

Sanitary Tri-Clamp Electromagnetic Flow Meter

- Tri-Clamp connections from 3/8" to 4" & DN10 to DN100
- Bi-directional flow measurement
- No pressure loss during operation
- Works with conductive liquids (>5 $\mu\text{S}/\text{cm}$)
- 4...20mA, HART, RS485 Modbus and pulse output signals
- Galvanically isolated switching relays
- CIP clean in-place



About

The P396 sanitary electromagnetic flow meter was designed to exceed the requirements of hygienic application governing authority mandates. Available with either ASME or ISO Tri-Clamp connections, this sensor is CIP (clean in-place) ready to go upon installation. Designed for conductive fluids, it features bi-directional flow detection, no pressure loss, and advanced diagnostics. Its versatile configurations, from integrated to remote sensor designs, ensure optimal performance.

Applications

- ✓ Sanitary
- ✓ Food & Beverage
- ✓ Pharmaceutical
- ✓ Biomedical Technologies
- ✓ Water Processing

Flow Ranges

Flow Ranges		Pipe Nominal Diameter	
Measuring Range		Inches	mm
Gallons/minute	m ³ /h		
0.37...12.4	0.085...2.8	3/8"	DN10
0.84...28	0.2...6.4	1/2"	DN15
1.5...49	0.34...11	3/4"	DN20
2.33...77	0.53...17	1"	DN25
3.9...131	0.9...30	1 1/4"	DN32
6...199	1.4...45	1 1/2"	DN40
9.4...311	2.2...70	2"	DN50
16...525	3.6...119	2 1/2"	DN65
24...796	5.5...181	3"	DN80
38...1244	8.5...283	4"	DN100



Dimensions

ASME BPE Tri-Clamp Dimensions

ASME Tri-Clamp with Integrated Transmitter

Dimensions (mm)

Size	L	H	Outer Diameter D	Groove Diameter C
3/8"	180	257	25	20.3
1/2"	180	257	25	20.3
1"	180	257	50.4	43.6
1 1/2"	200	278	50.4	43.6
2"	210	294	63.9	56.3
2 1/2"	210	314	77.4	70.6
3"	210	329	90.9	83.3
4"	210	349	118.9	110.3

ISO 2852 Tri-Clamp Dimensions

ASME Tri-Clamp with Integrated Transmitter

Dimensions (mm)

DN	L	H	Outer Diameter D	Groove Diameter C
10	180	257	50.5	43.5
15	180	257	50.5	43.5
25	180	257	50.5	43.5
40	200	278	50.5	43.5
50	210	294	64	56.5
65	210	314	77.5	70.5
80	210	329	91	83.5
100	210	349	119	110

Build Your Part Number

Series P396

Example: P396BS2C2J243AE1NHT6

Series	
P396	
Output Signal - select one	
A	4 ... 20mA + pulse frequency 0...5KHz
B	4...20mA with HART + pulse frequency 0...5KHz
M	RS485 Modbus
Flow Relays - select one	
S1	Without
S2	With 2 galvanically isolated user adjustable relays (30VDC / 3A, 250VDC / 3A)
Wetted Electrode Material - select one	
C1	316L Stainless Steel
C2	Hastelloy B
C3	Hastelloy C
C4	Titanium
C5	Others upon request
Wetted Liner Material - select one	
J1	PTFE
J2	PFA
J3	Others upon request
Process Connection Material - select one	
42	304 Stainless Steel (standard)
43	316L Stainless Steel
Power Supply - select one	
D	24 VDC
A	85...265 VAC
Electrical Connection - select one	
E1	NPT ½" Threaded hub
E2	M20 x 1.5 Cable gland
Ex-Proof - select one	
NH	Without
HA	Exd [ia Ga] qllc T5 Gb
Process Connections & Transmitter - select one	
ASME BPE Tri-Clamp – see page 3	
T1	3/8"
T2	½"
T3	1"
T4	1 ¼"
T5	1 ½"
T6	2"
T7	2 1/2"
T8	3"
T9	4"
ISO 2852 Tri-Clamp – see page 3	
P1	DN10
P2	DN15
P3	DN25
P4	DN32
P5	DN40
P6	DN50
P7	DN65
P8	DN80
P9	DN100

Technical Parameters

Technical Parameters		
Measuring	Measuring Range	See flow range table page 2 for complete details
	Applicable Medium	All liquids with conductivity > 5µs/cm
	Accuracy	0.5%
	Repeatability	±0.15% of Reading
Electrical	Output Signal	4...20mA + Pulse Frequency 0...5KHz 4...20mA with HART + Pulse Frequency 0...5KHz RS485 Modbus 2 galvanically isolated user adjustable switching relays 30VDC / 3A, 250VDC / 3A
	Operating Voltage	85...265 VAC ± 10% 24 VDC ± 10%
	Power Consumption	Less than 20W
	Electrical Connection	M20 x 1.5 cable gland ½" NPT threaded hub Optional 10 meter cable for connecting sensor body to transmitter body
Environmental	Ambient Temperature	Transmitter Housing: -22...140°F (-30...60°C)
	Ambient Humidity	≤ 85% Relative Humidity (68°F / 20°C)
	Medium Temperature	-4...212 / -20...100°C
	Protection Class	IP65
	Optional Ex proof	Exd [ia Ga] qllc T5 Gb
Materials	Electrode	Stainless steel 316L Hastelloy B Hastelloy C Titanium
	Liner	PTFE PFA Others on request
	Body/Flange	304 Stainless Steel 316L Stainless Steel
	Visual Display	Yes
	Process Connection	ASME BRE Tri-Clamp ISO 2852 Tri-Clamp

Features	
Auto "ZERO" Calibration	See manual for details
Self-Monitoring and Diagnostic	Monitor Citation Circuit, Electrode, and Transmitter Malfunction
Empty and Full Pipe Detection	Detect empty or full pipeline
Change Flow Direction in Real Time	See Manual for Details
Bi-Directional Measurement	Measuring both forward and reverse flow
Selectable Flow Rate Unit of Measurement	Gal/h, Gal/min, m³/h, m³/min, L/h, L/m and more
Low Flow Cut Off	Adjustable in 0...10%, no pulse output for any signal less than settings
Outputs Selectable	4...20mA, 0-5KHz, pulse
Display	Instantaneous flow rate in percentage, instantaneous flow rate, and total flow rate
Totalizer Reset	See manual for details

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