

# Matrix 2000 Standalone Inverter



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**DC Input**

Nominal voltage	48V dc
Operating range:	40V dc ~ 60V dc
Inrush current	< 2*I <sub>rated</sub>
Isolation AC-DC	4242V dc / 1min
Isolation DC-enclosure	707V dc (Varistors and filter capacitor removed) / 1min
Input protection	Reverse Polarity Protection
Psophometric noise voltage	1.0mV ITU-T O.41 (16.66 ~ 6000Hz)
Wide Band Noise	< 1.0mV psf (25Hz~5kHz) < 20mV rms (25Hz~20kHz)
Peak to peak noise	150mV up to 100MHz
Under voltage warning threshold	45V dc
Under voltage shutdown threshold	40V dc
Over voltage warning threshold	58V dc
Over voltage shutdown threshold	60V dc
DC Input Connection	Two Hole Compression Lugs on .625" / 16mm Centers (wires AWG 2 / 25mm <sup>2</sup> and larger may require narrow lugs)

**AC Input (to Transfer Switch)**

Voltage Range:	INV-4820SA: 89V ac to 138V ac INV-4820ESA: 176V ac to 276V ac
Over Voltage Threshold	INV-4820SA: 138V ac INV-4820ESA: 276V ac
Under Voltage Threshold	INV-4820SA: 89V ac INV-4820ESA: 176V ac
Frequency Range	50/60Hz +/-2%
Back-feed Protection	Complies with safety requirements
Transfer time	<10mS
Input Plug	INV-4820SA: NEMA 5-20P INV-4820ESA: IEC C20 Inlet

**AC Output**

Power Output	2000VA / 2000W
Waveform	Pure sine wave
Power factor	1.0
Nominal output voltage	INV-4820SA: 110/115/120V ac INV-4820ESA: 208/220/230/240V ac
Voltage regulation	Max ±2%
Output frequency	50/60Hz
Frequency variation	Nominal ±0.5%
Frequency setting	Manually, field selectable
Crest factor	3:1
THD	<3% for linear load <5% for non-linear load
Capacitive/inductive load	-1.0 to +1.0 without exceeding permissible distortion for resistive load
Efficiency	>91% at rated load 92% Peak efficiency
Current limitation	Electronic current limitation at overloads and short circuits.
Isolation AC-enclosure	Basic isolation (Primary - Ground) 2121V dc/1min
Isolation AC-DC	4242V dc / 1min

Surge protection	EN61000-4-5. Telcordia GR-1089 Core ANSI C62.41-IEEE, STD 587-1980
Dynamic response	< 10%, according to IEC 62040-3 class 1
Over load protection	2*Inom, 5sec max 1.5*Inom, 10sec max 1.25*Inom, temperature controlled
AC Outlet	INV-4820SA: 2 x NEMA 5-20R INV-4820ESA: 2 x IEC320-C13

### Environmental Requirements

Operating temperature range	-20°C to 60°C (-4°F to 140°F) -20°C to 50 °C (-4°F to 122°F), full performance
Storage temperature	-30°C to 80°C (-22°F to 176°F)
Operating humidity	95% Relative Humidity (non condensing)
Operating Attitude	1500m
Audible noise	55dB ETS 300 753, class 3.1

### Mechanical

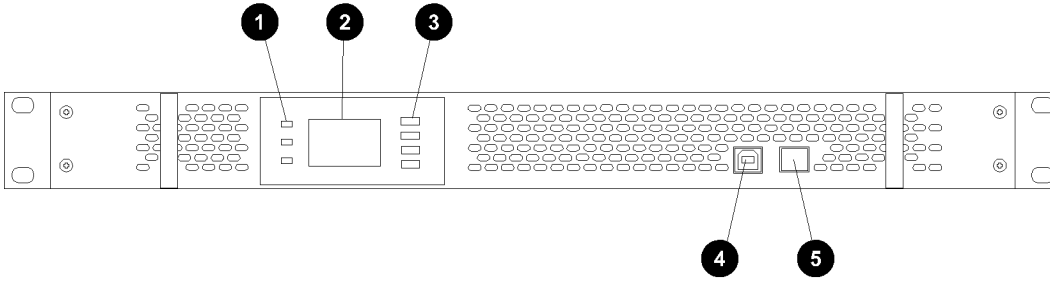
Dimension (D, W, H):	360mm, 440mm, 43.6mm (14.2", 17.3", 1.7")
Weight:	7.1kg (15.6lb)
Heat dissipation	Forced air cooling

