



**RDL**<sup>®</sup>  
Radio Design Labs

SPECIALISTS IN PRACTICAL PRECISION ENGINEERING™

## RACK-UP<sup>®</sup> SERIES

### Model RU-SM16 Dual Audio Meter

#### ANYWHERE YOU NEED...

- Precision Audio Level Metering
- Digital String Display Indication
- Precise Left/Right Meter Tracking
- Individual Channel Calibration Controls
- Selectable PEAK or AVERAGE Metering
- Continuous Peak-Hold Display
- Visual Verification of Adequate Headroom



#### ***You Need The RU-SM16!***

The RU-SM16 is part of the group of RACK-UP products from Radio Design Labs. RACK-UPS feature the advanced circuitry, for which RDL products are known, combined with accessible user-friendly controls and displays. The ultra-compact design permits high-density installations, with *three* products mounted in a single rack unit! Single RACK-UPS can be mounted right where they are needed using the adhesive method popularized by RDL's STICK-ON<sup>®</sup> series of products. Optional brackets and chassis permit mounting of a RACK-UP module above, below, or in front of any flat surface!

**APPLICATION:** The RU-SM16 is the ideal choice in most applications where audio-level metering needs to be designed into a system, or added to existing equipment. All connections are made using full-size barrier block terminals on the rear panel.

The RU-SM16 has two separate line-level inputs. Each of the inputs permits the connection of either balanced or unbalanced, high or low impedance audio lines.

When a stereo source is used, one channel is connected to each of the two inputs. In this configuration, the RU-SM16 provides a separate display for each of the inputs. The level calibration reference is user adjustable by a 25-turn trimming potentiometer available through the front panel. Unlike meters that use an off-the-shelf chip, the RU-SM16 develops a single precision reference for each metering increment. Comparators are used to switch the LEDs in the string display, with the respective comparators for each channel connected to the same reference. Therefore, when the input calibration controls are set equally, each channel's LED for a given dB value will switch on at exactly the same audio signal level. The metering sample is derived from an active, precision full-wave rectification circuit. Isolation between channels is amply sufficient to use the RU-SM16 to meter two monaural signals simultaneously.

Jumpers on the rear panel allow the installer to set each meter individually for either peak or average audio level display. In monaural installations, it may be advantageous to feed the mono source to both meters, setting one for peak and the other for average. In either mode the upper three LEDs (+10, +14, and +18) remain in the peak-hold mode. These LEDs illuminate at the peak rate and remain illuminated about one-half second to provide a clear visual indication of levels which impact system headroom.

The peak mode response time is nearly instantaneous with a dwell time sufficient to eliminate pulsing of the display, thereby giving the user an accurate visual representation of peak excursions. The average mode features rise and fall times providing the user with visual VU metering ballistics.

The RU-SM16 uses bright LEDs for good visibility. Each of the channel inputs has a write-on label area for identification of the source or function being metered.

Wherever an audio meter is needed to provide superior visual clarity, precise channel tracking, user calibration, reliability, compactness, and unsurpassed versatility, the RU-SM16 is the ideal choice. Use the RU-SM16 with any audio system, or combine it with other RDL RACK-UP<sup>®</sup>, STICK-ON<sup>®</sup>, TX<sup>™</sup>, or FLAT-PAK<sup>™</sup> series products as part of a complete audio/video system.



