UHS 3000

Electrophysiologic Innovation in a Modular Design

Universal Heart Stimulator

BIOTRONIK

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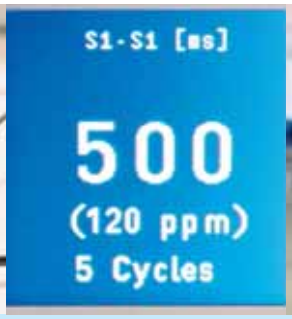
The UHS 3000 sets new standards for diagnostic electric cardiac stimulation. The modular, multi-channel device can be installed entirely according to the needs of your cath lab – and thus integrated perfectly into your workflow.

Numerous developments offer significant advantages compared to the predecessor model UHS 20. But the proven functionality and ease of handling of the UHS 20 have been retained.

Electrophysiologic Innovation

- Dual Channel
- Two-room installation
- Intuitive operation
- Memory for frequently used stimulation patterns



... in a Modular Design

Dual Channel

- Two alternative stimulation/sensing channels
- One additional sensing channel

Featuring two stimulation/sensing channels and an additional sensing channel, the UHS 3000 enables flexible handling.

Signals are detected independently of each other, and stimulation pulses are delivered without having to reposition the catheter or change the cable connections.

- High signal quality
- No repositioning of catheters
- No cable replugging

More Channels - More Applications

Two-Room Installation

- Separate Setup of Control and Stimulation Units
- Distances of up to 30 meters possible

The UHS 3000 always adapts itself to current needs. In no time, you can separate the stimulation and control units from each other. A range of connection cables allow a distance of up to 30 meters between the units.

If the stimulation and control units are joined to each other, the device uses less surface space than comparable devices.

- Stimulation unit can be placed close to the patient if needed
- Easy integration of the control unit into the EP lab system
- Minimal surface space when units are joined

Highly Flexible

Memory

- Configurable Settings for Every Stimulation Mode
- Seven Additional Personal Setups

The UHS 3000 is user-optimized. Up to seven personal setups are always available to the user. A profile can be called up in a matter of seconds.

You can configure the basic settings for every stimulation mode. Switching between the various stimulation modes can be done without any waiting time.

- User profile called up in seconds
- No waiting when switching modes
- Efficient measuring sequences

Everything in One Keystroke

Technical Data

Stimulation Parameters	
Pacing Modes	Fixed, Inhibited, Sensed, SNRT, WCL, DUAL Mode, High Rate
Number of Stimulation Channels	2
Pulse Amplitude (A+V))	0.1 - 12 V
Pulse Width ((A+V))	0.1 - 2.9 ms
Sensitivity	1 - 20 mV
Refractory Period	130 - 600 ms
Selection of Trigger Site (Sensing Site)	Selectable from: stim.site, external trigger, sensing channel (only DUAL mode))
Display of Measured Spontaneous Intervals	Refractory time set to 4000 ms
Definition of Minimally Adjustable Basic Interval S1-S1 for the Modes Fixed, Inhibited, Sensed, SNRT, WKB	200 - 150 ms
Display of Lead Impedance	Warning, if impedance < 20 or > 2500 Ω No warning, if impedance > 50 or < 2000 Ω
Volume of signal and brightness of background lighting adjustable	

Parameters for Modes Fixed, Inhibited, Sensed for the Indication of Extra Stimuli)	
Stimulation Mode with Possibility of PES Delivery	Fixed, Inhibited, Sensed
Selection of Channel for PES Delivery	Channel 1 or 2
PES Modesi	OFF, MANUAL, AUTO INC, AUTO DEC
Setting Interval (S1 – S1)	Min. basic interval - 3000 ms
Setting Interval (S1 – S2)	15 (lower range limit) - 3000 ms
Setting Intervals (S2 – S3, S3 – S4, S4 – S5)	15 (lower range limit) - 1500 ms
Setting Number of Consequential Intervals (S2 – S4)	Any consequential interval can be deactivated, except S1-S2. All delays following a deactivated delay are deactivated.
Selection of Actual Delay (Auto-Delay)	Each consequential interval can be defined as Actual Delay

Setting Upper and Lower Step Width for Automatic Increment/Decrement of the Actual Delays	1 – 99 ms
Setting Switch between Upper and Lower Step Width	200 – 600 ms
Setting Inhibition Cycles	0 – 99
Setting Behavior after Delivery of Consquential Intervals	Selectable: Pause or Stop
Setting Pause after Delivery of Consquential Intervals	2 – 9 s, in Sensed Mode 0 – 9 s

Parameters for SNRT Mode (Sinus Node Recovery Time)	
Pacing Mode for Measurement of SNRT	Mode "SNRT"
Selecting Stimulation Channel	Kanal 1 oder 2
Setting Stimulation Interval (S1 – S1)	Min. basic interval - 3000 ms
Setting Unit for Stimulation Interval	ms or ppm
Setting Stimulation Duration	30 – 120 s
Setting Measurement Time after Stimulation	5 – 20 s
Display of Post-Stimulation Pauses after Stimulation	Display of: primary pause, secondary pause, tertiary pause, quartiary pause

