

# **DELTA CONTROLS Corporation**

585 Fortson Street  
Shreveport, Louisiana 71107 USA  
Phone:318-424-8471 Fax:318-425-2421  
Email: delta@deltacnt.com Web Site: www.deltacnt.com

Doc. No.: 00-62703  
Issued: 27 July 98  
Revised: 12 AUG 04  
Approved: EEB  
Date: 20 SEP 04

## **TYPE 627 INLINE OPEN BORE MECHANICAL FLOW SWITCH INSTALLATION, OPERATION, AND MAINTENANCE INSTRUCTIONS, WITH CONNECTION DIAGRAM AND RECOMMENDED SPARE PARTS LIST**

TYPE NO: \_\_\_\_\_

APPLICATION NO: \_\_\_\_\_

SERIAL NO(S): \_\_\_\_\_

CUSTOMER: \_\_\_\_\_

CUSTOMER PURCHASE ORDER NO: \_\_\_\_\_

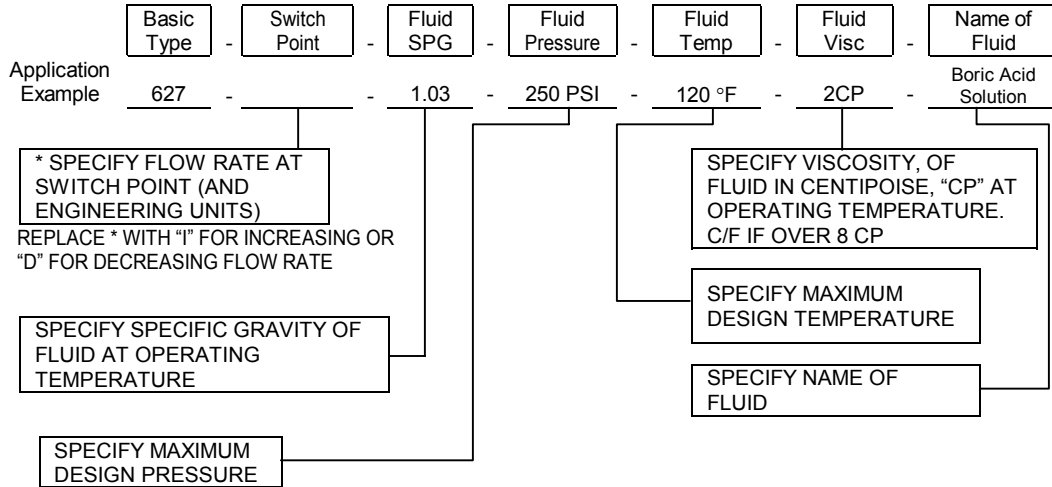
TAG NO(S): \_\_\_\_\_

OTHER: \_\_\_\_\_

RECOMMENDED SPARE PARTS \_\_\_\_\_

# MODEL NUMBERING SYSTEM

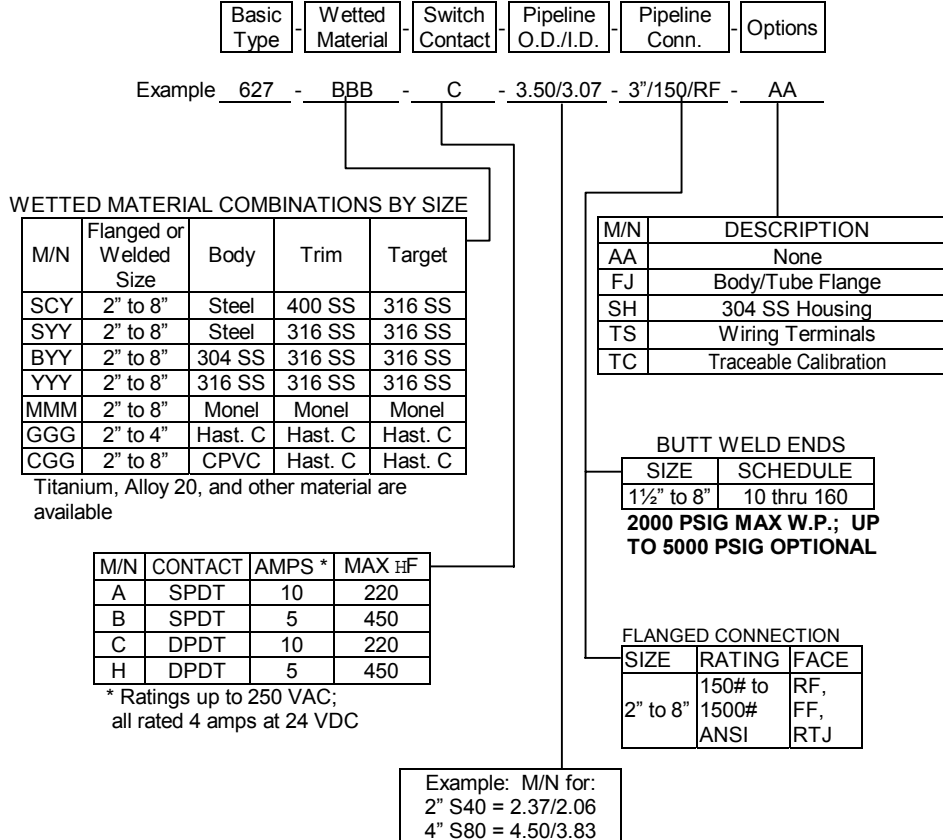
The hardware model number describes the materials and configuration of the flow. The application and service is used by the factory to properly size and calibrate the switch.



