

12.0 Model Series FTMD to 235 psi (16 bar)

Description

The ITABAR-Sensor series FTMD is designed to measure volumetric flow of saturated steam up to an operating pressure of $p_{\max} = 235$ psi (16 bar) and a operating temperature of $T_{\max} = 300$ °C / 572°F. The sensor construction features a welding boss between the pipe and the sensor-related parts, a compression fitting to seal the sensor and a gate valve to insert the sensor profile into the pipe. The insertion or removal of the sensor is made easy by two guide-rod spindles or (as an option) via a hand wheel driven gearbox.

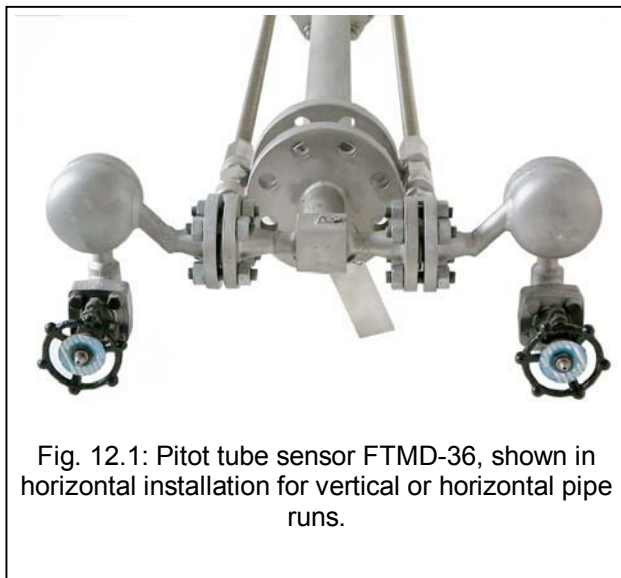
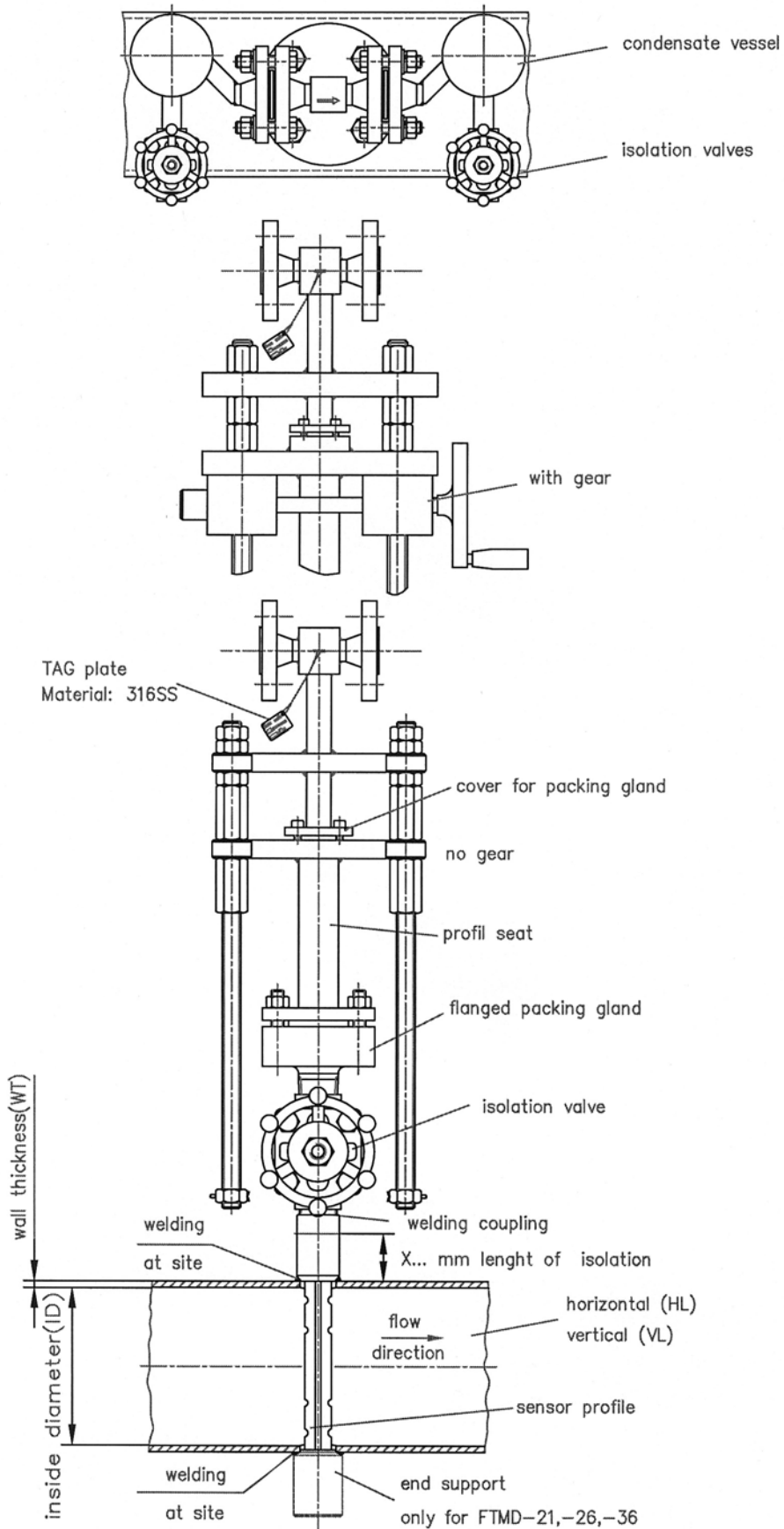


