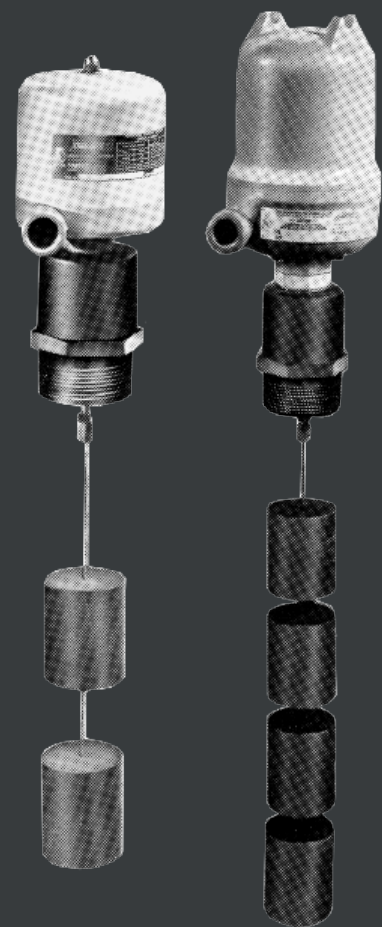


Omnitrol 610/710

Top Mounted Level Control Switches (Graphite Displacers)

The Omnitrol 610/710 Series provides rugged, reliable point-level control for refinery, petrochemical, wastewater, and power-generation applications requiring accurate switching under pressure or in hazardous service. Using magnetically actuated graphite displacers, these controls deliver precise, repeatable operation without external power, field calibration, or sensitivity to coating, turbulence, or dielectric changes. Unlike floats or capacitance probes that may drift, swell, or leak, the Omnitrol design uses a sealed displacer, dual-magnet snap action, and Inconel spring assembly to ensure positive actuation and long-term performance, even in corrosive, viscous, or high-temperature liquids. Models include the single-point 610 and the dual-point 710 for independent pump control, alarms, shutdown logic, or overfill protection. An all-metal isolation tube keeps the switch housing mechanically and pressure-isolated from the process, while explosion-proof or weather-resistant housings support operation in Class I and II classified locations. Graphite displacers provide superior reliability compared to stainless steel or porcelain designs, with excellent resistance to chemical attack, collapse, and mechanical fatigue.



Key Features

Positive Snap Switching

Magnetically coupled snap-action ensures vibration-proof actuation and eliminates intermediate drift or unstable switching points.

Foam/Turbulence Immunity

Archimedes-principle displacer actuation remains accurate even during agitation, coating, or foaming conditions.

Single or Dual Points

Choose one or two independent actuation levels for pump control, alarms, shutdown functions, or overfill logic flexibility.

High-Pressure Isolation

All-metal isolation tube safely separates process pressure from the switch housing up to 1500 PSIG service.

Hazardous Area Safety

Approved for Class I Groups B,C,D and Class II Groups E,F,G service, protecting against vapor ingress and ignition.

No Calibration Needed

Factory-set specific-gravity calibration remains stable despite pressure, temperature cycling, or long-term operation.



Typical Applications



OVERFILL PROTECTION

Dual-point switching provides high/high-high actuation for reliable shutdown during tank overfill scenarios.



PUMP CONTROL

Single- or dual-point configurations enable low-level cutout and refill logic to prevent cavitation and dry-run damage.



FOAMY LIQUIDS

Magnetic displacers maintain accurate switching performance even when product surfaces foam or coat instrumentation.



HAZARDOUS AREAS

Explosion-proof construction ensures safe, compliant operation in electrically classified process facilities.



HIGH-PRESSURE SERVICE

Alloy isolation tubes and Inconel springs maintain reliable switching in elevated pressure and temperature conditions.



CORROSIVE CHEMICALS

Solid graphite displacers resist swelling and chemical attack, delivering long-term performance in aggressive media.

Benefits



Stable Switching

Magnetic snap action resists turbulence and agitation, reducing nuisance trips and improving operational reliability.



Long Service Life

Sealed graphite displacer and Inconel spring eliminate fatigue, leakage, or collapse seen in conventional float designs.



Corrosion Resistance

Stainless steel, Monel, and Hastelloy materials ensure dependable operation in corrosive or scaling environments.



Regulatory Compliance

API 2350-tested design supports safe overfill protection and helps meet industry standards for tank safety.



Dual-Level Control

Two independent actuation points on the 710 model enable combined alarm and pump logic in one compact device.



