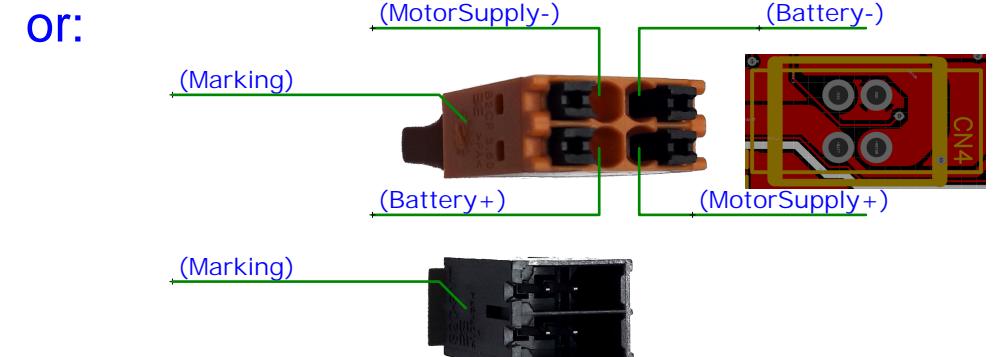


Cable M12-A female 4/5pole, e.g. weidmueller.com

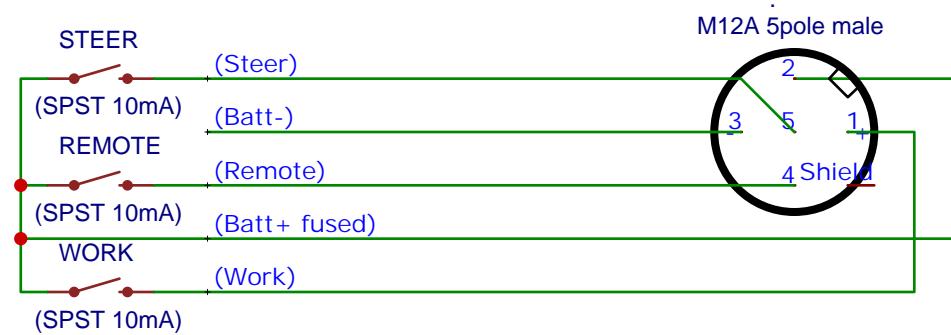
SAIL-M12BG-5-1.5U (9457910150)

5 pole 1.5m unshielded = 0150cm



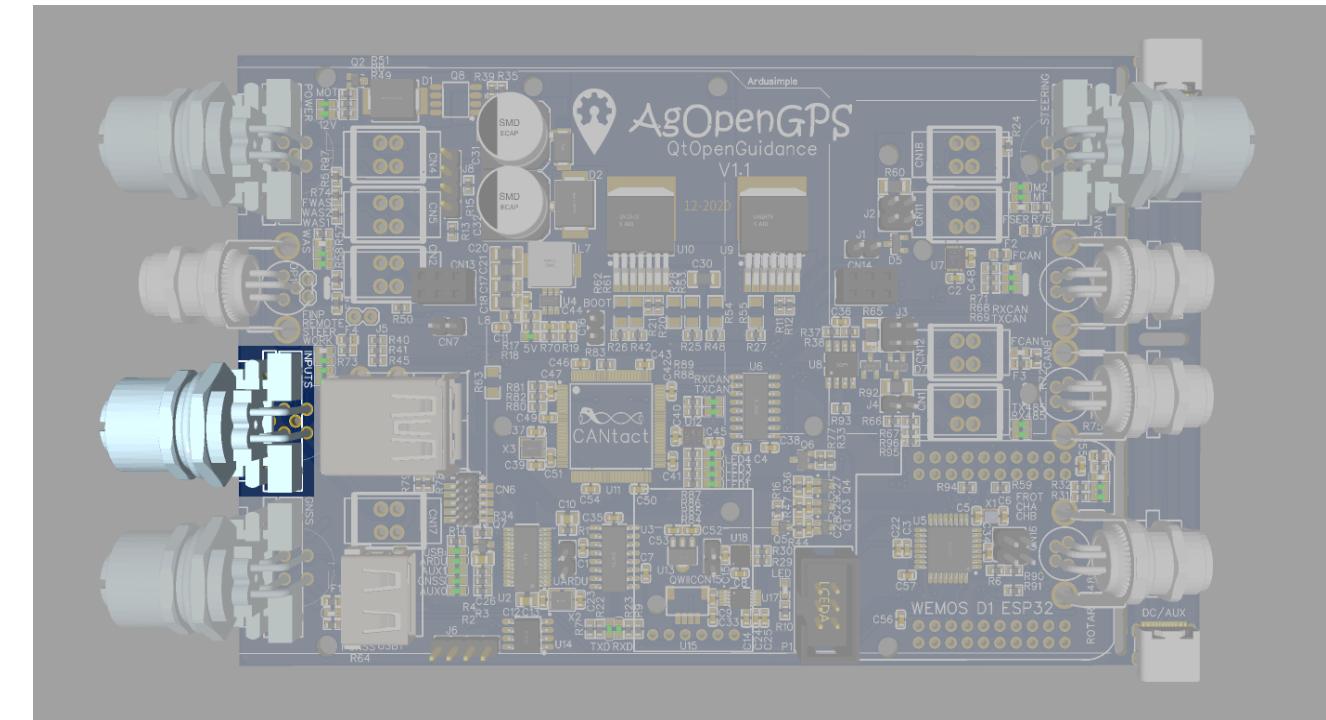
TITLE:		REV: 1.0
Company: agopengps.discourse.group		Sheet: 1/1
Date: 2021-01-09		Drawn By: GoRoNb
	EasyEDA	

