

## Testing System for function tests of ECG devices

- ☑ ECG impulse output
- ☑ periodic signals
- ☑ arrhythmia output
- ☑ pacemaker outputs
- ☑ simulation of respiration
- ☑ signal output according to IEC 60601
- ☑ user specific language setting





## Technical Data

Line voltage:

Nominal power: Protection class:

Environmental temperature: Storage temperature:

ECG impulse amplitude:

ECG signal duration:

FCG impulse form:

83 - 264 V ac, 50 / 60 Hz or internal accumulator operation max. 25 VA - internal power supply Internal power supply

+ 5 - + 40 °C - 10 - + 50 °C

 $1 - 5 \text{ mV} \pm 1\%$ in 1 mV steps 1 - 200 ms ± 1%

in 1 ms steps sinus sinus square triangle rectangle, trapeze, ISO, ventricular fibrillation, ventricular tachycardia, mains frequency, NSR

ECG impulse frequency:

Signal frequency variable:

Signal frequency sine:

Respiration:

Interface: Testing device connection:

Digital display: Keyboard: Accessories:

Mechanical data: Dimensions:

Weight: Selectable languages:

10 - 300 bpm ± 2 % in 1 bpm steps 1 - 100 Hz ± 2 %

in 1 Hz steps 0,3 Hz ± 2 % basic value ± 1 Ohm

1 x RS-232 for PC-connection 10 sockets 4 mm for ECG 4 x 16 char display 6 key foil keyboard 10 x STA8 ECG adapter clip

1 x charger

light weight metal case IP20 138 x 230 x 37 mm (W x H x D)

approx. 0.5 kg

german, english, french, polish spanish, Italian, portuguese, turkish

The ES-300 serves as a test-signal generator for ECG impulses. These ECG impulses can be used for the functional testing of the signalrepresentation and signal-evaluation of ECG monitors. Furthermore, the extended ECG functionality can be tested over a respirationfunction with apnoea-alarm-control.

The execution of a signal-output can be done with the PC-Software. The results of the signal-representation can be determined, assessed and stored.

PC-Software can be used for a flexible output of the offered waveforms. Consequently, integration into complex test instructions and into automatic test-sequences is possible. For that reason, a high-quality documentation of signal-representation and evaluation of an ECG appliance is possible.

Because of the, as far as possible, freely configurable and variable ECG signal forms, a large variety of signal sequences can be brought to the output. The simulation of arrhythmic signal forms offers the possibility to test more complex devices in accordance with a standard.

The generation of the calibration impulse CAL after IEC 60601-2-51 enables practical operating function-controls for manufacturers and examiners.

## Level ratios:

-	Voltage
Abl. I (L - R)	+ 1,00 mV
Abl. II (F - R)	+ 1,56 mV
Abl. III (F - L)	- 0,56 mV
N – R	+ 0,59 mV
N – L	+ 1,59 mV
N – F	+ 2,15 mV
N – C1	+ 0,59 mV
N – C2	+ 1,18 mV
N – C3	+ 1,75 mV
N – C4	+ 2,03 mV
N – C5	+ 2,83 mV
N – C6	+ 3,35 mV

(Technical modifications and errors reserved. 09/2022)





