

# WP/Dynamic - Turbine Water Meters

for hot water up to 266 °F / 130 °C



## Flanged Mechanical Turbine Water Meters

1.5 inch to 12 inch

DN 40 to DN 300

### Special Features

- Hermetically sealed register (IP 68)
- Hydro-Dynamically balanced rotor (Meinecke Patent)
- Symmetrical calibration adjustment (Meinecke Patent)
- Register may be rotated up to 360°
- High Overload capability
- Pattern approved removable measuring element
- Enamel Powder Coating provides maximum corrosion protection
- Not affected by external magnetic fields

### Application:

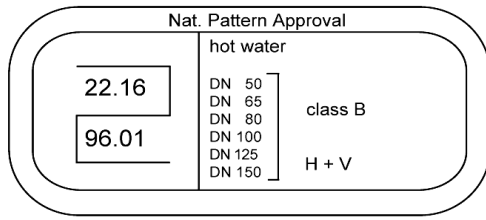
- Measurement of hot water up to 266°F / 130°C
- **Line Sizes:** 1-1/2", 2", 3", 4", 6", 8", 10" & 12" (40mm, 50mm, 80mm, 100mm, 150mm, 200mm, 250mm & 300mm)

### Options:

- **Connections:** ANSI 150lb, DIN PN-16 RF Flanges
- **Registration:** 6-Digit Non-Resettable Roller Counter (Odometer Style) reading in US Gallons or Cubic Meters
- **Output:** Reed or Opto Style Pulsers



## Design Approval



## Installation Guidelines

Pipe	horizontal	
	vertical	
	inclined	
Meter Head	upwards	
	sideways	

## Installation Requirements

- Provide a minimum of 3 pipe diameters of straight, unobstructed pipe upstream of the meter
- The Pipe Diameter should not be reduced directly in front of or behind the meter.
- No abrupt restrictions directly behind the meter
- All regulation of the flow should be done behind the meter.
- The meter must be installed in the pipe free of stress.
- The location of the meter should be such that it is not possible for air pockets to develop in the meter; For instance, the meter should not be located at high points in the pipeline or operated under half full pipe conditions.

## Performance Data

Performance Table - WP/Dynamic Hot Water Meter (< 266°F / 130°C)

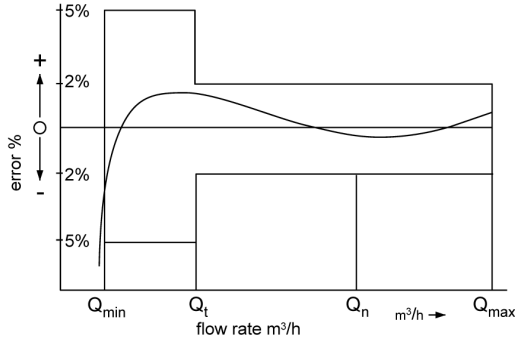
Meter Line Size:			1.5"	2"	3"	4"	6"	8"	10"	12"
			40mm	50mm	80mm	100mm	150mm	200mm	250mm	300mm
Q <sub>max</sub>	maximum peak flow	gpm	88.1	132.1	396.2	616.4	1320.9	2201.4	4402.9	5283.4
		m <sup>3</sup> /hr	20	30	90	140	300	500	1000	1200
Q <sub>n</sub>	max continuous flow (+ 2%)	gpm	44.0	66.0	198.1	308.2	660.4	1100.7	2201.4	2641.7
		m <sup>3</sup> /hr	10	15	45	70	150	250	500	600
Q <sub>t</sub>	transitional flow (+ 2%)	gpm	7.9	7.9	14.1	21.1	52.8	88.1	198.1	220.1
		m <sup>3</sup> /hr	1.8	1.8	3.2	4.8	12.0	20.0	45.0	50.0
Q <sub>min</sub>	minimum flow (+ 5%)	gpm	2.6	2.6	6.2	8.8	19.8	35.2	88.1	110.1
		m <sup>3</sup> /hr	0.6	0.6	1.4	2.0	4.5	8.0	20.0	25.0
	starting flow	gpm	1.1	1.1	1.5	2.6	7.5	8.8	44.0	66.0
		m <sup>3</sup> /hr	0.25	0.25	0.35	0.6	1.7	2.0	10.0	15.0

## Legend

Q <sub>max</sub>	Max Peak Flow	Once in a lifetime, 24hours @ Q <sub>max</sub> or 5 minutes @ 1.2 x Q <sub>max</sub>
Q <sub>n</sub>	Max Continuous Flow	± 2%
Q <sub>t</sub>	Transitional Flow	± 2%
Q <sub>min</sub>	Minimum Flow	± 5%

