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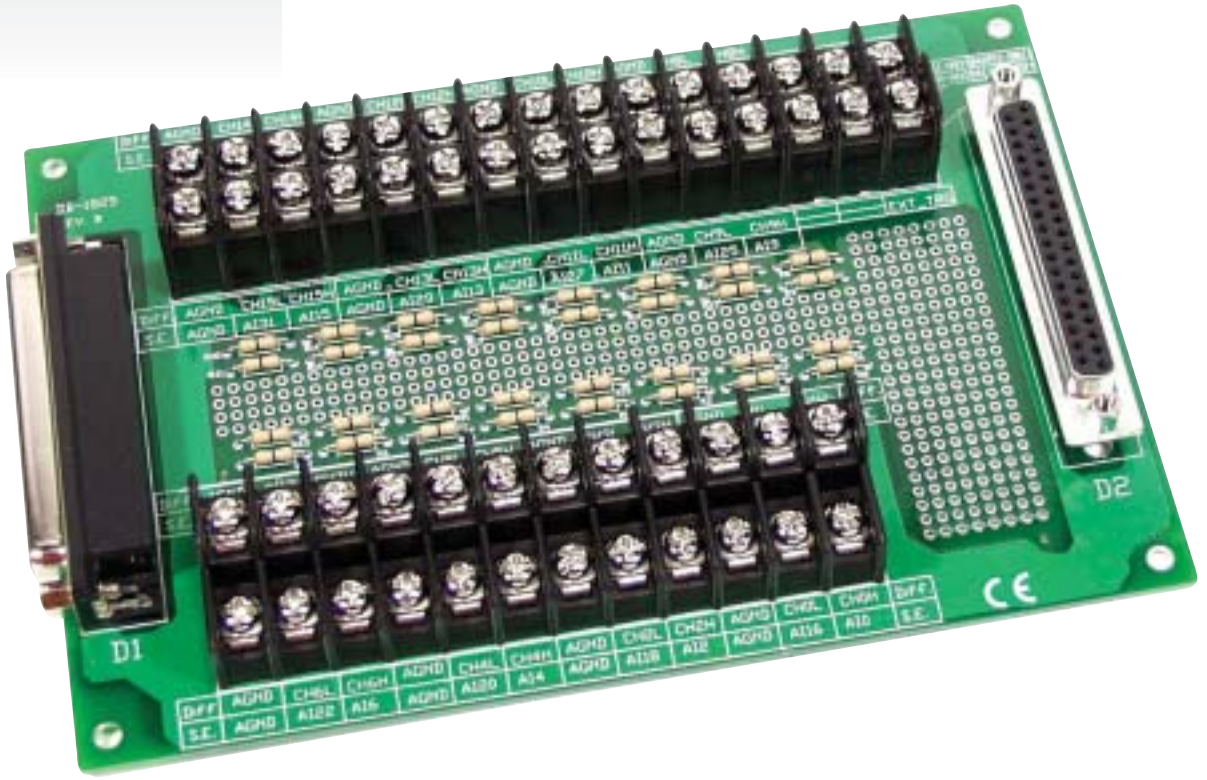

OME-DB-8025/8125/8225/8325/1825

Terminal Boards

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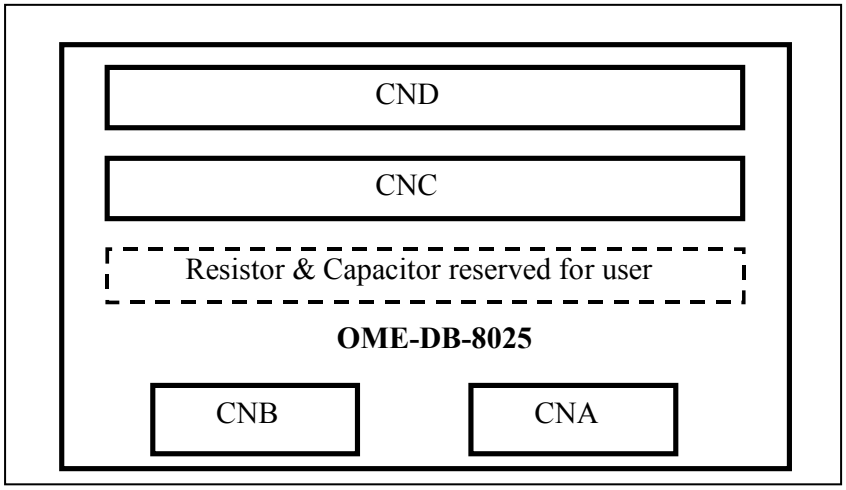
OME-DB-8025 TERMINAL BOARD

1. Accessories

The OME-DB-8025 is the cost-effective universal screw terminal board for A/D cards with 20-pin connectors.

2. OME-DB-8025 Layout



NOTE:

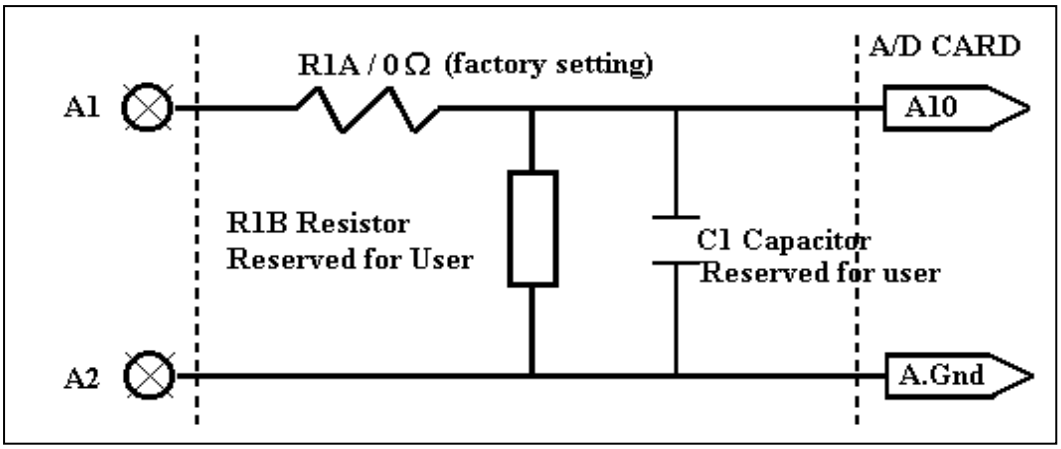
(1) CNA 20 pin connector for A1 to A20

(2) CNB 20 pin connector for B1 to B20

3. Pin Assignment

1	A1	1	B1
2	A2	2	B2
3	A3	3	B3
4	A4	4	B4
5	A5	5	B5
6	A6	6	B6
7	A7	7	B7
8	A8	8	B8
9	A9	9	B9
10	A10	10	B10
11	A11	11	B11
12	A12	12	B12
13	A13	13	B13
14	A14	14	B14
15	A15	15	B15
16	A16	16	B16
17	A17	17	B17
18	A18	18	B18
19	A19	19	B19
20	A20	20	B20

4. Wiring Diagram



5. Capacitor Filter, Voltage Divider & Current input

5.1. Input R/C Filtering

Input filtering is provided on the OME-DB-8025 by installing a resistor and a capacitor on the desired input channel.

For example:

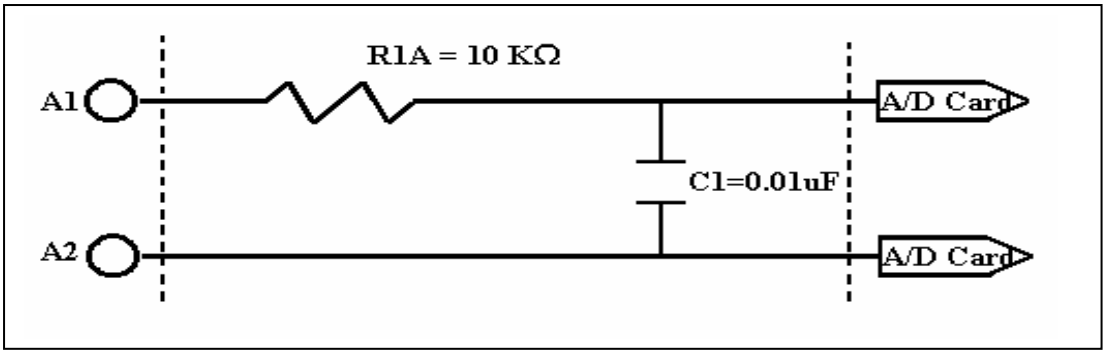
1.6 KHz Low pass filter

Equation: f3db = 1/(2 * Pi * R * C)

The steps are shown below

Step1. Change R1A (0Ω) resistor to 10 KΩ.

