

Harness 10021057-H01  
wired in-place after installation of bulkhead connector

Aft Bulkhead Connector  
Main Umbilical

|    |    |                 |              |
|----|----|-----------------|--------------|
| P1 | 1  | PWR CHARGE POS  | RED          |
|    | 2  | ENET_TXP        | WHITE/ORANGE |
|    | 3  | ENET_TXN        | ORANGE       |
|    | 4  | ENET_RXP        | WHITE/GREEN  |
|    | 5  | ENET_RXN        | GREEN/WHITE  |
|    | 6  | RS232_RXD       | RED          |
|    | 7  | RS232_TXD       | WHITE        |
|    | 8  | SHORE POWER POS | VIOLET       |
|    | 9  | SHORE POWER NEG | BLACK        |
|    | 10 | PWR CHARGE NEG  | BLACK        |

Seacon/MINK-10-L-BCR-DO  
10 pin bulkhead receptacle  
wired in place  
Seacon MINI-CON series  
Current limit per #14 pin: 16A  
Current limit per wire: 16A

24 AWG twisted pair 24" MIN Actual TBD 2 wires

|              |          |   |
|--------------|----------|---|
| WHITE/ORANGE | ENET_TXP | 1 |
| ORANGE/WHITE | ENET_TXN | 2 |
|              |          | 3 |
|              |          | 4 |
| WHITE/GREEN  | ENET_RXP | 5 |
| GREEN/WHITE  | ENET_RXN | 6 |
|              |          | 7 |
|              |          | 8 |

To MB Ethernet Connector  
or  
Cradle Point Router WAN Port

RJ45 Ethernet  
Stewart/940-SP-3088R-A133

24 AWG twisted pair 24" MIN Actual TBD 2 wires

24 AWG twisted pair 36" MIN Actual TBD 2 wires

|       |           |   |
|-------|-----------|---|
| RED   | RS232_TXD | 1 |
| WHITE | RS232_RXD | 2 |
|       |           | 3 |
|       |           | 4 |

To MB RS-232 Serial Console  
MB3.0: J6

Molex C-Gid 4x1  
Molex/50-57-9404

18 AWG hook-up wire 36" MIN Actual TBD 2 wires

|        |                 |   |
|--------|-----------------|---|
| VIOLET | PWR CHARGE POS  | 1 |
| BLACK  | SHORE POWER NEG | 2 |
|        |                 | 3 |
|        |                 | 4 |

To Mother Board Shore Power;  
MB3.0: J26

3.5MM DIP PLUG  
Hirose/MDF6-4DS-3.5C

14 AWG 20" 2 wires (Jim Montgomery 3-7-16)

|       |                |   |
|-------|----------------|---|
| Red   | PWR CHARGE POS | 1 |
| Black | PWR CHARGE NEG | 2 |

To Power Interface Board: J1

PC16 Molex/0433740001  
Molex Sabre Contact 14-16  
Quantity Q2 = 2  
Mates with Molex 43160-3102  
Crimper: MBARI-0239

J1

Harness 10021057-H02  
wired in-place after installation of bulkhead connector

Aft Bulkhead Connector  
Dropweight / Boost Charge

|    |    |                    |              |
|----|----|--------------------|--------------|
| P8 | 1  | BURNWIRE_ACT       | Black        |
|    | 2  | BURNWIRE_RTN       | White        |
|    | 3  | DROP_WEIGHT_SIGNAL | Red          |
|    | 4  | DROP_WEIGHT_POWER  | Green        |
|    | 5  | PWR BOOST POS      | Orange       |
|    | 6  | PWR BOOST POS      | Blue         |
|    | 7  | PWR BOOST POS      | White/Black  |
|    | 8  | PWR BOOST POS      | Red/Black    |
|    | 9  | PWR BOOST NEG      | Green/Black  |
|    | 10 | PWR BOOST NEG      | Orange/Black |
|    | 11 | PWR BOOST NEG      | Blue/Black   |
|    | 12 | PWR BOOST NEG      | Black/White  |

Subconn/MCBH12F AS  
SubConn Circular Micro 12 pins  
Teledyne Impulse stock connector with 20AWG 24" pigtail  
Current limit per pin 5A

Teledyne Impulse/ 20AWG trim to 18" 4 wires (Jim Montgomery 3-7-16)

|                           |                    |   |
|---------------------------|--------------------|---|
| Red                       | DROP_WEIGHT_SIGNAL | 1 |
| Black                     | BURNWIRE_ACT       | 2 |
| White                     | BURNWIRE_RTN       | 3 |
| Green                     | DROP_WEIGHT_POWER  | 4 |
| 20AWG Black / second line |                    | 5 |
| 20AWG White / second line |                    | 6 |

