



# Bridge between AQS-LoRa and Dry Contacts

SKU: DRYLWE02

Version: 1.0



## Product Description

The Dry Contact Controller connects wireless Aqua-Scope devices that are both controlled and controlling with the world of wired controls. With this device, it is possible to control an Aqua-Scope motor servo directly through a switch input. This switch input can be directly connected to an actuator of your alarm system or smart home system (Shelly, Z-Wave, Smarthings, Bosch, Homematic, ...). The Dry Contact Controller will transmit the information at the switch input wirelessly as a control signal to the motor.

Conversely, a normal magnetic shut-off valve or a similar actuator can be controlled by the Aqua-Scope sensor/monitor using the Dry Contact Controller.

The device requires a power supply, which can be provided through a regular 6...16 V AC connection, a USB-C power supply, or a 3 V battery. All connections, including switch inputs, switch outputs, and power supply, are connected via screw terminals. The button on the device can be used to test the quality of the wireless connection



to or from the Aqua-Scope device.

## Device as Motor Emulation

The device can be connected to the Aqua-Scope Monitor through the Aqua-Scope app. In the app, under the Configuration menu, select "New Subdevice" and enter the 8-digit ID of the device. Once accepted by the device, the controller can be operated through the app or another communication channel like MQTT. The switching signal (On/Off) is provided at the 'ADC' output terminal. Note that due to the limitation of the output current to 20 mA, direct switching of an electric motor is generally not possible, and an additional relay is required. The LED on the controller indicates the switching state with red and green color.



## Device as Control for Aqua-Scope Motors

Aqua-Scope valve actuators are controlled directly by LoRa wireless communication from the corresponding sensors or through a gateway. If control is to be done directly from a switch contact of an alarm system or a smart home system, this controller acts as the link. The two switching inputs detect "open" or "closed" and control the motor accordingly via radio. Once the motor reaches the new switching position, it also reports it via radio. A local LED (red or green) and a status output indicate this state.



To ensure secure communication, the 8-digit device ID and the 16-digit device key must be stored in the controller.

**Note: If you purchase the controller as a bundle with a motor directly from Aqua-Scope, the keys are already stored, and no further action is required.**

## Battery Operation

The controller can be powered by a battery through the 'GND' and '3V' connections. To save battery life, the controller must be switched to power saving mode, which can be done through the serial interface or with the button. Pressing the button for at least 2 seconds toggles between battery and normal modes. In battery mode, unlike normal mode, no LED lights up, and no status messages can be received. Therefore, the controller can only be used to control Aqua-Scope motors and only without a corresponding feedback channel on pin 'ADC'.

## Serial Interface



The controller's serial interface on the terminals RX/TX and parallel to the pin header is used for the necessary configuration of the motor ID and can also receive and output switching signals. The UART serial interface has the following parameters:

- Speed: 115200 Bps
- Coding: 8N1
- Level: TTL 3.3 V ... 5 V

Using the serial interface requires basic knowledge of serial terminal programs (minicom, putty, etc.) and interface hardware such as a Serial/UART converter.

The serial interface is controlled via AT commands. The complete set of AT commands for the RAK 3172 LoRa module is available at <https://docs.rakwireless.com/RUI3/Serial-Operating-Modes/AT-Command-Manual/>. In addition, the following device-specific AT commands are supported::

- **ATC+PEUI=xxxxxxxx**: Sets the 8-digit device ID of the motor to be controlled. The current value can be queried with '=?'
- **ATC+PKEY=xxxxxxxxxxxxxxxx**: Sets the 16-digit device key of the motor to be controlled. The current value can be queried with '=?'. The key is either provided by the dealer or can be requested at <https://aqua-scope.com/lora> by providing the 8-digit device ID and the email used for purchasing the device in the Aqua-Scope Shop.
- **ATC+SLEEP=0|1**. Sets the device to battery-saving mode (=1) or normal mode (=0 = default).
- **ATC+VALVE=0|1**. Controls a motor in the open/closed position

## Button

Using the button (not in battery mode), the current status of the motor is queried, and simultaneously, a link test of the radio connection is performed. A short press on the button starts the link test, whose result is indicated by a blinking sequence of the red and parallel green LED.

- No blinking: No radio connection.
- - 1...5 blinking: 1 (barely acceptable) ... 5 (excellent connection).



For a stable radio connection, it should blink at least twice. Afterward, the LED will indicate the queried switching state of the motor.