Step2. Install 0.01 uF Capacitor on C1.

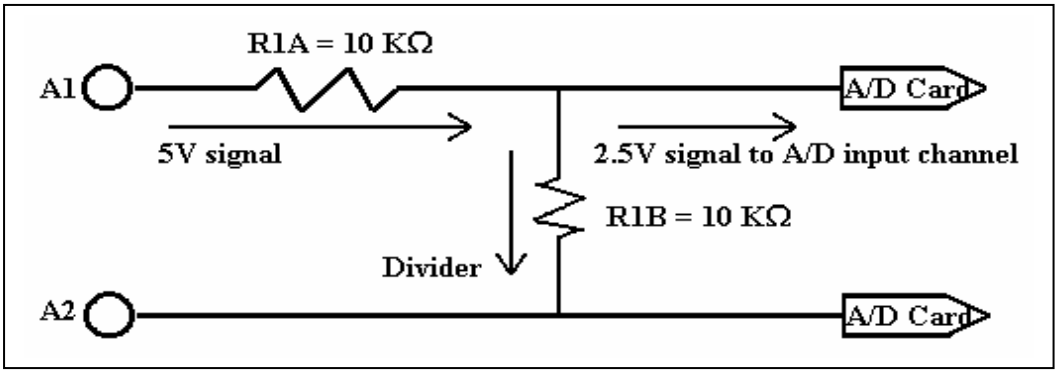


5.2. Voltage Divider

If the input signal voltage is greater than the A/D card input range a voltage divider may be used. The OME-DB-8025 provides 2 resistors on each input channel to divide the input voltage signal. The steps are shown below

Step1. Change R1A (0Ω) resistor to 10 KΩ (0.1%).
Step2. Install 10 KΩ(0.1%) on R1B. (Voltage Signal /2)

V/n : n = R1A/(R1A+R1B)



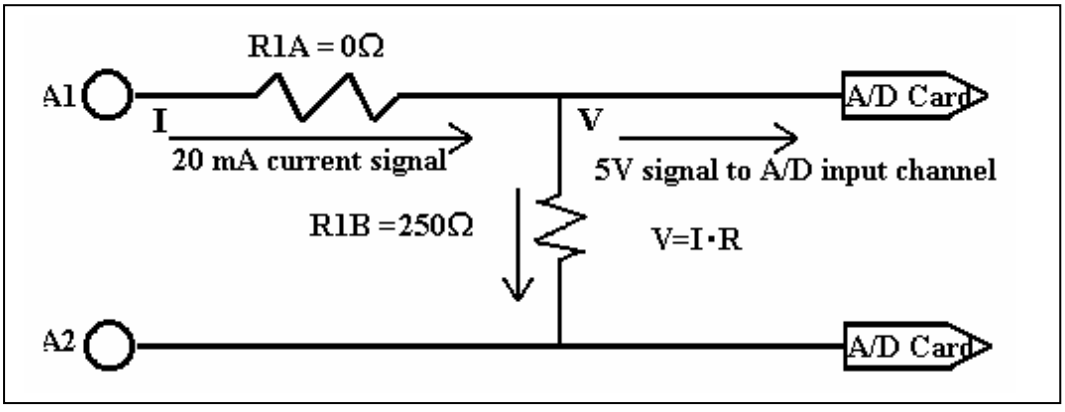
5.3. Current input

If you want to measure a current signal, you have to install a 250Ω resistor in R1B. The steps are shown as below

Current signal range: 0 to 20 mA
R1B changed to 250Ω
Voltage = 20 mA x 250Ω = 5V ; Range = 0 to 5V

Formula:

input voltage signal = input current signal x 250Ω

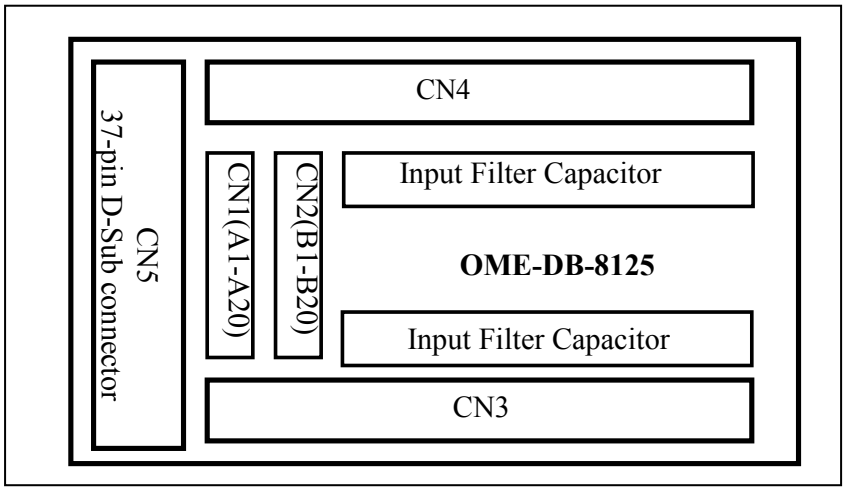


OME-DB-8125 TERMINAL BOARD

1. Accessories

The OME-DB-8125 is the cost-effective universal screw terminal board for A/D cards with a 20-pin connector or 37-pin D-Sub connectors.

2. OME-DB-8125 Layout



NOTE:

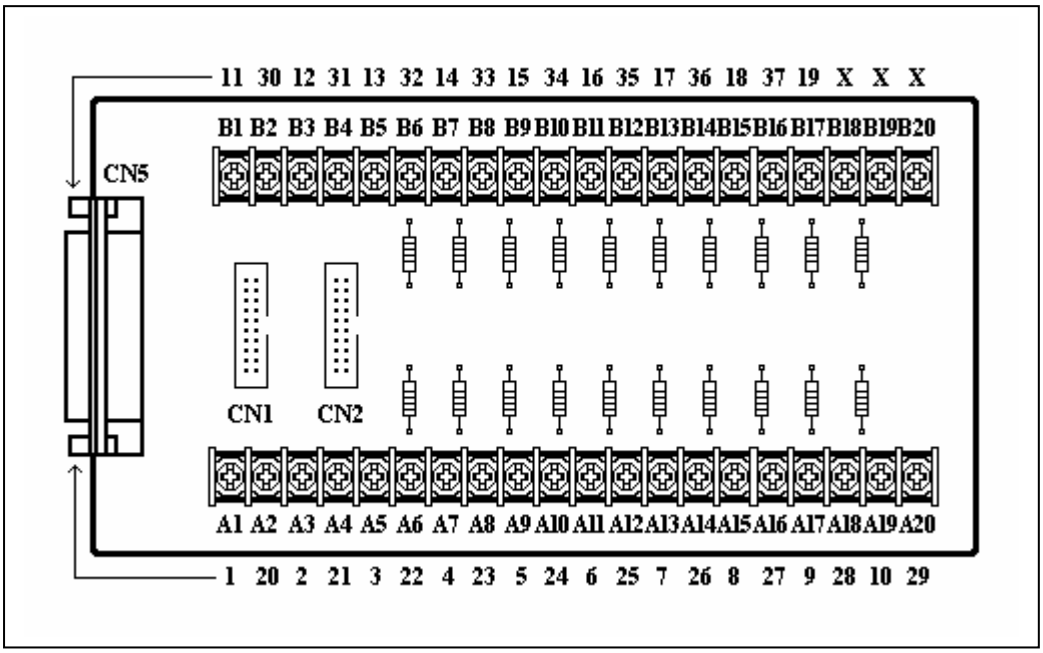
(3) CN5 37-pin D-Sub connector for A1 to A20 & B1 to B20