Parameter for WCL Mode (Wenckebach Cycle Length)	
Stimulation Mode for Measuring the Wenckebach Point	Mode "WCL"
Selecting Stimulation Channel	Channel 1 or 2
Setting Start Value for Stimulation Interval (S1 – S1)	Stop value – 3000 ms
Setting Stop Value for Stimulation Interval (S1 – S1)	Min. basic interval to start value
Setting Units for Start and Stop Value	ms or ppm
Setting Abbreviation Interval (Step-Size)	-1 to -99 ms (+1 to +10 ppm)
Setting Number of Cycles before Decrement	10 – 99
Displaying Current Stimulation Interval (S1 – S1)	In the range of start value to stop value

Parameters for DUAL Mode	
Stimulation Mode DUAL Mode	Mode "DUAL"
Selecting Sensing Channel (Trigger Location)	Selectable from: Stimulation channel 1, Stimulation channel 2, Sensing channel, external trigger
Selecting Stimulation Channel	Stimulation channel 1 or 2
Setting Delay between Sensing and Stim.	5 – 9999 ms
Setting Minimum Basic Interval	Min. Basic - 3000 ms
Types of Stimulation	Fixed, Inhibited
Sensitivity Setting	Separate setting for sense or stimulation channel
Setting Stimulation Amplitude and Pulse Width	For the stimulation channel selected within the limits as defined in section 1.1
Displaying Spontaneous Intervals Measured on the Sensing Channel	Min. Basic - 4000 ms

Parameter High Rate Mode	
Stimulation Mode for High Rate Stimulation	Mode "High Rate"
Setting High Rate	50 – 1200 ms, respectively 1200 – 50 ppm
Adaptating High Rate to Heart Rate	Selectable from: manually, adaptive
Selecting Unit for High Rate Interval	ms or ppm
Selecting Unit for Adaptation Value	In the unit set for High Rate Intervall (ms/ppm); in %
Defining Adaptation Value	If ppm is the unit for High Rate Interval: 105 – 200% or +5 to +95 ppm; if ms is the unit for High Rate Interval: 95 – 50% or -5 to -95ms
Lower Limitation Value for Pulse Width	1 – 2,9 ms
Sensing Site	Always stimulation site

Additional Data	
Supply Voltage	100 - 115 VAC / 60 Hz or 220 - 230 VAC / 50Hz
Supply Voltage	2 A, inert
Max. Power Input	< 10W
Operation Display	green LED on front side of stimulation unit
Safety Class	I (DIN EN60601-1 Abs.5.1)
Dimensions	Approx. 315 x 330 x 390 mm
Weight	Approx. 6 kg

Permissible Environmental Conditions	
Operating Temperature	+10°C to +40°C
Relative Humidity	30 - 75% (not condensing)
Air Pressure	700 - 1060 hPa (10,15 – 15,40 lb/in^2)
Fluctuation in Supply Voltage	max. +/- 10%
Splash Water Resistance	None (IP30)
Disinfection Durability	Accord. to IEC 601-1, sect. 44.7

Permissible Storage Conditions	
Storage Temperature	-10°C to +40°C
Relative Humidity	10 – 95% (not condensing)

Ordering Information	
UHS 3000 with accessories	328 029

Optimized Measurement Algorithms

• Wenckebach Point

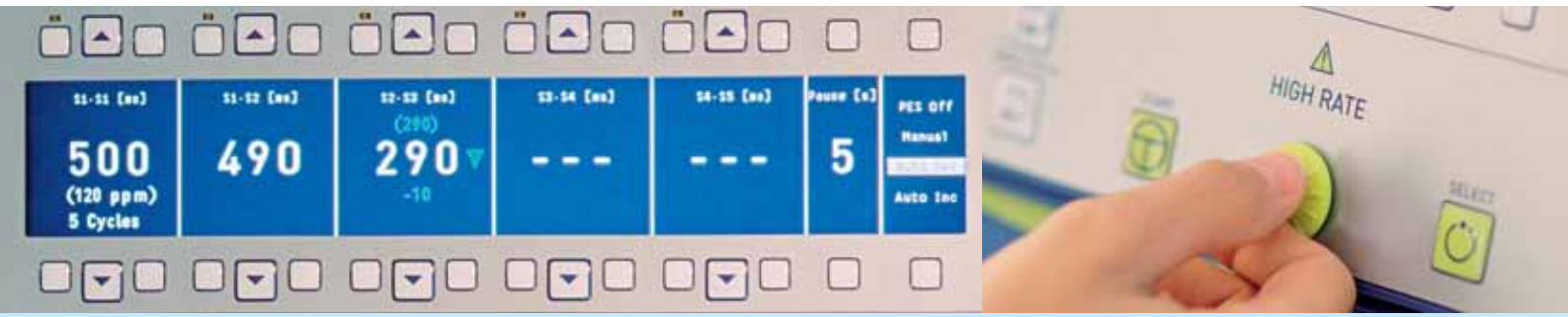
When measuring the Wencheback point, the UHS 3000 automatically shortens the pacing interval, beginning at a start value. You can individually set the step size and speed of the decrements.

• Sinus Node Recovery Time

After overpacing, the UHS 3000 can measure up to four RR intervals. You can define the time frame in which these intervals are measured.

• Dual Mode

In dual mode, the UHS 3000 can sense in one channel and - after a configurable delay – pace in another channel. Because the device has an additional sensing channel besides both pacing/sensing channels, you can toggle between the two sensing sites with a keystroke.



Efficient Measuring Sequences

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