



FLOMAT Electromagnetic Insertion Flow Meter

Introduction

Designed especially for flow measurement in pipes with large diameters.

Available in two versions, one as a fixed installation and the other in a removable system that enables the flow meter to be removed from a full pipe (under pressure).

Uses a small pipe adaptor, with union style thread 2 1/4", or flange DIN DN40 PN16 or DN40 TF special, for welded to the pipe and suitable for pipe sizes down to Ø 40 mm.

Benefits

- Measurement is independent of the density, temperature, viscosity and pressure of the liquid.
- Alternating magnetic field for measurement avoids electrolysis.
- Absence of obstructing elements gives low pressure and will allow solids to pass easily.
- Can be mounted in any position providing the pipe is always full.
- Low power consumption.
- Excellent stability with temperature and over time.
- No moving parts eliminates maintenance.
- Straight pipe requirement is short, only 10 DN upstream and 5 DN downstream.
- Good chemical resistance of construction materials

Sensor Technical Data

- Pressure Rating: PN16 bar (others on request)
- Working Temperature:
 - Separate Version (electronics away from sensor)
 - Material AISI-316 + PVDF, -20°C ... +130°C
 - Material PVDF, -20°C ... +130°C
 - Compact Version (electronics integral with sensor)
 - Material AISI-316 + PVDF, -20°C ... +70°C
 - Material PVDF, -20°C ... +70°C

It is important to have good ventilation around the sensor for the compact version. In applications with elevated temperatures, the ambient temperature should not exceed 50°C.

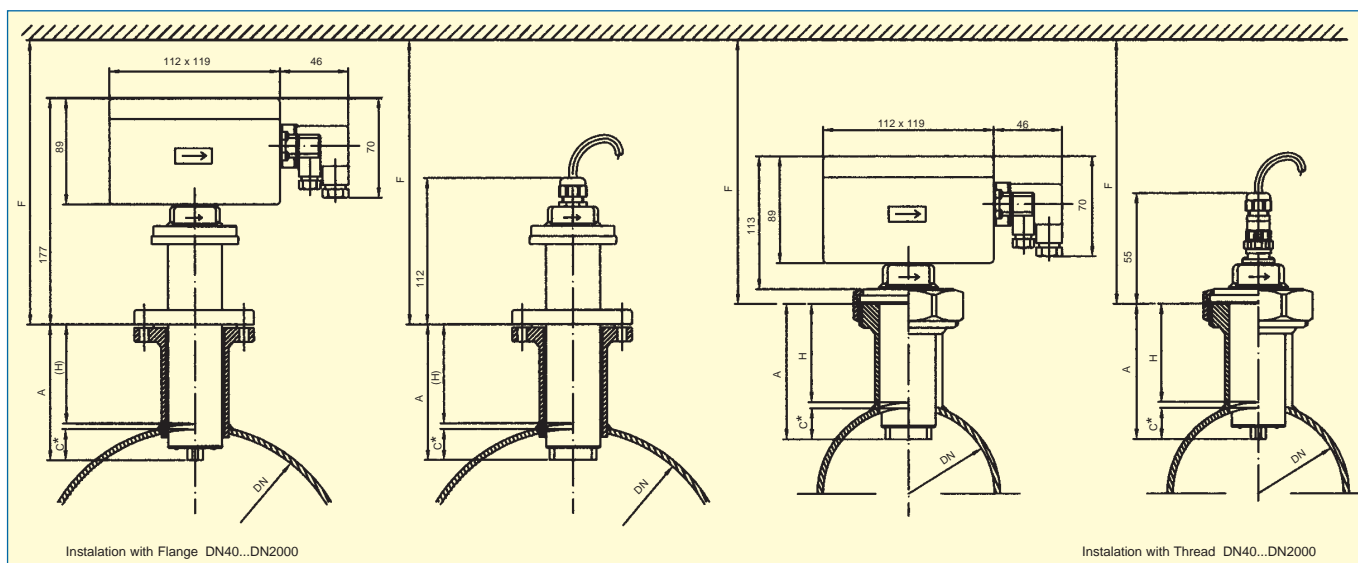
- Electrodes: Hastelloy C (on request Titanium, Zirconium, etc.)
- Field Coil Current: 130 mA 6,25 / 7,5
- Liquid Conductivity: >20 µS / cm
- Accuracy: ± 3,5%



FLOMAT Sensor (Dimensions in mm)

