



Made in America

• **F-5200 SERIES** •
**THERMAL MASS
 FLOW METER**



CALIBRATION

Every ONICON flow meter is wet calibrated in a flow laboratory against standards that are directly traceable to N.I.S.T. A certificate of calibration accompanies every meter.

FEATURES

Excellent Long Term Reliability -

ONICON thermal mass flow meters employ a low maintenance, non-moving parts technology to sense flow and are generally unaffected by debris in the flow stream.

Highly Accurate Over A Wide Operating Range -

Our proprietary hybrid analog/digital sensing circuitry is very stable and yet highly responsive to changes in flow. This stable yet responsive design allows for accurate flow measurement over a very wide operating range (over 1000:1 for the inline version). It also makes the meter ideal for measuring low flow rates.

Inline Meters Are Provided With Built-in Flow Conditioners -

Flow conditioners are built in to all 1/2" through 4" diameter inline meters. The flow conditioner significantly reduces overall straight run requirements for installation.

Insertion Meters Can Be Installed Without Interrupting Gas Service* -

ONICON's hot tap design allows for installation without interruption to the gas service. The meter can also be removed for service without disrupting flow.

Excellent Value -

ONICON insertion style meters are accurate, easy-to-use and reliable. They are also priced independently of pipe size. This makes them an excellent value, particularly in larger diameter pipes.

* See note on next page.



The optional D-100 Flow Display provides a local indication of rate and total and a network interface for BACnet, MODBUS, LonWorks, JCI - N2, or Siemens - P1 FLN networks.

DESCRIPTION

All F-5000 Series Thermal Mass Flow Meters provide accurate mass flow measurement of natural gas, compressed air and other industrial gases. The proprietary sensor design measures mass flow directly and does not require additional pressure or temperature compensation to deliver accurate flow data.

The F-5200 is available as an inline or an insertion style meter. Both versions require 24 VDC power and are provided with a single analog 4-20 mA output and a separate scalable contact closure pulse output.

APPLICATIONS

- Natural Gas
- Compressed Air
- Other Combustible Gases
- Industrial Gases

GENERAL SPECIFICATIONS

ACCURACY

Natural gas / Propane gas
 ± 1.0% of reading from 500 – 7000 SFPM
 ± 2.0 % of reading from 100 – 500 SFPM
 Compressed air & other high velocity calibrations
 ± 1.0 % of reading + 0.5% of scale over a
 100:1 turndown

OVERALL FLOW RANGE

5 to 35,000 SFPM

SENSING METHOD

Thermal mass flow utilizing hybrid analog/digital sensing circuitry

PIPE SIZE RANGE

Insertion style - 1" through 24" nominal diameter
 Inline style - 1/4" through 4" nominal diameter

INPUT POWER

Standard
 24 VDC ±10%, 100 mA maximum current

GENERAL SPECIFICATIONS (cont.)



FLUID TEMPERATURE RANGE

-40° F to +150° F standard (Consult ONICON for other operating ranges.)

AMBIENT TEMPERATURE RANGE

0° F to 150° F

OPERATING PRESSURE

250 PSI Maximum (Consult ONICON when higher pressure ratings are required.)

PRESSURE DROP (@ 2500 SFPM, 70° F and 2 PSIG)

Insertion Meter - Less than 0.5" W.C. (H₂O) in 1½" diameter pipes, decreasing in larger pipes
 Inline Meter - (with built-in flow conditioner)
 Less than 0.5" W.C (H₂O) in 2" and larger diameter meters
 Less than 0.9" W.C (H₂O) in 1" and 1½" diameter meters

OUTPUT SIGNALS PROVIDED

Analog output:
 Standard: 4-20 mA, active (internally powered)
 Optional: 4-20 mA, passive (externally powered)
 Scalable pulse output: Isolated contact closure output
 500ms duration

MATERIAL

Wetted metal components: 316 stainless steel

ELECTRONICS ENCLOSURE

Integral mount, weathertight NEMA 4 aluminum enclosure

ELECTRICAL CONNECTIONS

10 ft multi-conductor cable with a ½" NPT conduit connection
 4-wire minimum for power and 4-20 mA output
 2 additional wires required for scaled pulse output

* Installations must comply with federal, state and municipal building codes. Review all proposed combustible gas installations with your local code enforcement officials before attempting any installation.

