



## TriLIN and TriLin+ Flowmeter Linearizer and Flow Computer

### Basic Description

Miniaturized Smart electronics for flowmeters.

Amplification and Linearization of flowmeter output and Temperature/Pressure/Viscosity compensation. Suitable for remote as well as head mounting on the flowmeter itself. Signal conversion to linearized 0-10vDC or 4-20mA signal and 0-4800Hz. Response time of 1.5 to 2.5 milliseconds. Intuitive, used friendly programming/scaling/monitoring with graphical user interface.

### Power

9 to 32 Vdc, 900mW, reverse polarity protection

### Frequency Input

- a. Direct RF modulation: Range: 1-4000Hz
- b. Sine Wave 10mV to 10v: Range: 1-4000Hz
- c. Voltage pulses 0-12v: Range: 1-32700Hz

Accuracy: 0.01 Hz over entire range

### Temperature Input

- a. PT100 4 wire balanced into a 16 bit sigma-delta converter, 4 stage polynomial equation to direct temperature range  $-50^{\circ}\text{C}$  to  $+250^{\circ}\text{C}$ .  
Accuracy  $\pm 0.5^{\circ}\text{C}$  from  $-10$  to  $+100$  and  $\pm 0.5^{\circ}\text{C}$  from  $-50$  to  $+250$ .
- b. 0-10vDC input 16 bit sigma-delta conversion, accuracy  $\pm 0.17\text{mV}$ .

### Linearisation

Frequency to Flow rate, no temperature compensation, 32 points, 32bit floating point interpolation.  
Frequency/viscosity to Kfactor, no temperature compensation, 32 points, 32bit floating point interpolation.  
Temperature to viscosity 32 points, 32 bit floating point interpolation (TriLIN+ only).  
Temperature to density 32 points, 32 bit floating point interpolation (TriLIN+ only).  
Voltage input 0-10v to temperature 10 points, 32 bit floating point interpolation  
Strouhal and Roshkoe calculation to 32 bit floating point.

### Frequency Output

0-5v pulses, 1 to 4800Hz, 18 bit resolution 0.018Hz over entire range. Programmable for flow rate in Volume or Mass, Max range programmable from 10Hz to 4800Hz.

### Analog 0-10v Outputs

- a. Flow rate output. 0-10v output at 16 bits, accuracy  $\pm 0.17\text{mV}$  over range. Programmable for flow rate in Volume or Mass.
- b. Temperature output, 0-10v output at 16 bits, accuracy  $\pm 0.17\text{mV}$  over range (TriLIN+ only).  
Programmable 0v temperature and 10v temperature.

### Response time

Single point no temperature input  $< 2\text{mS}$ .

32 points no temperature input  $< 2.5\text{mS}$ .

Single point with full temperature compensation  $< 3\text{mS}$ .

32 point with full temperature compensation  $< 3.5\text{mS}$  (TriLIN+).

### Programming

Requirements. Interface lead fitted with 9 way 'D' socket to PC. Down load speed 19200 bps. Software allows graphical editing and multi-save features.

All data is also stored with the TriLIN and TriLIN+ boards and can be downloaded and edited.

Data memory FLASH at 5v, retention approx. 15years.

### Environment

Temperature: Operating  $-40$  to  $+85^{\circ}\text{C}$ , storage  $-55$  to  $+125^{\circ}\text{C}$

Humidity: 0 to 85 % RH non-condensing

### CE Approval

EN50081-1, EN50082-1, EN61010