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

Voltage to Current Converter Module.

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

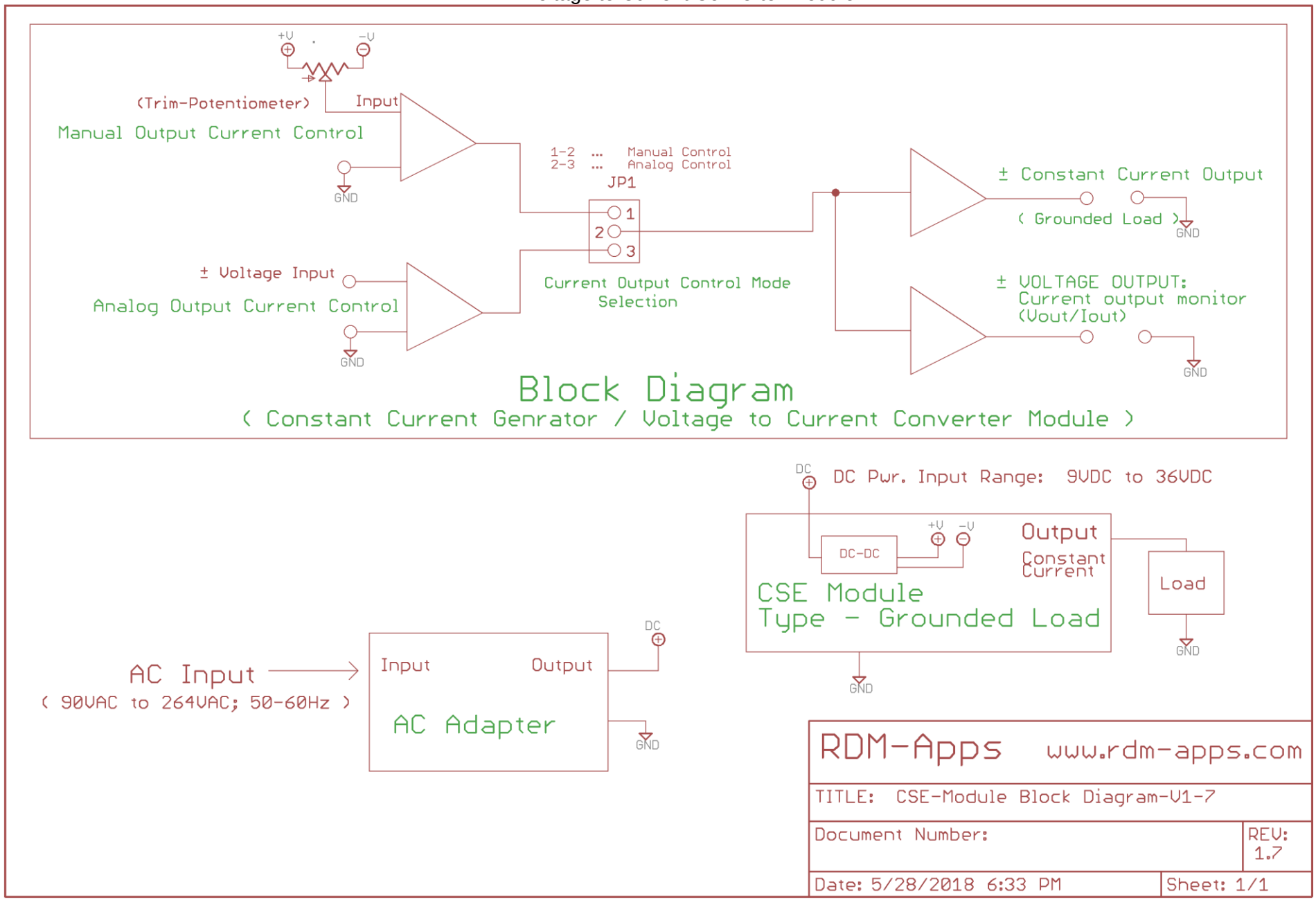
Voltage Amplifiers, Current to Voltage Converters …

