CLARK
WP Series Turbine Water Meter
2" to 8" Pipe Size, With or Without Reed Switch

WP- 2" Size

WP- 3" & 4"Sizes

WP-6" & 8"Sizes

DESCRIPTION

The WP meters are Woltmann type totalizing water meters comprised of a rotor with helical blades inserted axially in the flow stream.

The units feature a magnetic drive for low transmission resistance and a dry dial register insures clear reading. They operate at low pressure loss and offer excellent accuracy in 2" to 8" pipes.

The meter body is made of cast or ductile iron and is epoxy coated. The meter register assembly can be removed for repair or replacement without disrupting the process flow.

SPECIFICATIONS

GENERAL

Measuring Principle: Turbine/Woltman helical bladed rotor
Meter Type: Dry, magnetic coupling between rotor and register movement
Meter Sizes: 2", 3", 4", 6", 8"
Meter Ratings:
- Cold Water Meter: Calibrated for water temperatures to 104°F (40°C)
- Hot Water Meter: Calibrated for water temperatures to 194°F (90°C)

Max Media Operatng Temperature & Pressure:

Temperature (F°)	Pressure (PSIG)
-20 to 150	200
200	190

Materials Of Construction: See table 4
Accuracy: Cold water meter: ±2% at nominal/intermediate (Q_n) and maximum (Q_{max}) flow, ±5% at minimum flow rate (Q_{min}) to transition flow rate Q_t. See fig 1.
- Hot water meter: ±3% at nominal/intermediate (Q_n) and maximum (Q_{max}) flow, ±5% at minimum flow rate (Q_{min}) to transition flow rate (Q_t). See fig 1.

Pressure Drop: See Pressure drop curves fig. 2
Connections: ASME Class 125 Flanges per B16.1
Dimensions and Weights: See table 2 for details
Installation: Clean pipe line before installing meter.
1) Horizontal position with register facing upward is recommended however any position is acceptable.
2) Meter must be installed with direction of flow as indicated by arrow cast into the meter body.
3) Install valve before inlet of meter. A valve at outlet is also recommended.
4) Install meter in a location with at least 10 diameters of straight pipe at the inlet and 5 diameters at the outlet to assure proper flow profile to meter.
5) Do not use a meter rated for cold water as a hot water meter.

OPTIONAL PULSE/REED SWITCH OUTPUT:

The pulse emitter consists of a plastic housing with a reed switch that is closed when a magnet mounted on one of the meters register gears comes into its activation proximity.

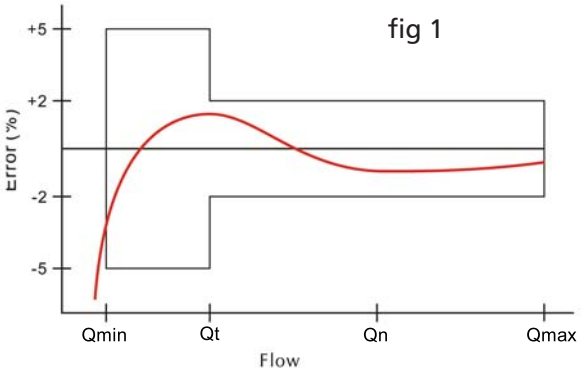
A 1.5 meter (59") length of 2-conductor wire 3.5 mm diameter is standard. One conductor has red insulation and one has black.
Max Voltage: 24V AC/DC
Max Current: 0.01 A

Reed Switch

Table 1- Operating Characteristics								
Model	Size	Max. Flow GPM (Q_{max})	Nom. Flow GPM (Q_n)	Min. Flow GPM (Q_{min})	Transition Flow rate (Q_t)	Min. Reading Gallons	Max. Reading Gallons	Pulse Output Option
WP-SDC(1A7)-2	2″	160	25	4	13	0.1	999999999	1 P/100 Gal
WP-SDC(1A7)-3	3″	350	50	8	35	0.1	999999999	1 P/100 Gal
WP-SDC(1A7)-4	4″	530	90	15	53	0.1	999999999	1 P/100 Gal
WP-SDC(1A7)-6	6″	1230	200	30	132	1.0	9999999999	1 P/1000 Gal
WP-SDC(1A7)-8	8″	2200	350	50	220	1.0	9999999999	1 P/1000 Gal