## Scope of Delivery

- Main Device

## Technical Data

- Platform: STM32WLE5CCU6
- Wireless Connection:
  - Spec: LoRa P2P
  - SF: 9, coding 4/5
  - Frequency: EU868
  - Range: > 2km (TX 22 dB)
- Protection: IP 20
- GPIOs
  - Output: max. 20 mA
  - Input: min. 10 uA
- Power consumption
  - Sleeping: 30 uA
  - RX: 8.5 mA
  - TX: 87 mA (@ 20 dbm 868 MHz)
- Environmental Conditions
  - Shipping and Storage: -65 °C ... 125 °C
  - Operation: - 40 °C ... 85 °C
  - Humidity:: 0...80 %
- Dimensions: 40 x 24 x 14 mm
- Weight (without Battery): 10 gr.

## Support and Contact

Should you encounter any problem, please give us the opportunity to address it before returning this product. Please check our website [www.aqua-scope.com](http://www.aqua-scope.com) and particularly the support section for answers and help. You can also send a message to [info@aqua-scope.com](mailto:info@aqua-scope.com).

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## Declaration of Conformity



Aqua-Scope Technology OÜ, Sakala 7-2, 10141 Tallinn, Republic of Estonia, declares that this radio emitting device works on the following frequencies:

**Български** С настоящото Aqua-Scope Technology OÜ декларира, че този тип радиосъоръжение DRYLWE02 е в съответствие с Директива 2014/53/ЕС. Цялостният текст на ЕС декларацията за съответствие може да се намери на следния интернет адрес: [www.aqua-scope.com/ce](http://www.aqua-scope.com/ce).

**Čeština** Tímto Aqua-Scope Technology OÜ prohlašuje, že typ rádiového zařízení DRYLWE02 je v souladu se směrnicí 2014/53/EU. Úplné znění EU prohlášení o shodě je k dispozici na této internetové adrese: [www.aqua-scope.com/ce](http://www.aqua-scope.com/ce).

**Dansk** Hermed erklærer Aqua-Scope Technology OÜ, at radioudstyrstypen DRYLWE02 er i overensstemmelse med direktiv 2014/53/EU. EUoverensstemmelseserklæringens fulde tekst kan findes på følgende internetadresse: [www.aqua-scope.com/ce](http://www.aqua-scope.com/ce).

**Deutsch** Hiermit erklärt Aqua-Scope Technology OÜ, dass der Funkanlagentyp DRYLWE02 der Richtlinie 2014/53/EU entspricht. Der vollständige Text der EU-Konformitätserklärung ist unter der folgenden Internetadresse verfügbar: [www.aqua-scope.com/ce](http://www.aqua-scope.com/ce).

**Eesti** Käesolevaga deklareerib Aqua-Scope Technology OÜ, et kesolev raadioseadme tüüp DRYLWE02 vastab direktiivi 2014/53/EL nõuetele. ELi vastavusdeklaratsiooni tselik tekst on kttesaadav jrgmisel internetiaadressil: [www.aqua-scope.com/ce](http://www.aqua-scope.com/ce)

**English** Hereby, Aqua-Scope Technology OÜ declares that the radio equipment type DRYLWE02 is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: [www.aqua-scope.com/ce](http://www.aqua-scope.com/ce)

**Español** Por la presente, Aqua-Scope Technology OÜ declara que el tipo de equipo radioeléctrico DRYLWE02 es conforme con la Directiva 2014/53/UE. El texto completo de la declaración UE de conformidad está disponible en la dirección Internet siguiente: [www.aqua-scope.com/ce](http://www.aqua-scope.com/ce)

**Ελληνικά** Με την παρούσα ο/η Aqua-Scope Technology OÜ, δηλώνει ότι ο ραδιοεξοπλισμός DRYLWE02 πληροί την οδηγία 2014/53/ΕΕ. Το πλήρες κείμενο της δήλωσης συμμόρφωσης ΕΕ διατίθεται στην ακόλουθη ιστοσελίδα στο διαδίκτυο: [www.aqua-scope.com/ce](http://www.aqua-scope.com/ce)

**Français** Le soussigné, Aqua-Scope Technology OÜ, déclare que l'équipement radioélectrique du type DRYLWE02 est conforme la directive 2014/53/UE. Le texte complet de la déclaration UE de conformité est disponible l'adresse internet suivante: [www.aqua-scope.com/ce](http://www.aqua-scope.com/ce)

**Hrvatski** Aqua-Scope Technology OÜ ovime izjavljuje da je radijska oprema tipa DRYLWE02 u skladu s Direktivom 2014/53/EU. Cjeloviti tekst EU izjave o sukladnosti dostupan je na sljedećoj internetskoj adresi: [www.aqua-scope.com/ce](http://www.aqua-scope.com/ce)

**Italiano** Il fabbricante, Aqua-Scope Technology OÜ, dichiara che il tipo di apparecchiatura radio DRYLWE02 conforme alla direttiva 2014/53/UE. Il testo completo della dichiarazione di conformità UE disponibile al seguente indirizzo Internet: [www.aqua-scope.com/ce](http://www.aqua-scope.com/ce)



