



**OTO**  
Sense in every cc.



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# OTO

Sense in every cc.



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1.5T & 3T MR CONDITIONAL PACING SYSTEM



## Escape the ordinary. Keep the essence.



This pacemaker comes equipped with preset programming calibrated through clinical experience. In addition, it features high definition EGMs and one-click test launch making the implant procedure and follow-up easier and faster for your daily practice.



## PRESET FIT™



# The new standard is excellence.



### Optimal settings automatically programmed.

- Precision programming calibrated through clinical experience is preset
- Automatic lead polarity configuration with Auto Implant Detect
- Evolves and learns with the patient with Rate Response
- Automatic launch of diagnostics 20 minutes after the detection of implantation



### One click follow-up test sequence.

- Adaptable suite of tests launched sequentially in one click
- Designed for an efficient follow-up experience
- Spend quality time on diagnostics, not on set up
- Detailed snapshot of key results displayed in one screen

**TEST SEQUENCE**

- V Sensing
- A Sensing
- V Impedance
- A Impedance
- V Auto Threshold
- V Manual Threshold
- A Manual Threshold

Smart  
Check

▶

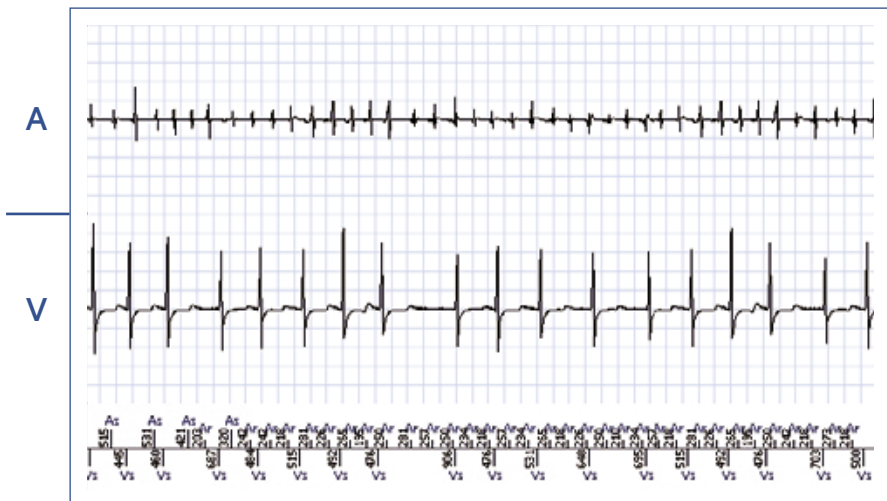




**High Definition EGM.**

- Eases reading of patient's status allowing a quick and precise diagnosis
- Eliminates the need for ECG electrodes to do threshold tests
  - Streamlines the follow-up procedure
  - Ensures increased patient comfort

Type AF Date 30/10/2018 03:28 Duration 9h 41min 8s Zoom ①×1 ②×2 ③×4



**PRESET FIT™**



Key information at first sight.

Warning & Key observations

% V Pacing

**WARNINGS : 0**

**OBSERVATIONS**

Time in MS: 16.8%.  
V Rate during MS: 110 min<sup>-1</sup>

**STATISTICS**  
Since 09/Jul/2018

Atrial				Ventricular			
RR	Pace	Sens.	PAC	RR	Pace	Sens.	PAC
46%	27%	3%	<1%	<1%	<1%	99%	<1%

**PARAMETERS**

Mode	DplusR		
Basic rate	60 min <sup>-1</sup>		
Max Rate	130 min <sup>-1</sup>		
A Pacing	2.5 V	0.35 ms	Bipolar
V Pacing	2.5 V	0.35 ms	Bipolar
A Sensing	0.6 mV	Bipolar	
V Sensing	2.5 mV	Bipolar	

**BATTERY STATUS**

Time to RRT > 10 Years

Magnet Rate 96 min<sup>-1</sup>

Impedance 0.06 kOhm

B.O.S. = 96 min<sup>-1</sup> R.T.T. = 80 min<sup>-1</sup>

**LEADS**

	Impedance kOhm	Threshold V	P/R Waves mV
A 428 12/Oct/2018	0.50	12/Oct/2018	6.14 12/Oct/2018
V 551 12/Oct/2018	0.50	12/Oct/2018	15.00 12/Oct/2018