To MB Aft Signals  
MB3.0: J33

TE Connectivity Mod II series 2-row  
Crimp contacts: 2-87523-4 (20-24 AWG)  
Crimper 91516-1  
Mates with TE 5-102618-1  
Current limit 3A per pin  
TE-Connectivity/87631-1

Teledyne Impulse/ 20AWG trim to 8" 8 wires (Jim Montgomery 3-7-16)

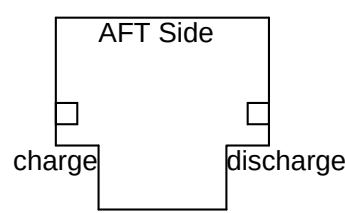
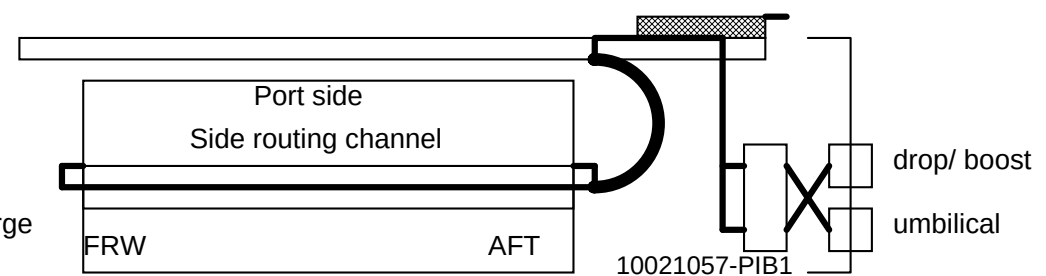
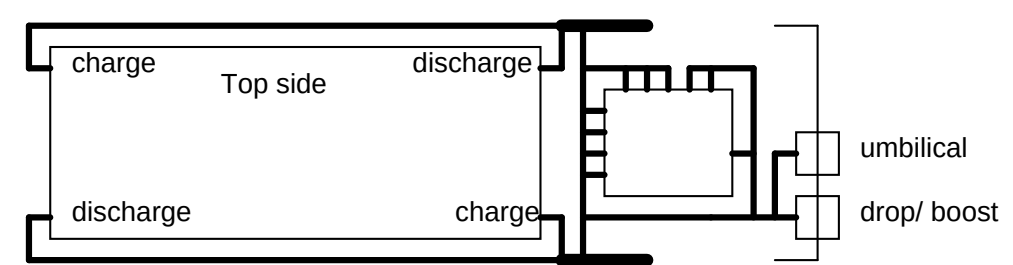
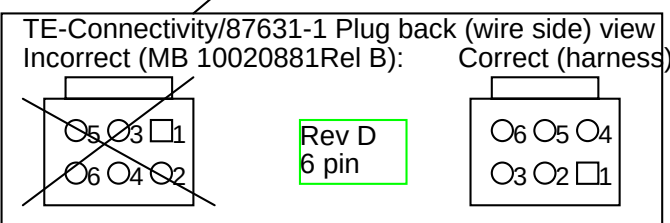
|              |               |    |
|--------------|---------------|----|
| Orange       | PWR BOOST POS | 1  |
| Blue         | PWR BOOST POS | 2  |
| Green/Black  | PWR BOOST NEG | 3  |
| Orange/Black | PWR BOOST NEG | 4  |
| Blue/Black   | PWR BOOST NEG | 5  |
| Black/White  | PWR BOOST NEG | 6  |
| White/Black  | PWR BOOST POS | 7  |
| Red/Black    | PWR BOOST POS | 8  |
|              |               | 9  |
|              |               | 10 |

To Power Interface Board: J3

Hirose MDF6 Series Crimp contacts:  
MDF6-1618SCF, MDF6-1618SC (16-18AWG)  
Mates with Hirose/MDF6- 10DP-3.5DSA(05)