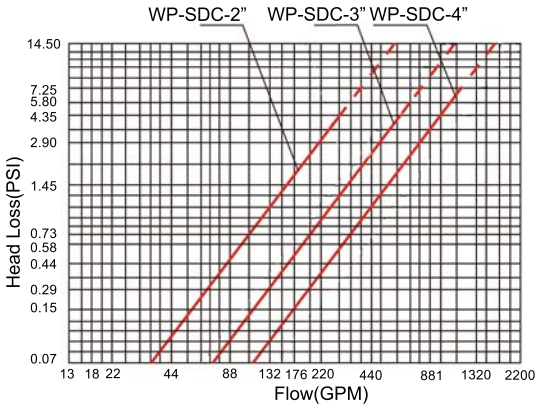
TYPICAL ACCURACY CURVE

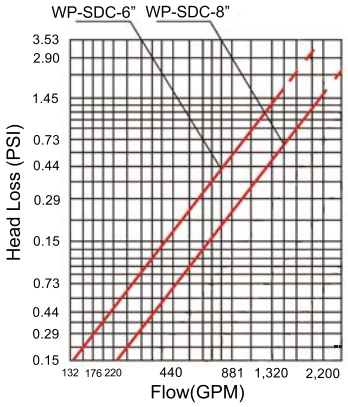
fig 1



PRESSURE DROP

fig 2





DIMENSIONS

fig 3

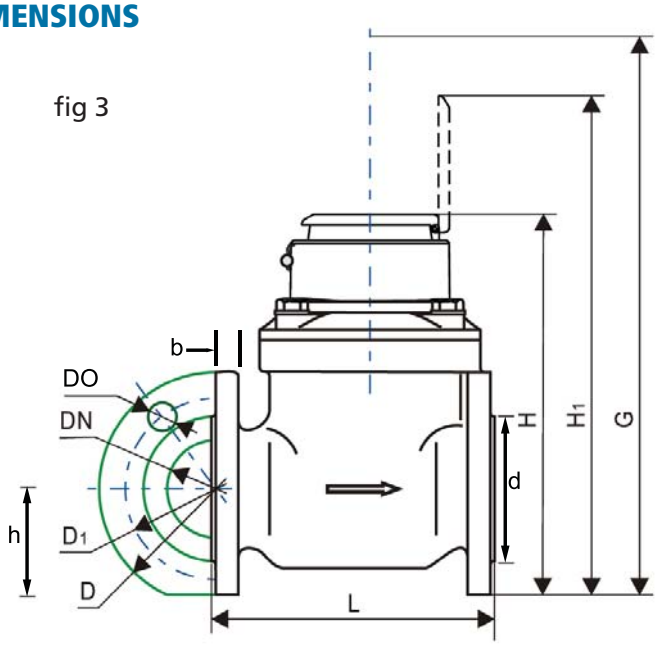


Table 2- Dimensions												
Model	Size	D Inches (mm)	D_1 Inches (mm)	d Inches (mm)	b Inches (mm)	h Inches (mm)	DO Inches (mm)	L Inches (mm)	H Inches (mm)	H_1 Inches (mm)	G Inches (mm)	No. Bolt Holes
WP-SDC(1A7)-2	2″	6.50 (165)	4.75 (120.62)	3.62 (92)	0.63 (16)	2.76 (70)	0.748 (19)	7.87 (200)	10.10 (256)	12.90 (328)	15.70 (400)	4
WP-SDC(1A7)-3	3″	7.50 (190.5)	6.00 (152.40)	5.00 (127)	0.748 (19)	3.58 (91)	0.748 (19)	8.86 (225)	10.90 (276)	13.70 (348)	15.70 (400)	4
WP-SDC(1A7)-4	4″	9.00 (228.6)	7.50 (190.50)	6.18 (157)	0.945 (24)	4.29 (109)	0.748 (19)	9.84 (250)	11.30 (286)	14.10 (358)	15.70 (400)	8
WP-SDC(1A7)-6	6″	11.00 (279.4)	9.50 (241.30)	8.50 (216)	0.965 (24.5)	5.31 (135)	0.878 (22.30)	11.80 (300)	13.60 (345.50)	16.40 (417.50)	19.70 (500)	8
WP-SDC(1A7)-8	8″	13.50 (343)	11.80 (298.50)	10.60 (270)	1.12 (28.5)	6.50 (165)	0.878 (22.30)	13.80 (350)	14.70 (372.50)	17.50 (444.50)	19.70 (500)	8

