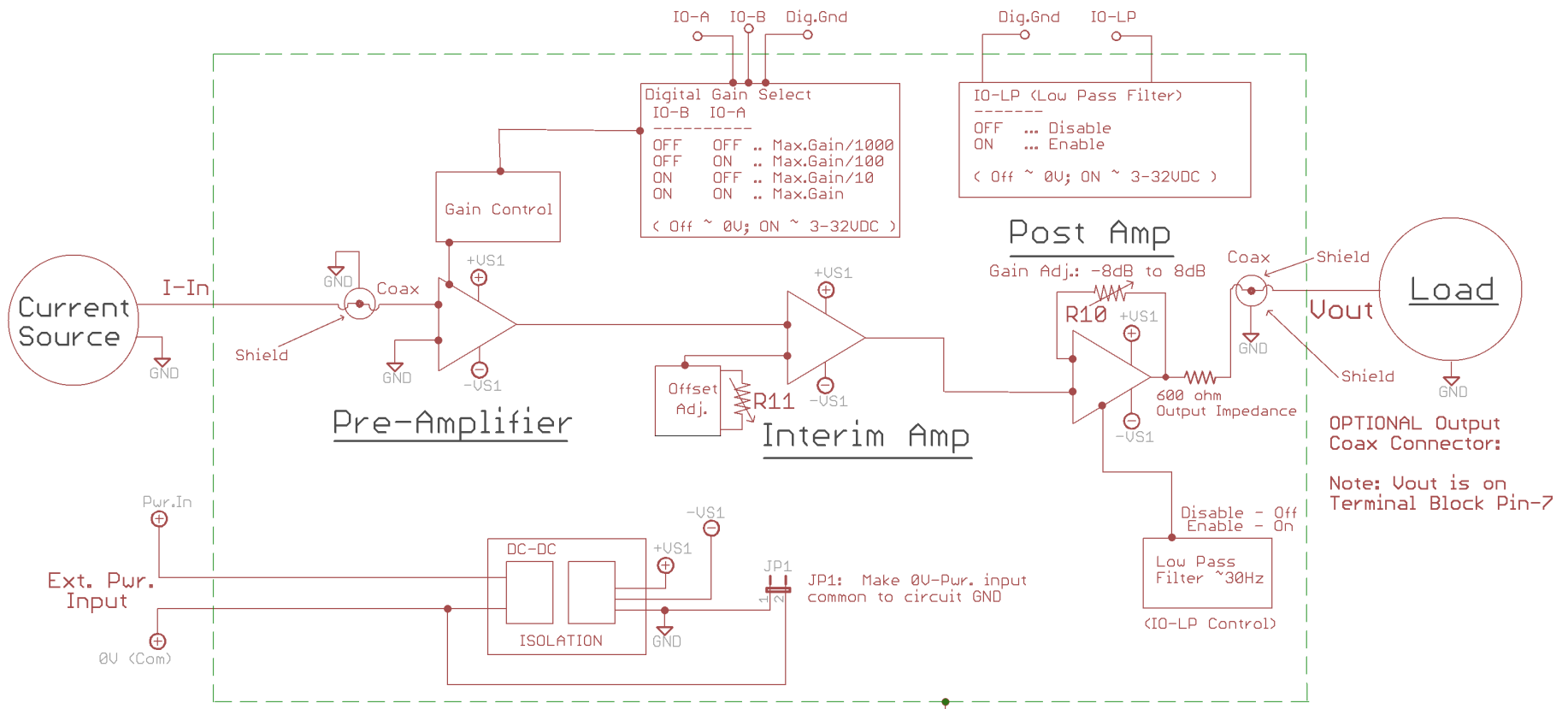


Block Diagram – Precision Multi-Range Current-Voltage Converter Module



Available Power Input Options:
5V, 12V, 15V, & 24V

Terminal Block Pin Assignments

1	2	3	4	5	6	7	8	9	10	
Input	Com	Out	IO-LP	IO-B	IO-A	IO Gnd	Uout	Gnd	Gnd	
Power Input			Digital Control				Signal Output	Signal Gnd		

TERM.BLK. Uout: 600 ohm Output Impedance

GND Note: Circuit GND common to Case.

