



LAUREATE™ Remote Displays

6-Digit Readouts with Control Capability

Features

Mechanical

- 6 digits, -999,999 to 999,999
- Red or green LED display
- NEMA-4X front panel
- 1/8 DIN case
- Screw terminal connectors

Choice of serial interfaces

- Ethernet
- Ethernet-to-RS485 converter
- USB 2.0
- USB-to-RS485 converter
- RS485
- Modbus RS485
- RS232

Choice of input power

- 85-264 Vac or 90-300 Vdc
- 12-34 Vac or 10-48 Vdc

Relay output options

- Dual or quad relays
- 8A, 250 Vac contact relays
- AC/DC solid state relays
- Relay actuation based on displayed value or control characters.

Analog output options

- Single 4-20 mA, 0-20 mA, 0-10V or -10 to +10V analog output
- Dual 4-20 mA, 0-20 mA or 0-10V analog outputs

Isolation

- All inputs and outputs are mutually isolated to 250 Vrms working, 2.3 kV per 1 min test.



Laureate™ six-digit remote displays are serial input meters which accept serial data from a computer, PLC or other instrument to display a numeric reading from -999,999 to +999,999. The units match the appearance of Laureate digital panel meters and counters. The display consists of six 14.2 mm (.56") high LED digits, available in red or green. The 1/8 DIN front panel is environmentally sealed to NEMA-4X when panel mounted.

Standard input power is 85-264 Vac or 90-300 Vdc. Low-voltage 12-34 Vac or 10-48 Vdc power is optional.

Communication Options

A serial interface is required. Choices are Ethernet, USB, RS485, RS232, Ethernet-to-RS485 converter, and USB-to-RS485 converter. All interfaces support the Modbus protocol (RTU or ASCII) and the simpler Laureate ASCII protocol.

The Ethernet interface provides an industry-standard RJ45 Ethernet connector. It allows the remote display to be connected to a local area network (LAN) or to the Internet via a router, or directly to a host computer.

The Ethernet-to-RS485 converter provides RJ45 connector to the Ethernet plus an RJ11 jack for interface to an RS485 bus which can support up to 31 Laureate meters equipped with and RS485 interface board.

The USB 2.0 interface allows the remote display to be connected to a PC USB port using a standard A-to-B USB cable.

The USB-to-RS485 converter provides a USB port for connection to a PC plus an RJ11 jack for interface to an RS485 bus which can support up to 31

Laureate meters equipped with and RS485 interface board.

An RS485 interface allows up to 31 Laureate devices to be connected to the same RS485 line in parallel. Use of dual connectors allows multiple devices to be daisy chained without use of a hub.

The standard RS485 interface (ordering option 2) uses dual RJ11 jacks for use with 6-wire data cables. The Modbus RS485 interface (ordering option 4) uses RJ45 jacks, as required by the Modbus standard. It allows multiple Modbus devices by different manufacturers to share the same data line.

Digital addressing, available with RS485, allows multiple remote displays on the same data line to only show values transmitted for its unique address.

The RS232 interface is suited for point-to-point communications via a single RS232 line; however, two 6-digit Laureate remote displays can be connected to a single RS232 line in multidrop fashion and be digitally addressed.

Relay Output Options

The remote display can be equipped with a choice of four relay output boards: two or four 8A contact relays, and two or four AC/DC 130 mA solid state relays. The relays can respond to data values or to control characters in the serial data.

Analog Output Options

The remote display can be equipped with a choice of two isolated 16-bit analog output boards: a single 0-20 mA, 4-20 mA, 0-10V, or $\pm 10V$ analog output, or dual 0-20 mA, 4-20 mA or 0-10V analog outputs. Each output can be scaled to data values in the serial data.

