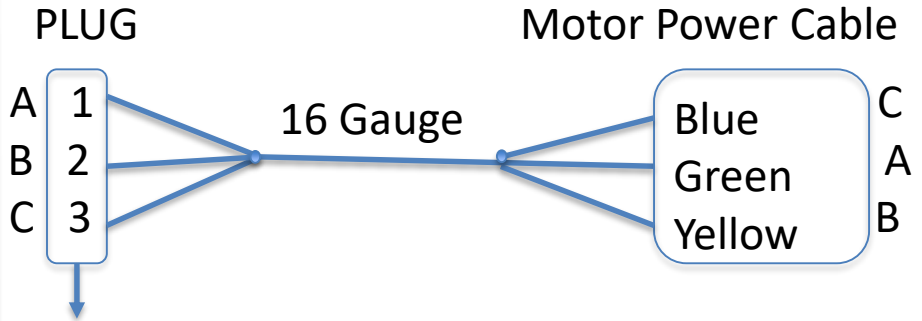


A: Blue
 B: Green
 C: Yellow

PCB (DigiKey):
 Inserts (3x): WM3112CT-ND
 Housing: WM23608-ND
Bulkhead:
 Bulkhead: SC2465-ND
Cable PN:
 Motor 1: M1-I
 Motor 2: M2-I
Bulkhead Housing Labels :
 M1, M2



A: Blue
 B: Green
 C: Yellow

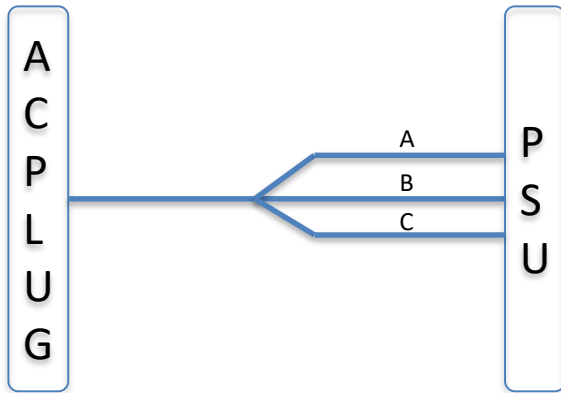
Motor Plug (Digikey):
 Plug: TA3FX-ND
Cable PN:
 M1: M1-O
 M2: M2-O
Note: M1-O, M2-O are attached to motors

M1-> Nearest Power -> P16
 M2-> Nearest E-STOP -> P16
 Cables identical for M1, M2
 All wire: 16 Gauge

Project: R2R Robotics
 Title: Motor Cables
 Prepared by: M. Berg, B. Lim, C. Miller
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F1 on PCB
No Directionality
PN: F1877-ND

Project: R2R Robotics
Title: Fuse Descriptor
Prepared by: M. Berg, B. Lim, C. Miller
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Marked on Power Supply; Follow Supply Manual and NEMA guidelines. For TERMINAL BLOCK ONE

A – HOT (BLACK) – SUPPLY #1

B – NEUTRAL (WHITE) – SUPPLY #2

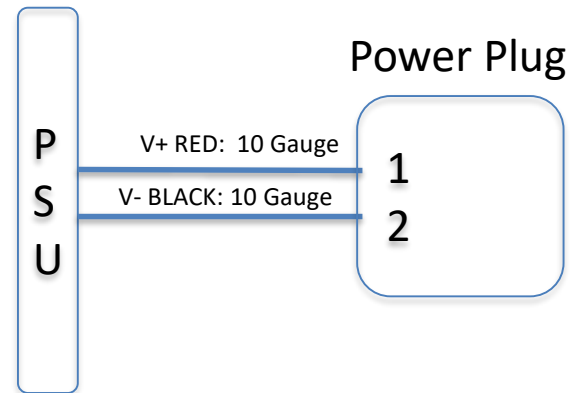
C – NEURTAL (GREEN) – SUPPLY #3

CABLE PN: AC; Generic Flying-lead NEMA US-AC plug (<https://www.amazon.com/Power-Cord-3-Prong-Grounded-Black/dp/B0069VW6K6>)

PSU: 750W, 24V Supply
MEAN WELL RSP-750-24

Mouser: 709-RSP750-24

Ring Terminals (3): A122836-ND

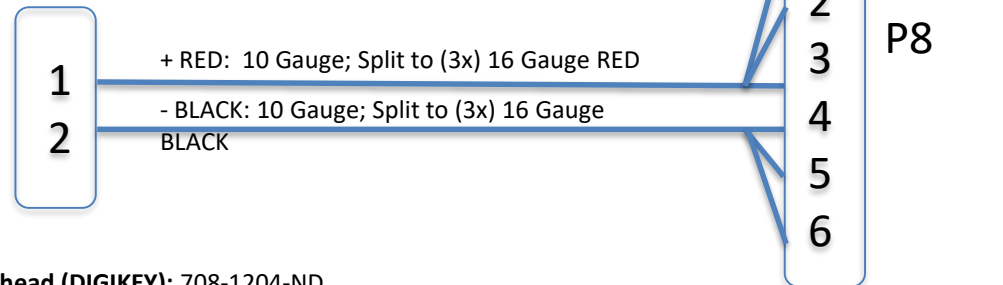


PLUG (Digikey): 708-1189-ND

Cable PN: PWR1

Ring Terminals (2): A124517-ND

Power Bulkhead



Bulkhead (DIGIKEY): 708-1204-ND

PCB:

