

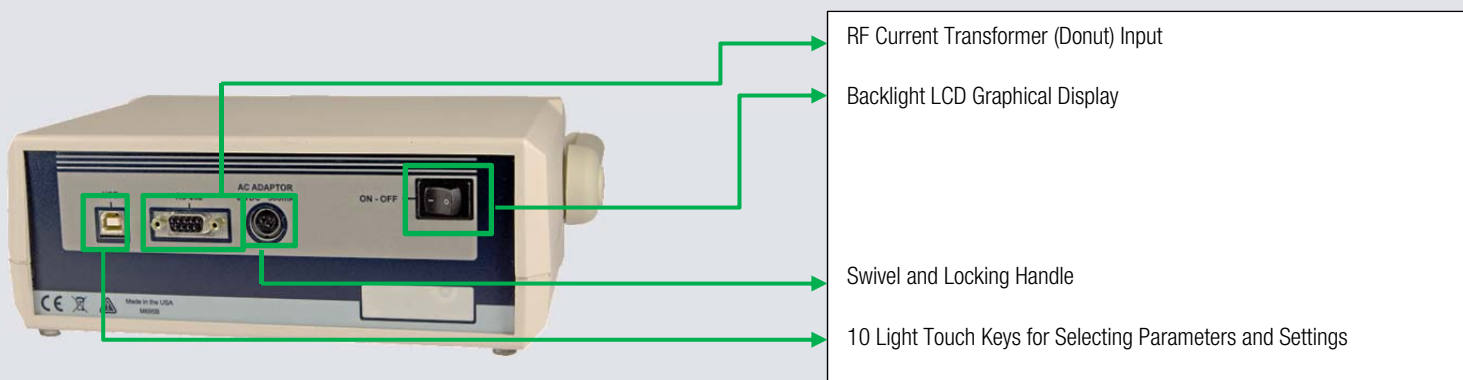
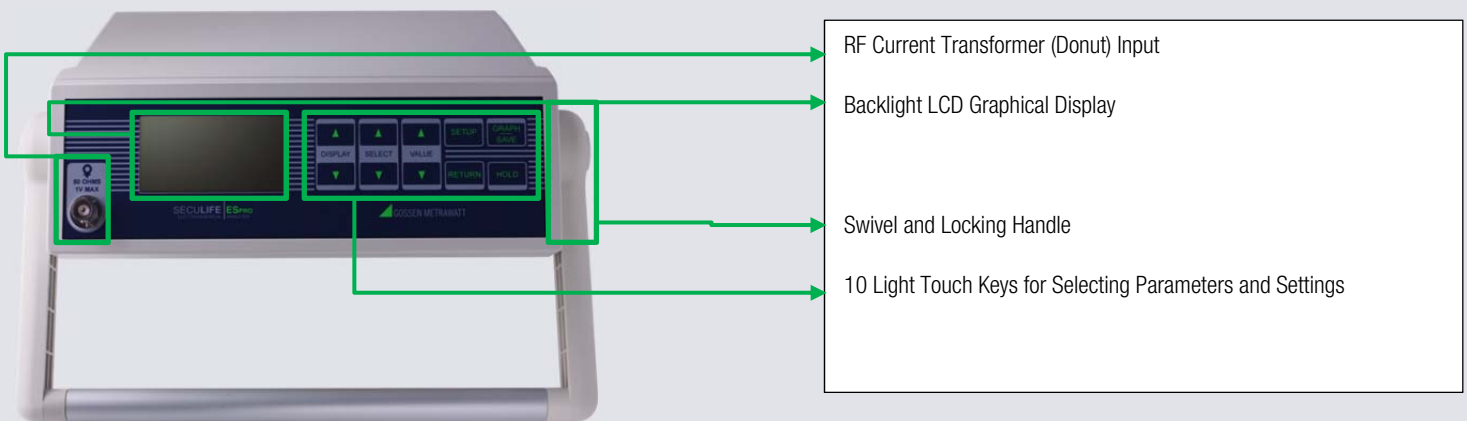
QUICK SETUP GUIDE

