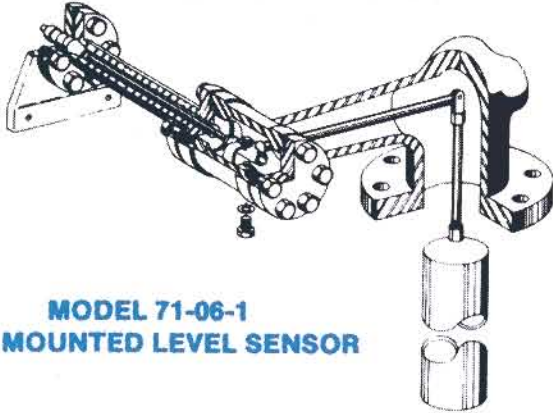


SERIES 1406 LIQUID LEVEL SENSOR Displacement Type with Torque Tube



**MODEL 71-06-1
TOP MOUNTED LEVEL SENSOR**

Top-mounted to nozzle or flange on a pressure vessel with displacement element positioned inside the vessel. For relatively quiet processes or where a quieting chamber is located inside the vessel.

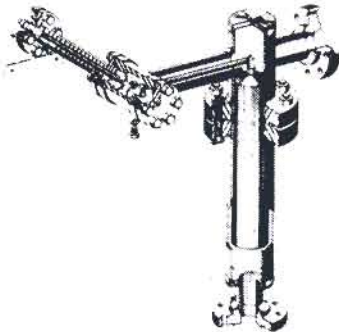
Standard Mountings

4" Steel, Flg.-ANSI 150, 300, 400, 600 AND 900, R.F. or RTJ

MODEL 71-06-2 LEVEL SENSOR with externally-mounted cage (Stationary Head)

Externally-mounted cage housing with stationary head. Provides a quiet chamber for operation of displacement element when turbulent conditions exist inside a vessel. Permits isolation of level controller for adjustment or repairs.

NOTE: Level in the cage must correspond to level in the vessel.



Standard Cage Housings

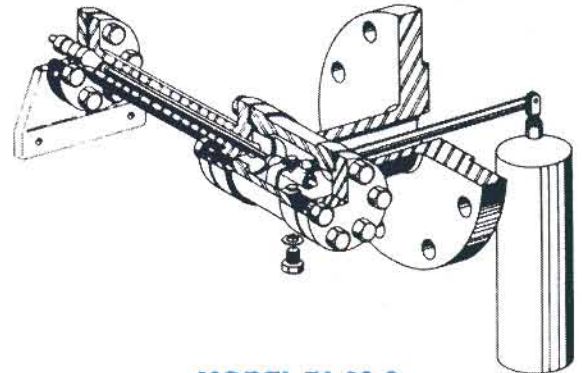
1½" or 2" Steel, Thd.—ANSI 600 1½" or 2" Steel, Flg.—ANSI 150, 300, 400, 600, R.F. or RTJ

Displacement Element

For Fab. Steel Cage through ANSI 600 : - 14, 32, 48, 60, 72, 84, 96, 108, 120. Standard Material—stainless steel. Special materials available on request.

TORQUE TUBE. Material—Inconel, Housing—Steel. Other materials on request.

NOTE: Level in the cage must correspond to level in the vessel.



**MODEL 71-06-3
SIDE MOUNTED LEVEL SENSOR**

Side mounted to nozzle or flange on a pressure vessel with displacement element positioned inside the vessel. For relatively quiet processes or where a quieting chamber is located inside the vessel. Also used in corrosive applications where external piping cannot be used or where external cage mountings are not practical because of clogging or vapor lock.

Torque arm between displacement element and torque tube is 20" long, double the length of top and external mounted units. Displacement element is correspondingly lighter and displaces less volume.

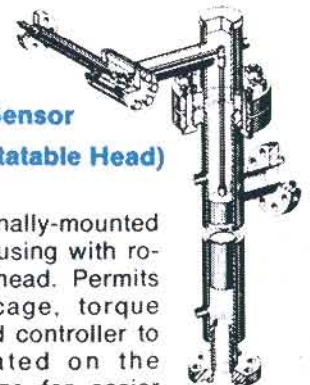
NOTE: Special consideration must be given to installation of long displacements through vessel opening.

