Metern Magnetic Flowmeter System
MTLD for Water/Wastewater & Utility Applications

THE MTLD MAGNETIC FLOWMETER

Metern reliability customized for Water, Wastewater and Utility applications
Available in flanged and wafer style
PTFE and Neoprene Liners
Line sizes available from 6 mm to 2000mm.

MTLD Series Electromagnetic Flowmeter

Economical Premier Products, Premier Performance

METERN corporation offers a broad selection of electromagnetic (Mag) flow meters for industrial, water, and waste water flow measurement applications worldwide. The units are offered in a wide variety of sizes and flow ranges for many industrial as well as OEM service.

■ Features and benefits

No moving parts; Virtually no pressure drop;
Minimal maintenance
Wide range of nominal diameters;
Broad selection of lining and electrode materials

■ Applications

Agricultural; Food & Beverage; Chemical; Pulp & Paper; Water & Waste Water

■ General Specification

Power Supply:
85---250VAC
20---36VDC
Power Consumption: 10W
Accuracy:
± 0.5% accuracy of rate from 0.3-10 m/s
± 1.0% accuracy of rate from 0.1-0.3 m/s
Repeatability: 0.2%
Minimum Fluid Conductivity:
5.0 micromhos/cm
Flow Direction: Unidirectional or bidirectional, 2 separate totalizers (programmable)
Analog Outputs: 4-20mA, 750ohms Max Load
Output Frequency: Scaled Pulse output, (open collector) Max 5Khz
Noise Damping: Programmable
Pulse Width: Programmable up to 500ms
Zero-point Stability: Automatic correction
Ambient Temperature: -4 to 140° F (-20 to 60° C)

Electrode Materials:
SS316L;
Optional: Titanium; Hastelloy Alloy C; Tantalum
Liner Material: PTFE, FEP, Hard Rubber
Fluid Temperature:
PTFE: 120°C Standard (Customized: 180°C)
Rubber: 60°C
Pressure Limits:
1.6 Mpa; Optional 2.5; 4.0 Mpa
Coil Power: Pulsed DC
Pipe Spool Material: SS316
Meter Housing Material:
Carbon Steel welded or SS304 (Sanitary Connection)
Flanges:
Carbon Steel - Standard (ISO 7005-1)
ANSI, DIN and JIS Flange Connections
Optional Stainless Steel Grounding Rings
Explosion: Ex d ia (ia Ga) q II CT6 Gb

Model and Selection

Model Suffix Code									Descriptions
MTLD-									
Diameter									Four Digitals; for example: 0010: 10mm 0015: 15mm 0100: 100mm 1000: 1000mm
Transmitter	S								Compact type
	L								Remote type
Electrode Material		M							Stainless steel 316L
		T							Titanium
		D							Tantalum
		H							Hastelloy Alloy
		TC							Tungsten Carbide
Signal Output			0						No output
			1						4-20mA/1-5KHz
Liner Material				X					Hard Rubber
				P					Polyurethane
				F4					FEP (F46)
				Pr					Propylene oxide
				F					PTFE
				A					PFA
Power Supply					0				85---250VAC
					1				20---36VDC
					2				Battery Power Supply
Communication						0			No communication
						1			Modbus: RS485 RTU
						2			Profibus
						3			HART
						4			GPRS
Grounding Ring							0		No grounding ring
							1		Grounding ring
							2		Grounding Electrode
Connection								DXX	DXX: D06, D10, D16, D25, D40 D06: DIN PN6; D10: DIN PN10 D16: DIN PN16; D25: DIN PN25 D40: DIN PN40
								AX	AX: A1, A3, A6 A1: ANSI 150#; A3: ANSI 300# A6: ANSI 600#; A9: ANSI 900#
								JX	JX: J1, J2, J4 J1: JIS 10K; J2: JIS 20K; J4: JIS 40K
								TR	Tri-Clamp for sanitary Type (Body material: Stainless Steel)
								WF	Wafer type with mated flanges, bolts and gaskets
								IN	Insertion type
								S	Customized

