

**RDM-Apps Setup** – PCB Revs.1.xx - CSE CSE00GL-100-36V-12V-AFL Constant Current Source / Sink Module.  
Voltage to Current Converter Module.

**RDM-Apps**

Capability Statement

Contact Information



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**Voltage Amplifier Modules** ... Both Precision and High Speed Amplifiers

**Current to Voltage Converter Modules**... Pico-Amp, Nano-Amp, Milli-Amp ... 1A, 10A/V, 100A/V

**Transimpedance Amplifiers**... Pico-Amp, Nano-Amp, Milli-Amp ... 1A, 10A/V, 100A/V

**Constant Current Source / Sink Modules**...  $\pm 10\text{pA}$  to 125mA, 1A, 5A & 10A full range output modules

**Voltage to Constant Current Converter Modules**...  $\pm 10\text{pA}$  to 125mA, 1A, 5A & 10A full range output modules

**Precision Isolation Amplifiers**

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DOCUMENTATION**

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Don't waste your time designing and/or packaging a Constant Current output Op-Amp or Voltage to Current Conversion amplifier circuit for your application. Utilize one of our self contained Ready Modules for your application or simply use in conjunction with a basic Multimeter as an inexpensive alternative to an expensive Constant Current Source.

Other Related Constant Modules:

[Module Selection Table \(10A to 10pA\) Constant Current Source / Sink Bidirectional Output Modules](#)

[Voltage Amplifiers, Current to Voltage Converters ...](#)

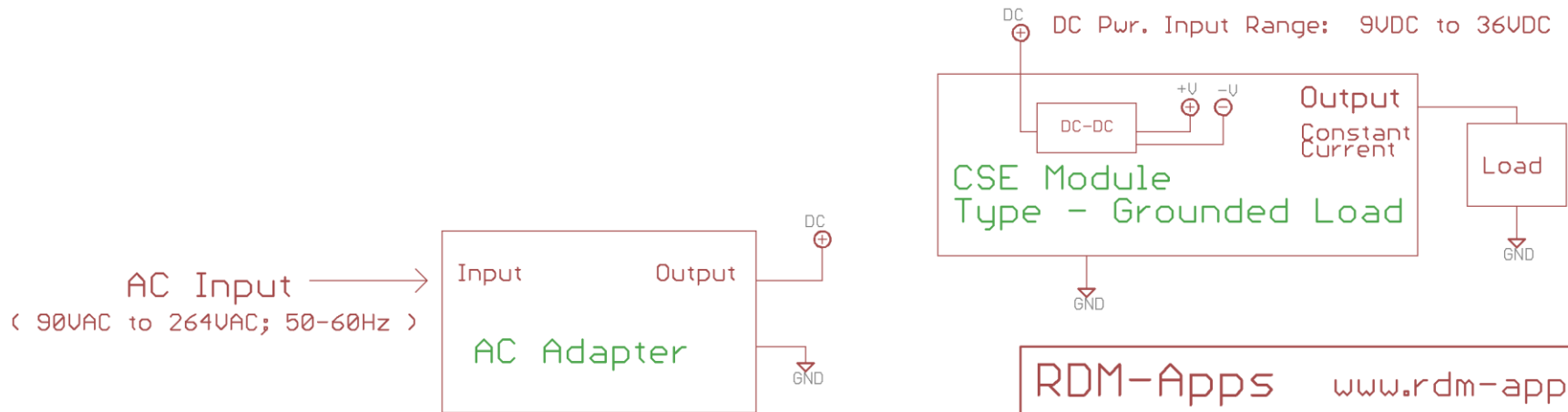
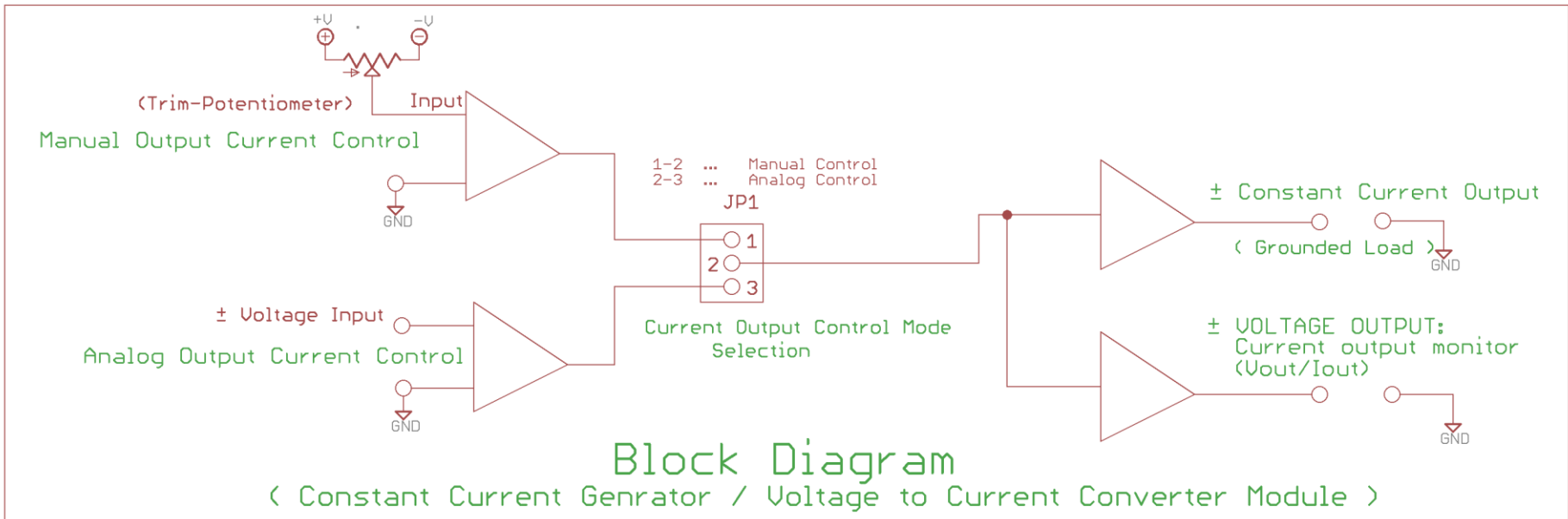
- ◆ Adjustable Constant Current Output
- ◆ Grounded Constant Current Outputs
- ◆ Output Current Range:  $\pm 100\text{mA}$
- ◆ Current Output Monitor;  $V_{out}$  proportional to current out.
- ◆ Converts from input voltage to output constant current.
- ◆ Current Output Control:
  - a.) Option#1:  $\pm 10\text{V}$  input relative to applicable full range current out.
  - b.) Option#2: Manual Trim-Potentiometer adjustment .
- ◆ Offset Null Capability for calibration.
- ◆ Load Compliance Voltage  $\leq \pm 12\text{V}$
- ◆ Constant within a wide temperature range
- ◆ Low Power Consumption
- ◆ Contact us for multi-range or custom constant current modules.
- ◆ Contact us for single supply or lower power consumptive constant current modules.

