



Series 205

# Welded Construction

External Mount Pressures to 1250 psi (86 bar) at Temperatures to 650°F (343°C), Optional Explosion-Proof Enclosures, Hermetically Sealed Switches



Series 207 has one vertical and one horizontal flanged connection (19 RF forged steel – ANSI specifications). Flange centerline 149 (356 mm). Other centerlines available.

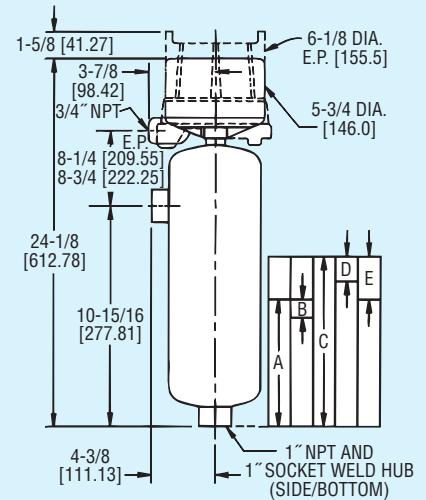


Series 208 features two vertical flanged connections (19 RF forged steel – ANSI specifications). Flange centerline 14-5/8" (371 mm). Other centerlines available.

Series 205 is connected with one horizontal and one vertical 1" combination NPT and 1" pipe socket weld connection.

"A" is the level at which single (or lower stage) operates on level rise.  
 "B" is the operating differential single (or lower stage) — drop in level to restore switch to original position.  
 "C" is the level at which the upper stage operates on level rise.  
 "D" is the operating differential of upper stage — drop in level to restore switch to original position.  
 "E" — the increase in level above "A" to operate upper stage.

Repeatability ±1/4" (6.4 mm)



	SP GR	A*	B*	A**	B	C	D	E	ORDERING CODE
MIN SP GR 0.75 1250 PSI (86 BAR) @ 650°F (343°C)	1.0	7-1/4" (184 mm)	3/4" (19 mm)	6-1/4" (159 mm)	3/4" (19 mm)	8-1/2" (216 mm)	1-1/4" (32 mm)	2-1/4" (57 mm)	C1-75
	0.75	8" (203 mm)	1" (25.4 mm)	7" (178 mm)	1" (25.4 mm)	9-1/2" (241 mm)	1-3/4" (44 mm)	2-1/2" (64 mm)	

\*\*"A" is adjustable ±1".

\*\*\*"A" is not adjustable.

**Long life and reliable operation** is inherent in the design of the 205 series. The heavy duty welded carbon steel chamber provides a control to operate up to 1250 psi (86 bar) and process temperature up to 650°F (343°C), 400°F (205°C) at the electrical head assembly. The use of an external magnet reduces the possibility of magnetic particle build up inside the armature tube and subsequent loss of operation as may occur with the internal magnet repulsion design. Choice of construction provides equipment suitable for specific gravity as low as (0.75). Electrical requirements are met by use of hermetically sealed snap action or mercury switches in a variety of actions including SPST, SPDT, DPDT and DPST arrangements. Optional circuits are available for low current/voltage DC; high current DC; or high temperature applications. Check the current chart for the switch best suited for your application. Standard process connections are combination 1" NPT and 1" socket weld hubs. Flanged connections are offered as an option. Contact factory for ANSI B31.1.

**APPLICATIONS**

Refineries, chemical plants, power generating stations, water treatment plants, mixing systems, scrubbers, accumulators, condensate recovery, industrial tanks and vessels.

**SPECIFICATIONS**

**C1-75:** Minimum specific gravity 0.75. Process pressure 1250 psig (86 bar) @ 100°F (38°C), 650°F (343°C).\*

\*Heat fins (HF) and/or high temperature switches should be considered for process temperatures above 500°F (260°C).

**Switch Type:** Snap action or mercury. See charts A and B.

**Electrical Rating:** See charts A and B.

**Wiring Connections:** G, WT or E enclosure, terminal block. EV enclosure 18" (460 mm) leads.

**Process Connections:** Combination 1" NPT/socket weld hubs or flanges. See chart C.

**Enclosures:** G, painted steel and aluminum; WT, painted steel, aluminum and neoprene; E, aluminum; EV, aluminum and neoprene.

**Weight:** 205, 40 lb (18 kg); 207, 50 lb (22.7 kg); 208, 57 lb (25.8 kg).

**Agency Approval:** UL.

**Suggested Specifications**

Liquid level control shall be 205 (207) (208) Series with combination 1" NPT/socket weld hubs (flanged) process connections. Chamber shall be welded suitable for operation at 1250 psig (86 bar) at 100°F (38°C), 650°F (343°C) at a minimum specific gravity of 0.75. Circuits shall be (hermetically sealed) snap action (mercury) switch (SPST) (SPDT), (DPDT). Enclosure shall be general purpose (weatherproof) (explosion-proof) (explosion-proof - vapor-proof). Switch mechanism shall be gravity return and shall be activated by a stainless steel float.