SPECIFICATIONS

Display

Type Six 7-segment, 14.2 mm (.56") high
LED digits plus 4 LED indicators
Display color Red or green
Display range -999999 to 999999

Serial Interface (isolated)

Format ... Ethernet, USB, RS485, Modbus RS485,
Ethernet-to-RS485, USB-to-RS485 converter
Protocol.....Modbus (RTU or ASCII), Laurel ASCII
Baud rate300 to 19200 baud
Digital addr. 31 (Laurel ASCII), 247 (Modbus)
Meter setup..... Via front panel or computer

Operating Power

Voltage (std)..... 85-264 Vac or 90-300 Vdc
Voltage (opt) 12-34 Vac or 10-48 Vdc
Power frequency..... DC and 47-440 Hz

Contact Relay Options (isolated)

Number of relays2 or 4
Load rating.....8A at 250 Vac or 24 Vdc

Solid State Relay Options (isolated)

Number of relays2 or 4
Load rating.....130 mA at 140 Vac or 180 Vdc
Input..... Serial data or control characters

Analog Output Options (isolated)

Number of outputs1 or 2
Output levels4-20 mA, 0-20 mA, 0-10V
Output scaling Via front panel or computer

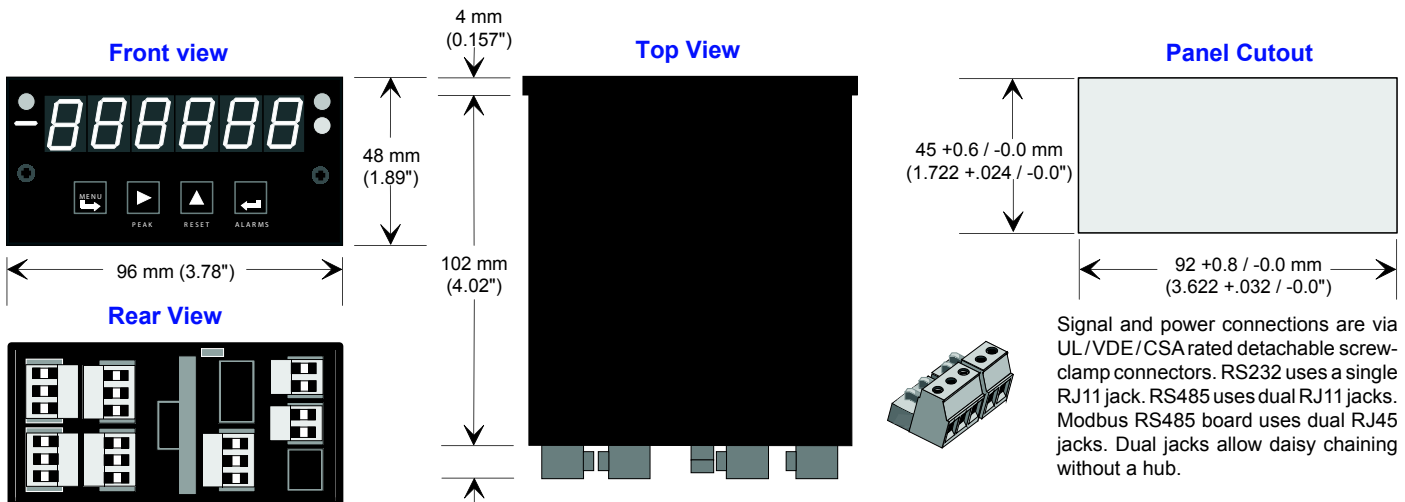
Meter Isolation (DC to 60 Hz)

Safety rated to 250 Vac, 4.2 kVp per high voltage test

Environmental

Operating temperature.....0°C to 60°C
Storage temperature.....-40°C to 85°C
Relative humidity ...95% at 40°C, non-condensing

MECHANICAL



ORDERING GUIDE

One entry required per box. Configure a model number in this format: **L50011**.
Laurel Electronics reserves the right to change pricing at any time.

YOUR LOCAL DISTRIBUTOR

<input type="checkbox"/> L Laureate™ with plug-in screw terminal connectors <input type="checkbox"/> Display Color 5 Green LED display 6 Red LED display <input type="checkbox"/> Power 0 85-264 Vac, 90- 300 Vdc NC 1 12-34 Vac, 10-48 Vdc <input type="checkbox"/> Relay Output 0 None 1 Two 8A contact relays 2 Two solid state relays 3 Four 8A contact relays 4 Four solid state relays <input type="checkbox"/> Analog Output 0 None 1 4-20 mA, 0-10V, ±10V 2 Dual 4-20 mA, 0-10V	<input type="checkbox"/> Digital Interface (1 required) 1 RS232 2 RS485 4 Modbus RS-485 5 USB 6 USB-to-RS485 converter 7 Ethernet 8 Ethernet-to-RS485
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