- Adjustable Constant Current Output
- Grounded Constant Current Outputs
- Output Current Range: ±100mA
- Current Output Monitor; Vout proportional to current out.
- Converts from input voltage to output constant current.
- Current Output Control:
  - a.) Option#1: ±10V input relative to applicable full range current out.
  - b.) Option#2: Manual Trim-Potentiometer adjustment .
- Offset Null Capability for calibration.
- Load Compliance Voltage <= ±12V
- 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 | ±100 | mA |
| Current Output vs. Voltage Monitor Output | ±10.0 | mA / V |
| Max. Load Impedance @ Max. Current | 120 | ohm |
| Max. Load Compliance Voltage | ±12 | V |
| Current Output Accuracy; BETTER THAN ( @ 25C ±5C ) Rload <= 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 | uV / Deg.C |
| Voltage Output: Noise | 35.0 | uVp-p |
| Voltage Monitor Output: Impedance | 600 | ohm |
| Voltage Monitor Output: Max. load current | ±10.0 | mA |


+V
-V
(Trim-Potentiometer)
Input
Manual Output Current Control
GND
1-2 ... Manual Control
2-3 ... Analog Control
JP1
1
2
3
Current Output Control Mode Selection
± Voltage Input
Analog Output Current Control
GND
± Constant Current Output
( Grounded Load )
GND
± VOLTAGE OUTPUT:
Current output monitor
(Vout/Iout)
GND
Block Diagram
( Constant Current Genrator / Voltage to Current Converter Module )
DC
DC Pwr. Input Range: 9VDC to 36VDC
+V
-V
DC-DC
Output
Constant
Current
CSE Module
Type - Grounded Load
Load
GND
GND
AC Input
( 90VAC to 264VAC; 50-60Hz )
Input
Output
AC Adapter
DC
GND
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TITLE: CSE-Module Block Diagram-V1-7
Document Number:
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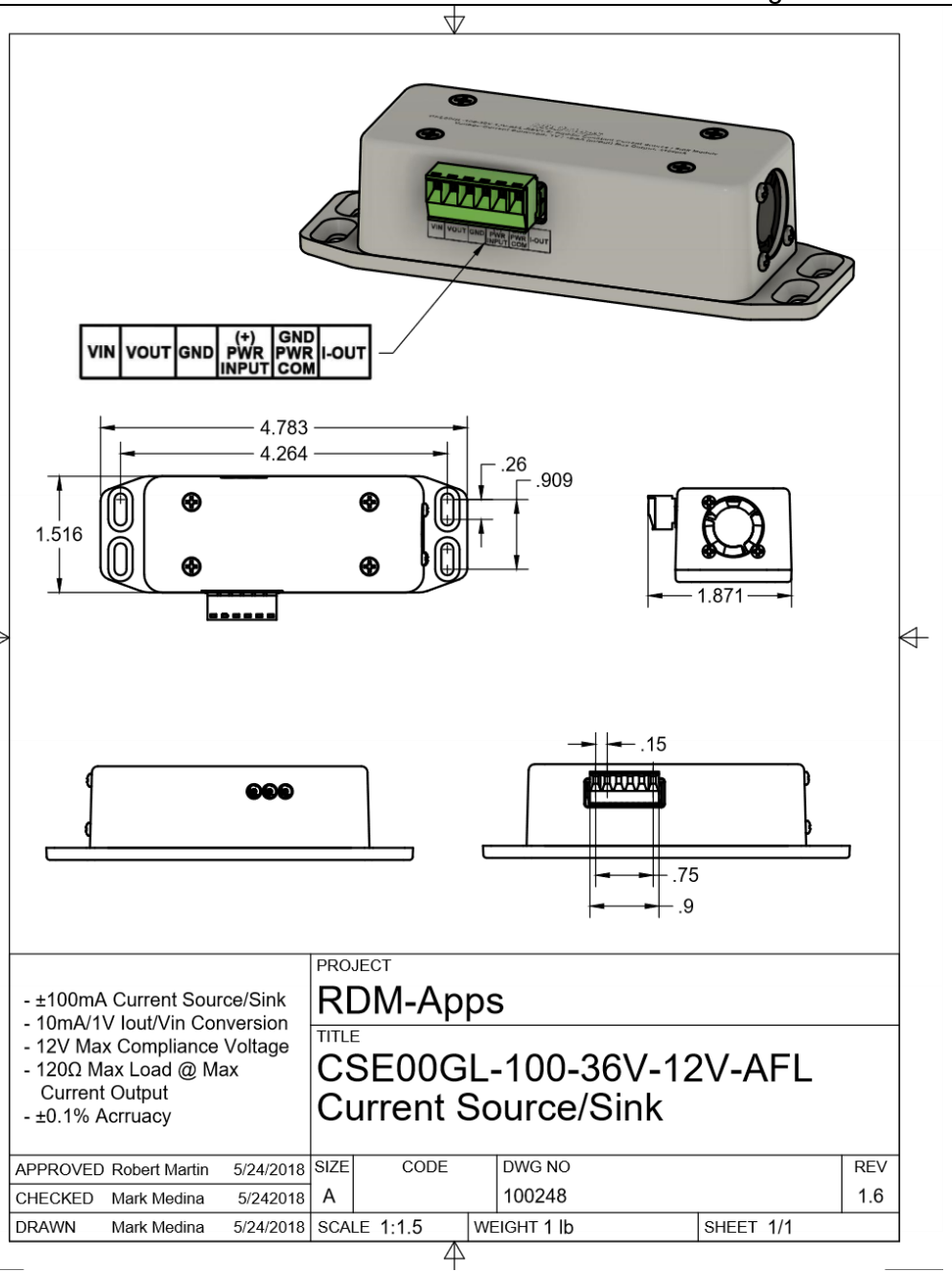