( 2 weeks Delivery, Call for order quantities greater than 5 )

General Specifications ...		
Desc.	Value	Unit
Operating Temperature	10 to 40	C
Required DC Supply Voltage	+9V to 36Vdc	VDC
Signal In / Out connector	Term. Block	

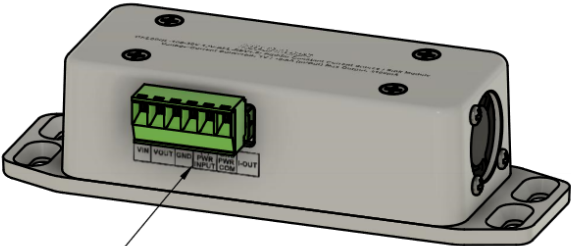
Specifications		
Desc.		Unit
Current Output Adjustment Range	$\pm 100$	mA
Current Output vs. Voltage Monitor Output	$\pm 10.0$	mA / V
Max. Load Impedance @ $\pm 100\text{mA}$	120	ohm
Max. Load Impedance @ $\pm 50\text{mA}$	240	ohm
Max. Load Impedance @ $\pm 10\text{mA}$	1200	ohm
Max. Load Compliance Voltage	$\pm 12$	V
Current Output Accuracy; BETTER THAN ( @ 25C $\pm 5\text{C}$ ) $R_{load} \leq 100\%$ of Max.	0.1	%
Current Output Manual Adj. Resolution	0.2	mA
Current Output: Drift; less than	20.0	nA / Deg.C
Voltage Output: Drift	30.0	$\mu\text{V}$ / Deg.C
Voltage Output: Noise	35.0	$\mu\text{Vp-p}$
Voltage Monitor Output: Impedance	600	ohm
Voltage Monitor Output: Max. load current	$\pm 10.0$	mA

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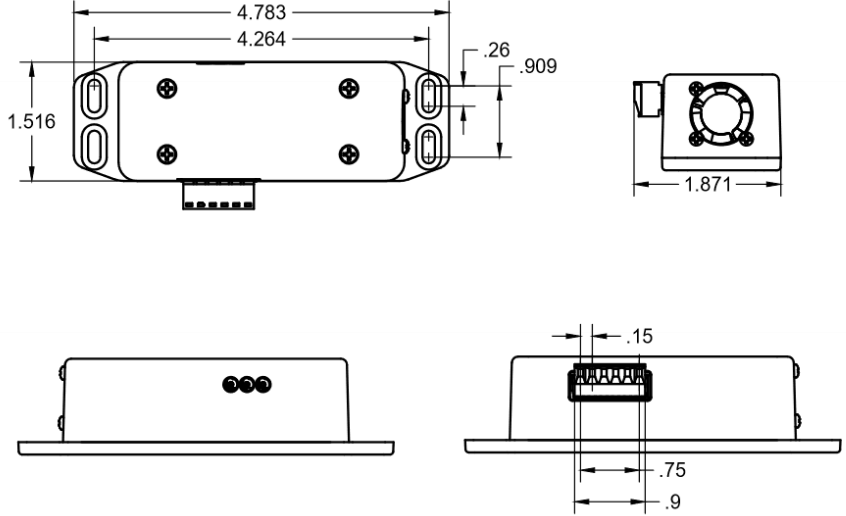


