

RA16LI-D - 16 Channel Headstage with Differential

RA16LI-D Overview

The RA16LI-D headstage is designed for fully differential recordings from low impedance electrodes and electrode caps with input impedances between <1 kOhm and 20 kOhm. It connects to the Medusa preamplifier's 25-pin connector. The simple interface to the RA16PA preamplifiers makes it easy to connect your electrodes to our system. An adapter is also available to connect a low impedance headstage to a PZ preamplifier. See "DBF-MiniDBM Low Impedance Headstage to PZ Preamplifier (16-channels)" on page 25, for more information.

The differential inputs allow for improved common mode rejection on all channels. Because of the increased complexity of the circuitry, the RA16LI-D does not have impedance checking. The headstage connector is a DB44. The pin out diagram is shown below.

Headstage Voltage Range

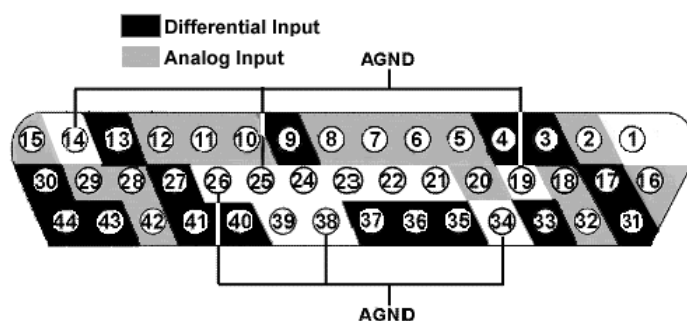
When using a TDT preamplifier the voltage input range of the preamplifier is typically lower than the headstage and must be considered the effective range of the system. Check the specifications of your amplifier for voltage range.

Headstage Technical Specifications



WARNING! When using multiple headstages ensure that all ground pins are connected to a single common node. See "Headstage Connection Guide" on page 6-99, for more information.

Input Referred Noise	rms 0.1 μ V bandwidth 300-3000 Hz 0.3 μ V bandwidth 2-8000 Hz
Headstage Gain	20x
Highpass Filter	2.2 Hz
Lowpass Filter	7.5 kHz
Input Impedance	10^6 Ohm



Note: Pins 1, 21-24 and 39 are not connected.

Pin	Name	Description	Pin	Name	Description
1	NA	Not Used	25	AGND	Analog Ground
2	A2	Analog Input	26	AGND	
3	D3	Differential Input	27	D12	Differential Input
4	D5		28	A14	Analog Input
5	A5	Analog Input	29	A15	
6	A7		30	D16	Differential Input
7	A8		31	D1	
8	A9		32	A3	Analog Input
9	D9	Differential Input	33	D4	Differential Input
10	A10	Analog Input	34	AGND	Analog Ground
11	A11		35	D6	Differential Input
12	A12		36	D7	
13	D13	Differential Input	37	D8	
14	AGND	Analog Ground	38	AGND	Analog Ground
15	A16	Analog Input	39	NC	
16	A1		40	D10	Differential Input
17	D2	Differential Input	41	D11	
18	A4	Analog Input	42	A13	Analog Input
19	AGND	Analog Ground	43	D14	Differential Input
20	A6	Analog Input	44	D15	
21	NA	Not Used			
22	NA				
23	NA				
24	NA				

Pinout based on channel number

Recording Channel	Pin	Differential Channel	Pin
1	16	1	31
2	2	2	17
3	32	3	3
4	18	4	33
5	5	5	4
6	20	6	35
7	6	7	36
8	7	8	37
9	8	9	9
10	10	10	40
11	11	11	41
12	12	12	27
13	42	13	13
14	28	14	43
15	29	15	44
16	15	16	30

Note: There are six analog grounds located at pins 14, 19, 25, 26, 34, 38.
No connections should be made to pins 1, 22, 23, 24, 39.