Standard Mountings

4" Steel, Flg.-ANSI 150, 300, 400, 600 AND 900, R.F. or RTJ

71-06-6 Level Sensor externally-mounted cage (Rotatable Head)

Externally-mounted cage housing with rotatable head. Permits upper cage, torque tube and controller to be rotated on the float cage for easier accessibility as required.



Standard Cage Housings

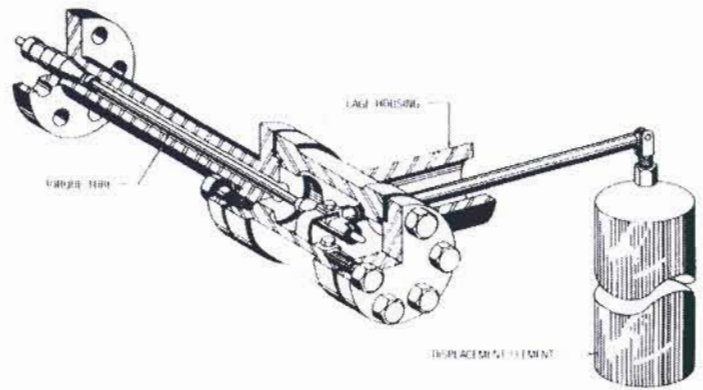
1½" or 2" Steel, Thd.—ANSI 600 1½" or 2" Steel, Flg.—ANSI 150, 300, 400, 600, R.F. or RTJ

Principles of Operation

Displacement element is positioned in liquid to be measured. As liquid level changes in vessel, apparent weight of displacement element (due to fluid displacement) varies according to amount of its submergence. This change in weight is converted to variable angular rotation in torque tube and produces an output pressure from the controller that is proportional to liquid level. Output pressure then positions control valve to regulate and maintain correct liquid level for process.

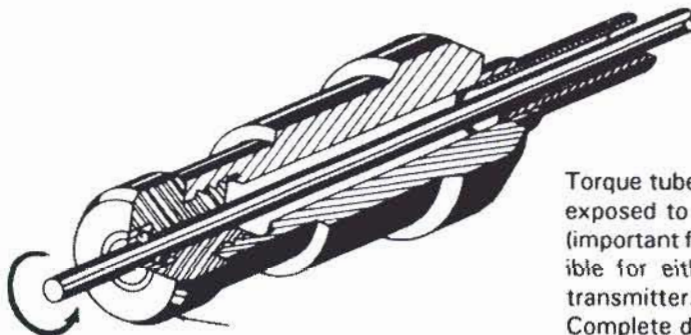
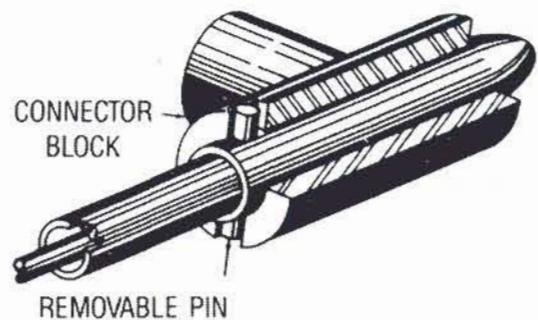
72-45 Pneumatic Controller - Specific gravity rocker arm and proportional bands are set direct for gravity ranges between 0.5 and 1.5. For gravities above 1.5 or below 0.5, special elements can be used or necessary compensation made by proportional band setting.

1600 Electronic Controller - FM and CSA approved Class I Div 1 Groups C&D. Gravity ranges same as 72-45. Two-wire loop powered. Available as transmitter only or transmitter with proportional plus integral control. Set point, proportional band, and integral are entered via key pad.



Torque Tube Assembly

Torque tube assembly consists of a shaft inside a tube. Tube is enclosed at the connector block end, with shaft welded concentrically to end closure of the tube. At the other end, shaft rotates in a bearing and connects to a specific gravity rocker arm. No stuffing box or packing gland required in transmitting rotational movement from torque tube to a specific gravity rocker arm.



