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Test & Measurement

- sales
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- calibration
- repair
- disposal

Complimentary Reference Material

This PDF has been made available as a complimentary service for you to assist in evaluating this model for your testing requirements.

TMG offers a wide range of test equipment solutions, from renting short to long term, buying refurbished and purchasing new. Financing options, such as Financial Rental, and Leasing are also available on application.

TMG will assist if you are unsure whether this model will suit your requirements.

Call TMG if you need to organise repair and/or calibrate your unit.

If you click on the "Click-to-Call" logo below, you can all us for FREE!

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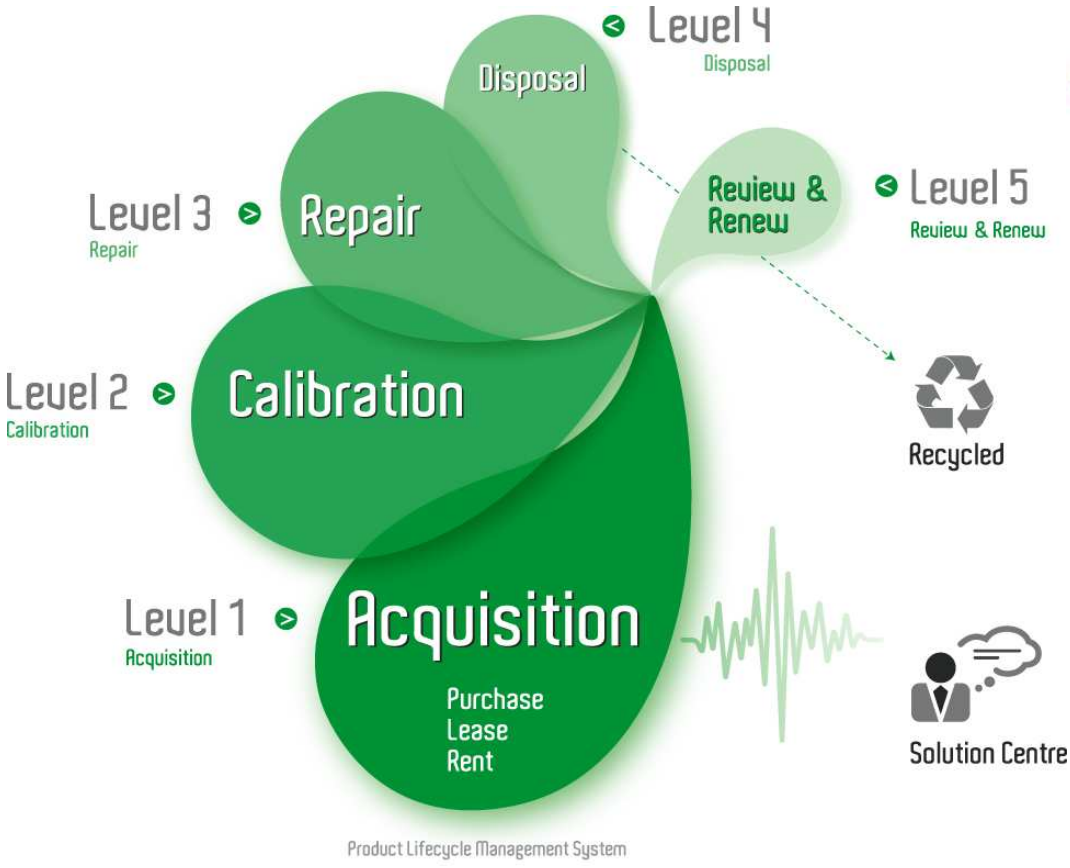
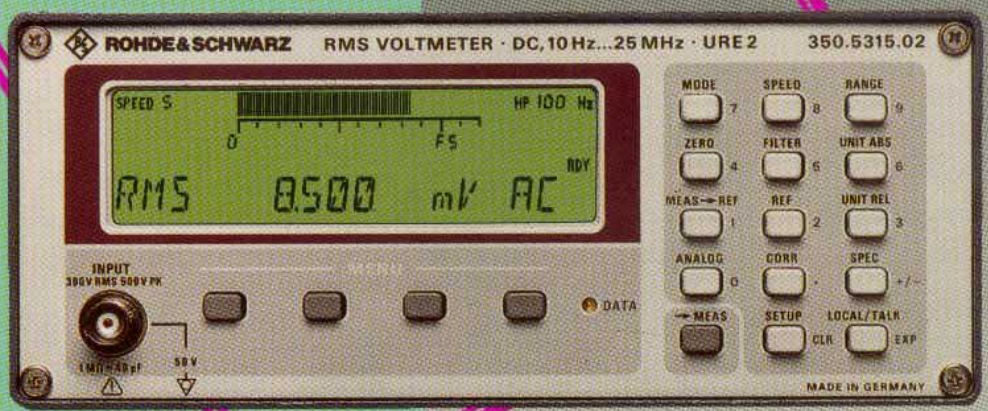