Pacing Mode

Remaining Longevity

Leads Status

# Size is golden.



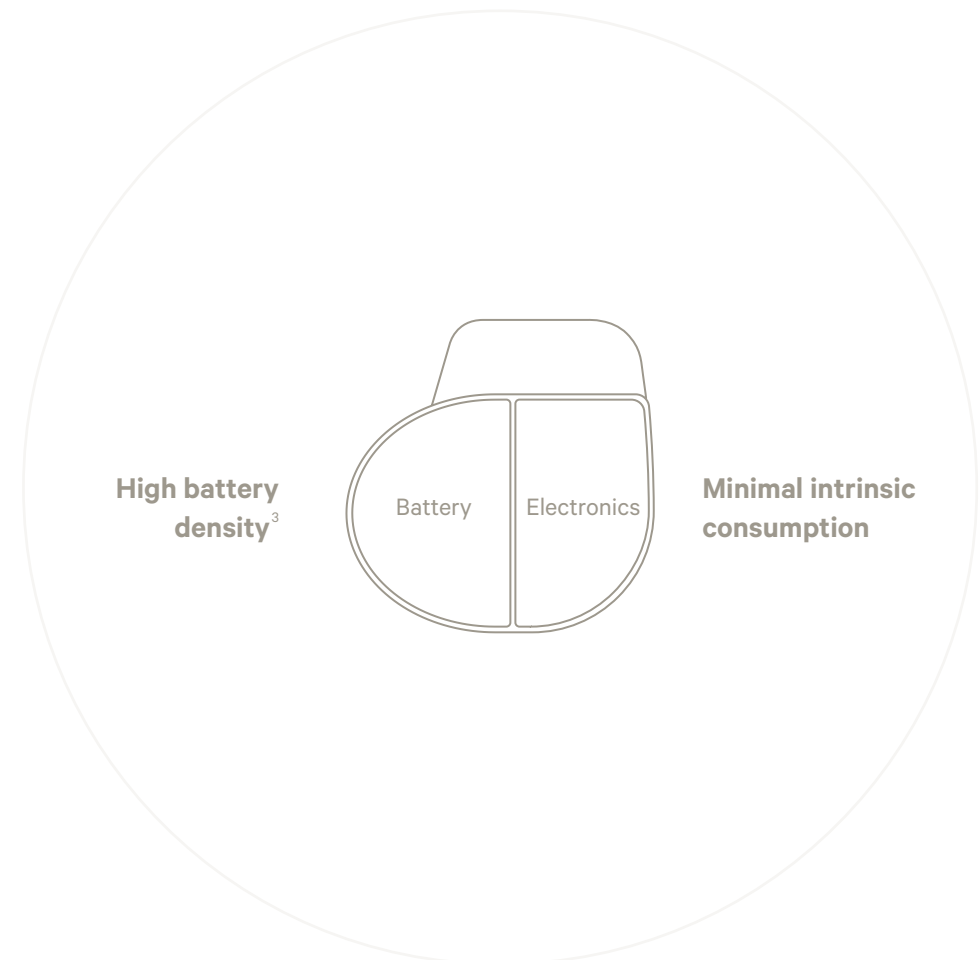
Oto™ is the world's smallest pacemaker\* with the best longevity per cc.<sup>1,2</sup> Optimized electronic placement, low intrinsic consumption and ellipse-shape ensure no dead space, allowing MICROPORT™ CRM to achieve the ideal ratio between size, shape and longevity.

## RATIO DESIGN™

Smallest<sup>1</sup>

Lightest<sup>1</sup>

Best longevity / cc<sup>2</sup>



### 8 cc

- Favours a smaller incision and reduced pocket size
- Facilitates both primo implants and replacements
- Boosts psychological adoption for patients

