

Quantim® Series Coriolis Mass Flow Controllers & Meters

Quick Start Guide



This Quick Start Guide applies to QmC IP40, IP66 and Class 1 Div 2 / Zone 2 Controllers and Meters

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INSTRUMENT

▲ WARNING

- Read all instructions prior to installing, operating and servicing this product.
- Follow all warnings, cautions and instructions marked on and supplied with this product.
- Install your equipment as specified in the installation instructions in the appropriate instruction manual and per local and national codes. Connect all products to the proper electrical and pressure sources.
- Ensure that all equipment doors are closed and protective covers are in place, except when maintenance is being performed by qualified persons, to prevent electrical shock and personal injury.
- Do not operate this instrument in excess of the specifications marked on and supplied with this product. Failure to heed this warning can result in serious personal injury and/or damage to the equipment.
- Before operating the device, ensure all electrical connections have been properly terminated.
- If it becomes necessary to remove the device from the system, power to the device must be disconnected.
- If it becomes necessary to remove the device from the system after exposure to toxic, pyrophoric, flammable or corrosive gas, purge the device thoroughly with a dry inert gas such as nitrogen before disconnecting the gas connections. Failure to correctly purge the device could result in fire, explosion or death. Corrosion or contamination of the device upon exposure to air may also occur.

▲ CAUTION

- Incorrect voltage will cause flowmeter damage or failure.
- QUANTIM is an input sinking device. Do not use a current sinking PLC output card.
- QUANTIM sources its own 4-20mA output signal. Do not source this output with an external supply.

Installation & Operation Manuals

The full installation & operation manual along with any supplemental manuals for software or digital communication protocols can be viewed or downloaded at BrooksInstrument.com in the Documents & Downloads section.

BEST Software

The Brooks Expert Support Tool (BEST) application provides expanded control through servicing tasks that include setup, attribute configuration, diagnostics, troubleshooting, valve tuning and calibration. The software, supporting documentation and an installation video can be viewed or downloaded at BrooksInstrument.com in the Documents & Downloads section.

Step 1: Location/Orientation

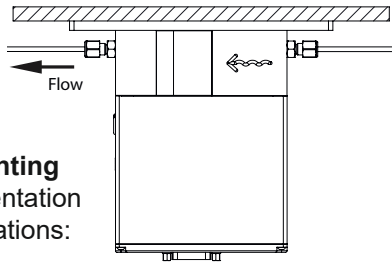
The instrument may be located anywhere in the process line, as long as the following conditions are met:

- Before operation, you must be able to stop flow through the meter. During the zeroing procedure, flow must be stopped completely, and the flow meter sensor tube must be full of process fluid to achieve an accurate zero.
- During operation, the flow sensor tube must be full of process fluid.
- Ambient temperature must remain between 0° and 60°C (32°F and 140°F).
- The instrument (cable connections, wiring compartments and/or conduit openings) should be accessible for service.

▲ CAUTION

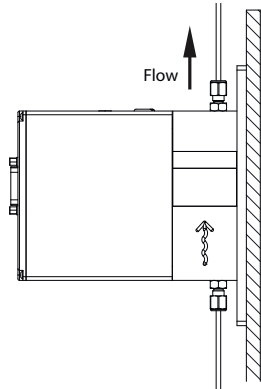
When installing the Mass Flow device, care should be taken to prevent foreign materials from entering the instrument's inlet or outlet. Internal passages are very small. It is recommended that an inlet filter be used to limit the chance of clogging. Do not remove the protective end-caps until the actual moment of installation. When used with reactive fluids (some of which may be toxic or moisture sensitive), contamination or corrosion may occur as a result of plumbing leaks or improper purging. Plumbing should be checked carefully for leaks. Care must be taken to thoroughly purge / dry down the system before introduction of any moisture sensitive process fluid.

