

Omnitrol 764/766/768 (W)

Dual Actuator Welded Chamber Mounted Switches

The Omnitrol 764/766/768(W) series provides dual-point level control for unit operations, reliability engineering, and instrumentation applications requiring two independent switching points in harsh service environments without adding vessel nozzles or potential leak paths. These dual-actuator, welded chamber-mounted controls feature long-body construction with nominal diameters from 4" to 8", completely enclosing rugged graphite displacers with optional stainless steel alternatives available. Each unit ships factory-calibrated to your process-specific gravity and hydrostatically tested at 1.5x maximum design pressure. The welded design minimizes gasketed joints compared to flanged alternatives while accommodating special body lengths when specified. Standard 1" NPT process connections with alternative configurations available ensure flexible installation. Pressure and temperature ratings from 150 to 1000 psig at 500°F cover most refinery, chemical, and water treatment services. Maximum specific gravity rating of 1.4 suits a broad range of industrial liquids. Standard switching gap between actuators is 4 inches, field-adjustable from 2 to 4 inches to match process dynamics. UL and CSA approvals support hazardous location installations and satisfy corporate safety compliance requirements.



Key Features

Dual Actuator Configuration Two independent setpoints in one welded chamber enable pump start/stop control or high-high/low-low alarms without adding second instrument, reducing vessel penetrations and installation complexity.	Welded Long-Body Construction Eliminates gasketed flange joints present in removable designs, reducing potential leak paths and fugitive emissions while supporting special body lengths and custom displacer materials.	Factory SG Calibration Each unit calibrated to specified liquid specific gravity up to 1.4 maximum before shipment, ensuring predictable switching differential and eliminating field trial-and-error during commissioning.
High Pressure Temperature Rating Standard ratings from 150 to 1000 psig at 500°F cover most refinery, chemical, and industrial water services where electronic instruments struggle with extreme conditions.	Adjustable Switching Gap Distance between lower switching points adjustable from 2 to 4 inches at standard specific gravity, allowing differential tuning to prevent pump short-cycling in surge conditions.	Hydrostatic Proof Testing Every chamber pressure-tested to 1.5 times maximum design pressure before shipment, providing documented mechanical integrity and verifiable compliance for audits and safety reviews.



Typical Applications



OVERFLOW PROTECTION SYSTEMS

Two independent trips in single welded chamber provide high and high-high alarms, reducing vessel penetrations and lowering installation costs while minimizing potential leak paths.



PUMP START/STOP CONTROL

Upper actuator stops pump while lower actuator starts pump with 2-4 inch adjustable differential, reducing short-cycling and stabilizing sump or tank levels.



HIGH-PRESSURE HOT SERVICES

Mechanical switching rated to 1000 psig and 500°F provides dependable control where electronic transmitters struggle, ideal for refinery and chemical plant extreme conditions.



SPACE-CONSTRAINED RETROFIT INSTALLATIONS

Long welded chamber with enclosed displacer mounts externally to vessel side, providing compact solution without internal stilling wells or extensive vessel modifications.



FUGITIVE EMISSION REDUCTION

Welded construction minimizes gasketed joints compared to flanged designs, lowering leak paths and reducing potential fugitive emissions for environmental compliance in regulated facilities.



VARIABLE DENSITY PROCESS CONTROL

Factory SG calibration with clear guidance on differential changes accommodates blend variations and temperature drift, maintaining accurate switching despite density fluctuations.

Benefits



Reduced Leak Paths

Welded body with standard NPT connections minimizes gasketed joints compared to flanged alternatives, lowering fugitive emission risk and reducing maintenance frequency for seal replacements.



Simplified Installation Work

Dual actuators provide two setpoints in single instrument, eliminating separate devices and reducing installation time, field wiring complexity, and spare parts inventory requirements.



Predictable Switching Performance

Factory calibration to specified SG with published differential guidance ensures accurate trip points, eliminating field tuning and preventing nuisance alarms from density variations.



Faster Commissioning Time

Pre-calibrated and hydrostatically tested units arrive ready for installation, enabling rapid startup during tight turnaround windows without additional field validation or adjustment cycles.



