

Omnitrol 616/716

Top-Mounted Stainless Steel Displacer Level Switch

The Omnitrol 616/716 Series is engineered for refinery operators, chemical plant engineers, boiler and water-treatment supervisors, and OEM skid builders who need dependable point-level switching in high-temperature or corrosive liquid service. These top-mounted controls use a weighted stainless-steel displacer that “sinks” in the process media, ensuring stable actuation unaffected by turbulence, foam, or rapid surface motion. Their constantly engaged magnetic field provides positive snap-action switching, supporting precise pump control, high/low alarms, and reliable interlocks across variable process conditions. With adjustable switching spans—from approximately 2.5 inches to full cable travel—the 616/716 can be field-set for custom control bands without external logic or auxiliary instrumentation. Stainless-steel construction and high-temperature capability up to 500°F make these switches ideal for aggressive chemicals, hot oils, condensate, petrochemical fluids, and industrial process liquids. Multiple switch types integrate into diverse automation architectures, while broad specific-gravity tolerance supports consistent operation across changing process compositions.



Key Features

Corrosion-Resistant Construction

Stainless-steel displacers and isolation components tolerate acidic, alkaline, and hydrocarbon media, preventing deterioration common with porcelain, graphite, or polymer elements.

Stable Performance in Turbulence

Weighted sinking displacers ignore surface agitation, foam, and wash conditions, maintaining reliable switching without nuisance alarms in dynamic process vessels.

High-Temperature Capability

Design materials allow operation up to 500°F, enabling dependable level actuation in hot condensate, thermal oils, and high-temperature chemical applications

Adjustable Switching Differential

Field-positionable displacers let operators set precise control points or pump on/off bands without external controllers or additional interface hardware.

Strong Magnetic Snap-Action

A constantly engaged magnetic field ensures positive “make/break” switching with no drift, even under vibration or rapid process level changes.

Multi-Switch Flexibility

Available SPST, SPDT, DPST, and DPDT configurations support alarms, pump control, and shutdown circuits across a wide range of electrical systems.



Typical Applications



BOILER WATER LEVEL

Provides stable switching unaffected by turbulence, delivering reliable actuation to prevent nuisance trips or burner shutdowns in steam systems.



HOT OIL SERVICE

Handles elevated temperatures and viscous hydrocarbons, ensuring dependable pump and alarm control in refinery and process-heating loops.



CHEMICAL STORAGE TANKS

Resists corrosive liquids, supporting long-term level control for acids, alkalis, and aggressive chemical solutions in batch or continuous operations.



SUMPS AND DRAIN PITS

Maintains consistent operation in dirty or agitated environments, improving pump cycling reliability during variable inflow conditions.



CONDENSATE RETURN SYSTEMS

Performs accurately in hot condensate streams, ensuring pump protection and proper condensate recovery under fluctuating load conditions.



REFINERY PROCESS VESSELS

Supports high-temperature, variable-density fluids, enabling robust alarm and control functions in demanding petroleum process equipment.

Benefits



Long Service Life

Stainless-steel displacers resist corrosion, swelling, and chemical attack, extending operational life in aggressive or high-temperature media.



Reliable Actuation

Magnetic snap-action operation ensures consistent switching even when exposed to vibration, agitation, or surface disturbances.



Customizable Control Band

Adjustable differential enables precise pump control or alarm points, reducing cycling frequency and improving system efficiency.



Reduced Maintenance Needs

Weighted displacer design avoids fouling or false triggers, minimizing service intervention in turbulent or contaminated liquids.



Broad Application Range

Wide specific-gravity tolerance from 0.70 to 2.0 supports use across diverse industrial media without recalibration.



Flexible System Integration

Multiple electrical switch types allow simple integration into alarms, pumps, shutdown circuits, and automation panels.