Model Chart - Series 205

<b>Example</b>	205	WT	7810	10	HF	C1	75	205-WT-7810-C1-75. Liquid level control. Welded carbon steel chamber. Weatherproof enclosure. SPDT snap switch, fixed deadband, automatic reset. Side/bottom process connections, combination 1" NPT/socket weld hubs. Minimum specific gravity 0.75. Operating pressure 1250 psig (86 bar) at 650°F (343°C).		
<b>Enclosure</b>		G WT E EV						General purpose, NEMA-1. Weatherproof NEMA-3R, 4, 4X. Explosion-proof NEMA-7, 9. Class I Groups B, C, D. Class II Groups E, F, G. Explosion-proof, vapor-proof NEMA-7, 9. Class I Groups B, C, D. Class II Groups E, F, G.	UL UL UL UL	
<b>Circuits</b>  (For electrical circuits see charts A & B below)			48XX 48XX 78XX 78XX 78XXHM 98XX  98XX	XX  XX  XX				Single stage. Mercury switch. See chart A. Two stage. Mercury switch. See chart A. Single stage. Snap switch. See chart B. Two stage. Snap switch. See chart B. Hermetically sealed snap switch. See chart B. Single stage. High capacity DC snap switch. Use heat fins (HF) if process temperature exceeds 350°F (177°C). Do not exceed 450°F (232°C). See chart B. Two stage. High capacity DC snap switch. Use heat fins (HF) if process temperature exceeds 350°F (177°C). Do not exceed 450°F (232°C). See chart B.		
<b>Welded Chamber Construction Combination 1" NPT/Socket Weld Hubs</b>	205					C1 C1	75	Refer to chart C for pressure/temperature ratings. Carbon steel body. Minimum specific gravity 0.75 side/bottom process connections. Combination 1" NPT/socket weld hub.	UL	
<b>Welded Chamber Construction with Flanged Process Connections</b>	207 207 207 208 208 208					C1 C1 C1 C1 C1 C1	175 375 675 175 375 675	Refer to chart C below for pressure/temperature ratings. 1" 150# flanges side/bottom process connection. 1" 300# flanges side/bottom process connection. 1" 600# flanges side/bottom process connection. 1" 150# flanges side/side process connection. 1" 300# flanges side/side process connection. 1" 600# flanges side/side process connection.	UL UL UL UL UL UL	
<b>Options</b>					HF			High temperature fins should be considered if ambient temperature exceeds 500°F (260°C) for extended periods. 12 Breather and drain for E type explosion-proof enclosure. Recommended for high humidity or outdoor service. 316 SS chamber and trim. 430 SS armature.		

Charts A & B - Electrical Circuits and Ratings

Switch Type	Switch Action	Electrical Ratings in AMPS					Ordering Code				
		AC			DC		Single Stage	Two Stage			
		120V	240V	440V	125V	250V		Lower	Upper		
<b>Chart A</b> Mercury Contacts	SP-ST Open on level FALL	10	5	3†	10	5	-4821	-4821	-21	UL	
	SP-ST Open on level RISE	10	5	3†	10	5	-4820	-4820	-20	UL	
	SP-DT One switch	4	2	1†	4	2	-4810	-4810	-10	UL	
	SP-DT Two switches E.I.*	10	5	3†	10	5	-4815	-4815	-15	UL	
	DP-ST Two switches E.I.* Open on level FALL	10	5	3†	10	5	-4813	-4813	-13	UL	
	DP-ST Two switches E.I.* Open on level RISE	10	5	3†	10	5	-4814	-4814	-14	UL	
	DP-DT Two SP-DT switches	4	2	1†	4	2	-4806	-4806	-06	UL	
<b>Chart B</b> Snap Action Contacts	SP-DT One switch	12	5	3†	0.5**	0.25**	-7810	-7810	-10	UL	
	DP-DT Two SP-DT switches	12	5	3†	0.5**	0.25**	-7806	-7806	-06	UL	
	SP-DT One hermetically sealed switch∠	5	5				-7810HM	-7810HM	-10HM		
	DP-DT Two hermetically sealed SP-DT switches∠	5	5				-7806HM	-7806HM	-06HM		
	DP-DT Two SP-DT switches	10	3		10‡	3‡	-9806	-9806	-06		
	SP-DT One switch	10	3		10‡	3‡	-9810	-9810	-10		

\* Electrically Independent † Available on special order. Change 1st digit in Ordering Code from 4 to 5 or 7 to 8  
 ‡ 10 Amp Inductive (Polarized) at 125 VDC i.e. -4820 becomes -5820, -7810 becomes -8810, etc.  
 ∠ 30 VDC=5 resistive \*\* Resistive

Chart C

Series	Mounting Style	Minimum Specific Gravity	Pressure Rating At		Flange Class (psi)	Order Code
			38°C	400°C		
			100°F	650°F		
205	1" NPT	0.75	1250 psi 86 bar	1250 psi 86 bar	-	C1-75
207 208	FLANGED	0.75	275 psi 19 bar	100 psi 7 bar	150	C1-175
207 208	FLANGED	0.75	720 psi 50 bar	425 psi 29 bar	300	C1-375
207 208	FLANGED	0.75	1250 psi 86 bar	1030 psi 71 bar	600	C1-675

LEVEL  
Level Switches,  
Float