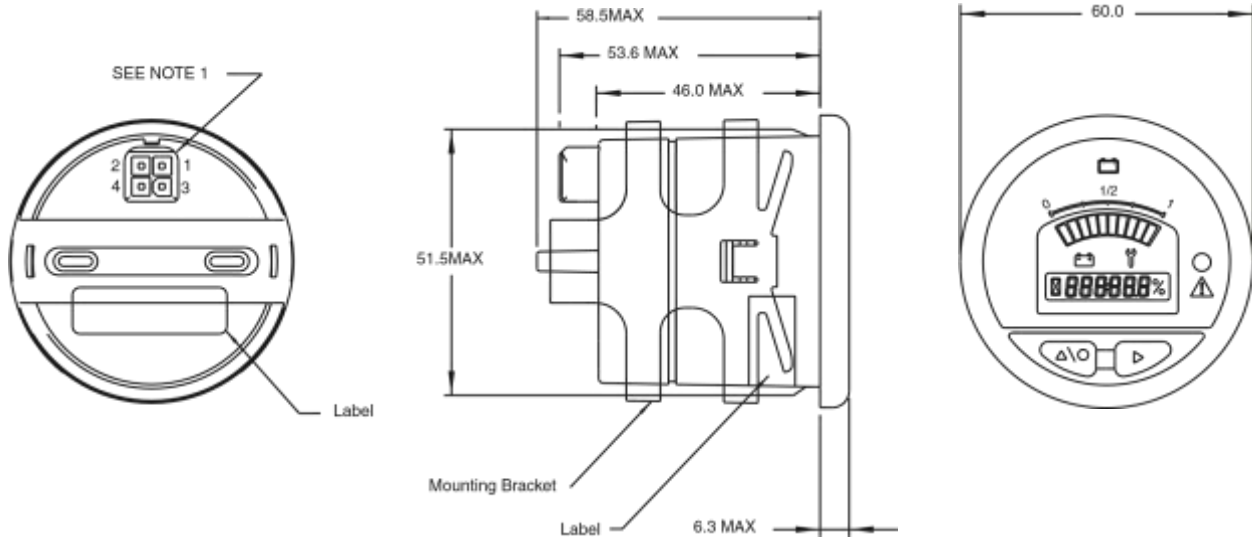


# Curtis enGage II Display Instructions (3100r)



## Technical Specifications

### Electrical

Operating Voltage 12v to 48v nominal, 35mA (CAN inactive).  
 \*Use 12VDC power with the MCU and BMSC.

### Mechanical

The 3100r display is an LCD with 10 segment bar and 6 digit numeric (5mm high), with alert icons and a warning LED.

Panel Cutout: 52mm (2 1/16") diameter

Operating Temperature: -40C to +85C

Sealing: IP65 front, IP65 rear (with connector installed)

### Electrical Connections

Connector and pins are provided, use wire size #20-24 AWG. The 3100r canbus connection is not internally terminated.

PIN #	FUNCTION
1	B-
2	B+ (12v-48v nominal)
3	CAN HI
4	CAN LO

- 1.0 Mating Connector: 4-PIN AMP P/N 794805-1
- 2.0 Designed for a mounting panel thickness of 0.8 - 6.4 mm
- 3.0 Canbus rates of 250 and 500 kbps supported

## MCU and BMSC Operation\*

At initial power up, all display segments are illuminated for 1 second and then the display will show data from the BMS (MCU or BMSC).

The segmented bar-graph at the top shows battery state of charge (SOC), calculated based on the parameters HVC and LVC. If the MCU uses a current sensor, then SOC is tracked based on coulomb counting and pack size.

The LED on the display will flash red for HVC or LVC faults, solid red for thermistor overtemp. The wrench icon blinks for BMS not locked, cell or thermistor census error. The battery icon shows when the pack is balancing.

Buttons below the display control backlighting and display options.

Right Hand Button: turns backlight on and off

Left Hand Button: cycles through these display options:

- Pack voltage: " 129.8" (Volts and tenths)
- System current: "C 59" means current is 59 Amps (requires MCU with current sensor).
- Lowest cell: "12\_332" means lowest cell #12 is 3.32 Volts
- Highest cell: "16\_335" means highest cell #16 is 3.35 Volts
- Average cell: "----- 333" means cell average is 3.33 Volts
- Standard deviation: "sd 001" means 0.01 Volt deviation

Use the command "enable 3100r" to allow the BMS to send information to the 3100r display.

When ordering the 3100r display, indicate your preference for canbus rate, either 250 or 500 kbps. If changes are needed after purchase, contact ThunderStruck Motors.