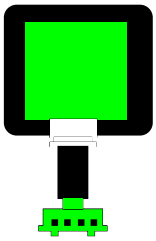
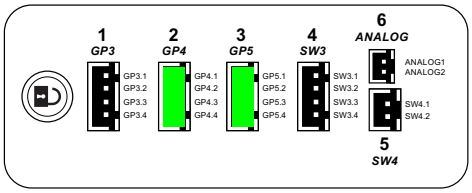
DOBOT Magician V1/V2

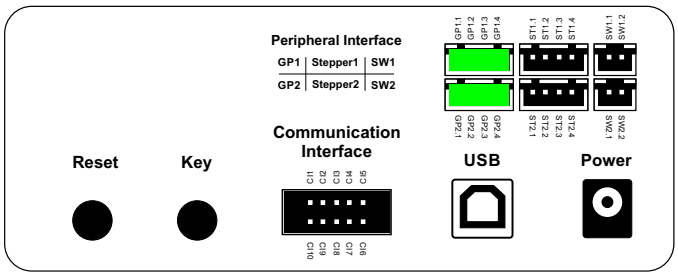
INPUT / OUTPUT GUIDE

Color Sensor
V1 GP2
V2 GP1, 2, 4, 5



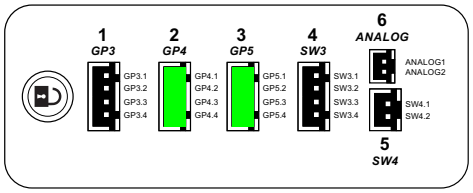
GP1
GP2
GP4
GP5

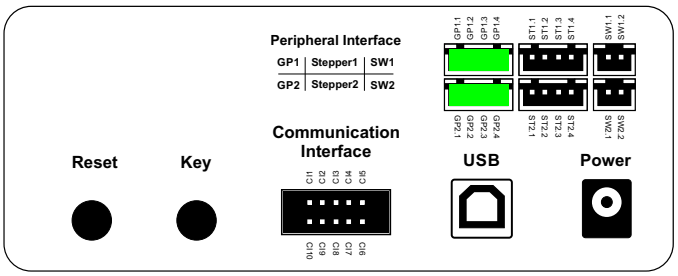


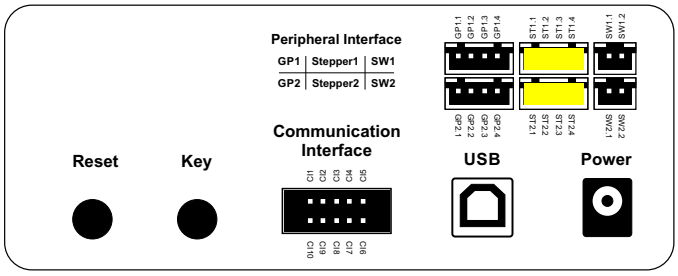


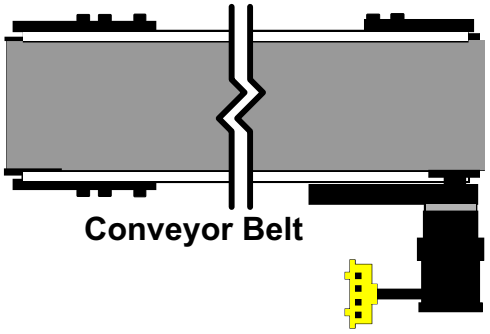
IR Sensor V1 & V2

GP1
GP2
GP4
GP5

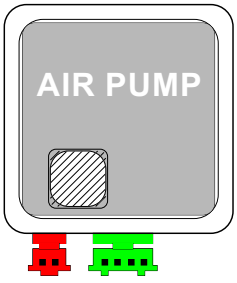




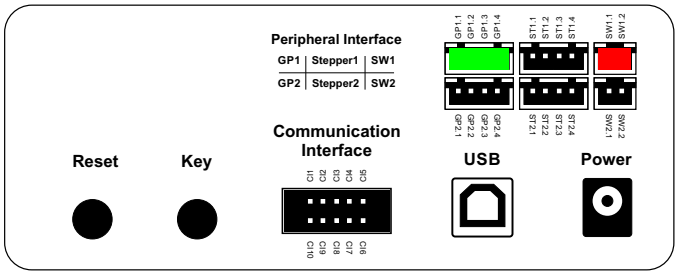




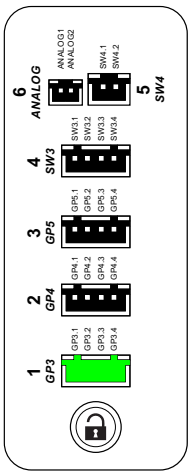
STEPPER 1
STEPPER 2



SW1 GP1



Wrist Rotate Servo



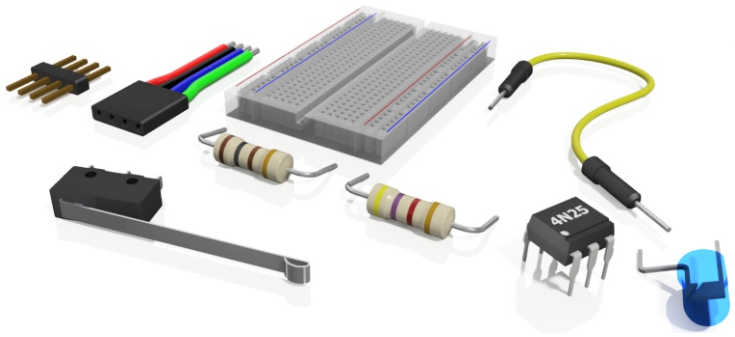