Documented Mechanical Integrity

Hydrostatic testing at 1.5× design pressure combined with UL/CSA certifications provides verifiable safety compliance, streamlining audit processes and satisfying insurance requirements.



Extended Service Capability

Optional stainless steel displacers and chambers resist corrosive media attack, providing longer service life in aggressive chemical environments while supporting special body lengths.



Technical Specifications
& Key Features

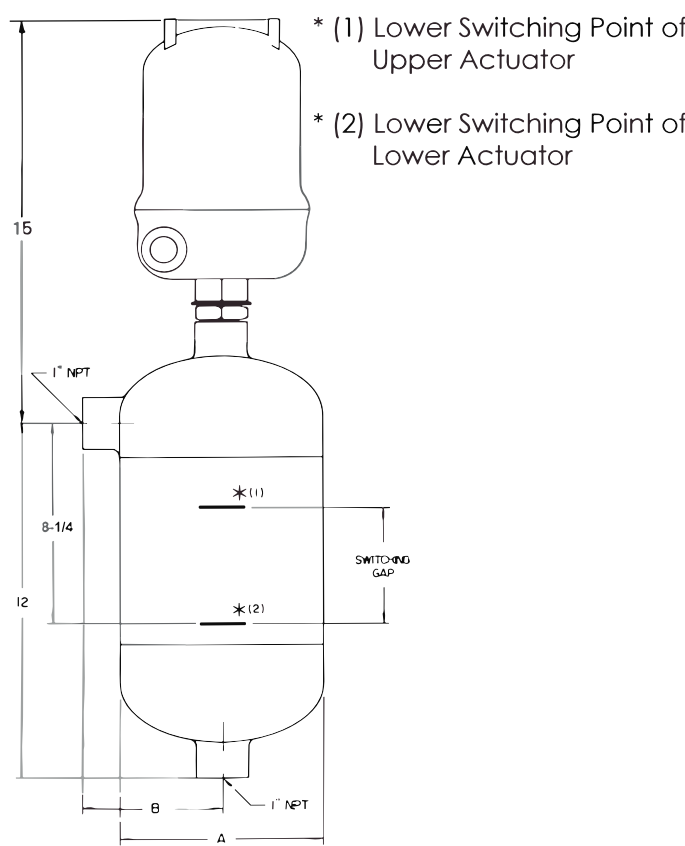
Models:	764W (4" body), 766W (6"), 768W (8") dual-actuator welded chamber.
Pressure/Temperature:	150–1000 psig at 500 °F (standard).
Materials:	Chamber in Carbon Steel, 304SS, 316SS; graphite displacer (316SS optional).
Process connections:	1" NPT standard; other sizes/configurations available.
Switching Gap (lower switch points):	2–4" adjustable, 4" default.
Max specific gravity:	1.4 (760 series).
Approvals:	UL & CSA.
Testing:	Hydrostatically tested to 1.5× max design pressure.

Why choose the
764/766/768(W) vs.
other Omnitrol chamber
switches?

