

# Temperature String

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**Up to 48 nodes**  
 Digital bus cable, individually positioned measurement points.
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**±0.1°C / 0.01°C**  
 Node accuracy and resolution in the main measurement range.
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**Direct to Aquatos**  
 SDI-12 bus, no additional converter required.
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**IP69 fully potted**  
 Permanently submersible, PUR jacket, stainless steel nodes.

## DESCRIPTION

The **Temperature String** is a digital bus cable with precisely positioned temperature sensor nodes (TNode) for continuous profile measurements in water, soil, ice and structures. Each node reports digitally to the Aquatos data logger via a 2-wire bus – **calibration data is stored in the node itself**, so swapping the logger or changing its configuration does not affect the measurement series.

The nodes are over-moulded into a **PUR cable core** (fully potted, IP69); the stainless-steel sleeve protects the sensing element. The string is custom-built to customer specification: node count, node positions, total length – up to **48 nodes per string**, up to **250 m length**.

## APPLICATIONS

- Temperature profiles in lakes, reservoirs and treatment basins
- Permafrost and borehole monitoring
- Soil and substrate temperature in agriculture and forestry
- Structural monitoring (dykes, dams, tunnels, slope movements)
- Ice and snow layer-thickness profiling
- Industrial process and waste-water temperatures




## KEY FEATURES


- **Digital 2-wire bus** · up to 48 sensor nodes per string
- **Node resolution 0.01 °C** · accuracy ±0.1 °C
- **Stainless-steel nodes** · over-moulded with the PUR jacket
- Custom-built cable · up to 250 m · any node position
- **IP69** · permanently submersible in water, brine and sludge
- Directly compatible with **Aquatos Web LTX** via SDI-12
- **Ultra-low power** · multi-year battery operation at the logger

# Technical data

Temperature String · Bus System

PARAMETER	VALUE
Sensing principle	<b>Digital semiconductor sensor nodes · individually calibrated · 2-wire bus</b>
Node type	<b>TNode (digital, integrated sensor chip)</b>
Measuring range	<b>-40 °C to +85 °C</b>
Resolution	<b>0.01 °C</b>
Accuracy	<b>±0.1 °C from -5 °C to +50 °C · ±0.5 °C across full range</b>
Node dimensions	<b>Ø 8 mm · length 80 mm · stainless steel 1.4571 (0.1 mm wall)</b>
Cable	<b>PUR · Ø 4.2 mm · tensile load up to 30 kg · UV-resistant</b>
Node count	<b>up to 48 nodes per string</b>
Cable length	<b>up to 250 m · built to customer-defined positions</b>
Min. spacing	<b>≥ 15 cm between nodes · first two nodes from 10 cm</b>
Bus	<b>2-wire bus · digital transfer of measurement values</b>
Supply	<b>3.0 V – 3.8 V · powered by the data logger</b>
Current	<b>Standby 0.75 µA · measurement 2.5 mA for approx. 500 ms</b>
Ingress	<b>IP69 · fully potted · permanently submersible</b>
Connector	<b>M8 (IP67) plug or fixed wiring at the logger</b>
Conformity	<b>CE · RoHS-compliant</b>

 **IP69 fully potted**  
Permanently submersible, PUR jacket

 **Up to 48 nodes**  
Up to 250 m cable length, custom-built

 **±0.1 °C**  
In main range -5...+50 °C, 0.01 °C



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