

3100R Instructions

Read Instructions Carefully!



With buttons



Without buttons

1.0 Technical Specifications

1.1 Electrical

Operating Voltage Range: 12-48V operating range (9 to 60VDC), 35mA (typ., CAN inactive)

1.2 Mechanical

Display: LCD with 10 segment bar and 5 digit numeric (5mm high);

Warning LED

Hardware: Mounting bracket (see section 2.0)

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

1.3 Environmental

Operating Temperature:-40C to +85C

Storage Temperature:-50C to +90C

Humidity: 95% RH (non-condensing) at +38C

Shock: SAE J 1378 March 83 Amplitude 44-55g, half sine, 9-13ms duration

Vibration: SAE J 1378 Double amplitude of 1.53mm with frequency sweep for 10-80-10Hz (20g max) at 1 minute intervals

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

2.3 Interconnect

Curtis 3100R gauge mates with a 4 pin AMP connector P/N 794805-1,

interface seal P/N 794772-4, wire seal P/N 794758-1, Pins P/N 770904-X for #18-24 AWG

3.0 Operation

3.1 With Curtis Motor Controllers

Upon initial power up, all display segments are illuminated for 1 second and then turned off. The unit is then ready to receive CAN messages. The basic 3100R is a passive communication device and simply waits to receive / display CAN messages from Curtis Model 1236 or 1238 motor controllers. A single, red LED can be illuminated to indicate warning / diagnostic conditions.

Optional buttons (2) are used to send CAN messages to the motor controller. Each button sends a specific CAN message to the controller. VCL (Vehicle Control Language) resident in the motor controller can be used to define a specific response to each button.

3.2 With Curtis Acuity Battery Monitoring System

When Model 3100R is connected only to a Curtis Acuity, the 3100R serves as the communication master. After all display segments are illuminated at initial power up, the numeric section of the LCD will display, in sequence, the following battery information from the Acuity:

- Voltage (bAt)
- Current (I)
- Temperature (t)
- State-of-Charge (SOC)
- Ampere Hours into the battery (AHrs C)
- Ampere Hours out of the battery (AHrs d)
- Estimated remaining battery capacity (Ebc)

Following this sequence, the LCD will return to the default screen of displaying battery state-of-charge in the bargraph and battery voltage in the numeric. The only time the bargraph does not display state-of-charge is when Estimated remaining battery capacity is displayed.

2.0 Installation

2.1 Terminal Assignments

J1 external	Description
Pin 1 B-	Common voltage return
Pin 2 B+	+ volts / 50 mA max current
Pin 3 CAN HI	CANOpen
Pin 4 CAN LO	

2.2 Mounting

Caution! Bracket is placed over gauge in reverse fashion for ease of shipping. Remove bracket from gauge, install gauge into mounting hole and place mounting bracket over gauge in reverse order from the shipped position. Rotate gauge to proper orientation and push the bracket against the back panel to secure the gauge. Note: Bracket has been designed to remain secured to the gauge after proper installation. Attempts to remove the bracket after installation may result in damage to the bracket.

See Dimensional Drawing on reverse side of page.

The default display will remain until either button is pressed. The numeric section will then display battery voltage. The user can sequence through each parameter above by pressing a button once. If a button is not pressed for 3 seconds or when the end of the sequence is reached, the default screen will return.

4.0 Trouble Shooting

For any deviation in operation described in Section 3.0, verify proper voltage rating, check harness pin-out terminals, and make sure the 4 pin AMP mating connector is fully seated.

5.0 Maintenance

The 3100R is not serviceable in the field.

6.0 Safety

- This instrument was manufactured and tested according to the applicable technical standards. It complies with all the safety regulations as shipped from the factory.
- Installation and startup must be performed by skilled personnel.
- Failure to install and operate the unit in accordance with these instructions may result in damage or injury.
- If safe operation of the instrument can no longer be ensured, stop and secure it against accidental operation.
- If instrument failure or malfunction may cause personal injury or material damage, use additional safety measures such as limit switches, guards, etc.

