



### PURPOSE

The Captrol 511 Point Level Switch is designed to be the ultimate in detecting the presence or absence of various materials from powder bulk solids to most liquids. The electronics are self contained in a cast aluminum housing pre-assembled to a rugged three element sensing probe.

# ■PRINCIPLE OF OPERATION

The Captrol 511 responds to a capacitance change at the active section of the sensing element. The material to be detected must be referenced to ground potential to create a significant capacitance change. Typically the ground referencing is accomplished by threading the probe to a metallic tank which then becomes ground reference. Most non-metallic tanks require a ground pipe or plate adjacent to the active probe.

When material fills the space between the active probe and ground, a capacitance change is detected and the output relay is actuated.

### **OVERLOOKS BUILD-UP**

Effects of an accumulated build-up that typically cause false signals are ignored via Delavan's driven guard element of the sensing probe.

### **FEATURES**

- Disregards effects of product build-up Build-up is ignored via the unique driven guard element on the sensing probe
- · On-board performance DVM test points
- Adaptable to a variety of applications
- Field selectable fail-safe modes
- Built-in static suppression
- · Explosion proof design
- · Adjustable time delay
- · Adjustable sensitivity
- Universal power supply Accepts 115, 230 Volts AC or 24 Volts DC
- Status indication LED's
- · Variable probe lengths





### SPECIFICATIONS

Supply Voltage NOMINAL ABSOLUTE LIMITS 115 Volts AC 95-135 Volts AC

230 Volts AC 190-270 Volts AC 24 Volts DC 12-28 Volts DC

Power Less than 3 volt-amperes

Frequency, AC Power 60-100 Hz

Output Relay - 5 amp DPDT

Ratings 5 amp @ 115 Volts AC Non-inductive

5 amp @ 230 Volts AC Non-inductive 3 amp @ 24 Volts DC Non-inductive

Time Delay Adjustable: .3 to 20 seconds

Fail-Safe Switch Selectable - High Level or Low Level

Indicators Two, Light Emitting Diodes (LED)

RED - Illuminated when probe capacitance

is greater than set-point YELLOW - Illuminated when relay

is energized

Temperature Range

Electronics  $-40^{\circ}\text{F to } +160^{\circ}\text{F } (-40^{\circ}\text{C to } +71^{\circ}\text{C})$ 

Pressure Rating G.I.M.: Up to 125 psi

Teflon Probes: Up to 400 psi

Housing

Stability

Cast Aluminum with

Fused Polyester Finish Meets NEMA 4, 5, 7, 9, 12;

NEC Class I, Division II - Groups C,D; NEC Class II, Division II - Groups E, F, G

2.2mv or 0.02pf (TP3 & TP4)

C '

Sensitivity 0.5 pF to 30 pF

Bulk Solids - 10 lbs/cu. ft. and greater Liquids - 1.5 dielectric constant and greater

## **■**ORDERING INFORMATION

### **CAPTROL**

511-\_

Special Features
H = High Temperature
12" Lagging Extension (>200°F)
L = External Alarm Indicator
90° = 90° Downward Bend on

00 = None

Probe Active Section

Process Mounting (Specify Size)

NPT = Nat'l Pipe Thread

Process Connection

3A = Food-grade Tri-clover Fitting

T3A = Teflon Faced Food-grade

Tri-clover Fitting (specify size)

K3A = Kynar Faced Food-grade
Tri-clover Fitting (specify size)

FC = Flange C.S. (specify size)

FSS = Flange 316 Stainless Steel (specify size)

Sensing Probe Type (Specify Insertion Length)

GIMN = Guarded Injection molded Noryl, 316 Stainless Steel, 14" Length

GMIF = Guarded Injection Molded Fortron, 316 Stainless Steel, 14" Length

GT = 18" Standard,

18" or less Stainless Steel/Teflon

GFC = GIM w/ Stainless Steel Flexible

Cable - max. 6 ft.

GC = High Temperature, Plasma/Ceramic - max. 750°F

GTH = Teflon with Hastelloy Wetted Parts, 36" or less

GTT = Guarded Teflon, Teflon Sealed Active

GAR = Guarded Abrasion Resistant Stainless Steel with

Durable Plastic Insulator

THD = Non-Guarded, Teflon Sealed Active

(Available Bare)

Model 511-B R.F. Capacitance Point Level Switch



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