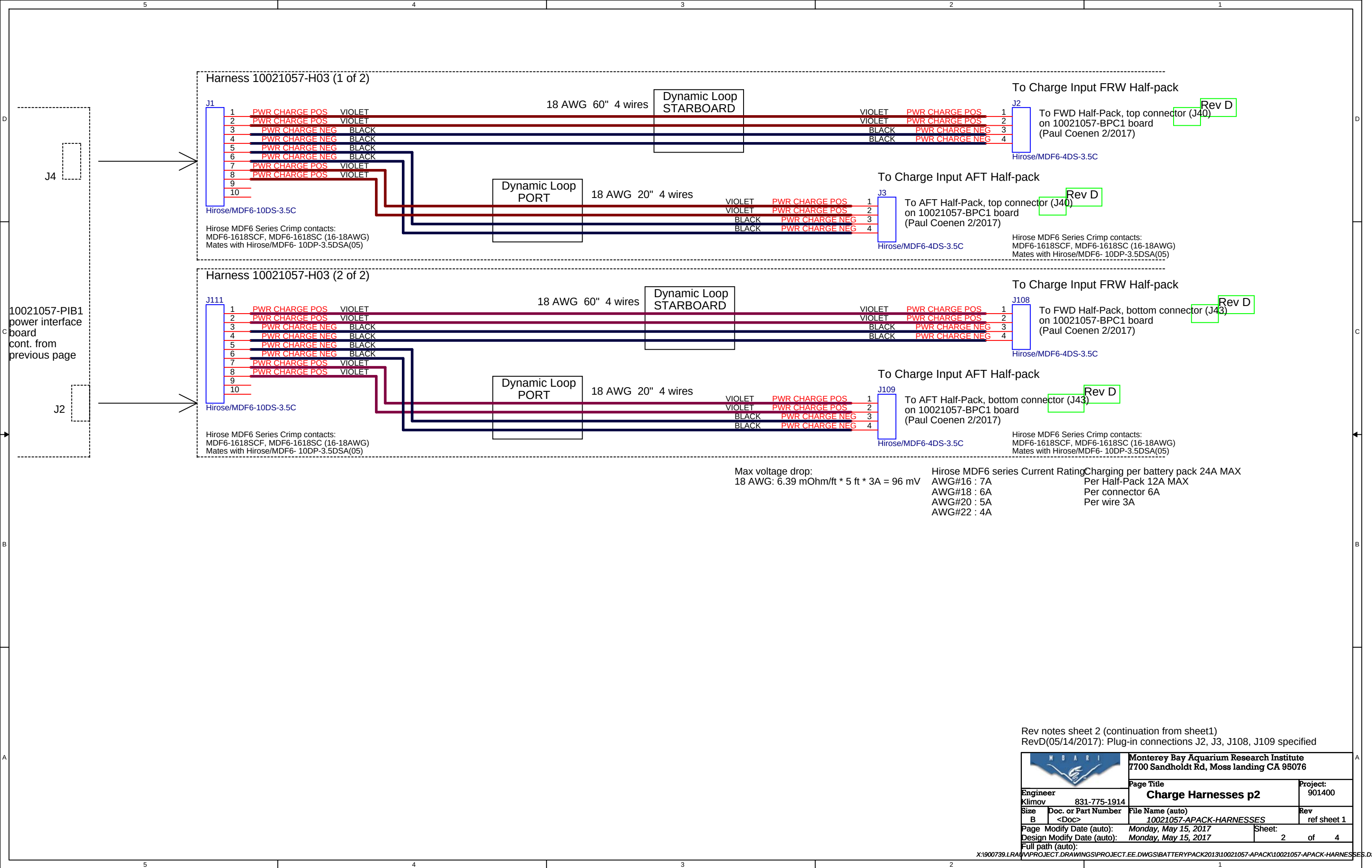
10021057-PIB1  
power interface  
board  
cont. next page

J3



Rev notes sheet 1  
RevA(07/30/2014): Initial Release  
RevC(03/26/2015): harness PN added, some moved to p2, length changed  
RevD(04/24/2017): wiring update for MB 3.0 only  
-H02 length changed 8 wires from 18" to 8"; 4 wires from 12" to 18"; plug P6 changed from 8pin to 6pin, rewired  
-H01 length changed 14AWG 2 wires from 24" to 20";

|                                                                                       |                              |                                                                                      |                    |
|---------------------------------------------------------------------------------------|------------------------------|--------------------------------------------------------------------------------------|--------------------|
|  |                              | Monterey Bay Aquarium Research Institute<br>7700 Sandholdt Rd, Moss landing CA 95076 |                    |
| Engineer<br>Klimov 831-775-1914                                                       |                              | Page Title<br><b>Charge Harnesses p1</b>                                             | Project:<br>901400 |
| Size<br>B                                                                             | Doc. or Part Number<br><Doc> | File Name (auto)<br>10021057-APACK-HARNESSES                                         | Rev<br>D           |
| Page Modify Date (auto):<br>Design Modify Date (auto):                                |                              | Monday, May 15, 2017<br>Monday, May 15, 2017                                         | Sheet:<br>1 of 4   |