DOBOT Magician

Digital Signal Guide

NEVER wire anything to the Dobot Magician while it has power **ON**
ALWAYS shutdown the Dobot before making connections or damage to the robot could occur.

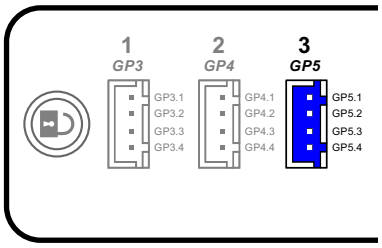
Parts Needed for Safe Communication

- Four Pin Male Headers
- Four Pin Jumper Wires
- 100Ω Resistors
- 4.7kΩ Resistors
- Breadboard
- Optical Isolators 4N25
- LEDs
- Jumper Wires
- Limit Switch



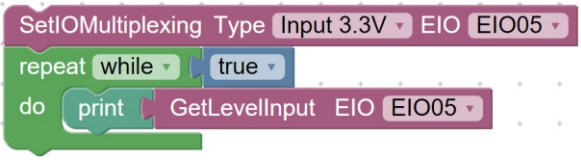
Test INPUT Communication to Dobot

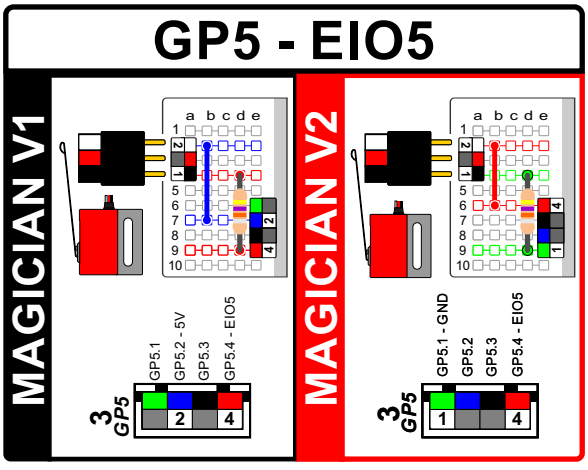
- Four Pin Male Headers
- Four Pin Jumper Wires
- 4.7kΩ Resistors
- Breadboard
- Limit Switch



Running Log:

