ES-Module ES

The GS Testing Module for function tests of ECG devices

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

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Technical Data

ECG impulse amplitude :	1–5 mV ± 1% in 1 mV steps
ECG signal duration :	1–200 ms ± 1% in 1 ms steps
ECG impulse form :	sinus sinus square triangle rectangle trapeze ISO ventricular fibrillation ventricular tachycardia mains frequency QRS
ECG impulse frequency :	10 - 300 bpm ± 2 % in 1 bpm steps
Signal frequency variable :	1 - 100 Hz ± 2 % in 1 Hz steps
Signal frequency sine :	0,3 Hz ± 2 %
Respiration :	Basic value ± 1 Ohm

The GS test module ES serves as test-signal generator for ECG impulses. These ECG impulses can be used for the functional test of the signal-representation and signal-evaluation of ECG monitors. Furthermore, the extended ECG functionality can be tested over the respiration-function with apnoea-alarm-control.

The GS-X basic unit V4 or V5 and a PC are required for testing with this plug-in module.

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, an integration into complex test instructions and into automatic test-sequences is possible. For that reason, a high-quality documentation of the signal-representation and signal-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 and ANE after IEC 60601-2-51:2003 enables practical operating function-controls for manufacturers and examiners.

-	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

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