

AquaLink technical specification

Models AQ3 IoT Data Logger Cat-M/NB-IoT 2,4,5,+ Relay

AquaLink

Water network efficiency

The **AquaLink Data Logger with NB-IoT communication** offers advanced functionality for monitoring water distribution systems. It features multiple input ports (cables) that allow connection to 4D/5A inputs, providing versatility for various measurement needs. Additionally, it can be optionally equipped with 2 relay outputs, which can control valves, pumps, and other devices. With its IP68 waterproof rating, the logger is resistant to water ingress, ensuring reliable operation even in challenging environments. The external SMA connector enables easy antenna replacement, while the option to replace batteries ensures extended device lifespan. Moreover, the built-in humidity and temperature sensor continuously monitors environmental conditions to control moisture ingress into the device. Designed for ease of maintenance, the device's modular design allows for the replacement of only the upper part of the logger in case of electronic failure, while all cable connections remain intact in the shaft.

Inputs:

- 5x programmable inputs (4x Digital/Analog/4-20mA + 1x Analog/4-20mA) with programmable power output for each input
- **Dedicated AQPressure input**
- Switch alarm input
- RS-485 Modbus RTU
- Internal humidity and temperature sensor for detection of water intrusion inside housing

Outputs: Optional

- 2x solenoid/relay pulse output with programmable voltage output 3,3V-20V, reverse polarity support and up to 20W pulse

Input types (each configurable in software):

- Digital (measures pulses from HRI, REED, Cyble, short circuit...) - counter mode
- Analog (measures voltage 0-3V)
- 0/4-20mA current loop (2,3 and 4 wire type support)

Each input can generate a separate power output on a dedicated pin to power the connected sensor using internal batteries every time a measurement is taken. The voltage generated for each input and the duration of power is configurable for each input, with selectable voltages from 3,3V to 20V and configurable current limits up to 4A in 50mA steps.

Communication:

- Built-in **Cat-M/Cat-NB/GPRS/EDGE** modem (optional other)
- Cat-M: B1/B2/B3/B4/B5/B8/B12/B13/ B14/B18/B19/B20/B25/B26/ B27/B28/B66/B85
- Cat-NB: B1/B2/B3/B4/B5/B8/B12/B13/ B18/B19/B20/B25/B26/B28/ B66/B71/B85
- GSM: 850/900/1800/1900MHz
- LTE RF Power Class (Class 5 (Typ. 21dbm))
- GNSS: o
- Optional GPS
- GPRS and SMS communication (configurable) to a AquaWeb server
- Accepts normal size SIM cards
- **Integrated Bluetooth for on site programming (v4.2BR/EDR)**
- Integrated WiFi 802.11 b/g/n, 2.4GHz
- Local connection through USB cable (for initial configuration and troubleshooting)

Mechanical:

Housing: IP68, DIN rail option
Dimensions (mm): 160 x 80 mm
Weight: 700g (without cables)

Mounting:

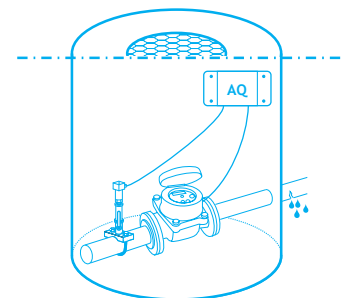
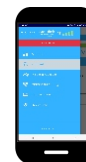
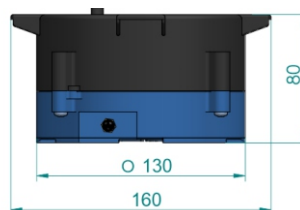
- 3 holes in the housing for zip ties or wall mounts

Operating environment:

Temperature range: Reduced battery life outside -20°C and +65°C
Humidity: 0-100% non-condensing

Power supply:

- Up to 3x 3,6V Li-SOCI2 internal batteries
- External power supply range from 3,6V to 15V, with auto fail-over to internal backup battery
- Standard battery life up to 6 years (depending on configuration)
- Batteries easily replaceable
- Optional mains / solar power supply / rechargeable batteries



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Uploading data:

- Standard to AquaLink Cloud
- Optionally via ODBC API to SCADA module
- Optionally HTTP open protocol

Firmware features Configuration:

- 2 way communication with AquaWeb server
- Automatic Firmware update over internet or USB cable
- All parameters can be configured remotely via internet
- **Android app for configuration**

Data sent during communication:

- Aqualink ID
- SIM number
- Rough location via GSM triangulation
- GPS coordinates (optional)
- Date and time
- Data logger readings
- Battery voltage
- GPRS/GSM signal
- Firmware version
- Device self power consumption
- Internal humidity and temperature

Configurable parameters:

- Date and time
- Intervals of recording and transmitting of data
- Mode for each input
- Cumulative for digital mode input
- Alarm thresholds (max. number of pulses between configured data collection intervals before alarm is triggered, max. and min. value for voltage and current loop modes before alarm is triggered.)
- SIM provider APN settings for GPRS connection

Data transmission (DATA (GPRS)/SMS):

- Minimal interval for sending data is every **1 minutes** (GPRS/SMS), up to once every month.

Recording data:

- Data recording from every **0.1 seconds**, up to once every week.
- Internal storage room for 300 000 intervals with all inputs enabled

Alarms:

- Independently configurable thresholds for each input (min. and max. number of pulses during a save interval for digital mode, min. and max. value for analog or 4-20mA mode)
- When the defined conditions are exceeded, an alarm is sent with the current input value, and type of alarm (undervalue, overvalue).

Standard package:

- AquaLink
- AquaWeb access
- External antenna
- Batteries included
- 8x3M Scotchlok cable joiners (Optionally connectors)
- 1x Wall mounts with screws

WARRANTY: Products are covered by a 2-year warranty in the EU and 13 months outside the EU.

CERTIFICATES: CE, ROHS, Manufactured in EU

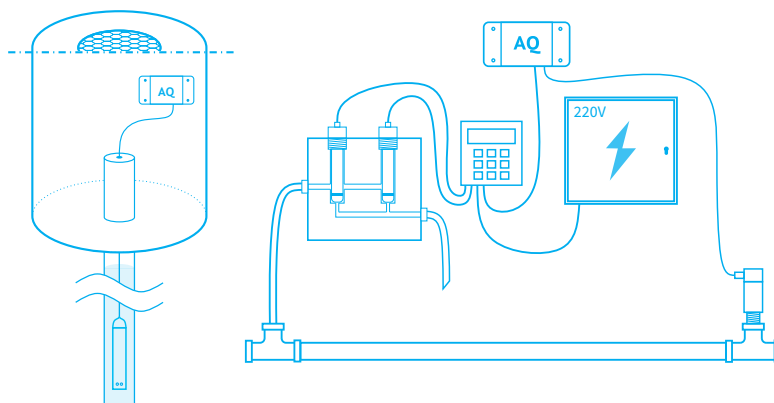
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WARNING! AQ Link GmbH products, and products described in the documents are not authorized for use as critical components in any life support system where failure of the product is likely to affect the system's safety or effectiveness.

Recycling information | At the end of this product's life it should not be put in commercial or domestic refuse but sent for recycling. Any batteries contained within the product or used during the products life should be removed from the product and also be sent to an appropriate recycling facility.



Accessories:

- ☒ Pole with additional antenna
- ☒ Solar cells
- ☒ Additional inputs
- ☒ SIM chip
- ☒ Installation tools
- ☒ Various sensors (Pressure, level, Ph, temperature, humidity etc.)
- ☒ AQPressure low power pressure and temperature sensor
- ☒ AQFlow insertion flow indicator