### Ellipse Shape

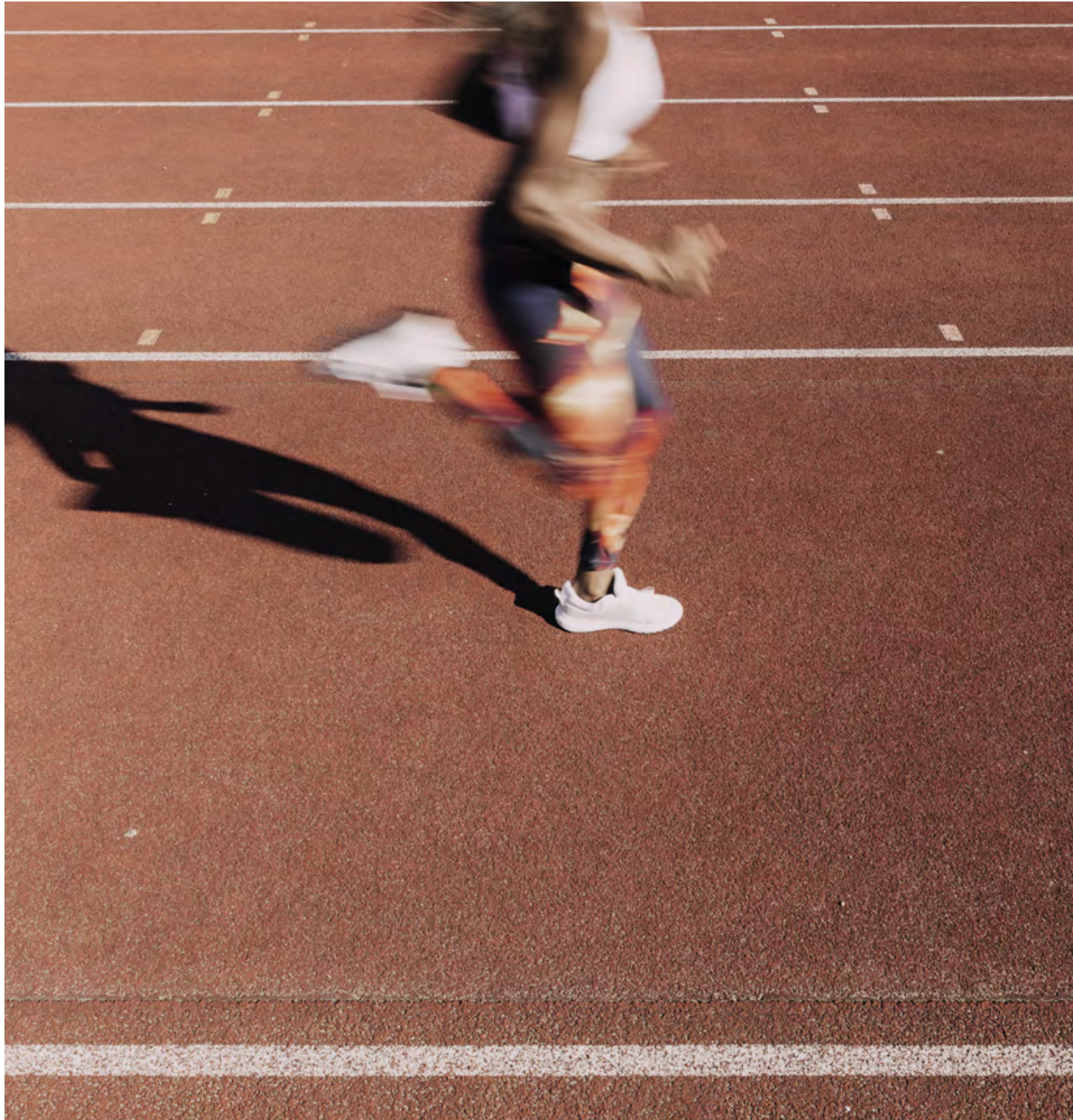
- Designed for natural lead wrap around
- Facilitates insertion and lead connection
- Rounded edges provide greater patient comfort

### 11.7 years Longevity\*\*

- Avoid complications<sup>4</sup> due to risky replacement procedures

\*TRANSVENOUS PACING SYSTEM.

\*\* DDDR MODE 50% A&V PACING, 60min<sup>-1</sup>, 2.5V, 0.35ms, 750Ω, SENSOR ON, EGMs ON, DIAGNOSTICS ON.



RATIO DESIGN™

# Best longevity / cc.

Comparison across manufacturers based on 100% pacing\*<sup>2</sup> shows that Oto™ delivers the best balance of extended longevity and small size.

Oto™, best service life per cc.



1<sup>st</sup>

OTO DR — MICROPORT CRM

1.11

ASSURITY MRI DR — ABBOTT\*\*

0.9

EDORA 8 DR — BIOTRONIK

0.85

ACCOLADE EL DR — BOSTON SCIENTIFIC

0.8

ASTRA XT DR — MEDTRONIC\*\*

0.75

0.5

Years of service life / cc

\* CONDITIONS DDDR MODE 100 % A&V PACING 60min<sup>-1</sup>, 2.5V, 0.4ms, 500 Ω, SENSOR G ON, EGMs ON  
 \*\* CONDITIONS DDD MODE 100 % A&V PACING 60min<sup>-1</sup>, 2.5V, 0.4ms, 500 Ω, SENSOR G OFF, EGMs ON





