

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 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", 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) |
| 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 ⁴ |
| 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.



Ordering Information

| | | | | | | |
|-----|--|---|--|---|---|---|
| QCT | | — | | F | A | 0 |
|-----|--|---|--|---|---|---|

| Size | Code |
|---------------------|------|
| 1/8" | 013 |
| 1/4" | 025 |
| 1/2" | 050 |
| 1" ² | 100 |
| 1-1/2" ² | 150 |
| 2" ² | 200 |

| Fitting | Code |
|--------------------------|------|
| NPT | 2 |
| Hose Barb | 3 |
| DIN 11864-1 ¹ | 4 |

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

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 |

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.

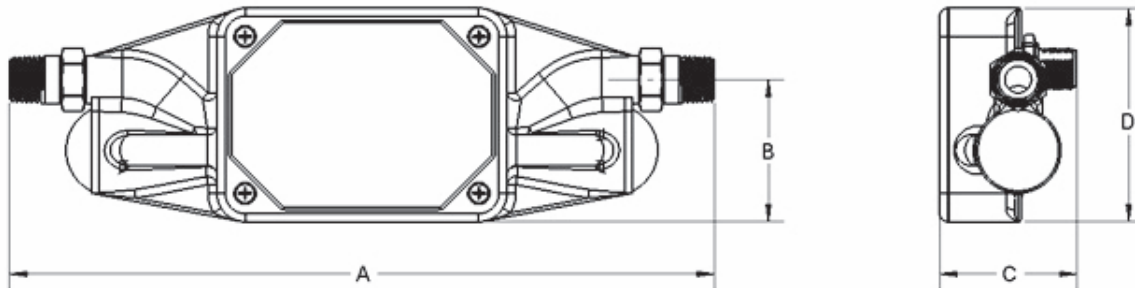
*Uncalibrated accuracy ±2% reading, typical, over 10:1 range with single point inline adjustment.

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

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



8930 S. Beck Avenue, Suite 107, Tempe, Arizona 85284 USA
Tel: (480) 240-3400 • Fax: (480) 240-3401 • Toll Free: 1-800-528-4225
E-mail: ftimarket@ftimeters.com • Web: www.ftimeters.com

