

Electronics Overview

for Turbine Flowmeters

Electronics Selection

Flow Technology provides a wide variety of amplifiers, transmitters, and displays to meet each customer's unique needs. Use the chart below to determine which electronics offering best suits your needs by matching the desired characteristics. The summary specification can then be viewed within this document. Once the desired electronics option has been selected, see the individual specification sheet for a complete specification.

Characteristics		Turbine Flow Meter Electronics Options							
		Pickoff / Amp	TWA	LinearLink	Link TCI	BR30	FC70	SL91	SL92
Outputs	Linearizer			✓	✓	✓	✓	✓	✓
	Rate Display					✓	✓	✓	✓
	Total Display					✓	✓	✓	✓
	UVC				✓		✓	✓	✓
	Gas Applications								✓
	Batch Control						✓	✓	
Power Source	DC	✓		✓	✓	✓	✓	✓	✓
	Loop Powered		✓			✓			
	110 VAC						✓	✓	✓
	220 VAC						✓	✓	✓
	Battery					✓			
Outputs	Scaled pulse			✓	✓	✓			
	4-20 mA		✓	✓	✓	✓	✓	✓	✓
	0-5 vdc				✓	✓		✓	✓
	RS232					✓			
Approvals	Explosion Proof					✓			
	CE	✓	✓	✓		✓		✓	✓
	FM		✓			✓			
	CSA	✓	✓			✓			
Mounting	Panel					✓	✓	✓	✓
	Meter-mounted	✓	✓	✓	✓	✓			
	Remote		✓	✓	✓	✓			



Electronics Overview

for Turbine Flowmeters

CA03

- Enhances turbine flowmeter performance
- Conditions modulated carrier pickoffs
- Long range transmission (over 1 mile/1.6 km)
- 10 volts pulse output, frequency proportional to flow rate



- Remote mounted or integral with flowmeter
- Reverse voltage protected
- Lightweight polypropylene, NEMA 4X or explosion-proof enclosures
- 24 VDC powered

Linear Link

- Linearizes outputs to $\pm 0.1\%$ of reading over the maximum repeatable range of the flowmeter
- Fast 10 mS linearized frequency response
- Operates from 10-32 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
- Fully-programmable and scalable through user-friendly Windows® software, via serial communication
- Compliant with EMC Directive 89/336/EEC per EN 61326

Link TCI

- Linearizes outputs to $\pm 0.1\%$ of reading
- Online viscosity/K-factor correction
- Fast 20 mS response
- 9–32 volts power
- Compact size — remote or direct flowmeter mounting
- Rotor blade frequency averaging to minimize measurement variations



- Temperature output
- Multiple outputs: raw frequency, digital, analog, RS232
- User-defined offset frequency at zero flow for error detection
- Strouhal-Roshko compensation
- Mass flow rate output
- Stores and recalls configuration and calibration data
- User-friendly configuration software compatible with Windows ®9 or newer operating system

Amplifier Link

- Combines pickoff and signal conditioner in one compact design
- Mounts directly to flowmeter for reduced system size and weight
- Operates from 8–30 VDC power
- 5-volt pulse output; frequencies proportional to flow rate



- Compatible with other manufacturers' turbine flowmeters
- RF version enhances low-flow performance
- EMI immunity
- Intrinsically-safe
- CE approved



Electronics Overview for Turbine Flowmeters

TWA

- Isolated 4–20 mA output
- Reverse polarity protected
- Frequency input from modulated carrier or magnetic pickoffs
- Available in potted module or polypropylene, NEMA 4X and explosion-proof enclosures



- Long range transmission with noise immunity
- Loop-powered 12–50 VDC
- Compact module utilizing surface mount technology
- Approvals: FM/CSA/CENELEC approved for intrinsically-safe requirements and CE conformity per the EU EMC Directive

BR3000

- Magnetic pickup and DC pulse (optically isolated) input
- Displays rate & total simultaneously
- Internal battery, external DC, or 4–20 mA loop-power supply Isolated scaled pulse or 4–20 mA analog output
- 8-digit totalizer display



- 4-1/2 digit rate display
- 10-point linearization
- Low battery indicator
- Explosion-proof, waterproof, and panel mounting options
- Lockout code

SL9000/9100/9200

- SL9000 - Din enclosure with two-piece wiring connector
- SL9000 - Windows-based PC programming software
- SL9000 - AC or DC powered
- SL9100 and SL9200 add - Liquid, temperature compensation for viscosity and density

SL9100 and SL9200 add - Strouhal – Roshko temperature compensation



- SL9100 and SL9200 add - 40-point linearization
- SL9100 and SL9200 add - Analog and RTD input for temperature
- SL9100 and SL9200 add - Volumetric or mass display and output
- SL9200 add - Gas, temperature and pressure compensation for viscosity and density
- SL9200 add - Analog input for pressure

FC70

- Linearization, batch or mass models available
- Linearization Model
 - 16 digit fluorescent display
 - 20 pt flow input linearization
 - 6 digit rate indication in engineering units
 - Optically isolated 4-20mA analog flow output
 - RS45 communications



- Batch/Temperature Compensation Model
 - All features of Linearization Model
 - Dual-relay batch control
 - UVC temperature compensation
 - 4-20mA temperature input
- Mass Model
 - Compensates for changes in density
 - Mass or volumetric flow rates



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