



WATCHLOG PRO ORB

CELLULAR / WI-FI CLOUD GATEWAY & CONTROLLER FOR REMOTE MONITORING OF MOBILE APPLICATIONS



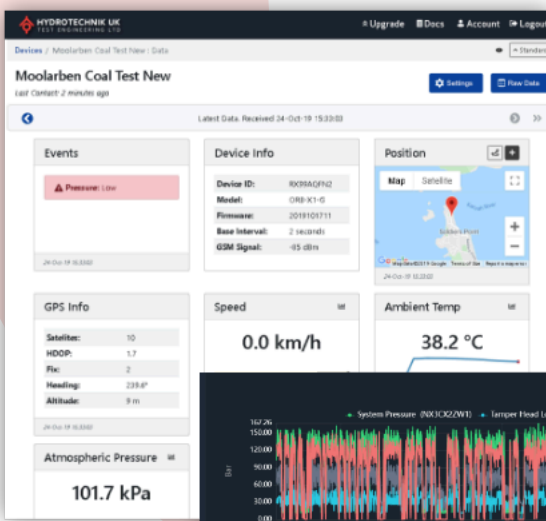
Designed for harsh industrial environments, dust-proof, waterproof, UV resistant and strong, Watchlog Pro is a programmable device which allows sensor data to be transmitted to our Watchlog cloud monitoring portal or a custom web server via 4G (SIM card) or Wi-Fi.

Powered by 10 to 75V DC or solar, the QUAD has GPS position, speed, temperature, angle, vibration, and tamper sensors built-in. External sensors such as temperature, flow, displacement and other sensors or machine data using common inputs 20mA, 0-10V, Frequency, Modbus, CANbus and RS232/RS485.

Our powerful cloud platform allows users to monitor and log sensor data on customisable dashboards. Optionally, the Watchlog Pro can push Sensor data to your own custom or 3rd party platform.

TYPICAL APPLICATIONS

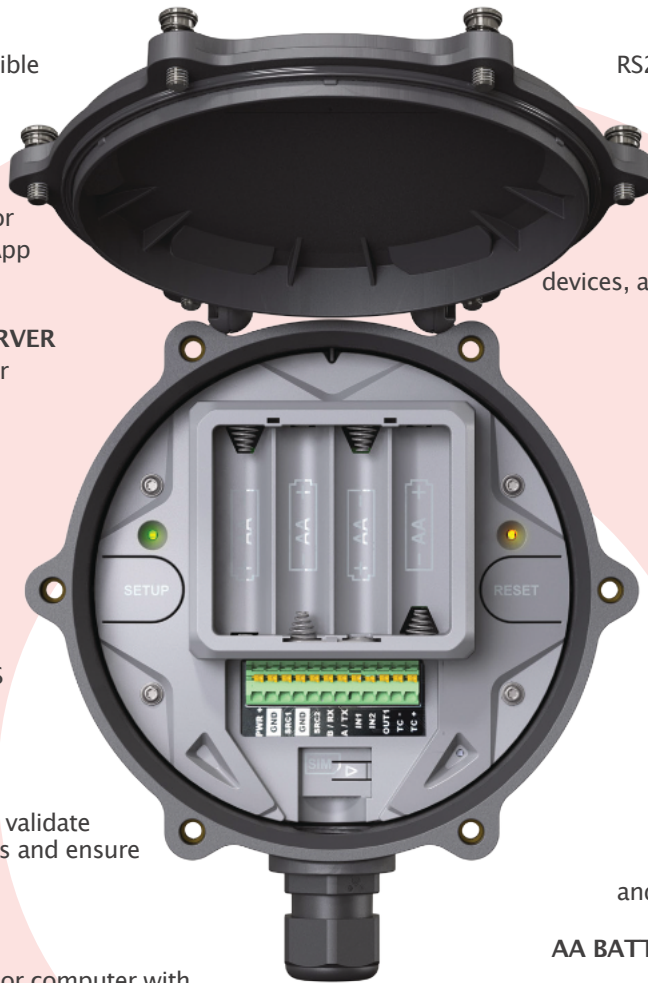
- Machine utilisation – create uniform metrics across a fleet.
- Engine diagnostics – monitor for fault codes.
- Sensor monitoring – MODBUS, NMEA, 4-20mA, voltage and more.
- Safety systems – interlocks, gas concentration, liquid level.
- Driver safety – monitor speed, pitch, roll, wind, air quality.
- Remote control – write scripts to control attached systems.
- Level measurement – calculate volume in odd shaped tanks.
- Complex sensors – script power control and measurement timing.
- Reliability – monitor oil condition, temperatures, pressure and more.
- Data consolidation – send data to your preferred endpoint.
- Water management – flow, level and quality with a single device.





