

# QCT\_PA12 Series

## In-Line Liquid Ultrasonic Flow Meter

### Description

The QCT\_PA12 Series in-line ultrasonic flow meter has been specifically designed for applications that require excellent accuracy & reliability at an economical price point. The compact QCT\_PA12 Series has no moving parts, non-wetted sensors and there is nothing in the flow stream that will cause an increase in pressure drop; this results in a very rugged, reliable and accurate flow meter. High accuracy & repeatability is achieved through the unique measurement section within the flow meter where the flow is conditioned and delta T is measured. The small footprint, lightweight device is ideal for low viscosity liquid applications including water based products, oils, and its all plastic construction makes it the meter of choice for many corrosive fluids.

The QCT\_PA12 Series flow meter bases its operation on measuring the time difference of an ultrasonic wave traveling with and against the flowing medium. The time difference is directly proportional to the fluid's flow rate. Temperature is measured via an RTD embedded into the flow meter body.

### Features

- USP Class VI compliant
- High accuracy
- No moving parts
- Compact & lightweight design
- Low pressure drop
- All plastic construction



### Specifications

Accuracy	
Calibrated	±0.5% of reading plus zero stability <sup>1</sup>
Uncalibrated <sup>2</sup>	±2% of reading <sup>3</sup>
Zero Stability	±0.05% of full scale
Repeatability	±0.2% over 10:1 turndown
Turndown	100:1
Nominal Line Sizes	1/8", 1/4", 1/2", 1", 1-1/2", 2"
Materials of Construction	
Meter Body	Nylon PA12 (USP Class VI compliant)
Temperature	Class A RTD
Temperature Range	-10°C to 80°C (14°F to 176°F)
Low Temperature Option	-40°C to 80°C (-40°F to 176°F)
Max Pressure	Up to 275 psi (19 bar)
End Connection	NPT, Hose barb, DIN 11864-1
Rating	Designed to IP 66
Power	9-30 VDC <sup>4</sup>
Outputs	
Analog	4-20mA
Scaled Frequency	0 to 8000 Hz
Communications	Modbus RTU over EIA485
Baud Rate	115200, 57600, 38400, 19200, 9600 bps

1. Calibrated conditions are defined as water at ~25°C. Standard calibrated range is 10:1.

2. Calibration sold separately. Standard meter uncalibrated.

3. Typical, over 10:1 range with single point inline adjustment.

4. 24-30 VDC power required if using analog output.



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## Ordering Information

QCT		—		F	A	
<b>Size</b>	<b>Code</b>	<b>Fitting</b>		<b>Code</b>		
1/8"	013	NPT		2		
1/4"	025	Hose Barb		3		
1/2"	050	DIN 11864-1 <sup>1</sup>		4		
1" <sup>2</sup>	100	<b>Temperature Range</b>		<b>Code</b>		
1-1/2" <sup>2</sup>	150	Standard		0		
2" <sup>2</sup>	200	Low Temperature		1		

1. Only available 1/8" to 1"  
2. Sizes 1" to 2" are crosspath

## Cable

19-102374-101 Connector to flying leads cable, 5 meters

## Calibration – 3-Point Verification

Size	5 Pts in Water Over 10:1	7 Pts in Water Over 20:1
1/8" & 1/4"	90-103048-101	90-103048-102
1/2", 1", 1-1/2"	90-103048-201	90-103048-202
2" *	90-103048-103	N/A

\*Base unit shipped without calibration. Must order separately.

\*Uncalibrated accuracy ±2% reading, typical, over 10:1 range with single point inline adjustment.

\*2" meter calibration in 5 pts over 20:1.

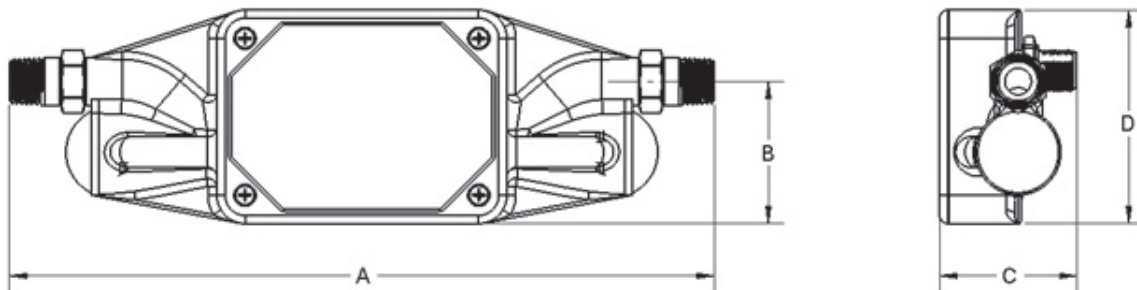
## Flow Rate & Pressure Drop

Line Size	Min Flow (gpm)	Max Flow (gpm)	Pressure Drop as % of Full Scale Flow			
			10% (psi)	25% (psi)	50% (psi)	100% (psi)
1/8"	0.035	3.5	0.24	2.11	12.10	37.7
1/4"	0.07	7.0	0.09	0.84	3.72	15.6
1/2"	0.20	20	0.01	0.16	0.75	3.26
1"	0.70	70	0.20	0.29	1.51	5.81
1-1/2"	1.65	165	0.32	0.15	1.16	2.58
2"	2.50	250	0.02	0.41	0.49	1.51

## Dimensions

Meter Size	Fitting	Dim A (in)	Dim B (in)	Dim C (in)	Dim D (in)
1/8" (013)	1/4" -18 NPT	8.0	1.6	1.6	2.4
	1/4" Hose Barb				
	DN 10				
1/4" (025)	1/4" -18 NPT	8.0	1.6	1.6	2.4
	1/4" Hose Barb				
	DN 10				
1/2" (050)	1/2" -14 NPT	8.0	1.6	1.5	2.4
	1/2" Hose Barb	8.5			
	DN 15	8.0			
1" (100)	1" -11 1/2 NPT	10.0	1.7	2.2	3.3
	1" Hose Barb			2.2	
	DN 25			2.4	
1-1/2" (150)	1-1/2" -11 1/2 NPT	12.0	2.0	2.2	4.1
	Hose Barb	11.0	2.0	2.2	4.1
	DN	N/A	N/A	N/A	N/A
2" (200)	2" -11 1/2 NPT	13.0	2.2	3.4	4.4
	Hose Barb	13.0	2.2	3.2	4.4
	DN	N/A	N/A	N/A	N/A

## Dimensions



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