



# UTATIP METERTEK DUAS

## SOLUSI METER & FLOWMETER



## Flostar M

Designed to meet the advanced needs of today's water utilities in large revenue applications

### New Flostar M DN 150

Flostar M is now available up to DN 150, featuring a patented innovative semi parabolic turbine. With optimized low flow performances and secured capacity at peak flows, Flostar M DN 150 will bring billing of industrial customers to unmatched efficiency.



The patented semi parabolic turbine of new Flostar M DN 150 has an approved measuring dynamic of 630 (Q3/Q1).

#### Wide Measuring Range

Flostar M is a single jet meter available in sizes from DN 40 to 150.

Its metrological performances far exceed ISO/IEC Class C standards.

Its low flow accuracy range combined with significant peak flow capacity ensure complete and efficient measurement whatever the faced flow-rates.

#### Reliability

Flostar M features a direct magnetic transmission between the turbine and the register without any intermediate gearing in the metered water.

This results in a very robust and reliable design able to withstand most types of potable water environments.

Ease of read in the toughest humid environments (ie: flooded pits) is secured

by hermetically sealed register (copper can/mineral glass envelope).

#### Metrological Stability

With over twenty years experience in single jet design and manufacturing, metrological performances are achieved by design and use of high quality components with no need for an external calibration. This ensures great metrological stability in production and over time.

#### Endurance & Peak Flow Resistance

Performance over time is a key requirement for efficient billing. Flostar M features a patented turbine ball pivoting enhancing endurance at low flow-rates. Hydrodynamic balance and turbine design bring resistance at high and peak flows.



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- ▶ Single jet Class C
- ▶ Hermetically sealed register (coppercan/mineral glass envelope)
- ▶ Patented ball pivot
- ▶ Patented turbine levitation



▶ Flostar M DN 150



▶ Flostar M indicator



▶ Cyble RF fitted on Flostar M

### Working Principle

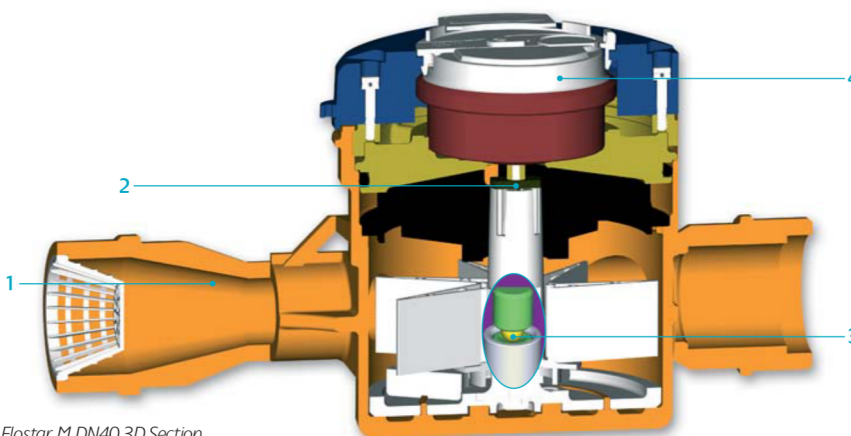
Flostar M is a single jet meter. The water jet is canalized by an injector before hitting the turbine. The single jet tapered injector straightens the flow profile. Its large bore area prevents meter overspeed by clogging.

The high precision processing of the inlet **1** allows Flostar M to meet best accuracy without the need for any bypass or calibration vane adjustment system. The turbine movement is directly transmitted to the extra dry register through a magnetic coupling **2** without the need for any intermediate gearing in the metered water.

This results in a meter with very stable accuracy initially and over time in the widest range of installation configurations and potable water nature.

High quality material for the turbine bearings and patented ball pivot **3** design are securing leakage metering initially and over time regardless of the flow profiles.

The hermetically sealed copper can/mineral glass envelope of the register **4** is safeguarding the read and integrity of the indicator in the toughest environments (flooded pits, mechanical tampering attempts, ...).



