



## **Electrosurgical Analyzer for function tests of HF Surgical Equipment in accordance to IEC 60601-2-2**

- ☒ menu guided cursor operation or PC-operation
- ☒ HF - power measurement
- ☒ HF - voltage measurement / current measurement
- ☒ HF - leakage current measurement
- ☒ neutral electrode test
- ☒ test load resistances 10 Ohm, 25 – 6375 Ohm  
in steps of 25 Ohm
- ☒ 6 selectable pre-resistances
- ☒ option - suit case

# Technical Data

|                                            |                                                                                                            |                       |                                                                                                                                                  |                             |
|--------------------------------------------|------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| Line voltage:                              | 83 - 264 V ac, 50 /60 Hz                                                                                   | Measurement           | Range                                                                                                                                            | Error                       |
| Power consumption:                         | 50 VA                                                                                                      | HF output power:      | 0 - 500 W                                                                                                                                        | ± 1 W or<br>± 5 % of value  |
| Class:                                     | 1                                                                                                          | HF leakage current:   | 0 - 250 mA                                                                                                                                       | ± 2 mA<br>± 5 % of value    |
| Environmental temperature:                 | + 5 - + 40°C                                                                                               | HF-current:           | 0 - 5000 mA                                                                                                                                      | ± 2 mA or<br>± 5 % of value |
| Storage temperature:                       | - 10 - + 50°C                                                                                              | HF-current Peak:      | 0 - 5000 mA                                                                                                                                      | ± 2 mA or<br>± 5 % of value |
| Measuring ranges:                          |                                                                                                            | Load resistors:       | 10 Ohm,<br>25 - 6375 Ohm                                                                                                                         | ± 3 %                       |
| HF-current:                                | 0 - 5000 mA                                                                                                | Keyboard:             | 6 key foil keyboard                                                                                                                              |                             |
| HF-current Peak:                           | 0 - 5000 mA                                                                                                | Display:              | 4 x 20 char LCD B/W display                                                                                                                      |                             |
| Discrimination:                            | 0,1 mA                                                                                                     | Interfaces:           | 1 x USB for PC interface<br>1 x RS-232 for PC interface<br>1 x RS-232<br>for additional test devices                                             |                             |
| HF- output power:<br>(in dependence of RL) | 0 - 500 Watt                                                                                               |                       |                                                                                                                                                  |                             |
| Crest Faktor: (V2)                         | 1 - 10 (bei > 1000 mA)                                                                                     | Testing plugs:        | 2 x safety plugs 4 mm for<br>HF power<br>2 x safety plugs 4 mm for<br>HF leakage current<br>1 x safety plug 4 mm for PE<br>1 x potential balance |                             |
| HF-leakage current:                        | 0 - 250 mA                                                                                                 | Accessories:          | 1 x adapter for potential balance<br>1 x USB cable<br>1 x power cord                                                                             |                             |
| Discrimination:                            | 0,1 mA                                                                                                     | Selectable languages: | german, english, french, polish<br>spanish, italian, portuguese, turkish                                                                         |                             |
| Neutral electrode test:                    | 0 - 1000 Ohm                                                                                               |                       |                                                                                                                                                  |                             |
| Bandwidth:                                 | 0,3 - 10 MHz                                                                                               |                       |                                                                                                                                                  |                             |
| Measuring principle:                       | thermal electric converter                                                                                 |                       |                                                                                                                                                  |                             |
| Load resistors:                            | 10 Ohm<br>25 Ohm - 6375 Ohm<br>In steps of 25 Ohm                                                          |                       |                                                                                                                                                  |                             |
| Swing in time:                             | < 3 sec                                                                                                    |                       |                                                                                                                                                  |                             |
| Output power:                              | 500 W: 1 min on, 5 min off<br>permanent: max. 200 W at 25°C<br>environmental temperature<br>(50 – 800 Ohm) |                       |                                                                                                                                                  |                             |
| Mechanical data:                           | light way metal case IP20                                                                                  |                       |                                                                                                                                                  |                             |
| Dimensions:                                | 343 x 88 x 280 mm (W x H x D)                                                                              |                       |                                                                                                                                                  |                             |
| Weight:                                    | approx. 3,8 kg                                                                                             |                       |                                                                                                                                                  |                             |

## Description of functions:

HF-400 serves to test the function of HF Surgical Equipment. In accordance to the instructions of the manufacturer of such surgical devices, the user can measure the HF output power and the HF leakage current given on a load resistor. The load resistor is adjustable to 10 Ohm and from 25 – 6375 Ohm in steps of 25 Ohm. The test parameters for testing can be laid down in a test instruction and can be automatically tested with a PC. This makes it possible to reduce the time for testing. In the use as a multi-functional test device, the measured values will be directly displayed. For example:

HF output power  
HF leakage current  
HF current, RMS  
HF voltage, RMS

## HF output power:

During the measurement of power, firstly the software sets the prescribed load resistance to 10 Ohm or from 25 Ohm to 6375 Ohm in 25 Ohm steps. Than the HF output power can be send to the HF-400 and is measured. An automatic range switcher takes care of the optimal control of the RMS-converter. The RMS converter, based on a thermal conversion principle and together with the driver module, is designed for frequencies up to 10 MHz.

## HF leakage current:

The high-frequency leakage current is measured through a 200 Ohm load resistor. For this test, the load resistor is adjustable.

(We reserve the right to make technical changes without prior notice 09/2025)