**Latviešu** Ar šo Aqua-Scope Technology OÜ deklarē, ka radioiekārta DRYLWE02 atbilst Direktīvai 2014/53/ES. Pilns ES atbilstības deklarācijas teksts ir pieejams šādā interneta vietnē: [www.aqua-scope.com/ce](http://www.aqua-scope.com/ce) Lietuvių AŠ, Aqua-Scope Technology OÜ, patvirtinu, kad radijo įrenginių tipas DRYLWE02 atitinka Direktyvą 2014/53/ES. Visas ES atitikties deklaracijos tekstas prieinamas šiuo internet adresu: [www.aqua-scope.com/ce](http://www.aqua-scope.com/ce)

**Magyar** Aqua-Scope Technology OÜ igazolja, hogy a DRYLWE02 típus rádiberendezés megfelel a 2014/53/EU irányelvnek. Az EUMegfelelőségi nyilatkozat teljes szövege elérhető a következő internetes címen: [www.aqua-scope.com/ce](http://www.aqua-scope.com/ce)

**Malti** B'dan, Aqua-Scope Technology OÜ, niddikjara li dan it-tip ta' tagħmir tar-radju DRYLWE02 huwa konformi mad-Direttiva 2014/53/UE. It-test kollu tad-dikjarazzjoni ta' konformit tal-UE huwa disponibbli f'dan l-indirizz tal-Internet li ġej: [www.aqua-scope.com/ce](http://www.aqua-scope.com/ce)

**Nederlands** Hierbij verklaar ik, Aqua-Scope Technology OÜ, dat het type radioapparaat DRYLWE02 conform is met Richtlijn 2014/53/EU. De volledige tekst van de EUconformiteitsverklaring kan worden geraadpleegd op het volgende internetadres: [www.aqua-scope.com/ce](http://www.aqua-scope.com/ce)

**Polski** Aqua-Scope Technology OÜ niniejszym oświadczam, że typ urządzenia radiowego DRYLWE02 jest zgodny z dyrektywą 2014/53/UE. Pełny tekst deklaracji zgodności z UE jest dostępny pod następującym adresem internetowym: [www.aqua-scope.com/ce](http://www.aqua-scope.com/ce)

**Português** O(a) abaixo assinado(a) Aqua-Scope Technology OÜ declara que o presente tipo de equipamento de rádio DRYLWE02 está em conformidade com a Diretiva 2014/53/UE. O texto integral da declaração de conformidade está disponível no seguinte endereço de Internet: [www.aqua-scope.com/ce](http://www.aqua-scope.com/ce)

**Română** Prin prezenta Aqua-Scope Technology OÜ declară că tipul de echipamente DRYLWE02 este în conformitate cu Directiva 2014/53/UE. Textul integral al declarației UE de conformitate este disponibil la următoarea adresă internet: [www.aqua-scope.com/ce](http://www.aqua-scope.com/ce)

**Slovensko** Aqua-Scope Technology OÜ potrjuje, da je tip radijske opreme DRYLWE02 skladen z irektivom 2014/53/EU. Celotno besedilo izjave EU o skladnosti je na voljo na naslednjem spletnem naslovu: [www.aqua-scope.com/ce](http://www.aqua-scope.com/ce)

**Slovensky** Aqua-Scope Technology OÜ týmto vyhlasuje, že rádiové zariadenie typu DRYLWE02 je v slade so smernicou 2014/53/EÚ. Úplné EÚ vyhlásenie o zhode je k dispozícii na tejto internetovej adrese: [www.aqua-scope.com/ce](http://www.aqua-scope.com/ce)

**Soumi** Aqua-Scope Technology OÜ vakuuttaa, että radiolaitetyyppi DRYLWE02 on direktiivin 2014/53/EU mukainen. EUvaatimustenmukaisuusvakuutuksen täysimittainen teksti on saatavilla seuraavassa internetosoitteessa: [www.aqua-scope.com/ce](http://www.aqua-scope.com/ce)

**Svenska** Härmed försäkrar Aqua-Scope Technology OÜ att denna typ av radioutrustning DRYLWE02 verensstämmer med direktiv 2014/53/EU. Den fullständiga texten till EUförsäkran om verensstämmelse finns på följande webbadress: [www.aqua-scope.com/ce](http://www.aqua-scope.com/ce)

## Disposal Guidelines



Do not dispose of electrical appliances as unsorted municipal waste, use separate collection facilities. Contact your local government for information regarding the collection systems available. If electrical appliances are disposed of in landfills or dumps, hazardous substances can leak into the groundwater and get into the food chain, damaging health and well-being.