

Helsinki, January 15, 2013

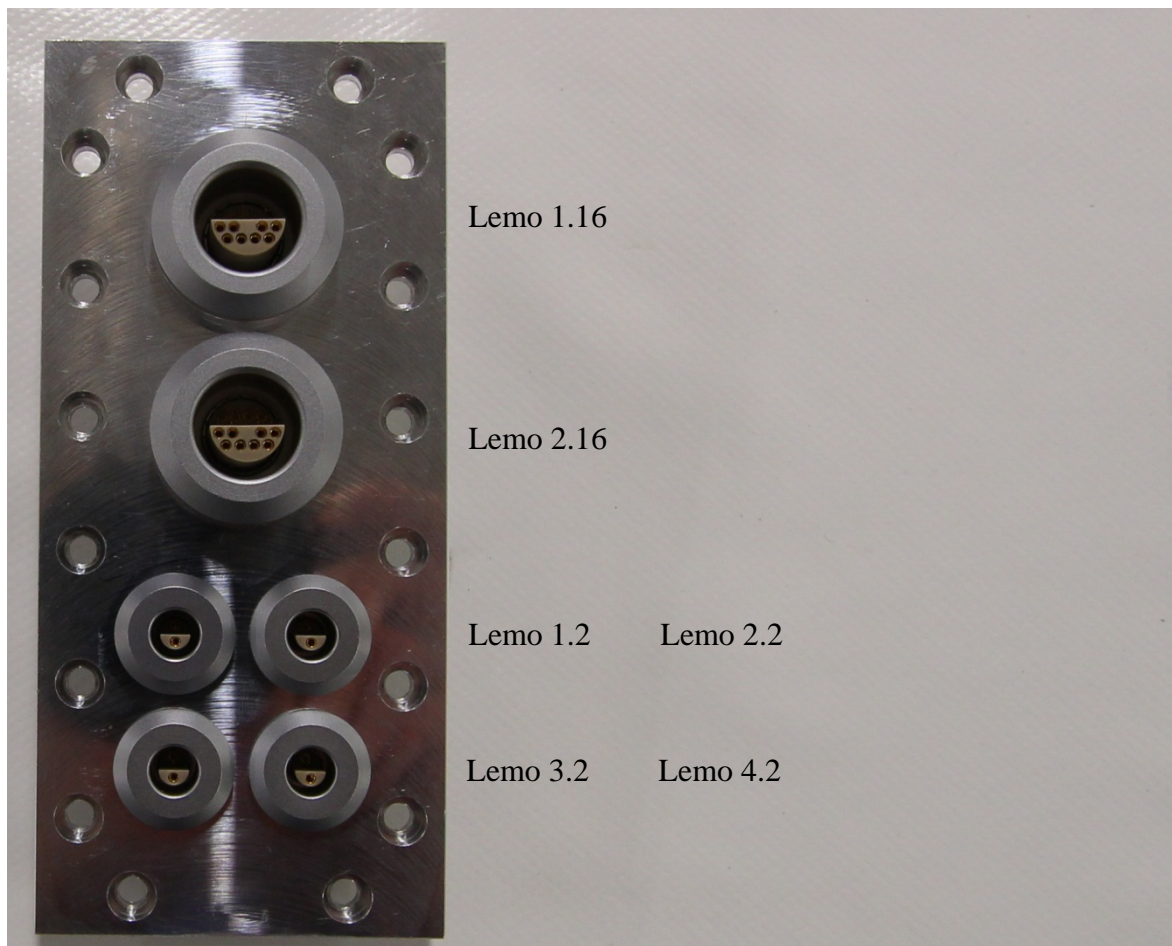
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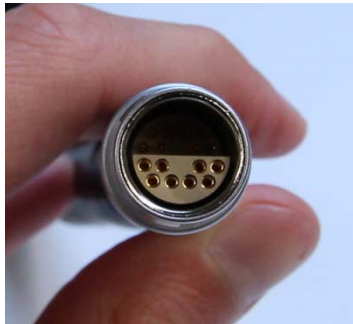
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Subject:

Diagnostics wiring pinouts

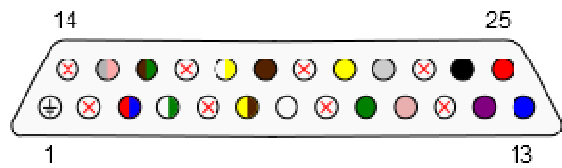
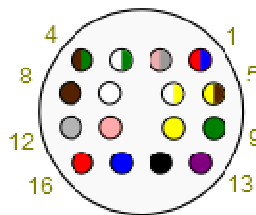
Lakeshore pre-amplifier - BlueFors RT connector box

16-pin Lemo-connector on the connector box. 25-pin D-connector on the preamp. Preamp channels 1-8 (2 D-connectors) used by diagnostics wires, channels 9-16 free.