Extreme Durability

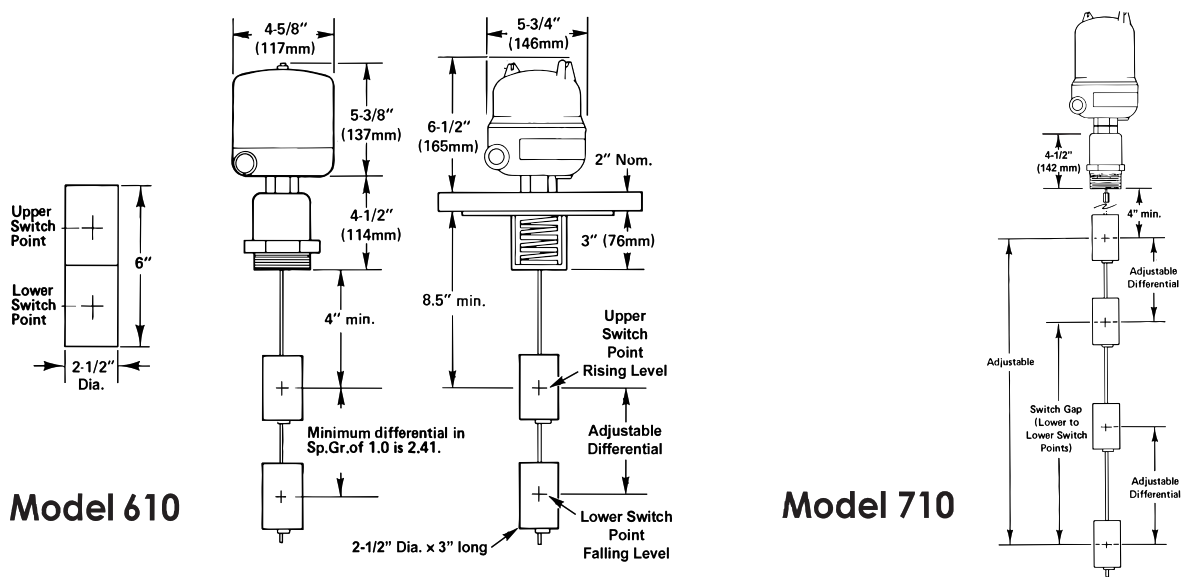
Graphite displacers withstand high temperature, pressure, and turbulence without swelling, cracking, or degrading.



Technical Specifications & Key Features

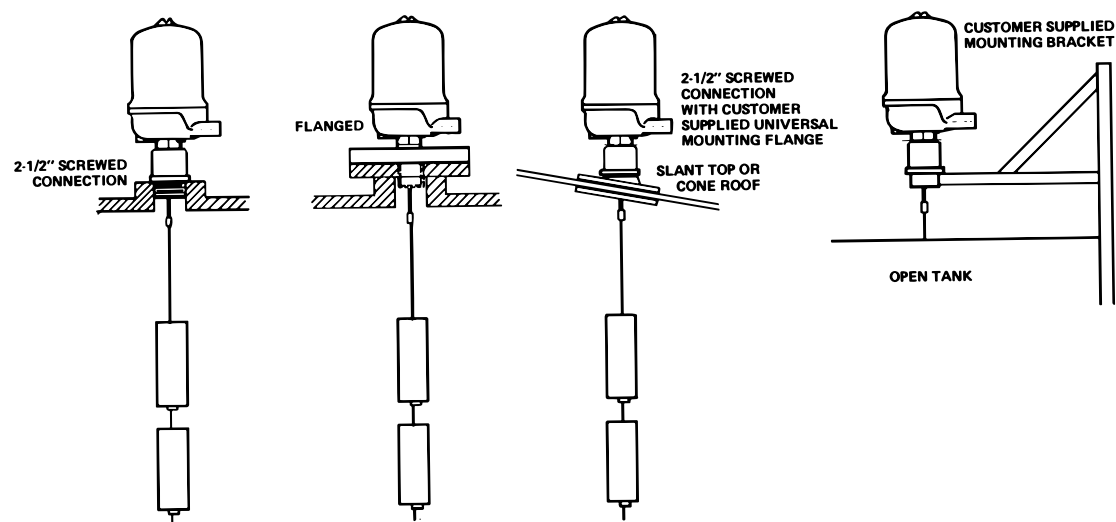
Type:	Top-mounted
Operation:	Buoyancy (Archimedes) principle; magnetic snap-action actuation
Models:	610 (Single actuator – one set point); 710 (Dual actuator – two set points)
Housing:	WR or Explosion-Proof/Vapor Proof/Rain Tight
Pressure Rating:	Up to 1500 PSIG (10335 kPa)
Temperature Rating:	–100°F (–73 °C) to +400°F (+204°C) depending on material
Switch Options:	SPDT / DPDT micro switches;
Electrical Entry:	¾" NPT conduit
Mounting:	Threaded (2 ½" NPT) or ANSI flange (150# – 1500#)
Process Connection Materials:	316 SS, Carbon Steel, 304 SS, Cast Iron
Displacer Material:	Graphite displacers give long-term, repeatable switching performance in harsh services where other materials would creep, swell, or corrode.
Certifications:	UL approved
Maintenance:	Annual inspection and functional test recommended; no field calibration required

Dimensions





Typical System Layout



Model Number Selection

The model number will consist of a base number 610/710 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	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



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

Part Number	DE- PROCESS CONNECTION & MATERIAL
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	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	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 610 / 710 Series combines magnetic displacer technology, explosion-proof reliability, and precision switch performance for dependable level control in the toughest process environments. Whether used for pump control, alarm, interlock, or overfill protection, these controls deliver repeatable performance without external power or recalibration. Backed by our century plus of expertise, Omnitrol units provide safer operations, reduced maintenance, and unmatched durability for process industries worldwide.

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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

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