



LLC «RPE «EVARTIS»

RTS-M

TESTING COMPLEX

FOR PROTECTION RELAY, AUTOMATION AND CONTROL SYSTEMS DEVICE



INTRODUCTION

RTS-M is a multifunctional device for secondary current and voltage testing of relay protection and automation devices.

The device includes:

- three output sources of AC or DC current;
- four sources of AC or DC voltage;
- configurable discrete inputs and output relays;
- circuit breaker simulation module.

All current and voltage sources have individual adjustment of amplitude, phase angle and frequency.

Discrete inputs are galvanically isolated and have a universal design ("dry" contact, or potential input).

The circuit breaker simulation module consists of relays that simulate close and open electromagnets, the contacts of which simulate the close and open state block contacts of the circuit breaker.

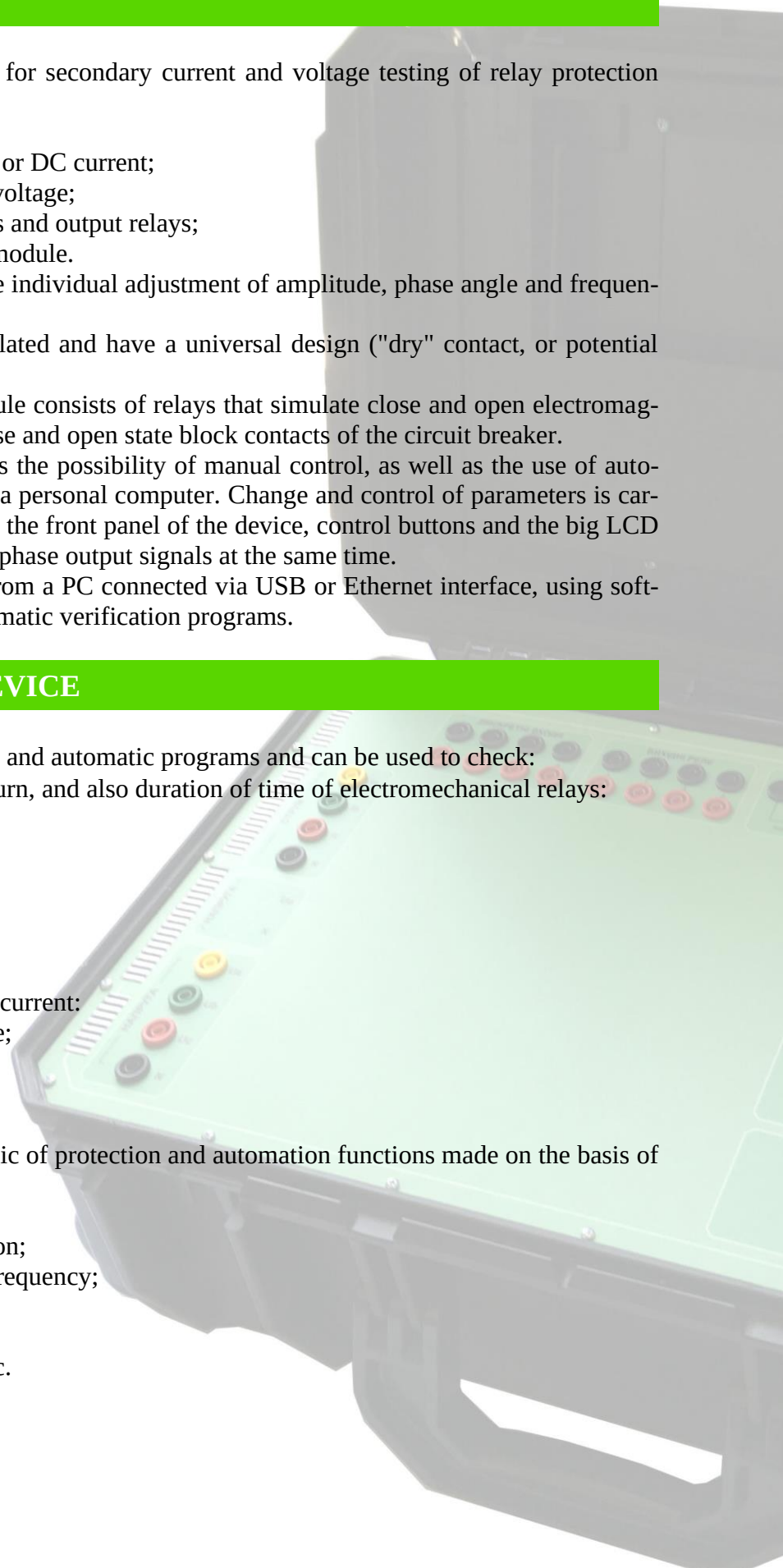
A distinctive feature of the device is the possibility of manual control, as well as the use of automatic testing programs without connecting a personal computer. Change and control of parameters is carried out by means of the handles located on the front panel of the device, control buttons and the big LCD which allow to control two groups of three-phase output signals at the same time.

The device can also be controlled from a PC connected via USB or Ethernet interface, using software with a wide range of manual and automatic verification programs.