DN	A	C*	(H)	F			
				Compact		Separate	
				Flanged	Threaded	Flanged	Threaded
40...100	105	15...15	90...88				
125...300	105	19...45	82...53	300	240	230	180
350...400	105	52...60	46...32				
500...1000	210	75...150	125...50	400	340	340	280
1200...2000	360	180...300	168...40	550	490	490	430

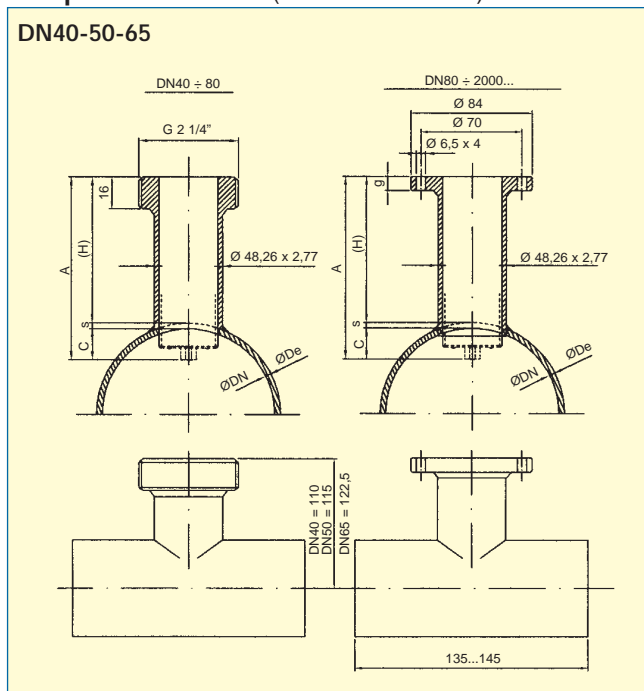
*Approximately 15 % of DN



Installation with Flange DN40...DN2000

Installation with Thread DN40...DN2000

Adapter "T" Peice (Dimensions in mm)



*Flanges to Tecfluid special standard

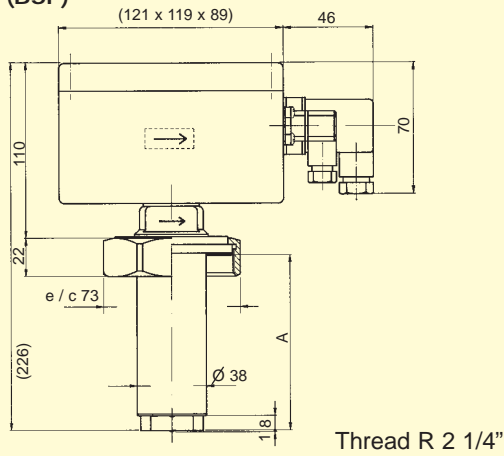
Dimensions in mm

DN	A Length of sensor	C	(H)	De*	s	Length total of insertion
40		15	86	48,3	2,6	
50		15	86	60,3	2,9	
65		15	86	76,1	2,9	
80		15	86	88,9	3,2	
100		15	86	114,3	3,6	
125	105	19	82	139,7	4,0	93
150		22	78	168,3	4,5	
200		30	69	219,1	5,9	
250		38	61	273,1	6,3	
300		45	46	318	7,5	
350		52	41	255,6	8	
400		60	33	41,9	10	
500		75	186	521	11,5	
600		90	111	632	12	
700	210	105	96	724	12	145
800		120	81	827	13,5	
900		135	66	928	14	
1000		150	51	1032	16	
1200		180	180	1236	18	
1400		210	150	1136	18	
1600	360	240	120	1640	20	190
1800		270	90	1844	22	
2000		300	60	2060	25	

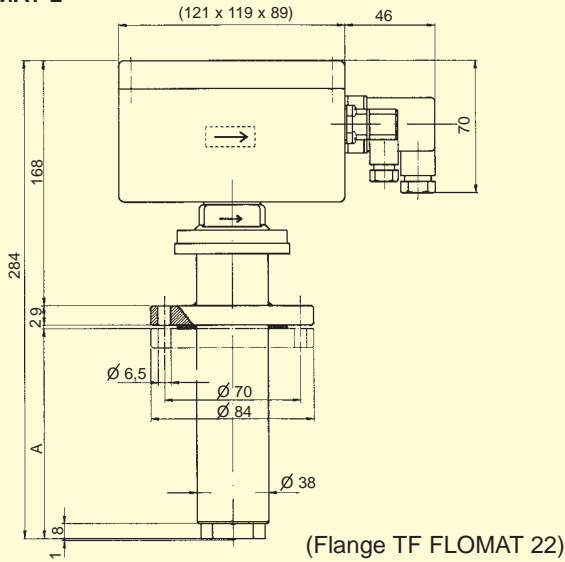
*De approximated and dependant on the materials and rating of the pipe

