



## TriLIN and TriLIN+T

### Smart Flow Transmitters and Flowmeter Linearizers



#### Description:

The TriLIN/TriLIN+T family of Smart Flow Transmitters and Linearizers is designed to be mounted directly on the flow meter or remotely in a 'sink box'. All programming and monitoring functions performed via PC using our CFlow+ LIN software variant.

The TriLIN and TriLIN+T linearize flow sensor outputs in real time and compensate for viscosity, density, temperature and pressure effects. They enable fast and accurate analysis of dynamic aircraft components, fuel flow and hydraulics.

#### **Features:**

- Intuitive CFlow+ User Interface
- USB Communications
- 9-32 V DC operation
- Input type selectable (Pulse, RF, Mag)
- Direct PT100 input (TriLIN+T)
- Pressure input (gas applications)
- 18 bit frequency output
- 16 bit analog outputs (0-10V or 4-20 mA)
- 1.5 to 3.5 millisecond response
- 1 to 20,000Hz operating range
- Optional RS485 monitor link
- Custom versions available

#### TriLIN / TriLIN+T Operating principles:

Step 1 - Amplification of the flowmeter signal. Options built into the PCB include:

- Low drag RF amplifier with a carrier frequency of 45 kHz to 100 kHz.
- Sinusoidal input (10 mV PP to 10 V PtP.)
- Standard pulse input (2-30 VDC)

Step 2 - Measurement of the flowmeter frequency. Once the frequency has been calculated the linearization is carried out so that the TriLIN and TriLIN+T output is directly proportional to the flow.

Step 3 – Temperature measurement and compensation. In the TriLIN+T, a simultaneous conversion of either a PT100 or 0-10 VDC input is carried out with 16 bits of resolution. Temperature and Pressure inputs can be used to compensate for the effects of changing density and viscosity in liquid and gas applications. For the most demanding of turbine flowmeter applications, Universal Viscosity Curve (UVC) and Strouhal/Rosko principles are employed.

Step 4 – Output Generation. Outputs are independent of each other, i.e. one can be volume the other mass, or both the same.

#### TriLIN/TriLIN+T applications include:

**Net Fuel Consumption for Diesel Engines** with the 2-channel version, A-B (Supply minus Return) option

**Fast response and real-time linearity compensation** of flowmeters allows response characteristics of engines to be tested and fuel flows can be dynamically checked on board.

**Standardization and interchangeability of flow meters.** For example, all 1 inch turbines can be programmed to have a 100:1 turndown with a fixed K-factor of 1000 pulses/lit. Each turbine now becomes a plug-in replacement for any other turbine.

**Mass and Normal/Standard flow output** using linearized temperature and pressure (for gases) inputs.

**Fast response testing.** Due to high speed of processing these units can be used for response testing with linear outputs, saving analytical post processing.