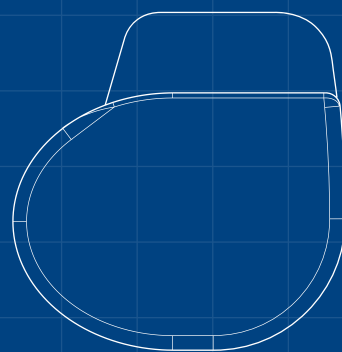


# Teo™ DR



## DUAL-CHAMBER PACEMAKER

World's smallest tranvesnous pacemaker<sup>1</sup>  
1.5 T and 3 T Full body MR conditional

[Technical specifications](#)



#### MECHANICAL CHARACTERISTICS

ORDER NUMBER — **TPM016C**

SIZE — **41.2 X 41.5 X 6.1 mm**

WEIGHT — **20 g**

VOLUME — **8 cm<sup>3</sup>**

CONNECTOR — **IS-1**

#### ELECTRICAL CHARACTERISTICS

LONGEVITY IN SAFER-R MODE (50% A & 5% V PACING)\* — **12 YEARS**

LONGEVITY IN DDDR MODE (100% A & V PACING)\* — **9.6 YEARS**

BATTERY TYPE — **GB8711 LITHIUM IODINE (2.8 V, 0.81 Ah)**

MAGNET RATE — **BOS: 96 min<sup>-1</sup> / RRT: 80 min<sup>-1</sup>**

\*60 min<sup>-1</sup> AT 2.5 V, 0.35 ms, 750 Ω, SENSORS ON, EGMS ON & DIAGNOSTICS ON

1. REFER TO MANUFACTURERS MANUALS.

2. STOCKBURGER M, DEFAYE P, BOVEDA S, ET AL. PHYSIOLOGICAL PACING WITH SAFER IS SAFE AND EFFICIENT IN ATRIO-VENTRICULAR BLOCK AND SINUS NODE DYSFUNCTION PATIENTS - A SUBGROUP ANALYSIS OF THE ANSWER TRIAL. ABSTRACT SUBMITTED FOR PUBLICATION.

## Highlights

- ✓ 12 years longevity in 8 cc  
With **RATIO DESIGN™**
- ✓ Fast and Easy follow-up  
at a click of a button  
With **Smartcheck**
- ✓ Automatically activates  
therapies at implant  
With **Auto Implant Detect**
- ✓ Mimics the natural activity of the heart  
With **Ψ INTELLIGENCE™**
- ✓ Reduces ventricular pacing  
in SND and AVB patients  
With **[ SAFER ]™ 2**
- ✓ Crosschecks sensors support  
all types of exercise  
With **[ DUAL SENSOR ]**
- ✓ Unique rest rate adaptation  
based on respiration  
With **Rest Rate**

## 8 cc only

# AUTOMRI™

Visit. Scan. Go.

APPROVED FOR 1.5 T AND 3 T FULL BODY MR CONDITIONAL

## Ease the Workflow.

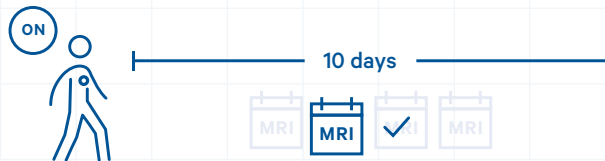
### 1. Patient visits the cardiologist.

Cardiologist turns AutoMRI ON.



### 2. There is a 10 day window where the patient can have an MRI scan.

No limitation on the numbers of scans during these 10 days.  
No need to return to the cardiologist or any additional check ups etc. This allows for flexibility with scheduling MRI scans.



### 3. Patient enters MRI Scan.

Approaching and detecting the scan, the device switches into asynchronous MRI mode. Moving away from the scan, 5 minutes after the patient leaves, the device switches back to initial settings.



### 4. Patient can go home.

Without any assistance or intervention.  
No visit to cardiologist, patient is free to go home autonomously.



## Automatic Detection of Implantation

SAFER AUTO LAUNCH	Yes - No
ATRIAL PACING POLARITY	<b>Unipolar</b> - Bipolar
VENTRICULAR PACING POLARITY	<b>Unipolar</b> - Bipolar