SECULIFE ES_{PRO}



The SECULIFE ES_{PRO} Electrosurgical Unit Analyzer is a high-accuracy True RMS RF Voltmeter designed to be used in the routine performance verification of Electrical Generators. The SECULIFE ES_{PRO} offers a higher degree of accuracy than previously attainable with conventional Electrosurgical Unit Analyzer designs. The SECULIFE ES_{PRO} has been designed to be used in conjunction with an external RF Current Transformer (Pearson Electronics Model 411 and 4100 recommended) and external precision load resistors (Vishay Dale NH-250 Precision 1% tolerance resistors recommended) to measure various parameters relating to the routine service of Electrosurgical Generators. The SECULIFE ES_{PRO} is microprocessor based and utilizes a combination of unique hardware and software to provide accurate and reliable test results.

SECULIFE ES_{PRO}



Precision Load Resistance

5 Ω – 5000 Ω



Current Transformer

Ratio from 0.1:1 or 1:1



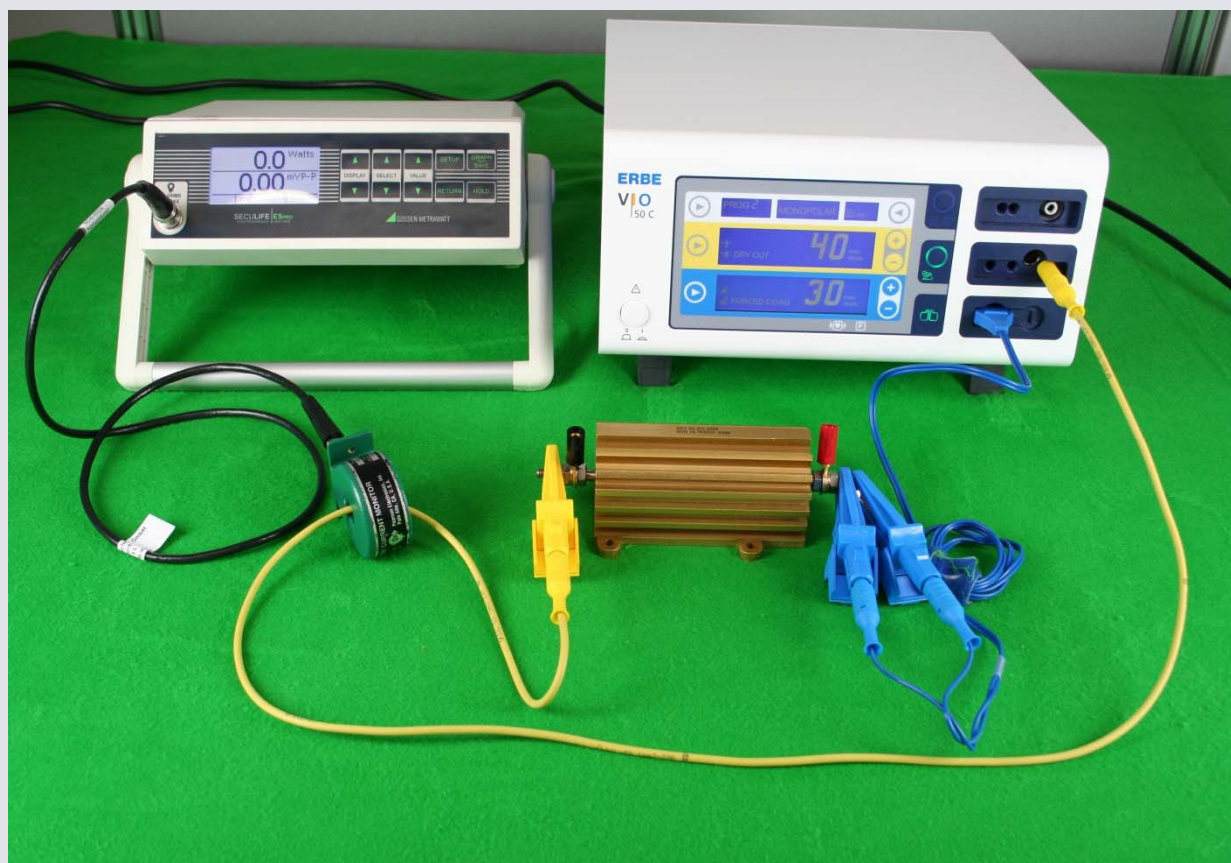
Verification of RF Output Power (monopolar)