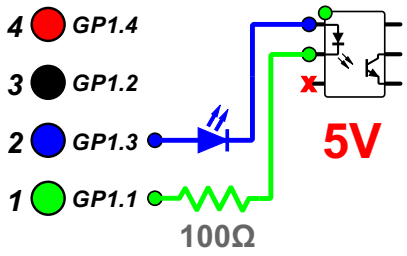
```
[17:07:08]0
[17:07:08]0
[17:07:08]0
[17:07:08]0
[17:07:08]1
[17:07:08]1
[17:07:08]1
```

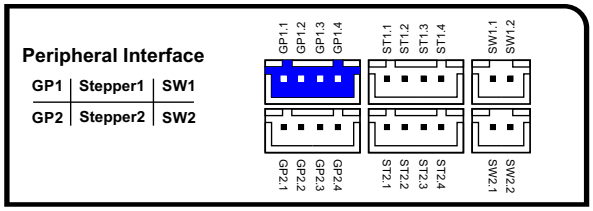


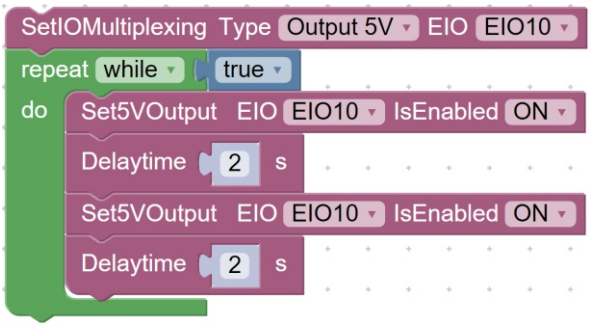


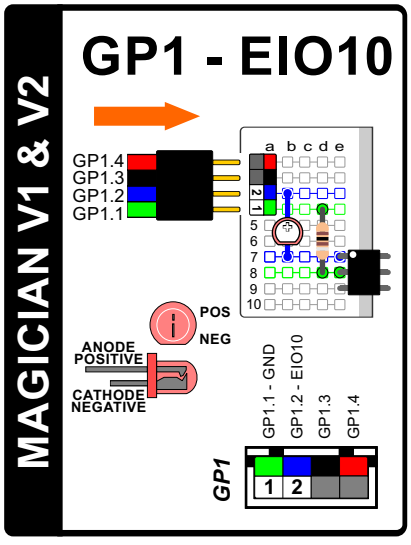
Test OUTPUT Communication from Dobot

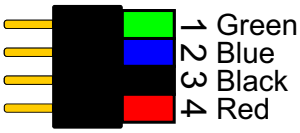
- Four Pin Male Headers
- Four Pin Jumper Wires
- 100Ω Resistors
- Breadboard
- Optical Isolators 4N25
- LEDs











DOBOT Magician V1

Digital Signal Guide

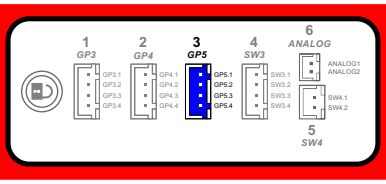
Caution: NEVER wire anything to the Dobot Magician while it has power on. **ALWAYS** shutdown the Dobot before making connections or damage to the robot could occur.