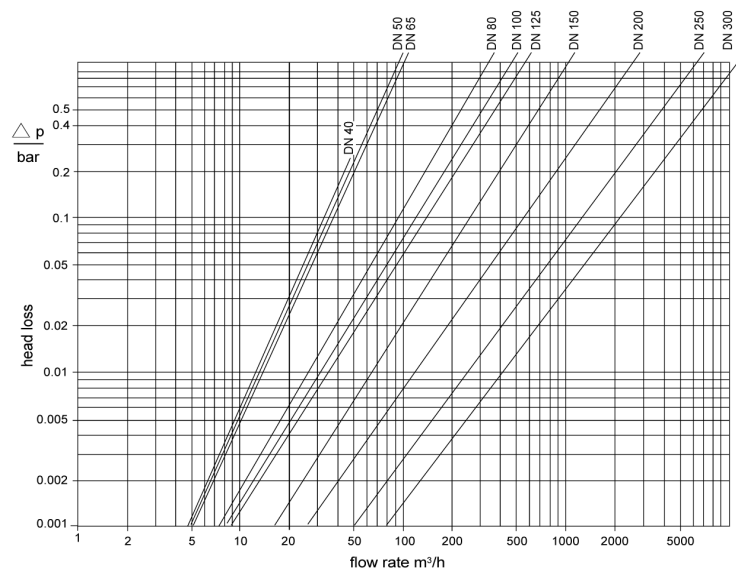


## Typical Accuracy Curve



- $Q_{max}$  = maximum peak flow
- $Q_{cont}$  = continuous flow
- $Q_t$  = transitional flow  $\pm 2\%$
- $Q_{min}$  = minimum flow  $\pm 5\%$

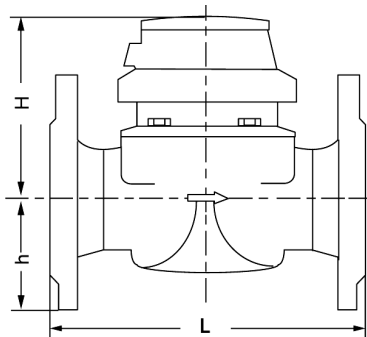
## Typical Head Loss Curve



## Dimensions & Weight

Size of Meter		inches	1 1/2	2	3	4	6	8	10	12
		mm	40	50	80	100	150	200	250	300
		pressure	← (ANSI) 150 PSI / PN-16 (DIN) →							
Dimensions	overall length	L inches	8 11/16	7 7/8	8 7/8	9 13/16	11 13/16	13 3/4	17 11/16	19 11/16
		L mm	220	200	225	250	300	350	450	500
	height	H inches	4 3/4	4 3/4	5 7/8	5 7/8	6 15/16	8 1/8	9 1/8	10 1/16
		H mm	120	120	150	150	177	206	231	256
		h inches	2 11/16	2 7/8	3 3/4	4 1/8	5 5/16	6 3/8	7 5/8	8 7/8
		h mm	69	73	95	105	135	162	194	226
Weights	meter	pounds	16.3	17.0	30.9	39.7	78.3	111.3	159.4	218.9
		kg	7.4	7.7	14	18	35.5	50.5	72.3	99.3
	imu only	pounds	3.1	3.1	6.6	6.6	12.1	16.5	16.5	16.5
		kg	1.4	1.4	3	3	5.5	7.5	7.5	7.5
	body only	pounds	13.2	13.9	24.3	33.1	66.1	94.8	140.7	202.4
		kg	6	6.3	11	15	30	43	63.8	91.8

## Dimension Picture



## Materials of Construction

<b>Body</b>	cast iron
<b>Measuring Element</b>	plastic
<b>Rotor</b>	plastic
<b>We also use the following materials</b>	brass stainless steel



## Dials Specifications

Line/Meter Size		Smallest Reading		Maximum Reading	
Inches	MM	USG	M <sup>3</sup> /Hr	USG	M <sup>3</sup> /Hr
1-1/2" to 4"	40mm to 100mm	1.0	0.0005	99,999,999	1,000,000
6" to 12"	150mm to 300mm	10.0	0.005	999,999,999	10,000,000

## Pulse Values

Pulser		1-1/2" to 4" 40mm to 100mm		6" to 12" 150mm to 300mm	
RD-02	Reed Switch	10 gallons 25 gallons	0.10 cubic meters 0.25 cubic meters	100 gallons 250 gallons	1.0 cubic meters 2.5 cubic meters
OD-02	Optical Pulser	0.1 gallons	0.001 cubic meters	1.0 gallons	0.010 cubic meters
OD-04		1.0 gallons	0.010 cubic meters	10.0 gallons	0.100 cubic meters

## Available Designs

Meter Line Size	40mm	1-1/2 inch	50mm	2 inch	80mm	3 inch	100mm	4 inch
Model Number	828594		828596		828602		828604	
Meter Line Size	150mm	6 inch	200mm	8 inch	250mm	10 inch	300mm	12 inch
Model Number	828608		828618		828720		828744	

## Ordering Information

To Order, please specify the following:

Model Code: See "Available Designs" above  
 Flange Drilling: Specify: ANSI 150 or DIN PN-16 (Raised Face Flanges)  
 Register Reading: US Gallons, Cubic Meters  
 Options: Pulsers: RD-02, OD-02, OD-04  
 Frequency To Current Converters: FM-1D/K, FM-2D/K

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