ISO 9001:2008 certified company

Transformer Oil Express Test Kit

Model

TOR-1

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INTRODUCTION

TOR detects moisture in oil quickly and precisely – even in miniscule quantities.

Express test kits have been developed specifically to detect the amount of moisture in dielectric insulation oils, which is necessary for normal operation and timely maintenance of electric equipment.

The high precision and excellent long-term stability make this testing device an ideal solution for continuous monitoring of moisture in transformer oils.

The test kit is compact, reliable, simple to operate and multifunctional; it is the best choice for moisture measurement. The device also measures such parameters as water activity (aw), temperature (t), and calculates absolute water content in ppm. The device combines everything necessary for simple and comfortable operation: two digital displays to indicate sample temperature moisture content in ppm, a detachable sample container and two buttons: power and measurement.

The test kit combines a wide range of capabilities and economy. Changing a sample has never been easier: simply change the detachable sample container and press the measurement button to start!

Operation of the device includes:

1. Pressing the POWER button; the power light comes on,
2. Rinsing the container with the sample oil,
3. Placement of the container and pressing of the TEST button.

   A blue light is on during the test. After a brief time to stabilize sensor readings, the indicators display moisture content and temperature of the sample.

Industrial components are installed inside the device.
The IP protection of the kit allows to use it directly on site near the transformer. The device is equipped with heavy-duty anti-vandalism buttons, metal protection of the sensor, stabilizes power and integrated electric protections for high reliability and ruggedness. It is a true field tester for use even in adverse conditions.

TESTER APPLICATION

TOR-1 transformer oil tester is designed for measurement of the weight ratio of dissolved water in mineral electrical insulation oils with viscosity below 70 cSt at **50°C**.

When operating this instrument, please keep in mind that the device provides only orientation for quick moisture content measurement, and that final analysis must be performed by a certified laboratory.

TOR-1 is not a laboratory device, but an express tester. Standard laboratory tests take 24 hours at best, with great labor and financial costs, as well high price. Using TOR-1 allows to quickly analyze transformer oil and make informed decisions on site in the field.

Operation conditions:

- ambient temperature: 0 to +55°C;
- atmospheric pressure: 630 to 800 mm. Hg;
- elevation above sea level up to 1000 meters;
- explosion/fire proof location.

SPECIFICATIONS

2.1 Primary specifications are listed in **Table** 1.

Table 1

No	Parameter	Value
1.	Operating range, aw (active water (aw))	0...1
2.	Dissolved water content measurement range, ppm	0....500
3.	Precision at 20 °C	±0.02 aw (0...0.9 aw) ±0.03 aw (0.9...1 aw)
4.	Temperature measurement	Yes
5.	Oil temperature, °C	0...55
6.	Power requirement, W	10
7.	50 Hz AC voltage, V	220
8.	Dimensions, mm max - length - width - height	 180 180 380
9.	Weight, kg max	6

SCOPE OF SUPPLY

Table 2

№	Item	Q-ty, pcs
1	TOR-1 transformer oil express tester with spare parts.	1
2	Documentation: - TOR-1 manual;	1

DESIGN AND PRINCIPLE OF OPERATION

TOR-1 transformer oil express tester (**Figure 1**) consists of: **1** – body; **2** – back panel; **3** – moisture sensor case; **4** – on-off button; **5** – oil chamber; **6** – moisture sensor; **7** – LCD panel; **8** – sensor cover **9** – spill tray; **10–** printer; **11** –220 V power cable;