(4) CN1 20-pin connector for A1 to A20

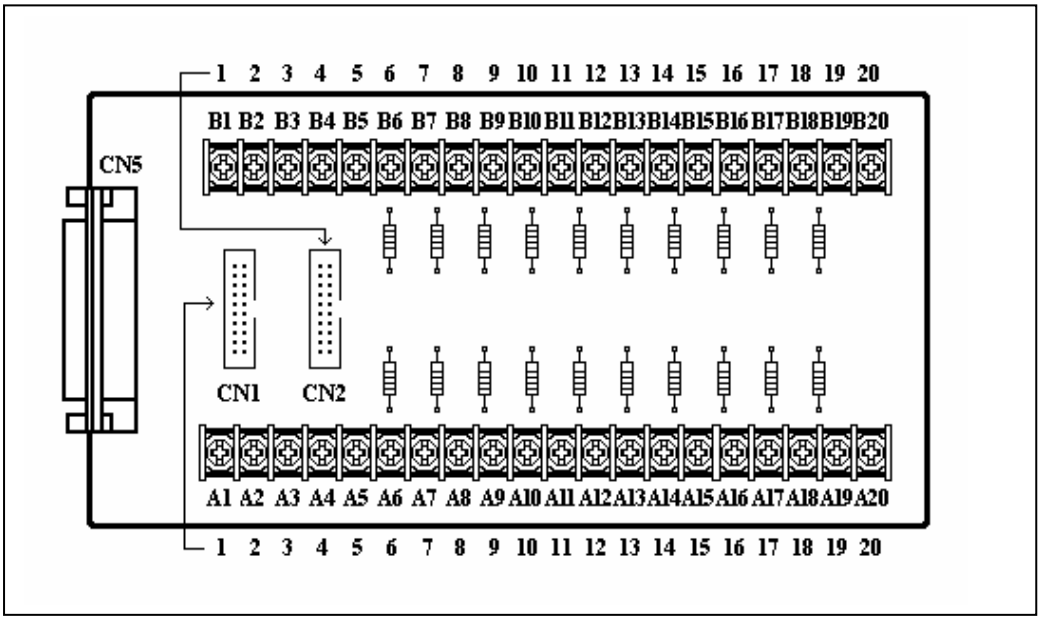
(5) CN2 20-pin connector for B1 to B20

3. Pin Assignment

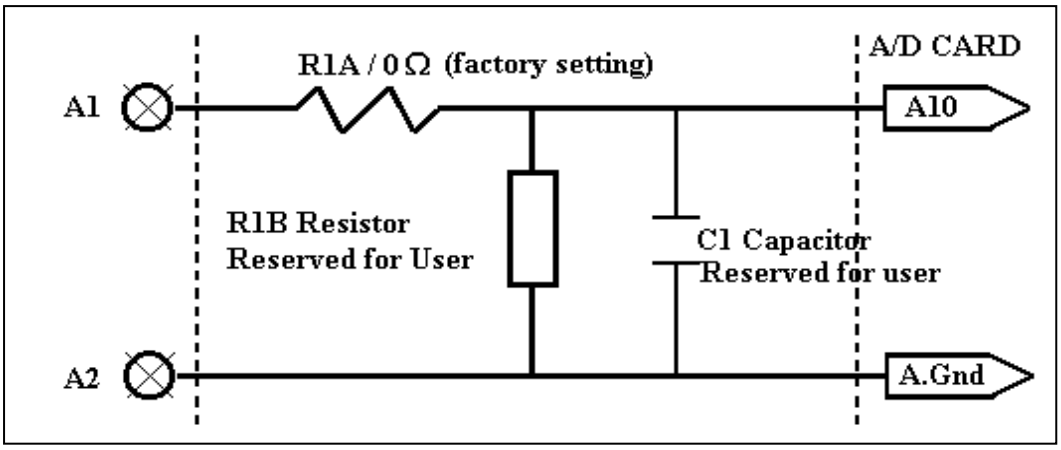
37-pin D-Sub connector pin assignment



20-pin connector pin assignment



4. Wiring Diagram



5. Capacitor Filter & Voltage Divider & Current input

5.1. Input R/C Filtering

Input Filtering is provided on the OME-DB-8125 by installing a resistor and a capacitor on the desired input channel.

For example:

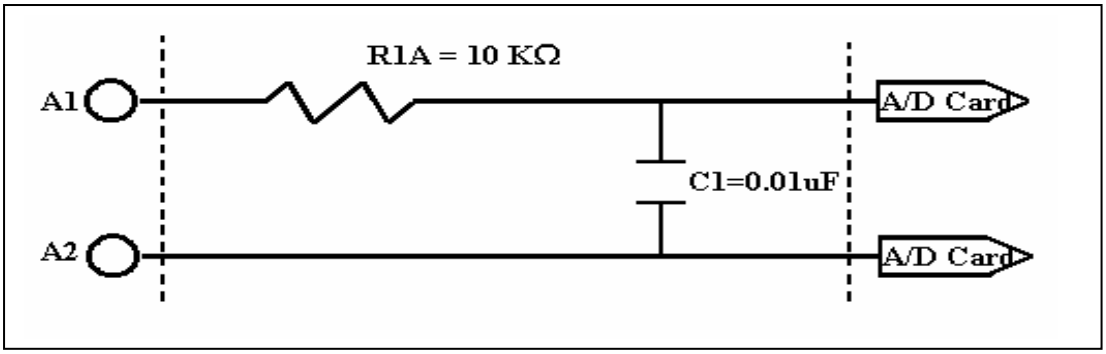
1.6 KHz Low pass filter

Equation: f3db = 1/(2 * Pi * R *C)

The steps are shown below

Step1. Change R1A (0Ω) resistor to 10 KΩ.

Step2. Install 0.01 uF Capacitor on C1.



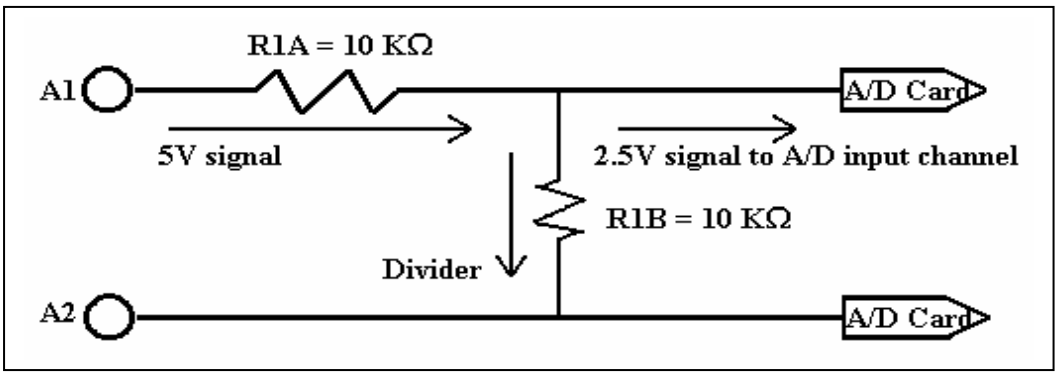
5.2. Voltage Divider

If the input signal voltage is greater than the A/D card input range a voltage divider may be used. The OME-DB-8125 provides 2 resistors on each input channel to divide the input voltage signal. The steps are shown below

Step1. Change R1A (0Ω) resistor to 10 KΩ. (0.1%)

Step2. Install 10 KΩ (0.1%) on R1B. (Voltage Signal /2)

V/n : n = R1A/(R1A+R1B)



5.3. Current Input

If you want to measure a current signal, you must change resistor R1B (0Ω) to 250Ω. The steps are shown as below

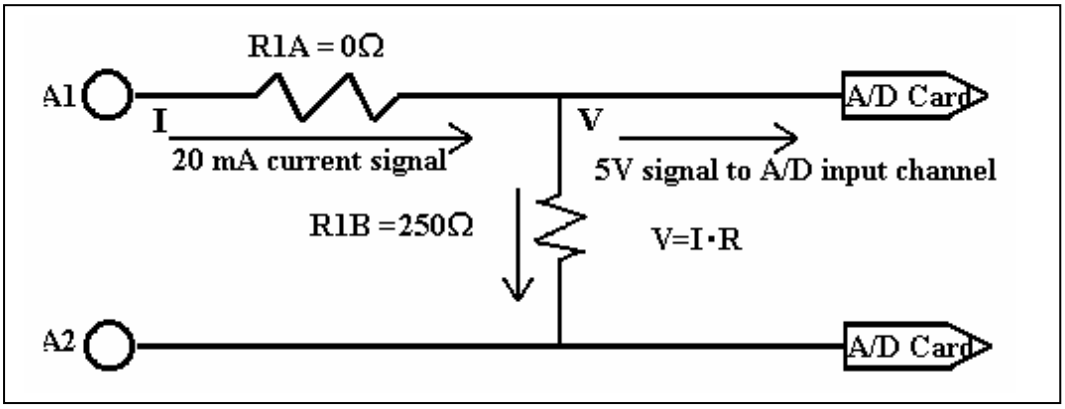
Current signal range: 0 to 20 mA

R1B change to 250Ω

Voltage = 20 mA x 250Ω = 5V ; Range = 0 to 5V

Formula:

