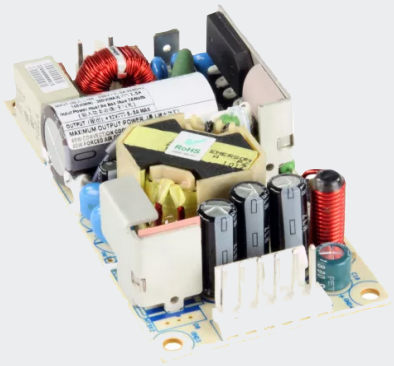
NPS60-M SERIES

60 W AC-DC Power Supply



Advanced Energy's NPS60-M series of open-frame AC-DC power supplies comprises four single output models, offering voltages of 5 V, 12 V, 15 V or 24 V. All four models feature ITE and medical safety approvals and are equipped with dual AC fuses. The power supplies have a a typical full load efficiency of 87% and a no-load power consumption of less than 300 mW. The series is primarily designed for use in information technology equipment (ITE) and light industrial systems, as well as for equipment intended for non-patient contact and non-patient critical use in low power medical, dental and laboratory applications.

SPECIAL FEATURES

- Medical and ITE safety approvals
- Universal input
- Less than 1U high
- 2" x 4" footprint
- Remote sense
- Overload and short circuit protection
- Adjustable output voltage
- High efficiency
- High MTBF
- Built in EMI filter (CISPR 22 Class B)
- International efficiency level V, Energy Star 2.0 (except NPS62-M)
- Less than 300 mW no-load power consumption (less than 500 mW for NPS62-M)
- 0°C to +80°C operation
- Input power < 74 W
- Complies with EN61000-3-2
- UL Class I approved
- Class II approved (with Class A EMI)
- LPX100 enclosure kit available
- Dual AC fuses
- RoHS compliant

SAFETY

UL	62368-1, 60601-1
CSA	62368-1, 60601-1
CB	Certificate and report
CE	Mark (LVD)
CCC	Mark

AT A GLANCE

Total Power

60 W

Input Voltage

90 to 264 VAC
127 to 300 VDC

of Outputs

Single

RoHS

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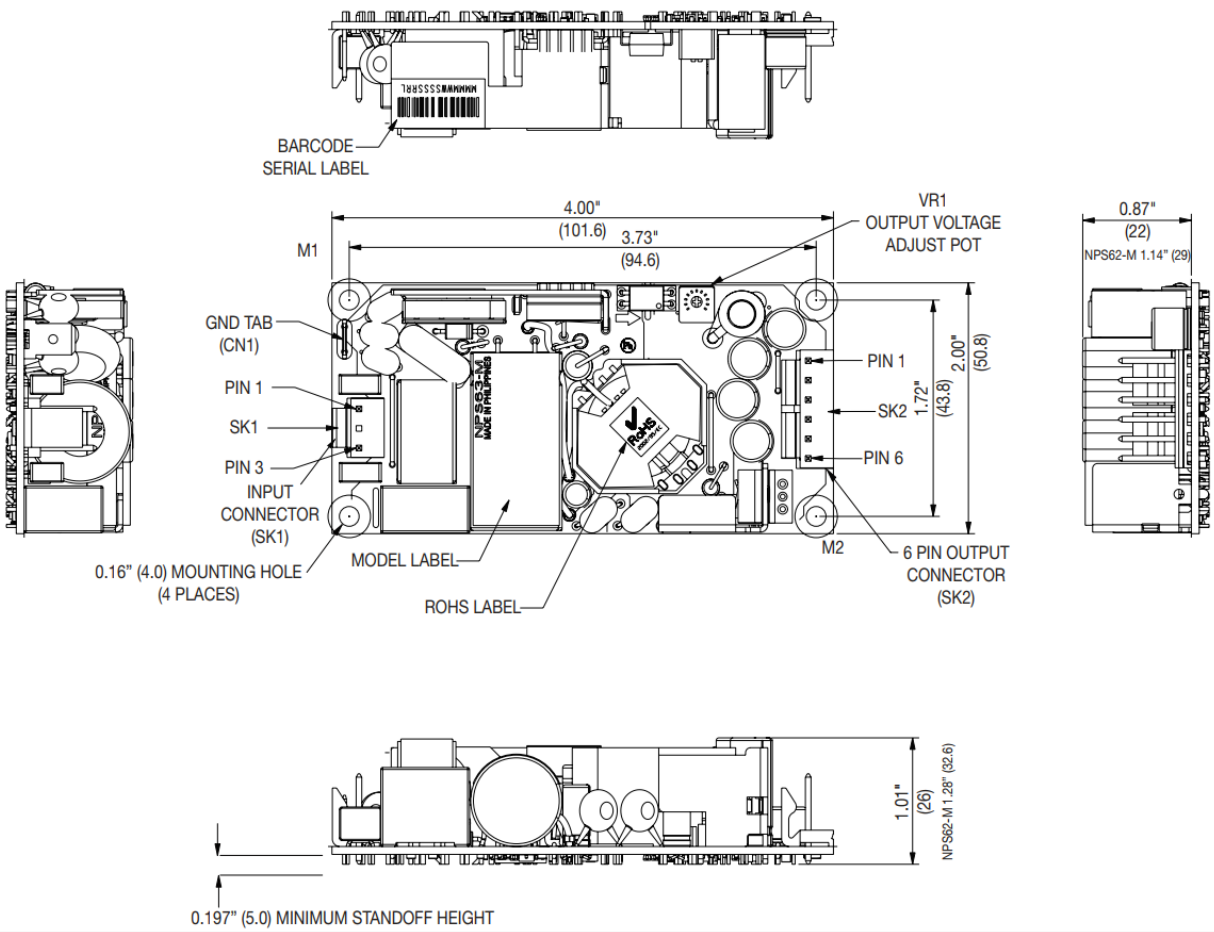
ELECTRICAL SPECIFICATIONS

