LAUREL
ELECTRONICS, INC.

Features

- **Converts serial data to a isolated, scaled 4-20 mA or 0-10V transmitter output**
- **Accepts an RS232 or RS485 serial data, half or full duplex, isolated**
- **Supports Modbus RTU, Modbus ASCII, or Laurel ASCII protocols**
- **Able to retrieve data from long character strings**
- **Serial data rates from 300 to 19,200 bps**
- **Analog transmitter output, isolated**
- **Analog resolution 0.0015% of span (16 bits), accuracy ±0.02% of span**
- **Dual solid state relays for alarm or control, isolated**
- **Universal AC power, 85-264 Vac, or low voltage power, 10-48 Vdc or 12-32 Vac**

CE   RoHS   ETL LISTED c US 4006497   MADE IN CALIFORNIA

Description

The Laureate LTS6 serial input to analog output transmitter accepts RS232 or RS485 serial data using the Modbus protocol, Laurel ASCII protocol, or direct ASCII characters, and converts this data to an isolated, scalable 4-20 mA, 0-20 mA or 0-10V analog output. The unit is housed in transmitter case which is only 22.5 mm (0.89") thick and fits on a 35 mm DIN rail. It is normally powered by AC (85-264 Vac), but can optionally be powered by low voltage AC or DC. All electrical connections are via detachable screw-clamp plugs.

Features include:

- **Analog transmitter output, 16-bit, scalable and isolated.** User selectable 4-20 mA, 0-20 mA or 0-10V levels. A 16-bit digital-to-analog converter provides ultra-fine resolution of 0.0015% and accuracy better than 0.02% of output span. Output isolation from signal, power and serial communication grounds is provided by a separate on-board transmitter power supply, thereby eliminating potential problems caused by ground loops. The supply can drive 20 mA into a 500Ω (or lower) load for 10V compliance, or 10V into 5 kΩ (or higher) load for 2 mA compliance.

- **Serial communications input, isolated.** User selectable RS232 or RS485, half or full duplex, Modbus protocol, Laurel ASCII protocol, or ASCII characters at data rates up to 19200 bps. The RS232 interface is suitable for short cable runs and point-to-point communications. The RS485 interface is compliant with the EIA/TIA-485 standard and supports multiple addressable devices on the same data line using the Modbus protocol or Laurel ASCII Protocol. Modbus implementation is fully compliant with Modbus over Serial Line Specification V1.0 (2002) in RTU or ASCII, half-duplex or full-duplex operation, with up to 247 digital addresses.
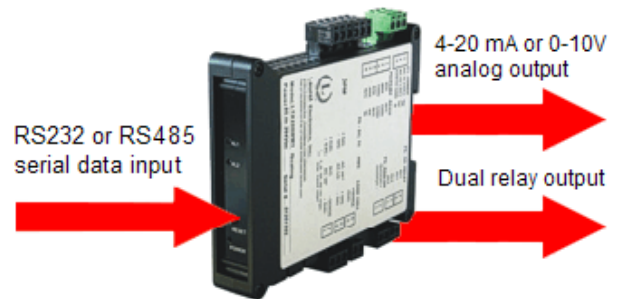
- **Ability to extract readings from long ASCII data strings.** You can specify character positions, start and stop ASCII characters, how many characters to skip, and how many characters to process. Slave operation requires connection to a master. Not applicable to the Modbus protocol.

- **Dual solid state relays for control or alarm.** Rated 120 mA at 130 Vac or 170 Vdc, isolated.

- **Universal AC power supply for 85-264 Vac.**

- **Optional low voltage power,** 10-48 Vdc or 12-32 Vac.

Easy Transmitter programming is via Laurel's Instrument Setup Software, which runs on a PC under MS Windows. This software can be downloaded from Laurel's website at no charge. The required cable from the transmitters to a PC com port is available from Laurel (P/N CBL04).

Specifications

Serial Communications (standard)	
Signal Types Data Rates Output Isolation Serial Protocols Modbus Modes Modbus Compliance Digital Addressing	RS232 or RS485 (half or full duplex) 300, 600, 1200, 2400, 4800, 9600, 19200 baud 250V rms working, 2.3 kV rms per 1 min test Modbus RTU, Modbus ASCII, Laurel ASCII RTU or ASCII Modbus over Serial Line Specification V1.0 (2002) 247 Modbus addresses. Up to 32 devices on an RS485 line without a repeater.
Analog Output (standard)	
Output Levels Compliance, 4-20 mA Compliance, 0-10V Output Resolution Output Accuracy Output Update Rate Output Isolation	4-20 mA, 0-20 mA, 0-10 Vdc (selectable) 10V (0-500Ω load) 2 mA (5 kΩ load) 16 bits (65,536 steps) 0.02% of output span Determined by input data rate 250V rms working, 2.3 kV rms per 1 minute test
Dual Relay Output (standard)	
Relay Type Load Rating	Two solid state relays, SPST, normally open, Form A 120 mA at 140 Vac or 180 Vdc
Power Input	
Standard Power Low Power Option Power Frequency Power Isolation Power Consumption	85-264 Vac or 90-300 Vdc 10-48 Vdc or 12-32 Vac DC or 47-63 Hz 250V rms working, 2.3 kV rms per 1 min test 2W typical, 3W with max excitation output
Mechanical	
Dimensions Mounting Electrical Connections	129 x 104 x 22.5 mm case 35 mm rail per DIN EN 50022 Plug-in screw-clamp connectors
Environmental	
Operating Temperature Storage Temperature Relative Humidity Cooling Required	0°C to 55°C -40°C to 85°C 95% at 40°C, non-condensing Mount transmitters with ventilation holes at top and bottom. Leave 6 mm (1/4") between transmitters, or force air with a fan.

