

# Linear Link®

## High Performance Turbine Meter System

### Description

The Linear Link® is a high performance turbine flowmeter linearizer which has redefined the methodology for optimum linearization. Based on measuring the time between turbine rotor blades, the Linear Link® can output “real time” corrected K-factor flow data in 10 mS, with an accuracy of  $\pm 0.1\%$  of reading over the full repeatable range of the flowmeter. This wide turndown is made possible by a unique approach that enhances resolution in the low flow range of the turbine meter where linearization is critical.

The Linear Link® is available in locally mounted or remote enclosures, including NEMA 4X, aluminum and explosion-proof, with or without a display. When the operating temperature exceeds the limits of the electronics or the application requires an industrial enclosure, the system’s remote enclosure options provide the solution.

### Putting It To Work

The Linear Link® operates on a wide 12–32 VDC power input, making it ideal for on-board vehicle testing in the automotive and aircraft industries, and engine test stands in the aerospace industry. The outputs available are a raw flow meter frequency, a linearized frequency, and a choice of linearized analog voltage or current outputs.

A variety of packaging options are available to meet your industry needs. MS style connectors are available for automotive and aerospace test stands while explosion-proof enclosures are available for the industrial market.



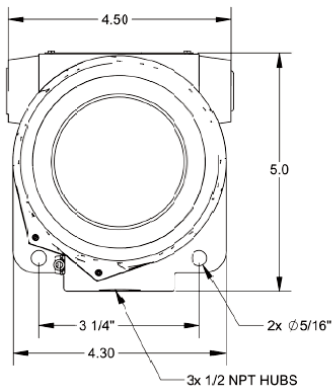
### Features

- Integral or remote enclosure mounting
- Linearizes outputs to  $\pm 0.1\%$  of reading, typical, over the maximum repeatable range of the flowmeter
- Fast 10 mS linearized frequency response
- Operates from 12–32 VDC power
- Simultaneous frequency and analog outputs
- Combines linearization and analog converter in one compact package
- Provides user-selectable K-factor outputs for ease of replacement
- Reduces space requirements and cost of installation
- Fully-programmable and scalable through user-friendly Windows® Visual Link 5 software, via serial communication
- Compliant with EMC Directive 2014/30/EU per EN61000-6-2 and EN61000-6-4

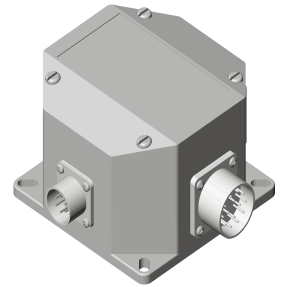
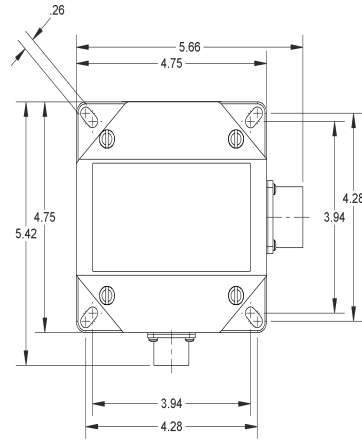


## Mechanical Dimensions

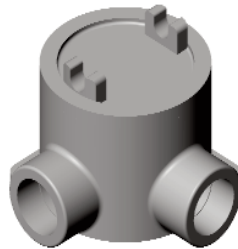
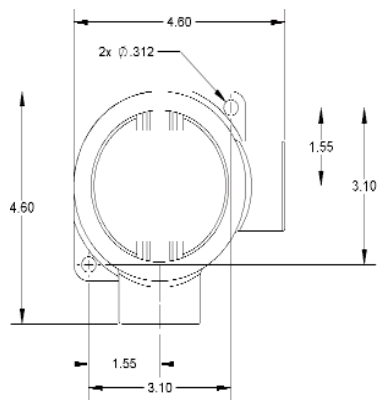
### Explosion Proof Display (-F1 enclosure)



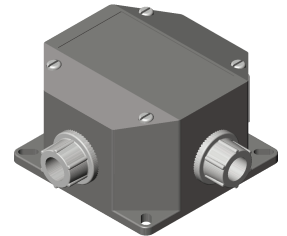
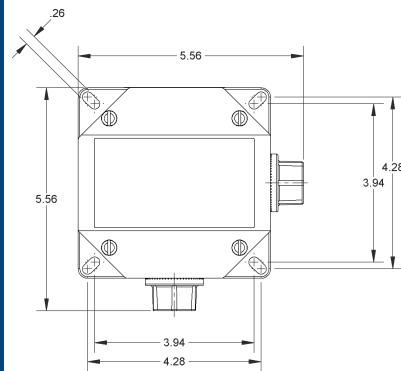
### Nema 4X, MS Connections (B7 enclosure)



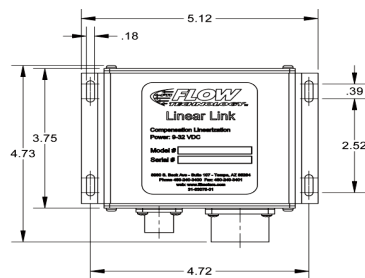
### Explosion Proof (-9 enclosure)



### Nema 4X, Conduit Hubs (B6 enclosure)



### Dusttight Aluminum, MS Connectors (A7 enclosure)



# Linear Link

## Specifications

### Input Power

24 VDC nominal	12–32 VDC: no display and unloaded Vout 110mA max
	15–32 VDC: with display and unloaded Vout 160mA max
	19–32 VDC: no display and current out 135mA max
	23–32 VDC: with display and current out 200mA max