WATCHLOG PRO ORB

Features



WiFi +4G LTE4
CAT-M1 for best possible coverage. CAT-1 for global connectivity



BLUETOOTH
Monitor BLE beacons or send data to the BLE App



DIRECT TO YOUR SERVER
Send data to the server of your choice



GPS+GNSS
Accurate position and speed



NOTIFICATIONS
Receive email and SMS warnings and alarms



SECURE
Embedded certificates validate identities, encrypt links and ensure integrity



SIMPLE SETUP
Use any phone, tablet or computer with the integrated web server



INTEGRATED ANTENNAS
All antennas are internal for simple deployment and reliable operation



FLEXIBLE SENSOR INTERFACE
RS232, RS485, MODBUS, CANBus, Bluetooth, output, 4-20mA, pulse and voltage



USER PROGRAMMABLE
Write scripts to manipulate data, create alerts, control devices, and create customised payloads



VERSATILE MOUNTING
DIN rail, wall or panel mount



IP67
Waterproof and Dust proof



BUILT TOUGH
Glass filled nylon
UV resistant and strong



CLOUD SERVICES
Use the Watchlog Portal to view and store data and configure and update devices



AA BATTERIES + SOLAR +10 -72VDC
Integrated solar regulator
Internal backup battery

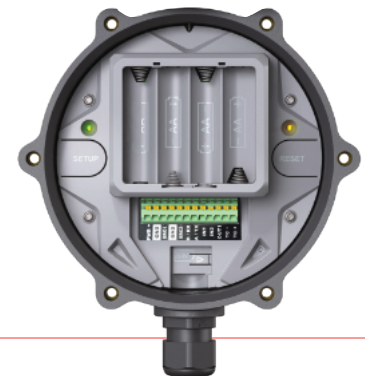


INTERNAL SENSORS
Accelerometer for pitch, roll and vibration.
Tamper detection, temperature, and voltage monitoring

Order Code

Order Code	Network Features
ORB-C1-W	Wi-Fi
ORB-C1-G	Wi-Fi, 4G LTE CAT-M1, GNSS
ORB-C1-H	Wi-Fi, 4G LTE CAT-1, GNSS





WATCHLOG PRO ORB

Technical Specifications

Power	<p>External supply: 10VDC to 75VDC</p> <p>4 x AA Long-life lithium: battery calculator can be downloaded from the Senquip website</p> <p>Solar: typical 12V 10W, with regulator and backup battery internal to the Senquip ORB</p> <p>Internal rechargeable backup battery: 3.7V, 1800mAh LiPo</p> <p>Typical current draw (LiPo): 65uA (sleep), 40-70mA (measure), 100mA (Wi-Fi), 120mA (4G LTE)</p>
Configuration	<p>Local via embedded web server</p> <p>Remote via the Watchlog Portal</p>
Edge Processing	<p>Write and deploy JavaScript applications to manipulate data, create combinational alerts, execute local control, or create customised payloads for sending to 3rd party servers.</p>
Internal Sensors	<p>GPS: horizontal accuracy $\pm 5m$ ($< 2.5m$ CEP-50), speed $\pm 1km/h$. Time to first fix typically $< 60s$</p> <p>Bluetooth version 4.2: receive and transmit BLE advertising messages</p> <p>Accelerometer: 3-axis, $\pm 16G$. Pitch and roll accuracy $\pm 1\sigma$, vibration</p> <p>Ambient temperature: -40 to 85oC, accuracy $\pm 1\text{oC}$</p> <p>Ambient pressure: 300 - 11 hPa, accuracy ± 1 hPa</p> <p>Supply, AA battery, and internal LiPo voltage monitoring</p> <p>Tamper detection through use of internal light sensor</p>
Multi purpose Inputs/Output	<p>Input 1: Analog + Digital (0-72V), pulse counting (up to 10kHz)</p> <p>Input 2: Analog + Digital (0-72V)</p> <p>Output 1: Open collector (500mA, 72V max)</p> <p>Alternate function, Input 3: Analog + Digital (0-72V)</p> <p>Source 1: 12V, 100mA max (battery backed) , 4-20mA</p> <p>Alternate function, Input 4: Digital (0-12V)</p> <p>Source 2: 12V, 100mA max (battery backed) , 4-20mA</p> <p>Alternate function, Input 5: Digital (0-12V)</p>
Serial	<p>RS232 (3-wire), RS485 (2-wire)</p> <p>Serial capture or MODBUS RTU Master</p> <p>CAN Bus: High Speed CAN FD (4Mbps), Line Faults to $\pm 60V$</p>
Network	<p>4G LTE CAT-M1 (ORB-C1-G) / 4G LTE CAT-1 (ORB-C1-H)</p> <p>SIM card holder for Micro-SIM (internal soldered SIM optional)</p> <p>Wi-Fi (ORB-C1-W)</p> <p>Endpoint: Watchlog Portal and 3rd party MQTT(S), HTTP(S), UDP servers</p> <p>Data format: JSON or script your own</p>
Mechanical	<p>Dimensions: 153mm wide, 174mm height (including cable gland), 50mm depth</p> <p>Weight: 400g excluding AA batteries and mounting brackets</p> <p>Enclosure material: UV stabilised glass filled nylon</p> <p>Stainless lid screws, spring mounted and captive</p> <p>Ships with stainless pole and wall mounting brackets</p> <p>Terminal block wire size: 24 (min) to 16 (max) AWG</p>
Environmental	<p>Operating temperature: -40C to 85C</p> <p>Water Ingress: IP67, IP68 (Contact us for alternate gland)</p>