



MEASUREMENT AND CONTROL

900 Series Flow Switch

Vane actuated switches are designed for direct sensing of liquid flow in pipelines. These switches are magnetically actuated and feature rugged internal construction and all stainless trim. Minimum line pressure loss is determined by vane position at actuation. These switches are designed for vertical mounting only.

The 900 Series Flow Switch can be adjusted for a wide range of pipe sizes from 2-1/2" upward. The standard model is furnished with a vane for an 8-inch line which can be field trimmed for installation in smaller lines. Special models are available for pipe over 8-inch size.



Product Specifications	
Mounting	
Orientation	Vertical
Connection Size	2" through 3"
Connection Type	NPT(M) or flanged
Maximum Process Pressure	1000 psi
Process Temperature Range	250°F
Electrical	
Switch Type	Dry contact or hermetically sealed
Housing	Aluminum NEMA 4X/IP65 or explosion proof (Class I, Groups C,D; Class II, Groups F,G; Div. 1&2)
Connection Size	1" NPT(F)
Design Code	Designed to ANSI/ASME B31.1 and B31.3 guidelines
Warranty	5 Years
Agency Listing*	CSA Certified (US & Canada) or UL Listed
Safety Certified to IEC 61508 (SIL)	SOR products are certified to IEC 61508 for non-redundant use in SIL1 and SIL2 Safety Instrumented Systems for most models. For more details or values applicable to a specific product, see the Safety Integrity Level Quick Guide (Form 1528).

*See accessories for details.

Design and specifications are subject to change without notice. For latest revision, see SORInc.com.

How to Order

Below is the SOR quick select model number tree that provides you with all the options to configure and order a product for your application. You must select a designator for each component.

1 Model		2 Process Connection Material		3 Process Connection Size		4 Process Connection Rating		5 Trim Material		6 Switching Mechanism		7 Housing		8 Accessories	
NPT	901	Carbon Steel	A	2" NPT(M)	F2	NPT (901)	A	316/316LSS Vane, 400SS Attraction Sleeve	B	A1	General Purpose	SPDT	Aluminum Housing, 1" NPT Conduit Connection. NEMA 4, 4X, IP65	CR	Conduit Reducer 3/4" NPT
150#	902*	316/316L Stainless Steel	C	2-1/2" RF Flange	F7	150# (902)	C*	316/316LSS Vane, 316/316LSS Attraction Sleeve	C	A4	General Purpose	DPDT	Aluminum Explosion-Proof Housing, 1" NPT Conduit Connection. Class I, Groups C, D; Class II, Groups F, G; Divisions 1 & 2. NEMA 4, 4X, IP65	CS	CSA Certification <i>Not available with WV accessory</i>
300#	903*			3" RF Flange	F3	300# (903)	D*			L1	Mini-Hermetically Sealed	SPDT		KK	Housing Breather Drain
600#	904*					600# (904)	E*			L4	Mini-Hermetically Sealed	DPDT		NC	NACE Construction
														PY	Powder Coat Epoxy Coating (No coating on SS parts or plated screws. 500 hrs. salt spray)
														RR	SS Tag wired to housing for customer tagging
														TT	Oversized Nameplate for customer tagging
														WV	UL Listed <i>Not available with CS accessory</i>

901 A - F2 A - B - A1 - N4 - CR

Example Model No.

*Flanged units require customer specified nozzle length at time of order. See drawing on page 4 for reference.

Note: Options may change specifications and dimensions, contact Customer Service for more information.

900 Series Flow Switch

Test Certificates

	D1	D2	C1	C3	C4	C5	C6	C7	B5	B6	B7
Calibration			◆						◆	◆	◆
Inspection Report				◆					◆	◆	◆
Compliance / Conformance					◆						◆
Dielectric Test						◆			◆		
Insulation Resistance							◆		◆	◆	
Certificate of Origin	◆										
Manufacturer's Certification		◆									

Limited Warranty: SOR agrees to repair or replace any switch found to be defective in material or workmanship within five years from date of shipment. The limited warranty is valid only if the switch was installed in accordance with published factory installation instructions, operated within the design limitations stated on the nameplate, and returned to the factory for inspection, freight prepaid, within the warranty period. Contact the factory for return authorization. No claim for labor or consequential damages will be allowed.

Safety Certified to IEC 61508 (SIL)

SOR products are certified to IEC 61508 for non-redundant use in SIL1 and SIL2 Safety Instrumented Systems for most models. For more details or values applicable to a specific product, see the Safety Integrity Level Quick Guide (Form 1528).

Adjustable Flow Rate

For pipe sizes over 8", consult factory.

Pipeline* Size (inches)	Flow Increase GPM		Flow Decrease GPM	
	Minimum	Maximum	Minimum	Maximum
2.50	25	75	20	55
3.00	30	90	25	65
4.00	45	115	30	85
6.00	80	180	55	125
8.00	120	230	80	160

*Schedule 40

Note: These switches may be adjusted in service to actuate per the values charted here. They are intended for flow indication only, not flow measurement.

