

Electrical Breakdown Voltage Express Tester

Model

TOR-100



Application.

The unit is designed to determine the electrical breakdown voltage of transformer oil and other liquid dielectrics in accordance with ASTM D877A-87, ASTM D877B-87, ASTM D1816-12, ASTM D1816-84a, IEC 60156:2018, IEC 60156:1995, JIS C2101-1999 50Hz, JIS C2101-1999 60Hz, GOST 6581-75, ASTM D877/D877M-19, AS1767 2.1, IRAM2341-72, VDE 0370 Part 5/96.

It is a fully automatic device that provides testing according to the procedures defined by these standards, as well as according to the user procedures specified in the corresponding section of the installation menu.

Description and working principle.

1.1. Technical characteristics.

The main technical characteristics of the device are shown in the Table 1.

Table 1 – Technical specification.

No	Parameter	Value	Notes
1	Operating voltage AC, V.	85 - 264	
2	Supply frequency, Hz.	48 – 63	
3	Power consumption, VA.	max 250	
3	Maximum output voltage, kV.	Sinusoidal, up to 100 kV	
4	Output voltage measurement precision	±2 %	
5	Voltage rate of rise, kV / s	from 0,1 to 10	variable
6	Resolution when displaying the output voltage, V.	100	
7	High voltage shutdown time after breakdown, µs	10 max, 4 typical.	
8	Volume of a measuring cell, cm ³	500	
9	Range of measurement of ambient temperature, C	0 - 100	
10	Resolution when measuring temperature, C	1	
11	Integrated printer	yes	
12	Working temperature, C	0 - 50	
13	Storage temperature, C	from – 20 to + 60	
14	Relative humidity, %	Up to 90 without condensation	
15	Overall dimensions, mm LxWxH	510x300x350	
16	Weight, max	29.6	



Principle of operation

The working core of the tester is a high-voltage transformer and electronic modules. The principle of operation of the device is to gradually increase the voltage on the secondary winding of a high-voltage transformer from zero to maximum value, or to a value at which there will occur a breakdown of a liquid dielectric poured into a measuring cell installed on the high-voltage contacts of the transformer and constituting a part of its output electrodes.

A voltage rise at the high-voltage contacts of the secondary winding of the transformer occurs due to a gradual increase in the voltage on the primary winding when sinusoidal voltage is applied thereto from a controlled master inverter.

Note

Device is modified with inbuilt battery and according to that:

- Time of continuous autonomous work in standard operating mode (without recharge) – 8 hours.
- Recharge time – 8 hours.

Set of supply.

Set of supply is shown in the table 2.

Table 2 – Set of supply.

item	Name	quantity	notes
	Device TOR-100	1	
	measure cell	1	
	gap clearance setting device 2,5 mm	1	In the set with measure cell
	Magnetic Oil Stirrer	1	In the set with measure cell
	Magnetic stick to remove the stirrer	1	In the set with measure cell
	Electrode polishing cloth.	1	In the set with measure cell
	Mushroom chaped electrodes	2	In the set with measure cell
	Flat electrodes	2	As per special order
	Spherical electrodes	2	As per special order
	gap clearance setting device 2,0 mm	1	As per special order



	gap clearance setting device 2,54 mm	1	As per special order
	gap clearance setting device 1,0 mm	1	As per special order
	USB Flash drive	1	
	Power cable	1	
	I/F cable RS-485	1	
	Interface converter RS-485 – USB	1	
	Protective ground wire.	1	
	paper roll	1	
	Operation manual	1	
	Fuses	2	
	stowage box	1	