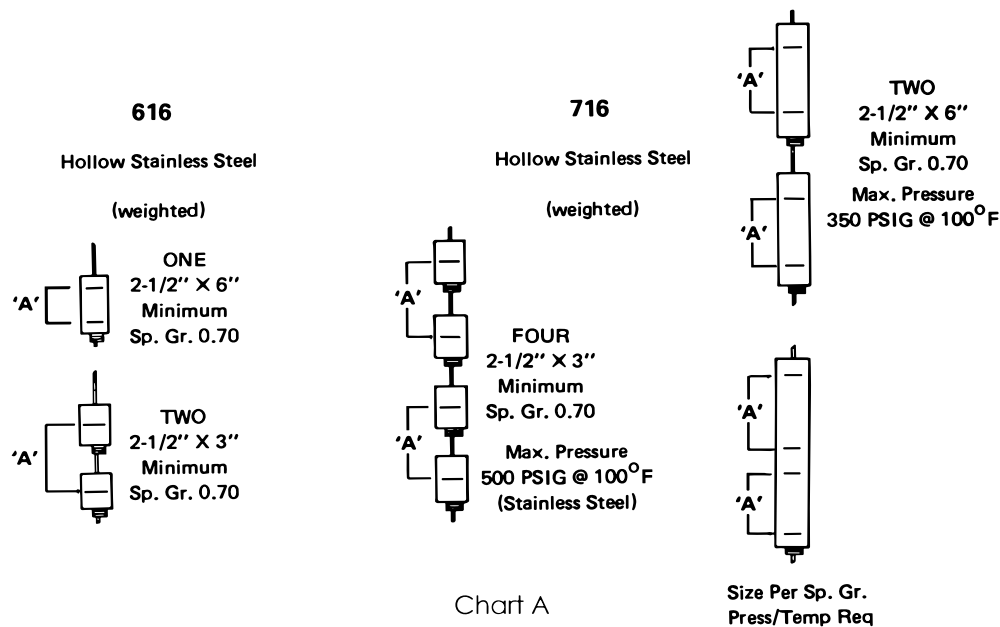


Technical Specifications
& Key Features

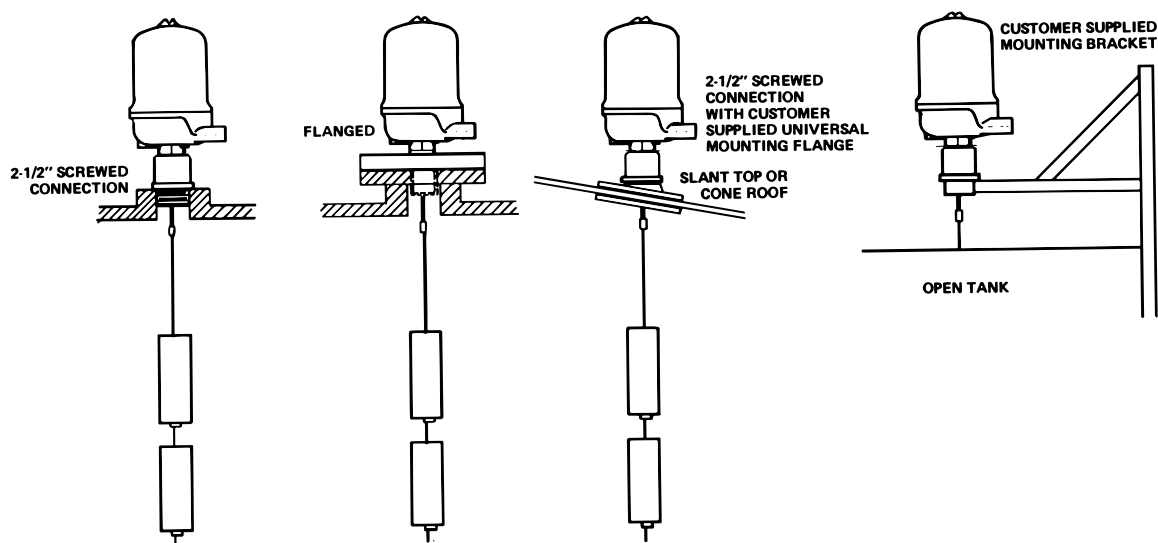
Mounting:	Top-mounted, 2-1/2" NPT or ANSI flange (150#-1500#)
Actuation:	Magnetic snap-action switch mechanism
Switch Types:	SPDT, DPDT micro switches
Displacer:	Stainless steel weighted sinking displacer
Cable Length:	10' standard; up to 75' (600 series); 40' (700 series)
Specific Gravity Range:	0.70 – 2.0 (±0.2 variation)
Temperature:	Up to 500°F (material dependent)
Differential Range:	2.5" to full cable travel
Certifications:	UL
Housing:	WR or Explosion-Proof/Vapor Proof/Rain Tight
Applications:	Water, oils, petrochemicals, acids/alkalis, hot condensate



Dimensions



Typical System Layout





Model Number Selection

The model number will consist of a base number 616/716 followed by 9 digits. These digits will represent 10 sets of option tables.