WARNING — Power OFF

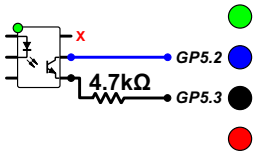
WARNING — Power OFF

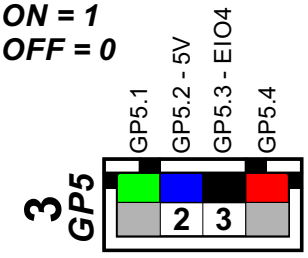
INPUTS

GP5

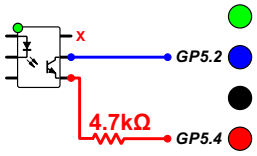


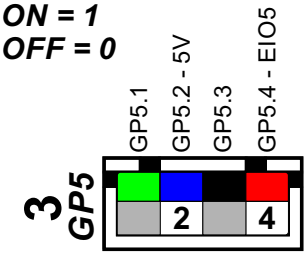
EIO-4 — Signal ON = 1, Signal OFF = 0



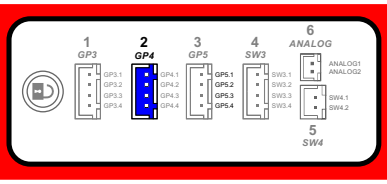


EIO-5 — Signal ON = 1, Signal OFF = 0

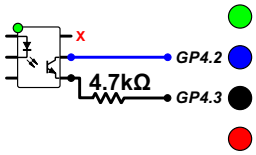


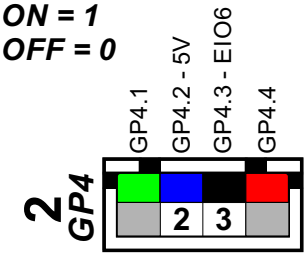


GP4

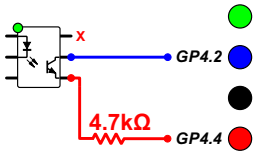


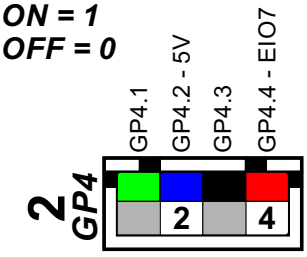
EIO-6 — Signal ON = 1, Signal OFF = 0





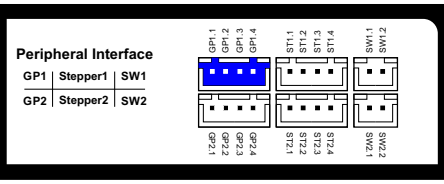
EIO-7 — Signal ON = 1, Signal OFF = 0



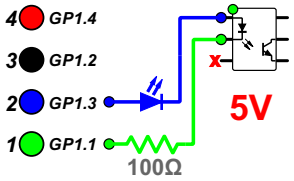


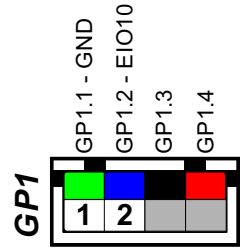
OUTPUTS

GP1

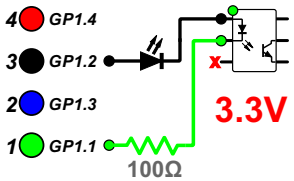


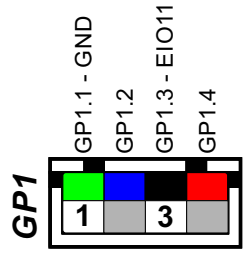
EIO-10



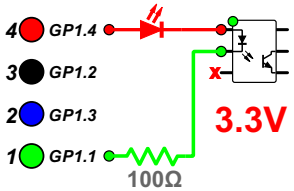


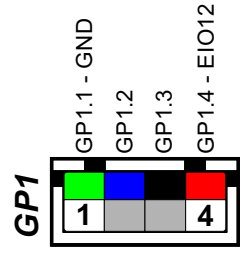
EIO-11



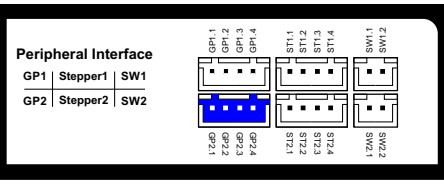


EIO-12

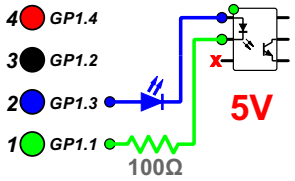


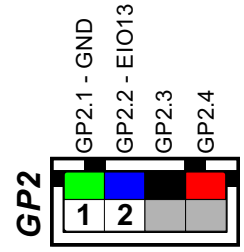


GP2

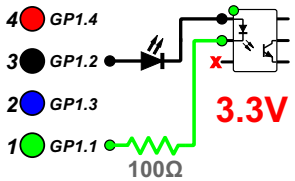


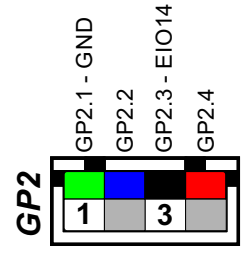
EIO-13



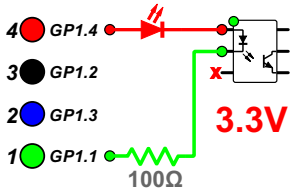


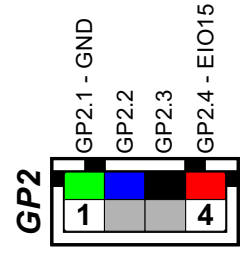
EIO-14

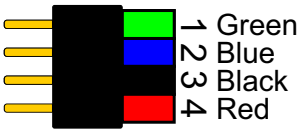




EIO-15







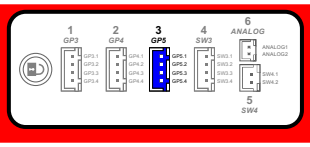
DOBOT Magician V2

Digital Signal Guide

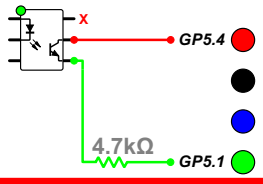
Caution: NEVER wire anything to the Dobot Magician while it has power on. **ALWAYS** shutdown the Dobot before making connections or damage to the robot could occur.