Fig. 12.1: Pitot tube sensor FTMD-36, shown in horizontal installation for vertical or horizontal pipe runs.



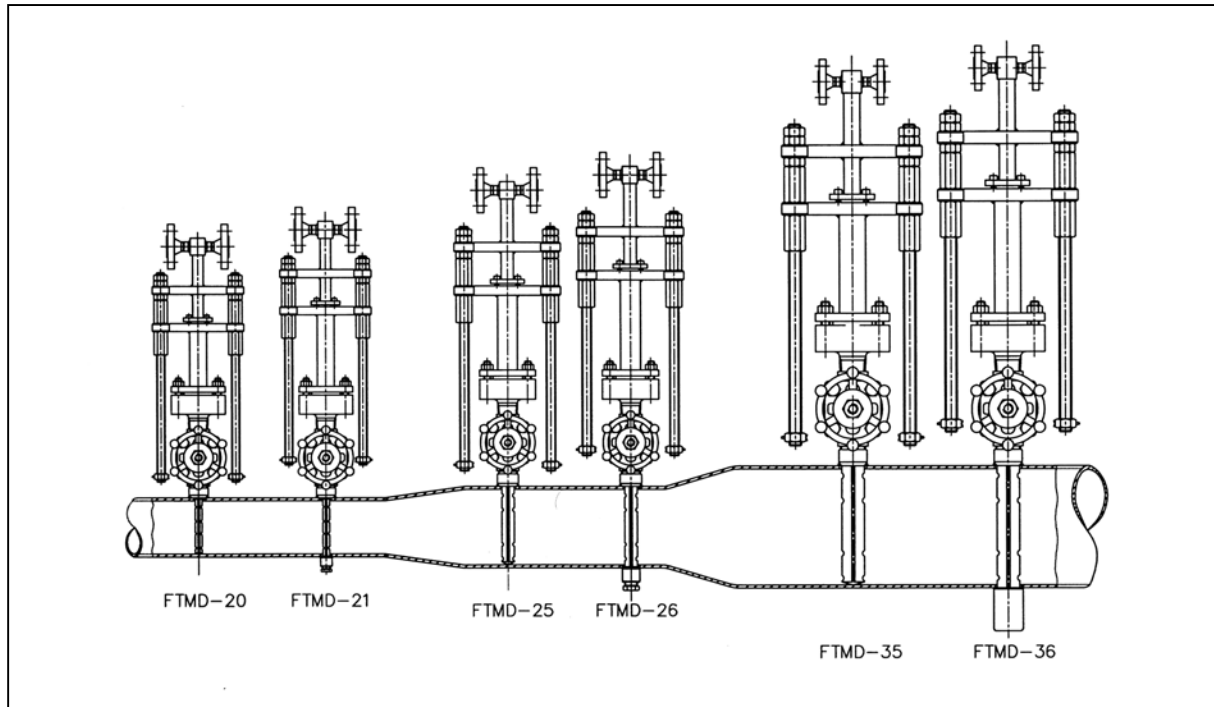
Fig.12.2: Pitot tube sensor FTMD-36 made of st. steel for pipe size ID= 336.5 mm

