

A remote telemetry outpost  
delivering a scalable and versatile  
solution for reducing operating  
and capital costs.

Multiple site parameters are monitored, recorded and transmitted over 2G (SMS/GPRS), 3G, NB-IoT and LTE Cat M1 networks, providing a comprehensive multi-application solution for the Utilities and Industry.

## Key Features

- Future ready. Support for LTE Cat M1 and NB-IoT leverages low power network capability for greater energy efficiency
- Flexible communication build options supporting either 2G only; 2G / 3G; or 2G / NB-IoT / LTE Cat M1
- Physical build options for up to two pressure and eight user programmable digital or analogue inputs
- Two independent digital outputs configurable for external power control, alarm signalling or switching 12 Volt outputs for powering 4-20mA loops
- Proven bidirectional Cello communication with automatic gap filling ensuring high level data reliability and supporting remote product configuration
- Remote set-up, monitoring and control through locally deployed PMAC software or web based WaterCore platform
- Models available to facilitate closed loop control of pressure reducing valves, pressure sustaining valves and variable speed pumps
- Water temperature measurement

- Advanced channel profile and threshold alarms
- High frequency (100 Hz) pressure transient detection critical to extending asset life and network modelling
- Low power design. Support for external battery packs and DC supply
- Rugged, portable and waterproof to IP68





# Technical Specifications

## Standard Build Options

<b>Inputs</b>	<p><b>2i</b> - Configurable for up to two digital or analogue inputs</p> <p><b>1P</b> - One internal or external pressure transducer</p> <p><b>1P2i</b> - Configurable for one internal or external pressure transducer and up to two digital or analogue inputs</p> <p><b>2P2i</b> - Configurable for up to two internal or external pressure transducer and up to two digital</p> <p><b>1P7i</b> - Configurable for one internal or external pressure transducer and up to seven digital or analogue inputs</p> <p><b>8i</b> - Configurable for up to eight digital or analogue inputs; supporting 12v flash powering</p>
<b>Pressure Sensors</b>	<p><b>1P, 1P2i, 2P2i &amp; 1P7i options only</b></p> <p><b>Input range:</b> 0 - 100 m, 0 - 200 m; 0 - 10 bar, 0 - 20 bar; 0 - 150 psi, 0 - 300 psi</p> <p><b>Programmable:</b> +/- 0.5% or +/- 0.1% resolution F.S.</p> <p>- Supports average and statistical recording of pressure (min, max, mean, standard deviation) over logging interval</p>
<b>Outputs</b>	<p><b>1P7i &amp; 8i options only:</b> Two independent digital outputs for external power control and alarm signalling (0 &amp; 3 volt levels, active low, 100k output impedance) or two individually switched 12 Volt outputs for powering 4-20mA loops</p>

## Standard Specification - Common to all Variants

<b>Electrical Inputs</b>	<p><b>Configurable channel strategies:</b> Voltage, event, tamper / status, count, frequency and encoder</p> <p><b>Digital:</b> Pulses counted over, and recorded at, pre-set intervals. Tamper/status and event time supported</p> <p><b>Frequency input:</b> Switch closures or logic pulses, maximum frequency 16 kHz, programmable sampling period</p> <p><b>Analogue:</b> 0 - 2.5V, 0.01V resolution as standard, &lt;1mV with 8 channel option</p>
<b>Modem</b>	<p><b>Integral antenna:</b> Optional external antenna</p> <p>- Support for 2G, 3G, NB-IoT and LTE Cat M1 frequencies (subject to build option)</p> <p><b>SIM:</b> User replaceable SIM card</p>
<b>Data Transmission</b>	<p><b>Type:</b> 2G, 3G, NB-IoT and LTE Cat M1 networks (subject to build option)</p> <p><b>Interval:</b> 1 min to 1 month at programmable date and time</p>
<b>Memory</b>	<p><b>Size:</b> 512K, allocable between channels as required (max 64K per channel)</p>
<b>Clock</b>	<p><b>Type:</b> Crystal controlled calendar clock with leap year adjustment</p> <p>- Option to synchronise clock to local network at regular intervals</p>
<b>Supply</b>	<p>- User replaceable Internal lithium battery pack, typical battery life &gt; 5 years depending on mode of use</p> <p>- High capacity external lithium battery pack, user replaceable</p>
<b>Recording</b>	<p><b>Interval:</b> Programmable between 1 second and 1 hour</p> <p><b>Data storage:</b> Rotating store or store until full</p>
<b>Alarm Dial-Out</b>	<p>- Four threshold and profile alarms, independently configurable on each channel</p> <p>- Option to update data on alarm and more frequently thereafter</p>
<b>Environmental</b>	<p><b>Operating ambient temperature:</b> -20°C to +50°C</p> <p><b>Ingress protection classification:</b> IP68 (submersion at 1m depth for 48 hours)</p>
<b>Mechanical</b>	<p><b>Dimensions (mm):</b> 149 x 146.5 (h)    <b>Weight:</b> 0.750kg</p>