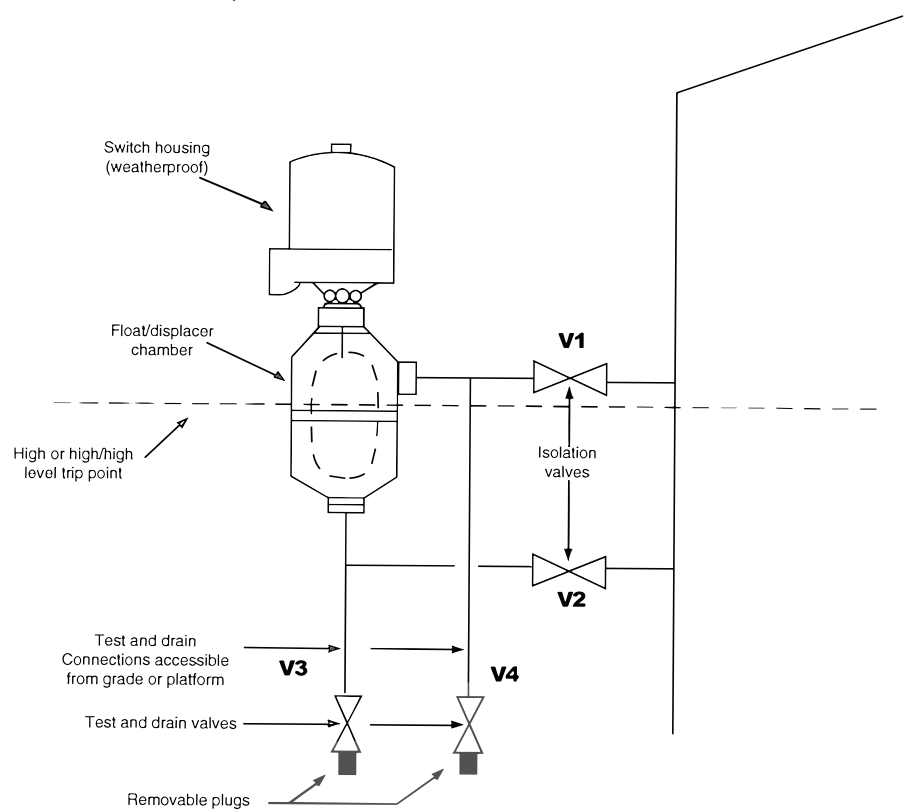
- Vs. 764/766/768(F) (dual-actuator flanged): Choose (W) when you want fewer gasketed joints and the ability to specify special body lengths. Pick (F) when you prefer flanged removal or when you need broader pressure class tables and field disassembly. Note: both are dual-actuator; the 760 series has max SG 1.4 and is not for interface duties.
- Vs. 663/664/666/668(W) (single-actuator welded): Choose 760(W) for two setpoints in one chamber (pump control, HH/LL). Choose 660(W) when only one trip is required or when tighter SG capabilities of the 600 series meet your needs. Both share 150–1000 psig @ 500 °F ratings.
- Vs. 666/668(C) (short welded "C" chamber): C-series is compact and supports higher max SG (to 1.7) but is single-actuator and short-body; use it for one-point trips and tight spaces.



Dimensions



Typical System Layout





Model Number Selection

The model number will consist of a base number 764W, 766W, & 768 (W) followed by 9 digits. These digits will represent 10 sets of option tables.

Part Number Structure

OMNITROL A-B-CD-E-F-G-HI-JK-L-MN

Part Prefix OMNITROL

Part Number	A- NUMBER OF ACTUATORS
6	Single
7	Dual
P	Pneumatic

Part Number	B- CONFIGURATION
2	Switch Head
6	Switch with Chamber

Part Number	E- DISPLACER MATERIAL & TYPE
G	Graphite
R	304 Stainless Steel
S	316 Stainless Steel

Part Number	F- SWITCH HOUSING
W	Weather Resistant
V	Explosion & Vapor Proof Group B, C & D
R	Explosion & Vapor Proof/Rain Tight Group C & D

Part Number	G- MAXIMUM WORKING PRESSURE
1	150 PSIG
2	300 PSIG
3	500 PSIG
4	600 PSIG
5	900 PSIG
6	1000 PSIG
7	1500 PSIG

Part Number	HI- CHAMBER PROCESS CONNECTION SIZE
11	1" NPT
12	1" Socket Weld
13	1.5" NPT
14	1.5" Socket Weld
15	2" NPT
16	2" Socket Weld
21	1" 150 Lb. RF