Dimensions & Weights

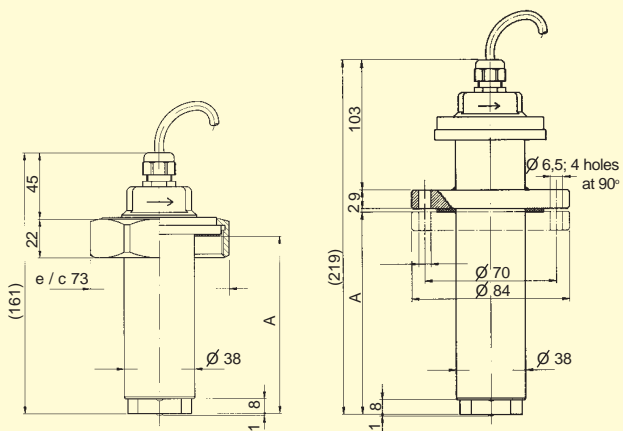
Compact Electronics MC/T, MC/FT, MC/S FLOMAT 1 (BSP)



FLOMAT 2



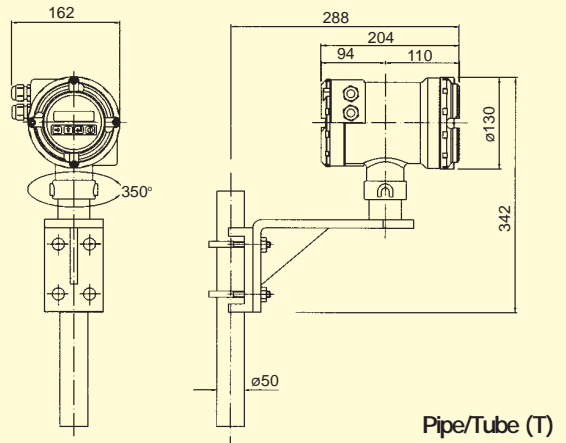
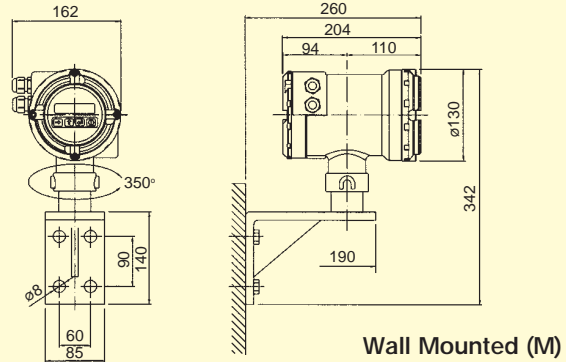
Sensor-Monting Separate



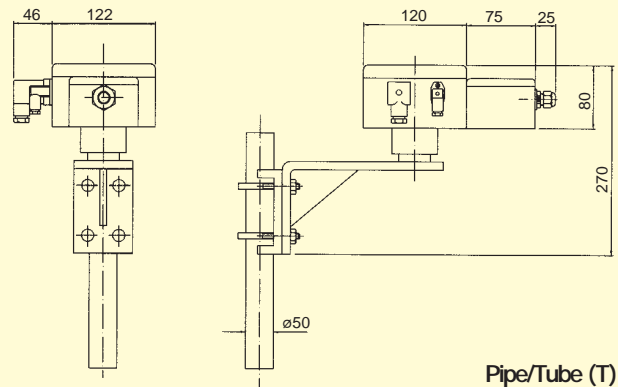
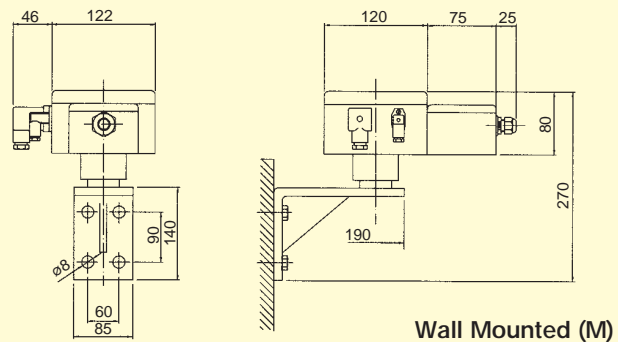
FLOMAT 1
R 2 1/4" Thread BSP
(Others on Request)
Weight 0,9 kg