input voltage signal = input current signal x 250Ω

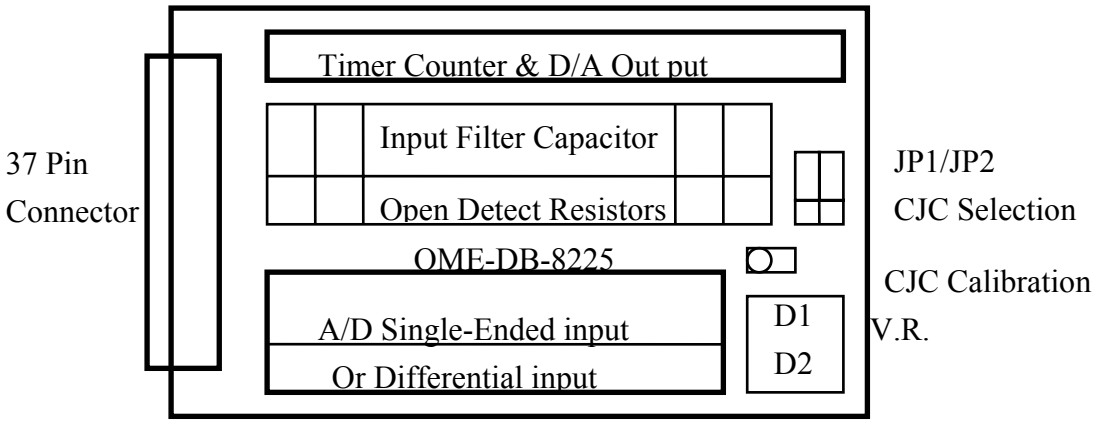


OME-DB-8225 TERMINAL BOARD

The OME-DB-8225 Terminal Board provides convenient wiring for OME-A-82X Series cards.

A/D Card Type	Input Mode
OME-A-822HG	Single – Ended or Differential
OME-A-822DG	Single - Ended or Differential
OME-A-821PG	Single - Ended or Differential
OME-A-826PG	Single - Ended or Differential

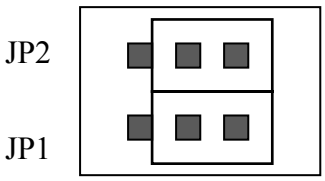
2. OME-DB-8225 Layout



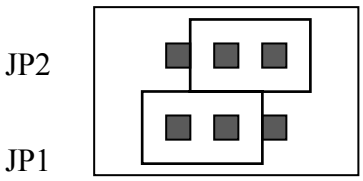
3. CJC Jumper Setting

The CJC is only for A/D channel 0

3.1. Single-Ended Mode



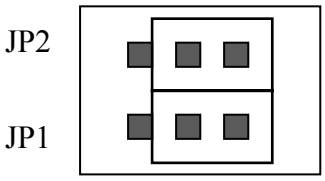
NO CJC Connection
(Default)



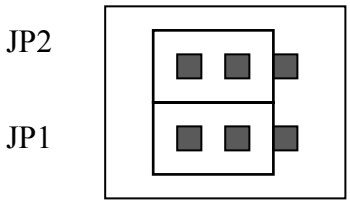
Single-Ended CJC Connection

To single-ended mode
A/D channel 0

3.2. Differential Mode



NO CJC Connection
(Default)



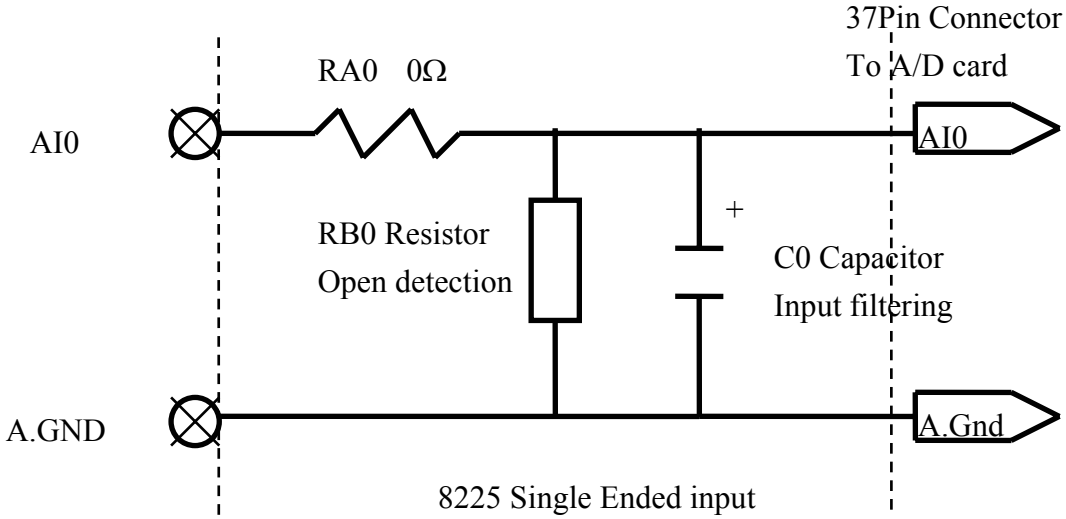
Differential CJC Connection

To differential mode
A/D channel 0

4. Wiring Diagram

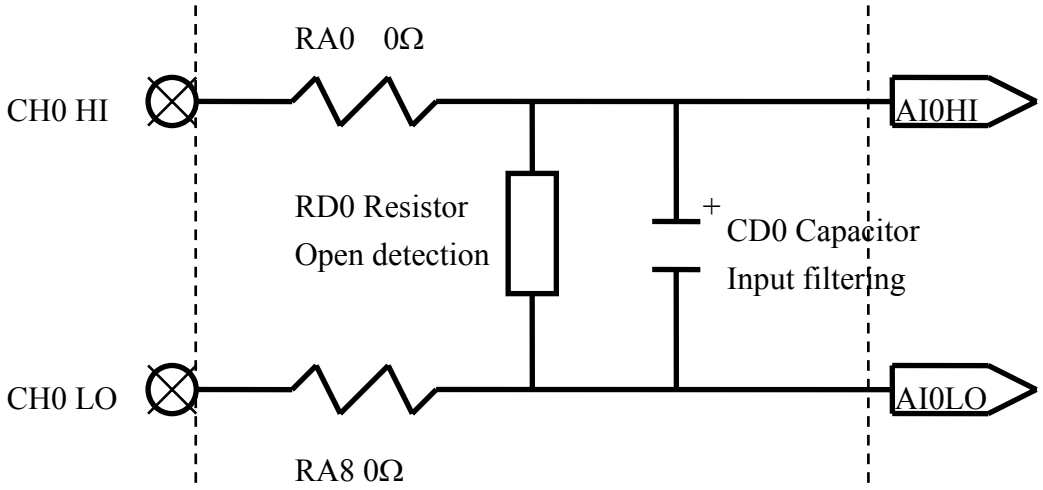
The OME-A-82X series provides Single - Ended & Differential connections.

4.1. Single - Ended Connection



8225 Single Ended input

4.2. Differential Connection



8225 Differential input

5. CJC Output

The built -in CJC Circuitry produces a 10mV per Deg C output with 0.0 Volts @ -273 Deg C. The OME-A-822 should be protected from drafts and direct sunlight in order to accurately reflect room temperature.

CJC Calibration:

1. Connect the OME-A-82X series to the OME-DB-8225 CN1
2. Set OME-A-822HG/DG to Single-Ended Mode
3. set JP1 to 1-2and JP2to 2-3 (Single-Ended mode)
4. Read the temperature from a Digital thermometer placed near D1/D2 (See OME-DB-8225 Layout).
5. Read OME-A-82X AI0 (Single-Ended Channel 0)
6. Adjust VR1 until a stable reading of 10mV per deg C is attained.