Drawings of ITABAR Series FTMD



Ordering Data for ITABAR Series FTMD-20/21/25/35/36

1. Sensor Type



Pipe size (inches)	Maxium allowable volumetric flow in GPM					
	Sensor type					
	FTMD -20	FTMD -21	FTMD -25	FTMD -26	FTMD -35	FTMD -36
1 1/2	175	502	---	---	---	---
2	260	708	---	---	---	---
2 1/4	409	1069	---	---	---	---
3	572	1443	---	---	---	---
4	787	1936	902	2398	---	---
5	1047	2512	1240	3168	---	---
6	---	---	1579	3938	---	---
8	---	---	2270	5473	---	---
10	---	---	3027	7150	---	---
12	---	---	3841	8962	7739	18519
14	---	---	4637	10718	9438	22321
16	---	---	5403	12460	11154	26158
20	---	---	7013	15976	14462	33528
24	---	---	8588	19483	17850	41087
28	---	---	10212	23069	21370	48923
32	---	---	11910	26870	24965	56962
36	---	---	---	30839	---	65155
40	---	---	---	34896	---	73189
48	---	---	---	43010	---	90090

These values are valid for water with a density of $\rho = 0,9982 \text{ kg/l}$ and a temperature $T = 20 \text{ }^\circ\text{C}$. To calculate volumetric flow or mass flow for fluids of another density ρ_1 see chapter 6 „Specifications of pitot tubes with WINFLOW“.

1. Order specification ITABAR-FLOW-Sensor, series FTMD-20 / 21

1. type of sensor	
20	without end support
21	with end support
2. inside diameter and wall thickness.	
ID / W.-thickn.	inside diameter and wall thickness in inches (or mm), please specify
3. sensor material	
S	316 SS
4. welding coupling	
00	without
07	material: C.S.
08	material: 316 SS
5. end support (only FTMD-21)	
Y	without end support
C	end support material: C.S.
S	end support material: 316 SS
6. isolation valve for the sensor profile	
AS1	gate valve 1", material: C.S. PN16 / 150 lbs
AS2	gate valve 1", material: 1.4401 PN16 / 150 lbs
7. flanged packing gland	
S	material: 316 SS
8. cage nipple	
PC	material: C.S.
PS	material: 316 SS
9. packing material for the flanged and welded packing gland	
2	packing material: graphite, max 400°C
10. condensate vessel	
	s. page 162
11. thermal isolation	
KI	without
X..	thermal isolation in inches or mm, please specify
12. piping run	
HL	horizontal
VL	vertikal
13. gears	
0	without gears
1	with gears
	14. process connect., s page 162

