ClearPath|Flow™ Quick Start Guide
Ultrasonic Flow Meter

Introduction

The ClearPath|**Flow**™ in-line ultrasonic flow meter has been specially designed for applications that require a low-profile sensor with excellent accuracy & reliability at an economical price point. The ClearPath|**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. Multiple outputs are available, including 4-20mA, scaled frequency, and Modbus serial communication. Two versions are available:

QIT Series *(integrated sensor version)* The QIT is a fully integrated unit containing the main electronics which provides direct 4-20mA, frequency, and Modbus RTU outputs.

QRT Series *(remote sensor version)*
The QRT series interfaces with remote electronics (the QRE). The QRT is supplied with a 1-meter cable that connects directly to the QRE. All units are supplied fully configured with the meter's individual calibration factors stored in the unit. To obtain a copy of the calibration certificate, scan the QR code on the bottom of the unit.
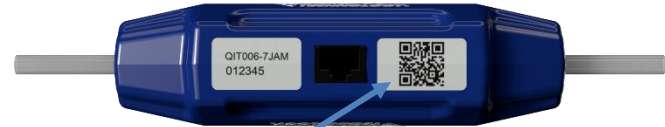
QR Code: Calibration certs & Documentation

1 Mechanical Installation

The sensor is designed to use tube fittings. If using a push-on style, grasp the tube of the end you are connecting to push the tube into the fitting. **DO NOT** use the meter housing to push – doing so could potentially damage the internal sensors.

The meter should ideally be installed in the horizontal orientation. The flow arrow must point downstream. If vertical installation is required, ensure that the flow is in the vertical up direction.

2 Electrical Installation

If using the QRT, connect the remote sensor cable to the "SENSOR" port on the QRE remote electronics / display. The user connection to the QIT and QRE uses a standard 8P8C modular (ethernet T-568B) cable directly to the port (Power I/O on QRE).

Pin #	Function	Wire Color
1	Analog (+)	White/Orange
2	Vsupply (9-30VDC)	Orange
3	Factory Use Only	White/Green
4	TIA-485 A	Blue
5	TIA-485 B	White/Blue
6	Frequency Output	Green
7	Analog (-)	White/Brown*
8	Power Return (-)	Brown*

* Pins 7 & 8 are common

The frequency (0-8000Hz) and analog (4-20mA) outputs are mapped to volumetric flow rate. Note: when using the analog output, a supply voltage of 24-30VDC is required. The frequency output is a square wave with amplitude of 0 to Vsupply.

Scan the QR Code on the sensor to download a complete datasheet showing the output scaling information specific to your serial number.