

Estella DR

MR Conditional Dual Chamber Pacemaker

ProMRI®

- ProMRI®
- V_P Suppression®
- Atrial & Ventricular Capture Control
- AutoSensing®
- Follow-up Center with FastFollowUp®



Housing

Dimensions/weight	53 x 43 x 6.5 mm/26 g
Volume	11 cm ³
Electrically conductive housing surfaces	
■ Uncoated	33 cm ²
■ Coated	7 cm ²
X-ray identification	SF

Ordering information

■ Uncoated	377 381
■ Coated	377 380

- 1) For combinations of MR Conditional leads please see the ProMRI Manual
- 2) EN 50061 triangle pulse
- 3) If Capture Control is ON, the pulse amplitude is automatically selected

- 4) 300...[25]...775 ms for AAI(R), AAT(R), DDT modes
- 5) Post-ventricular atrial blanking
- 6) Storage of IEGMs by using intelligent memory management
- 7) See manual for other modes
- 8) Nominal data of the manufacturer

All data at 37°C, 500 Ω.
Default settings are printed in bold.

Estella DR

Technical data

MR Conditional	
ProMRI	MR Conditional in combination with BIOTRONIK MR Conditional leads ¹⁾
MRI modes	DOO; VOO; AOO; OFF
Pacemaker parameters	
NBG code	DDDR
Modes	DDDR ; DDD; DDD(R)-ADI(R); DDI(R); DVI(R); DDT; DOO(R); VDD(R); VDI(R); VVI(R); VVT(R); VOO(R); AAI(R); AAT(R); AOO(R); OFF
Basic rate	30...(1)... 60 ...(1)...88...(2)...122...(3)...140...(5)...200 ppm
■ Night rate	OFF ; 30...(1)...88...(2)...122...(3)...140...(5)...200 ppm
■ Rate hysteresis	OFF ; -5...(-5)...-90 ppm
■ Repetitive hysteresis	OFF ; 1...(1)...15 cycles
■ Scan hysteresis	OFF ; 1...(1)...15 cycles
Sensitivity ²⁾ ■ Atrium	AUTO ; 0.1...(0.1)...1.5...(0.5)...7.5 mV
■ Ventricle	AUTO ; 0.5...(0.5)...7.5 mV
Pulse amplitude (A/V) ³⁾	0.2...(0.1)...3.0...(0.1)...6.0...(0.5)...7.5 V
Pulse width (A/V)	0.1; 0.2; 0.3; 0.4 ; 0.5; 0.75; 1.0; 1.25; 1.5 ms
Atrial Capture Control	OFF; ON ; ATM (monitoring only)
■ Minimum amplitude	0.5...(0.1)... 1.0 ...(0.1)...4.8 V
■ Start amplitude	2.4; 3.0 ; 3.6; 4.2; 4.8 V
■ Safety margin	0.5...(0.1)... 1.0 ...(0.1)...1.2 V
■ Search time	interval (0.1; 0.3; 1; 3; 6; 12; 24 h); time of day 02:00 (00:00...(00:10)...23:50 hh:mm)
Ventricular Capture Control	OFF; ON ; ATM (monitoring only)
■ Minimum amplitude	0.7 V
■ Start amplitude	2.4; 3.0 ; 3.6; 4.2; 4.8 V
■ Safety margin	0.3...(0.1)... 0.5 ...(0.1)...1.2 V
■ Search time	interval (0.1; 0.3; 1; 3; 6; 12; 24 h); time of day 02:00 (00:00...(00:10)...23:50 hh:mm)
Auto-Initialization	ON
Leads	IS-1-connector
■ Automatic lead check (A/V)	ON
■ Lead configuration (A/V)	unipolar ; bipolar (both automatically configured)
Refractory period ■ Atrium ⁴⁾	AUTO
■ Ventricle	200...(25)... 250 ...(25)...500 ms
PVARP	AUTO ; 175...(5)...250...(5)...600 ms
PVARP after PVC	PVARP + 150 ms (max: 600 ms) automatically adjusted
Ventricular blanking after A _p	30 ...(5)...70 ms