## Basic Parameters

MODE	<b>SafeR</b> <sup>1</sup> - SafeRR - SafeR/DDIR - Dplus DplusR - Dplus/DDIR - DDDR - DDD DDD/DDIR - AAIR - AAI - VVIR - VVI - VDDR VDD - DDIR - DDI - DDTAV - DDTA - DDTV AAT - VVT- DOO - AOO - VOO - OOO
BASIC RATE	30 - 40 - 45 - 50 - 55 - <b>60</b> - 65 - <u>70</u> 75 - 80 - 85 - 90 - 95 min <sup>-1</sup>
REST RATE	50 - 55 - <b>60</b> - 65 - 70 - 75 - 80 - 85 90 - 95 min <sup>-1</sup>
MAXIMUM TRACKING RATE	100 - 110 - 120 - <b>130</b> - 140 - 155 - 165 - 175 - 185 min <sup>-1</sup>
RATE HYSTERESIS	<b>0</b> - 5 - 10 - 20 - 35 %
REST AV DELAY	30 - 45 - 65 - 80 - 95 - 110 - 125 - 140 - <b>155</b> 170 - 190 - 205 - 220 - 235 - 250 ms
EXERCISE AV DELAY	30 - 45 - 65 - <b>80</b> - 95 - 110 - 125 - 140 155 - 170 - 190 - 205 - 220 - 235 - 250 ms
AVD PACED / SENSED OFFSET	0 - 15 - 30 - 45 - <b>65</b> - 80 - 95 - 110 - 125 ms

## Pacing Parameters

ATRIAL AND VENTRICULAR AMPLITUDE	1.5 - 2.0 - 2.5 - 3.0 - <b>3.5</b> - 4.0 - <u>5.0</u> - 7.5 V
ATRIAL AND VENTRICULAR PULSE WIDTH	0.10 - 0.25 - <b>0.35</b> - <u>0.50</u> - 0.60 - 0.75 - 0.85 - 1.00 ms
ATRIAL AND VENTRICULAR PACING POLARITY	<b>Unipolar</b> - Bipolar <sup>2</sup>
ATRIAL AND VENTRICULAR AUTOTHRESHOLD	Auto - Monitor - <b>OFF</b>
MIN. VENTRICULAR AMPLITUDE	1.5 - 2.0 - <b>2.5</b> - 3.0 - 3.5 V
MIN. ATRIAL AMPLITUDE	1.0 - <b>1.5</b> - 2.0 - 2.5 V
SAFETY ATRIAL AMPLITUDE	2.5 - <b>3.5</b> - 4.0 - 5.0 V
ATRIAL AUTOTHRESHOLD MAX RATE	75 - 80 - 85 - 90 - 95 - 100 - <b>110</b> min <sup>-1</sup>

## Sensing Parameters

ATRIAL SENSITIVITY	0.1 - 0.2 - 0.3 - 0.4 - 0.6 - 0.8 - <b>1.0</b> - 1.2 - 1.5 - 1.8 2.0 - 2.2 - 2.5 - 2.7 - 3.0 - 3.5 - 4.0 - 4.5 - 5.0 - 6.0 mV
VENTRICULAR SENSITIVITY	0.4 - 0.6 - 0.8 - 1.0 - 1.2 - 1.5 - 1.8 - 2.0 - <u>2.2</u> - <b>2.5</b> 2.7 - 3.0 - 3.5 - 4.0 - 4.5 - 5.0 - 6.0 - 8.0 - 10.0 - 15.0 mV
POST VENTRICULAR ATRIAL BLANKING (PVAB)	<b>150</b> - 165 - 180 - 195 - 210 - 225 - 240 - 255 ms
ATRIAL AND VENTRICULAR SENSING POLARITY	<b>Unipolar</b> - Bipolar <sup>2</sup>
ATRIAL AND VENTRICULAR AUTOSENSING	Auto - <b>Monitor</b>

## Atrial and Ventricular lead polarity switch

ATRIAL AND VENTRICULAR LEAD POLARITY SWITCH	ON - <b>OFF</b>
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## Rate-Response Parameters

SENSOR CHOICE	<b>MV+G (Twin Trace)</b> - MV - G
RATE RESPONSE MODE	<b>Learn</b> <sup>3</sup> - RRAuto - RRFixed - <b>OFF</b>
PHYSICAL EXERCISE	Very low - Low - Medium - High - Very high

## Special Features

FALLBACK MODE SWITCHING (FMS)	ON - OFF
PMT PROTECTION	Termin - <b>Reprog</b>
RATE SMOOTHING	<b>OFF</b> - Very slow - Slow - Medium - Fast
ACCELERATION	<b>0</b> - 5 - 15 - 25 - 35 - 45 %
AV DELAY SHORTENING	<b>0</b> - 15 - 30 - 45 - 65 - 80 - 95 - 110 ms

## SafeR™ Parameters

AVB I SWITCH	<b>Rest+Exercise</b> - Exercise
LONG PR (max.)	250 - 300 - <b>350</b> - 400 - 450 ms
LONG PR (min.)	200 - <b>250</b> - 300 - 350 - 400 - 450 ms
PAUSE (max.)	2 - <b>3</b> - 4 s

