

# Model 715

## DISPLACER SWITCH / ALARM -TOP INSERTED SINGLE ALARM

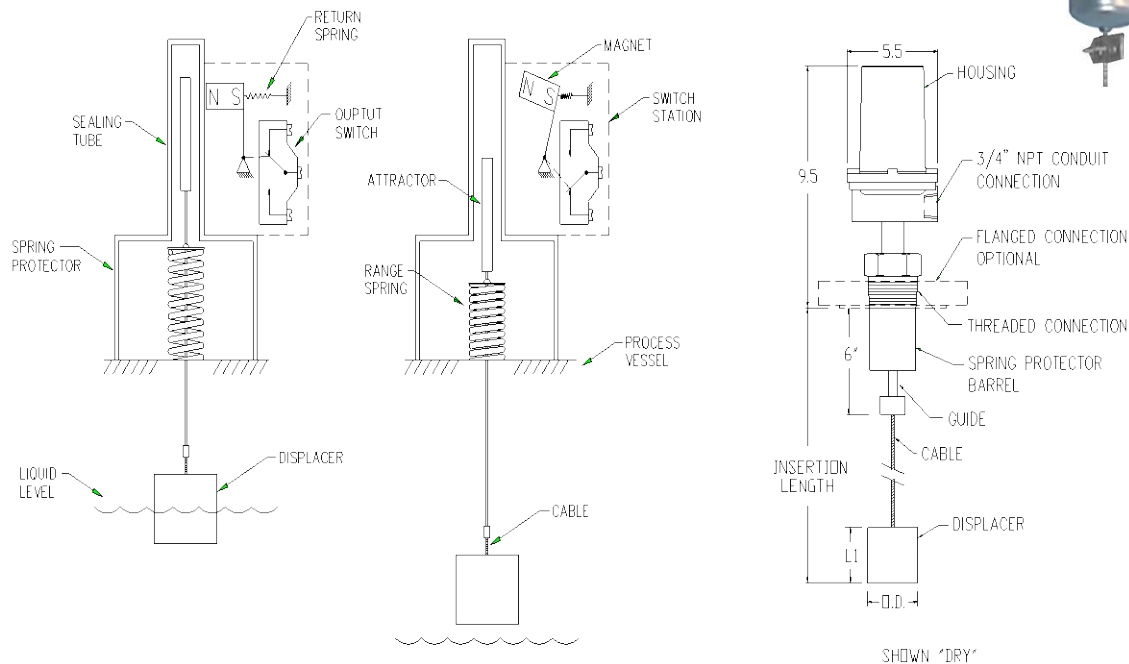
The Model 715 provides activation of a single switch station as the liquid level surface rises past the elevation at which the displacer has been positioned. Similarly the switch station is deactivated as the liquid level falls below the displacer.

Operation is based on a buoyancy principle. A displacer, which is more dense than the process liquid is supported by 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 is supported by the process liquid. The spring length is proportionally increased and the attractor is moved up into the field of a switch station magnet.

The magnet is pulled in against the outside of the sealing tube and the output switch is activated.

Similarly, when the process fluid uncovers the displacer, the liquid weight equal to the volume of the displacer is transferred back to the spring. The length of the spring decreases to its original length and the attractor is pulled out of the field of the magnet. The magnet is pulled back to its original position and the output switch deactuates.

For floating roof type tanks, the Model 715 may be used to detect the position of the roof. The 715 may then be equipped with a lead weight instead of a displacer. The 715 is positioned above the top of a floating roof tank; the roof lifts the weight as it rises, triggering an alarm switch; warning that the roof has traveled to the limit.



**DELTA CONTROLS**  
CORPORATION

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

MODEL  
EXAMPLE: 715 - 44Y - 10' - 2"NPTS - L1W - AA

**BASIC TYPE**

M/N	DESCRIPTION
715	1 STATION 1 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	ANSI SIZE
	2" NPT*
	2" 150R#
	2" 300R*
	2" 600R*
	3" NPT*
	3" 150R*
	3" 300R*
	3" 600R*
	4" 150R*
	4" 300R*
	4" 600R*

REPLACE "\*" WITH "S" FOR STEEL  
OR "Y" FOR 316 S.S.

**SENSING DISPLACER**

DISPLACER (INCHES)						WKG PSIG @ °F			MINIMUM ANSI FLANGED	
M/N	MAT *	MIN SPG	MAX SPG	O.D.	LENGTH	100	250	450	NPT	NOZZLE
38Y	316 S.S.	0.40	1.05	2.9	10.0	510	400	320	3"	3" SCH 80
39Y	316 S.S.	0.50	1.85	1.9	14.0	1500	1300	1150	2"	2" SCH 80
40Y	316 S.S.	0.60	1.80	1.9	12.0	1500	1300	1150	2"	2" SCH 80
44Y	316 S.S.	0.85	2.00	1.9	8.0	1500	1300	1150	2"	2" SCH 80

INTERFACE SERVICE										
MINIMUM DIFFERENCE BETWEEN LIQUIDS			MINIMUM SPG OF HEAVIER LIQUID: 0.50 UNITS							
*45Y	316 S.S.	0.22 SPG UNITS	2.9	12.0	510	400	335	3"	3" SCH 80	.
*46Y	316 S.S.	0.15 SPG UNITS	3.5	12.5	300	300	255	NA	4" SCH 120	.
*47Y	316 S.S.	0.10 SPG UNITS	3.5	18.0	300	300	255	NA	4" SCH 120	.

HIGH POSITION OF FLOATING TANK ROOF										
48Z	LEAD	POSITION	1.0	4.0	NA	NA	NA	NA	NA	C/F

\* 316 S.S. ALSO AVAILABLE IN SOLID POLYPROPYLENE;  
WORKING PRESSURE OF 2200 PSIG @ 100°F;  
LIMITED TO 1550 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
DM	DUAL MAGNETS FOR HIGH VIBRATION
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+H<sub>2</sub>  
Maximum contact ratings 480Vac, 15A, T5 with max  
ambient 80°C. T6 without heater with max ambient 60°C



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