

QCT_12CF Series

In line Liquid Ultrasonic Flow Meter

Description

The QCT_12CF 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_12CF 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 along the axis of the flow meter. 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_12CF 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

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



Specifications

Accuracy	
Calibrated	±0.5% of reading plus zero stability ¹
Uncalibrated ²	±2% of reading ³
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"
Materials of Construction	
Meter Body	Carbon filled nylon
Temperature	Class A RTD
Temperature Range	-10°C to 80°C (14°F to 176°F)
Max Pressure	up to 275 psi (19 bar)
End connection	NPT
Rating	Designed to IP 66
Power	9-30 VDC ⁴
Outputs	
Analog	4-20mA
Scaled frequency	10 to 5000 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 20:1.

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.



Ordering Information

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Size	Code
1/8"	013
1/4"	025
1/2"	050
1"	100

Fitting	Code
NPT	2

Cable

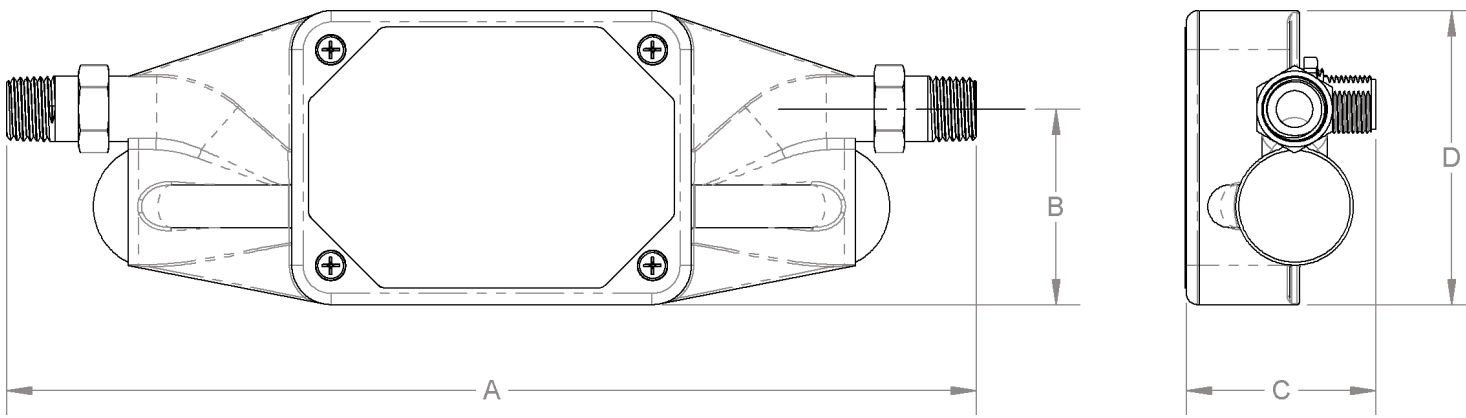
19-102374-101 Connector to flying leads cable, 5 meters

Wiring

Pin #	Function	Wire Color
1	Current Output (+)	Yellow
2	Power (9-32VDC)	Red
3	Factory Use Only	Green
4	EIA-485 A	Blue
5	EIA-485 B	White
6	Frequency Output	Orange
7	Current Output (-)	Brown
8	Power Return	Black

See technical manual for detailed wiring instructions.
Pins 7 & 8 are common.

Dimensions



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"	90-103048-201	90-103048-202

Base unit shipped without calibration. Must order separately.

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

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	0.01	0.21	0.79	3.92

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" (025)	1/4" -18 NPT	8.0	1.6	1.6	2.4
1/2" (050)	1/2" -14 NPT	8.0	1.6	1.5	2.4
1" (100)	1" -11 1/2 NPT	10.0	1.6	2.0	2.5



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