# Visit. Scan. Go.



More independence for cardiologists, radiologists and patients with greater flexibility in scheduling MRI scans, eliminating the need for post-scan follow ups.<sup>5</sup>

## AUTOMRI™



### Cardiologists

- Device automatically switches in and out of MRI mode upon detection of MR field
- 10 days scan window allows greater scheduling flexibility
- Multiple MRI scans possible during the programmed window
- No need to accompany the patient during or after the scan
- No post MRI follow-up is needed



### Radiologists

- MR sensor activates MRI mode upon detecting the magnetic field
- Device switches back to its optimal pacing mode automatically
- No intervention needed from the radiologist or cardiologist after the scan
- Patient is ready to leave the hospital without assistance



### Patients

- Patient enjoys optimal pacing settings right up to and just after the scan
- Device automatically switches to asynchronous MRI mode only for the duration of the scan
- Protects the patient by keeping their time in asynchronous mode to an absolute minimum<sup>6</sup>
- Ensures patients don't leave the hospital in sub-optimal settings

AUTOMRI™

# Ease the Workflow.



**AUTOMRI™** comes as standard.

2014 Innovation award for AutoMRI technology.  
Longest experience in automatic MRI detection.

✓ AutoMRI is available in all MICROPORT™ CRM MR conditional pacemakers.<sup>5</sup>

## 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 number of scans during these 10 days.  
No need to return to the cardiologist for any additional check ups.  
This allows for flexibility in scheduling MRI scans.



## 3. Patient enters MRI Scan.

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



## 4. Patient can go home.

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



Extensive range of therapeutic features

## Clinical excellence standards

- ✓ AV HYSTERESIS
- ✓ ACCELERATION
- ✓ RATE RESPONSE
- ✓ MODE SWITCH
- ✓ PMT PROTECTION

### DPLUS – AV HYSTERESIS - REDUCE VP WITHOUT MISSING A BEAT

DDD with automatic AV delay hysteresis (Dplus), designed to promote intrinsic AV conduction.

D Plus reduces ventricular pacing<sup>7</sup> even in patients with impaired AV conduction.

### ACCELERATION - VASOVAGAL RESPONSE

Detects sudden cardiac rate drops and responds by increasing the pacing rate.

Avoids slow cardiac rate caused by carotid sinus syndrome or vasovagal syncope.<sup>8</sup>

### G SENSOR - RATE RESPONSE

Detects exercise using a motion sensor and responds by increasing the pacing rate.

Adapts heart rate to exercise for chronotropic incompetent patients.

### MODE SWITCH PROTECTION DURING ATRIAL FIBRILLATION

Unique atrial arrhythmia detection using atrial prematurity, with 96 % Specificity and 96 % Sensitivity.<sup>9</sup>

Avoids rapid ventricular tracking of atrial arrhythmias<sup>9</sup> which may cause adverse hemodynamics and symptoms.<sup>10</sup>

### PMT PROTECTION

Automatic modulation of AV delays to reliably detect PMTs.

The PMT protection algorithm is effective at preventing and terminating PMTs.<sup>11</sup>

## Technical Specifications

Oto™

SR

DR

MR COMPATIBILITY 1.5 T AND 3 T

✓

✓

AUTOMRI™

✓

✓

AUTOMATIC IMPLANT DETECTION

✓

✓

LEAD POLARITY SWITCH

✓

✓

SMARTCHECK

✓

✓

G SENSOR RATE RESPONSE

✓

✓

DPLUS AV HYSTERESIS

✓

ACCELERATION & AV DELAY SHORTENING

✓

AUTOTHRESHOLD

V

A & V

AUTOSENSING

A/V

A & V

## References

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2. *Competition comparison made as of October 2018, refer to manufacturers manuals and Boston Scientific longevity calculator available online*  
*Applicable conditions: A,V=2.5V; 0.4ms; 500 ohms; 100 % DDD pacing by 60 bpm; EGMs ON; sensor ON (OFF if not applicable)*
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9. *Géroux L, Limousin M, Cazeau S. Clinical performances of a new mode switch function based on a statistical analysis of the atrial rhythm. Herzschr Elektrophys 10: Suppl 11/15 – 1/21 Steinkopff Verlag, 1999*
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11. *Maillard L. et al. Prevention of ELTs with an Innovative Fallback Algorithm. Europace 95, 437, 1995*

# Manufactured in Europe by MicroPort CRM.

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