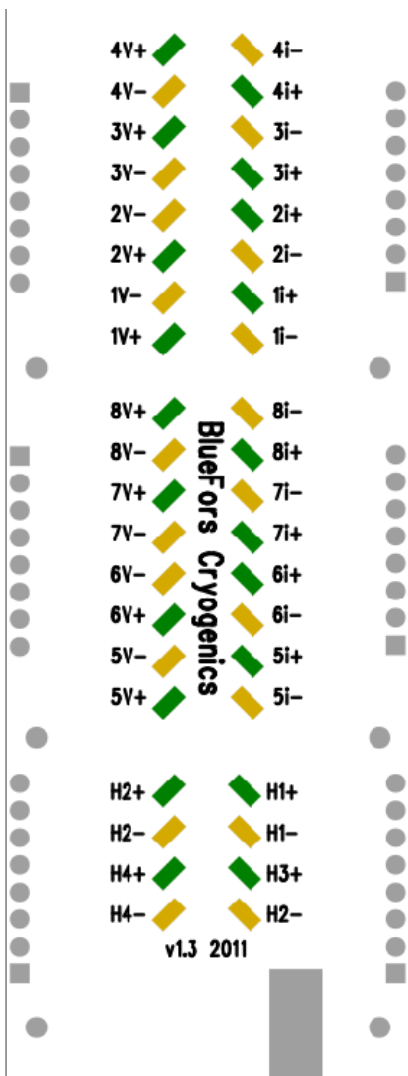
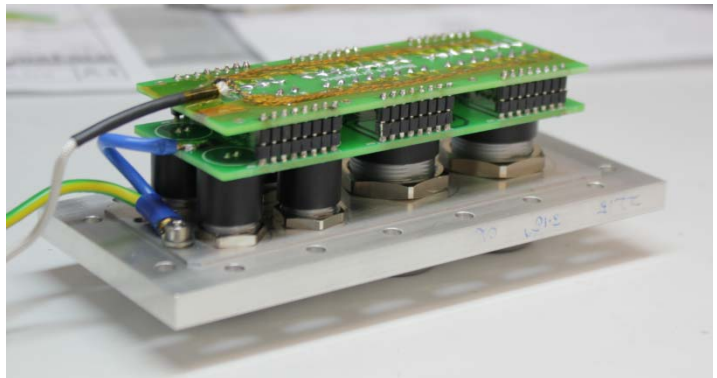
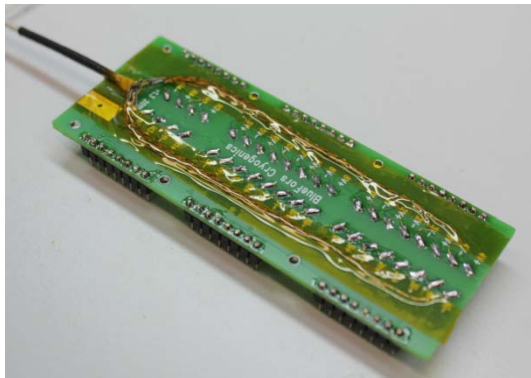


Both connectors are shown from solder side.



The cable shield is only connected on d-sub connector (pin1 and case) to prevent the ground loops.

RT connector box - LT thermal anchors



Connector pinout
All IEMO connectors used in anchors have yellow numbering

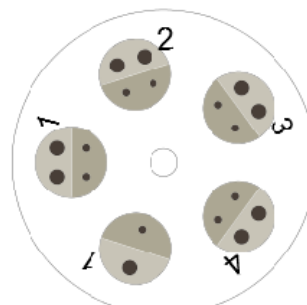
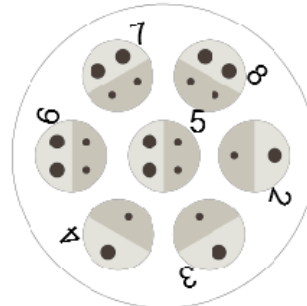
- | | |
|----------------|----------------|
| 1 - H- (gold) | 1 - V- (gold) |
| 2 - H+ (green) | 2 - V+ (green) |
| | 3 - I- (gold) |
| | 4 - I+ (green) |



Pinout from the connector side



Connector layout (bottom view)



Every sensor channel has two pairs of wires:

V- (gold), V+ (green)

I- (gold), I+ (green)

Heater channels:

H- (gold), H+ (green)

Pinout tables

Lemo channels 1.2 o 4.2 have separate two wire leads with banana connectors.

Lemo 1.2	Heater pin
1	H1-
2	H1+

Lemo 2.2	Heater pin
1	H2-
2	H2+

Lemo 3.2	Heater pin
1	H3-
2	H3+

Lemo 4.2	Heater pin
1	H4-
2	H4+

Lemo 1.16	25-pin D-connector	Sensor pin
1	3	I1+
2	15	I1-
3	4	V1+
4	16	V1-
5	6	I2+
6	18	I2-
7	7	V2+
8	19	V2-
9	9	I3+
10	21	I3-
11	10	V3+
12	22	V3-
13	12	I4+
14	24	I4-
15	13	V4+
16	25	V4-

Lemo 2.16	25-pin D-connector	Sensor pin
1	3	I5+
2	15	I5-
3	4	V5+
4	16	V5-
5	6	I6+
6	18	I6-
7	7	V6+
8	19	V6-
9	9	I7+
10	21	I7-
11	10	V7+
12	22	V7-
13	12	I8+
14	24	I8-
15	13	V8+
16	25	V8-

Appendix 1: Notes on adding sensors to BF wiring and adding sets of wires to Lakeshore preamplifier

When adding sensors to the free channels of BF diagnostics wiring (usually channels 3, 4, 7 and 8) use Lemo connectors with white colored numbering on sensor wires to maintain correct pin order.

If you plan to use the free channels (9-16) of the Lakeshore bridge using some room temperature filters is strongly advised.



In the BF RT connector box Pi-filters are used in the heater channels and Zero-resistors in the temperature sensor channels.

