University of Hawaii, Electronic (power/comm.) penetrators for *JASON*
Alvin Cruise AT 25-05; July, 2013

Wiring of Science External Instruments

UH instruments that require through-hull communications and/or power control are summarized in the table below. Additional detail is provided in the following discussion and attached diagrams. Contacts for technical questions and for issues dealing with on board scheduling are provided below.

Table 1. Summary of penetrator configurations for all Hawaii instruments.

ALVIN #18-07 Penetrator Configurations. '# Pins' represents wires from instrument to J-Box and then to hull-penetrator

Equipment/pentrator	Total # of pins	Power +V # pins	Power +V Volts	Power +V Amps	Power -V # pins	Comm Signal # pins	Comm Gnd # pins	Required shielded pairs	Required Twisted pairs	# Dives Active (expected)
MPS (Cowen et al.)	12	3	48	2.5A	3	4	2	2	4	Most/ forward basket
Optode	10 (4 used)	-	-	-	-	4	-	-	-	Most/ forward basket
McLane Multi sampler Comm	3	-	-	-	-	2	1	-	1	Most/ aft sci bay
McLane Multi sampler Power	2	1	24	<0.5A	1	-	-	-	-	Most/ aft sci bay
GeoMICROBE sled ODI (Cowen et al.)	12	0	0	0	0	11	1	2	4	2/ autonomous
Mobile ISEA comm (Glazer)	8 (4 used)	0	0	0	0	4	0		2	Most/ aft sci bay
Mobile ISEA power (Glazer)	2	1	12-24	<1A	1	0	0			Most/ aft sci bay
total:										

University of Hawaii/ Microbial Observatory

1. MPS Controller/Power

The MPS (Mobile Pumping and sensor System) will be installed on forward Jason basket (right side). *Details of MPU wiring are attached as:*
Wiring is same as in 2009 and 2010:

MPS cable 1–Subconn 12-conductor whip; RS-422 Comm @

57600 baud;

- ***UH_MPU_ALVIN CABLEing2010.pdf (still appropriate for 2013 Jason)***

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Cruise/scheduling Contact: Jim Cowen (jcowen@soest.hawaii.edu)

2. McLane Multisamper

This sampler is associated with the MPS, but has separate comm. and power connections to JASON.

MM cable 1–Subconn 3-conductor whip; RS-232 Comm @ 9600 baud;
MM cable 2–Subconn 2-conductor whip; Power 24VDC;

3. GeoMICROBE Comm

Communications with the GeoMICROBE autonomous sled will be necessary on only 2-3 dives. Wiring is essentially identical to that of the MPU. It is important to note that he MPU will be used on the same dives that GeoMICROBE Comm is needed. *Wiring details for the GeoMICROBE Comm are provided in attachments:*

GeoM cable 1–Subconn 12-conductor whip; RS-422 Comm @ 57600 baud;

- ***UH_GEO_ALVIN ODI CABLEing2010.pdf***

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4. Aanderaa 4330 Oxygen Optrode

This O2 sensor has independent comm. and power connections with Jason. It will be plumbed with the MPS on the forward basket (within the MPS milk crate).

Optode cable 1–Proprietary 10-conductor whip; power 5-14VDC; Comm is AiCaP CANbus, RS232 @ 9600 baud;

see attachment: GlazerInstrumentSpecs_2011.pdf

5. ISEA Controller/Power

In Situ Electrochemical Analyzer (ISEA)

ISEA cable 1–Subconn 8-conductor whip; RS-422 Comm @ 57600 baud;

ISEA cable 2–Subconn 2-conductor whip; Power 12-24VDC;

The ISEA family consists of three components: communications with the main ISEA controller, power to the main ISEA housing, and power to a minipump that draws a controlled flow of fluids past the ISEA electrodes from the main pump's flow. All of these components will be used on each dive in close conjunction with the MPU. *Wiring details are provided in attachments:*

see attachment: GlazerInstrumentSpecs_2011.pdf

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