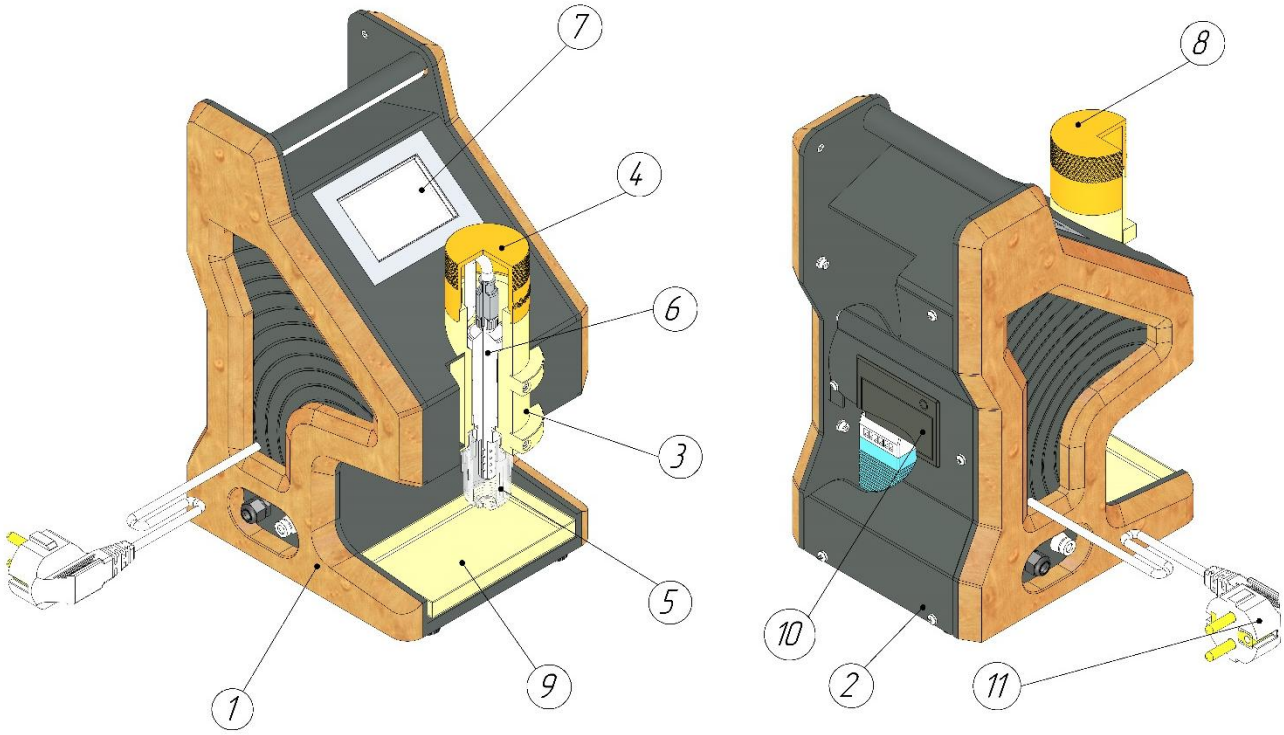
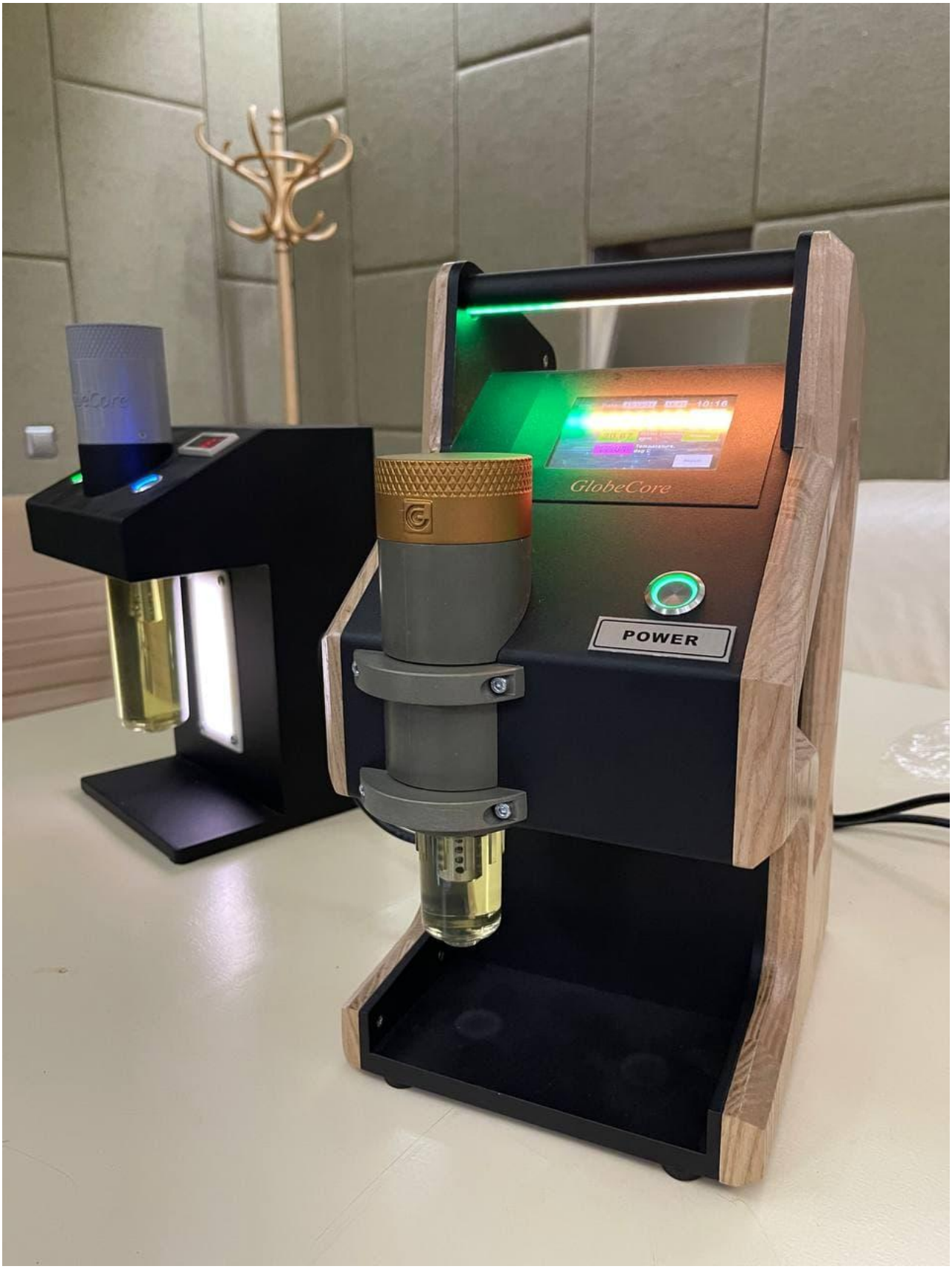


Figure 1 –TOR-1 general view



All pictures are given for reference