

spirax/sarco®

Orifice Plate Flowmeters Orifice Plate Flowmetering System (non-compensated)

DESCRIPTION

The Spirax Sarco Orifice Plate Metering system is suitable for measuring the rate of flow of steam, liquids and most gases. For steam and gas flowmetering applications where the operating pressure and temperature are steady, it is not necessary to incorporate any means of automatic density compensation. Liquids, being non compressible, are not significantly affected by pressure and temperature variations and so density compensation is not normally required.

OPTIONS AVAILABLE:

The Spirax Sarco Orifice Plate Metering package is available in a number of options to suit most requirements. For non density compensated applications, the following options are available :

- Option 1 M410 orifice plate and gaskets
- Option 2 M410 orifice plate, gaskets and M610 DP transmitter assembly
- Option 3 M410 orifice plate, gaskets, carrier ring assembly and F50C isolation valves
- Option 4 M410 orifice plate, gaskets, carrier ring assembly, F50C isolation valves and M610 DP transmitter assembly

DESCRIPTION

M410 orifice plate. This is installed in the line at the point where the flow is to be measured. It produces a differential pressure proportional to the rate of flow.

F50C isolation valves: These are used to isolate the impulse lines close to the orifice plate.

M610 DP transmitter assembly: This is installed close to the orifice plate and converts the differential pressure to a 4-20mA signal for retransmission to other equipment. The M610 is supplied ready fitted with a 3 way manifold which acts as secondary isolation and pressure equalization valve.

ASSOCIATED EQUIPMENT

M700 Display Unit. This is a panel mounting flow indicator that displays flow rate and total flow. It is available in several versions (use square root versions 17-24 with M410 orifice plates) with analog and digital outputs available. The M700 supplies 24v DC to power the M610 DP transmitter.

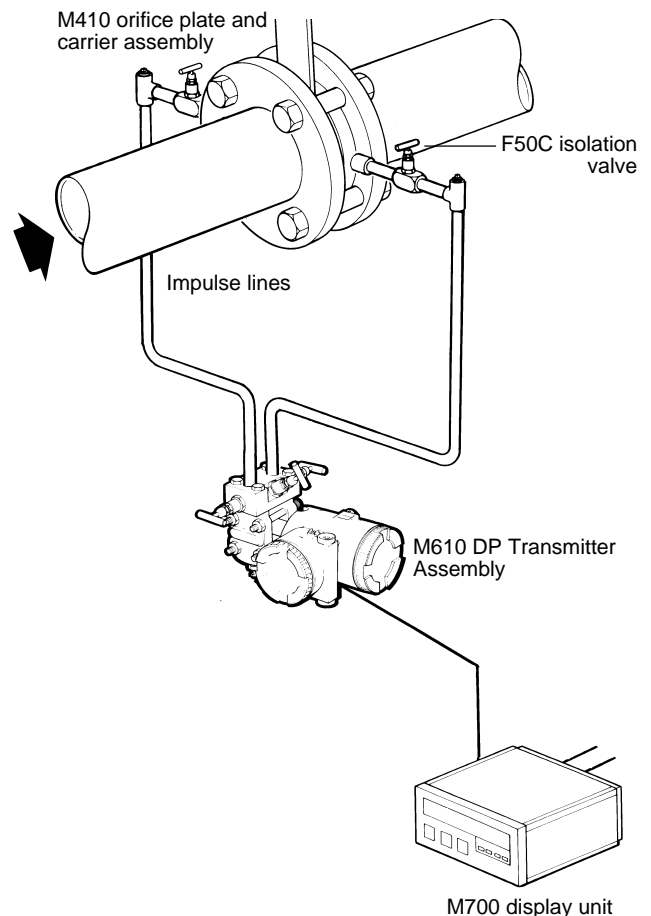
PERFORMANCE

The performance of an orifice plate metering system can be greatly influenced by installation variables, so the figures given below are for guidance only:

- Accuracy: typically +/- 3% of actual flow (equivalent to +/- 1.5% full scale deflection at 50% of rated maximum flow).
- Repeatability: typically +/- 0.3%.
- Turndown: typically 4:1.

INSTALLATION

It is important that all details of the installation conform to ASME-MFC-3M. Of special note, is the long, straight lengths of pipe that must be present upstream of the orifice plate. As an approximate guide, 20 to 30 pipe diameters upstream and 5 diameters downstream should be adequate but it is recommended that reference is made to the relevant standard. A summary of the basic requirements is included with the M410 equipment.



Typical configuration for a non density compensated steam application. Gas applications will differ slightly

HOW TO SPECIFY

1- Spirax Sarco M410 Orifice plate flowmeter system conforming to ASME-MFC-3M.

HOW TO ORDER

1- Spirax Sarco M410 Orifice Plate Steam Metering System to include tab handled plate and carrier, F50C isolation valves, M610 DP transmitter assembly and M700 Display Unit. (Full details as specified on Customer Data Sheet TIS 8.203)