



*Unequaled Accuracy*

*Autoranging Inputs*

*Watthour Display*

*Kh of 1 at all Ranges*

*VARhour/Qhour Models*

*Lightweight*

*Communications Port*

## OVERVIEW

The Radian Research RM-10 Metronic Portable Watthour Standard is the most accurate portable standard available. The field proven RM-10, which is unequalled in accuracy, stability and reliability, is the number one selling standard in North America.

The RM-10 is totally autoranging on the potential input, current input and auxiliary power input. Totally autoranging inputs, a feature pioneered by Radian, make it impossible to damage the unit by applying a signal to the wrong input. The three summing current inputs can be used to perform closed link testing. A maximum test current of 150 Amps can be used when paralleling the three 50 Amp inputs.

The RM-10 provides a true watthour display with a Kh of 1 for its entire operating range. This feature, introduced by Radian, allows for a much simpler percent registration calculation. Models with VARhour and Qhour capabilities are available for testing the newer multifunction solid state meters.

At only 5.5 pounds, the RM-10 is the lightest standard available making it desirable for field testing applica-

tions. Ease of use and safety are further enhanced with the use of the RM-1S Remote Reset Switch for field testing.

The RM-10 can be used to upgrade older test boards and load boxes to provide the accuracy required for testing solid state meters. A full line of test accessories to use with the RM-10 are also available from Radian. These accessories can be used for field and shop testing of solid state and induction meters.

The RM-1N is a solid state counter which automatically starts and then stops the test after it has counted the desired number of pulses from the meter. A communications port is available for computer access to the RM-10's display when using the RM-PCA and PCA-Link™ Meter Test Software.

In addition to unequalled accuracy, user-friendly features and a full line of test accessories, the RM-10 is backed by the most aggressive warranty in the industry. Technical specifications are detailed on the back side of this page.

## RM-10 MODELS

RM-10-01 Portable Watthour Standard  
 RM-10-02 Portable Watthour 200 Amp Standard  
 RM-10-03 Portable Watthour Standard with I/O Communications Port  
 RM-10-06 Portable Watthour/VARhour Standard  
 RM-10-07 Portable Watthour/VARhour/Qhour Standard  
 RM-10-08 Portable Watthour/VARhour 200 Amp Standard  
 RM-10-09 Portable Watthour/VARhour/Qhour 200 Amp Standard

\*The RM-10-02, -03, -06, -07, -08 and -09 Models are provided with an I/O Communications Port.

## RM-10 Metronic Portable Watthour Standard

## ACCURACY

All errors are in percent of reading at any combination of the normal operating conditions. Note that stability is included within the maximum accuracy specifications for Watthours, Qhours and VARhours. \*Power factor is referenced to Watthours and it is also assumed that voltage is the reference vector.

	<b>Watthour</b>	<b>Qhour</b>
AT UNITY POWER FACTOR* (0°)	± 0.01% typical, ± 0.05% maximum	± 0.035% typical, ± 0.1% maximum
AT 0.5 LAG POWER FACTOR* (-60°)	± 0.02% typical, ± 0.05% maximum	± 0.025% typical, ± 0.1% maximum
AT POWER FACTOR* P < 0.5 LAG (± between -60° and -90°)	± 0.05%/P maximum	
	<b>VARhour</b>	
AT 0.0 LAG POWER FACTOR* (-90°)	± 0.025% typical, ± 0.1% maximum	
AT 0.866 LAG POWER FACTOR* (-30°)	± 0.035% typical, ± 0.1% maximum	

## NORMAL OPERATING CONDITIONS

INPUT VOLTAGE	60 to 600 VAC (Autoranging)
INPUT CURRENT	0.2 to 50 Amps (Autoranging) 150 Amps max. when paralleling 3 inputs
POWER FACTOR	Any (See accuracy definition)
AMBIENT TEMPERATURE	20° to 30° C (68° to 86° F)
RELATIVE HUMIDITY	0 to 95%
AUXILIARY POWER VOLTAGE	80 to 600 VAC (Autoranging)
FREQUENCY	48 to 62 Hz
ORIENTATION	Any
RECALIBRATION INTERVAL	365 days
WARMUP TIME	30 seconds
SHOCK AND VIBRATION	Any which is nondestructive

## INFLUENCE AFFECTING ACCURACY

TEMPERATURE	± 0.001%/°C typical, ± 0.003%/°C maximum -20° to 70° C (-4° to 158° F)
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## INPUT

INPUT TERMINAL	BNC, digital display gate
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## OUTPUT

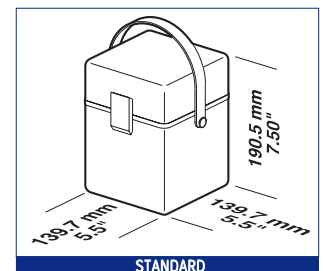
OUTPUT TERMINAL	BNC
PULSE VALUE (Wh/pulse)	0.00001 (0.00002 for 200 Amp models)

## PROTECTION

ISOLATION	Complete: Input/Output/Power/Case/Control
DIELECTRIC WITHSTAND	2.3 kVrms, 60 Hz, 60 seconds
SURGE WITHSTAND	IEEE 472 and ANSI 37.90
FUSES	Schurter #0342516 or Radian #3001000 for potential input and auxiliary power

## PHYSICAL DESCRIPTION

SIZE	190.5 mm (7.5") H x 139.7 mm (5.5") W x 139.7 mm (5.5") D excluding latches and strap
WEIGHT	2.5 kg (5.5 lbs); 3.6 kg (8 lbs) shipping weight
SHIPPING DIMENSIONS	305 mm (12") H x 248 mm (9.75") W x 248 mm (9.75") D
DISPLAY	12.7 mm (0.5") LCD, 6 digits, readout in Watthours, VARhours, Qhours



## ACCESSORIES AVAILABLE

RM-1S Remote Reset Switch	RM-DS Meter Disk Sensor	RM-OA Optical Adapter
RM-1N Solid State Meter Interface	RM-KYZ Pulse Input Adapter	RM-TC Transit Container
RM-1H Optical Pickup for Infrared LED	RM-1A Photo Counter Interface	RM-PCA Computer Interface Adapter with PCA-Link™ Software

## WARRANTY

The RM-10 is warranted to be substantially stable in calibration over time. If within one year after factory calibration the RM-10 does not meet its specifications, Radian will repair and recalibrate the unit. Radian Research warrants the RM-10 to be free from defects in material and workmanship. Radian will repair or replace any instrument or component therein which, within two years after shipment, proves to be defective upon examination. For a period of ten years, Radian warrants the RM-10's autoranging feature from catastrophic failure resulting from failure to autorange.

## SERVICES AVAILABLE

Extended Warranty (5 year warranty plus 6 recertifications)  
 Recertification of standards  
 Certification with special calibration points

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