

1. Application domain

The transportable cased isolating and regulating transformers are universally employable as low-impedance alternative voltage sources, especially in production departments and during the assembly of measurement positions in laboratories, test facilities and service workshops.

The galvanic separation between primary and secondary side with a test voltage of 3,75 kV and the design as class I protection makes these devices particularly adequate in electrical workshops for the protective separation of devices from the electrical and electronic domains during repairs. It is only designed for use in dry rooms.

The output voltage of the laboratory isolating and regulating transformer can be easily varied between approx. 1 and 250V using a variable transformer. The device may be loaded with the respective nominal current over the entire settings range during continuous operation.

The main advantages of this kind of voltage setting is the constant characteristic curve of the output voltage and the relatively small internal resistance.

2. Design

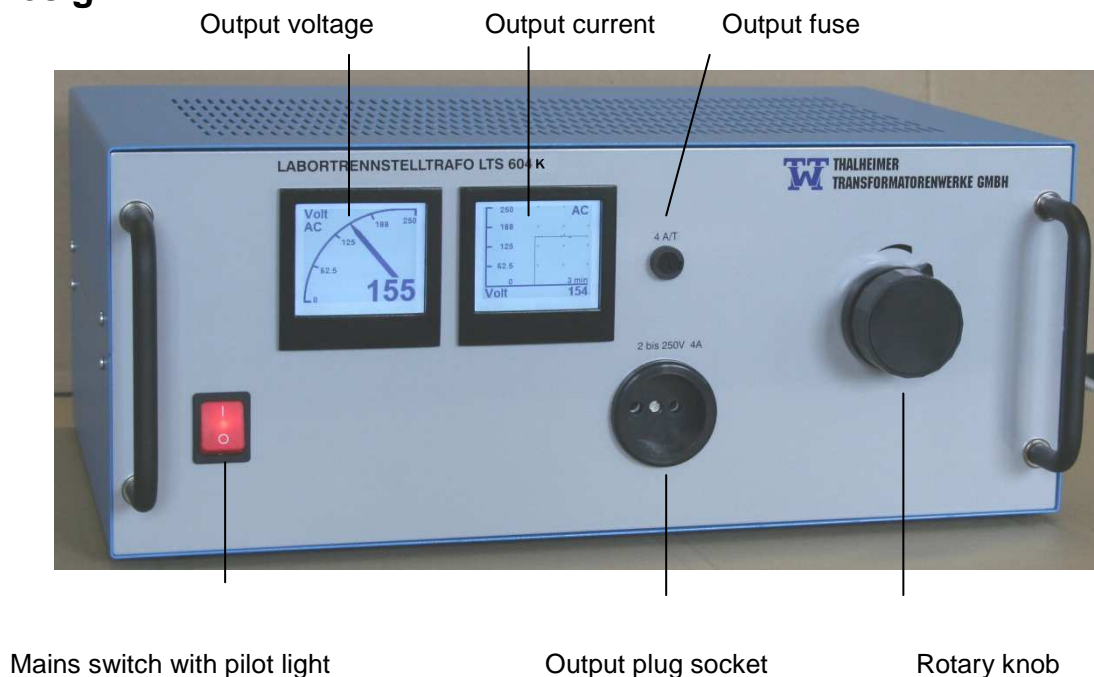


Fig. 1 LTS 604K

Fig. 1 shows the laboratory isolating and regulating transformer in LTS 604 K design. The other designs differ in their technical values (see table). Mechanically, the laboratory isolating and regulating transformers consist of a steel sheet construction

which contains all components. This design is protected by respectively one upper and one lower sheet and provides IP 20 protection.

On the input side, the isolating and regulating transformers have an IEC cold device plug on the rear side. The front plate contains all operating and display instruments including the output plug socket. The displays for current and voltage show the true RMS measured values as indicator dials and digital displays and have a white background illumination.

The insulation monitor monitors the insulation resistance between both isolated live contacts of the output connectors and the neutral connector (ground potential).

The signaling thereby has the following meaning:

Operating LED green

Alarm LED yellow when the impedance goes below the $R \leq 50 \text{ k}\Omega$ limit value

Acoustic signal sound (approx. 2,4kHz) when the limit value is crossed

The keys have the following functions:

"Test" key - starts the manual function verification of the insulation monitor

"Quit" key - Error acknowledgment;

Press 1x to turn off signal sound, 2x to turn off yellow LED

If the error source is not eliminated, the alarm is automatically continued until the error is remedied.

Additionally, a function self-test is performed after each switching on and cyclically every 8 hours during operation.

If an insulation fault occurs, the yellow LED and warning signal switch on permanently. The warning signal sound can be reset using the acknowledgment key. The yellow LED stays lit until the error is fixed.