CONTROLLER MOUNTING END

Torque tube is welded construction. All critical internal parts exposed to process are either inonel or 316 stainless steel (important for corrosive services). Displacement arm is reversible for either right or left hand mounting of controller or transmitter. No additional parts required for this reversal. Complete dismantling not required.

Symmetrical connector block permits mounting of torque tube in either end. Connector block has no bearing parts; it's frictionless, free from freezing or clogging.

Accessories

RADIATION FIN TORQUE TUBE HOUSING — For service temperatures below 0° F and above 800° F. (Standard torque tube housing without insulation is suitable for 0° F to 800° F service temperatures if ambient temperature is below 80° F.)

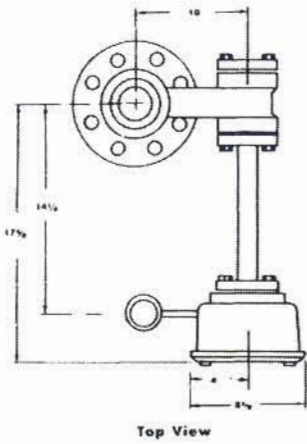
GAUGE GLASS ASSEMBLIES — Consult Factory.

SIDE-MOUNTED LEVEL CONTROLLER FOR HUB MOUNTING — 20" torque arm, standard. Other lengths available on special request. Displacement element, stainless steel, 50 cu.in.. Available in ratings of ANSI 1440 and 3600 CWP.

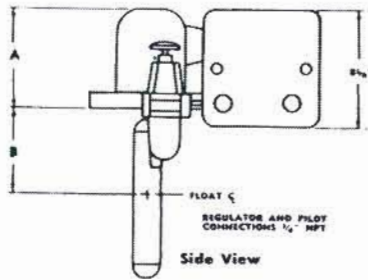
DIMENSIONS

For Preliminary Piping Design

71-06-1 TOP MOUNTED LEVEL SENSOR



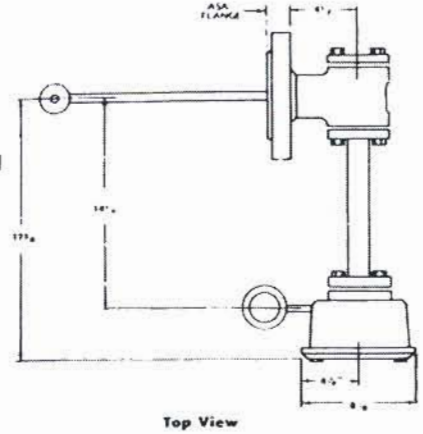
Top View



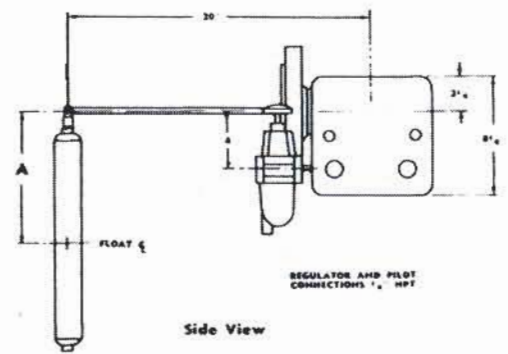
Side View

Displacement Element Length (inches)	DIMENSIONS (Inches)		
	Top Mounted Steel	Side Mounted	
14	A	B	A
32	8	7	8 1/4
48	8	16	17 1/4
60	8	24	25 1/4
72	8	30	31 1/4
84	8	36	37 1/4
96	8	42	43 1/4
108	8	48	49 1/4
120	8	54	55 1/4
	8	60	61 1/4

