CURTIS

Instrumentation

CAN and Serial Instrumentation

Model 3140

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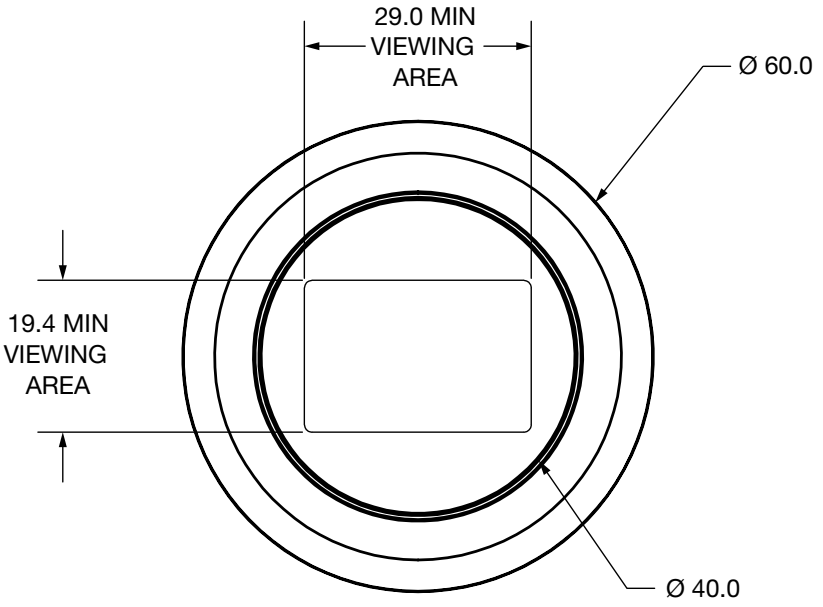
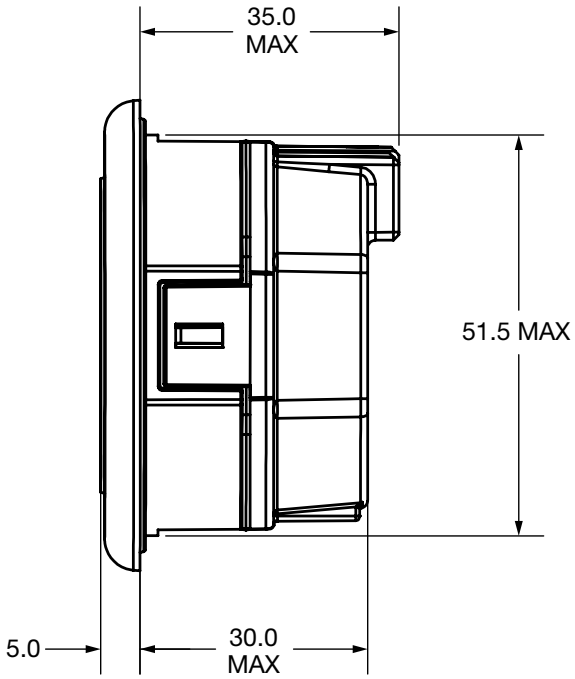
Curtis Model 3140 is designed to display critical vehicle and motor controller data in an easy-to-read and attractive LCD. The display includes three 10 mm digits and six 5 mm digits and all digits are in 16-segment format to allow the full use of the alpha numeric character set. Model 3140 integrates seamlessly with Model F2A and other Curtis CANopen-based motor controllers.

FEATURES

- Integrates seamlessly with Curtis Model F2A (and other CANopen-based Curtis motor controllers) thereby reducing the amount of development work by the vehicle designer.
- Attractive fixed-segment, transflective LCD with 16-segment digits and informative symbology allows intuitive reading in all lighting conditions and battery-powered vehicle environments.
- Industry standard 52mm panel cutout allows the use of existing panel/tool designs thereby lowering development cost.
- Battery State-of-Charge (BSOC) can be calculated in the 3140 or sent to the 3140 by the Model F2A (or equivalent CAN-based Curtis motor controller).
- The Model 3140 will run at one of seven selectable baud rates: 20kbps, 50kbps, 125 kbps, 250 kbps, 500 kbps, 800 kbps, and 1 Mbps. The baud rate can be factory programmed or changed by an SDO.
- In addition to the 3 and 6 digit portions of the LCD, a percent symbol, wrench symbol and decimal point are also present which provides more comprehensive information about vehicle status.
- Single unit operates from 24, 36 or 48 VDC allowing use on many models of battery-powered vehicles.
- Optional backlighting and LCD heater allow use in low-light and cold-store applications.
- Optional integral CAN termination resistor allows flexibility in customer vehicle design.
- Integrated 6-pin Mini-Universal MATE-N-LOCK connector allows for an easy and environmental protected connection.
- Environmentally protected (IP65 front, IP54 rear) to allow use in harsh environments.
- CE compliance, UL recognition and RoHS2 compliance ensure compatibility with global regulatory standards.

DIMENSIONS mm





SPECIFICATIONS

Environmental

Operating Temperature:
–10°C to +85°C
(with optional LCD heater: –40°C to +85°C).

Storage Temperature:
–40°C to +85°C.

Humidity:

Soak: Designed to meet EN 60068-2-78.