ROHDE&SCHWARZ

RMS Voltmeter URE 2

For any waveform

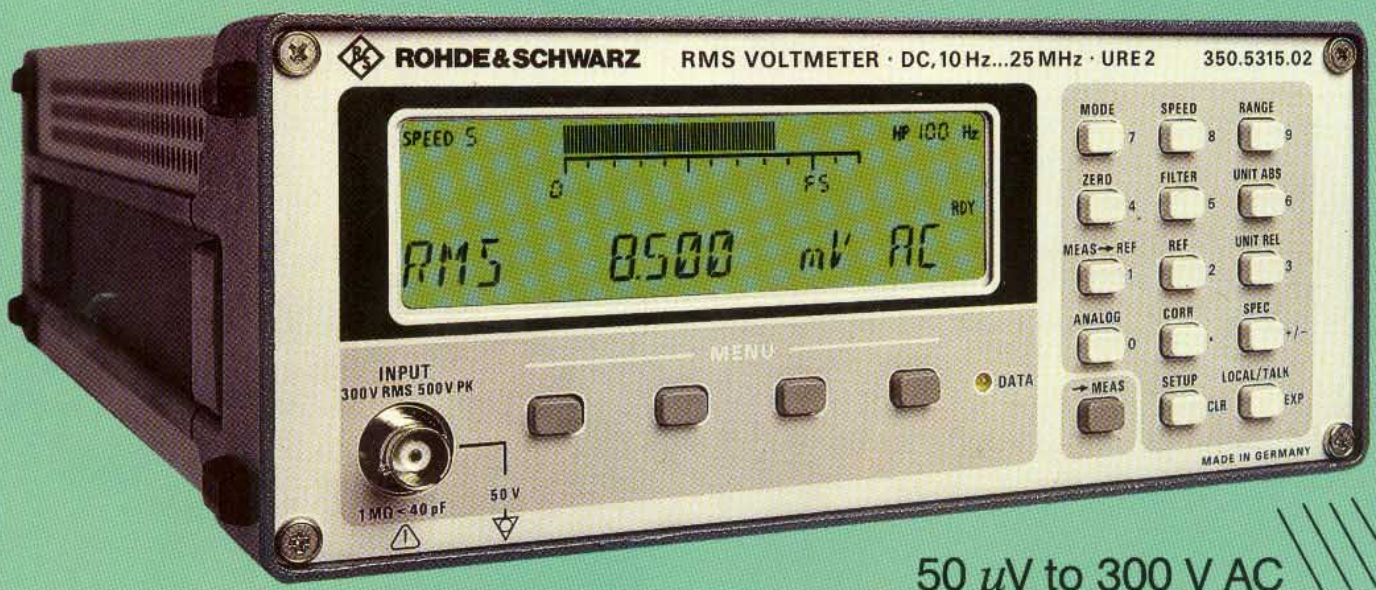


IEC625Bus

IEEE 488

PD 756.8526.21

RMS VOLTMETER URE 2



50 μV to 300 V AC

DC, 10 Hz to 25 MHz

0 to 300 V DC

Photo: STEREO

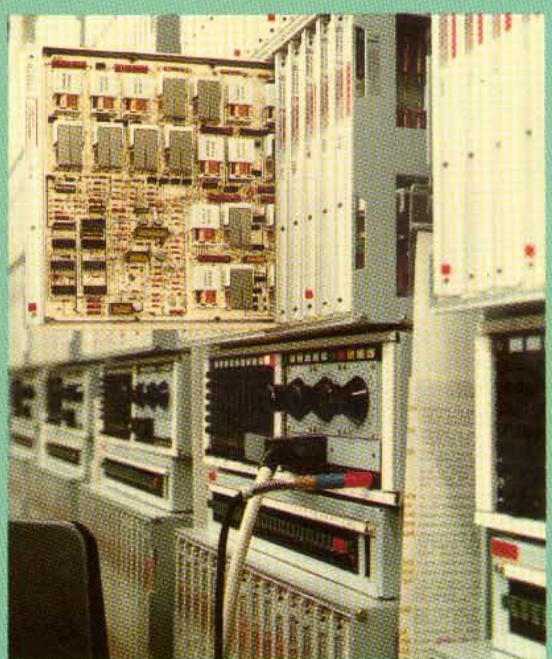


Photo: DBP/Kleß, Bad Honnef

High measuring accuracy and true rms weighting for noise voltage measurements are the requirements a voltmeter has to meet for **audio measurements.** This is where the URE 2 comes in. Frequency response and linearity measurements on components, modules and whole devices are its main audio applications.

The possibility of measuring the DC and AC components of (AC+ DC) voltages separately as well as the high measurement speed mean that in **telephone measurements** the URE 2 can simultaneously measure the voltage of dialling signals and the power supply carried on a single telephone line.

For any waveform

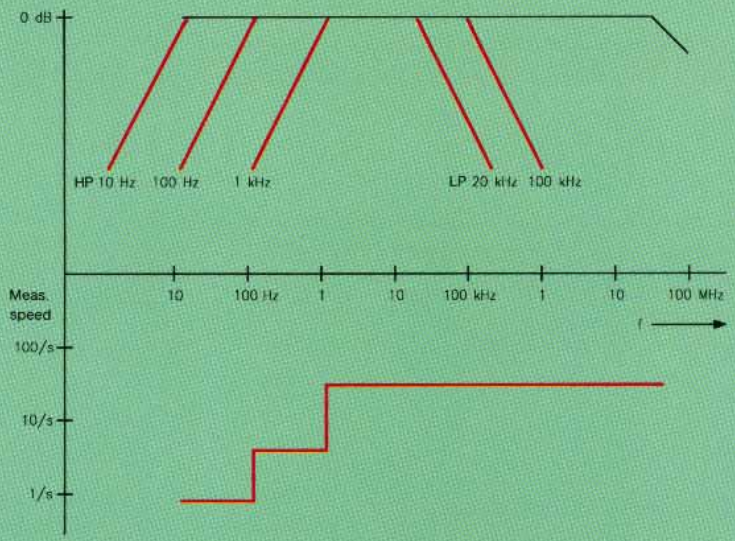
The URE 2 measures DC voltages as well as the rms value of AC and (AC+DC) voltages in the frequency range between 10 Hz and 25 MHz.

Since the URE 2 has a common input impedance of 1 MΩ, commercial probes can be used and their division ratio be taken into account in the displayed result.

Three measurement speeds

Automatic test systems call for a high measurement speed of the instruments used. With more than 30 measurements/s from 1 kHz, the URE 2 leaves nothing to be desired, in particular since the results are settled values and not the rapidly changing readouts which some other instruments use to give an impression of speed.

The slower modes are for measurements down to 10 Hz.



Digital and analog displays

The measured value is read out in up to five digits with unit and additional information on a large LCD. Readout in volts, watts, dBV, dBμV, dBu or dBm can be selected; the readout in watts and in dBm can be referred to any impedance value.

Highpass and lowpass filters can be switched in to suppress AC hum or high-frequency noise (see graphs).

Maxima and minima as well as tolerance limits can be determined automatically. Relative display is possible as a difference, as a ratio of measured value to reference value or as deviation in dB or % to provide an overview. Reference values can be entered or measured values used as references.

The additional, high-resolution bargraph display is ideal for quick overview measurements and precise adjustments. Its scale and unit either follow the digital display or can be set manually, and its resolution is better than that of any pointer meter.

Convenient operation

Operation of the URE 2 is very simple and functional. The measuring and system parameters can be selected via a few, programmed keys and the associated softkey menus.

All instrument functions can be remote-controlled via the built-in IEC/IEEE bus using plain-text commands, which may be abbreviated as long as they are unambiguous. The remote-control commands fully comply with the IEC 625-2 standard.

High accuracy

A patented rectifier circuit with microprocessor-controlled autocalibration is the basis of the excellent URE 2 characteristics.

