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 with dual RJ11
- RS485 with dual RJ45
- RS232

Inpu power

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

Relay outputs (isolated)

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

Analog outputs (isolated)

- 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 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.

Multiple remote displays can be digitally addressed on the same communications line and can extract numeric readings from long data strings.

Communication Options

A serial interface board is required. Choices are RS232, RS485, USB, USB-to-RS485 converter, Ethernet, and Ethernet-to-RS485 converter. All interfaces support the Modbus protocol (RTU or ASCII) and the simpler Laurel 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 Laurel 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 plus an RJ11 jack for interface to an RS485 bus which can support up to 31 Laurel 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 changed without use of a hub.

A first RS485 interface (ordering option 2) uses dual RJ11 jacks for use with 6-wire data cables. A second 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 ±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.

DALEC CONTROLS

Dalec Controls, 16140 South Vincennes Avenue, South Holland, IL 60473
Tel: 800-621-8276, **Fax:** 847-671-7665, **Web site:** www.dalec.com, **E-mail:** sales@dalec.com

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)
Formats .. Ethernet, USB, RS485, Modbus RS485, Ethernet-to-RS485, USB-to-RS485 converter
Protocols ... Modbus (RTU or ASCII), Laurel ASCII
Baud rate ..... 300 to 19200 baud
Digital addr. ..... 31 (Laurel ASCII), 247 (Modbus)
Meter setup ..... Via front panel or computer

Operating Power (isolated)
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)
Relay type ..... 2 or 4 mechanical or solid state
Rating, mechanical ..... 8A at 250 Vac or 24 Vdc
Rating, solid state .. 120 mA at 140 Vac or 180 Vdc

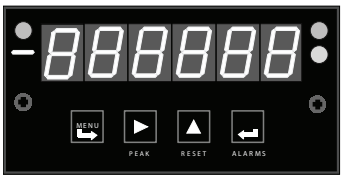
Analog Output Options (isolated)
Number of outputs ..... 1 or 2
Output levels ..... 4-20 mA, 0-20 mA, 0-10V
Compliance ..... 12V at 20 mA, 2 mA at 10V
Output scaling ..... Via front panel or computer
Scaling resolution ..... 16 bits

Meter Isolation (DC to 60 Hz)
Safety rated to 250 Vac, 4.2 kVp per high voltage test

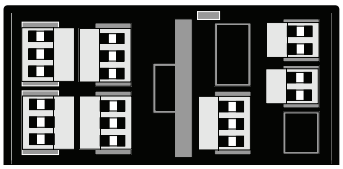
Environmental
Operating temperature ..... 0°C to 60°C
Storage temperature ..... -40°C to 85°C
Relative humidity ... 95% at 40°C, non-condensing
Protection ..... NEMA-4X when mounted in panel

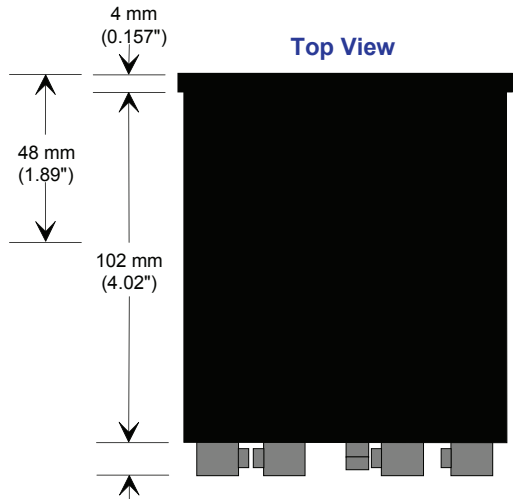
Certifications
ETL certifications ..... UL Standard 61010-1
CAN/CSA Std. C22.2 No. 61010-1
EMI and safety ..... CE Mark
Hazardous materials ..... RoHS compliant

MECHANICAL

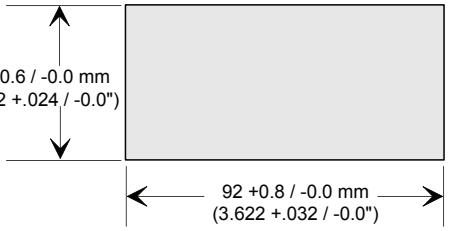
Front view


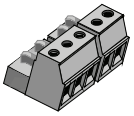
96 mm (3.78")

Rear View




Top View

Panel Cutout




Signal and power connections are via UL / VDE / CSA rated detachable screw-clamp connectors. RS232 uses a single RJ11 jack. RS485 uses dual RJ11 or RJ45 jacks for daisy chaining without a hub. USB and Ethernet use industry standard connectors.

ORDERING GUIDE

One entry required per box. Configure a model number in this format: ***L50011***

☐ **L** ..... Laureate™ with plug-in screw terminal connectors

☐ **Display Color**
5 ..... Green LED display
6 ..... Red LED display

☐ **Power**
0 ..... 85-264 Vac, 90- 300 Vdc NC
1 ..... 12-34 Vac, 10-48 Vdc

☐ **Relay Output**
0 ..... None
1 ..... Two 8A contact relays
2 ..... Two solid state relays
3 ..... Four 8A contact relays
4 ..... Four solid state relays

☐ **Analog Output**
0 ..... None
1 ..... 4-20 mA, 0-10V, ±10V
2 ..... Dual 4-20 mA, 0-10V

☐ **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

YOUR DALEC APPLICATIONS ENGINEER

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