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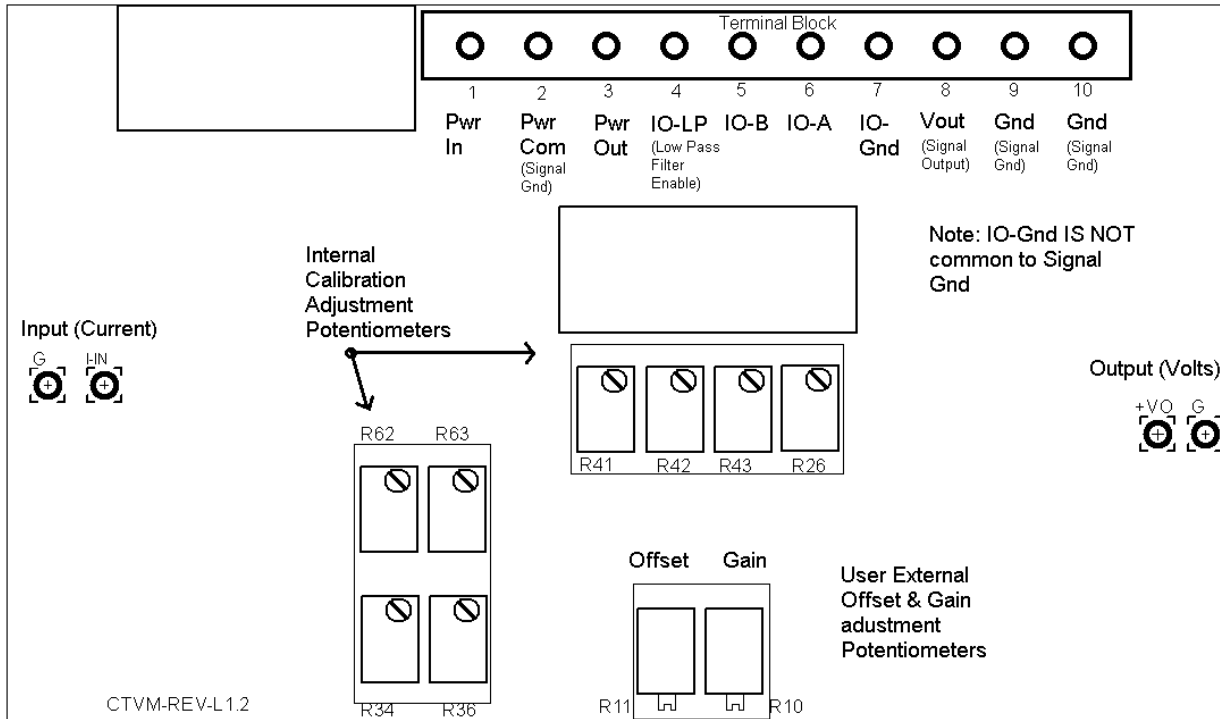
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PCB Lay-out Diagram:

JP1: Isolate Input Power Common (Gnd) from Circuit GND:

JP1 ON ... (Default; Most applications) Input Power GND common to Circuit GND.

JP1 Off ... Isolate Input Power GND from Circuit GND.

Table #1

Binary Logic Table

Digital Gain Control: (3.3V, 5V, 12V & 24V compatible logic levels)

Dig. Input	Max. Gain / 1000	(Max. Gain) / 100	(Max. Gain) / 10	Max. Gain
IO-B	0	0	1	1
IO-A	0	1	0	1

Example: If (Max. Gain) = 1nA/V then ...

(Max. Gain) / 10 =10nA/V

(Max. Gain) / 100 =100nA/V

(Max. Gain) / 1000 =1000nA/V

Table #2

Binary Logic Table

Digital Gain Control: (3.3V, 5V, 12V & 24V compatible logic levels)

Dig. Input	Low Pass Filter ON	Low Pass Filter Off
IO-LP	1	0

Continue to next page ...

Gain / Offset Adjustment Procedure:

Required Conditions:

- 1.) CTVM Module must have required DC power applied.
- 2.) Allow CTVM module to warm up for at least 3 mins. Before continuing to the procedure.