Connection for Control Signals



Annotations:

- Steer signal will be automatically asserted when motor driver is powered if J7 is unfitted
- Remote and Work signals may be analog 0..15V if using the ESP32 option



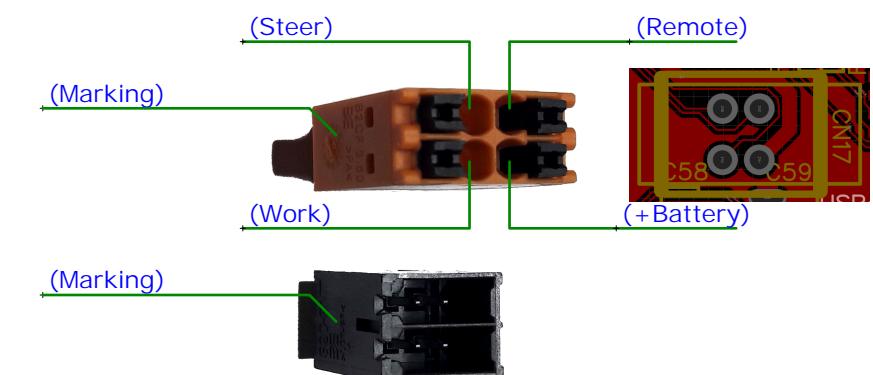
Cable M12-A male 4/5pole, e. g. weidmueller.com

SAIL-M12G-5-1.5U (9457610150)

5 pole 1.5m unshielded = 0150cm



or:



TITLE:

Connecting Power Socket

REV: 1.0

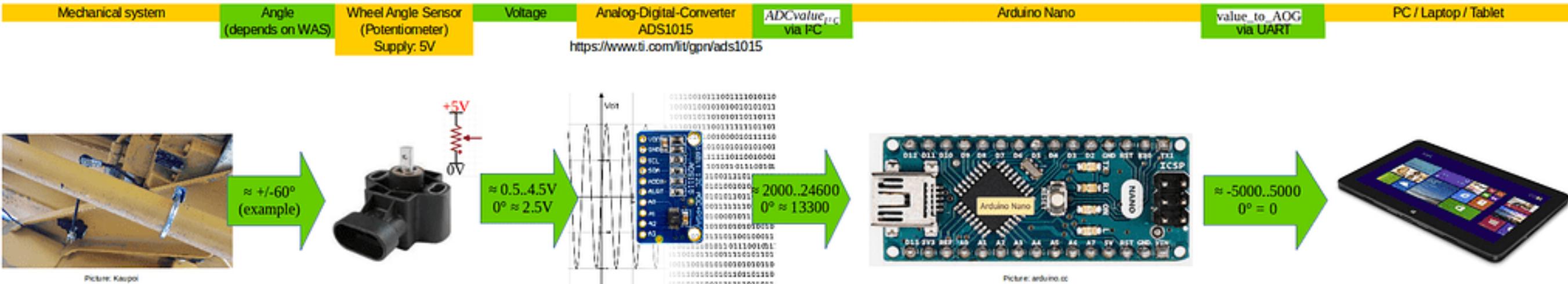
1

2

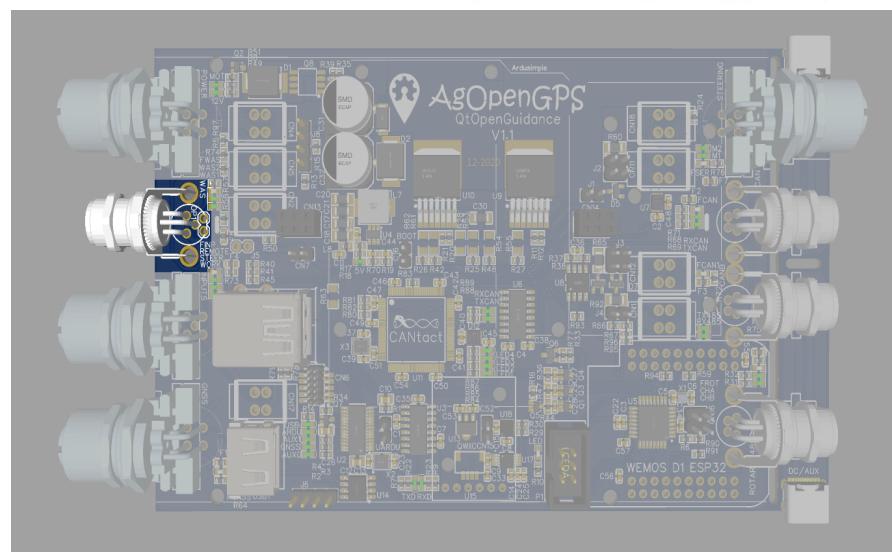
3

4

5



Picture: Kaupol

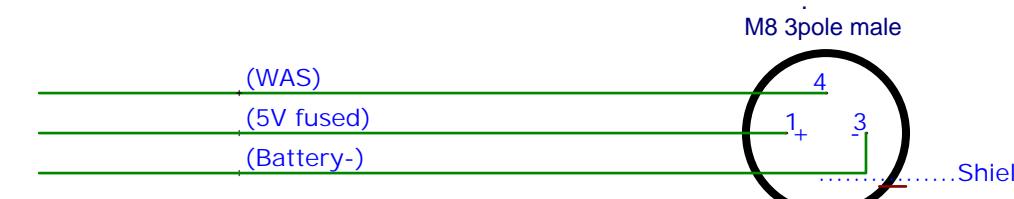
mind: https://en.wikipedia.org/wiki/Ackermann_steering_geometry

$$\text{value_to_AOG} = \begin{cases} \frac{25 \cdot (\text{ADCvalue}_{PC} - 13280 - \text{'Wheel Angle Zero'})}{\text{'Counts per Degree'}} & (\text{if numerator} \geq 0) \\ \frac{25 \cdot \text{'Ackermann'} \cdot (\text{ADCvalue}_{PC} - 13280 - \text{'Wheel Angle Zero'})}{\text{'Counts per Degree'}} & (\text{if numerator} < 0) \end{cases}$$

$+/- 6.144V = 0..65520 (=0x1ff0)$
 $0..6.144V = 0..32752 (=0x7ff0)$
 $0.5V = 0.26653$
 $2.5V (0^\circ) = 13326$
(Brian's choice: 13280)
(ADC sends 12bit left aligned)



Connection to (new) WAS



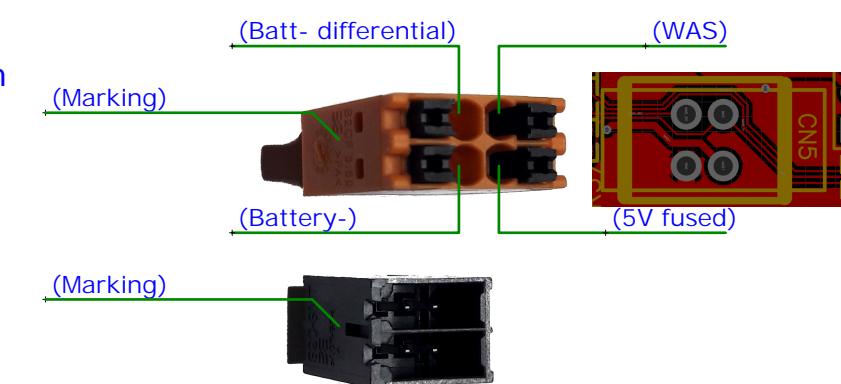
Cable M8 male 3/4pole, e. g. weidmueller.com