1.) Connection of SECULIFE ESPro with resistor, current transformer and DUT

A connection between resistor, current transformer and DUT must be established before checking the RF output power (monopolar).

The following cables must be connected to this end:

- Connect the alligator clip (yellow) with the resistor, conduct it through the current transformer and plug it into the monopolar terminal of the DUT provide for this purpose (see yellow markings).
- Insert the plug connector (blue) into the neutral electrode socket of the DUT. Establish a connection with the resistor by fixing two alligator at the resistor (see blue markings).
- The current transformer is connected to the SECULIFE ESPro with a BNC measuring cable (black markings).



2.) Function test

The RF output power is checked by comparing the value shown on the display of the DUT (here: 40 Watt) with the value issued by SECULIFE ESPro (here: 42.6 Watt).

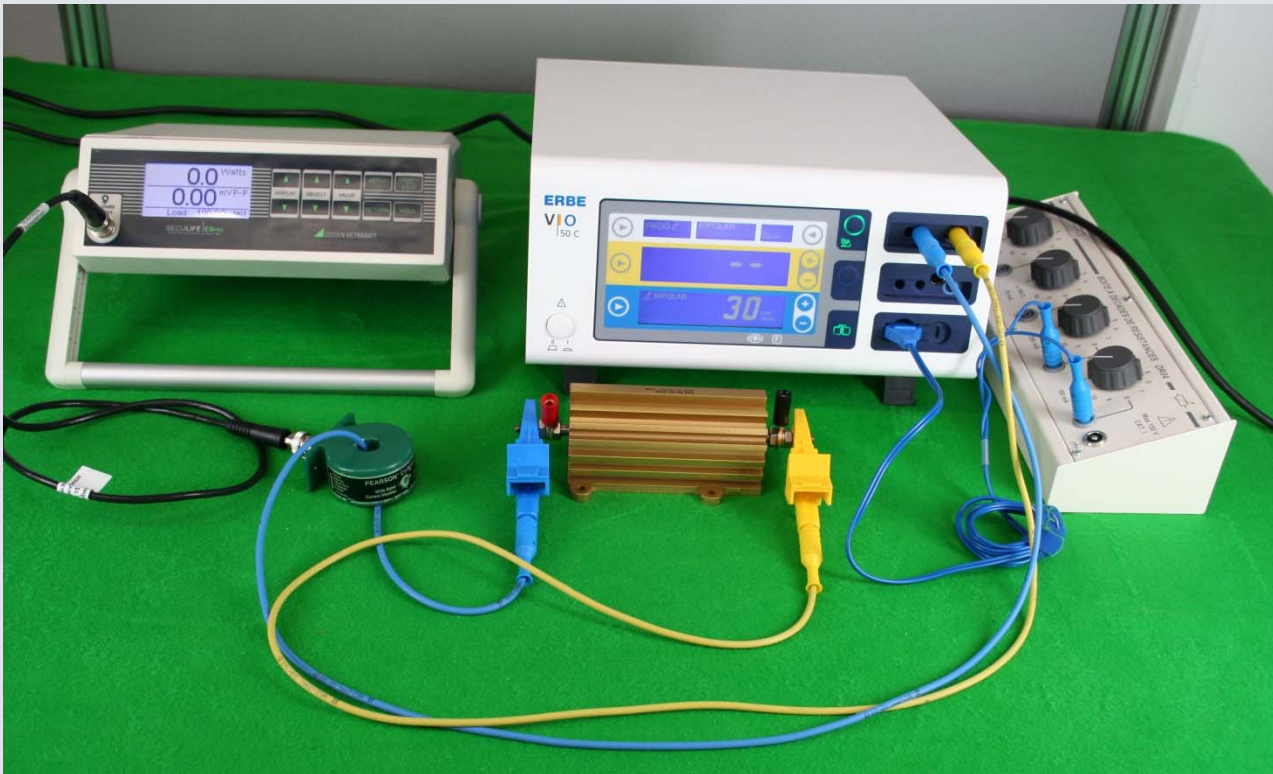


Detail: DUT display



Detail: SECULIFE ESPro display

Verification of RF output power (bipolar)



1.) Connection of SECULIFE ESPro with DUT, resistor and current transformer

The following connections must be established before measuring the RF output power (bipolar).

- Connect the plug connector (blue) with the resistor, conduct it through the current transformer and plug it into the bipolar socket at the DUT