Part Number Structure

OMNITROL ABC-DE-F-G-H-IJ-K-L-M

Part Prefix OMNITROL

Part Number	ABC- NUMBER OF ACTUATORS & DISPLACER MATERIAL
610	Single Actuator / Graphite Displacer
613	Single Actuator / Porcelain Displacer
616	Single Actuator / Stainless Steel Displacer
621	Single Actuator / Lead* Displacer
710	Dual Actuators / Graphite Displacer
713	Dual Actuators / Porcelain Displacer
716	Dual Actuators / Stainless Steel Displacer
721	Dual Actuators / Lead* Displacer

Part Number	F- FLANGE PRESSURE RATING
0	Threaded
1	125 Lb. ANSI
2	150 Lb. ANSI
3	300 Lb. ANSI
6	600 Lb. ANSI
7	900 Lb. ANSI
8	1500 LB. ANSI

Part Number	G- FLANGE FACE TYPE
0	Threaded
1	Flat Faced (FF)
2	Raised Face (RF)
3	Ring Type (RT) > 600 lbs

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

Part Number	IJ- 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	DE- PROCESS CONNECTION & MATERIAL
C0	Cast Iron 2.5" NPT Threaded
E0	Cast Iron 2.5" NPT Threaded (GLC)
D3	Cast Iron with 3" ANSI 125 Lb. FF
D4	Cast Iron with 4" ANSI 125 Lb. FF
D6	Cast Iron with 6" ANSI 125 Lb. FF
D8	Cast Iron with 8" ANSI 125 Lb. FF
F3	Carbon Steel with 3" ANSI Flange
F4	Carbon Steel with 4" ANSI Flange
F6	Carbon Steel with 6" ANSI Flange
F8	Carbon Steel with 8" ANSI Flange
G3	304 SS with 3" ANSI Flange
G4	304 SS with 4" ANSI Flange
G6	304 SS with 6" ANSI Flange
G8	304 SS with 8" ANSI Flange
H3	316 SS with 3" ANSI Flange
H4	316 SS with 4" ANSI Flange
H6	316 SS with 6" ANSI Flange
H8	316 SS with 8" ANSI Flange
B0	Carbon Steel Bushing 2.5" NPT
S0	304 SS Bushing 2.5" NPT
T0	316 SS Bushing 2.5" NPT
J3	Cast Iron with 3" ANSI Flange (GLC)
J4	Cast Iron with 4" ANSI Flange (GLC)
J6	Cast Iron with 6" ANSI Flange (GLC)
J8	Cast Iron with 8" ANSI Flange (GLC)
K3	Cast Steel with 3" ANSI Flange (GLC)
K4	Cast Steel with 4" ANSI Flange (GLC)
K6	Cast Steel with 6" ANSI Flange (GLC)
K8	Cast Steel with 8" ANSI Flange (GLC)
L3	304 SS with 3" ANSI Flange (GLC)
L4	304 SS with 4" ANSI Flange (GLC)
L6	304 SS with 6" ANSI Flange (GLC)
L8	304 SS with 8" ANSI Flange (GLC)
M3	316 SS with 3" ANSI Flange (GLC)
M4	316 SS with 4" ANSI Flange (GLC)
M6	316 SS with 6" ANSI Flange (GLC)
M8	316 SS with 6" ANSI Flange (GLC)



Part Number	IJ- 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	K- 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)
Y	Not Applicable (Lead Displacer)

Part Number	L- DISPLACER CABLE LENGTH
0	10 ft (Standard)
2	20 ft
3	30 ft
4	40 ft

Part Number	M- GROUND LEVEL CHECKER CHAIN LENGTH
0	No GLC
1	10 ft (Standard)
2	20 ft
3	30 ft
4	40 ft
5	50 ft
6	60 ft

Summary

The Omnitrol 616/716 provides rugged, adjustable top-mounted level control designed for demanding industrial environments including refining, chemical processing, boilers, and bulk liquid handling. With stainless steel displacers, robust magnetic actuation, and flexible switching configurations, the 616/716 eliminates nuisance trips, handles aggressive media and high temperatures, and offers reliable long-term performance where safety and uptime matter. Stainless steel displacers ensure superior durability, chemical resistance, safety, and reliability legacy designs.

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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