FLOMAT 2
Flange Standard TF
(Others on Request)
Weight 1,5 kg

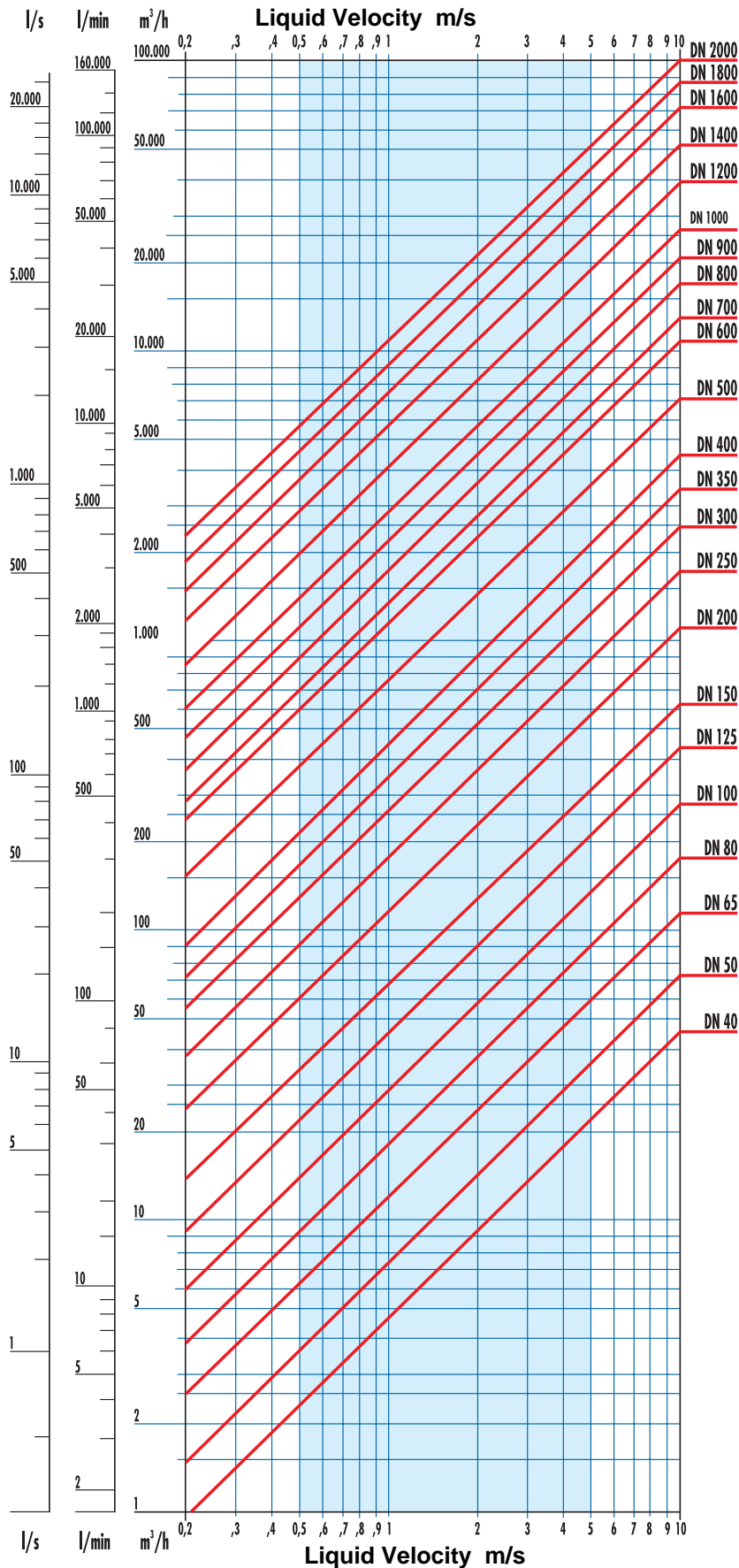
Separate Electronics MX/M...T



Separate Electronics MC/T-M...T, MC/FT-M...T, MC/S-M...T



FlowRateTable



Selection of pipe size

The diagram shows the relationship between the liquid velocity and the flow rate for different pipe sizes.