Pinout

Mechanical

FRONT

BACK
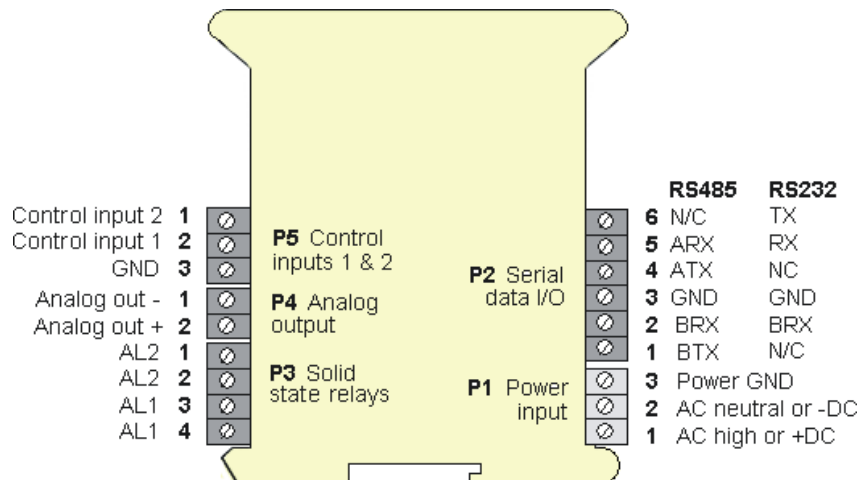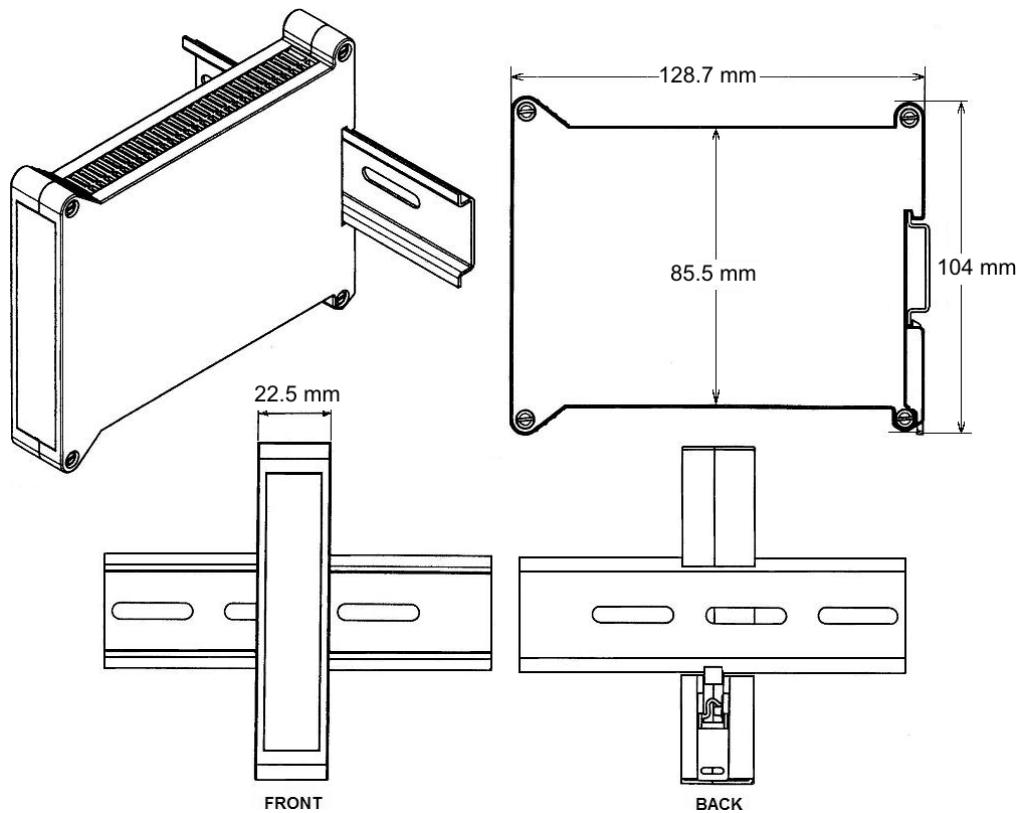
Ordering Guide

Create a model a model number in this format: **LTS600, CBL04**

Transmitter Type	**LTS6** Serial input transmitter, 4-20 mA, 0-20 mA or 0-10V output.
Power	**0** 85-264 Vac or 90-300 Vdc **1** Isolated 12-32 Vac or 10-48 Vdc
Accessories	**CBL04** RS-232 cable, LTS6 to computer or USB adapter **CBL02** USB to RS-232 cable adapter