Housing (DIGIKEY):

Inserts (DIGIKEY) (6x): WM3112CT-ND

CABLE PN: PWR2

Bulkhead Housing Label: POWER

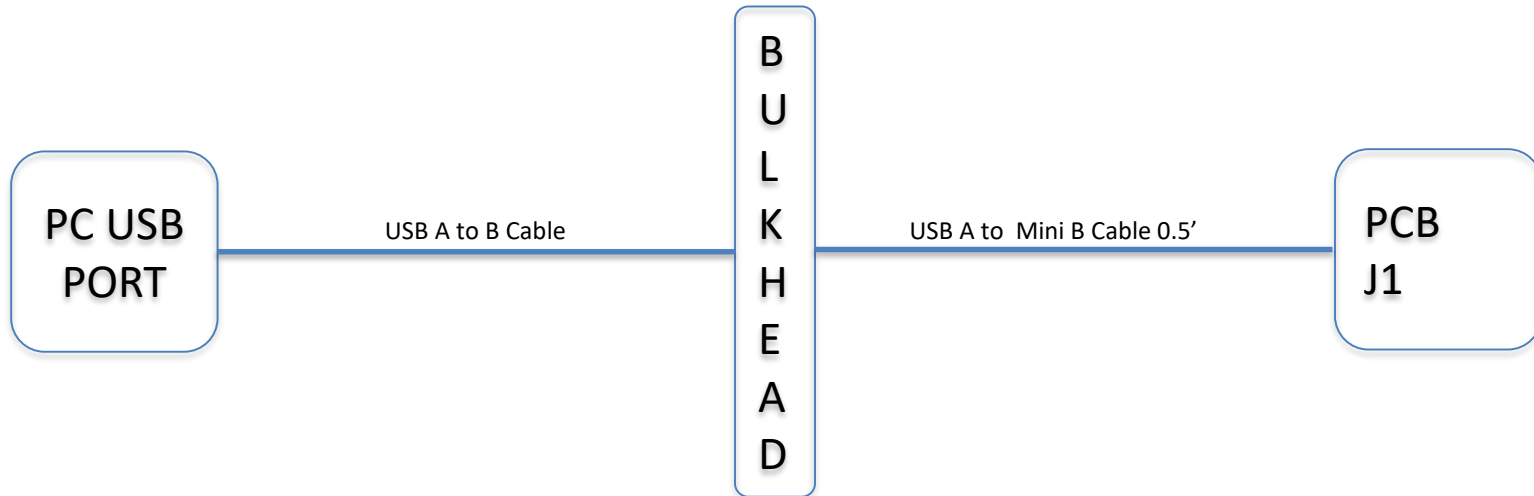
Project: R2R Robotics

Title: Power

Prepared by: M. Berg, B. Lim, C. Miller
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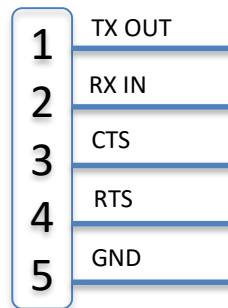
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Bulkhead (DIGIKEY): SAM8673-ND
External Cable (DIGIKEY): AE10617-ND
Internal Cable (DIGIKEY): TL1233-ND
CABLE (EXT) PN: USB1
CABLE (INT) PN: USB2
Bulkhead Housing Label: USB

Project: R2R Robotics
Title: USB
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PCB – P1



Bulkhead: None – flying leads

PCB (DigiKey):

Housing: 455-1491-ND

Inserts (5): 455-1325-1-ND

Wire: 22 Gauge Stranded

CABLE PN: None – Not Provided

NOTE: MAP RX to RX, TX to TX, etc.