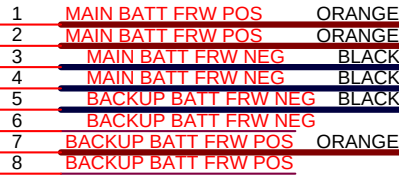


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|--------------------------------------------------------------------------------------|--|------------------|--------------------|
| Monterey Bay Aquarium Research Institute<br>7700 Sandholdt Rd, Moss landing CA 95076 |  |                  |                    |
| Page Title<br><b>Charge Harnesses p2</b>                                             |  |                  | Project:<br>901400 |
| File Name (auto)<br>10021057-APACK-HARNESSES                                         |  |                  | Rev<br>ref sheet 1 |
| Monday, May 15, 2017<br>Monday, May 15, 2017                                         |  | Sheet:<br>2 of 4 |                    |

Harness 10021057-H04

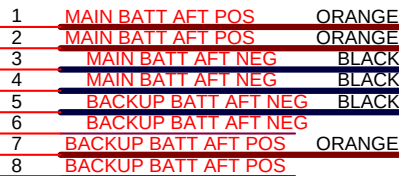
From Half-pack  
Output FRW

Long cable



Hirose/MDF6- 8DS-3.5C

From Half-pack Output AFT



Short cable

Hirose/MDF6- 8DS-3.5C

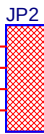
Dynamic Loop  
PORT

Dynamic Loop  
STARBOARD

18 AWG 54" 5 wires

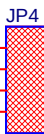
18 AWG high-flex 24" 5 wires

To MB3.0 Main Battery Connector J30



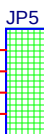
Hirose/MDF6-4DS-3.5C

To MB3.0 Main Battery Connector J27



Hirose/MDF6-4DS-3.5C

To MB3.0 BackUp Battery Connector J32

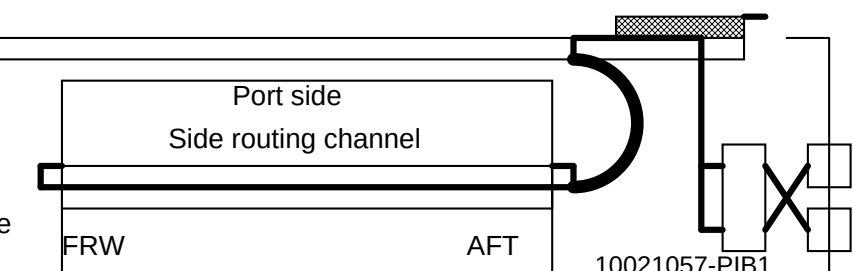
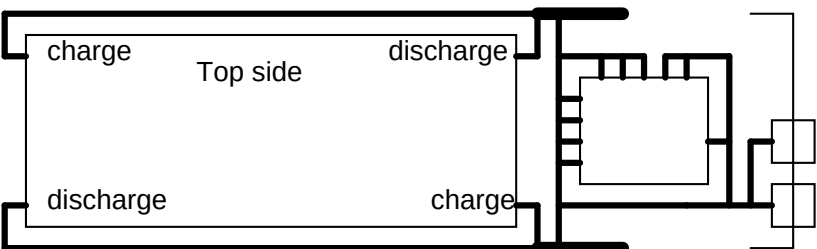


Hirose/MDF6-4DS-3.5C

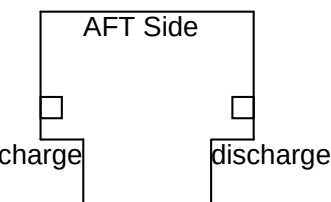
Rev D

MB2.5  
mating  
references  
removed

Crimp contacts for Hirose MDF6 Series:  
MDF6-1618SCF, MDF6-1618SC (18-18AWG)  
Mates with: Hirose/MDF6- 8DP-3.5DSA(05)  
Hirose MDF6 series Current Rating:  
AWG#16 : 7A; AWG#18 : 6A  
AWG#20 : 5A; AWG#22 : 4A



