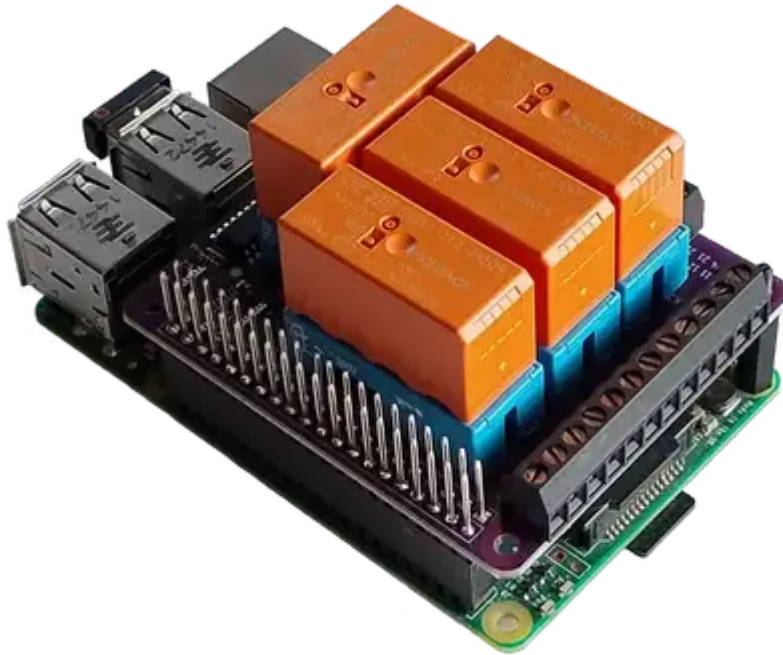


# AQEX qReCon Flex v1.0 — Technical Datasheet

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## 1. Overview

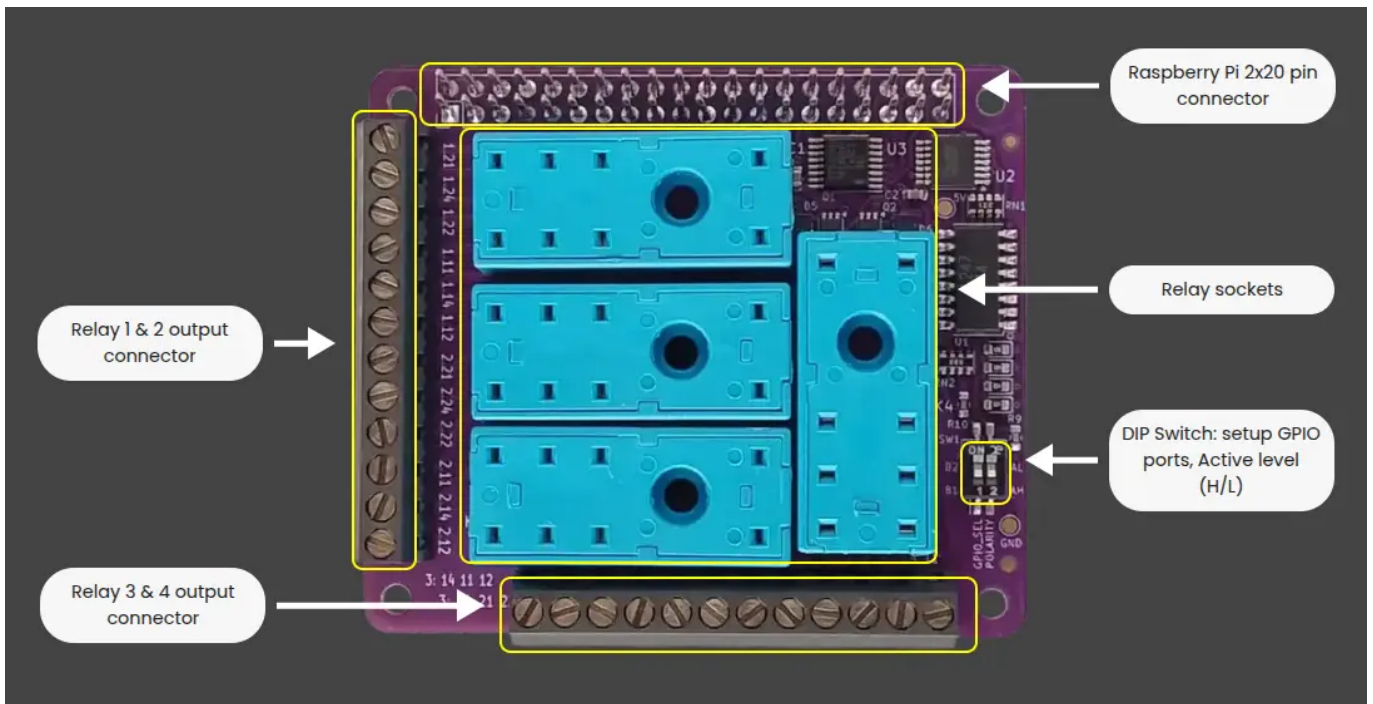
The **qReCon Flex** is a versatile 4-channel relay output module designed for Raspberry Pi and other microcomputers. Its unique **socketed design** allows you to choose and easily replace the relays based on your specific project needs.