Labels are one-to-one with the external device

Project: R2R Robotics

Title: Optional UART Breakout

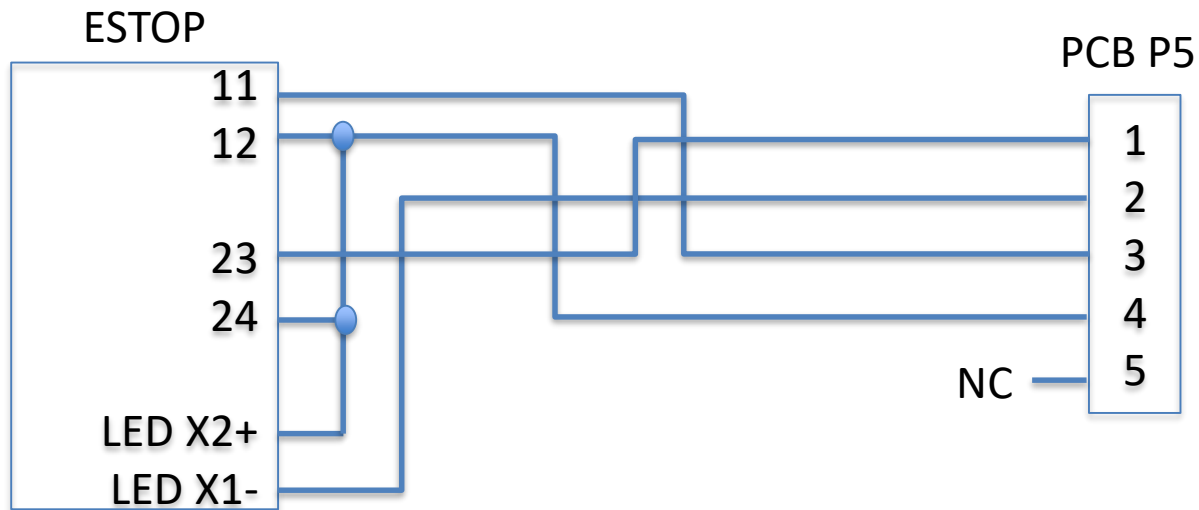
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Bulkhead: None – External Red Button

PCB (DigiKey):