Model Code: MTLD-0150SM1F-011-A1

Explanation - Diameter: 150mm; Transmitter: Compact; Electrode Material: SS316L;

Signal Output: 4-20mA/Pulse; Liner Material: PTFE; Power Supply: 110-240Vac;

Communication: RS485; Grounding Ring: Yes, (for PVC Pipe); Connection: ANSI 150# Flange

Technical Data

Measuring system

Measuring principle	Faraday's law
Application range	Electrically conductive fluids
Measured Value	
Primary measured value	Flow velocity
Secondary measured value	Volume flow

Design

Features	Fully welded maintenance-free sensor
	Flange version with full bore flow tube
	Standard as well as higher pressure ratings
	Large diameter range from DN6...3000 with rugged liners approved for drinking water
	Industry specific insertion lengths
Modular construction	The measurement system consists of a flow sensor and a signal converter. It is available as compact and as separate version.
Compact version	With L-Mag 511 Series converter: power supply
	With L-Mag_W801 converter: battery supply
	With L-Mag W803C converter: battery supply
Remote version	In wall mount version with L-Mag(B) series converter
	With L-Mag_W801 converter: battery supply
	With L-Mag W803C converter: battery supply
Measurement range	-12...+12 m/s / -40...+40 ft/s

Measuring accuracy

Reference conditions	Flow conditions similar to EN 29104
	Medium: Water
	Electrical conductivity: ≥ 300 µS/cm
	Temperature: +10...+30°C / +50...+86°F
	Inlet section: ≥ 5 DN
	Operating pressure: 1 bar / 14.5 psig
Flow Meter Accuracy	Standard: 0.5% of rate
	Optional: 0.2% of rate

■ Operating Conditions

Temperature	
Process temperature	Hard rubber liner: -20...+60°C
	Polypropylene liner: -20...+90°C
	PTFE liner: -20...+120°C
Ambient temperature (all versions)	**Standard** (with aluminum converter housing):
	-20…+60°C (Protect electronics against self-heating with ambient temperatures above 55°C)
Storage temperature	-20...+70°
Pressure	
EN1092-1	DN1200...2000: PN 6
	DN350...1000: PN 10
	DN6...300 : PN 16
	Other pressures on request
ISO insertion length	Optional for DN100...2000
ASME B16.5	1...24": 150 lb RF
	Other pressures on request
JIS	DN10...1000 / 2...40": 10 K
	Other pressures on request
Pressure drop	Negligible

Fluid	
Physical condition	Conductive liquids
Electrical conductivity	≥ 5 µS/cm
Permissible gas content (volume)	≤ 5%
Permissible solid content (volume)	≤ 70%

■ Installation Conditions

Installation	Take care that flow sensor is always fully filled
	For detailed information see chapter "Cautions for Installation"
Flow direction	Forward and reverse
	Arrow on flow sensor indicates positive flow direction.
Inlet run	≥ 5 DN
Outlet run	≥ 2 DN

■ Materials

Sensor housing	Carton steel, polyurethane coated
	Other materials on request
Measuring tube	Austenitic stainless steel
Flanges	Carbon steel, polyurethane coated
	Other materials on request
Liner	Standard
	DN10...50: FTFE
	DN65…1000: PTFE or Hard Rubber
	DN1200...2000: Hard rubber
Connection box (only remote versions)	Standard: polyurethane coated die-cast aluminum
Measuring electrodes	Standard: Stainless steel 316L
	Option: Hastelloy C, titanium, tantalum
	Other materials on request
Grounding electrodes	Standard: Stainless steel
	Option: Hastelloy C, titanium, tantalum
Grounding rings (option)	Same material as measuring electrodes.

■ Process Connections

Flange	
EN 1092-1	DN10...3000 in PN 6...40
ASME (ANSI)	1/2…120" in 150 lb RF
JIS	10…1000 in 10...20K
Design of gasket surface	RF
	Other sizes or pressure ratings on request

■ Measuring Flow Rate Range:

Note: The flow range as blow is for reference only. Consult the factory if you have special requirement. Refer to the nameplate or certificate for actual flow range.