SAIL-M8G-3-3.0U (1824590300)

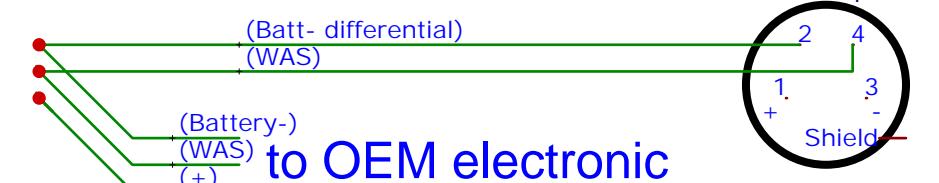
SAIL-M8G-4-3.0U (1906270300)

4 pole 3m unshielded = 0300cm

Or:



Connection to OEM WAS



to OEM electronic

TITLE:

Connecting the Wheel Angle Sensor (WAS)

REV: 1.0

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Date: 2021-01-09 Drawn By: GoRoNb

1

2

3

4

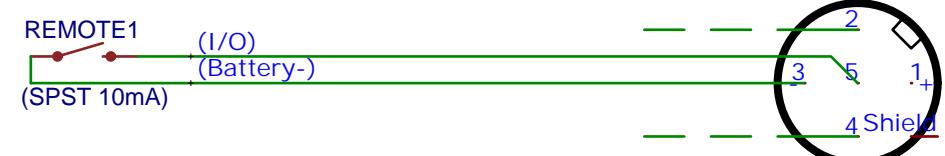
5



Connection to Steering Motor



Additional Steer Input Switch (starts autosteering when motor is engaged)