Pacemaker parameters	
Far-field protection ⁵⁾ ■ after V _S	100 ...(10)...220 ms
■ after V _P	100...(10)... 150 ...(10)...220 ms
AV delay	15...(5)... 180 ...(5)...350 ms (up to 450 ms with AV hysteresis)
Dynamic AV delay	OFF; low ; medium; high; fixed; individual (programmable in 5 rate ranges)
Sense compensation	OFF; -10...(-5)...- 45 ...(-5)...-120 ms
AV hysteresis	OFF ; IRS ^{plus} ; negative; low; medium; high
■ AV repetitive hysteresis	OFF ; 1...(1)...5...(1)...10 cycles
■ AV scan hysteresis	OFF ; 1...(1)...5...(1)...10 cycles
V _P Suppression	available in the modes DDDR-ADIR and DDD-ADI
■ Pacing suppression	1...(1)...6...(1)...8 consecutive V _S
■ Pacing support	1; 2; 3; 4 out of 8 cycles without V _S
Mode switching with X/Z-out-of-8-criterion	OFF; ON
■ Intervention rate	100...(10)... 160 ...(10)...250 bpm
■ X-out-of-8 criterion (Onset criterion)	3...(1)... 5 ...(1)...8
■ Z-out-of-8 criterion (Resolution criterion)	3...(1)... 5 ...(1)...8
■ Change of basic rate	OFF; +5; +10 ...(5)...+30 ppm
■ Rate stabilization	OFF ; ON
2:1 lock-in protection	OFF; ON
Atrial overdrive	OFF ; ON
NIPS	burst stimulation; programmed stimulation
Upper rate limit ■ Atrium	OFF; 240 ppm
■ Ventricle	90...(10)... 130 ...(10)...200 ppm
Tachycardia behaviour	2:1; WKB
IEGM recording ⁶⁾	12 recordings, max. 10 seconds each, 3 triggers
■ Recording prior to event	0; 25; 50; 75 ; 100 %
PMT protection	OFF; ON [VA criterion: 250...(10)... 350 ...(10)...500 ms]
Sensor	accelerometer
■ Maximum activity rate	80...(5)... 120 ...(5)...180 ppm
■ Sensor gain	1...4...23 in 27 increments [auto gain: OFF; ON]
■ Sensor threshold	very low; low; medium ; high; very high
■ Rate increase	1...(1)... 4 ...(1)...10 ppm/cycle
■ Rate decrease	0.1; 0.2; 0.5 ; 1.0 ppm/cycle
■ Rate fading (rate smoothing)	OFF ; ON
Sensor optimization	original, preview
Magnet response	AUTO (10 cycles with 90 ppm asynchronous, then basic rate synchronous); asynchronous; synchronous
Replacement indication	programmed rate minus 11 % (in DDD(R) ⁷⁾)
Battery ⁸⁾	LiJ (open circuit voltage: 2.8 V)
Nominal operating time	12.1 years (at A/V: 2.5 V, 0.4 ms, 60 ppm, 500 Ω, 50 % pacing)

CRM

Cardiac Rhythm Management

Bradycardia Therapy

Data Sheet

Estella SR

MR Conditional Single Chamber Pacemaker

ProMRI®

- ProMRI®
- Ventricular Capture Control
- AutoSensing®
- Auto-Initialization
- Follow-up Center with FastFollowUp®



Estella SR

Technical data

MR Conditional	
ProMRI	MR Conditional in combination with BIOTRONIK MR Conditional leads ¹⁾
MRI modes	VOO; AOO; OFF
Pacemaker parameters	
NBG code	VVIR/AAIR
Modes	VVIR ; VVI; VVT(R); VOO(R); AAI(R); AAT(R); AOO(R); OFF
Basic rate	30...(1)... 60 ...(1)...88...(2)...122...(3)...140...(5)...200 ppm
■ Night rate	OFF ; 30...(1)...88...(2)...122...(3)...140...(5)...200 ppm
■ Rate hysteresis	OFF ; -5...(-5)...-90 ppm
■ Repetitive hysteresis	OFF ; 1...(1)...15 cycles
■ Scan hysteresis	OFF ; 1...(1)...15 cycles
Sensitivity ²⁾	AUTO ; 0.5...(0.5)...7.5 mV
Pulse amplitude ³⁾	0.2...(0.1)...3.0...(0.1)...6.0...(0.5)...7.5 V
Pulse width	0.1; 0.2; 0.3; 0.4 ; 0.5; 0.75; 1.0; 1.25; 1.5 ms
Ventricular Capture Control	OFF; ON ; ATM (monitoring only)
■ Minimum amplitude	0.7 V
■ Start amplitude	2.4; 3.0 ; 3.6; 4.2; 4.8 V
■ Safety margin	0.3...(0.1)... 0.5 ...(0.1)...1.2 V
■ Search time	interval (0.1; 0.3; 1; 3; 6; 12; 24 h); time of day 02:00 (00:00...[00:10]...23:50 hh:mm)
Auto-Initialization	ON
Leads	IS-1-connector
■ Automatic lead check	ON
■ Lead configuration	unipolar ; bipolar (both automatically configured)
Refractory period	200...(25)... 250 ...(25)...500 ms
Upper rate limit ⁴⁾	90...(10)... 130 ...(10)...200 ppm
IEGM recording ⁵⁾	12 recordings, max. 10 seconds each, 1 trigger
■ Recording prior to event	0; 25; 50; 75 ; 100 %
Sensor	accelerometer
■ Maximum activity rate	80...(5)... 120 ...(5)...180 ppm
■ Sensor gain	1...4...23 in 27 increments [auto gain: OFF; ON]
■ Sensor threshold	very low; low; medium ; high; very high
■ Rate increase	1...(1)... 4 ...(1)...10 ppm/cycle
■ Rate decrease	0.1; 0.2; 0.5 ; 1.0 ppm/cycle
■ Rate fading (rate smoothing)	OFF ; ON
Sensor optimization	original, preview
Magnet response	AUTO (10 cycles with 90 ppm asynchronous, then basic rate synchronous); asynchronous; synchronous
Replacement indication	programmed rate minus 11 %
Battery ⁶⁾	LiJ (open circuit voltage: 2.8 V)
Nominal operating time	> 15 years (at 2.5 V, 0.4 ms, 60 ppm, 500 Ω, 50 % pacing)

Housing	
Dimensions/weight	53 x 39 x 6.5 mm/25 g
Volume	10 cm ³
Electrically conductive housing surfaces	
■ Uncoated	33 cm ²
■ Coated	7 cm ²
X-ray identification	SF
Ordering information	
■ Uncoated	377 385
■ Coated	377 384

1) For combinations of MR Conditional leads please see the ProMRI Manual
 2) EN 50061 triangle pulse
 3) If Capture Control is ON, the pulse amplitude is automatically selected

4) Only available for triggered modes
 5) Storage of IEGMs by using intelligent memory management
 6) Nominal data of the manufacturer

All data at 37°C, 500 Ω.
 Default settings are printed in bold.