Teledyne RESON

PLD16847-1

EC6067

CCA 1000 Conditioning Charge Amplifier

EC6067

The CCA 1000 is a compact low-noise conditioning charge amplifier designed for use with piezoelectric hydrophones and other piezoelectric detectors. The CCA 1000 enables the uses of long cables between hydrophone and amplifier without affecting the hydrophone sensitivity.

The input capacitance can be selected to match the hydrophone capacitance for close unity gain or to achieve input gain up to 20dB. The input resistance, control the lower frequency limit -3dB break frequency. The output gain can be selected from 0 to 32dB.

AT A GLANCE

- 1Hz to 1MHz bandwidth Input capacitance, selectable
- Lower frequency limit, selectable
- 6 levels voltage gain 0 to 32dB
- Water stain resistant

TECHNICAL SPECIFICATIONS

Input:	
Impedance max.:	1GOhm
Max input at (unity gain):	$2V_p$
Estimating Input gain:	(dB) = 20 log Ctr/Cin
Input capacitance selector:	12 steps: 22pF to 10nF
Input resistance selector:	12 steps: 3.3kohm to 1GOhm
Output:	
Output gain settings 6 steps:	0, 6, 12, 20, 26, 32dB
Signal output, max:	$2V_p$
Output impedance:	20ohm
DC off-set:	0
Bandwidth:	
Operating -3dB Frequency range at 20dB gain:	1Hz to 1MHz
Noise:	
Input termination:	1nF to GND
Output noise with selector settings	
1nF/1GOhm/0dB:	$2\text{-}4\mu V_{rms}/A$
10nF/1GOhm/20dB:	$8\text{-}10\mu V_{rms}/A$
1nF/1GOhm/20dB:	$14\text{-}20\mu V_{rms}/A$
100pF/1GOhm/20dB:	$80\text{-}110\mu V_{rms}/A$
Power supply:	
Voltage:	min. 12VDC max.24VDC
Current consumption:	40mA ±10mA at 12Vdc

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TECHNICAL SPECIFICATIONS

Lower frequency limit:	
Frequency limits (-3dB) versus input resistance at 1nF input load:	
1GOhm	0.3Hz
330Mohm	0.5Hz
100Mohm	1.5Hz
33Mohm	4.5Hz
10Mohm	15Hz
3.3Mohm	45Hz
1ohm	150Hz
330kOhm	450Hz
100kOhm	1.5kHz
33kOhm	4.5kHz
10kOhm	15kHz
3.3kOhm	45kHz
Weight:	
Including supply cable:	530g
Accessories included:	Supply cable TL 8088 at one end.

Input capacitance settings:
To obtain close unity input gain from a hydrophone, - set the input capacitance selector to a capacitance value close as possible to the hydrophone (end of cable capacitance).
The input gain is then calculated from: transducer capacitance Ctr. divided by the input capacitance Cin x 20 log = dB gain

Example:

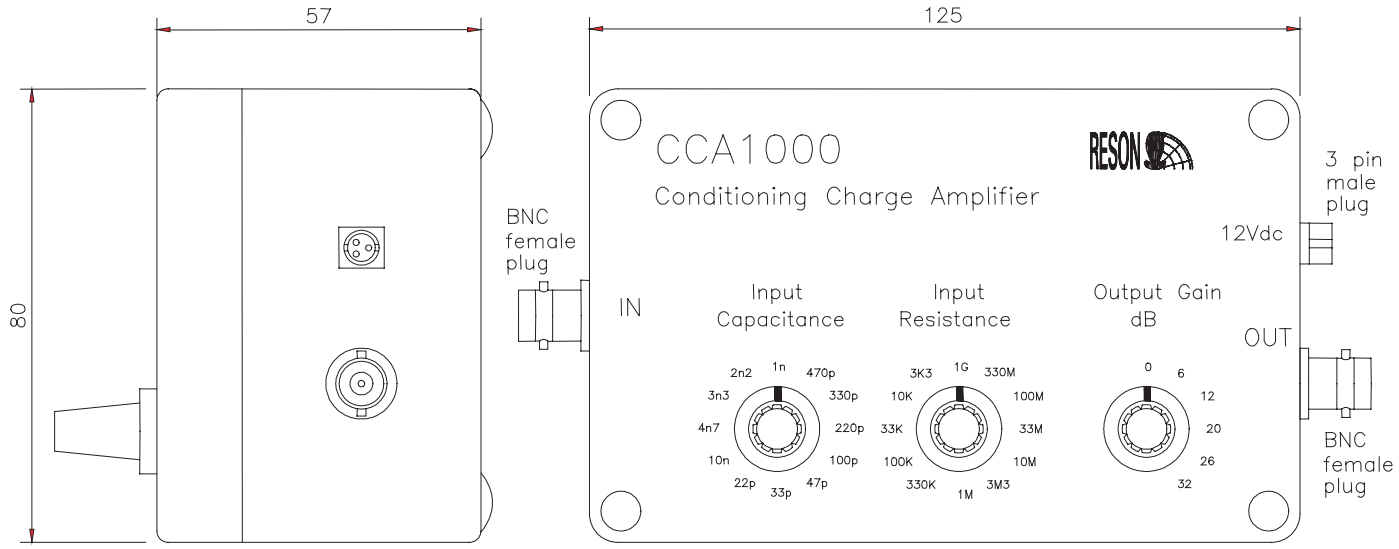
a. 20 log (1nF/1nF) = 0dB

b. 20 log (8nF/4.7nF) = +4.62 dB gain

USER INSTRUCTIONS

Voltage supply:
Connect the supply cable to a battery or AC powered DC supply.
The required voltage is 12 to 24VDC. DC supply common/ground should be connected to water for minimum noise.