### Compliances

Safety Compliance	EN60950-1 / UL60950-1
Certifications	CE
EMC	EN300 386:2001 Class B
MTBF	>200,000 Hours as per Telcordia SR332
RoHS	Compliant

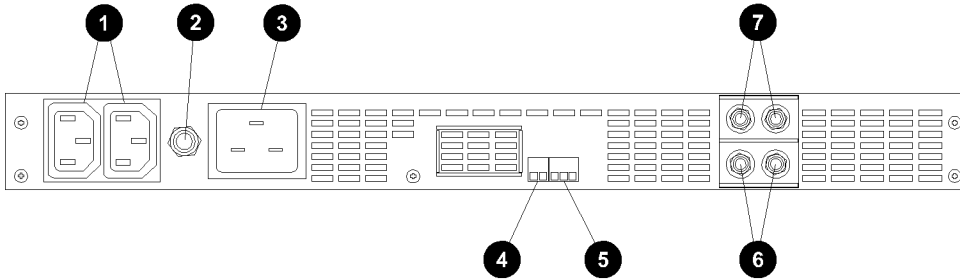
**Mechanical Drawings**

Front View

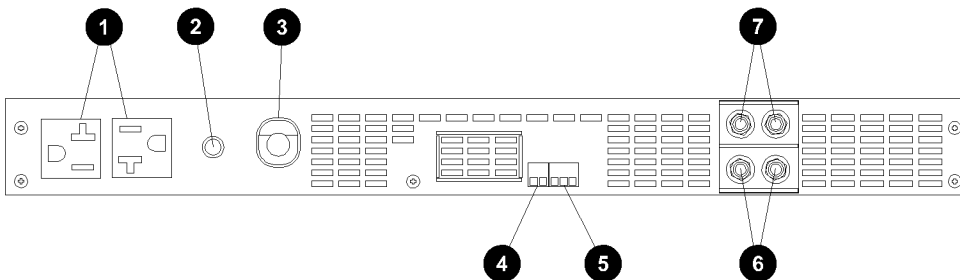


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| <ul style="list-style-type: none"> <li>1. LEDs: Power (green), minor alarm (yellow), major alarm (red).</li> <li>2. LCD display screen</li> </ul> | <ul style="list-style-type: none"> <li>3. Keypad</li> <li>4. USB 1.1 connector</li> <li>5. ON/OFF power switch</li> </ul> |
|---|---|

