23 lbs.) approx. for U-bracket form, 1.14 Kgs. (2.52 lbs.) approx. for enclosed form.
8. Maximum penetration depth of fixing screws is 4mm from the outer surface of chassis.

CONNECTORS & SIGNALS

CONNECTOR	PIN	FUNCTION
P1 (AC)	1	AC GROUND
	2	AC LIVE
	3	NEUTRAL
P2		+OUTPUT
P3		COMMON RETURN
P4	1	COMMON RETURN
	2	+V SENSE
	3	-V SENSE
	4	PFD
	5	INHIBIT
	6	+5V STANDBY
	7	DC OK
	8	PS OFF
P5	1	+12V FAN
	2	COMMON RETURN

CONTROL SIGNALS	
PFD	TTL high for normal operation, low upon loss of input power, turn-on delay time 100-500ms, turn-off delay time 5ms minimum
INHIBIT	TTL low to turn off output
DC OK	TTL high when output voltage >95%
PS OFF	TTL high to turn off output

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