Housing: 455-1491-ND

Inserts (4): 455-1325-1-ND

BUTTON (MOUSER): 123-84-5031.2B20

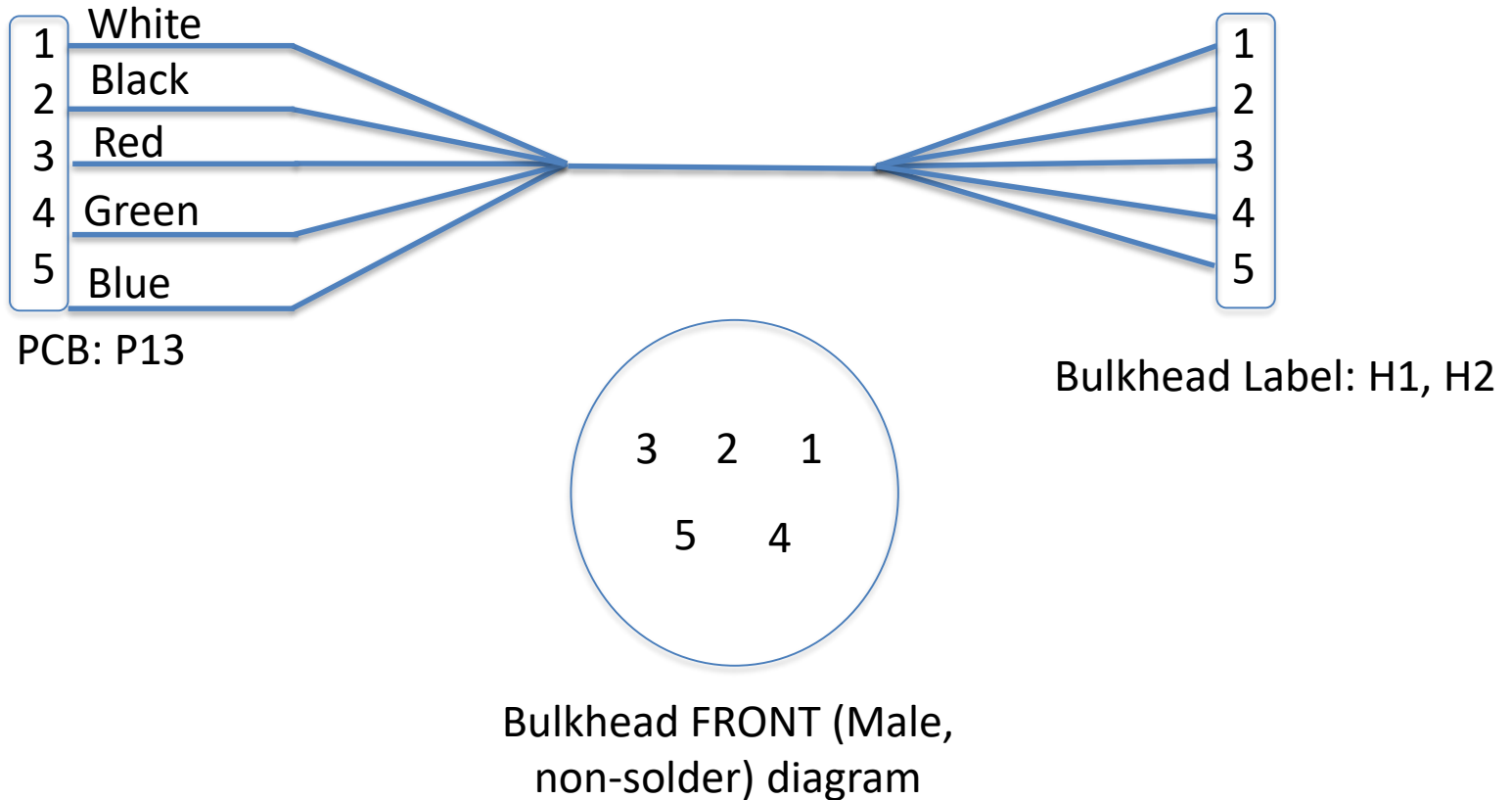
Wire: 22 Gauge Stranded

CABLE PN: ES

Bulkhead Housing Label: ESTOP

NOTE: Unless indicated by circle, no overlapping wires are shorted; All Wire 22 Gauge

Project: R2R Robotics
 Title: E-STOP Harness
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Bulkhead (DigiKey): 670-1129-ND

PCB (DigiKey):

Housing: 455-1491-ND

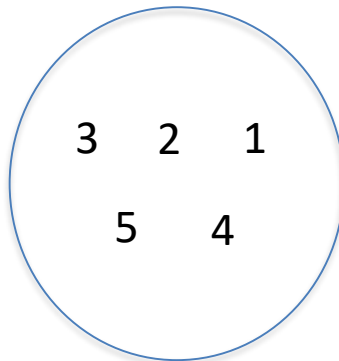
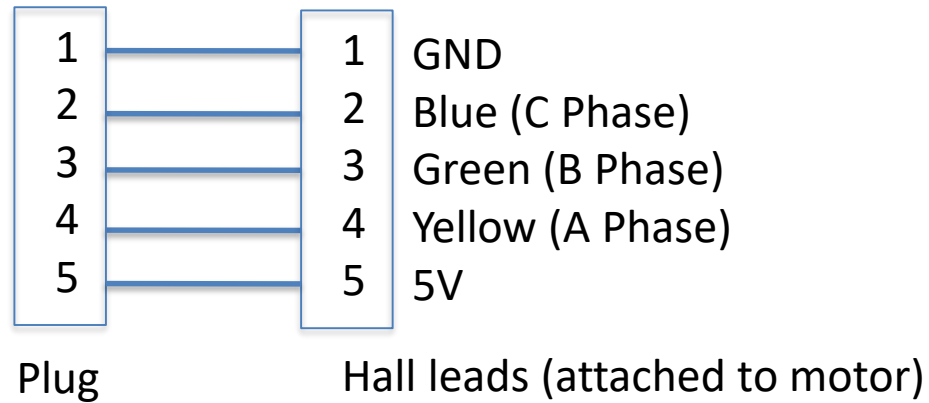
Inserts (5): 455-1325-1-ND

Wire: 22 Gauge Stranded

CABLE PNs: H1I, H2I

NOTE: 1:1 Mapping PCB:Bulkhead; same diagram for all halls

Project: R2R Robotics
 Title: Halls - Internal
 Prepared by: M. Berg, B. Lim, C. Miller
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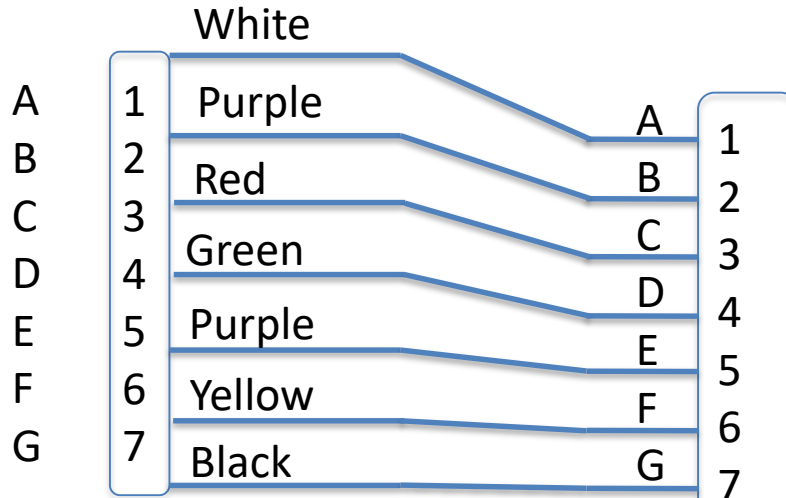


**Bulkhead FRONT (Male,
non-solder) diagram
Mates Plug to Bulkhead**

Plug (DigiKey): 670-1143-ND
PCB (DigiKey):
 Housing: 455-1491-ND
 Inserts (5): 455-1325-1-ND
CABLE PNs: H10, H20
Wire: 22 Gauge Stranded
Bulkhead Housing Label: HALL 1 or HALL 2
NOTE: 1:1 Mapping PCB:plug; same diagram for all halls; Pullups on PCB

