



Series 211

Flanged Chamber

External Mount, Pressure to 450 psig (31 bar), Hermetically Sealed Switches and Temperature to 500°F (260°C)



Series 213 has one vertical and one horizontal flanged connection (1" RF forged steel - ANSI specifications). Flange centerline 15 1/4" (387 mm). Other centerlines available.



Series 211 has one vertical and one horizontal 1" NPT pipe connection. 1" socket weld optional.

"A" is the level at which single (or lower stage) operates on level rise.

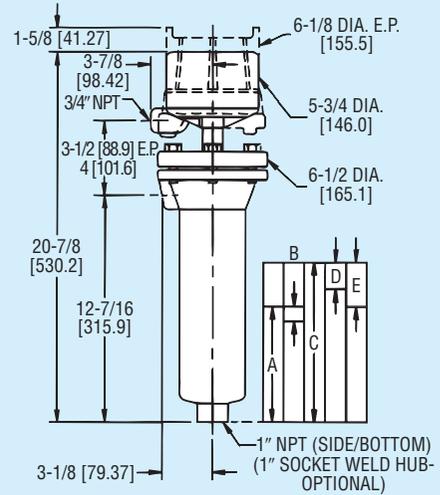
"B" is the operating differential single (or lower stage) - drop in level to restore switch to original position.

"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 position.

"E" - the increase in level above "A" to operate upper stage.

Repeatability ± 1/4" (6.4 mm)



Series 214 has two vertical flanges (1" RF forged steel - ANSI specifications). Flange centerline 15 5/8" (403 mm). Other centerlines available.

Switch Level Change Single Stage Operation

Switch Level Change Two Stage Operation

| | SP GR | A* | B | A** | B | C | D | E | ORDERING CODE |
|--|-------|--------------------|-------------------|--------------------|-------------------|--------------------|-------------------|-------------------|---------------|
| MIN SP GR 0.6 450 psi (31 bar) @ 100°F (38°C) 300 psi (21 bar) @ 500°F (260°C) | 1.0 | 6 3/4" (171 mm) | 3/4" (19 mm) | 5 3/4" (146 mm) | 3/4" (19 mm) | 8 1/4" (210 mm) | 1 1/4" (32 mm) | 2 1/2" (64 mm) | C1-60 |
| | 0.6 | 8" (203 mm) | 1 1/4" (32 mm) | 7" (178 mm) | 1 1/4" (32 mm) | 9 3/4" (248 mm) | 2" (51 mm) | 2 3/4" (70 mm) | |

**"A" is adjustable ± 1".

***"A" is not adjustable.

A removable stainless steel float enclosed in a flanged carbon steel chamber is featured in the durable, field proven 211 Series. External side mount series includes 1" NPT process connections as standard, or with socket weld hubs; or, 1" flanges as options. Pressure and temperature limits are 450 psi (31 bar) at 100°F (38°C), and 300 psi (21 bar) at 500°F (260°C). Minimum specific gravity for all models is 0.60. The models shown can be ordered with a variety of electrical arrangements including SPST, SPDT, or DPDT circuits in hermetically sealed snap action or mercury contacts. Switches can be ordered open on level rise or fall. Single pole double throw electrically independent circuits are available as well as low current or high DC current applications. A full range of enclosures are offered including general purpose NEMA-1; weatherproof NEMA-4X; (explosion-proof) and (explosion-proof - vapor proof) groups B, C, D, E, F, G, NEMA-7 - 9.

APPLICATIONS

Oil refineries, chemical plants, power generating stations, pumping stations, heat transfer systems, sanitary/waste water facilities, drip legs, hydraulic systems, boilers.

SPECIFICATIONS

Minimum Specific Gravity: 0.60

Switch Type: Snap or mercury switch. 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: 1" NPT standard (socket weld hubs or flanges optional). See model chart.

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

Wetted Parts: C1 construction. Chamber, carbon steel. Trim, 303SS, 304SS, and 430SS (316SS and 430SS optional).

Weight: 211, 34 lb (15 kg); 213, 44 lb (20 kg); 214, 51 lb (23 kg).

Suggested Specifications

Liquid level control shall be 211 (213) (214) Series with flanged carbon steel chamber. Process connections shall be 1" NPT (socket weld hub) (flanged). Unit shall be suitable for operation at 450 psi (31 bar) and 100°F (38°C), 300 psi (21 bar) and 500°F (260°C) with a minimum specific gravity of 0.60. Switch mechanism shall be gravity return and shall be activated by a stainless steel float. Circuit shall be (hermetically sealed) snap action (mercury) switch, (SPST) (SPDT) (DPDT). Enclosure shall be general purpose (weatherproof) (explosion-proof) (explosion-proof - vapor proof).