- ±100mA Current Source/Sink
- 10mA/1V Iout/Vin Conversion
- 12V Max Compliance Voltage
- 120Ω Max Load @ Max Current Output
- ±0.1% Acrruacy

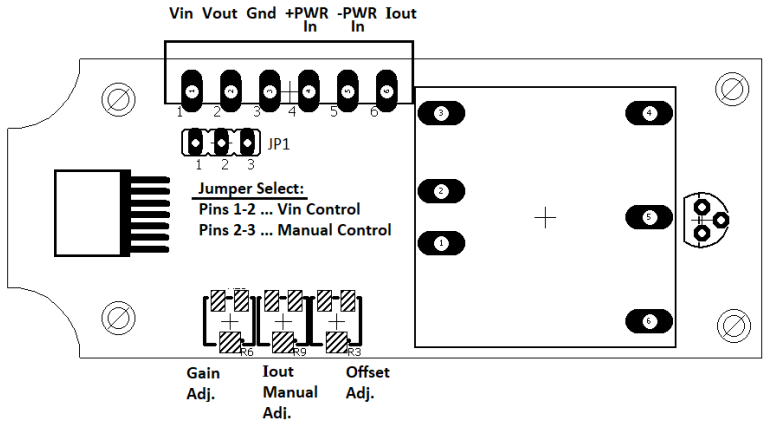
PROJECT

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 | 5/242018 | A | | 100248 | 1.6 |
| DRAWN | Mark Medina | 5/24/2018 | SCALE 1:1.5 | WEIGHT 1 lb | SHEET 1/1 | |




## Terminal Block Plug-In:

Manufacturer Part# … OSTTJ0631530

Digikey Part# … ED2879-ND

6 Position Terminal Block Plug, Female Sockets 0.150" (3.81mm) Screw

# ***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 ±10vdc voltage source.
2.) A current meter with accuracy better than 0.1% of the CSE full current range ou

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 ±10uA and the Vin / Iout (Input / Output) ratio is 1V/uA then the current output should be +5uA. Conversely , a -5VDC input should result in a -5uA 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.

Rev.1.7 03-19