71-06-3 SIDE MOUNTED LEVEL SENSOR



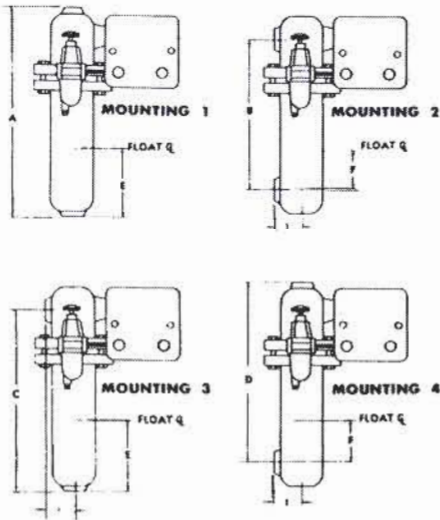
Top View



Side View

71-06-2 Level Sensor with externally-mounted cage (Stationary Head)

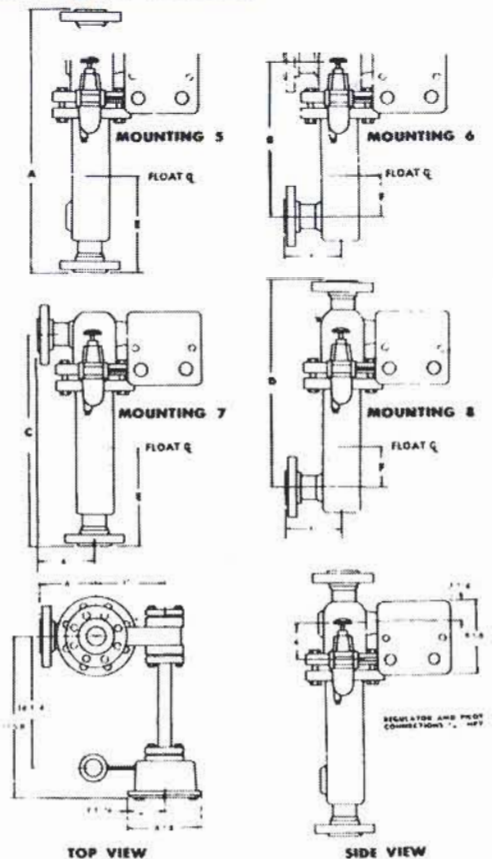
With Threaded Connections



FOR MOUNTINGS 1, 2, 3 and 4
Cast Steel—1 1/2" or 2" ANSI 600 lb.

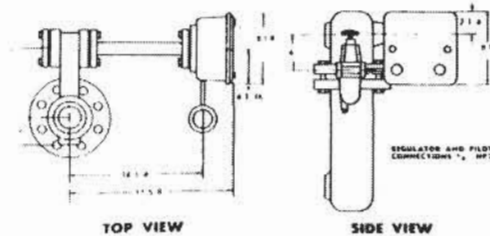
Displacement Element Length (inches)	Equalizing Connection Dimensions (inches)					
	Mountings 1, 2, 3 and 4					
	A	B	C	D	E	F
14	22%	16%	19%	19%	10%	7%
32	41%	35%	38%	39%	20%	18%
48	57%	51%	54%	55%	28%	26%
60	69%	63%	66%	67%	34%	32%
72	81%	75%	78%	79%	40%	38%
84	93%	87%	90%	91%	46%	44%
96	105%	99%	102%	103%	52%	50%
108	117%	111%	114%	115%	58%	56%
120	129%	123%	126%	127%	64%	62%

With Flanged Connections



FOR MOUNTINGS 5, 6, 7 and 8
Cast Steel—1 1/2" or 2", ANSI 150, 300, 400, and 600 lb. R.F.

Displacement Element Length (inches)	Equalizing Connection Dimensions (inches)					
	Mountings 5, 6, 7 and 8					
	A	B	C	D	E	F
14	29	16%	22%	23	13%	7%
32	48%	35%	41%	42%	24%	18%
48	64%	51%	57%	58%	32%	26%
60	76%	63%	69%	70%	38%	32%
72	88%	75%	81%	82%	44%	38%
84	100%	87%	93%	94%	50%	44%
96	112%	99%	105%	106%	56%	50%
108	124%	111%	117%	118%	62%	56%
120	136%	123%	129%	130%	68%	62%



TOP VIEW

SIDE VIEW

TOP VIEW

SIDE VIEW

