Phoenix Flow / LMM Designs T-Lin Temperature Compensating Signal Conditioner

Basic Description: The flow computer will amplify and linearise any flow meter output then process the information to a 0-10vDC or 4-20mA linear signal and a 0-4800Hz linear frequency, at a speed of 1.5 to 2.5 milliseconds. Comprehensive software, graphical editing, download and upload.

Power: 9 to 32 VDc, 900mW, reverse polarity protection

Flow Meter input: Three types are supported as standard and can be configured by the customer by a jumper link on the PCB

RF: Range 1 Hz to 4 kHz, inductance 1 mH, resistance 10 to 13 Ohm, oscillator 45 to 55 kHz (OEM versions for different pickoffs)
Sine: 10mV to 10V P-P direct mag interface
Pulse: Standard voltage pulses low level <1.5V High level >3V to 30V, 1-32,000Hz input impedance =>10,000 Ohms.

Temperature Input: RTD 4-wire, temperature range: -100 to + 400°C, type 100-ohm platinum, correlation: α = 0.0035, Accuracy: RTD + 1°C Or Voltage 0 to 10 V, A/D conversion 16 bit

Linearisation: Flow meter signal input, 2 to 32 points of linear interpolation.

Temperature Compensation: PT100 using a 4h order polynomial

0-10VDC input 10 points linear interpolation
2 to 32 points temperature verses viscosity
2 to 32 points temperature verses density
Sfouhal vs. Roshko temperature expansion correction

Output Update Time: Programmable from 0 to 3.5 seconds

Zero Cut Off: Programmable from 0 to 3.5 seconds

Outputs *Frequency*: Linearised frequency 0 to 5 V pulse, NPN reference 0V

Full scale frequency range 50 to 4800 Hz. Impedance: ≤ 2.2 kOhms
Accuracy: ≤0.1% of reading, resolution 0.018 Hz/step
Linearisation latency 2.5 -3.5 msec + period of input

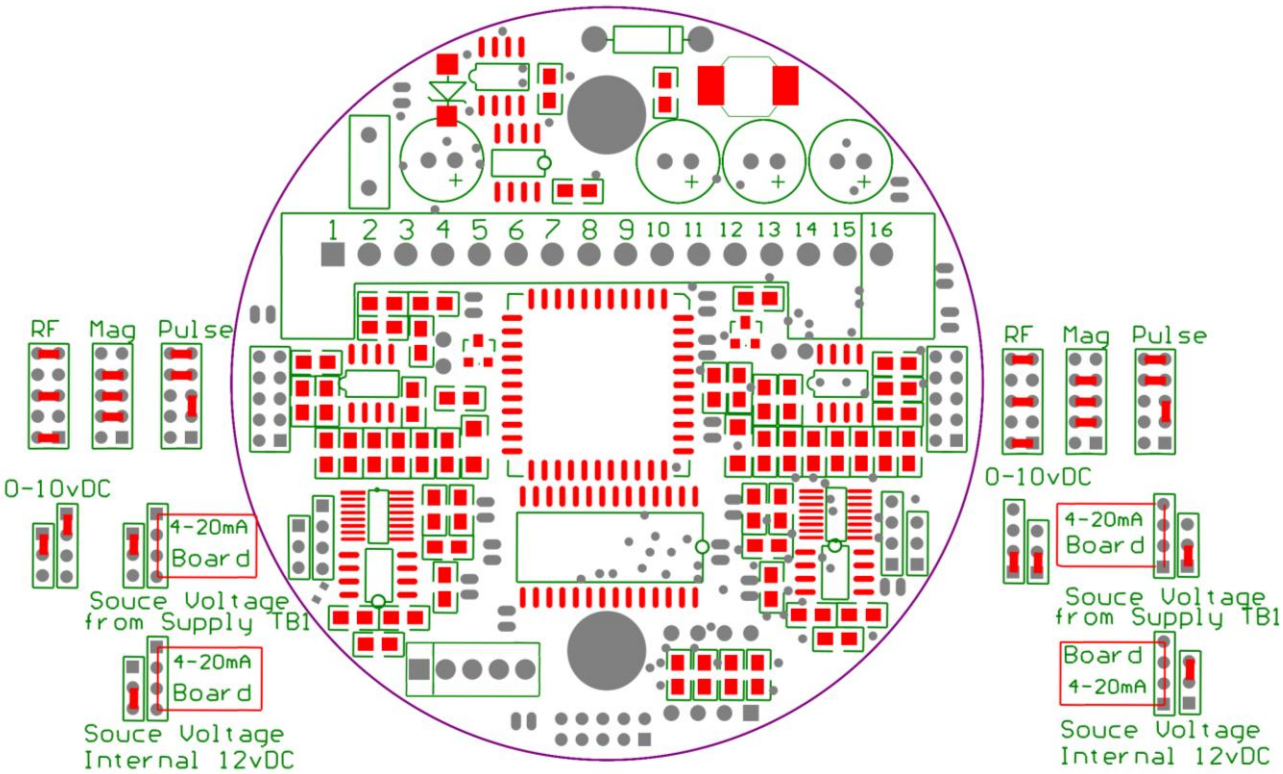
Analogue 1: 0-10 VDc, linearised, scaled for flowrate, zero offset ≤ 10 mV, accuracy: ≤ 0.1% FS, 16 bit, resolution 0.16 mV. Optional 4-20mA plug in board.
Analogue 2: 0-10 VDc, linearised, scaled for temperature, zero offset ≤ 10 mV, accuracy: ≤ 0.1% FS, 16 bit, resolution 0.16 mV. Optional 4-20mA plug in board.

Communications: RS232, Baud rate: 19200. Data input: manually/electronically. Data output: Full data file stored in board and on disk.

Environment: Temperature: Operating - 40 to + 85°C, storage -55 to + 125°C

CE Approvals: EN50081-1, EN50082-1, EN61010

(D)(T)Lin Wiring Diagram



Terminal	Description	Dlin	DTlin
1.	+9-32vDC Supply Input	*	*
2.	0v	*	*
3.	Sensor Input +	*	*
4.	Sensor Input -	*	*
5.	0-10vDC Flow Output	*	*
6.	0v	*	*
7.	0-10vDC Temperature Output	*	
8.	RTD PT100 + Supply	*	
9.	RTD PT100 + Sense	*	
10.	RTD PT100 - Sense	*	
11.	RTD PT100 - Supply	*	
12.	0-10vDC Temperature Input	*	
13.	5v (TTL Pulse) Frequency Output	*	*
14.	0v	*	*
15.	Sensor Input +	*	*
16.	Sensor Input -	*	*