THE PURPOSE OF THE DEVICE

The RTS-M device contains manual and automatic programs and can be used to check:

- parameters of operation and return, and also duration of time of electromechanical relays:
 - current relay;
 - voltage relay;
 - differential relays;
 - power relay;
 - frequency relay;
 - time relay.
- parameters relays of DC or AC current:
 - operating current or voltage;
 - return current or voltage;
 - operating time;
 - return time.
- parameters of operation and logic of protection and automation functions made on the basis of microprocessor terminals:
 - current protections;
 - directional current protection;
 - protection on voltage and frequency;
 - distance protections;
 - differential protections;
 - automatics auto recloser etc.



SPECIFICATIONS

CONSTRUCTION

The RTS-M series devices are made in a plastic impact-resistant case consisting of a base and a cover. The base of the case is equipped with transport wheels, carrying handles, as well as an additional retractable transport handle.

The base of the case is equipped with a front panel on which the output connectors of current and voltage sources, connectors of power supply of the device, connectors of discrete inputs and output relays, LCD and control buttons are located.

GENERAL PARAMETERS

Power supply	
Rated supply voltage	230 V (~)
Supply voltage frequency range	$50 \pm 0,5$ Hz
Supply voltage range	$(195 \div 253)$ V (~)
Maximum power consumption	2500 VA
Overall dimensions	
(W × D × H)	556×226×353 mm
Weight	
weight device with accessories	22 kg
PC connection	
PC connection interfaces	USB

VOLTAGE SOURCES

	AC	DC
Outputs Ua, Ub, Uc		
Range		
– 3-phase mode;	3×(0...135) V	3×(0...±190) V
– 1-phase mode (2 channels in series).	1×(0...270) V	1×(0...380) V
Power		
– 3-phase mode;	3×50 VA	3×50 W
– 1-phase mode (2 channels in series).	1×150 VA	1×150 W
Step	0,01 B	
Accuracy	±0,2%×Umeas±0,01%×Umax	
Output Uo		
Range	0...135 V	0...190 V
Power	50 VA	50 W
Step	0,01 V	0,01 V
Accuracy	±0,2%×Umeas±0,01%×Umax	

Voltage sources are equipped with protection against short circuit at the output, thermal overload and external voltage at the output terminals.

CURRENT SOURCES

	AC	DC
Outputs Ia, Ib, Ic		
Range		
– 3-phase mode;	$3 \times (0 \dots 36)$ A	$3 \times (0 \dots \pm 36)$ A
– 1-phase mode (3 channels in parallels).	$1 \times (0 \dots 108)$ A	$1 \times (0 \dots 108)$ A
Power		
– 3-phase mode;	3×500 VA	3×250 W
– 1-phase mode (3 channels in parallels).	1×750 VA	1×750 W
Step	0,001 A	
Accuracy	$\pm 0,2\% \times I_{\text{meas}} \pm 0,01\% \times I_{\text{max}} \pm 0,5\% \times I_{\text{meas}} \pm 0,05\% \times I_{\text{max}}$	

Current sources are protected against rupture of output circuits and thermal overload.

PHASE ANGLE

Outputs Ua, Ub, Uc, Uo, Ia, Ib, Ic	
Range	$0 \dots 360^\circ$
Step	$0,1^\circ$

FREQUENCY

Outputs Ua, Ub, Uc, Uo, Ia, Ib, Ic	
Range	5...1000 Hz
Step	0,01 Hz

DISCRETE INPUTS

Quantity	6
Designation	DI1÷DI4, KCT, KCC
Type	Type Universal: - «dry» contact, internal power supply; - potential, external voltage <300V.
Recognition time	0,1 ÷ 25 ms, step 0,1 mc (set by software)
Time interval measurement range	0,001÷99999 s

The status of the digital inputs is displayed on the LCD of the device. Discrete inputs are used to measure the operation time or return of the devices being tested. Discrete inputs can also be used to automatically turn on or off current or voltage output channels. The digital input mode is set in the device menu.

OUTPUTS RELAYS

Quantity	4
Designation	RL1÷RL4
Quantity, type of contacts:	
– RL1	1 NO
– RL2	1 NO
– RL3	1 NO
– RL4	1 NO
Rated relay contact voltage	250 V (=,~),
Relay contact current	8 A
Opening capacity of relay contacts:	
– 250 V (=), L/R=30ms	0,25 A
– 220 V (~), cos φ =0,6	8 A

The status of the output relays is displayed on the LCD of the device. Output relays are used to control the devices being tested. Output relay control is performed from the device menu in automatic or manual mode.

CIRCUIT BREAKER SIMULATOR

The circuit breaker simulation module consists of bistable relays that simulate close and open electromagnets, the contacts of which simulate the close and open state block contacts of the circuit breaker. The circuit breaker simulator can be used to test the operation of current protections in the AR cycle.

The circuit breaker simulator is controlled programmatically, using the control buttons on the front panel of the device, and using digital inputs. The status of the close or open status of the circuit breaker simulator is indicated by means of LED indicators and in the device menu.

CONTACTS

LLC «RPE «EVARTIS»

07401, Kyiv region, Brovary, street Yaroslava Mudrogo 90, office 26.

Tel: +380-(98)-680-32-42

Tel: +380-(95)-900-96-88

E-mail: info@evartis.com.ua

SUPPORT

<http://www.evartis.com.ua>

For technical support please contact:

E-mail: support@evartis.com.ua