1-1



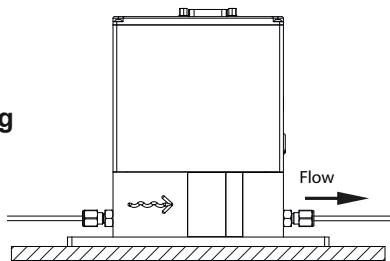
- Horizontal Down Mounting**
Preferred mounting orientation for most **LIQUID** applications:
- Sensor tube **DOWN**
 - Horizontal pipeline

1-2



- Vertical Mounting**
Orientation for **LIQUID** applications where entrapped gas may occur:
- Flag mount
 - Vertical pipeline

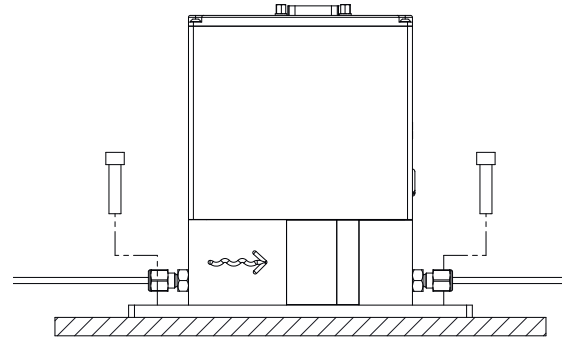
1-3



- Horizontal Up Mounting**
Preferred mounting for most **GAS** applications:
- Sensor tube **UP**
 - Horizontal pipeline

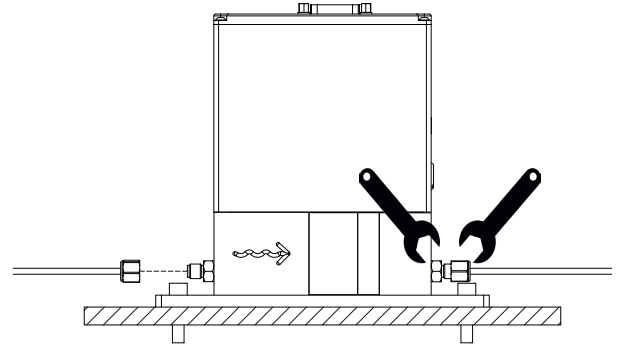
Step 2: Mounting the Quantim

2-1



Mount the device in the proper orientation and location for your process.

2-2



After mounting the device connect the process lines. Carefully tighten the process lines, using two (2) wrenches to prevent rotation of the inlet/outlet fitting.

▲ WARNING

Any rotation of the inlet or outlet fitting during installation of a metal seal device may result in a leak. Always use two wrenches when attaching process line to prevent rotation.

Step 3A: Electrical Connections IP40 Meter/Controller

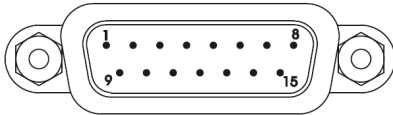
D-Connector Functions Legends:

- = Feature Available
- N/A = Not Available

NOTE: Chassis ground is available through the D-Connector back shell.

3-A1

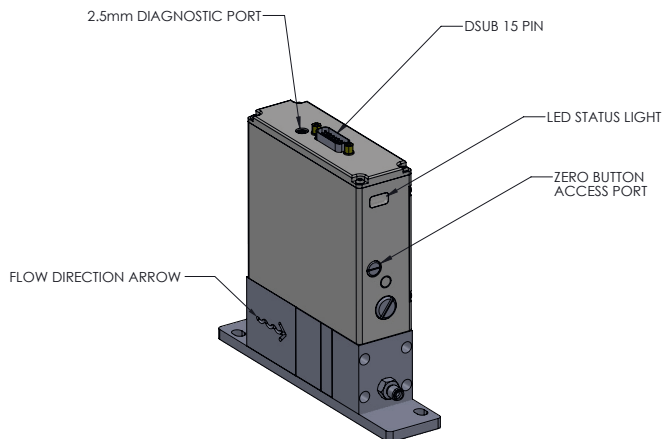
D-Connector for QmC IP40
Pin Out Connections



D-CONNECTOR PINOUTS

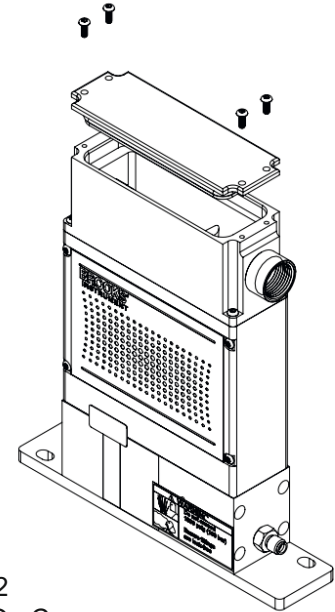
Pin	Function	Controller	Meter
1	Setpoint Common	*	N/A
2	0-5(10) Volt Flow Output	*	*
3	(TTL) Open Collector Alarm Output	*	*
4	(0)4-20 mA Flow Output	*	*
5	Power Supply (14-27 V)	*	*
6	Not Connected	N/A	N/A
7	(0)4-20 mA Setpoint Input	*	N/A
8	0-5(10) Volt Setpoint Input	*	N/A
9	Power Common	*	*
10	Signal Out Common	*	*
11	Not Connected	N/A	N/A
12	Valve Override Input	*	N/A
13	Density or Temperature output, Current or Voltage	*	*
14	RS-485, B(-) Input/Output	*	*
15	RS-485, A(+) Input/Output	*	*