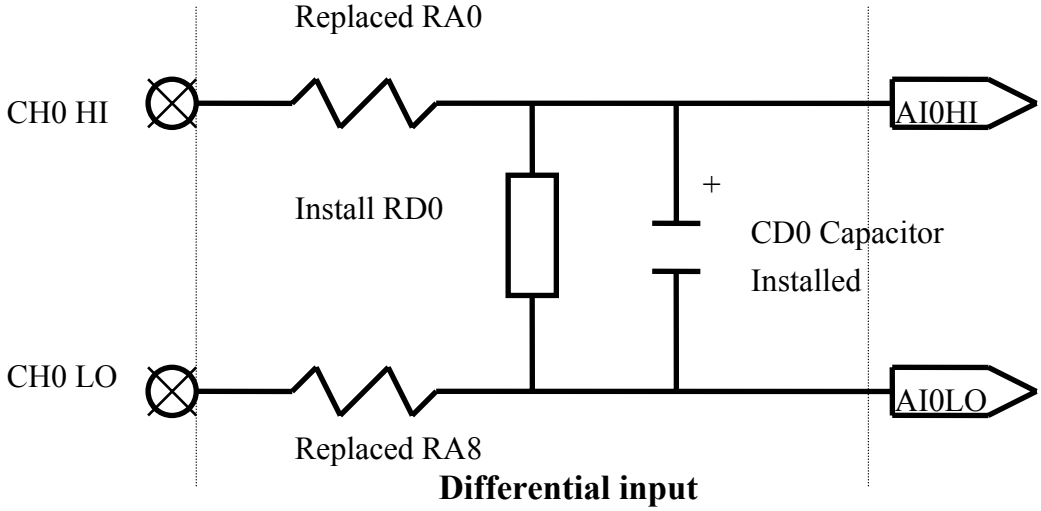
For example, when the environment temperature is 24 deg C. the reading value of CJC will be 2.97V

(273 deg c +24 deg c) X 10 mV/deg c = 2.97V

You will need an A/D channel for CJC calibration. AI0 is reserved for CJC calibration in single ended mode and CH0-HI & CH0-LO is reserved for differential mode.

6. Open Detect and Input Filtering

Open thermocouple detection and input filtering are provided on the OME-DB-8225 by installing 3 resistors and a capacitor on the desired input channel. For example, if channel 0 is the desired channel, RA0and RA8 must be removed and RD1 must be installed. These biasing resistors will slowly pull an open input channel to 0 Vdc. This 0 Vdc condition can be sensed and flagged in software.



Differential input

Channel	0Ω replaced by 10KΩ	Install 100MΩ	Install 1uF
0	RA0 , RA8	RD0	CD0
1	RA1 , RA9	RD1	CD1
2	RA2 , RA10	RD2	CD2
3	RA3 , RA11	RD3	CD3
4	RA4 , RA12	RD4	CD4
5	RA5 , RA13	RD5	CD5
6	RA6 , RA14	RD6	CD6
7	RA7 , RA15	RD7	CD7

In single-ended mode, a 10KΩ resistor should replace RA_n. Install a 100MΩ resistor in RB_n and install a 1uF.capactor in C_n.

Note: n: Channel 0 to15

7. Voltage Divider & Current input

7.1. Voltage Divider

If the input voltage signal is greater than the input range of the OME-A-82X, a voltage divider can be used. The OME-DB-8225 provides 2 resistor locations on each input channel that can be used to reduce the input voltage signal.
Follow the steps shown below

Step 1. Change RA0 (0 Ω) resistor to 10KΩ (0.1%)
Step 2. Install 10 KΩ (0.1%) on RB0 (Voltage Signal / 2)

V/n : n = RB0 / (RA0+RB0)

7.2. Current input

If you want to measure current input signal, you should change resistor RA0 (0Ω) to 250Ω . Follow the steps show below

Current Signal range: 0 to 20mA
RA0 change to 250Ω
Voltage =20 ma X 250Ω = 5V ; Range 0 to 5V

Formula:

input voltage signal = input current signal x 250Ω

8. CN3 Timer Counter & D/A Output Connector

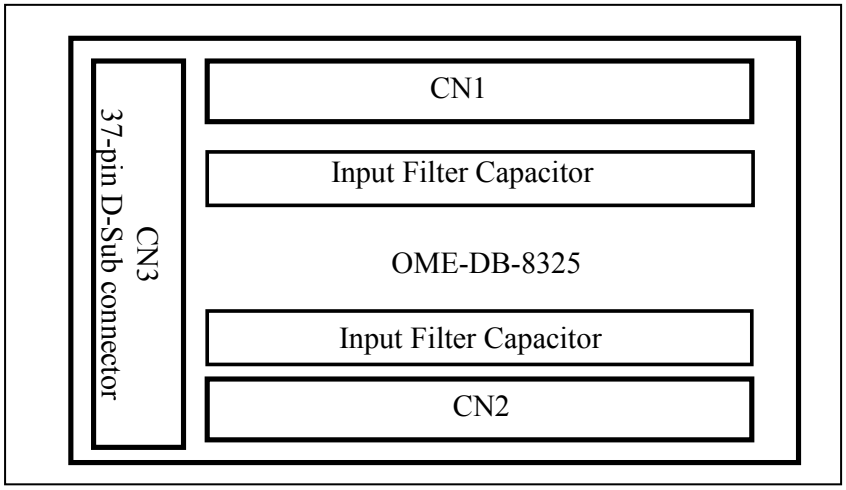
Pin name	Connector
+5V	From PC +5V
D.GND	Digital Ground
EXTCLK	External Clock for OME-A-822HG/DG
INTCLK	No Function
DRDY	No Function
EXTTRG	External Trigger of A/D converter
COUT1	8254 Counter 1 output (Internal trigger used)
GATE	8254 Counter 1 Gate (Internal trigger used)
COUT0	8254 Counter 0 output (Reserved for user)
GATE0	8254 Counter 0 Gate (Reserved for user)
AGND	Analog Ground
EXTVREF2	External reference voltage input of D/A Channel 2
DAOUT2	Output of D/A Channel 2
EXTVREF1	External reference Voltage input of D/A Channel 1
DAOUT1	Output of D/A Channel 1
VREF	Output of D/A Internal reference Voltage

OME-DB-8325 TERMINAL BOARD

1. Accessories

The OME-DB-8325 is screw terminal board for OME-A-832 isolated A/D card.

2. OME-DB-8325 Layout

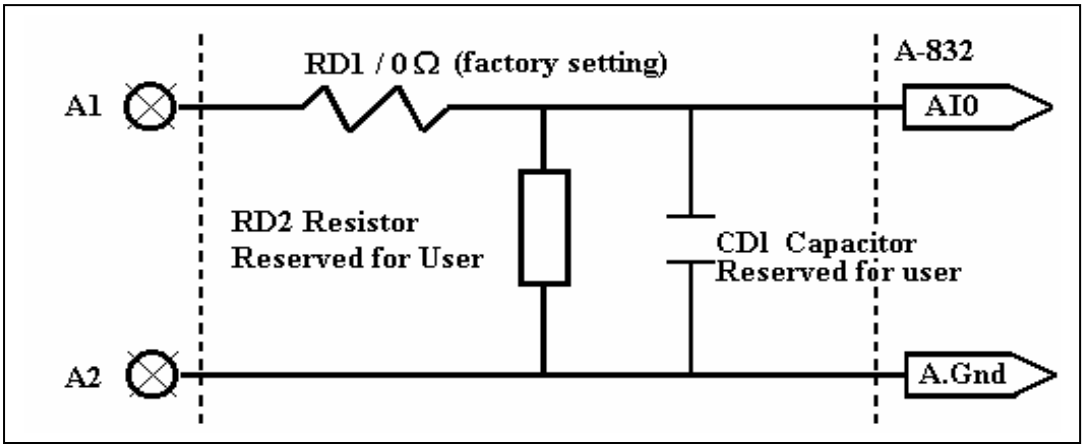


NOTE:

(1) A0 to A31 for OME-A-832 analog input channel 0 to channel 31.

(2) A.GND for OME-A-832 analog ground.

3. Wiring Diagram



4. Capacitor Filter & Voltage Divider &Current input

4.1. Input R/C Filtering

Input filtering is provided on the OME-DB-8325 by installing a resistor and a capacitor on the desired input channel.