<b>RDM-Apps</b> <a href="http://www.rdm-apps.com">www.rdm-apps.com</a>	
TITLE: CSE-Module Block Diagram-V1-7	
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Date: 5/28/2018 6:33 PM	Sheet: 1/1

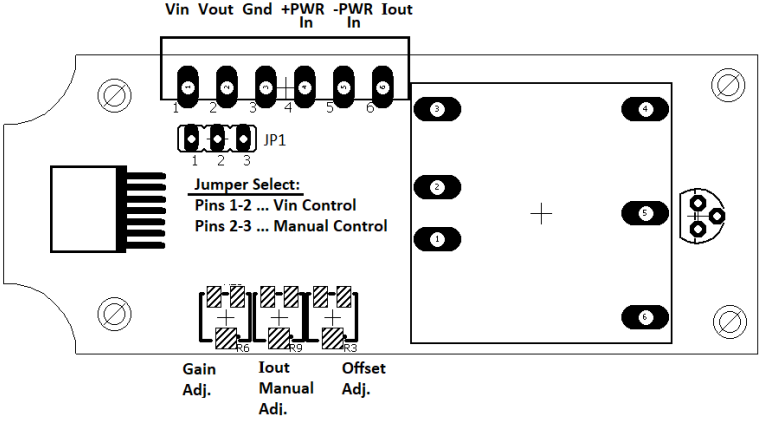
# RDM-Apps Setup – PCB Revs.1.xx - CSE CSE00GL-100-36V-12V-AFL Constant Current Source / Sink Module. Voltage to Current Converter Module.



VIN VOUT GND (+) PWR INPUT GND PWR COM I-OUT



4.783  
4.264  
1.516  
.26  
.909  
1.871  
.15  
.75  
.9




Vin Vout Gnd +PWR -PWR Iout  
In In

1 2 3 4 5 6

1 2 3 JP1

Jumper Select:  
Pins 1-2 ... Vin Control  
Pins 2-3 ... Manual Control

Gain Adj. Iout Manual Adj. Offset Adj.



**Terminal Block Plug-In:**  
 Manufacturer Part# ... OSTTJ0631530  
 Digikey Part# ... ED2879-ND  
 6 Position Terminal Block Plug, Female Sockets 0.150" (3.81mm) Screw

- ±100mA Current Source/Sink - 10mA/1V Iout/Vin Conversion - 12V Max Compliance Voltage - 120Ω Max Load @ Max Current Output - ±0.1% Accuracy		PROJECT				
		RDM-Apps				
		TITLE				
		CSE00GL-100-36V-12V-AFL Current Source/Sink				
APPROVED	Robert Martin	5/24/2018	SIZE	CODE	DWG NO	REV
CHECKED	Mark Medina	5/24/2018	A		100248	1.6
DRAWN	Mark Medina	5/24/2018	SCALE	1:1.5	WEIGHT	1 lb
					SHEET	1/1

## **RDM-Apps Setup – PCB Revs.1.xx - CSE CSE00GL-100-36V-12V-AFL Constant Current Source / Sink Module. Voltage to Current Converter Module.**

### Gain / Offset Calibration Procedure:

#### Required equipment:

- 1.) An accurate  $\pm 10\text{Vdc}$  voltage source.
- 2.) A current meter with accuracy better than 0.1% of the CSE full current range output.

#### Required Conditions::

- 1.) CSE Module must be jumpered for Analog Voltage Control Mode ( JP1 pins 2-3 ).
- 2.) CSE Module must have required DC power applied.
- 3.) Connect voltage source to CSE module voltage input (Vin) connector.
- 4.) Connect current meter to the applicable CSE module current output (Iout) connector.
- 5.) Allow CSE module to warm up for at least 3 mins. Before continuing to the procedure.

#### Procedure exclusively for Grounded or Floating current outputs:

- 1.) Use your voltage source to apply 0.000V to the CSE voltage input (Vin) connector. Adjust "OFFSET" trim-pot until the CSE module current output (current meter) reads zero amps ... within 0.1% of the CSE full range output.
- 2.) Apply +5VDC to the CSE voltage input and adjust "GAIN" trim-pot to the required output current. For example, if your CSE module has a full range output of  $\pm 10\mu\text{A}$  and the Vin / Iout (Input / Output) ratio is 1V/ $\mu\text{A}$  then the current output should be +5 $\mu\text{A}$ . Conversely , a -5VDC input should result in a -5 $\mu\text{A}$  output.

Note(s): 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 input voltages that are mid-range values.

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