CCA 1000 outline dimensions and layout



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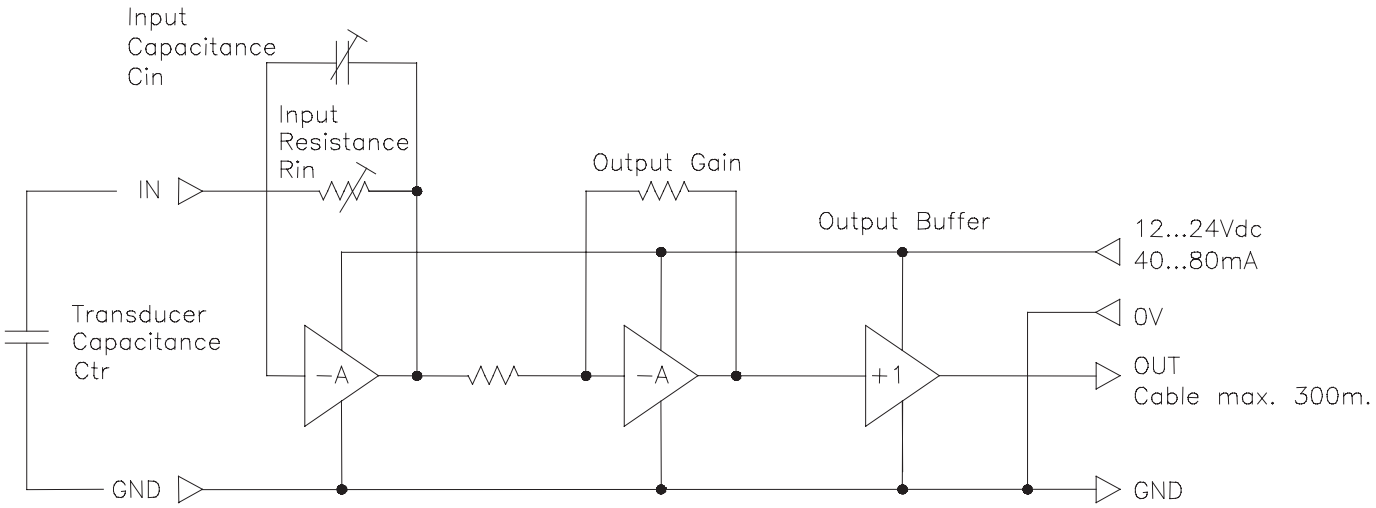
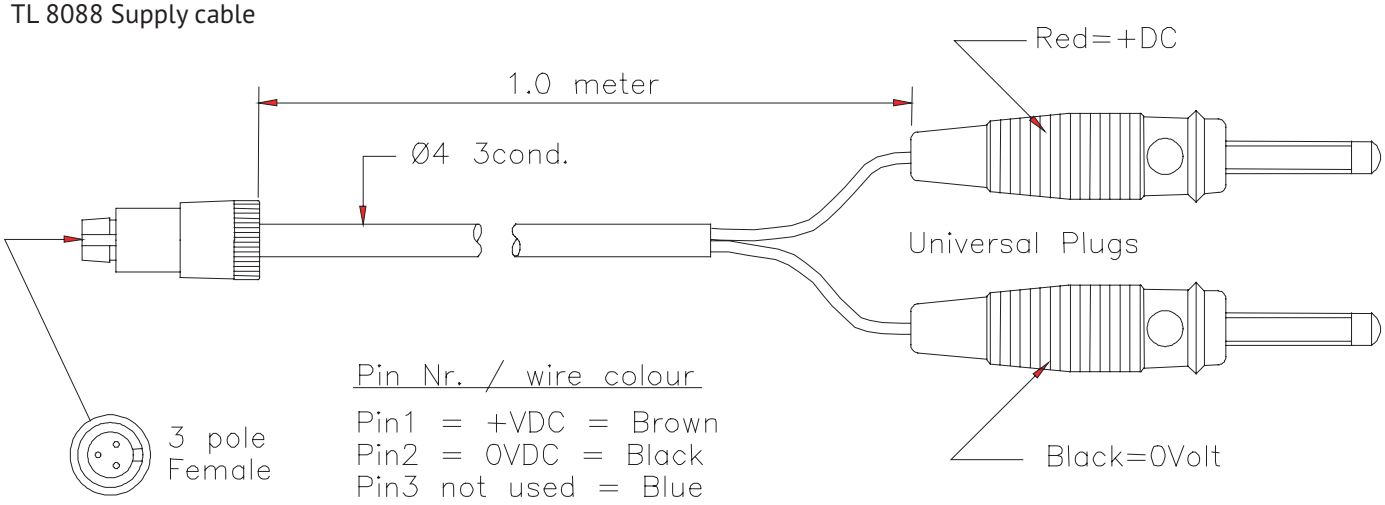
Simplified block diagram



TL 8088 Supply cable



For more details visit www.teledyne-reson.com or contact your local Teledyne RESON Office. Teledyne RESON reserves the right to change specifications without notice. 2015©Teledyne RESON

Teledyne RESON A/S
Denmark
Tel: +45 4738 0022
info@teledyne-reson.com

Teledyne RESON Inc.
U.S.A.
Tel: +1 805 964-6260
sales@teledyne-reson.com

Teledyne RESON Ltd.
Scotland U.K.
Tel: +44 1224 709 900
sales@reson.co.uk

Teledyne RESON B.V.
The Netherlands
Tel: +31 (0) 10 245 1500
info@reson.nl

Teledyne RESON GmbH
Germany
Tel: ++49 421 3770 9600
info@teledyne-reson.com

Teledyne RESON Shanghai Office
Shanghai
Tel: +86 21 64186205
shanghai@teledyne-reson.com

www.teledyne-reson.com

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