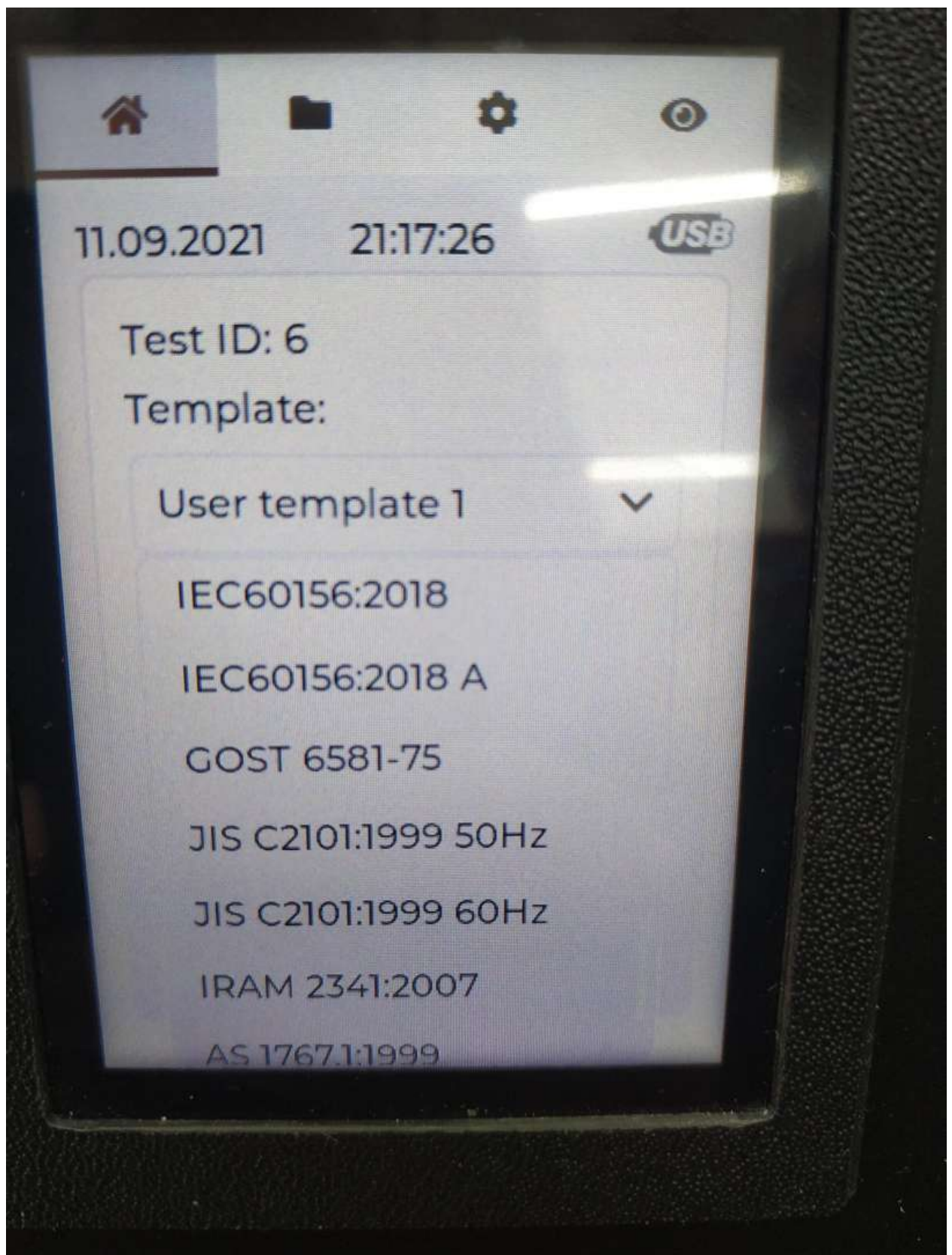
Advantages

- automated and accurate measurement of breakdown voltage up to 100 kV;
- instantaneous (4 μ s) test voltage shutoff upon breakdown;
- an integrated printer is available, measurement results can be printed out;
- there is a USB connector for connecting a flash drive; it is possible to record the information from the test data archive in order to further rerecord it on a computer;
- easy and convenient to operate and maintain.



Photos









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