### Flowmeter Input Type

Magnetic	
Frequency range:	10 Hz – 4 kHz (low Hz dependent on meter configuration)
Impedance:	Greater than 5 K ohms
Sensitivity:	20 mV p-p
Pulse	
Frequency range:	2.5 Hz to 4 kHz
Impedance:	5.8 K ohms to +5 VDC
Schmitt Trigger Buffer	
Voltage (STB):	Low: 0–1 VDC; High: 4–5 VDC
Input Maximum:	0–10 VDC, 1 Hz–4 kHz
RF	
Frequency range:	5–3500 Hz
Inductance:	1 mH
Oscillator frequency:	45–55 kHz
Other RF	
Frequency range:	5–3500 Hz
Inductance:	350 microH
Oscillator frequency:	45–55 kHz

### Linearization

Flow Meter K-factor	
Number of Points:	2 to 20
Interpolation Method:	Linear
Density	
Number of Points:	Fixed

### Performance

Accuracy	
Linearized Frequency:	0.1% of reading or better, typical
Linearized Analog:	0.1% of full scale or better
Linearization Latency	9–20 mS + period of input

### Outputs

Frequency (Flow Rate)	
Flow Rate Raw Frequency:	0–5 VDC pulse
Flow Rate Linearized Frequency:	0–5 VDC pulse (1–3500 Hz)
Impedance:	2.2 K ohms
Transmission Distance:	250 ft maximum
Analog (Flow Rate)	
Voltage	0–10 VDC or 0–5 VDC (factory settable)
Linearized, Scaled Zero Offset:	less than 10 mV
Current	4–20 mA,
Linearized, Scaled Maximum Load:	IRload = (supply voltage–4)/0.02
RS-232 (Volume/Mass Flow)	
Baud Rate:	19200
Update Rate:	0.5/sec, 1.0/sec, or 2.0/sec
See 'Communication' for additional details	

### Environment

Temperature	
Operating:	-40° F to +185° F (-40° C to +85° C)
with F1 display	32° F to +122° F (0° C to +50° C)
Storage:	-55° F to +257° F (-67° C to +125° C)
with F1 display	14° F to +140° F (-10° C to +60° C)

Humidity	0 to 85% RH non-condensing
Enclosure	NEMA 4X, Class I, Division 1 & 2, Group A, B, C, & D; Dust-tight aluminum (options)

### Communication

Interface	RS232, serial USART connection to personal computer (with serial cable)
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Baud	
Output:	19200
Programming:	19.2 K
Data Bits:	8
Stop Bit:	1
Parity:	None

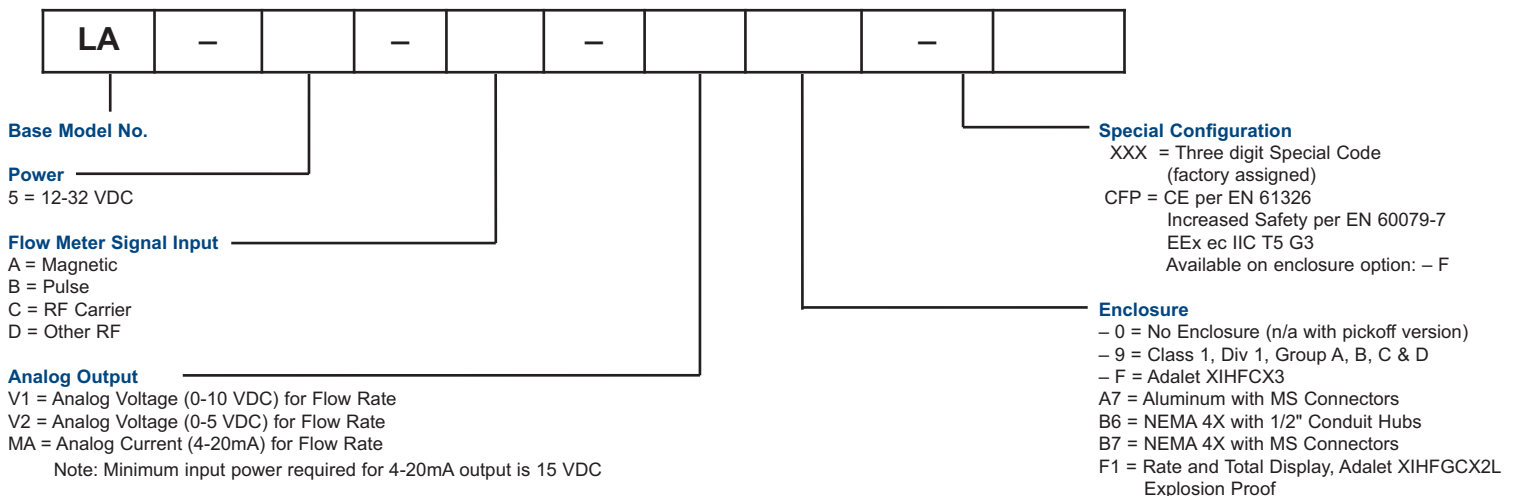
### Approvals

CE	Directive 2014/30/EU
	Immunity Standard EN61000-6-2
	Emissions Standard EN61000-6-4

### Programming Cables

Choose one for field programming changes	
Basic	19-62627-104
MS Connector version only	19-62627-106

## Model Numbering System



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Specifications are for reference only and are subject to change without notice.

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