Glow stabilizers and neon lamps   03.09.2013

The stabilizer is operated with a series resistor (as in practical operation - a suitable resistor must be connected manually).

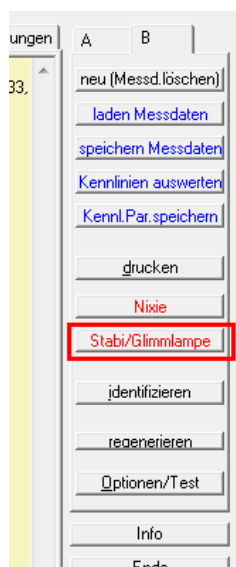Depending on the hardware the measurement of th voltage at the stabilizer is done differently:

- Starting with hardware version 6 of the G3 board the voltage is measured using the G3-board (for this purpose there is a switching relay and a trimmer present). With this circuit voltages up to 600 V can be measured.

- For older RoeTests the voltage is determined by calculation. This induces some inaccuracy as the value of the series resistor can be determined only approximately
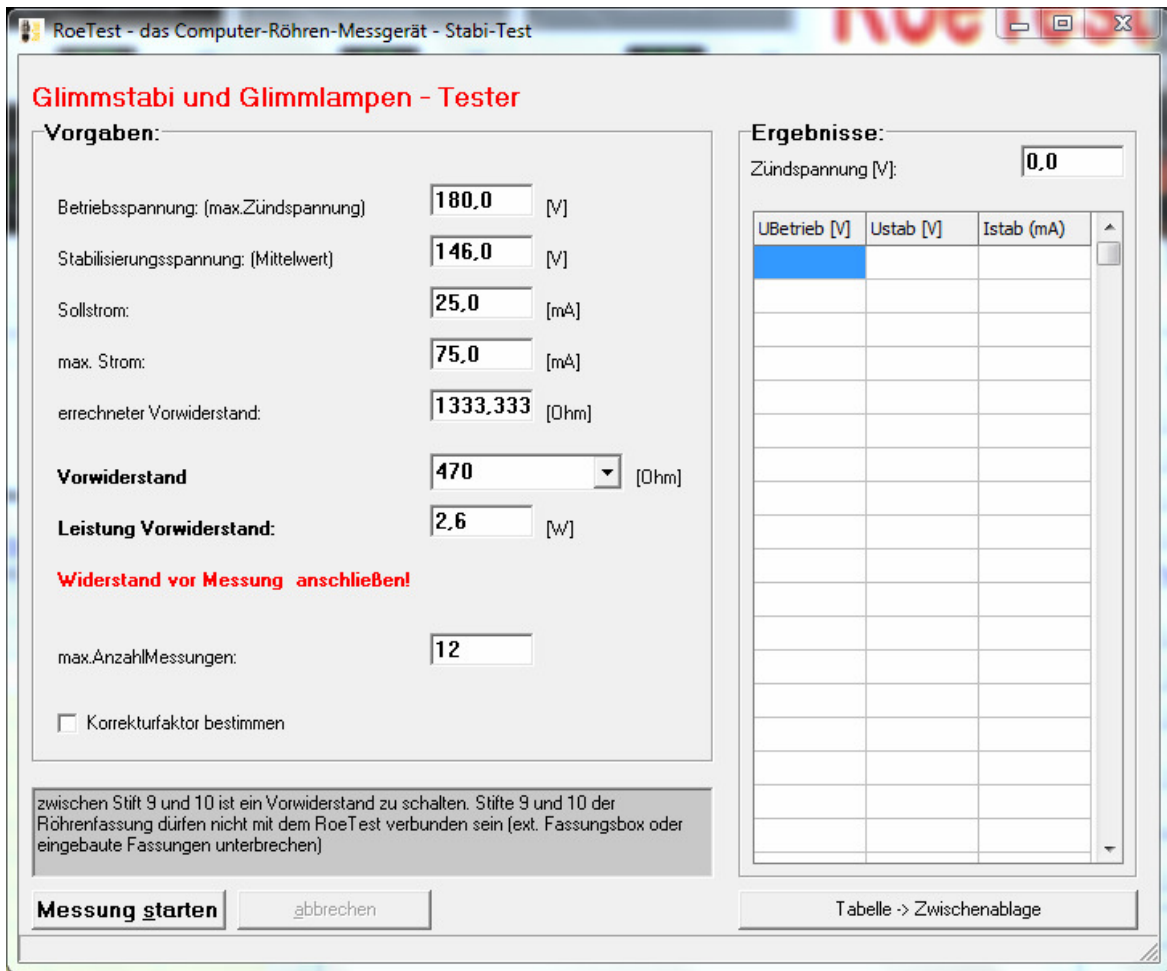
Note:

Please keep in mind: Ustab is determined approximately. The more measure values are recorded the more precise is the approximation. A more precise determination is not necessary and also not possible as Ustab and Uzünd depend on many criteria (quality of the stabilizer, temperature of the stabilizer, aging, environment lighting...). Important is that the stabilizer ignites up to the maximal defined voltage and does stabilize. The steeper the characteristic curve the better is the stabilization quality of the stabilizer.