Featuring **optical isolation**, **configurable GPIOs**, and **Active High/Low control**, the qReCon Flex provides professional-grade reliability and ultimate flexibility for controlling AC/DC loads.

## 2. Technical Specifications

Feature	Specification
<b>Number of Channels</b>	4 independent relay sockets
<b>Relay Compatibility</b>	Standard industrial relays (e.g., Finder 40 series, Omron G2RL)
<b>Socket Type</b>	Easy-swap sockets (no soldering required for relay replacement)
<b>Isolation</b>	Double isolation (Opto-isolators + Relay)
<b>Control Logic</b>	3.3V or 5V DC
<b>Power Supply</b>	5V DC via Raspberry Pi header

### 3. qReCon Flex User Interfaces and Indicators



### 4. Hardware Configuration

The qReCon features a **2-circuit DIP switch (2)** for hardware-level customization:

#### 4.1 GPIO Selection (GPIO\_SEL)

You can choose between two sets of GPIO pins for control to avoid conflicts with other HATs:

DIP Position	Relay 1	Relay 2	Relay 3	Relay 4
<b>OFF (B1)</b>	GPIO21 (P40)	GPIO20 (P38)	GPIO16 (P36)	GPIO5 (P29)
<b>ON (B2)</b>	GPIO26 (P37)	GPIO19 (P35)	GPIO13 (P33)	GPIO6 (P31)

#### 4.2 Active Level Setup (POLARITY)

Defines whether the relay activates on a HIGH (1) or LOW (0) signal:

DIP Position	GPIO 0 (False)	GPIO 1 (True)
<b>OFF (Active High)</b>	COM-NC	<b>COM-NO</b>
<b>ON (Active Low)</b>	<b>COM-NO</b>	COM-NC

## 5. Compatible Relay Models

The qReCon Flex is designed to work with a wide range of standard industrial relays. The following is a **non-exhaustive list** of models that have been tested and are guaranteed to be compatible. Many other brands and models with the same footprint and 5V coil voltage may also work.

- **Schrack:** RT1 (e.g., RT314005), RT2 (e.g., RT424005)
- **Finder:** 40.51.9.005.xxxx, 40.52.9.005.xxxx, 40.61.9.005.xxxx
- **Omron G2RL series:** G2RL-1A-E, G2RL-1A4-E, G2RL-1-E, G2RL-14-E, G2RL-2A, G2RL-2
- **Omron G5RL series:** G5RL-1A-E-LN, G5RL-1A-E-HR, G5RL-1A-E-TV8
- **Critical Requirement:** Always ensure the replacement relay coil voltage is exactly **5V DC**.

## 6. Resources and Software

Full support and documentation are available on our official [GitHub repository](#):

- **C++ and Shell Utilities:** Ready-to-use tools for controlling the relays.
- **Full User Manual:** Including setup and socket installation guides.

## 7. Safety and Installation

- **Relay Selection:** Always ensure the relay coil voltage is **5V DC**. Using relays with different coil voltages may damage the HAT or the Pi.
- **High Voltage Warning:** If using relays for AC switching (up to 250V), touching any part of the high-voltage section during operation is life-threatening.
- **Isolation Zone:** The high-voltage area is clearly demarcated on the PCB with a **thick polygon outline**, **High Voltage icons**, and **"Danger"** labels.
- **Boot Phase Note:** Relay 4 (GPIO5/6) may trigger during boot due to Raspberry Pi default pull-ups. Use `gpio=X=mode, state` in `config.txt` to manage this.

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**HW Version:** 1.0 | **Released:** 2025

**Manufacturer:** AQEX Electronics | [aqex.eu](http://aqex.eu)