Project: R2R Robotics
 Title: Halls – External
 Prepared by: M. Berg, B. Lim, C. Miller
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PCB: P14-M2 Encoder



PCB: P14-M1 Encoder

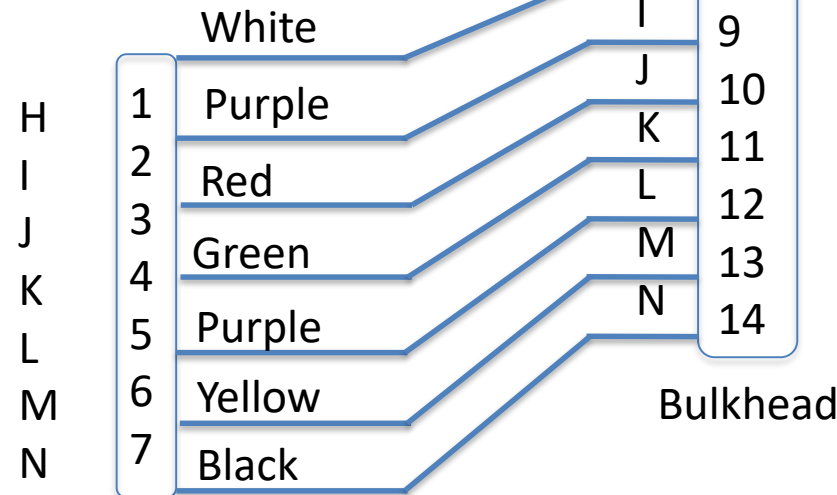
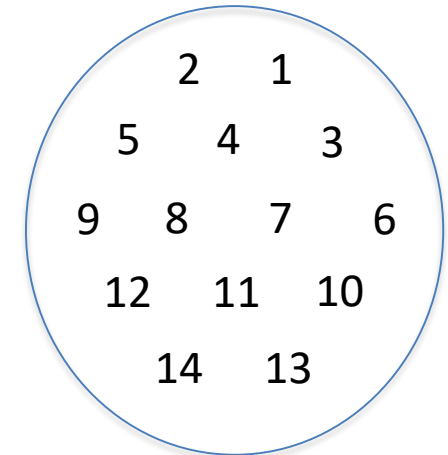


Diagram: Bulkhead Back



Solder Cups

Bulkhead (DigiKey): 1754-1112-ND

PCB (DigiKey):

Housing (2): 455-1491-ND

Inserts (14): 455-1325-1-ND

CABLE PNs: EINT

Wire: 22 Gauge

Bulkhead Housing Label: ENCODERS

NOTE: Header breaks off into two connectors

Project: R2R Robotics
 Title: Encoders - Internal
 Prepared by: M. Berg, B. Lim, C. Miller
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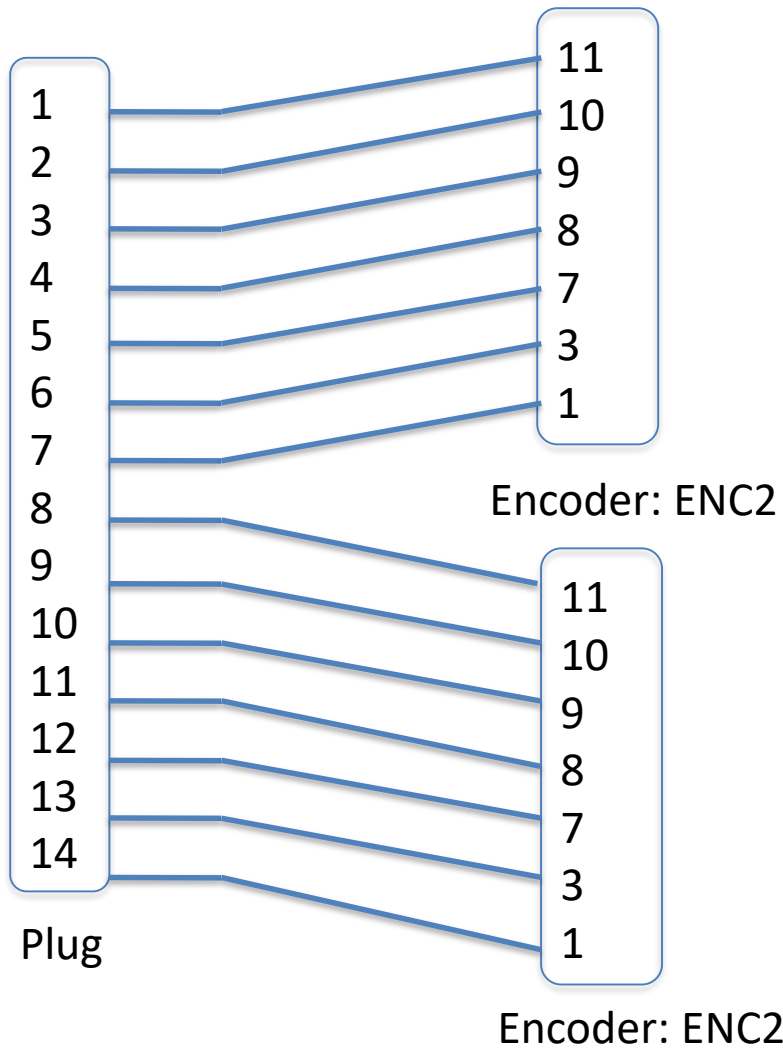
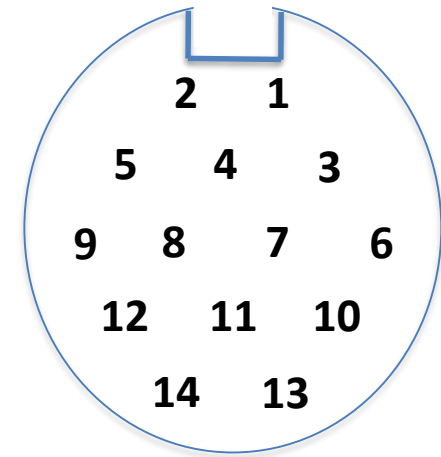