NOTE: Specifications are subject to change without notice.

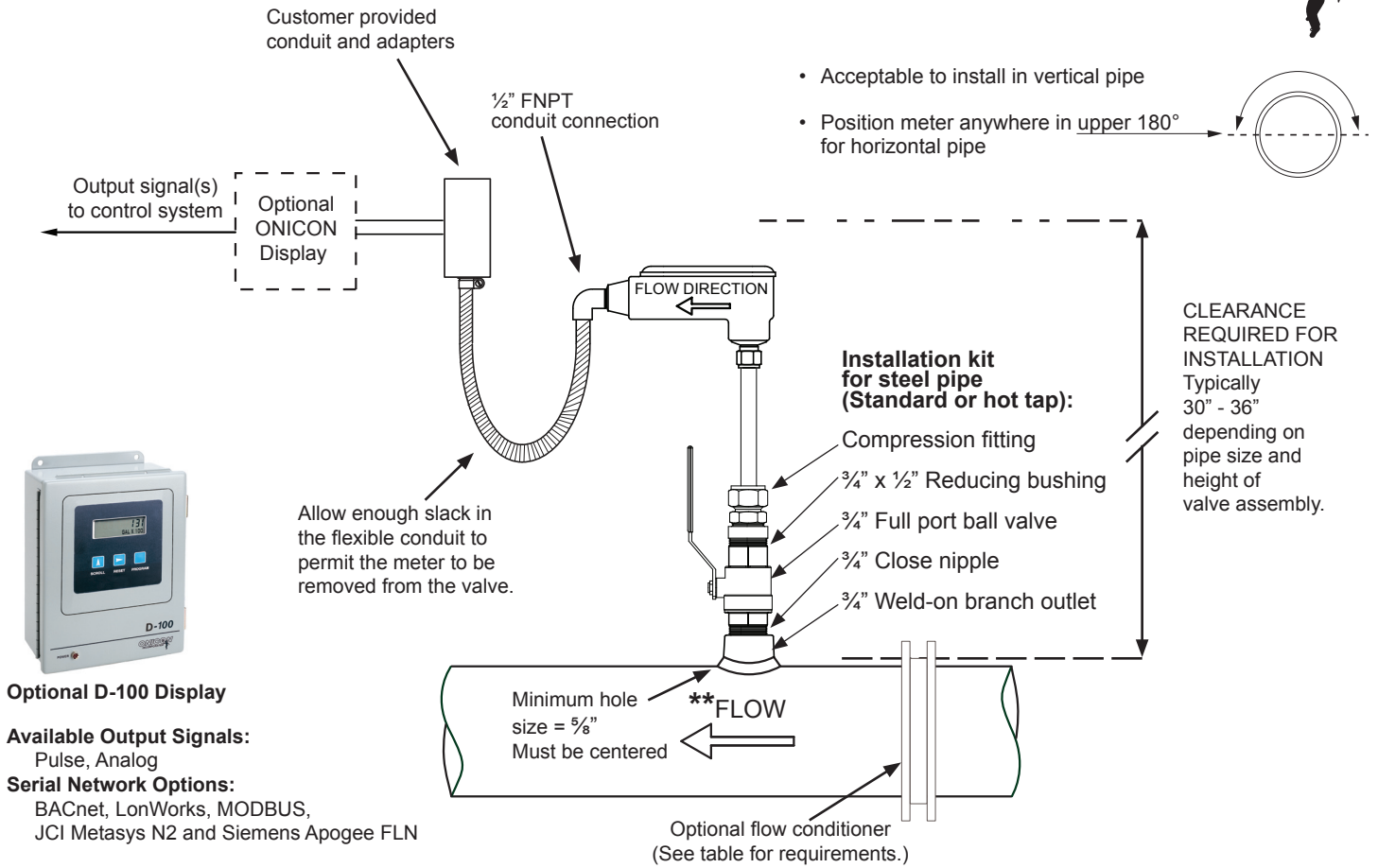
ELECTRICAL CONNECTIONS

Wire Color	Description	Notes
Red	+24 ±10% VDC @ 100 mA	Connect to power supply positive
Black	Supply common	Connect to power supply negative
Analog Output (Active)		
Blue	(+) Isolated analog output	Analog output signal
Brown	(-) Analog output common	Analog output common
Scaled Output		
White	Scaled output, isolated dry contact, 50 VDC @100 mA maximum	Non-polarized contact closure output
Orange	Scaled output, isolated dry contact, 50 VDC @100 mA maximum	Non-polarized contact closure output

Operating range for common pipe sizes 5 to 7000 SFPM in schedule 40 pipe

Pipe Size in inches	Flow Rate in SCFH	
	Min	Max
¼	0.2	304
⅜	0.4	557
½	0.6	886
¾	1.1	1,560
1	1.8	2,521
1¼	3.1	4,362
1½	4.2	5,938
2	7.0	9,740
2½	10	13,964
3	15	21,562
4	27	37,130
5	42	58,350
6	60	84,263
8	104	145,912