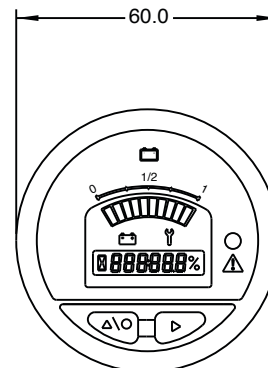
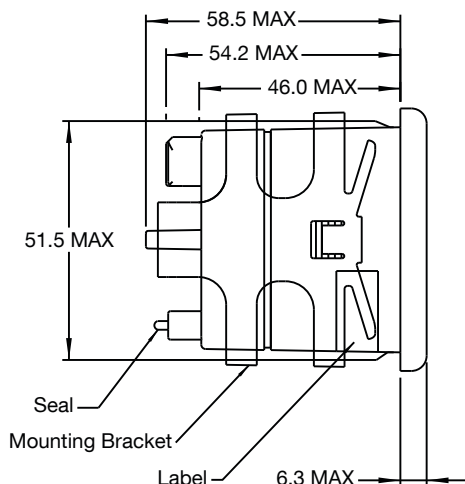
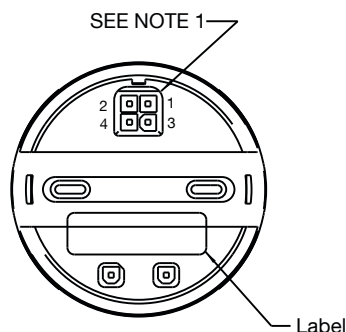
- Read the Operating Instructions carefully before startup.
- Note the safety instructions marked with this warning symbol ⚠ in this manual.

7.0 Guarantee

Curtis Instruments' products and/or components are guaranteed against defects in workmanship and material for a period of two years, or as defined in the individual product literature, from date of shipment from our factory, when applied in a proper application within specified ratings. This guarantee is limited to repair or replacement F.O.B. our factory. There is no further warranty or implied representation, guarantee, promise or agreement as to any Curtis Instruments product and/or component. Curtis Instruments, Inc., cannot assume responsibility or accept invoices for unauthorized repairs to its products and/or components, even though defective. In no case will Curtis Instruments' responsibility extend to products, components or equipment not of its manufacture. Under no circumstances shall Curtis Instruments, Inc., be liable for any special or consequential damages or loss of profits or other damages. Returned goods will not be accepted unless identified by a Curtis Return Material Authorization (RMA).

All specifications are subject to change without notice.

Dimensional Drawing mm



PIN #	FUNCTION
1	B-
2	B+
3	CAN HI
4	CAN LO

NOTES:

- 1.0 MATING CONNECTOR; 4-PIN AMP P/N 794805-1 WITH UL RATING 94V-0, INTERFACE SEAL P/N 794772-4, WIRE SEAL 794758-1, PINS P/N 770904-X FOR #18-24 AWG
- 2.0 52mm METER IS PROVIDED IN A STANDARD ROUND PACKAGE FOR MOUNTING IN A 52mm DIA DASH PANEL HOLE. SEE DETAIL FOR PANEL CUTOUT WITH KEY.
- 3.0 MATERIAL: CASE — POLYCARBONATE, LENS — CLEAR POLYMETHYLMETHACRYLAT (PMMA), COVER — POLYCARBONATE, OVERLAY — POLYCARBONATE, MOUNTING BRACKET — POLYCARBONATE.
- 4.0 THIS UNIT IS DESIGNED FOR A MOUNTING PANEL THICKNESS OF 0.8 mm - 6.4 mm.
- 5.0 ENVIRONMENTAL PROTECTION FRONT IP-65, REAR IP-65 (WITH MATING CONNECTOR INSTALLED AND AND SEALS IN DEVICE CONFIGURATION PORTS).
- 6.0 WEIGHT: 0.095 kg MAX, INCLUDING MOUNTING BRACKET.
- 7.0 OPERATING VOLTAGE = 12 TO 48 VDC.
- 8.0 LCD VIEWING ANGLE = 0 TO -20°.