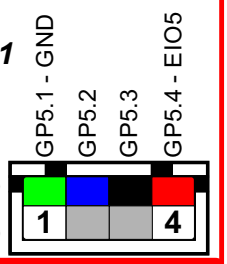
INPUTS

GP5

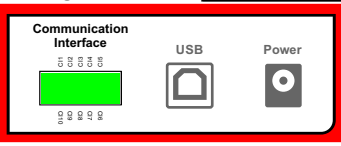


EIO-5 *Signal ON = 0 Signal OFF = 1*

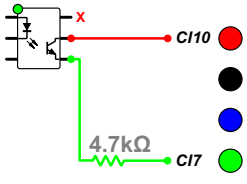


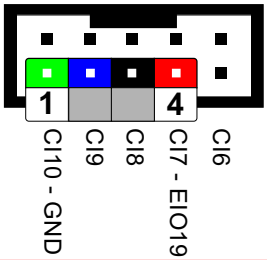


CI

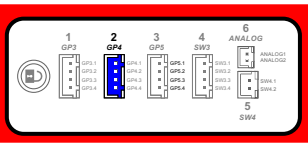


EIO-19

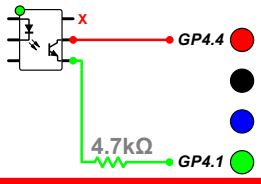


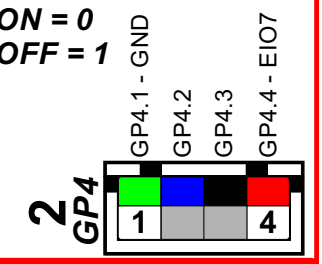


GP4

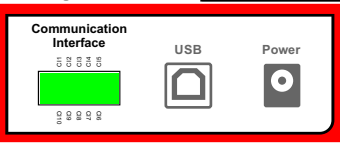


EIO-7 *Signal ON = 0 Signal OFF = 1*

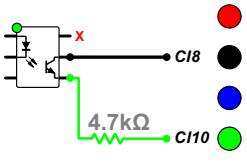


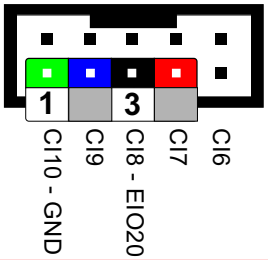


CI



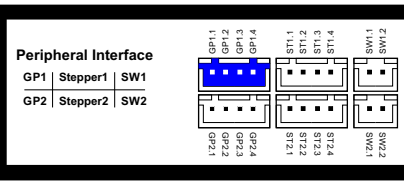
EIO-20



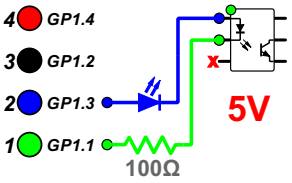


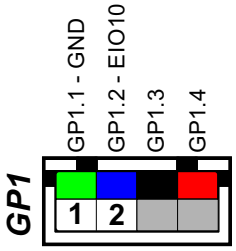
OUTPUTS

GP1

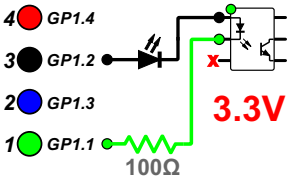


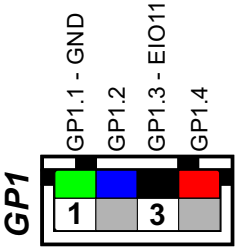
EIO-10





EIO-11





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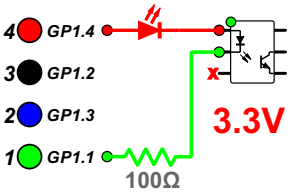
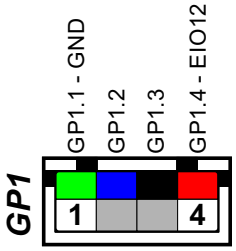
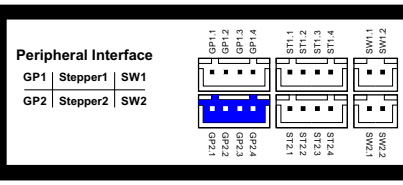
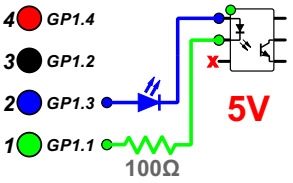