3-A2



Step 3B: Electrical Connections Meter/Controller IP66 or Class 1 Division 2 / Zone 2

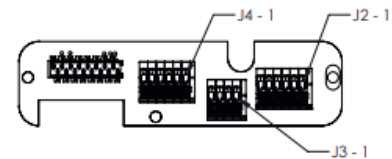
3-B1



Note:
Follow Steps 1 thru 2
for Mounting of the QmC

Terminal Block Pin Out Connections
for QmC IP66 or Class 1 Division 2 / Zone 2

3-B2



Connector	Pin	Signal
J2	1	Power Supply (14-27 V)
	2	Power Common
	3	Earth GND
	4	RS-485, B(-) Input / Output
	5	RS-485, A(+) Input / Output
	6	N/C
J3	1	Setpoint Common
	2	Valve Override Input
	3	Setpoint Input, Current
	4	Setpoint Input, Voltage
J4	1	Signal Out Common
	2	N/C
	3	Density or Temperature Output (Current or Voltage)
	4	Flow Output, Current
	5	(TTL) Open Collector Alarm Output
	6	Flow Output, Voltage

Step 4: Zeroing Procedure

To assure measurement accuracy, the instrument must be zeroed to the operational installation conditions:

- Apply power to instrument for approximately 45 minutes to reach a stable thermal condition prior to applying flow.
- Flow the process fluid into the instrument and allow sufficient time for the sensor to reach normal operating temperature.
- Close the shutoff valve downstream to eliminate any pressure differential across the instrument.
- After confirming a NO flow condition, press the zeroing button for at least 3 seconds
 - Zeroing button is located on the side of the instrument's housing.
- The zeroing process takes approximately 60 seconds. Status light will flash red.
- A solid Green LED means a successful zero.
- A solid Red LED means an unsuccessful zero.

Note: If solid Red LED is indicated, recycle power and repeat zeroing procedure or contact Technical Services at Brooks Instrument

Step 5: Operation

After the flowmeter or flow controller has been installed in the system it is ready for operation.

Meter: The meter will provide a flow signal proportional to the full scale flow of the device as indicated on the device label.

Controller: You must provide a setpoint/command signal to the controller. The controller will read the setpoint signal and will automatically adjust the valve to the appropriate position to achieve the desired flow and will provide a flow signal proportional to the full scale flow of the device as indicated on the device label.

Equipment Receipt and Return Procedures

Receipt of Equipment

When the equipment is received, the outside packing case should be checked for damage incurred during shipment. If the packing case is damaged, the local carrier should be notified at once regarding his liability. A report should be submitted to the nearest Brooks Instrument location listed on the Global Service Network page on our website: brooksinstrument.com/service-support
Remove the envelope containing the packing list. Carefully remove the instrument from the packing case. Make sure spare parts are not discarded with the packing materials. Inspect for damaged or missing parts.

Return Shipment

Prior to returning any instrument to the factory for any reason, visit our website for instructions on how to obtain a Return Materials Authorization Number (RMA #) and complete a Decontamination Statement to accompany it: brooksinstrument.com/service-support
All instruments returned to Brooks also require a Material Safety Data Sheet (MSDS) for the fluid(s) used in the instrument. Failure to provide this information will delay processing of the instrument. Instrument must have been purged in accordance with the following:

▲ WARNING

Before returning the device, purge thoroughly with a dry inert gas such as Nitrogen before disconnecting process connections. Failure to correctly purge the instrument could result in fire, explosion or death. Corrosion or contamination may occur upon exposure to air.

Global Headquarters

Brooks Instrument
407 West Vine Street
Hatfield, PA 19440-0903 USA
Toll-Free (USA): 888-554-FLOW
Tel (215) 362 3700
Fax (215) 362 3745
BrooksAm@BrooksInstrument.com

A list of all Brooks Instrument locations and contact details can be found at
www.BrooksInstrument.com

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