Diagram: Bulkhead Front

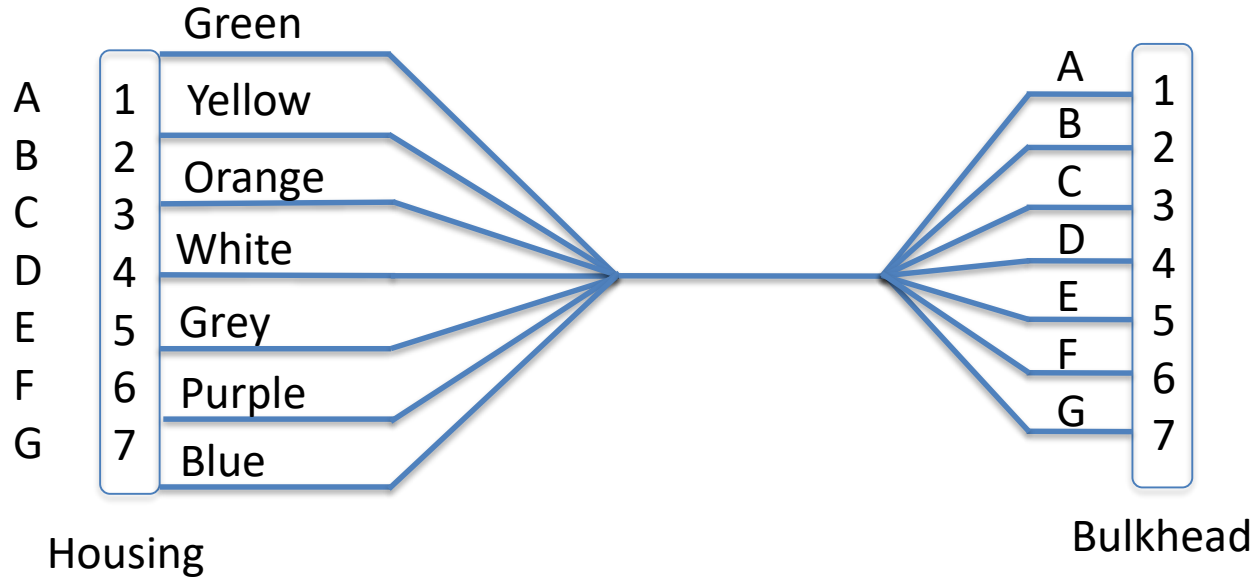


Non-Solder; Mates with Plug

Plug (DigiKey): 1754-1113-ND
Encoder (Renishaw) (2): Orbis: BR10SPC14B12CH00
CABLE PNs: EOUT
Wire: 22 Gauge Stranded
NOTE: Plug has both encoders attached via solder

Project: R2R Robotics
 Title: Encoders - External
 Prepared by: M. Berg, B. Lim, C. Miller
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PCB: P2



A: 3.3V

B: RESET

C: TDI

D: TDO/SWO

E: TCK/SWCK

F: TMS/SWDIO

G: GND

Bulkhead (DigiKey): SC3280-ND

PCB (DigiKey):

