

Model 716A

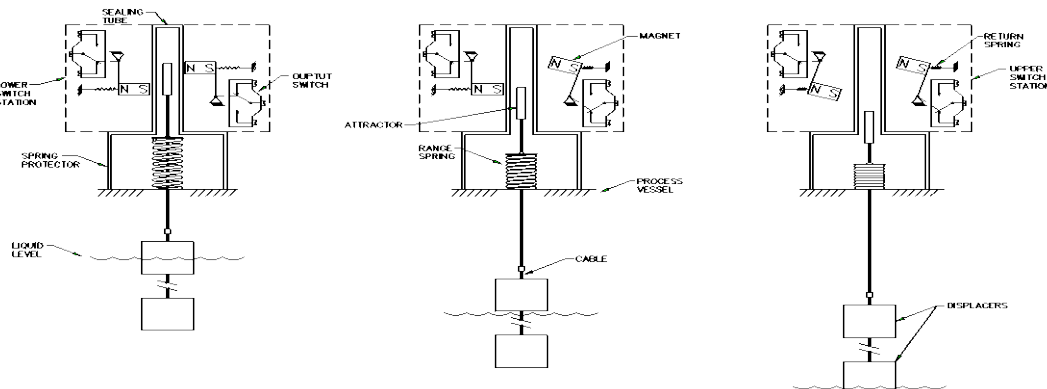
DISPLACER SWITCH / ALARM -TOP INSERTED TWO ALARM POINTS

Spring supported displacer type level switches are used in sumps, tanks, and vessels where long insertions and switching over wide variations in liquid level are required.

Displacer actuated units are less sensitive to surface wave action than other models which are actuated by floats. Spring opposed displacer type units are suited to difficult services where the fluid contains entrained solids or otherwise would tend to cause hang-ups in float actuated units.

Operation is based on a buoyancy principle. A displacer, which is more dense than the process liquid is suspended from a spring. The length of the spring is proportional to the amount of weight that it supports; the less the weight, the longer the spring will be. When liquid covers a displacer, an amount of weight equal to the weight of the process liquid displaced, is removed from the spring and supported by the process liquid. The spring length is proportionally increased and the attractor is moved up into the field of the switch station magnet. The magnet is pulled in against the outside of the sealing tube and the output switch is actuated.

Similarly, when the process fluid uncovers the displacer, the displacer liquid weight is transferred back to the spring. The length of the spring is decreased to its original length and the attractor is pulled out of the field of the magnet. The magnet returns to its original position and the output switch deactivates. The two separate displacers are supported by a single spring. As the liquid covers the first displacer, the spring lifts the entire displacer assembly (along with the attractor) upward a precise amount. The second switch station will be operated as the liquid level continues to rise covering the upper displacer. The displacers may be placed on the cable at widely separated points and the switch action will then be produced when the liquid level surface covers a displacer at the separated points.



DELTA CONTROLS
CORPORATION

BASIC TYPE	SENSING DISPLACER	INSERTION DISTANCE	PROCESS CONNECTION	SWITCH AND HOUSING	OPTIONS
-------------------	--------------------------	---------------------------	---------------------------	---------------------------	----------------

MODEL
 EXAMPLE: 716A - 54Y - 20' - 4"150RS - S2W - HH

BASIC TYPE

M/N	DESCRIPTION
716A	2 STATION 2 DISPLACER

316 S.S. SPRING: 250°F MAXIMUM;
 INCONEL SPRING TO 450°F
 BASIC: 316 S.S. TRIM,
 416 S.S. ATTRACTOR

INSERTION DISTANCE

M/N	DESCRIPTION
10	10 FT OF 316 S.S. CABLE
#	UP TO 50 FEET OF 316 S.S. CABLE, MAXIMUM

REPLACE "#" WITH REQ'D FEET OF CABLE.
 FOR MONEL OR HASTELLOY "C" CABLE: C/F

PROCESS CONNECTION

M/N	PROCESS CONNECTIONS
3" NPT*	3" NPT
3" 150R*	3" 150# ANSI FLANGE
3" 300R*	3" 300# ANSI FLANGE
3" 600R*	3" 600# ANSI FLANGE
4" 150R*	4" 150# ANSI FLANGE
4" 300R*	4" 300# ANSI FLANGE

REPLACE "*" WITH "S" FOR STEEL,
 "B" FOR 304 S.S., OR
 "Y" FOR 316 S.S.
 CONSULT FACTORY FOR OTHER SIZES &
 RATINGS.