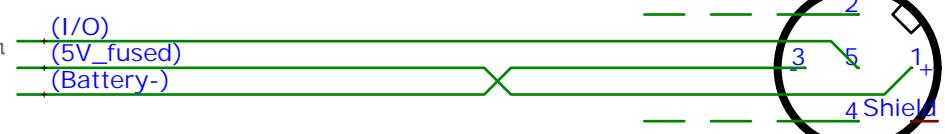


Additional Engagement Servo*

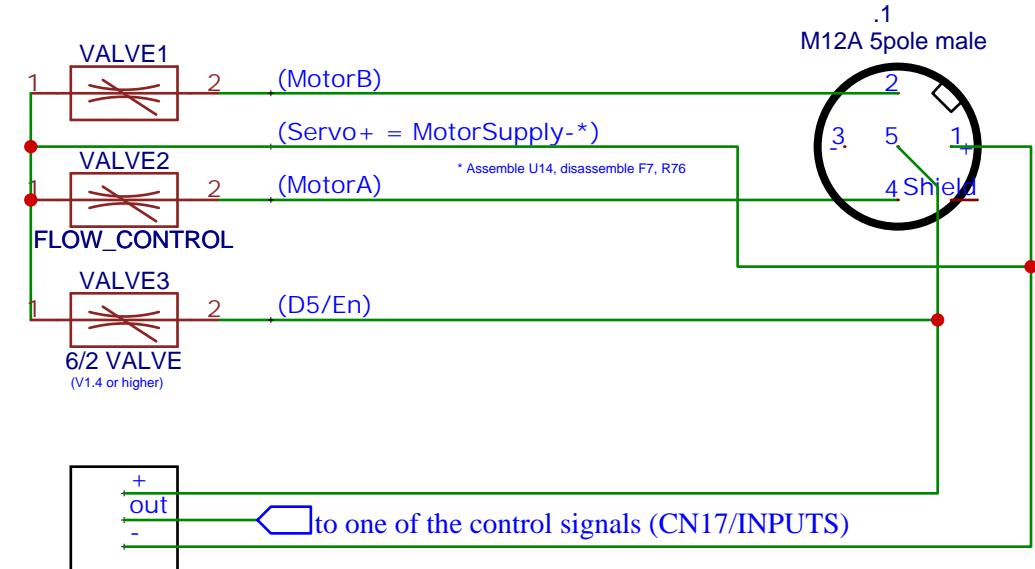
* Modification of code needed

OPTION.1
M12A 5pole male

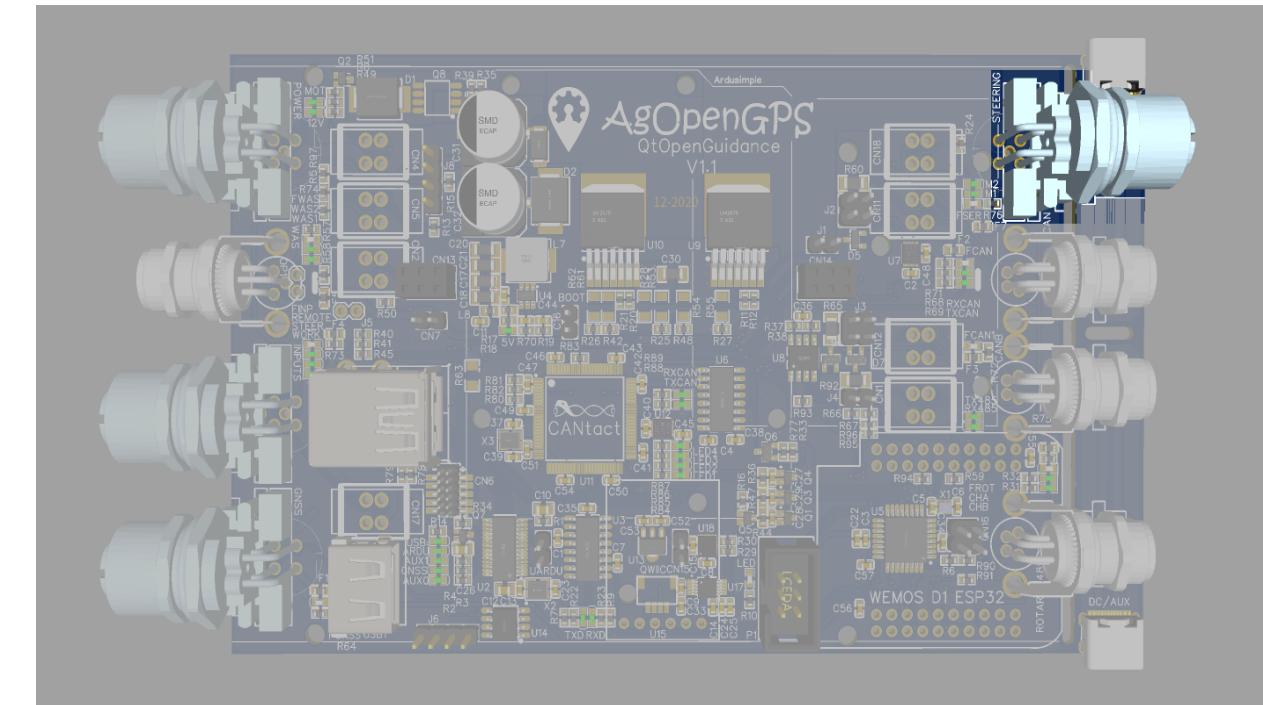
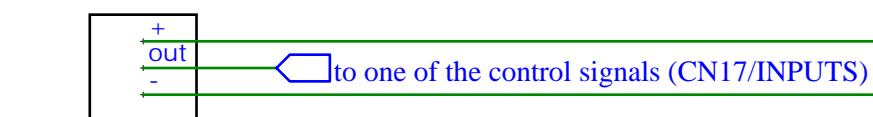
OPTION.2
M12A 5pole male



Connection to Hydraulic Valves



+ Turn Sensor or Pressure Switch for disengaging

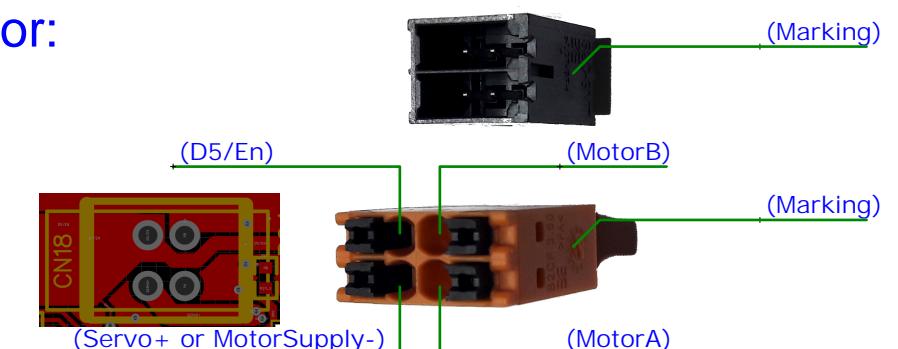


Cable M12-A male 4/5pole, e. g. weidmueller.com

SAIL-M12G-5-1.5U (9457610150)