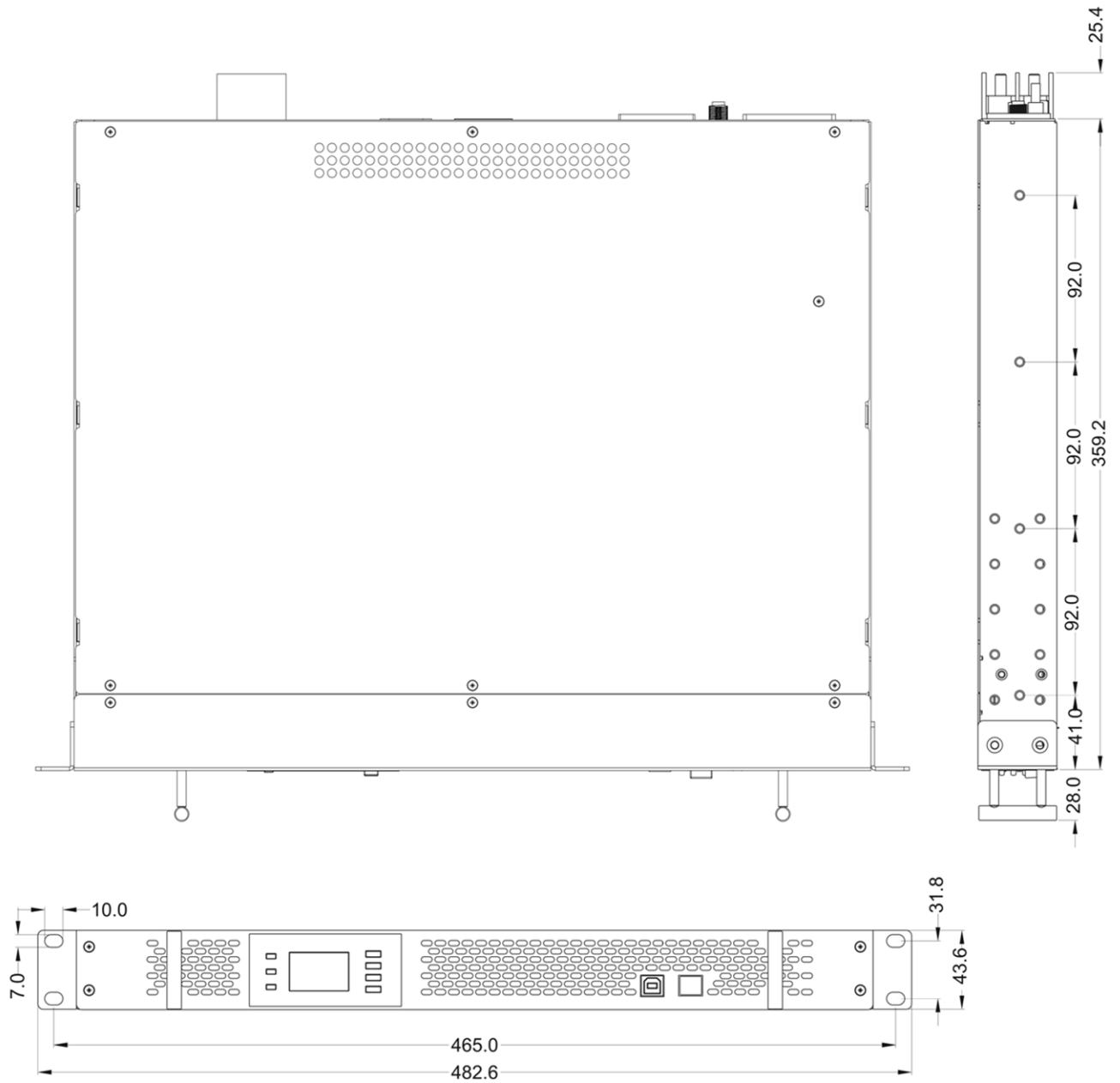
Rear View – 230V ac Model (INV4820ESA)



Rear View – 120V ac Model (INV4820SA)



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| <ul style="list-style-type: none"> <li>1. AC output connectors.</li> <li>2. AC input circuit breaker. Push in to reset.</li> <li>3. 120V models: AC input cord, 230V models: AC input connector.</li> <li>4. Remote on/off connector/screw terminals (wire size: 0.5 - 2.0mm<sup>2</sup>, 20 - 14 AWG).</li> </ul> | <ul style="list-style-type: none"> <li>5. Alarm relay output connector/screw terminals (wire size: 0.5 - 2.0mm<sup>2</sup>, 20 - 14 AWG).</li> <li>6. 48V dc negative (-) input terminals (M5).</li> <li>7. 48V dc positive (+) input terminals (M5).</li> </ul> |
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