FTMD- / S S 2

1. Order specification ITABAR-FLOW-Sensor, series FTMD-25 / 26

1. type of sensor	
25	without end support
26	with end support
2. inside diameter and wall thickness.	
ID / W.-thickn.	inside diameter and wall thickness in inches (or mm), please specify
3. sensor material	
S	316 SS
4. welding coupling	
00	without
07	material: C.S.
08	material: 316 SS
5. end support (only FTMD-26)	
Y	without end support
C	end support material: C.S.
S	end support material: 316 SS
6. isolation valve for the sensor profile	
AS3	gate valve 1 1/2", material: C.S. PN16 / 150 lbs
AS4	gate valve 1 1/2", material: 1.4401 PN16 / 150 lbs
7. flanged packing gland	
S	material: 316 SS
8. cage nipple	
PC	material: C.S.
PS	material: 316 SS
9. packing material for the flanged and welded packing gland	
2	packing material: graphite, max 400°C
10. Condensate vessel	
	s. page 162
11. thermal isolation	
KI	without
X..	thermal isolation in inches or mm, please specify
12. piping run	
HL	horizontal
VL	vertikal
13. gears	
0	without gears
1	with gears
14. integ. RTD resit. thermocouple	
TO	without
TA	3-wire
TB	3-wire, with ex-proofness
	15. process con., s page 162

FTMD- / S S 2

1. Order specification ITABAR-FLOW-Sensor, series FTMD-35 / 36

1. type of sensor	
35	without end support
36	with end support
2. inside diameter and wall thickness.	
ID / W.-thickn.	inside diameter and wall thickness in inches (or mm), please specify
3. sensor material	
S	316 SS
4. welding coupling	
00	without
07	material: C.S.
08	material: 316 SS
5. end support (only FTMD-36)	
Y	without end support
C	end support material: C.S.
S	end support material: 316 SS
6. isolation valve for the sensor profile	
AS3	gate valve 2", material: C.S. PN16 / 150 lbs
AS4	gate valve 2", material: 1.4401 PN16 / 150 lbs
7. flanged packing gland	
S	material: 316 SS
8. cage nipple	
PC	material: C.S.
PS	material: 316 SS
9. packing material for the flanged and welded packing gland	
2	packing material: graphite, max 400°C
10. condensate vessel	
	s. page 162
11. thermal isolation	
KI	without
X..	thermal isolation in inches or mm, please specify
12. piping run	
HL	horizontal
VL	vertikal
13. gears	
0	without gears
1	with gears
14. integ. RTD resit. thermocouple	
TO	without
TA	3-wire
TB	3-wire, with ex-proofness
	15. process con., s page 162

FTMD- / S S 2

Order specification condensate vessel**type FTMD 20, 21, 25, 26, 35, 36****flanged joint at sensor head**

K0	without condensate vessel
K1	condensate vessel, welding stud 21,3mm, edge form 21 acc. DIN 2559

material and size condensate vessel

H	Kesselbach H11	size Ø 88,9 x 5 mm
S	material: 316 SS	size Ø 88,9 x 3,2 mm

**Order specification connection and shut-off device****type FTMD- 20, 21, 25, 26, 35, 36****shut-off device for effect pressure pipe, standard with welding condensate vessel**

A00	without gate valve
A81	ANSI small gate valve, nominal pressure 800 lbs connection: 1/2"-NPT, material case: A105, packing: graphite glas-fibre
A82	ANSI small gate valve, nominal pressure 800 lbs connection: 1/2"-NPT, material case: 316L, pcking: graphite glas-fibre

**Order specification condensate vessel (only compact construction)****type FTMD 20, 21, 25, 26, 35, 36****flanged joint at sensor head**

A1	condensate vessel with sensor head, effect pressure pipe and direct welding flange
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material and size condensate vessel

H	Kesselbach H11	size: Ø 88,9 x 5 mm
S	material: 316 SS	size: Ø 88,9 x 3,2 mm

**Order specification connection, only with A1****type FTMD- 20, 21, 25, 26, 35, 36****connections**

A06	flanged joint for 3-way manifold
A07	flanged joint for 5-way manifold

**Order specification shut-off device, only with A1****type FTMD- 20, 21, 25, 26, 35, 36****shut-off device for effect pressure pipe**

A00	without shut-off device
A66	mounted 3-way manifold, PN400, 1.4401 / packing: graphite
A71	mounted 5-way manifold, PN400, 1.4401 / packing: graphite

