

Application note: N° F073

July 2016

The orthopedic industry



Orthopedics in general

Orthopedics is the branch of surgery concerned with conditions involving the musculoskeletal system.

Today it is crucial to have innovative orthopedic solutions for enhanced longevity and performance, to ensure that all patients can continue living the same, or improved, life style after having orthopedic surgery.

Together with the continuous research of innovative materials (such as trabecular titanium and bio ceramics), new concepts in modularity, customers are expecting more from their orthopedic surgery, thus the suppliers are always looking to improve their product range.



Why the need to measure temperature & humidity?

Discussed in this edition:

- Orthopedics in general **1**
- Why the need to measure temperature & humidity? **1**
- What solution can Rotronic offer? **2**
- Rotronic products **2**
- Customer benefits **2**

The most used materials for this kind of manufacturing are the most advanced, modern and resistant, frequently also used in the aerospace field:

- **Titanium**
- **Bio ceramics**
- **Stainless steel**

The temperature and monitoring of such high quality materials is crucial. A real time monitoring solution, even during the various

production steps, will help avoid the development of bacteria.

For example in the treatment of titanium, a temperature (titanium loses strength when heated above 430°C) and relative humidity (titanium resists all forms of corrosive attack by fresh water and steam to temperatures in excess of 316°C) monitoring can help avoid wasting materials and time in the production

plant and at the same time guarantying a very precise mechanical dimensions to the different pieces that will make up the prosthesis at the end of the process.

Companies that produce prostheses have quality systems complying with the most rigorous procedures laid down by European and Japanese regulatory authorities and the FDA making.

What solutions can Rotronic offer?

Rotronic propose the HygroLog HL-NT2-D with the HC2-S probe that provide a combination of precise, fast response temperature and humidity measurements with easy calibration possibilities

via the HW4 Software. Furthermore this solution offers the customer the best accuracy and long-term stability on the market. With the use of the HW4 Software the customer can log every trend

and action according to the FDA 21 CFR part 11 and GAMP 5 conformity.



HL-20 — High precision, compact

Rotronic products:

HL-1D

- Battery powered compact logger with display
- 64,000 point memory
- Up to 3 year battery life
- Programmable start /stop
- -20...70°C range

HL20-D

- Battery powered compact logger with display
- 20.000 point memory
- Programmable start /stop
- -10...60°C range
- High precision

HygroLog HL-NT

- Our most advanced logger
- Unlimited memory
- USB, Ethernet, RS485, WiFi connectivity
- Fully programmable
- Local alarms

HL-RC-B

- Wireless logger
- Secure on-board memory
- 175,000 point memory
- Up to 6 year battery life
- USB / Ethernet receivers

Mapping Services

- From freezers to warehouses
- Full reporting and certification
- Traceable or ISO17025 calibrations
- Temperature and humidity mapping available

Calibrations Services

- Traceable or ISO 17025 services available
- Temperature, humidity and dew point
- Fast turnaround on request



HL-1D — Compact and reliable battery powered data logger



HL-RC-B — Robust wireless data logger

Customer benefits:

Range of solutions:

Rotronic is renowned for high accuracy devices. But we understand that different applications have different requirements. Our range of devices ensures we can provide the right product.

Communication:

Networking with Rotronic is an easy affair! With the wide range of communication interfaces available, from conventional analogue output signals to USB, RS-485, Wireless

and Ethernet RJ-45, Rotronic can provide the required interface to your local systems.

Reliability:

Logging systems must be 100% reliable. Loss of data can result in the disposal of potentially life saving products. Compliant software and robust product design ensure your data is always available.

Calibration:

Rotronic offers a factory cali-

bration certificates, and ISO17025 certificates if required. The portable HygroGen temperature & humidity calibrator is also available for on-site calibration.

Service

Rotronic is proud of its reputation for quality service and support. Our global network of subsidiaries and distributors are available to support you and your customers.



HygroLog HL-NT — Our most advanced data logger