Specific Gravity Correction Factors

To determine the actuating flow rates for liquids with a specific gravity other than 1.00, a correction factor must be applied to the flow rates given in the above table. These factors are listed below.

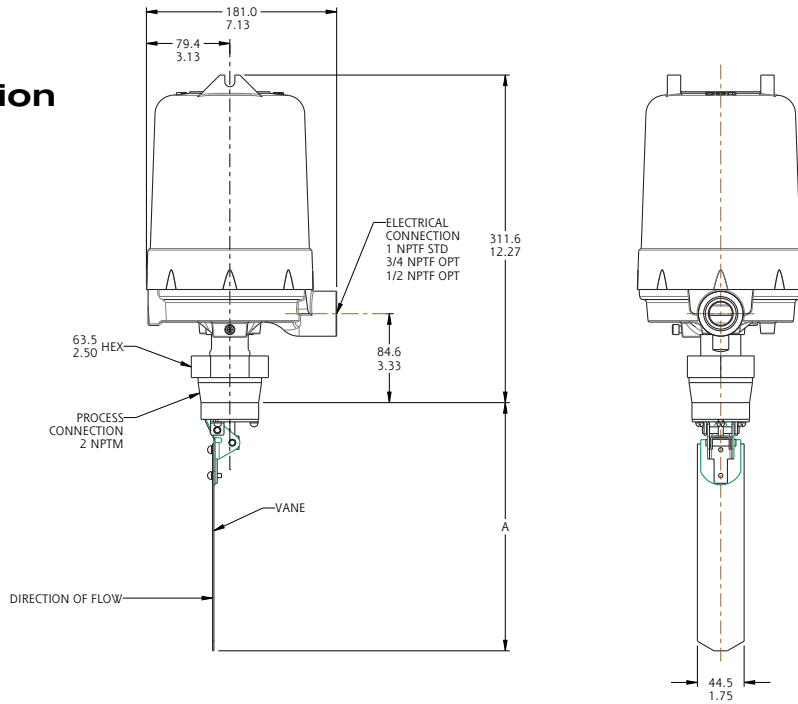
Specific Gravity	Multiplication Factor	Specific Gravity	Multiplication Factor
.40 (minimum)	1.65	.95	1.03
.45	1.55	1.00	1.00
.50	1.46	1.05	.97
.55	1.39	1.10	.95
.60	1.33	1.15	.92
.65	1.27	1.20	.90
.70	1.22	1.25	.88
.75	1.17	1.30	.86
.80	1.13	1.35	.84
.85	1.10	1.40	.82
.90	1.06	1.45	.80

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Dimensions

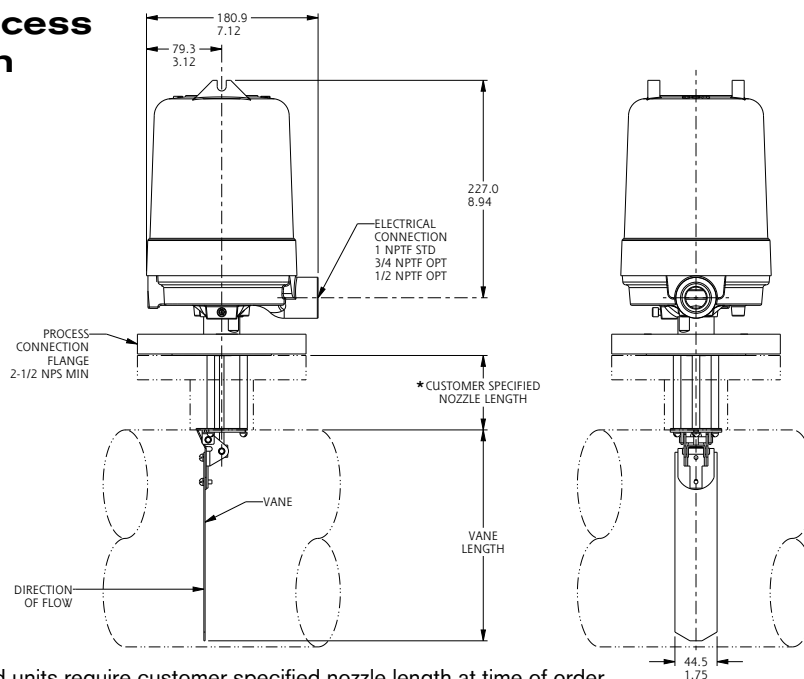
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2" NPT Process Connection



Linear = mm/inches
Drawing 0390467

Flange Process Connection



Linear = mm/inches
Drawing 0390749

*Flanged units require customer specified nozzle length at time of order.