For example:

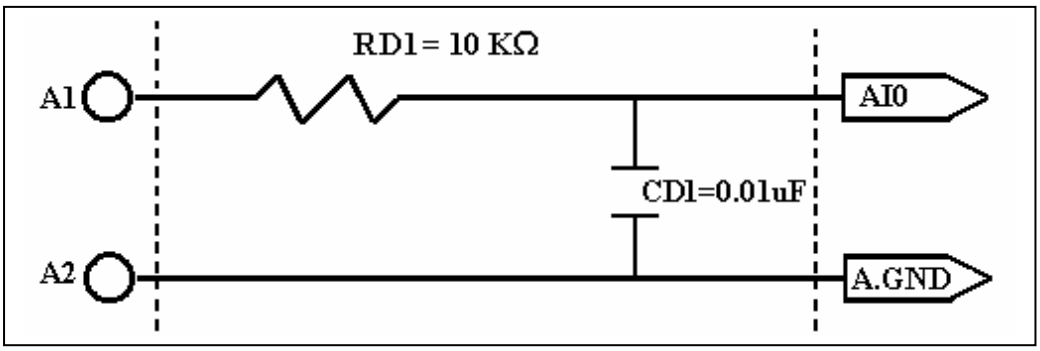
1.6 KHz Low pass filter

Equation: f3db = 1/(2 * Pi * R * C)

Follow the steps shown below

Step1. Change RD1 (0Ω) resistor to 10 KΩ.

Step2. Install 0.01 uF Capacitor on CD1.

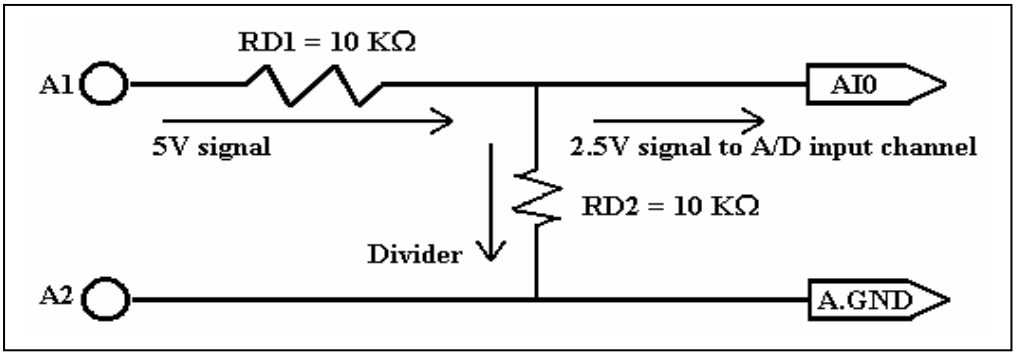


4.2. Voltage Divider

If the input voltage signal is greater than the A/D cards input range, a voltage divider can be used. The OME-DB-8325 provides 2 resistor locations for adding a voltage divider for each input channel. Follow the steps shown below

Step1. Change RD1 (0Ω) resistor to 10 KΩ (0.1%).
Step2. Install 10 KΩ (0.1%) on RD2. (Voltage Signal /2)

V/n : n = RD1/(RD1+RD2)

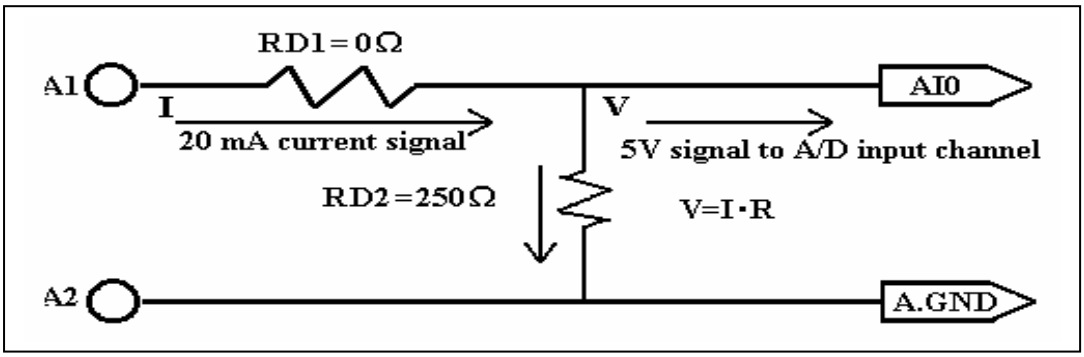


4.3. Current input

If you want to measure current input signal, you should change resistor RD2 (0Ω) resistor to 250Ω. Follow the steps shown below

Current signal range: 0 to 20 mA
RD2 change to 250Ω
Voltage = 20 mA x 250Ω = 5V ; Range = 0 to 5V

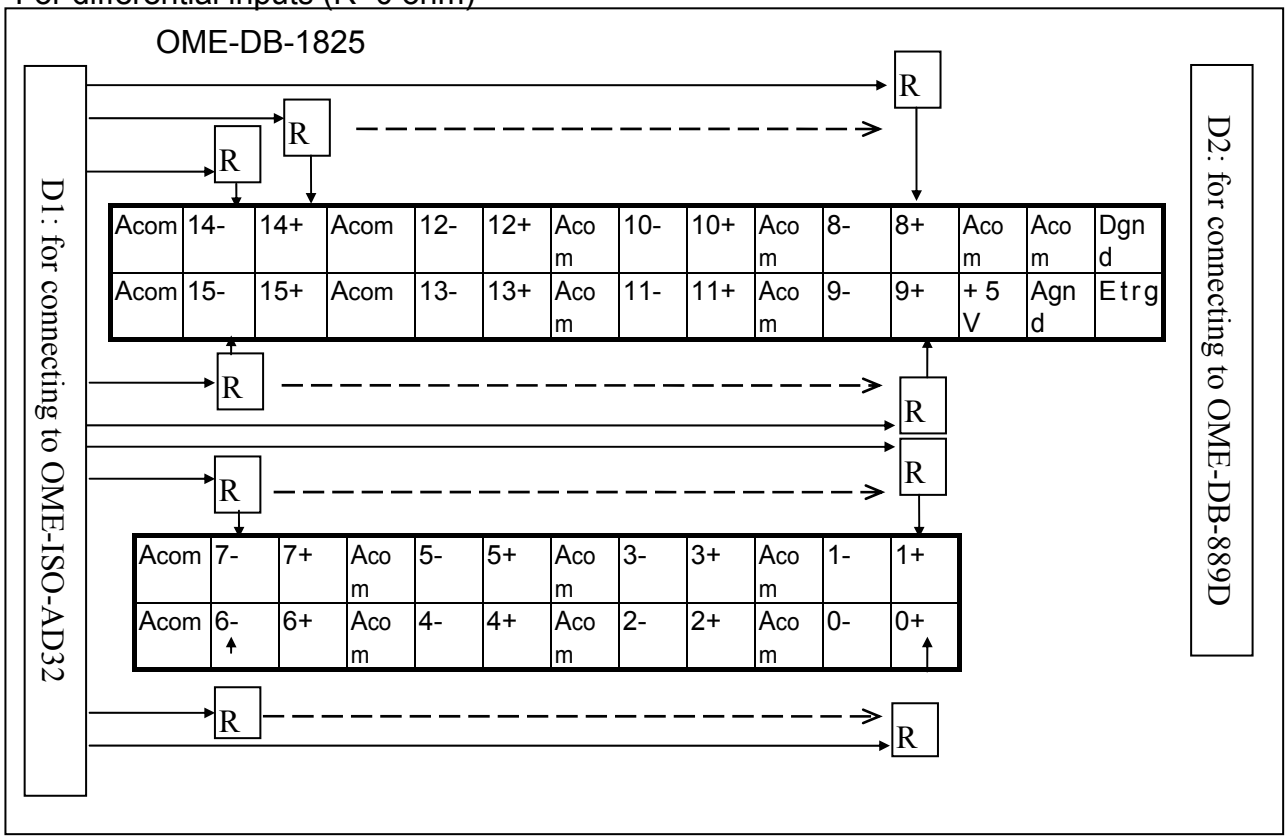
Formula:
input voltage signal = input current signal x 250Ω



