

RID DIAGNOSTICS TOOL

IDENTIFICATION OF PROBLEMS ON-BOARD SYSTEM



RID EA-30V BATTERY ELECTROCHEMICAL ANALYZER:

RID EA-30V is a portable device which measures internal resistance and output voltage at the terminals of battery. By the battery is meant an electrochemical power source with maximum voltage value of 30 V

- is applying for rejecting a single-type batteries according with specified parameter of conformance
- the additional function of RID EA-30V is determination a CCA of starter batteries (Cold Crank-ing Amperes)
- supports micro SD cards and equipped with USB interface to connect with PC
- is a portable device with four AA size 1.5 V batteries power source
- according with IEC 60529 standard a protection degree code of the RID EA-30V case is IP32
- a metal case of RID EA-30V is stable towards acids and alkalis

DCV measurement range: 0.3 to 30.0 V. Measured value is indicated as a four-digit number with decimal point (see table 1):

Table 1

Measurement range, V	Subrange, V	Least significant digit, V	Maximum permissible error, V
0,3 – 30	0-9,999	0,001	±(5·10 ⁻³ ·U + 20 dgt)
	10,00-30,00	0,01	

NOTE – there are following designations used in the table: - U – measured value of DC voltage (V); - dgt – least significant digit, V

Analyzer provides measurement of complex impedance value (Z), real (R) and imaginary (X) parts of the impedance.

Range is selected automatically depending on value of measured resistance. Measurement result is indicated as four-digit number with sign and decimal point and expressed in mΩ (milliohms) (see tables 2 and 3)

Table 2

Device version	Z - measurement Range, mΩ	R - measurement Range, mΩ	X - measurement Range, mΩ	dgt, mΩ
RID EA-30V-3	0-30,04	0-30,04	±(0-30,04)	0,01
	30,1-300,4	30,1-300,4	±(30,1-300,4)	0,1
	301-3000	301-3000	±(301-3000)	1

Table 3

Parameter description	Device version
	RID EA-30V-3
Measurement range, mΩ	10-3000
Limits of absolute permissible error:	
-Z, mΩ	±(2,5·10 ⁻² ·Z + 50 dgt)
-R, mΩ	±(2,5·10 ⁻² ·R + 50 dgt)
-X, mΩ	±(2,5·10 ⁻² ·X + 50 dgt)

NOTE – there are following designations used in the table: - Z – measured value of complex impedance (mΩ);

- R – measured value of active part of the impedance (resistance, mΩ); - X - measured value of reactive part of the impedance (reactance, mΩ);

-dgt – least significant digit, mΩ

Measurement range of angle between vector values of complex impedance and its real part:

- 90 to 90° with resolution 0.01°.

Test signal frequency range within 20 to 1000 Hz, with resolution 1 Hz. It is possible to set from 1 to 4 test frequency values.

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Measurement delay («MD» mode): 0.5 to 9.5 s., with resolution setting step 0.5 s
Rejection threshold level («TRG» mode) is set within 0.7 to 30.0 V, 0.1 V step
CCA is calculated in range of 100-2000 A, 1 A resolution
Capacity of embedded memory card is 4 Gb
External interface – USB 2.0, with mini-USB connector type
Power source voltage range: 4 to 6 V
Maximum power consumption: 0.6 W

RID EA-30V conforms to requirements of the GOST 12.2.091 (IEC 61010-1:2001). Type of insulation – basic insulation.
Pollution degree – 2. Measurement category – III. Maximum input voltage – 50 DCV.
RID EA-30V conforms to the electromagnetic compatibility requirements according to IEC 61326-1-2014 for battery-powered portable measurement equipment.

Limits of absolute permissible error under effect of radiated radio-frequency electromagnetic field at 3 V/m:
- For voltage measurements: $\pm(3\% + 180 \text{ dgt})$
- For impedance measurements: $\pm(5\% + 280 \text{ dgt})$

Ambient Air Temperature: – 10 to 55 °C
Operating time to failure: at least 50 000 hours
Useful lifetime: more than 7 years
Overall dimensions: no more than 190x119x38 mm
Weight is no more than 0.7 kg (without batteries)