

## ReconSense TC

# Sensorless temperature monitoring

## How it works

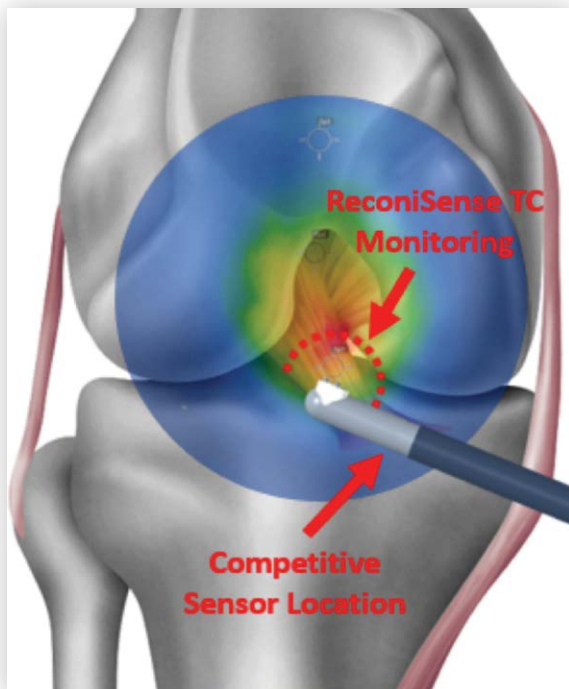
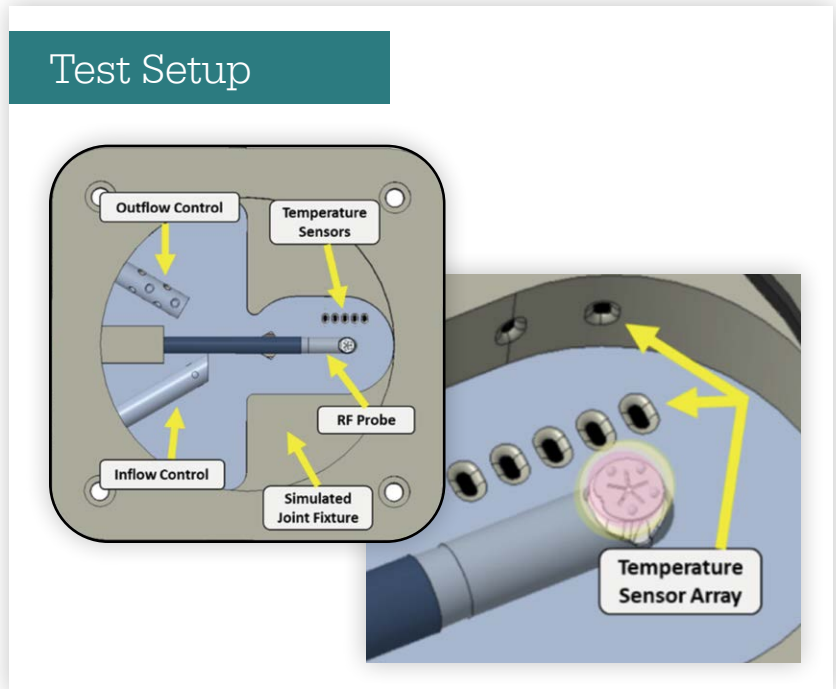
### Developing sensorless monitoring

A simulated joint space fixture was created to run controlled testing simulations that consider major variables that affect joint temperature. The fixture was outfitted with a SERFAS probe, fluid management controls and 8 thermistors that track true temperature profile characteristics at distinct distances from the probe electrode<sup>1</sup>.

The system gathered over 7 million temperature data points across wide-ranging conditions, by varying test conditions such as<sup>2</sup>:

- Probes model
- Console power settings
- Fluid management conditions
- Joint pressure
- Joint leakage conditions

Using **machine learning**, a sensorless system was developed for monitoring temperature with accuracy of +/- 4.65°C<sup>3</sup>.



### Why go sensorless?

Get the full story on joint temperature

- The sensor measurement of competitor systems is taken at a single location, behind the probe electrode and proximal from the tip. This location can be deceiving, as the temperature of the joint space is not defined by a single temperature<sup>4</sup>.
- ReconSense TC monitors temperature across the **3D joint space**, and keeps you informed on the **temperature state** of the joint, particularly **in front of the probe face**.

Integration with the pump

- **Fluid management** is a dominant factor in **combating temperature**.
- Integrating with the CrossFlow pump allows for both **monitoring** and the added benefit of **mitigation**.

Temperature control without additional case cost

- The competition utilizes an audible alarm to notify when temperatures are above a threshold and may charge a premium for RF probes with temperature sensing.
- ReconSense TC will monitor and mitigate, with an accuracy of +/- 4.65°C<sup>3</sup>, at **no additional case cost**.

References:

1. P41419
2. DHD13751
3. TR19995
4. DHD14032

## Sports Medicine

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