To enhance the measuring accuracy even further, **correction factors** are determined for each instrument and each measurement range, which the URE 2 automatically takes into account in the result.

The **zero function** is particularly efficient at low levels as it „cancels out" noise voltages and inherent noise using a special algorithm.

Specifications

Measurement functions	DC, AC, AC+DC voltages
Frequency range	DC, 10 Hz to 25 MHz
Voltage range	DC: ±0 to 300 V AC, AC+DC: 50 µV to 300 V
Range selection	AUTO, HOLD, FIX
Input	BNC connector, floating
Input impedance	1 MΩ shunted by 40 pF
Maximum input voltage	300 V_{rms}, 500 V_p max. 1×10^8 V·Hz
Display	LCD, 4½ digit result display, digital and analog readout in V, W, dBV, dBm, dBµV or dBu; difference, deviation in % or dB and ratio to a reference value
IEC/IEEE bus	fitted as standard, all functions

AC voltage measurement

Voltage range	50 µV to 300 V		
Ranges and resolution	1 mV to 300 V, 10-dB steps, maximum reading 3800 or 12000 ±1 digit, maximum resolution 1 µV		
Selectable lowpass filters	20 kHz, 100 kHz Butterworth, (3-dB cutoff frequency, 40 dB/decade)		
Selectable highpass filters	10 Hz, 100 Hz, 1 kHz (lower meas. limit, AC component in AC+DC)		
Measurement speed at lower frequency limit[1] (AC component in AC+DC)	time of triggered measurement	readout rate	min. meas. frequency
Speed 4	1.3 s	10/s	10 Hz
Speed 5	250 ms	10/s	100 Hz
Speed 6	32 ms	20/s	1 kHz
Error limits	see table for RMS measurement, plus 10 digits for DC coupling (inherent noise „cancelled out" by zero function)		
Maximum crest factor	7		
Weighting error	crest factor <3: included in basic error crest factor <5: 1% crest factor <7: 3% for spectral components up to 25 MHz		

Temperature effect	% of rdg/°C	frequency (MHz)
	≤0.1	<10 (<10)
	≤0.15	<20 (<12)
	≤0.3	<25 (<15)
	≤0.8	– (<20)
	values in parentheses refer to V_{in}	
	<3 mV	

DC voltage measurement

Voltage range	±0 to 300 V	
Ranges and resolution	10 mV to 1000 V, 20-dB steps, maximum reading 12000 ±1 digit, maximum resolution 1 µV	
Measurement speed	time of triggered measurement	readout rate
Speed 4	1.3 s	10/s
Speed 5	250 ms	10/s
Speed 6	32 ms	20/s
Error limits	±(0.1% of rdg + 10 digits)	
Temperature effect	<(0.01% of rdg + 1 digit)/°C	