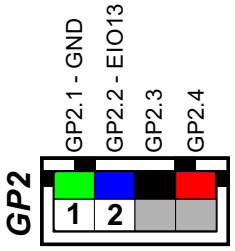


GP2

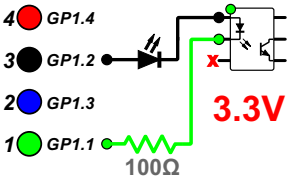


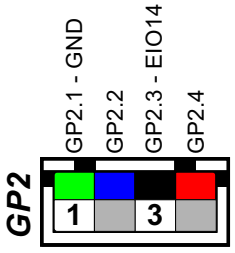
EIO-13



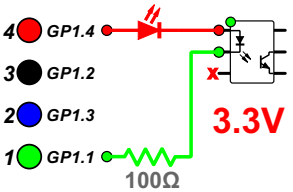


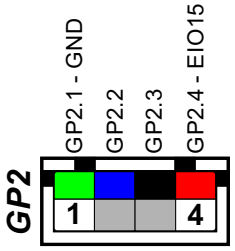
EIO-14

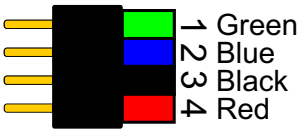




EIO-15







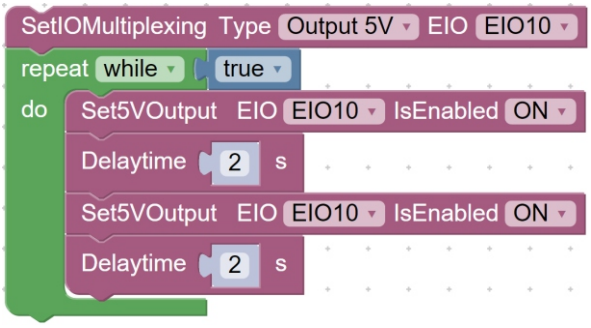
DOBOT Magician

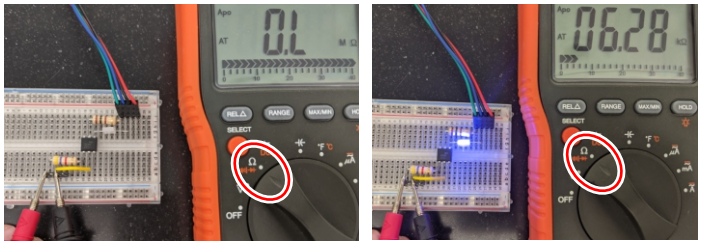
Signal Guide

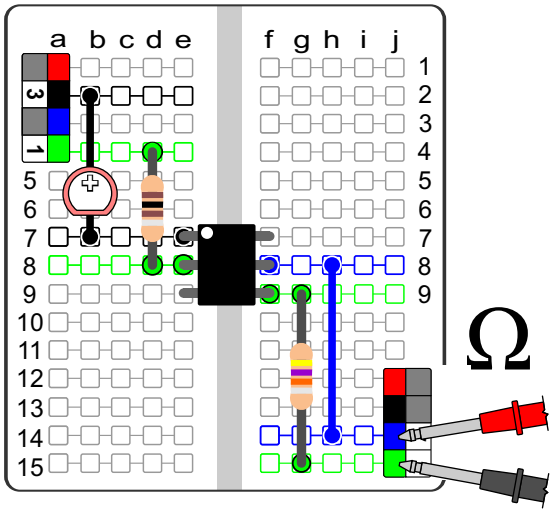
Caution: NEVER wire anything to the Dobot Magician while it has power on. **ALWAYS** shutdown the Dobot before making connections or damage to the robot could occur.

Check Optical Isolator with Volt Meter

WHY is the robot not receiving a signal from the handshake module? Wiring and programing are often the culprit. It could also be a damaged optical isolator. The LED on the INPUT side of the optical isolator helps us determine if the signal is actually being sent by the robot. Unfortunately, the OUTPUT side of the