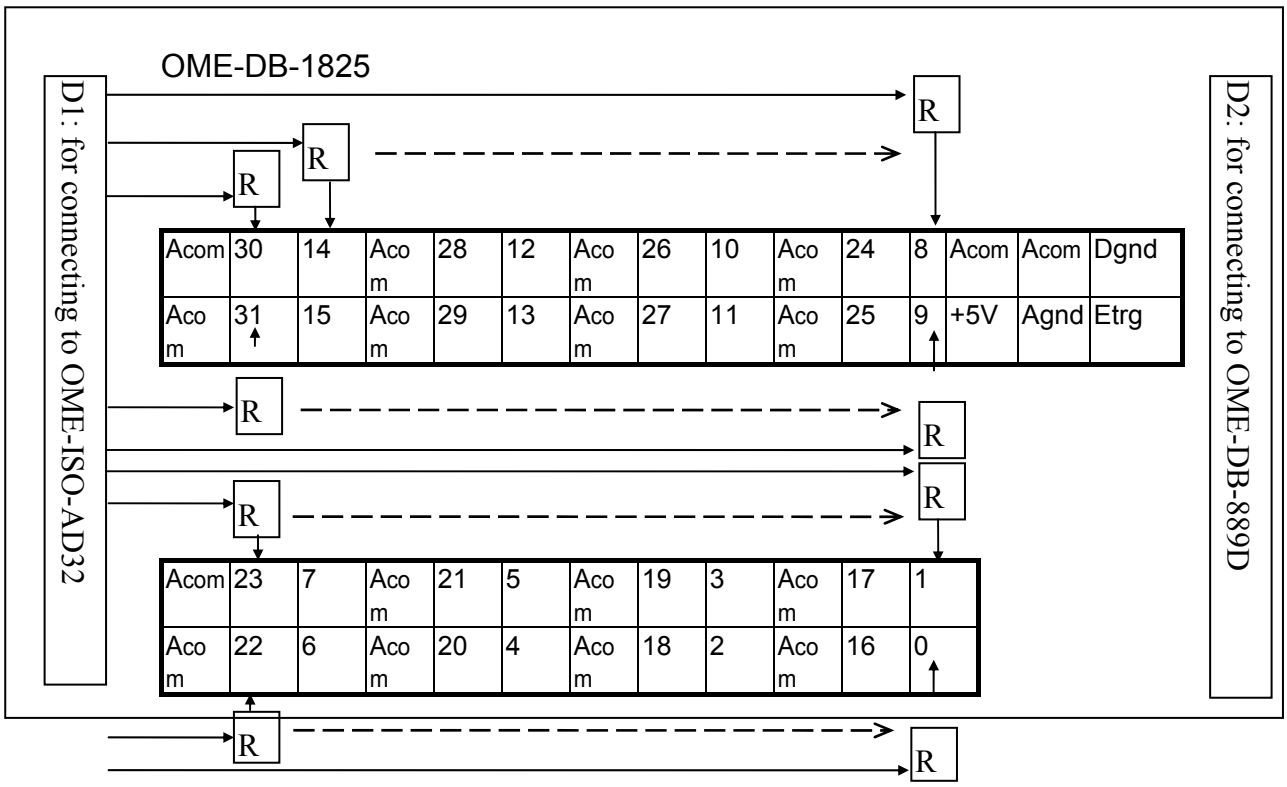
OME-DB-1825 TERMINAL BOARD

1. PCB layout for connecting to OME-ISO-AD32:

For differential inputs (R=0 ohm)



For single-ended inputs (R=0 ohm)

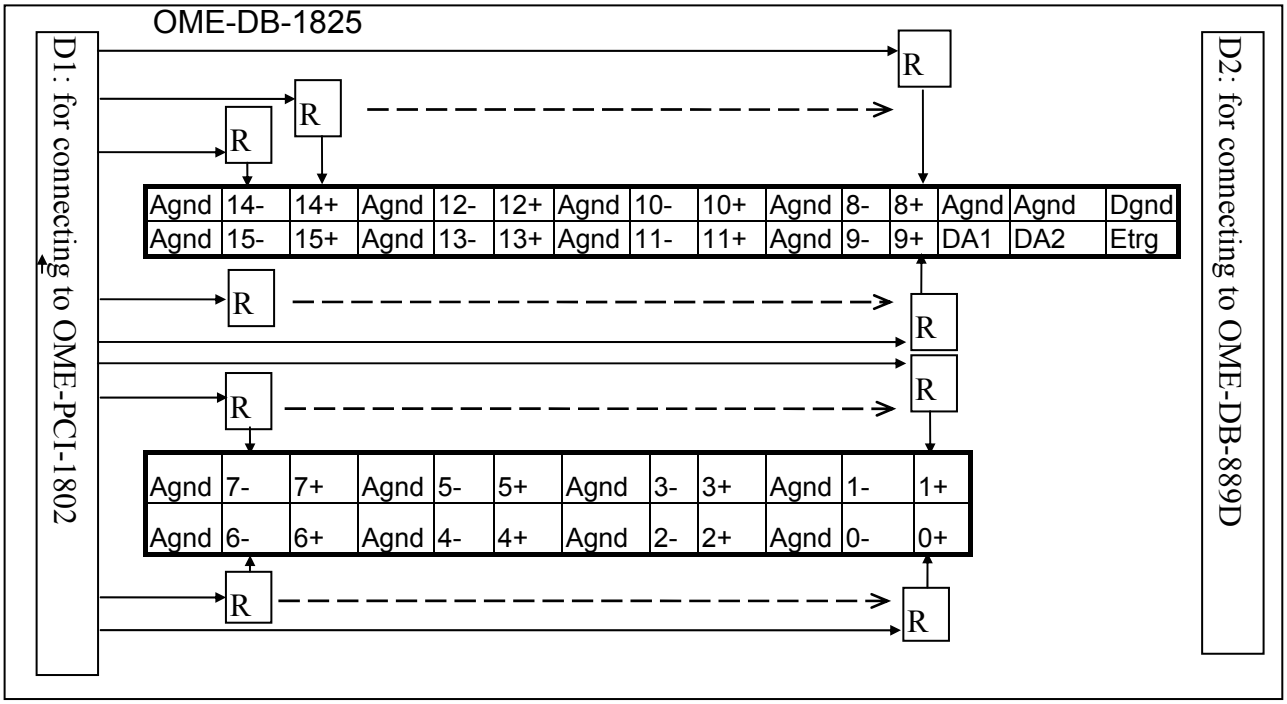


Pin assignment of D1 same as **CN1 of OME-ISO-AD32**

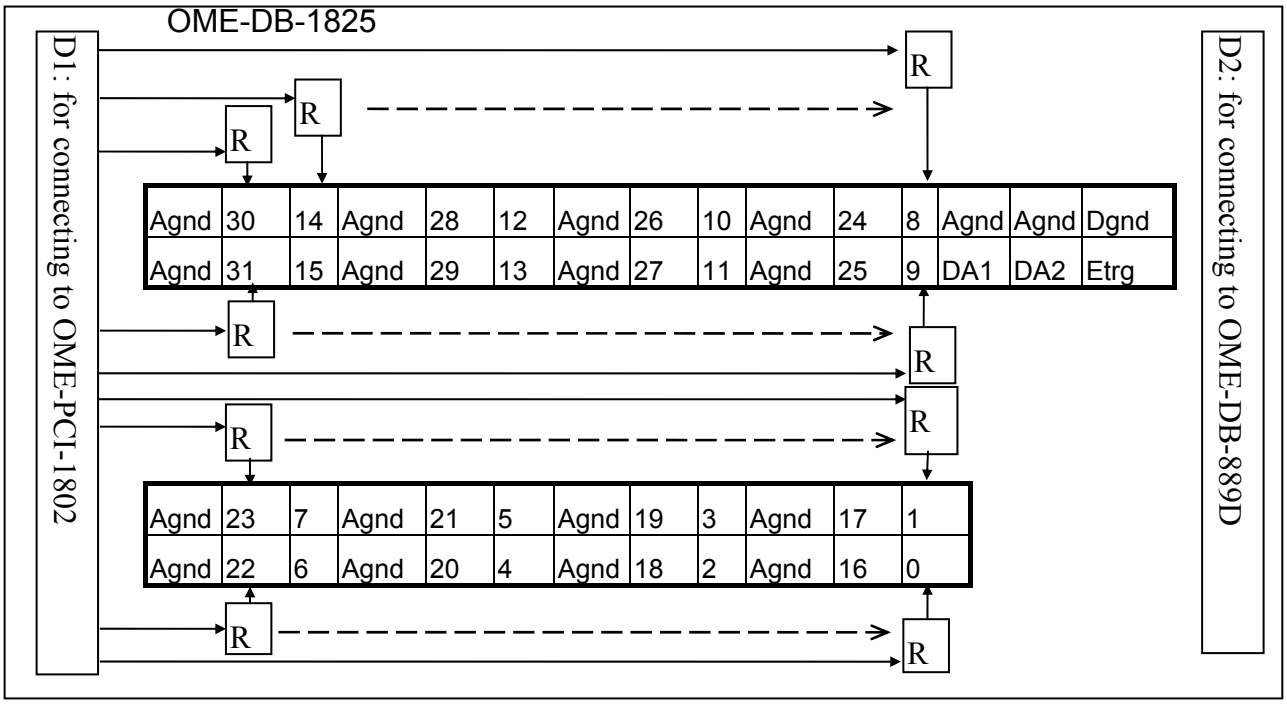
Pin assignment of D2 same as **CN1 of OME-DB-889D**