Housing: 455-1491-ND

Inserts (7): 455-1325-1-ND

CABLE PNs: JTAGINT

Wire: 22 Gauge Stranded

NOTE: 1:1 Mapping PCB: Bulkhead

Project: R2R Robotics

Title: JTAG - Internal

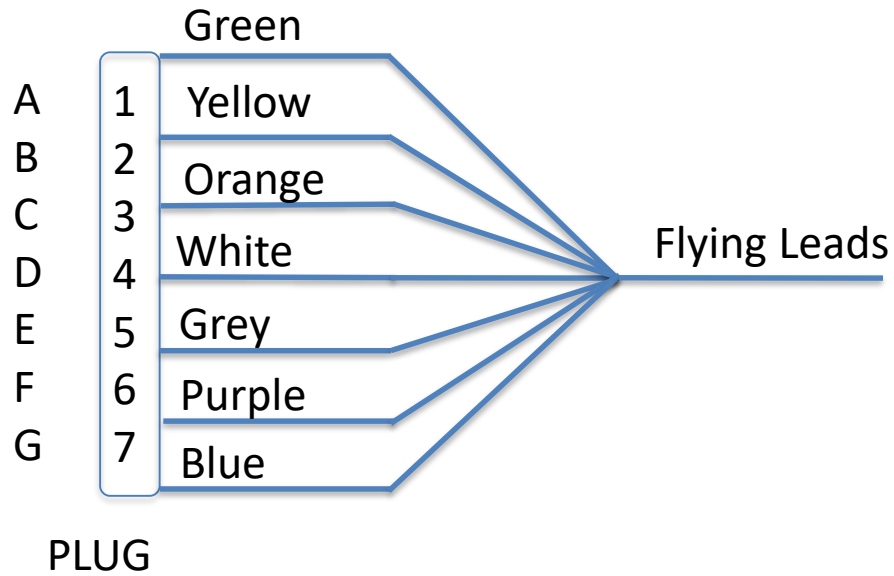
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Pinouts