General data

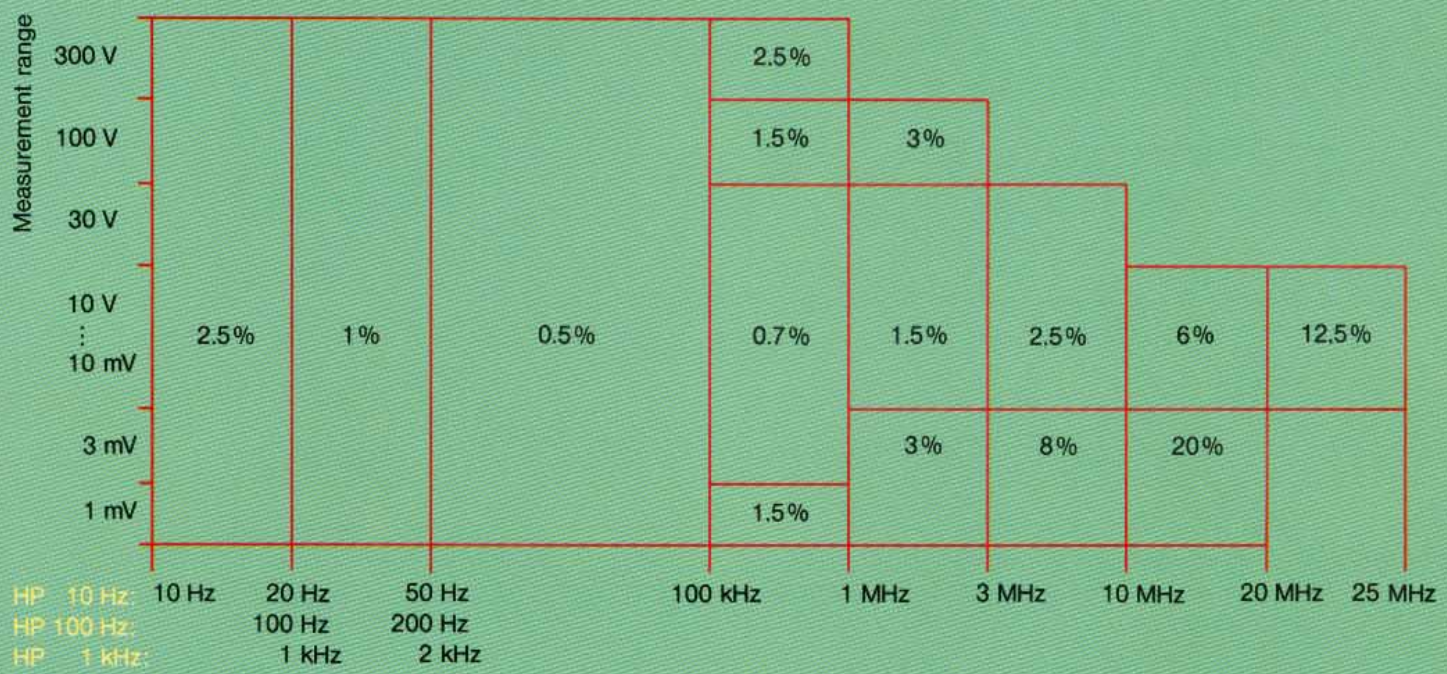
Operating temperature range	0 to +50 °C, for use in class 1 to IEC 359
Storage temperature range	−40 to +70 °C
Permissible humidity	20 to 80% (no condensation)
Mechanical strength	to IEC 359 class 1
RFI suppression	to DBP regulations 1046/1984
Power supply	100/120/220/240 V ±10%, 47 to 440 Hz (25 VA), safety class 1 to VDE 0411 and IEC 348
Dimensions (W x H x D)	219 mm x 103 mm x 350 mm
Weight	4.5 kg

Ordering information

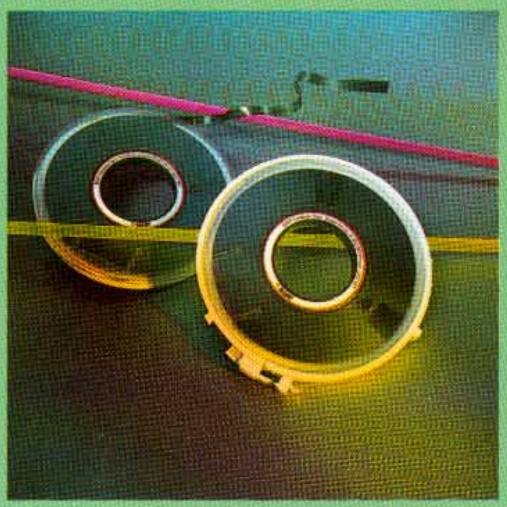
Order designation ▶ RMS Voltmeter URE 2 350.5315.02

[1]) When the measurement speed is increased, the required highpass filter is automatically switched into circuit. At lower measurement speeds, the higher-frequency highpass filters can be selected as desired. There are no speeds 0 to 3.

Error limits of RMS measurement (23 ±5 °C)



- True rms weighting for AC and AC+DC
- More than 30 measurements/s
- Digital display and analog readout with selectable scale
- Highpass and lowpass filters
- Relative measurement, maxima/minima
- IEC/IEEE bus for all functions
- Convenient menu operation
- High measurement accuracy



Automatic **quality control of audio and video tapes** calls for fast, system-compatible measuring instruments to ensure a high throughput. The broadband characteristics of the measuring instrument are a main point of interest in digital **magnetic storage** and optical data storage, where the high data rates require high-frequency measurements on sampling probes and storage media.

The URE 2 is ideal for use in both applications.

The RMS Voltmeter URE 2 combines a logical system design with ergonomical operation and demonstrates its high performance for everyday use in labs or service shops as well as in automated measurements.

ROHDE&SCHWARZ

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