2. Niryo One - Physical external interfaces

2.1 Overview

There are many physical interfaces at the back of Niryo One. Here is an overview and some warnings about things you should be careful about.

The functionalities related to each interface will be covered throughout this manual.

1. Top button.

2. Ethernet port of the Raspberry Pi 3B.

3. USB port * 4.

4. LED.

5. CAN bus connection for Niryo Steppers * 2. Not used yet.

6. Dynamixel XL-320 connector. Used for the vacuum pump.

7. Dynamixel XL-430 connector. Not used yet.

8. 12 V switch output * 2. Actionable through software.

9. GPIO panel * 2. Total 6 digital pins, actionable through software. You can use GPIO1 and GPIO2 pins as 5V digital pins (mode: input or output, state: high or low).

10. Power switch.

11. Power adapter connector.

⚠ Ensure your power adapter has an 11.1V output and is able to provide 6A. Lower output voltage and current may cause the robot to fail to move correctly. Higher output voltage and current may permanently damage the robot, and can be a cause of fire.

2.2 Panel connector

Here is a more detailed view of the panel connector:
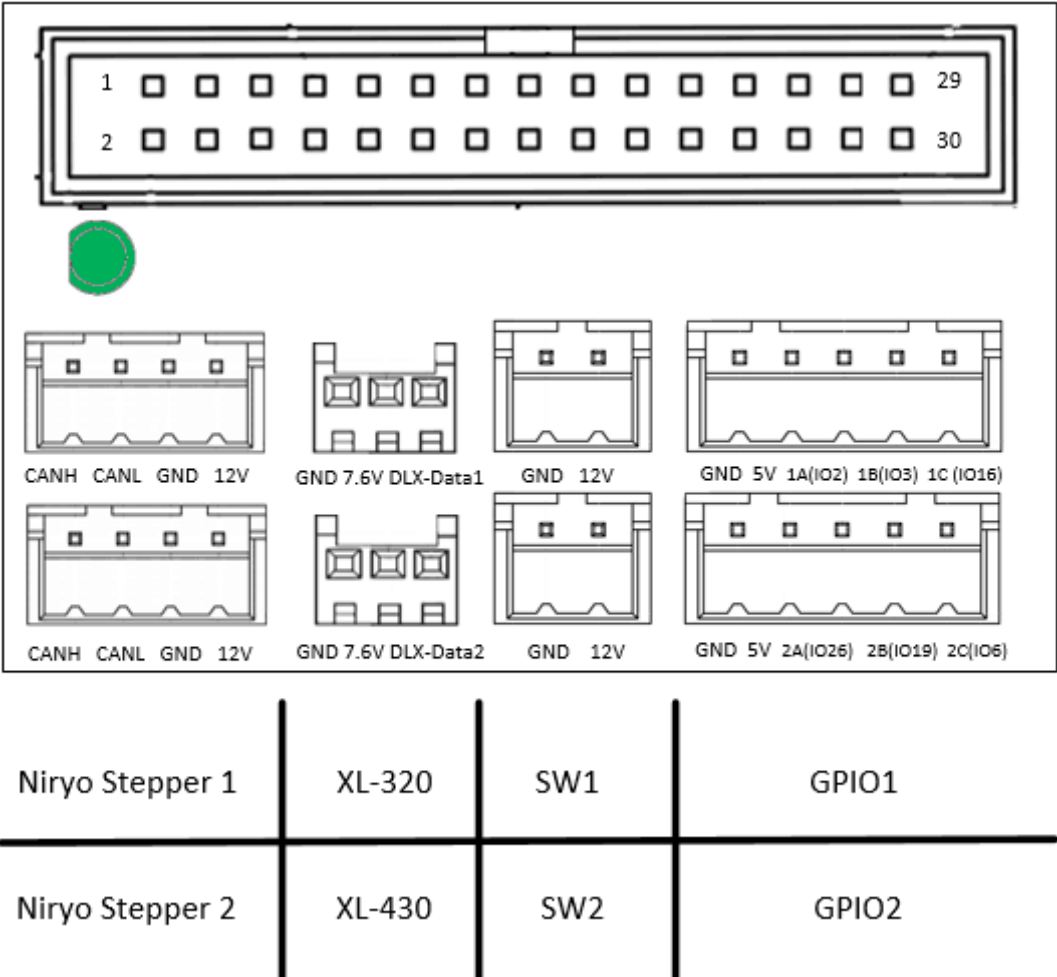
⚠ Electrical rules and warnings for the panel connector:

- The XL-320 (Dxl-Data1) interface should only be used to connect XL-320 motors.
- The XL-430 (Dxl-Data2) interface should only be used to connect XL-430 motors.
- Do not make a short circuit between the GND and 12V pins of the switches (SW1 and SW2) and do not connect the switches together.
- The SW* interfaces can provide 500 mA maximum.
- The device you connect to GPIOs pins must operate at 5V, not more, not less. Add a voltage divider if needed.
- Do not make a short circuit between GND, 5V, and any other GPIO pin.

Not respecting these rules may lead to various damages on the electronics boards or motors.