To use the stabilizer test proceed as follows:
- load the tube data
- enter stabilizer mode:

RoeTest - das Computer-Röhren-Messgerät - Stabi-Test

Glimmstabi und Glimmlampen - Tester

Vorgaben:

Betriebsspannung: (max.Zündspannung)	180,0	[V]
Stabilisierungsspannung: (Mittelwert)	146,0	[V]
Sollstrom:	25,0	[mA]
max. Strom:	75,0	[mA]
errechneter Vorwiderstand:	1333,333	[Ohm]
Vorwiderstand	470 ▼	[Ohm]
Leistung Vorwiderstand:	2,6	[W]

Widerstand vor Messung anschließen!

max.AnzahlMessungen:	12	

☐ Korrekturfaktor bestimmen

zwischen Stift 9 und 10 ist ein Vorwiderstand zu schalten. Stifte 9 und 10 der Röhrenfassung dürfen nicht mit dem RoeTest verbunden sein (ext. Fassungsbox oder eingebaute Fassungen unterbrechen)

Messung starten | abbrechen

Ergebnisse:

Zündspannung [V]: 0,0

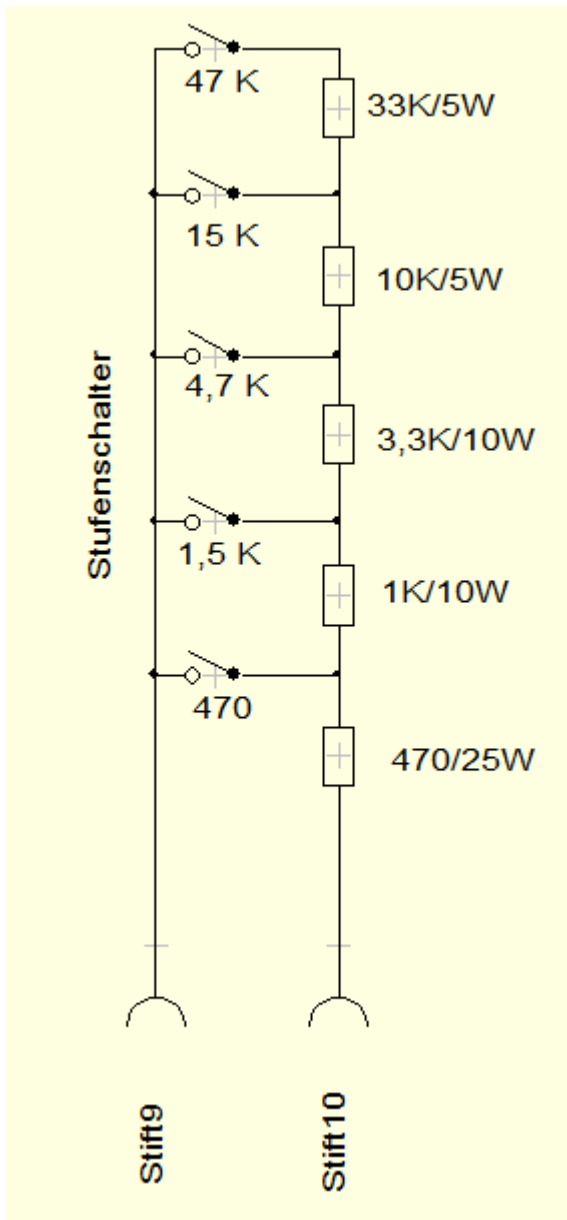| UBetrieb [V]	Ustab [V]	Istab (mA)

Tabelle -> Zwischenablage

On the basis of the tube data a series resistor value is calculated and a **real resistor** (as well as the required power) is suggested. This resistor must be connected to the **pin connections 9 and 10** of the RoeTest. As the pins 9 and 10 are used for the resistor glow stabilizers must not be inserted to normal sockets that use pin 9 or 10 (there only very few tube types). These special types can nevertheless be tested when the connection wires of pin 9 and 10 of the socket to the Roetest are disconnected and the two pins are manually connected (K to ground and A to pin 9). Those using external adapter boxes are well off (either you have to use adapters). Stabilizers with up to 8 (wired) connections can be measured using normal tube sockets/socket boxes.

You can connect separate resistors or build a resistor box according to the following circuit:

Stufenschalter

47 K — 33K/5W

15 K — 10K/5W

4,7 K — 3,3K/10W

1,5 K — 1K/10W

470 — 470/25W

Stift9   Stift10

The resistors need not be very precise as they are only used for current limiting.

Measured are the ignition voltage as well as a series of currents at different values of Ustab. At the end of the measurement the measure value will be determined that matches the tube data best for the measured current (will be marked green). Data are automatically transferred to the main form (static data and characteristic curve). If you want to just test a stabilizer you do not need a complete series of measures of course. You just can abort the measurement.

Data in the Database:

The fields have a slightly different meaning than for normal tubes:

Data field	Meaning
Limit of anode voltage	= max. ignition voltage according to data sheet
max. cathode current	= max. current
Nominal value of anode voltage	= mean UStab according to data sheet
Nominal value anode current	= mean current at UStab according to data sheet

The data must always be entered to the database for "System 1".

Miscellaneous:

If there is a helper anode it normally would have to be connected (possibly using a series resistor) with a positive voltage. The helper anode is not used with the RoeTest. Such tubes must be tested like other glow stabilizers. For this reason the ignition voltage is a little higher compared to the value from the data sheet.