Part Number	CD- CHAMBER SIZE, TYPE & MATERIAL
3F	Ø3" Chamber - Flanged / Steel
3G	Ø3" Chamber - Flanged / 304SS
3H	Ø3" Chamber - Flanged / 316SS
3W	Ø3" Chamber - Long / Steel
3X	Ø3" Chamber - Long / 304SS
3Y	Ø3" Chamber - Long / 316SS
4C	Ø4" Chamber - Short / Steel
4D	Ø4" Chamber - Short / 304SS
4E	Ø4" Chamber - Short / 316SS
4F	Ø4" Chamber - Flanged / Steel
4G	Ø4" Chamber - Flanged / 304SS
4H	Ø4" Chamber - Flanged / 316SS
4W	Ø4" Chamber - Long / Steel
4X	Ø4" Chamber - Long / 304SS
4Y	Ø4" Chamber - Long / 316SS
6C	Ø6" Chamber - Short / Steel
6D	Ø6" Chamber - Short / 304SS
6E	Ø6" Chamber - Short / 316SS
6F	Ø6" Chamber - Flanged / Steel
6G	Ø6" Chamber - Flanged / 304SS
6H	Ø6" Chamber - Flanged / 316SS
6W	Ø6" Chamber - Long / Steel
6X	Ø6" Chamber - Long / 304SS
6Y	Ø6" Chamber - Long / 316SS
8C	Ø8" Chamber - Short / Steel
8D	Ø8" Chamber - Short / 304SS
8E	Ø8" Chamber - Short / 316SS
8F	Ø8" Chamber - Flanged / Steel
8G	Ø8" Chamber - Flanged / 304SS
8H	Ø8" Chamber - Flanged / 316SS
8W	Ø8" Chamber - Long / Steel
8X	Ø8" Chamber - Long / 304SS
8Y	Ø8" Chamber - Long / 316SS



Part Number	HI- CHAMBER PROCESS CONNECTION SIZE
22	1" 300 Lb. RF
23	1" 600 Lb. RF
24	1.5" 150 Lb. RF
25	1.5" 300 Lb. RF
26	1.5" 600 Lb. RF
27	2" 150 Lb. RF
28	2" 300 Lb. RF
29	2" 600 Lb. RF
31	1" 150 Lb. RF
32	1" 300 Lb. RF
33	1" 600 Lb. RF
34	1.5" 150 Lb. RF
35	1.5" 300 Lb. RF
36	1.5" 600 Lb. RF
37	2" 150 Lb. RF
38	2" 300 Lb. RF
39	2" 600 Lb. RF
41	1" 150 Lb. RF
42	1" 300 Lb. RF
43	1" 600 Lb. RF
44	1.5" 150 Lb. RF
45	1.5" 300 Lb. RF
46	1.5" 600 Lb. RF
47	2" 150 Lb. RF
48	2" 300 Lb. RF
49	2" 600 Lb. RF

Part Number	JK- SWITCH TYPE
E2	20 Amp SPDT Micro (E2)
E4	20 Amp DPDT Micro (E4)
G2	ECW Gold Contact
H2	10 Amp DC SPDT Micro (H2)
H4	10 Amp DC DPDT Micro (H4)
M2	5 Amp SPDT Micro-Hermetically Sealed (M2)
M4	5 Amp DPDT Micro-Hermetically Sealed (M4)
S2	5 Amp SPDT Micro Environment Proof (S2)
S4	5 Amp DPDT Micro Environment Proof (S4)

Part Number	L- SPECIFIC GRAVITY
A	< .53 (Special)
B	.53 to .57
C	.58 to .62
D	.63 to .67
E	.68 to .72
F	.73 to .77
G	.78 to .82
H	.83 to .87
I	.88 to .92
J	.93 to .97
K	.98 to 1.02
L	1.03 to 1.07
M	1.08 to 1.12
N	1.13 to 1.17
O	> 1.17 (Special)

Part Number	MN- CHAMBER CONNECTION DISTANCE
00	Standard Chamber Length
XX	Specify Chamber Length in Inches

Summary

The Omnitrol 764/766/768(W) delivers two dependable, mechanical level trips in a welded, long-body external chamber—ideal when integrity, simplicity, and minimal leak paths matter. With factory SG calibration, UL/CSA approvals, hydrostatic proof testing, and service to 1000 psig/500 °F, it's a robust choice for pump control and alarm duties across refining, chemical, and water markets. If you need removable flanged construction, the dual-actuator (F) variant or other models from the chamber-mount family may be a better fit; otherwise, the (W) gives you the cleanest, most compact dual-point package.

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This document is for information purposes only. All designs subject to change. Certified dimensions, specifications, and performance data available upon request