Input	
Input Voltage	90 to 264 VAC or 127 to 300 VDC
Frequency	47 to 63 or 440 Hz, safety rating 50/60 Hz
Inrush Current	< 50 A peak at 230 VAC, cold start at 25°C
Input Power	< 74 W
Efficiency	87% average (as per Energy Star 2.0 standard) (NPS62-M, 80%)
EMI/RFI	FCC Class B conducted, CISPR 22 Class B conducted, EN55022 Class B conducted VDE0878PT3 Class B conducted
Safety Ground Leakage Current	275 µA at 50/60 Hz, 264 VAC input
Output	
Maximum Power	60 W for convection
Adjustment Range	±20% (NPS63-M-006, +/-10%)
Hold-up Time	13/75 ms 115/230 VAC input line
Overload Protection	Short circuit protection on all outputs. Case overload protected at 110% to 160% of normal rating
Overvoltage Protection	130 to 150% of nominal output
Remote Sense	Compensated for 0.5 V lead drop max. Will operate without remote sense connected. Reverse connection protected.

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	0°C to 50°C ambient derate each output at 2.5% per degree from 50°C to 80°C. -20°C start up
Storage Temperature	-45°C to +85°C
Electromagnetic Susceptibility	Designed to meet EN61000-4; -2, -3, -4, -5, -6, -8, -11 Level 3
Humidity	Operating, non-condensing 10% to 90% RH
Vibration	IEC68-2-6 to the levels of IEC721-3-2
MTBF Demonstrated	> 550,000 hours at full load and 25°C ambient conditions

MECHANICAL DRAWING



ORDERING INFORMATION

Model Number	Output Voltage	Minimum Load	Maximum Load with Convection Cooling	Peak Load[1]	Regulation[2]	Ripple P/P (PARD)[3]
NPS62-M	5 V	0 A	11 A	13 A	±2%	50 mV
NPS63-M-006[4]	12 V	0 A	5 A	5.5 A	±2%	120 mV
NPS64-M	15 V	0 A	4 A	4.4 A	±2%	150 mV
NPS65-M	24 V	0 A	2.5 A	2.75 A	±2%	240 mV

1. Peak current lasting < 15 seconds with a maximum 10% duty cycle.
2. At 25°C including initial tolerance, line voltage, load currents and output voltages adjusted to factory settings.
3. Peak-to-peak with 20 MHz bandwidth and 10 µF (tantalum capacitor) in parallel with a 0.1 µF capacitor at rated line voltage and load ranges.
4. Compliant to Level VI efficiency
5. This product is a component power supply and is only for inclusion by professional installers within other equipment and must not be operated as a standalone product. EMC compliance to appropriate standards must be verified at the system level. This product is for sale to OEMs and system integrators, including through distribution channels. It is not intended for sale to end users.

PIN ASSIGNMENTS

Connector	NPS62-M	NPS63-M-006	NPS64-M	NPS65-M
SK1-1	Line	Line	Line	Line
SK1-3	Neutral	Neutral	Neutral	Neutral
CN1	Ground	Ground	Ground	Ground
SK2-1	+5 V	+12 V	+15 V	+24 V
SK2-2	+5 V	+12 V	+15 V	+24 V
SK2-3	Common	Common	Common	Common
SK2-4	Common	Common	Common	Common
SK2-5	-Sense	-Sense	-Sense	-Sense
SK2-6	+Sense	+Sense	+Sense	+Sense

MATING CONNECTORS

AC Input	Molex 09-50-8031 (USA) 09-91-0300 (UK) PINS: 08-52-0113
DC Outputs	Molex 09-50-8061 (USA) 09-93-0600 (UK) PINS: 08-52-0113
70-841-006 Connector Kit includes all of the above	

Notes:
1. Specifications subject to change without notice.
2. All dimensions in inches (mm), tolerance is ±0.02" (±0.5 mm).
3. Mounting holes M1 and M2 should be grounded for EMI purposes.
4. Mounting hole M1 is safety ground connection.
5. Specifications are for convection rating at factory settings at 115 VAC input, 25°C unless otherwise stated.
6. For DC input an external DC safety rated fuse must be used.
7. Warranty: 2 years.
8. Weight: 0.26 lbs/0.118 kg.

ABOUT ADVANCED ENERGY

Advanced Energy (AE) has devoted more than four decades to perfecting power for its global customers. AE designs and manufactures highly engineered, precision power conversion, measurement and control solutions for mission-critical applications and processes.

Our products enable customer innovation in complex applications for a wide range of industries including semiconductor equipment, industrial, manufacturing, telecommunications, data center computing, and medical. With deep applications know-how and responsive service and support across the globe, we build collaborative partnerships to meet rapid technological developments, propel growth for our customers, and innovate the future of power.

PRECISION | POWER | PERFORMANCE | TRUST

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