10021057-PIB1



Rev notes sheet 3 (continuation from sheet2)  
RevD(05/14/2017): MB2.5 connector references removed:  
- Tyco Mate-N-Lok 8-pin  
- Tyco Mate-N-Lok 4-pin

|                                                                                                                                 |                              |                                                                                      |                    |
|---------------------------------------------------------------------------------------------------------------------------------|------------------------------|--------------------------------------------------------------------------------------|--------------------|
|                                                                                                                                 |                              | Monterey Bay Aquarium Research Institute<br>7700 Sandholdt Rd, Moss landing CA 95076 |                    |
| Engineer<br>Klimov                                                                                                              |                              | Page Title<br><b>Discharge Harness</b>                                               |                    |
| 831-775-1914                                                                                                                    |                              | Project:<br>901400                                                                   |                    |
| Size<br>B                                                                                                                       | Doc. or Part Number<br><Doc> | File Name (auto)<br>10021057-APACK-HARNESSES                                         | Rev<br>ref sheet 1 |
| Page Modify Date (auto):<br>Design Modify Date (auto):                                                                          |                              | Monday, May 15, 2017<br>Monday, May 15, 2017                                         | Sheet:<br>3 of 4   |
| Full path (auto):<br>X:\1900739.LRA\PROJECT.DRAWINGS\PROJECT.EE.DWGS\BATTERYPACK2013\110021057-APACK\10021057-APACK-HARNESSES.D |                              |                                                                                      |                    |

Harness 10021057-H05

RS-232  
to half-pack FRW

1: TX\_OUT  
2: RX\_IN  
3: GND  
4: GND

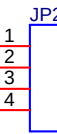


Molex/50-57-9404

Dynamic Loop  
PORT

24 AWG twisted bundle 55" (3/2015) 3 wires

White/Green Stripe  
White/Blue Stripe  
BROWN



Molex/50-57-9404

To RS-232 port B???  
MB3.0: J4 (Paul Coenen 2/2017)

Rev D

Battery Serial FWD J4 (Paul Coenen 2/2017)

Harness 10021057-H06

RS-232  
to half-pack AFT

1: TX\_OUT  
2: RX\_IN  
3: GND  
4: GND

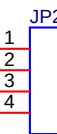


Molex/50-57-9404

Dynamic Loop  
STARBOARD

24 AWG twisted bundle 16" (2/2017 Paul Coenen) 3 wires

White/Green Stripe  
White/Blue Stripe  
BROWN



Molex/50-57-9404

To RS-232 port A???  
MB3.0: J8 (Paul Coenen 2/2017)

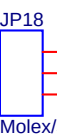
Rev D

Battery Serial AFT J8 (Paul Coenen 2/2017)

Harness 10021057-H07

Control  
to half-pack FRW

1: IN\_1  
2: OUT\_OC  
3: GND

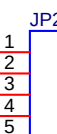


Molex/50-57-9403

Dynamic Loop  
PORT

24 AWG twisted bundle 55" (3/2015) 3 wires

White/Brown Stripe  
White/Brown Stripe



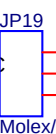
Molex/50-57-9406

Battery pack control  
MB3.0: J10 (Paul Coenen 2/2017)

Rev D

Control  
to half-pack AFT

1: IN\_1  
2: OUT\_OC  
3: GND



Molex/50-57-9403

Dynamic Loop  
STARBOARD

24 AWG twisted bundle 16" (2/2017 Paul Coenen) 3 wires

White/Red Stripe  
White/Red Stripe  
BLACK  
BLACK

Rev notes sheet 4 (continuation from sheet3)  
RevD(05/14/2017): Plug-in connections for JP20, JP21, JP22 specified;  
lengths updated from 36" to 16"

|                                                                                       |                              |                                                                                      |                                              |                    |
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|  |                              | Monterey Bay Aquarium Research Institute<br>7700 Sandholdt Rd, Moss landing CA 95076 |                                              |                    |
| Engineer<br>Klimov                                                                    |                              | Page Title<br><b>COMM Harnesses</b>                                                  | Project:<br>901400                           |                    |
| 831-775-1914                                                                          |                              |                                                                                      |                                              |                    |
| Size<br>B                                                                             | Doc. or Part Number<br><Doc> |                                                                                      | File Name (auto)<br>10021057-APACK-HARNESSES | Rev<br>ref sheet 1 |
| Page Modify Date (auto):                                                              |                              |                                                                                      | Monday, May 15, 2017                         | Sheet:             |
| Design Modify Date (auto):                                                            |                              |                                                                                      | Monday, May 15, 2017                         | 4 of 4             |
| Full path (auto):                                                                     |                              |                                                                                      |                                              |                    |