A: 3.3V

B: RESET

C: TDI

D: TDO/SWO

E: TCK/SWCK

F: TMS/SWDIO

G: GND

Plug (DigiKey): SC3090-ND

CABLE PNs: JTAGEXT

Wire: 22 Gauge

NOTE: Flying leads remain for user to crimp for their specific JTAG utility

Project: R2R Robotics

Title: JTAG – External

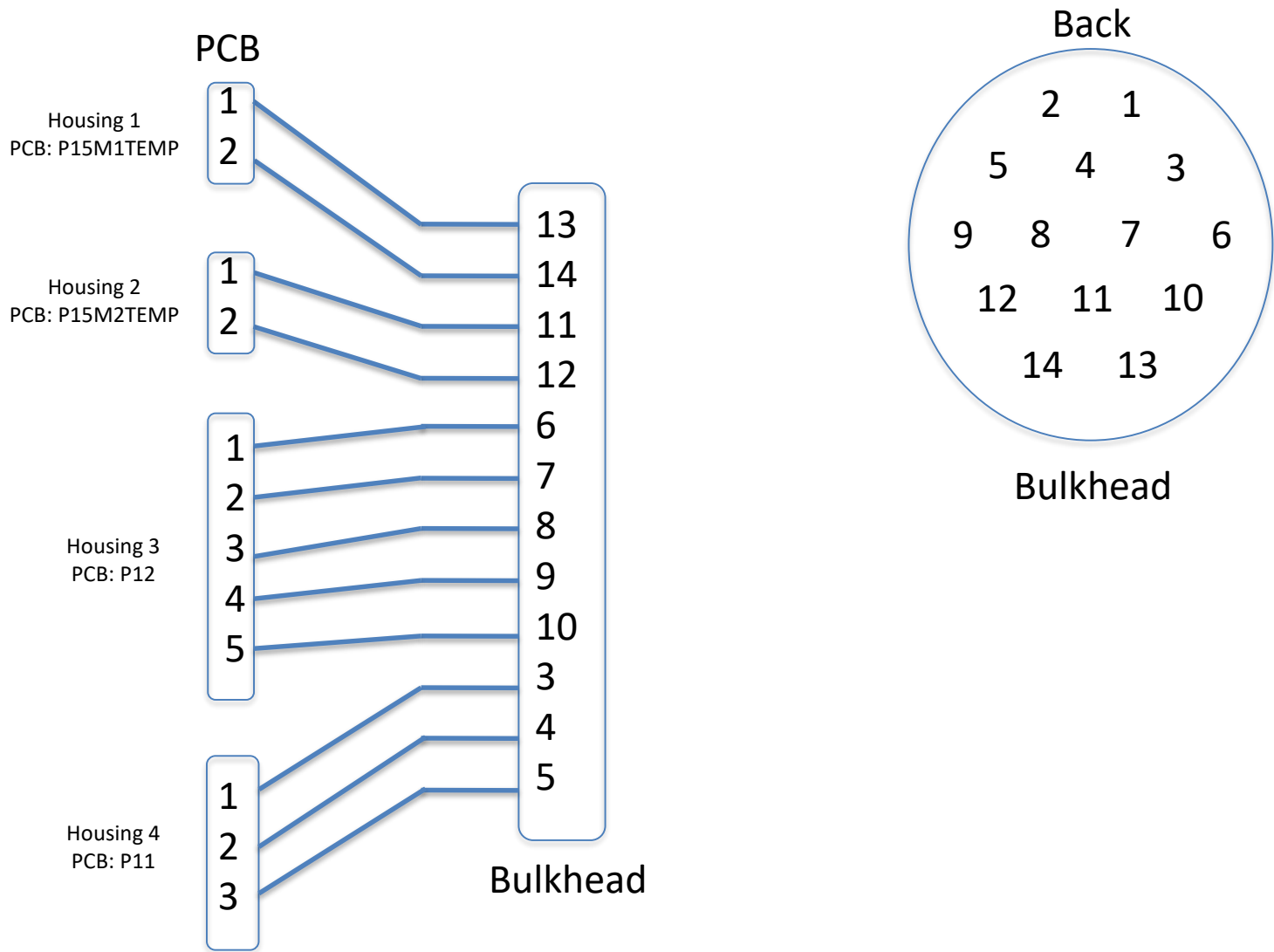
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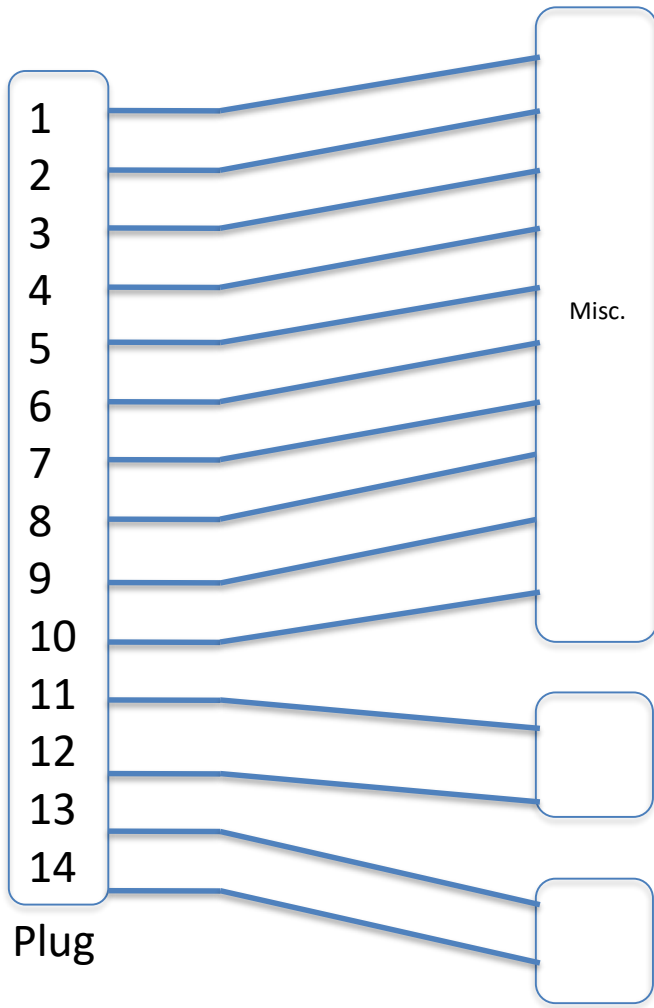
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Bulkhead (DigiKey): 1754-1112-ND
PCB (DigiKey):
 Housing 1,2: 455-1486-ND
 Housing 3: 455-1491-ND
 Housing 4: 455-1487-ND
 Inserts (12): 455-1325-1-ND
Wire: 22 Gauge
CABLE PNs: MISCINT

Project: R2R Robotics
 Title: MISC - Internal
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Misc: Wires are heat-shrunk together;
 not attached to sensors
 6-10: IMU
 3:5: Force Sensor
 See schematics for pinouts

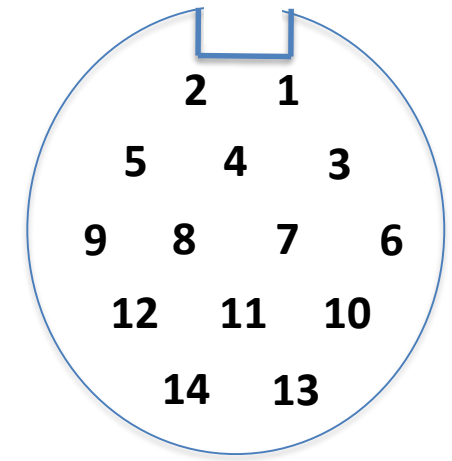
Misc.

K Type Thermocouple –
 non polarized – TEMP 2

K Type Thermocouple –
 non polarized – TEMP 1

Plug

Diagram: Bulkhead Front



Non-Solder; Mates with
 Plug

Plug (DigiKey): 1754-1113-ND
Termocouples (2): 1286-1099-ND
CABLE PNs: MISCEXT
NOTE: K-Type thermocouple wire is non-polarized and can be attached however user wishes

Project: R2R Robotics
 Title: MISC - External
 Prepared by: M. Berg, B. Lim, C. Miller
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