## MRI Mode Parameters<sup>4</sup>

MRI MODE	Auto - Manual - <b>OFF</b>
MRI PACING MODE	<b>DOO</b> - VOO - OOO
MRI PACING RATE <sup>5</sup>	50 - 55 - 60 - 65 - 70 - 75 - <b>80</b> - 85 - 90 - 95 100 - 105 - 110 - 115 - 120 min <sup>-1</sup>
MRI MONITORING PERIOD	2h - 4h - 6h - 12h - <b>24h</b> - 48h - 3 days 7 days - 10 days

1. Twenty minutes after the automatic detection of implantation by the device, the as-shipped pacing mode (DDD) is automatically reprogrammed to SafeR.
2. As soon as the detection of implantation has been confirmed, the lead configuration is automatically programmed to unipolar pacing and bipolar sensing (if a bipolar lead is used) or to bipolar pacing bipolar sensing (if the values are re-programmed to bipolar in the box and a bipolar lead is used).
3. Twenty minutes after the automatic detection of implantation by the device, the as-shipped rate response mode (OFF) is automatically programmed to Learn, and Diagnostics will be ON.
4. The pacemaker system (TEO pacemaker and MRI tested leads) is MR conditional under specific conditions. Refer to the MRI Solutions manual (UA10006) for the complete MRI checklist to be fulfilled at the time of MRI examination.
5. Default pacing is rate 20 min<sup>-1</sup> over programmed basic rate.



# Atrial Arrhythmia Prevention Parameters

**OVERDRIVE** ON – OFF  
**MAX. OVERDRIVE RATE** 100 - **110** - 130 - 155 - 185 min<sup>-1</sup>

# Non Programmable Parameters

**COMMITTED PERIOD** 95 ms  
**RATE LIMIT** 195 min<sup>-1</sup>  
**LEAD IMPEDANCE MEASUREMENT** Automatic (every 6 hours)  
**REFRACTORY PERIODS** Dynamic

# SAM™ — Sleep Apnea Monitoring

**MONITORING** ON<sup>6</sup> - OFF  
**MONITORING PERIOD** 22:00-03:00 - 23:00-04:00 - **00:00-05:00**  
 01:00-06:00

6. Automatic activation at first interrogation after automatic implantation detection

## Diagnostics Aida

*(Automatic Interpretation for Diagnosis Assistance)*

**ALL DIAGNOSTICS**  
 Always ON (24 hours - 6 months)

**INTRACARDIAC EGM**  
 18.3 min., A and V, 512 Hz sampling,  
 18 stored episodes, Annotated markers,  
 synchronized with intracardiac EGM

**AV CONDUCTION**  
 Number of AVB episodes and switches day & night:  
 AVB I, II, III and pauses; SafeR switch criteria

**EGM TRIGGERS**  
 Mode switching; Atrial bursts; Ventricular bursts;  
 Switches in SafeR mode

**HISTOGRAMS AND COUNTERS**  
 A and V rate; Pacing %; Atrial arrhythmias  
 (number and time in mode switch, bursts,  
 Premature Atrial Contractions (PACs));  
 Ventricular bursts and Premature  
 Ventricular Contractions (PVCs);  
 Pacing threshold follow-up;  
 Amplitudes of normal and abnormal P and R waves;  
 over 7 days 24-hour heart rate curve

**SLEEP APNEA MONITORING (SAM)**  
 Respiratory Disturbance Index;  
 Number and duration of events

## Follow-Up Functions

**TEST ASSISTANT SMARTCHECK**  
 Chained test sequence with automatic  
 saving/printing of results

**PATIENT DATA**  
 Detailed patient information

**BATTERY STATUS**  
 Magnet rate; Battery impedance; Battery curve

**A AND V LEAD IMPEDANCE**  
 Automatic every 6 hours

**ATRIAL AND VENTRICULAR PACING THRESHOLD TESTS**  
 Simultaneous visualization of intracardiac EGM and markers

**TEMPORARY PROGRAMMING**  
 Automatic measurement of P and R amplitudes:  
 Simultaneous visualisation of intracardiac EGM and markers

**NIPS (ELECTROPHYSIOLOGIC STUDIES)**  
 A burst, V burst, extra-stimuli sequences

**IMPLANT AND FOLLOW-UP REPORT**  
 Available paper print and electronic format (Adobe® PDF)

REFER TO USER'S MANUAL FURNISHED WITH THE DEVICE FOR COMPLETE INSTRUCTIONS FOR USE.

NOT AVAILABLE FOR DISTRIBUTION OR SALE IN THE USA.

# Manufactured in Europe by MicroPort CRM.

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