A pipe size should be selected to give a maximum normal working liquid velocity of about 3-4 m/s.

The minimum working liquid velocity should not be below 0.5 m/s.

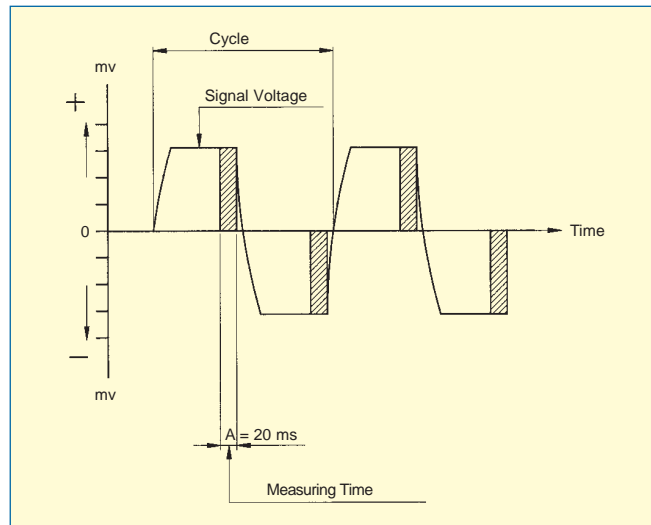
The recommended working liquid velocity is 1 to 3 m/s.

When the liquid has suspended solids, it is recommended to work between 3 to 5 m/s to avoid the settling of solids in the pipe.

Control Electronics

To arrange for different options for the control of flow for, Hi and Lo flow alarms/switches, transmitters for 0...4-20 mA, Frequency (Hz) signals or for batch control, there are different models of electronics compatible with the different types of sensors available.

- Model MX-M & MX-T, for wall or pipe mounting, with separate FLOMAT sensor.
- Model MC/T, MC/FT & MC/S, for mounting directly onto the FLOMAT sensor.
- Model MC/T-M...T, MC/FT-M...T y MC/S-M...T, for wall or pipe mounting, with separate FLOMAT sensor.



Technical Data for the Electronics Unit

MX-M, MX-T (Separate Version)

- Enclosure of coated Aluminium (Polyamide 11). Protection to IP 67
- Programable via membrane covered push buttons.
- Electronics with signal isolation to the sensor and the output signals.
- Counter for Total and Batch flows.
- Batch control functions, with remote or panel operation.
- Magnetic Field: 6.25 Hz from a mains of 50 Hz
7.5 Hz from a mains of 60 Hz
- Power Supply: 12 V, 24 V, 110 V, 120 V, 220 V,
240 V ac, $\pm 10\%$, 50 & 60 Hz
24 V dc
(Other options on request)
- Power Consumption: <10 VA
- Flow Minimum: Programable
- Measurement Range: 0...7 m/s
- Display: 16 character x 2 line LCD
6 display formats selectable within the program and also from the front panel.
- Flow Indication: Units programable by the user.
- Totalizer Volume: Up to 9,999,999
- Batch Volume: Units programable by the user.
- Analogue Output: 4-20 mA, programable

- Signal Mode, Pulses / l.: Programable max. 2 Hz
- Signal Mode Frequency: 10 ... 1,000 Hz
- Relay Outputs: Two relays programable, as hi or lo flow rates, empty pipe detection, flow direction, or preselection
Integration Time programable from 0.1 ... 25.5 s
- Filter:
- Linearity: 0.1%
- Zero drift: 0.05%
- Temperature drift: 0.015% / °C
- T^a ambient temperature: -10 ...+60°C