SENSING DISPLACER

DISPLACER (INCHES)						WKG PSIG @ °F			MINIMUM ANSI FLANGED	
M/N	MAT *	MIN SPG	MAX SPG	O.D.	LENGTH	100°F	250°F	450°F	NPT	NOZZLE
49Y	316 S.S.	0.45	0.90	3.5	5.9,12.5	385	300	250	NA	4" SCH 80
50Y	316 S.S.	0.60	1.20	3.5	4.8,10.0	385	300	250	NA	4" SCH 80
51Y	316 S.S.	0.60	1.07	2.9	7.1,14.9	500	400	325	3"	3" SCH 80
52Y	316 S.S.	0.70	1.10	2.9	5.9,12.0	500	400	325	3"	3" SCH 80
54Y	316 S.S.	0.85	1.20	2.9	4.8,10.0	500	400	325	3"	3" SCH 80
55Y	316 S.S.	1.01	2.10	2.9	4.8,10.0	500	400	325	3"	3" SCH 80
HIGH POSITION OF TANK ROOF										
57Z	LEAD	POSITION	1.0	4.0,4.0	NA	NA	NA	2.0	C/F	

* 316 S.S. AVAILABLE IN SOLID POLYPROPYLENE; WORKING PRESSURE OF 2200 PSIG @ 100°F;
 LIMITED TO 1520 PSIG @ 220°F MAXIMUM. CHANGE "Y" TO "P"

SWITCH AND HOUSING

M/N FIRST CHARACTER	SWITCH TYPE - SERVICE AND LOAD RATINGS	Switch Temp Rating
S	GENERAL USE, COMPACT, 4 AMP @ 28VDC, 5 AMP @ 125VAC, 250VAC	-65 to 250°F (-54 to 121°C)
T	HIGH TEMPERATURE; 5 AMP @ 125VAC, 250VAC; 0.5A @ 125VDC; 0.25A @ 250VDC	-65 to 400°F (-54 to 204°C)
H	SEALED SWITCHES, 15 AMPS @ 125/250VAC, 0.5 AMPS @ 125 VDC, 0.25A @ 250VDC, 1/8HP 125VAC, 1/4HP 250VAC	-67 to 185°F (-55 to 85°C)
L	A.C. MOTOR LOADS; 15 AMP @ 125,250,480VAC, 0.25 HP @ 250VAC, 1/8HP @ 125VAC; 1/4HP @ 250VAC; 0.5A @ 125VDC; 0.25A @ 250VDC	-67 to 185°F (-55 to 85°C)
D	HIGH D.C. LOADS; 10 AMP @ 125VAC/DC; 0.25 HP @ 125VAC/DC; 3A(resistive) @ 250VDC; 1/2HP @ 125VDC POLARIZED (i.e., with negative side connected to common.)	-67 to 180°F (-55 to 82°C)
M/N SECOND CHARACTER	NUMBER OF CONTACTS	
1	1 SPDT CONTACT	
2	2 SPDT CONTACTS	
4	4 SPDT CONTACTS (TYPE S ONLY)	
M/N THIRD CHARACTER	HOUSING RATING	
W	Type 4X, IP65	
X	TYPE 4X, IP65 (EPOXY COATED)	
C	ALUMINUM - FOR HAZARDOUS LOCATIONS; SEE CSA RATINGS	
T	300 STAINLESS STEEL - FOR HAZARDOUS LOCATIONS; SEE CSA RATINGS	

OPTIONS

M/N	DESCRIPTION
AA	NONE
IN	INCONEL SPRING 450°F INCREASE MIN. SPG BY 6%
SA	316 S.S. SHEATHED ATTRACTOR
HH	120VAC ELECTRICAL HOUSING HEATER TO PREVENT CONDENSATION & ICING



CSA Ratings:
 Housing types 'C' and 'T'
 Cl I Div 1, Gr B,C,D; Cl II, Div 1 Gr E,F,G; CL III Div 1
 Class I Zone 1, Ex/AEx d IIB+H₂
 Maximum contact ratings 480Vac, 15A, T5 with max ambient 80°C. T6 without heater with max ambient 60°C



DELTA CONTROLS CORPORATION

Engineered Sensors - For Difficult Services

585 Fortson Street
 Shreveport, La. 71107 - USA
 Ph: +1(318) 424-8471
 Fax: +1(318) 425-2421
 E-mail: sales@deltacnt.com
 Web: www.claustemp.com