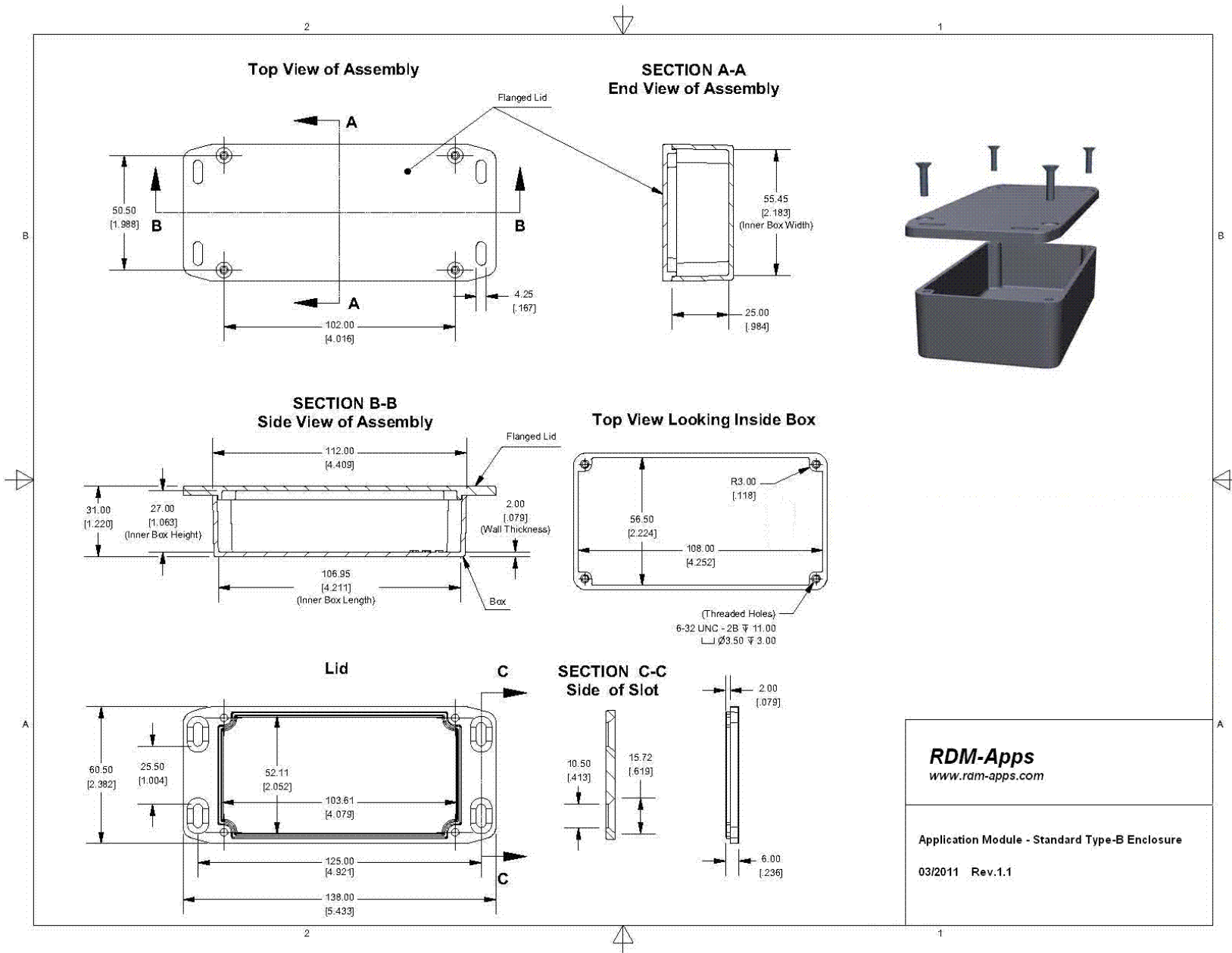
Procedure:

- 1.) Set the CTVM module to Max Gain. Connect your current source to the CTVM input. Set the current source to zero current out and then adjust R11 (offset) until the CTVM output is approximately 0V.
- 2.) With a known current applied to the CTVM input adjust R10 (Gain) until the output voltage corresponds to the applicable gain. For example, if 500pA is applied to the CTVM input and the desired gain is 100pA/V (Input/Output) then adjust R10 until the output is approximately 5.000V.

Note(s):

- 1.) You will probably have to repeat procedure steps 1 and 2 a couple of times to assure proper calibration. If the Gain adjustment potentiometer is set to one of the extreme top or bottom extents extremely high or low gain states can occur which may cause confusion when making sequential offset and gain adjustments. Also, we advise you adjust the gain using an input current that is a mid-range value. For example, if the desired gain is 100pA/V (Input/Output) and the maximum output is 10V then apply 500pA to the CTVM input and adjust the gain so the CTVM output is 5.000V. You can conversely do this using a -500pA and -5V, respectively.
- 2.) It is not required but is more effective if you set the CVTD module to the Max. Gain while calibrating. The calibration of the other ranges should track within 0.1% of the require gain. If not then you will have to individually calibrate each gain range. If necessary the manufacturer should calibrate the individual gain ranges, otherwise contact RDM-Apps for the applicable procedure.

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Application Module - Standard Type-B Enclosure

03/2011 Rev.1.1



Terminal Block Plug-In:
Part# OSTTJ105153 (Digikey) or
Part# 1757093 (Mouser)

Pluggable Terminal Blocks 10 Pos 5.08mm pitch Plug 24-12 AWG Screw