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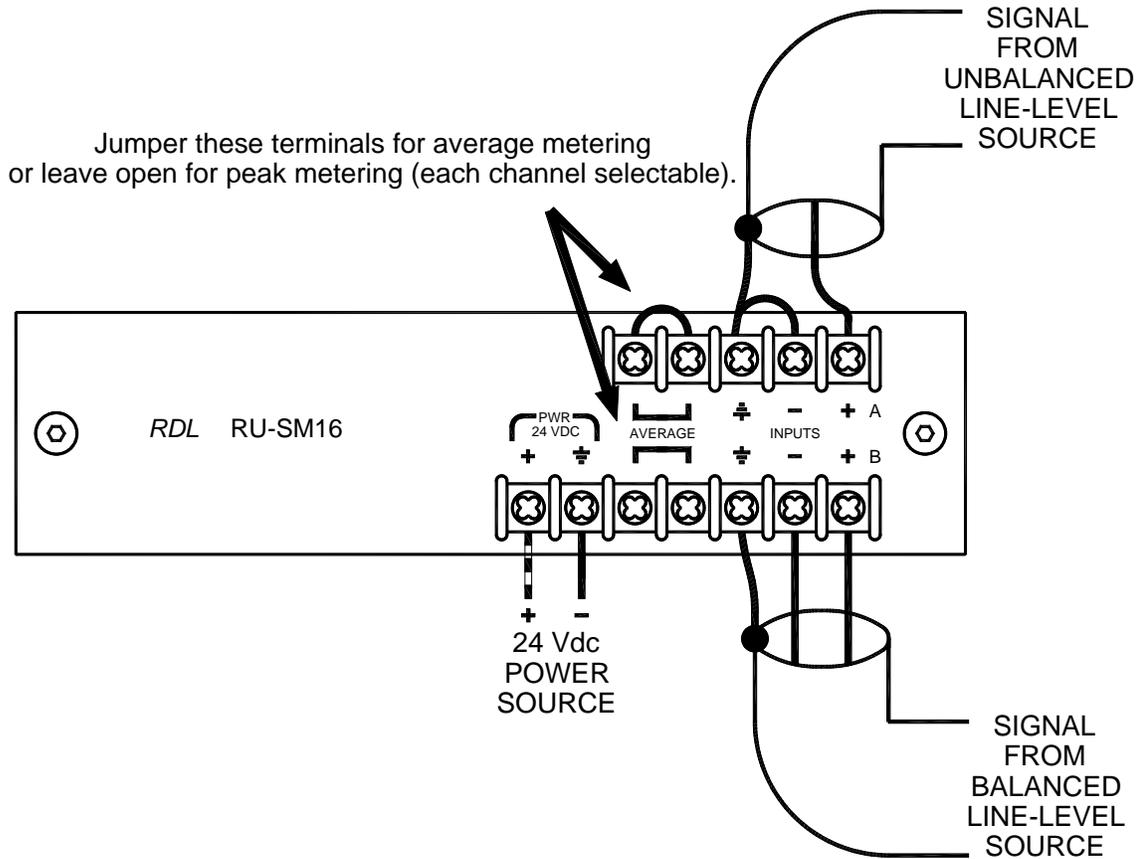
# RACK-UP<sup>®</sup> SERIES

## Model RU-SM16 Dual Audio Meter

## Installation/Operation



EN55103-1 E1-E5; EN55103-2 E1-E4  
Typical Performance reflects product at publication time exclusive of EMC data, if any, supplied with product. Specifications are subject to change without notice.



### TYPICAL PERFORMANCE

Inputs (2):	Line level															
Input Impedance:	200 kΩ Balanced or unbalanced															
Input Range (sensitivity):	For 0 dB reading, -26 dBu to +14 dBu															
Metering Bandwidth:	20 Hz to 50 kHz															
Indicators:	16 LEDs per channel; SIGNAL, -20, -15, -12, -9, -6, -3, -2, -1, 0, +1.5, +3, +6, +10, +14, +18 (+10, +14, +18 are peak-hold indicators only)															
Metering Response:	Each channel individually selectable PEAK or AVERAGE (terminal block strap provided)															
	<table border="0"> <tr> <td></td> <td style="text-align: center;"><u>Peak Mode</u></td> <td style="text-align: center;"><u>Average Mode</u></td> </tr> <tr> <td>Rise Time (10% - 90%)</td> <td style="text-align: center;">50 μS</td> <td style="text-align: center;">130 mS</td> </tr> <tr> <td>Rise Time (0% - 100%)</td> <td style="text-align: center;">60 μS</td> <td style="text-align: center;">300 mS*</td> </tr> <tr> <td>Fall Time (90% - 10%)</td> <td style="text-align: center;">65 mS</td> <td style="text-align: center;">185 mS</td> </tr> <tr> <td>Fall Time (100% - 0%)</td> <td style="text-align: center;">100 mS</td> <td style="text-align: center;">300 mS*</td> </tr> </table>		<u>Peak Mode</u>	<u>Average Mode</u>	Rise Time (10% - 90%)	50 μS	130 mS	Rise Time (0% - 100%)	60 μS	300 mS*	Fall Time (90% - 10%)	65 mS	185 mS	Fall Time (100% - 0%)	100 mS	300 mS*
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Power Requirement:

24 to 33 Vdc @ 250 mA, Ground-referenced

Dimensions:

Height:	1.7 in.	4.3 cm
Length:	5.8 in.	15.0 cm
Depth:	2.0 in.	5.1 cm (case only)
	2.5 in.	6.4 cm (including barrier block)

Radio Design Labs Technical Support Centers

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