5 pole 1.5m unshielded = 0150cm

or:



TITLE:

Connecting Motor or Valves

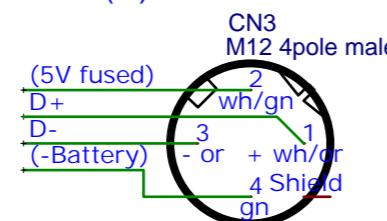
REV: 1.0



USB* or I²C**

(* e. g. to Rooftop Unit)

(**) remove R43 + R46 and connect I²C to CN3



I-Ethernet pinning:

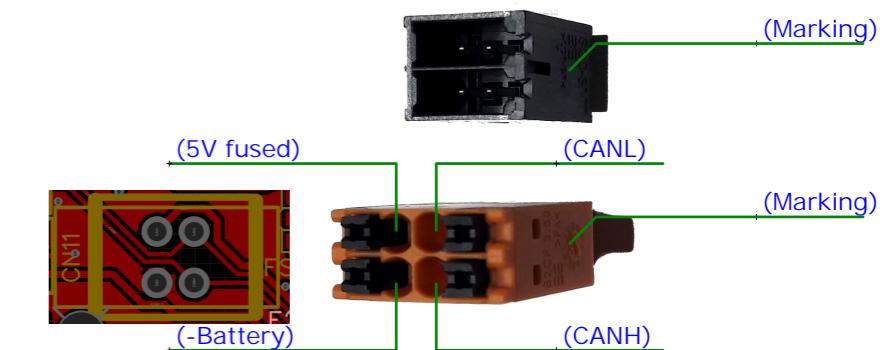
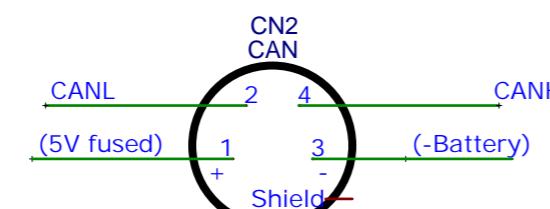


Cable M12D male-male 4pole, e. g. weidmueller.com

IE-C5DD4UG0030MCSMCS-E (1025950030)

4 pole 3m = 0030dm

Controller Area Network (CAN)

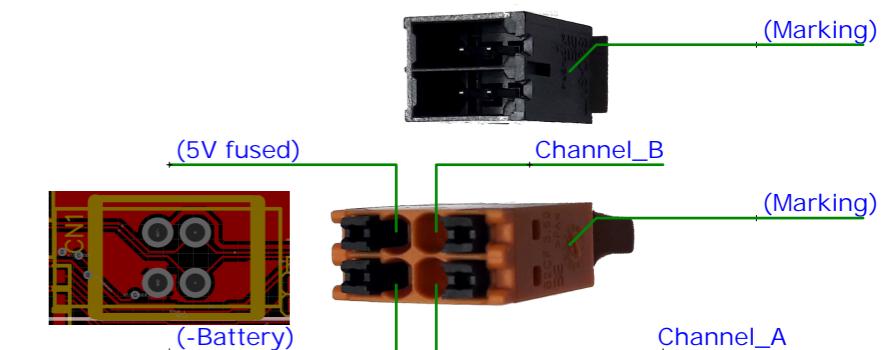


Cable M8 male 4pole, e. g. weidmueller.com

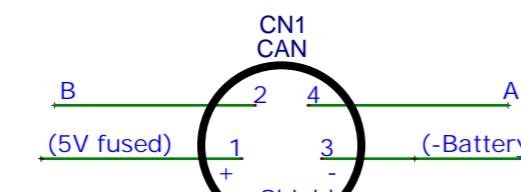
SAIL-M8G-4-3.0U (1906270300)

4 pole 3m unshielded = 0300cm

OR:



RS485 / ModbusRTU

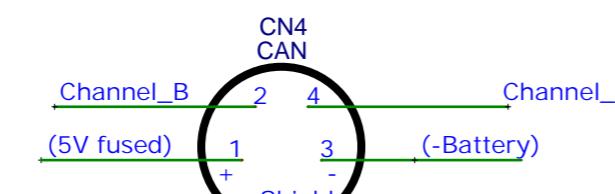


Cable M8 male 4pole, e. g. weidmueller.com

SAIL-M8G-4-3.0U (1906270300)