F-5200 TYPICAL INSERTION METER INSTALLATION

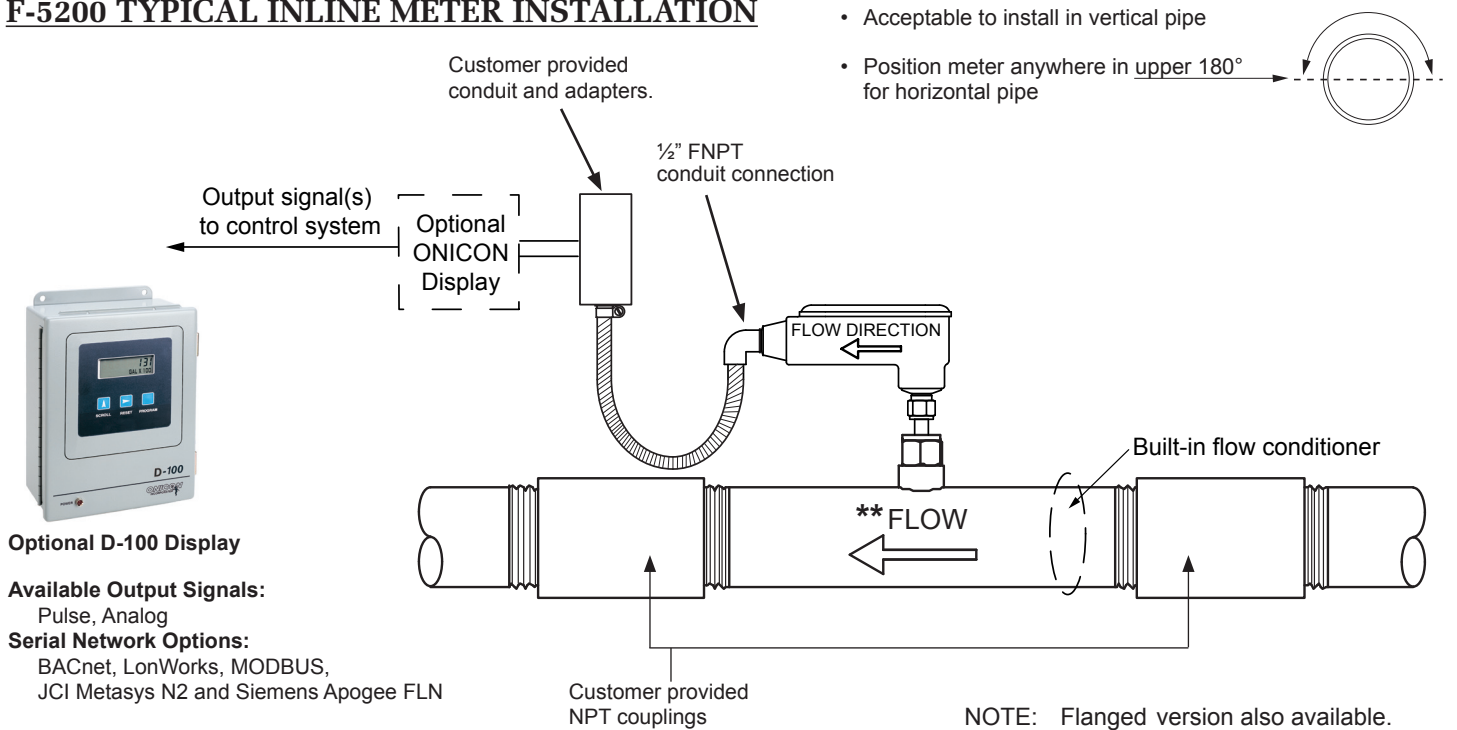


Optional D-100 Display

Available Output Signals:
Pulse, Analog

Serial Network Options:
BACnet, LonWorks, MODBUS,
JCI Metasys N2 and Siemens Apogee FLN

F-5200 TYPICAL INLINE METER INSTALLATION



Optional D-100 Display

Available Output Signals:
Pulse, Analog

Serial Network Options:
BACnet, LonWorks, MODBUS,
JCI Metasys N2 and Siemens Apogee FLN

** Standard orientation. Contact ONICON for other options.

ORDERING INFORMATION



F-5200 Thermal Mass Model # Codification F-52AA-1BCD-EFF

F-52 = Thermal Mass Flow Meter With Display, 4 - 20 mA & Scaled Pulse Outputs

AA = Pipe Diameter

00 = Insertion	13 = 1¼"
14 = ¼"	15 = 1½"
38 = ⅜"	02 = 2"
12 = ½"	25 = 2½"
34 = ¾"	03 = 3"
01 = 1"	04 = 4"

B = Line Voltage

1 = 24 VDC

C = Integral or Remote Mount

1 = Integral

D = Process Connections

0 = Insertion
1 = Threaded MNPT Connections
2 = ANSI Class 150 Flange
3 = ANSI Class 300 Flange

E = Flow Conditioner

1 = Insertion meter without conditioner
2 = Insertion meter with conditioner
3 = Inline meter

FF = Gas Type

NG = Natural Gas	O2 = Oxygen Gas
ME = Methane Gas	DA = Duct / Flue Air
PG = Propane Gas	HE = Helium Gas
CA = Compressed Air	NI = Nitrogen Gas
	XX = Other Gases

F-5200 Thermal Mass Meter Accessory Ordering Information

(F-5200 are limited to 150° F maximum temperature and 250 PSI maximum pressure.)

Item #	Accessory Item Description
Install kits for carbon steel pipe	
INSTL64	Installation kit for welded carbon steel pipe, 50 PSIG, 200° F max
INSTL69	Stainless steel installation kit for welded carbon steel pipe, 50 PSIG, 200° F max
INSTL70	Installation kit for welded carbon steel pipe, 250 PSIG, 140° F max
INSTL71	Installation kit for welded carbon steel pipe, 500 PSIG, 140° F max
INSTL72	Stainless steel installation kit for welded carbon steel pipe, 600 PSIG, 600° F max
Install kit for stainless steel pipe	
INSTL82	Stainless steel installation kit for welded stainless steel pipe, 250 PSIG, 140° F max