2. PCB layout for connecting to OME-PCI-1802:

For differential input (R=0 ohm)



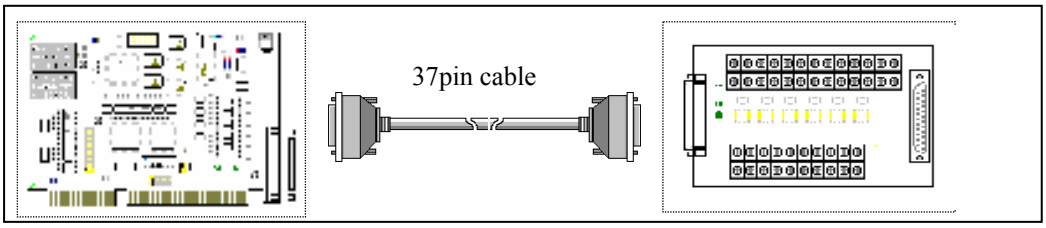
For single-ended input (R=0 ohm)



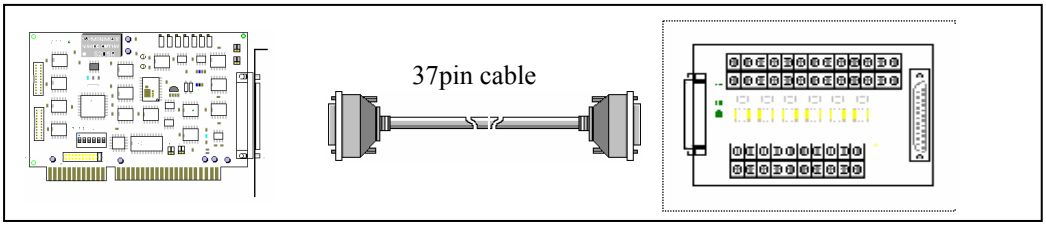
Pin assignment of D1 same as **CON3 of OME-PCI-1802.**

Pin assignment of D2 same as **CN1 of OME-DB-889D.**

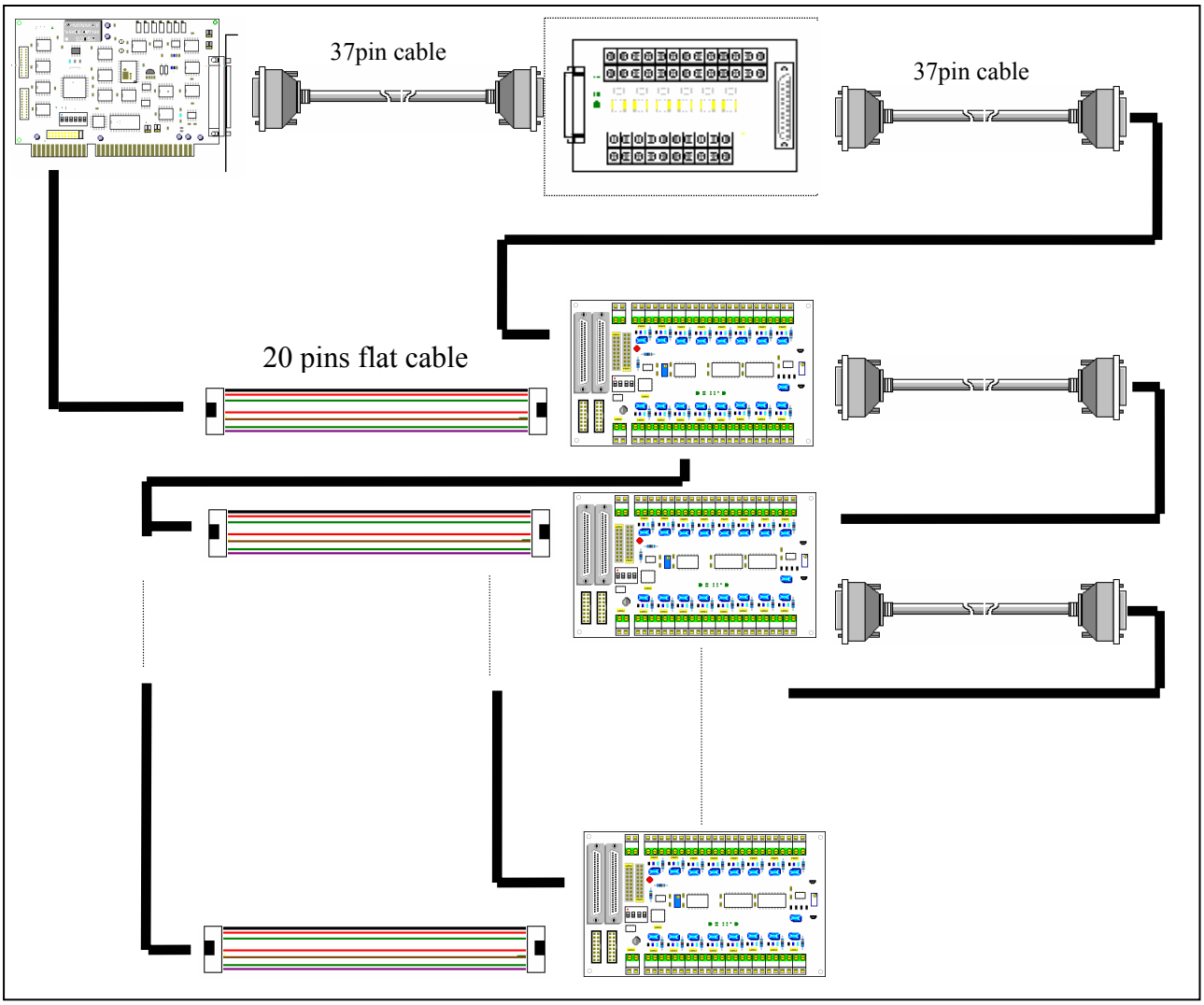
3. Connection to OME-ISO-AD32



4. Connection to OME-PCI-1802



5. Connection to OME-PCI-1802 and multiple OME-DB-889D (16 channels differential)



WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of 13 months from date of purchase. OMEGA's WARRANTY adds an additional one (1) month grace period to the normal one (1) year product warranty to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product.

If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components which wear are not warranted, including but not limited to contact points, fuses, and triacs.

OMEGA is pleased to offer suggestions on the use of its various products. However, OMEGA neither assumes responsibility for any omissions or errors nor assumes liability for any damages that result from the use of its products in accordance with information provided by OMEGA, either verbal or written. OMEGA warrants only that the parts manufactured by it will be as specified and free of defects. OMEGA MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND WHATSOEVER, EXPRESS OR IMPLIED, EXCEPT THAT OF TITLE, AND ALL IMPLIED WARRANTIES INCLUDING ANY WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED. LIMITATION OF LIABILITY: The remedies of purchaser set forth herein are exclusive, and the total liability of OMEGA with respect to this order, whether based on contract, warranty, negligence, indemnification, strict liability or otherwise, shall not exceed the purchase price of the component upon which liability is based. In no event shall OMEGA be liable for consequential, incidental or special damages.

CONDITIONS: Equipment sold by OMEGA is not intended to be used, nor shall it be used: (1) as a "Basic Component" under 10 CFR 21 (NRC), used in or with any nuclear installation or activity; or (2) in medical applications or used on humans. Should any Product(s) be used in or with any nuclear installation or activity, medical application, used on humans, or misused in any way, OMEGA assumes no responsibility as set forth in our basic WARRANTY/DISCLAIMER language, and, additionally, purchaser will indemnify OMEGA and hold OMEGA harmless from any liability or damage whatsoever arising out of the use of the Product(s) in such a manner.

RETURN REQUESTS/INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence.

The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR WARRANTY RETURNS, please have the following information available BEFORE contacting OMEGA:

1. Purchase Order number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR NON-WARRANTY REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

1. Purchase Order number to cover the COST of the repair,
2. Model and serial number of the product, and
3. Repair instructions and/or specific problems relative to the product.

OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.

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