

Model 709

FLOAT SWITCH / ALARM -TOP INSERTED SINGLE POINT

The Model 709 is a very simple mechanical device and is highly reliable over long periods of time. An alarm switch type action is provided as the liquid level surface passes through the elevation where the sensing float has been positioned. The sensing float is attached to a vertical shaft, which can move up and down. Lifting the float causes the output switch station to activate. The switch station is on the outside of a solid, non-magnetic pipe wall. This isolation eliminates the possibility of leaking seals and flex tube failures, which are problems in many other designs.

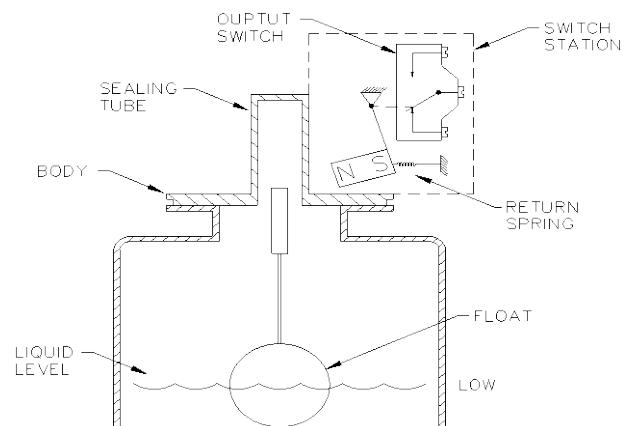
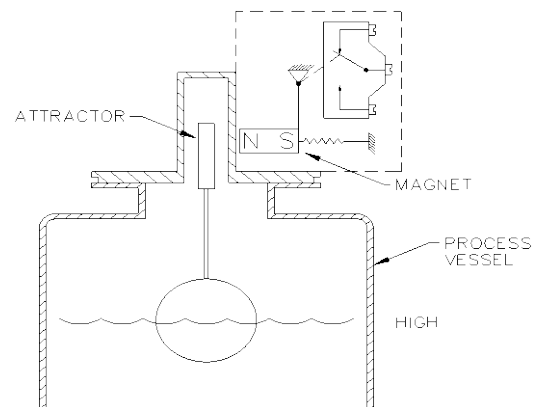
The 709 is commonly used for high level alarms and shutdown on tanks. An optional support bracket allows the 709 to also be used in sumps and pits.

The float may be extended down into the tank as far as 12 feet (beyond the 12 feet, the float can no longer lift the weight of the long and heavy float rod). This allows it to provide switch action as far as 12 feet down into the tank and allows the 709 to be used as a low-level alarm. Unlike most competitive switches, the 709 float rod guide is always located just 3 inches above the float and thus avoids the need for any type of "stilling well". Moderate swirling or fluid motion will not damage the 709.

A permanent magnet is attached to the actuating lever of the switch. As the liquid level rises, the float is carried upwards and the attractor is carried into the field of the magnet. The magnet is attracted and pulled against the wall of the sealing tube. This movement actuates the output switch.

When the liquid level falls, the float drops, the attractor is pulled out of the field of the magnet and the output switch returns to its original position.

The non-magnetic heavy duty sealing tube provides a leakproof static barrier to the process fluid. The magnetic lines of force are the only coupling; failure prone couplings such as shafts with "O" rings, diaphragms, bellows, etc. have been eliminated to improve operation and reliability.



DELTACONTROLS
CORPORATION

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

MODEL
 EXAMPLE: 709 - TY - 48" - 1" NPTS - T1C - AA

BASIC TYPE

M/N	DESCRIPTION
709	1 ALARM POINT

BASIC: 316 S.S. TRIM WITH
 416 S.S. ATTRACTOR

INSERTION DISTANCE

M/N	DESCRIPTION
11"	MINIMUM INSERTION DISTANCE
*	11" TO 150" MAXIMUM INSERTION

REPLACE "*" WITH REQUIRED INCHES OF INSERTION

SENSING FLOAT

ELEMENT (INCHES)				WKG PSIG @ °F			MINIMUM CONN SIZE		MINIMUM SPG @ INSERTION DISTANCE (INCHES)										
M/N	MATERIAL	O.D.	LENGTH	100°F	450°F	750°F	NPTF	FLANGED	13"	18"	24"	36"	48"	60"	72"	96"	120"	150"	
TY	316 S.S.	2.6	7.0	275	185	160	2.5"	3" S160	0.76	0.78	0.79	0.81	0.85	0.88	0.92	NA	NA	NA	
14Y	316 S.S.	3.5	7.0	265	175	145	NA	4" S120	0.56	0.57	0.58	0.59	0.62	0.65	0.67	0.73	0.78	0.85	
15Y	316 S.S.	5.5	BALL	425	300	250	NA	6" S80	0.40	0.41	0.41	0.42	0.43	0.45	0.46	0.49	0.51	0.55	
INTERFACE SERVICE																			
PY	316 S.S.	7.0	BALL	425	275	235	NA	8" S120	0.56	0.56	0.56	0.57	0.57	0.58	0.59	0.60	0.61	0.63	
IY	316 S.S.	7.0	BALL	730	475	400	NA	8" S120	0.45 MIN SG; .010 MIN S.G. DIFFERENTIAL										

FOR INTERFACE:

- (1) # MINIMUM DIFFERENCE BETWEEN THE SPECIFIC GRAVITIES OF THE TWO LIQUIDS: 0.10
- (2) # MINIMUM SPG OF THE HEAVIER LIQUID: 0.45
- (3) ALLOWED INSERTION: ANY FROM 12" TO 150" (BOTTOM OF FLOAT HANGING FREE)
- (4) CENTERLINE OF SWITCH BAND: 4" ABOVE INSERTION DEPTH

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	ALUMINIUM - FOR HAZARDOUS LOCATIONS; SEE CSA RATINGS	
T	300 STAINLESS STEEL - FOR HAZARDOUS LOCATIONS; SEE CSA RATINGS	

PROCESS CONNECTION

M/N	PROCESS CONNECTIONS
1"NPT#	1" NPT
3"NPT#	3" NPT
3"150R#	3" 150# ANSI FLANGE
4"150R#	4" 150# ANSI FLANGE
4"300R#	4" 300# ANSI FLANGE
6"150R#	6" 150# ANSI FLANGE
6"300R#	6" 300# ANSI FLANGE
8"150R#	8" 150# ANSI FLANGE
8"300R#	8" 300# ANSI FLANGE

REPLACE "# " WITH:
 "S" FOR STEEL CONSTRUCTION,
 "B" FOR 304 SS
 "Y" FOR 316 SS

OPTIONS

M/N	HOUSING EXTENSION	MAX PROCESS TEMP (°F) - SWITCHES					
		CONDENSING SERVICE (STEAM, DOWTHERM)			NONCONDENSING (GAS, HYDROCARBONS)		
	LENGTH	D	S,L	H,T	D	S,L	H,T
AA	NONE	400	500	750	500	600	850
T1	6"	500	575	950	600	700	1100
T2	12"	600	650	1250	800	925	1500
SA	316SS SHEATHED ATTRACTOR (REQ'D FOR 316SS BODY)						
HH	120VAC HOUSING HEATER, PREVENTS CONDENSATION & ICING- INSULATE HOUSING FOR LOW AMBIENT CONDITION						
HBKT	SUPPORT BRACKET, HORIZONTAL LEDGE MOUNT						
VBKT	SUPPORT BRACKET, VERTICAL WALL MOUNT						



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