Test Cab: Damp Heat, Steady State, 10 days at 93% RH (±3%), 30°C.

Cyclic: Designed to meet EN 60068-2-30.

Test Db: Damp Heat, Cyclic (12hr + 12hr cycle). Test method variant 1. 6 cycles (each cycle is 24hrs), 90% RH.

Ingress Protection:
Designed to meet EN 60529
Face: IP65; Rear surface: IP54.

Shock:
Applicable to enclosed units only: designed to meet EN 60068-2-27: 3 shocks in all 3 axes in both directions (18 shocks in total), 500 m/s^2, 11ms, half sine wave.

Vibration:
The following vibration specifications are applicable to enclosed units only:

General:
Designed to meet EN 60068-2-6, Swept Sine Wave method, 5g, 20 cycles in each plane, 5 to 500 Hz, 1 Octave/min. ; Amplitude = +/– 15mm; Amplitude < +/– 15mm; Acceleration = 5g.

Random:
Designed to meet EN 60068-2-64. Test Fh: vibration, broad-band random (digital control) and guidance. Method 1, random excitation, 5hrs in each axis, 10 to 350 Hz.

Resonance:
Designed to meet EN 60068-2-6. Vibration sinusoidal, 5g, 5 mins at resonant points, 1 Octave/min, Swept Sine Wave 10 to 2000 Hz.

EMC Specifications

Emissions (Broadband & Narrowband)
Designed to meet UN ECE/324 Addendum 9 Regulation 10 Revision 4 (6 March 2012) for an Electrical/electronic sub-assembly (ESA).

Immunity
ESD: Designed to meet IEC 61000-4-2: Test level IV (8 kV contact discharge or 15 kV air discharge) according to ISO 10605:2001, Table B.1.

Radiated Imunity: Designed to meet 30 V/m (20MHz to 1 GHz) when tested per ISO 11452–2, Absorber-Lined Chamber (single sample).

Conducted Immunity: Designed to meet IEC 61000-4-4: Test level 4 (4 kV peak, 2.5 kHz repetition rate).

Regulatory Approvals

UL:
UL recognition to UL 583 – PENDING.

CE – PENDING:
The product complies with the requirements of the EMC Standards and RoHS directive 2011/65/EU (RoHS 2).

The product conforms to the following product specifications and regulations:

EMC:

Radiated Emissions: UN ECE/324;
Radiated Immunity: ISO 11451-1 and ISO 11451-2, using the RF levels defined in BS EN 13309:2010;
Electrical Transient Conduction: IEC 61000-4-4: Test level 4 (4 kV peak, 2.5 kHz repetition rate);
ESD: ISO 10605: 2001.

RoHS:
RoHS directive 2011/65/EU (RoHS 2).

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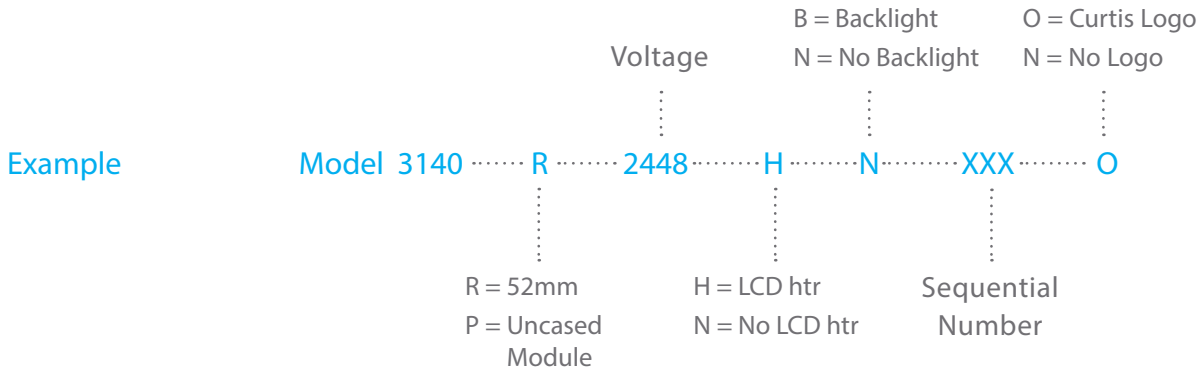
MODEL ENCODEMENT

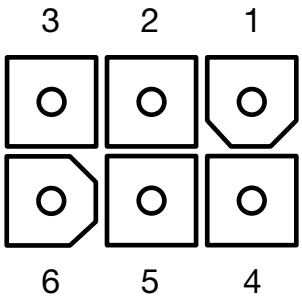


NOTE: Model 3140 can be specified with a factory set baud rate and/or an integral CAN termination resistor.

CONNECTOR

Pin	Signal Name	Description
PIN 1	CAN HI	CANbus high signal
PIN 2	B+	Battery Positive
PIN 3	B–	Battery Common
PIN 4	Heater B–	LCD Heater B–
PIN 5	Heater B+	LCD Heater B+
PIN 6	CAN LO	CANbus low signal

NOTE: *The LCD Heater B+ and LCD Heater B– pins must be tied to B+ and B–, respectively.*



WARRANTY

Two year limited warranty from time of delivery.

The Curtis Difference

You feel it when you drive it

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