- Insert the yellow clamp cable into the bipolar socket at the DUT and connect it with the resistor.
- Establish a connection between the current transformer and SECULIFE ESPro via BNC cable.

Note: The blue cable, which is plugged into the neutral electrode socket of the DUT on one end and into the decade resistor on the other end, is used for approaching the trigger point.

2.) Function test

Comparison of the value shown at the DUT display (here: 30 Watt) with the one issued by SECULIFE ES_{PRO} (here: 30 Watt).



Detail: DUT display





Detail: SECULIFE ES_{PRO} display

Graph Mode

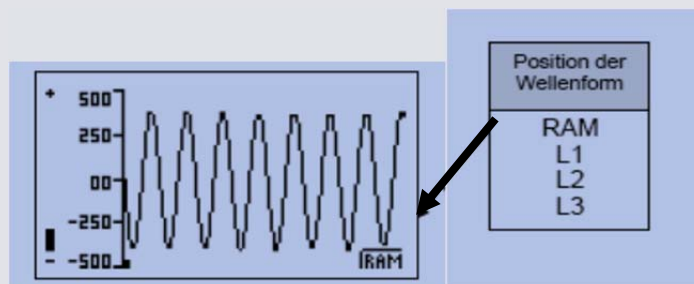
The GRAPH MODE allows the user to view the measured waveform in the display. The horizontal axis can be zoomed in to display higher frequency waveform components. The vertical axis is auto-scaling and cannot be adjusted. Any of the stored waveforms can be graphed. Additionally, if the unit is placed in the HOLD MODE, the user can adjust which portion of the waveform is being displayed.


WARNING: Due to the limited number of pixels in the display, this should not be used as a calibrated reference, rather as a quick check of the waveform being measured.

Use  to enter the GRAPH MODE.

Use  to exit the GRAPH MODE.


Selecting a Waveform:

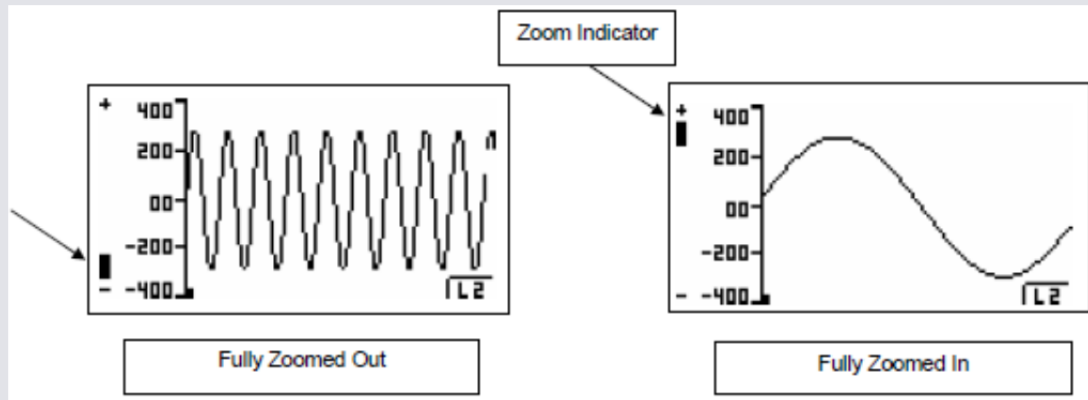


Use  to select the waveform to be graphed, Ram or Location 1-3.


Zooming

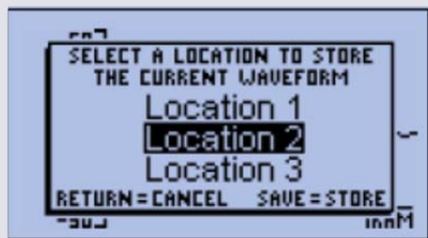





Use  to zoom the graph in and out. The Zoom Indicator is a bar that moves along the left side of the Graph Screen to indicate the Zoom level shown in the current viewing window. It adjusts from Fully Out (-) to Fully In (+).



Saving

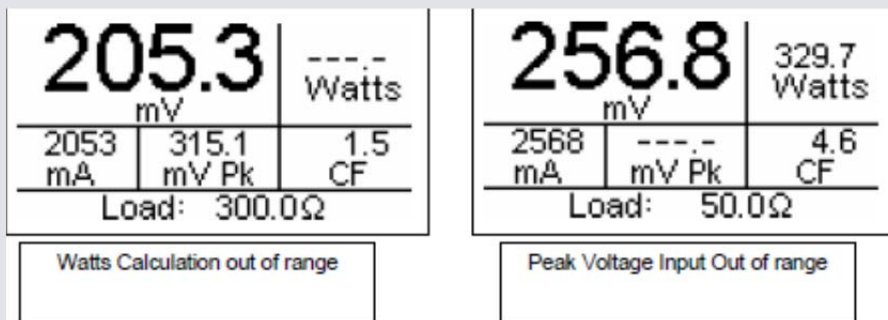
To save the displayed waveform, use  to enter the SAVE MODE.



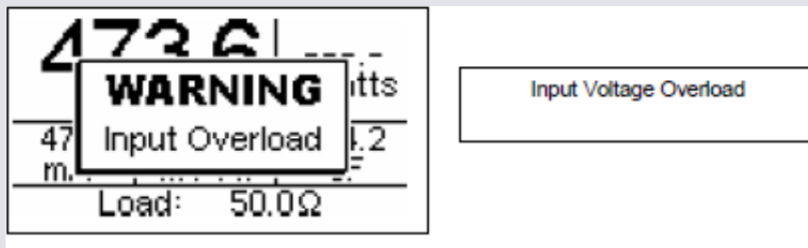
Use  to select the desired storage location, then  to save the waveform, or  can be pressed to cancel the save function. Once the save is complete, the newly saved waveform will be displayed.

Error Messages

Several error messages are provided to indicate invalid operating conditions. Any values that are over range will be displayed as dashes.

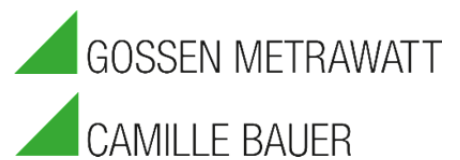


When the input voltage rises above the range that is measurable by the system, the "WARNING Input Overload" message will be shown.



WARNING: Although the input is protected from damage at these voltages, the user should immediately remove any input voltage when this message is shown.

GMC INSTRUMENTS



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