Flostar M DN40 3D Section

### Communication

Flostar M is supplied pre-equipped with **Cyble Target**

Allows communication and remote reading through:

- Pulse output (Cyble Sensor)
- M-Bus protocol (Cyble M-Bus)
- Radio frequency wireless link (Cyble RF)

These Cyble modules allow the Flostar M meter to be connected with various associated systems if and when desired. They are particularly adapted to commercial and industrial applications where a need for frequent meter monitoring is expressed especially in hard-to-read locations.

#### Key Advantages of Cyble Technology

- No need for additional investment on the meter to implement remote reading
- Actaris standardized meter interface, irrespective of meter technology and widely spread on Actaris water meters range
- Reliability brought by electronic switch (no wear or bouncing)
- Reverse flow management
- Principle proven on the field with a 20 years experience
- Pre-equipment being immune to magnetic tampering



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### Metrological Characteristics

#### Performance Values

Nominal diameter (DN)	mm	40	50 or 65	65 or 80	80 or 100	100 or 150	150
		inches	1" 1/2	2" or 2" 1/2	2" 1/2 or 3"	3" or 4"	4" or 6"
Starting flow*	L/h	22	32	35	50	70	90
Accuracy ± 2% from*	L/h	65	80	120	180	280	300
Accuracy ± 5% from*	L/h	45	60	100	120	170	200
Admissible peak flow (2 hrs. max.)**	m³/h	40	50	60	90	120	260
Max. temperature for short period	°C	60					
Max. admissible pressure	bar	16		20			
Cycle HF pulse weight	L	10			100		

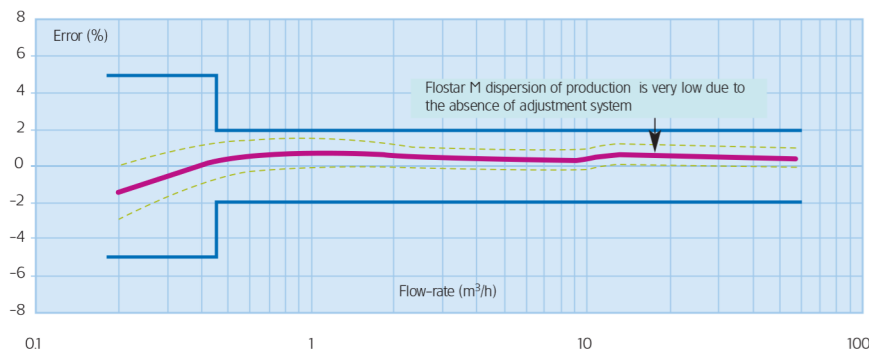
\* Average values - \*\* Without impact on accuracy performances.

#### EEC/ISO Approval Values

Nominal diameter (DN)	mm	40	50 or 65	65 or 80	80 or 100	100 or 150	150
		inches	1" 1/2	2" or 2" 1/2	2" 1/2 or 3"	3" or 4"	4" or 6"
EEC/ISO class approval		Class C horizontal position*					
Nominal flow rate	Qn m³/h	10	15	20	30	50	100
Maximum flow rate	Qmax m³/h	20	30	40	60	100	200
Accuracy ± 2% class C	Qt L/h	150	225	300	450	750	1500
Accuracy ± 5% class C	Qmin L/h	100	90	120	180	300	600
Testing pressure	bar	25		32			
Max. temperature	°C	30					
Headloss group	bar	1		0.6			1
Min. scale interval	L	0.5			5		
Indicating range	DN 40 to 100	999 999.99 m³					
	DN 150	9999 999.9 m³					
EEC approval certificate	DN 40 to 100	F-06-G-1546					
	DN 150	F-06-G-219					

\* DN 65, 80 and 100 approved in class B other positions.

### Typical Accuracy Curve, Flostar M Qn 30 m³/h



### New Mobile Flanges

New Flostar M DN 150 is equipped with mobile flanges allowing easy installation in a horizontal position.