## HARDWARE MODEL NUMBER\*

\*Application and Service Number must also be provided.

Actuation Point: Within 10% of that specified  
 Housing: Class 1, Division 1, Groups BCD, X-Proof, also 4X, IP67.  
 Third Party Listed by CSA NRTL/C (USA & Canada)  
 Body/Tube Conn: NPT; flanged ANSI, METRIC



## **APPLICATION**

The Model 627 is a target actuated flow switch and is equipped with a body that fits into and becomes part of the pipeline. It is similar to the Model 624.

The Model 627 is equipped with a “fitted” target that nearly fills the inside area of the in-line pipeline body at low to “no” flow rates. The target is the “full swing” type and swings back 90° to rest against the inside of the pipeline when the flow rate equals the minimum calibrated flow rate.

The target has been “cupped” and “fitted” so that it is flush against the interior curve of the pipeline during higher flow rates. Only the thin edge of the target plus its support block contacts the flow. The inside area of the pipeline is not restricted and the result is a fully open bore. This design produces a negligible pressure drop while allowing an extremely high velocity throughput. Even so, the 627 can actuate at a very low pre-calibrated flow rate.

The 627 is useful for a wide variety of applications, including exothermic reactor cooling water; blending systems to verify that an ingredient has, in fact, been added; fire water systems; tank car complete drainage; and product transfer completion tasks.




## **INSTALLATION**

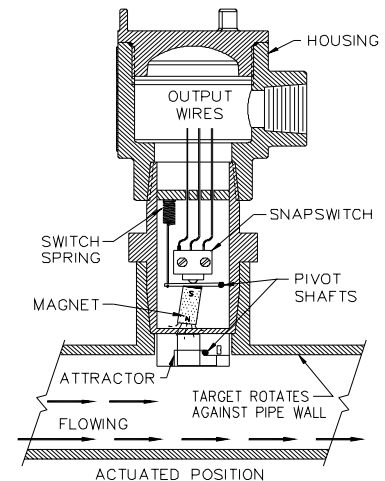
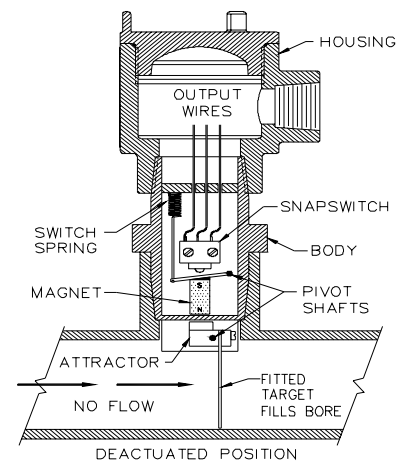
Install the Model 627 flow switch in a horizontal section of the flow line to be monitored. It is important that the vertical centerline of the body be plumb. It is necessary that the arrow on the body be parallel with and point in the direction of flow. The flow rate setpoint of the Model 627 is fixed at the factory and is not field adjustable.

## **WIRING AND CONNECTION**

Wire the unit in accordance with the National Electrical or other governing code. Do not miswire or overload the electrical contacts as this can destroy the unit or result in unsafe conditions.

NOTE: Units with DPDT output have two individual switches and dual sets of the same wire colors.

COMMON	BLACK		CLAMP TYPE TERMINAL STRIP
NORMALLY OPEN	BLUE		
NORMALLY CLOSED	RED		



**SWITCH POINT IS PRE-CALIBRATED TO RELIABLY DETECT A SPECIFIED FLOW RATE**

Media	Switch Action at Flow Rate	BODY SIZE (Based to ANSI Schedule 40 Pipe)					
		2	2 ½	3	4	6	8
Water at 77°F	Actuate – GPM	2.2	3.1	4.8	8.5	15	20
	Deactuate – GPM	1.2	1.7	2.6	4.7	8.3	11
Air at STP*	Actuate – SCFM	11	13	15	20	42	70
	Deactuate – SCFM	6.1	7.2	8.3	11	23	39

\* STP is 77 °F and 1 Atm(25°C AND 1 BAR)      GPM X 3.785 = LPM,    CFM X 0.028 = M3/M

**FACTORS FOR LIQUIDS OR GASES WITH DENSITIES DIFFERENT FROM WATER OR AIR AT STP**

SPG (Density)	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	1.05	1.10	1.15	1.20	1.25	1.30	1.35	1.40	1.45	1.50
Multiply by	1.41	1.35	1.29	1.24	1.19	1.15	1.12	1.08	1.05	1.02	0.97	0.95	0.93	0.91	0.90	0.88	0.86	0.84	0.82	0.80

**SPECIFICATIONS**

Maximum Pressure: 2000 psig; (5000 psig optional, limited to SPDT only)

Switch Point: within 10% of the flowrate specified above

Housing: Class 1, Division 1, Groups BCD, Explosion Proof, also 4X and IP67; aluminum;  
Stainless Steel optional, Third Party Listed CSA NRTL/C (USA & Canada)