optical isolator will not allow us to use an LED as an indicator. We can however use a volt meter to measure the RESISTANCE across the optical Isolator to determine when a signal is ON or OFF. Use the Blockly program shown below to cycle the signal ON and OFF to see if the signal is getting across the optical isolator. When no signal is present, the voltmeter should read “O.L” or “---”. When a signal is present it should read near the resistance value of the resistor used.



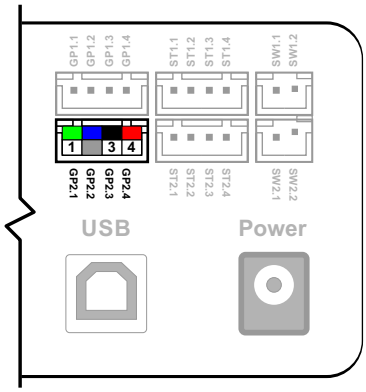


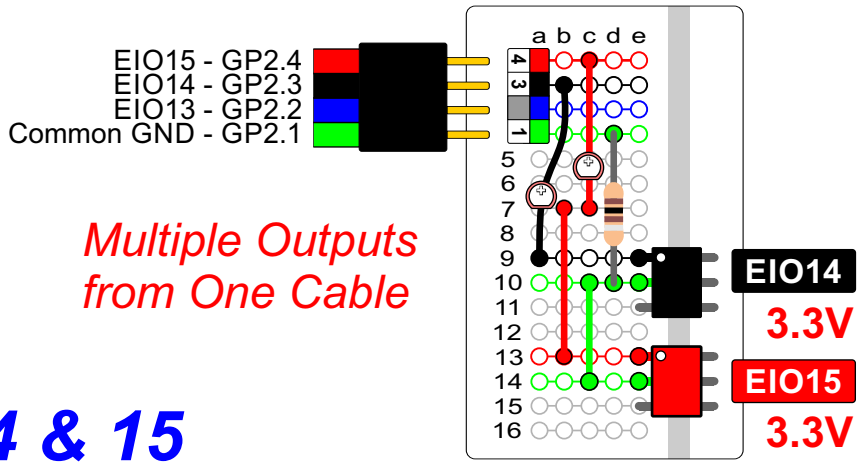


Optical Isolator OFF = 0.L or ---
Optical Isolator ON = 4.9+ kΩ

How to Use a Common GND

Can the ground (GND) be shared between multiple outputs? Yes, the ground can split among multiple optical isolators as a “shared” or common ground signal. The optical isolators then only need the signal wire to turn ON and OFF. See the illustration below.





Multiple Outputs from One Cable

GP2 - EIO14 & 15