### Easy sizing of the meter

- ▶ Qn 15, 20, 30 and 50 m³/h can be supplied with the upper DN length and flanging for easy downsizing in the field (meter sizing adaptation to real faced flow-rates).

### Options

- ▶ Wire sealed metallic cap equipped with a lockable lid is available as an option for harsh environments (Qn 20 to 100 only).



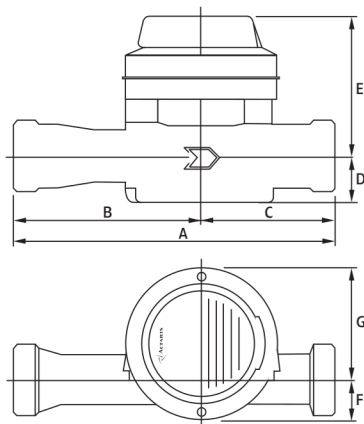
- ▶ Hot water version (90°C) available in DN 40 and 50 (plastic register).



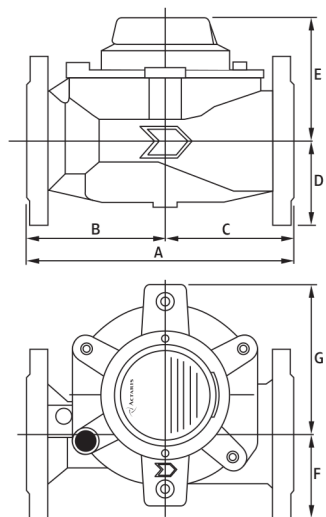
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### ► DN 40 and 50 (threaded)



### ► DN 50 to 150 (flanged)



## Dimensions

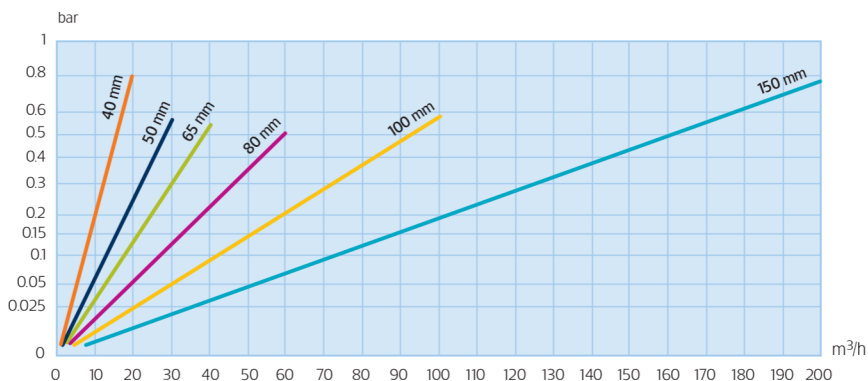
Nominal diameter (DN)	mm	40	50	50	65	80	100	150
Meter thread		G 2" B	G 2" 1/2 B		Flanges ISO PN 10/16			
A (length)	ISO	mm 300	300	300	300	350	350	450*
	DIN	mm -	270	270	300	300	360	-
B	mm	175	175	175	180	200	184	240
C	mm	125	125	125	120	150	166	210
D	mm	45	48	83	92	100	110	144
E	mm	133	130	130	129	135	148	173
F	mm	40	40	83	92	100	110	144
G	mm	104	104	104	118	171	198	236
Weight	kg	5.7	6	10	17	21	31.5	62.1

\* Additional sleeve DN 150 length 50 mm available.

## Installation requirements

- Flostar M should be installed in the horizontal position with totalizer facing up for optimum performances.
- Installation of a strainer upstream of the meter is recommended to protect the hydraulics against debris that might result from accidents on the network, piping corrosion, ... (see Actaris strainer leaflet – Flostar M DN 40 is supplied as standard with a strainer and can be fitted with standard non return valve on request).
- Flostar M is not sensitive to flow disturbers.

## Head Loss



For more information, please contact your local agency.



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