

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:

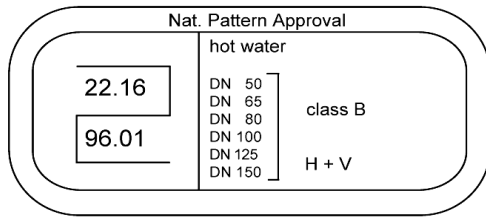
- Measurement of hot water up to 266°F / 130°C
- **Line Sizes:** 1-1/2", 2", 3", 4", 6", 8", 10" & 12" (40mm, 50mm, 80mm, 100mm, 150mm, 200mm, 250mm & 300mm)

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)

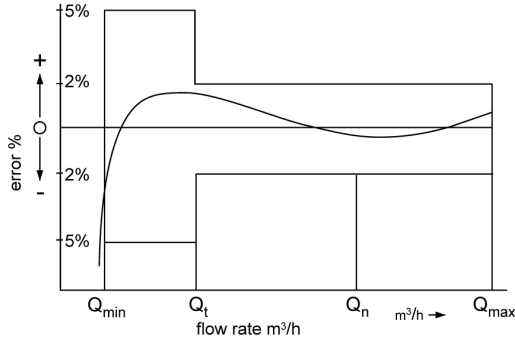
| Meter Line Size: | | | 1.5" | 2" | 3" | 4" | 6" | 8" | 10" | 12" |
|------------------|----------------------------|--------------------|------|-------|-------|-------|--------|--------|--------|--------|
| | | | 40mm | 50mm | 80mm | 100mm | 150mm | 200mm | 250mm | 300mm |
| Q _{max} | maximum peak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

Legend

| | | |
|------------------|---------------------|--|
| Q _{max} | Max Peak Flow | Once in a lifetime, 24hours @ Q _{max} or 5 minutes @ 1.2 x Q _{max} |
| Q _n | Max Continuous Flow | ± 2% |
| Q _t | Transitional Flow | ± 2% |
| Q _{min} | Minimum Flow | ± 5% |

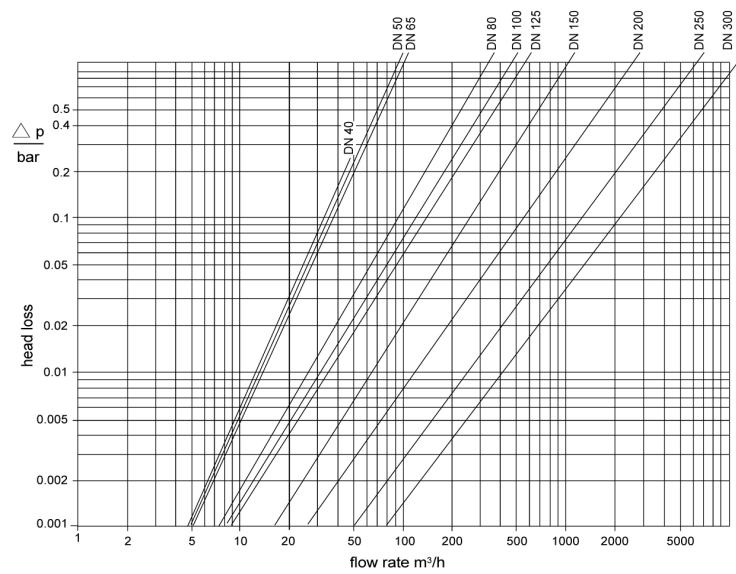


Typical Accuracy Curve



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

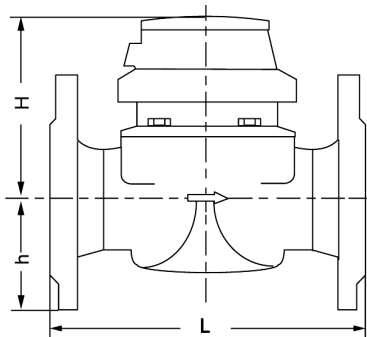
Typical Head Loss Curve



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

| | |
|--|--------------------------|
| Body | cast iron |
| Measuring Element | plastic |
| Rotor | plastic |
| We also use the following materials | brass stainless steel |



Dials Specifications

| Line/Meter Size | | Smallest Reading | | Maximum Reading | |
|-----------------|----------------|------------------|--------------------|-----------------|--------------------|
| Inches | MM | USG | M ³ /Hr | USG | M ³ /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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