4 pole 3m unshielded = 0300cm

Alternative: Rotary Encoder

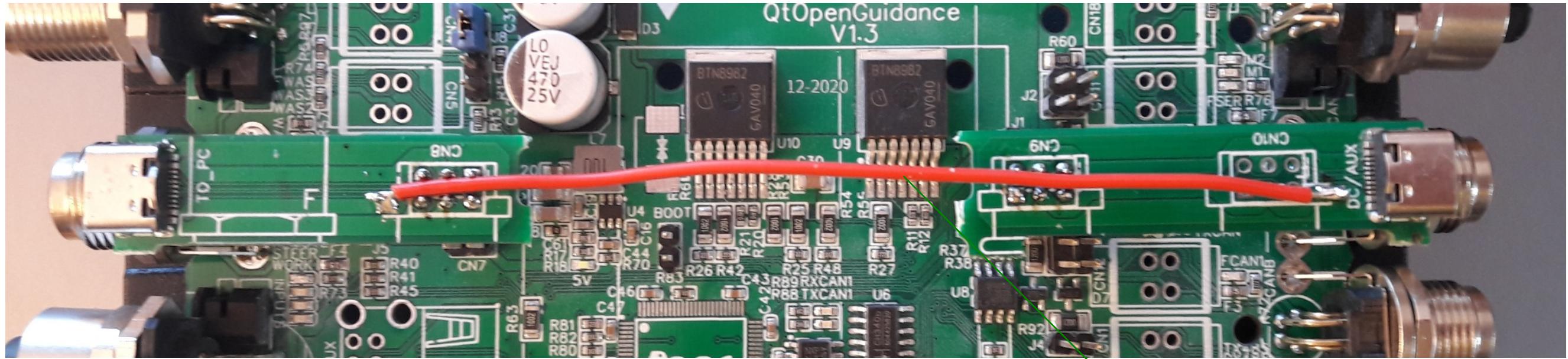


TITLE:

Bus Connections

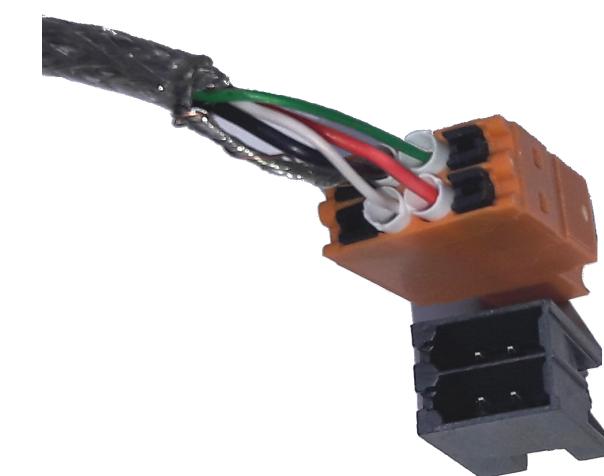
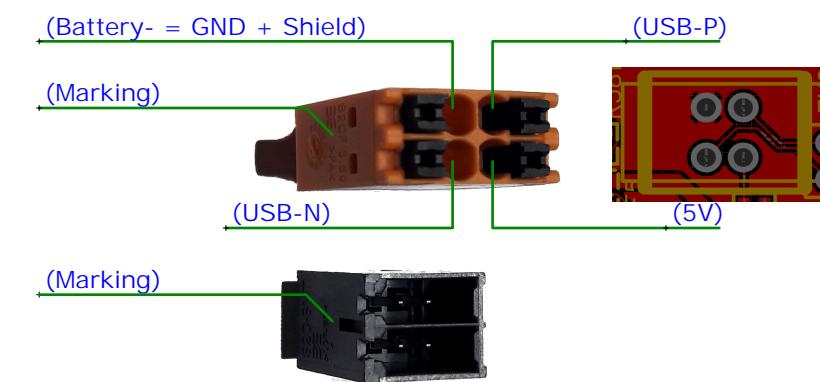
REV: 1.0

USB-C



(cross connection for VBUS)

or: USB cut cable to host



TITLE: Connecting the USB		REV: 1.0
	Company: agopengps.discourse.group	Sheet: 1/1
	Date: 2021-01-09	Drawn By: GoRoNb