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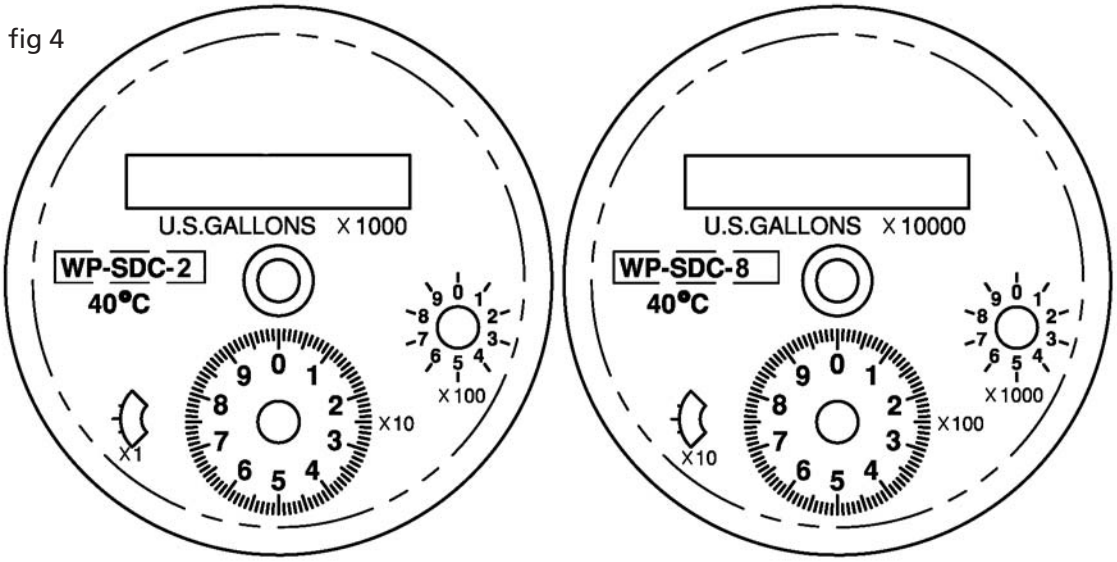
METER DIALS

fig 4



ORDERING INFORMATION

Table 3

Model	Description
Cold Water Meter, No Pulse Output	
WP-SDC(1A7)-2	2" Meter
WP-SDC(1A7)-3	3" Meter
WP-SDC(1A7)-4	4" Meter
WP-SDC(1A7)-6	6" Meter
WP-SDC(1A7)-8	8" Meter
Cold Water Meter, With Pulse Output	
WP-SDC(4A7)-2	2" Meter, 1 Pulse/100 gal
WP-SDC(4A7)-3	3" Meter, 1 Pulse/100 gal
WP-SDC(4A7)-4	4" Meter, 1 Pulse/100 gal
WP-SDC(4A7)-6	6" Meter, 1 Pulse/1000 gal
WP-SDC(4A7)-8	8" Meter, 1 Pulse/1000 gal

Model	Description
Hot Water Meter, No Pulse Output	
WP-SDH(1A7)-2	2" Meter
WP-SDH(1A7)-3	3" Meter
WP-SDH(1A7)-4	4" Meter
WP-SDH(1A7)-6	6" Meter
WP-SDH(1A7)-8	8" Meter
Hot Water Meter, With Pulse Output	
WP-SDH(4A7)-2	2" Meter, 1 Pulse/100 gal
WP-SDH(4A7)-3	3" Meter, 1 Pulse/100 gal
WP-SDH(4A7)-4	4" Meter, 1 Pulse/100 ga
WP-SDH(4A7)-6	6" Meter, 1 Pulse/1000 ga
WP-SDH(4A7)-8	8" Meter, 1 Pulse/1000 ga

WP- 2"

WP- 3" & 4"

WP- 6" & 8"

Table 4

Part Description & Materials		
No.	Qty	WP-2", 3", 4$
1	1	Hinge Pin Brass
2	1	Lid ABS
3	2	Plug ABS
4	1	Upper Retaining Ring- ABS
5	1	Register Assembly
6	1	Bracket ABS
7	3	Screw 1Cr18Nig
8	4	Screw 1Cr18Nig
9	1	Immovable Plate ABS
10	1	Register House ABS
11	3	Screw 1Cr18Nig
12	1	Screw w/hole 1Cr18Nig
13	4	Gasket 1Cr18Nig
14	1	Measuring Unit Fe,CU,ABS,PA,PPO
15	1	O-ring NBR
16	1	Iron with Epoxy Coating
17	2	Copper Wire Brass
18	2	Seal Lead
19	1	Seal Pin 1Cr18Nig
20	2	Rvet Brass
21	1	Label Brass, Stainless Steel
22	2	Flange Gasket NBR

Part Description & Materials		
No.	Qty	WP-6", 8"
1	1	Hinge Pin Brass
2	1	Lid ABS
3	2	Plug ABS
4	1	Upper Retaining Ring- ABS
5	1	Register Assembly
6	1	Bracket ABS
7	3	Screw 1Cr18Nig
8	4	Screw 1Cr18Nig
9	1	Immovable Plate ABS
10	1	Register House ABS
11	7	Screw 1Cr18Nig
12	1	Screw w/hole 1Cr18Nig
13	8	Gasket 1Cr18Nig
14	2	Screw 20#
15	1	Measuring Unit Fe,CU,ABS,PA,PPO
16	1	Gasket NBR
17	1	Iron with Epoxy Coating
18	2	Copper Wire Brass
19	2	Seal Lead
20	1	Seal Pin 1Cr18Nig
21	2	Rvet Brass
22	1	Label Brass, Stainless Steel
23	2	Flange Gasket NBR