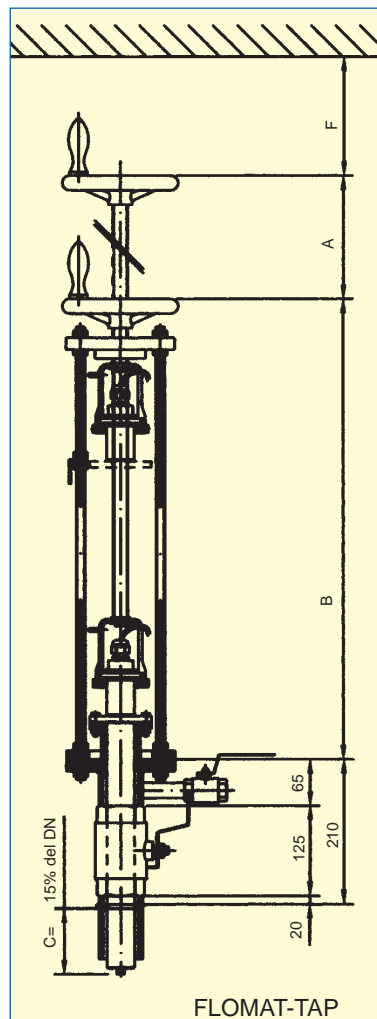
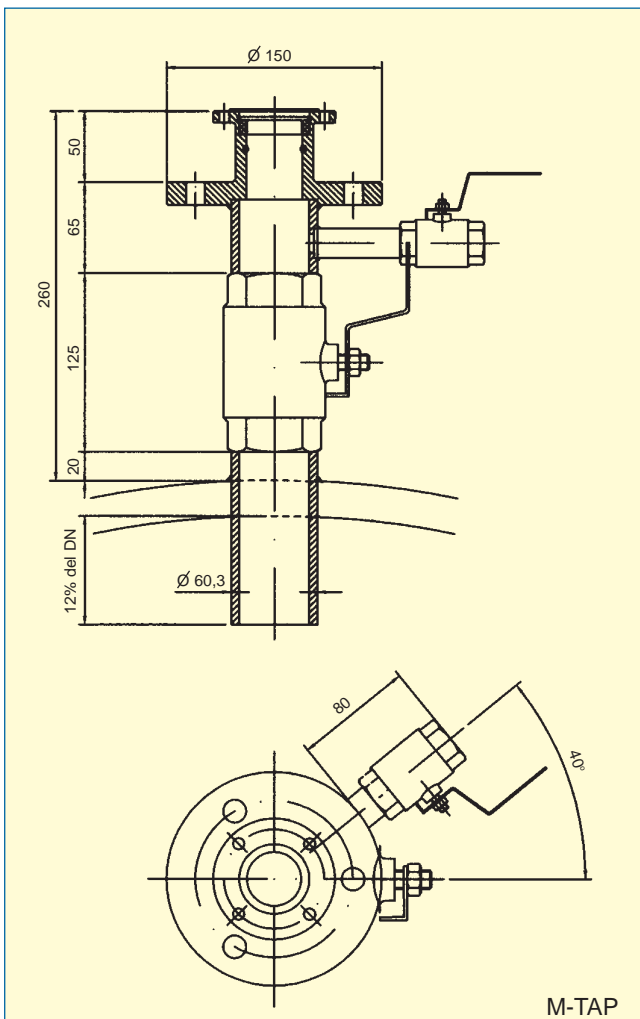


FLOMAT-TAP

- The Model FLOMAT-TAP is an accessory for the installation of the FLOMAT electromagnetic flow meter sensor.
- Allows insertion & removal under pressure (full pipe), for the FLOMAT measurement sensor.
- Designed for taking readings at different points in a network or system of pipes, with only one flow meter.
- Allows for the replacement of the flow sensor, if required, without the need to stop the flow in the pipe.
- The special pipe adapter with ball valve, M-TAP, is required to accept the FLOMAT-TAP.

Dimensions FLOMAT-TAP vs DN

	DN50...DN600	DN700...DN1200	DN1300...DN2000
A	385	480	588
B	720	830	960
F	200	200	200



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Las diferentes formas y medidas de los aparatos descritos en este folleto, pueden ser modificadas, sin previo aviso si las innovaciones técnicas en nuestros procesos de fabricación lo requieren.



XT5 /XT5H Converter for Flomid/Flomat Electromagnetic sensors Series XT5 / XT5H

- DC coil excitation obtains a negligible zero drift.
- Pulse output.
- Analog output 4-20 mA (active or passive).
- Easily user configurable without having to open the enclosure (touch keys).
- Different working units, independent for flow rate and totalizer.
- Easy replaceable between Flomid and Flomat FX sensors.
- Compact or separate mounting.
- Orientable display (two positions) to adapt to the installation position.
- Local indication of flow rate and totalizer. Totalizer reset.
- Configurable flow rate direction.
- Empty pipe indication.
- HART protocol compatibility (model XT5H).
- U.V. resistant polycarbonate enclosure. Ingress protection IP67.