MODEL CHART – SERIES 211

| | | | | | | | | | | | |
|--|-----|------------------------|--|--------------|----|----------|-----|----------|---|----------------|-------------------|
| EXAMPLE | 211 | WT | 7810 | 10 | HF | C1 | 60 | | 211-WT-7810-C1-60. Liquid level control. Flanged carbon steel chamber. Weather proof enclosure. SPDT snap switch, fixed deadband, automatic reset. Operating pressure 450 psig (31 bar) at 100°F (38°C), 300 psig (21 bar) at 500°F (260°C). Side/bottom process connections, 1" NPT. Minimum specific gravity 0.60. | | |
| ENCLOSURE | | G WT E EV | | | | | | | General purpose, NEMA-1. Weather proof, NEMA-3R, 4, 4X. Explosion proof, NEMA-7, 9. Class I Groups B, C, D. Class II Groups E, F, G. (CSA approved Groups C, D, E, F, G only). Explosion proof, vapor proof, NEMA-7, 9. Class I Groups B, C, D. Class II Groups E, F, G. (CSA approved groups C, D, E, F, G only). | UL UL UL | CSA CSA CSA |
| CIRCUITS (For Electrical Circuits see charts A & B below.) | | | 48XX 48XX 78XX 78XX 78XXHM 98XX | 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. Single stage. High temperature snap switch. Continuous rating 800°F (425°C). See Chart B. 211-C1-60 type rated at 175 psi (12 bar). Two stage. High temperature snap switch. Continuous rating 800°F (425°C). See Chart B. 211-C1-60 type rated at 175 psi (12 bar). | | |
| FLANGED CHAMBER CONSTRUCTION 1" NPT HUBS | 211 | | | | | C1 C1 | 60 | | Carbon steel body. Minimum specific gravity 0.60. Side/bottom process connections. 1" NPT hubs. Pressure rating 450 psig (31 bar) at 100°F (38°C), 300 psi (21 bar) at 500°F (260°C). | UL UL | CSA CSA |
| FLANGED CHAMBER CONSTRUCTION WITH FLANGED PROCESS CONNECTIONS | 213 | | | | | C1 | 160 | | 1" 150# flanges side/bottom process connection. Pressure rating 275 psi (19 bar) at 100°F (38°C), 150 psi (10 bar) at 500°F (260°C). Minimum specific gravity 0.60. | UL | CSA |
| | 213 | | | | | C1 | 360 | | 1" 300# flanges side/bottom process connection. Pressure rating 450 psi (31 bar) at 100°F (38°C), 300 psi (21 bar) at 500°F (260°C). Minimum specific gravity 0.60. | UL | CSA |
| | 213 | | | | | C1 | 660 | | 1" 600# flanges side/bottom process connection. Pressure rating 450 psi (31 bar) at 100°F (38°C), 300 psi (21 bar) at 500°F (260°C). Minimum specific gravity 0.60. | UL | CSA |
| | 214 | | | | | C1 | 160 | | 1" 150# flanges side/side process connection. Pressure rating 275 psi (19 bar) at 100°F (38°C), 150 psi (10 bar) at 500°F (260°C). Minimum specific gravity 0.60. | UL | CSA |
| | 214 | | | | | C1 | 360 | | 1" 300# flanges side/side process connection. Pressure rating 450 psi (31 bar) at 100°F (38°C), 300 psi (21 bar) at 500°F (260°C). Minimum specific gravity 0.60. | UL | CSA |
| | 214 | | | | | C1 | 660 | | 1" 600# flanges side/side process connection. Pressure rating 450 psi (31 bar) at 100°F (38°C), 300 psi (21 bar) at 500°F (260°C). Minimum specific gravity 0.60. | UL | CSA |
| OPTIONS | | | | | HF | C216 | | H2 12 | High temperature fins should be considered if ambient temperature is extremely high or if process temperature exceeds 500°F (260°C) for extended periods. 316SS chamber and trim. 430SS armature. 1" socket weld hub instead of 1" NPT. Breather and drain for E type enclosure. Recommended for high humidity or outdoor service. | UL | CSA |

Level

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 | 30VDC | 125V | 250V | | LOWER | UPPER | | |
| CHART A Mercury Contacts | SP-ST Open on level FALL | 10 | 5 | 3† | | 10 | 5 | -4821 | -4821 | -21 | UL | CSA |
| | SP-ST Open on level RISE | 10 | 5 | 3† | | 10 | 5 | -4820 | -4820 | -20 | UL | CSA |
| | SP-DT One Switch | 4 | 2 | 1† | | 4 | 2 | -4810 | -4810 | -10 | UL | CSA |
| | SP-DT Two switches E.I.* | 10 | 5 | 3† | | 10 | 5 | -4815 | -4815 | -15 | UL | CSA |
| | DP-ST Two switches E.I.* Open on level FALL | 10 | 5 | 3† | | 10 | 5 | -4813 | -4813 | -13 | UL | CSA |
| | DP-ST Two switches E.I.* Open on level RISE | 10 | 5 | 3† | | 10 | 5 | -4814 | -4814 | -14 | UL | CSA |
| DP-DT Two SP-DT switches | 4 | 2 | 1† | | 4 | 2 | -4806 | -4806 | -06 | UL | CSA | |
| CHART B Snap Action Contacts | SP-DT One switch | 12 | 5 | 3† | | 0.5** | 0.25** | -7810 | -7810 | -10 | UL | CSA |
| | DP-DT Two SP-DT switches | 12 | 5 | 3† | | 0.5** | 0.25** | -7806 | -7806 | -06 | UL | CSA |
| | SP-DT One hermetically sealed switch | 5 | 5 | | 5** | | | -7810HM | -7810HM | -10HM | | |
| | DP-DT Two hermetically sealed SP-DT switches | 5 | 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 | | |
| | DP-DT Two SP-DT switches | 2 | 2 | | | 0.4** | 0.25** | -1006 | 1006 | -06 | | |
| SP-DT One switch | 2 | 2 | | | 0.4** | 0.25** | -1010 | -1010 | -10 | | | |

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