

# Rj-7600 Series Energy Meter



- **UV to Far-IR; pJ to Joules**
- **Single or Dual Channel**
- **Statistical Analysis Package**
- **GPIB Computer Interface**

The Rj-7600 Series Energy Meters work with a variety of probes - pyroelectric, silicon, and thermopile - to measure true energy per pulse from single-shot to 40 Hz, picojoules to Joules, UV to far-IR. Sets of 10 or 100 pulses can be statistically analyzed, and data can be transferred to computer via the IEEE-488 GPIB computer interface. The Rj-7620 Dual-Channel Energy Meter accepts two probes and simultaneously displays the energy incident on Channels A and B, as well as the ratio of Channel B/Channel A.

The Rj-7600 Series Energy Meters feature a high-contrast, backlit, alphanumeric LCD display, dual-use numeric/function keys, and power switch. The default display mode continuously shows the Channel A energy per pulse, the number of pulses to be averaged (1, 10, or 100), a running counter of the number of events elapsed in the current pulse set (10 and 100 events only), and whether the instrument is in Local or Remote mode. In addition to this the Rj-7620 Dual Channel Energy Meter also displays the Channel B energy per pulse and the energy ratio (B/A).

When Averaging is set to 10 or 100 events the MODE key toggles the LCD between the three available displays: default, minimum and maximum energy (Channel A for Rj-7610; A and B for Rj-7620), and standard deviation (Channel A for Rj-7610; A and B for Rj-7620).

The Rj-7600 can be operated in Single Event (capture-and-hold) mode. When armed, the instrument will capture and display the energy recorded at the first trigger, and ignore all subsequent triggers until the instrument is rearmed or the feature disabled.

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A Calibration Factor for each channel can be entered via the numeric keypad to compensate for non-linearity in the optical path - for example, transmission loss through a filter, or the spectral response of a non-flat detector. The measured energy is divided by the Calibration Factor and the corrected energy displayed.

Rear panel connectors include the power entry module; Probe(s); GPIB; Sync In; Analog Out (Rj-7610); Ratio Out, A Out, and B Out (Rj-7620). The power entry module accepts a standard line cord and has a switchable 110/220 VAC card. The Sync In BNC accepts an external TTL trigger pulse for syncing the instrument to an external source (a laser trigger circuit, for example).

The Analog Out on the Rj-7610 is a 0-10 VDC signal where 10 V corresponds to full scale. The Analog Out updates with every trigger. The Ratio Out for the Rj-7620 is similar to the Rj-7610's Analog Out, except it can be toggled via the MODE function to select Channel A, Channel B, or the B/A Ratio. When B/A is selected the voltage corresponds to the mantissa of the ratio. The Rj-7620 has two additional outputs, A Out and B Out, that show the post-preamplifier waveform, whose baseline-to-peak voltage is proportional to the pulse energy.

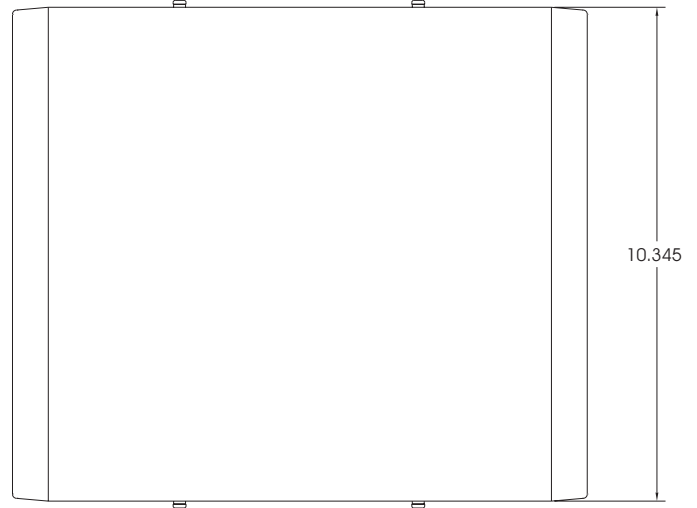
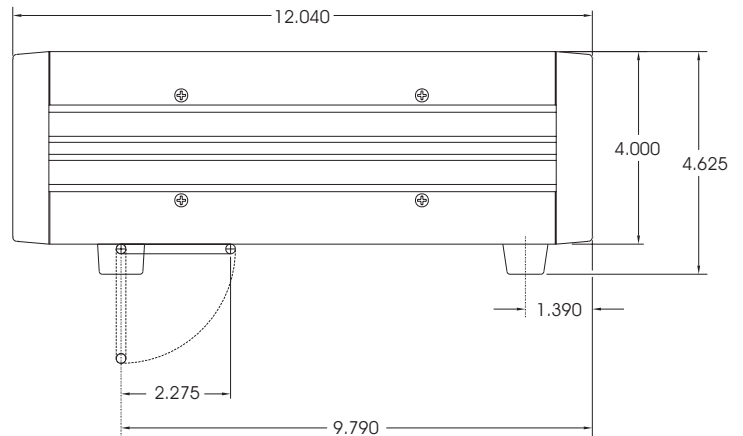
The IEEE-488 GPIB computer interface outputs the following information in ASCII format, in real time up to 40 Hz, for Channel A (and B for the Rj-7620): pulse energy in scientific notation, min & max energy, and standard deviation. Ratio B/A is also available (Rj-7620 only). Any combination of these can be enabled or disabled for transmission.

The Rj-7600 Series instruments are compatible with the RjP-700 and RjT Series probes. Contact the factory for additional information regarding probe compatibility and available options.

The Rj-7600 Series instruments are provided with a certificate of calibration showing traceability to the National Institute of Standards and Technology (NIST) and compliance with MIL-45662 and ANSI-Z540 Sections 7-18.

Max. pulse width	250 ms (probe dependent)
Max. pulse rep rate	40 Hz (probe dependent)
Resolution	0.03% of full scale
Calibration factor	0.100 to 1.000
Average Mode	1, 10, or 100 pulses
Ratio range	10 <sup>15</sup> to 1 (probe dependent)
Ratio accuracy	± 2 LSD
Trigger select	Internal, External
Internal (auto) trigger	Channel A; Energy > 7% of F.S.
External trigger	TTL; within ± 20 μs of optical pulse
Accuracy	± 0.5%
Analog (Ratio) output	0-10 VDC, 10V equals FS for Channel A and B; the voltage is equal to the mantissa of the ratio B/A
A Out, B Out	Baseline-to-peak voltage proportional to pulse energy
GPIB	Talker/Listener; Address 0-32; serial poll w/status byte; Terminator LF/CR
Power supply	120/240 ±10% VAC; 50-60 Hz
Temperature range	0°C to 40°C operating; -20°C to 70°C storage
Dimensions (l x w x h)	30.6 cm x 26.3 cm x 10.2 cm (12.1" x 10.4" x 4.0")
Weight	4.1 kg (9.0 lb)

SPECIFICATIONS



As a result of our ongoing commitment to product improvement specifications are subject to change without notice. REV 019801js