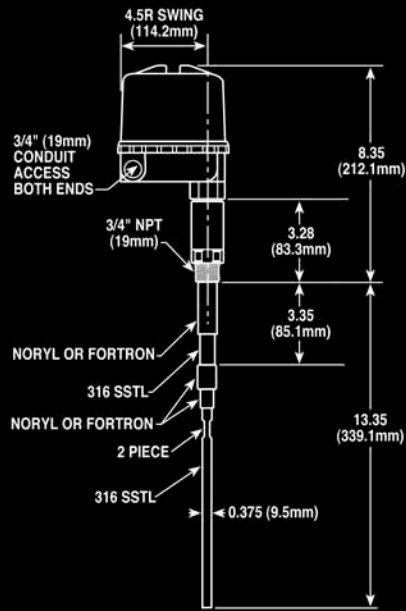


# CAPTROL 500

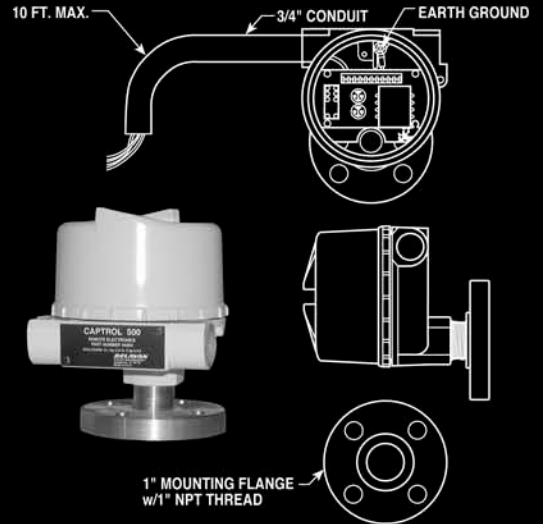


500 Integral



## DATA SHEET

# R.F. Capacitance Integral or Remote Point Level Switch



500-R10 Remote Electronics

### PURPOSE

Delavan's **Captrol 500** is a cost effective Microcontroller Based R.F. Capacitance On/Off Switch used in powder bulk solid and liquid applications.

### "ONE-TOUCH" BUTTON CALIBRATION

With the utilization of our Microcontroller and Delavan's unique Auto-Cal algorithm, calibration is accomplished with a momentary touch of a button. No special tools, complicated procedures or valuable time is needed.

### PRINCIPLE OF OPERATION

The **Captrol 500** Microcontroller Based Point Level Switch consists of solid state electronics mounted in a cast aluminum explosion proof enclosure. The rugged sensing element utilizes a driven guard designed to eliminate the effects of material build-up or coatings that may cause false signals.

The sensing element's "active" section is energized with a R.F. (Radio Frequency) signal approximately 2mHz. When the process level changes, a change in capacitance occurs resulting in a change in frequency. This change in frequency is compared to a preset value and after amplification the signal is used to actuate a relay.

### FEATURES

- Integral or remote mount electronics
- On-board microcontroller
- One-touch button calibration
- Built-in "self diagnostics"
- Built-in driven shield/guard  
Designed to eliminate false signals caused by material build-up or coatings
- Universal power supply  
115, 230 Volts AC or 24 Volts DC
- Status Indication LED's
- Adjustable sensitivity
- Adjustable time delay
- Field selectable Fail-Safe modes
- Built-in static suppression
- Explosion proof design
- 3/4" stainless steel N.P.T. and flange mounting



# DELAVAN

## Process Instrumentation

### SPECIFICATIONS

<b>Supply Voltage</b>	NOMINAL	ABSOLUTE LIMITS
	115 Volts AC	95-135 Volts AC
	230 Volts AC	180-270 Volts AC
	24 Volts DC	18-28 Volts DC
<b>Power Consumption</b>	Less than 3 volt-amperes	
<b>Frequency, AC Power</b>	50-60 Hz	
<b>Output</b>	Relay-5 amp DPDT	
<b>Ratings</b>	5 amp @ 115 Volts AC Non-inductive 5 amp @ 230 Volts AC Non-inductive 3 amp @ 26 Volts AC Non-inductive	
<b>Time Delay</b>	Adjustable: .1 to 30 seconds	
<b>Fail-safe</b>	Switch Selectable: High Level or Low Level	
<b>Indicators</b>	Two light emitting diodes (LED): GREEN - Illuminated when probe capacitance is greater than set point RED - Illuminated when relay is energized	
<b>Temperature Range</b>		
<b>Electronics —</b>	-40° to 160°F (-40° to +71°C)	
<b>Probes —</b>	G.I.M.F.: -40° to 450°F (-40° to +232°C) G.I.M.N.: -40° to 300°F (-40° to +149°C) G.T.: -40° to 450°F (-40° to +232°C)	
<b>Pressure Rating</b>	G.I.M.F. and G.I.M.N.: Up to 500 psi Teflon Probes: Up to 400 psi	
<b>Housings</b>		
<b>Cast Aluminum with Fused Polyester Finish</b>	Meet NEMA 4, 5, 7, 9, 12; NEC Class I - Groups C, D; NEC Class II - Groups E, F, G	
<b>Stability</b>	0.01%F	
<b>Sensitivity</b>	Adjustable 0.5 pF to 10 pF Bulk solids - 10 lbs./cu. ft. and greater Liquids - 1.5 Dielectric constant and greater	

### ORDERING INFORMATION

#### CAPTROL 500

	<p><b>Special Features</b>  H = High Temperature  12" Lagging Extension (GT, GC, GTH)  90° = 90° Downward Bend on Probe Active Section  S = Sensitivity Sleeve, 2" or 5"  00 = None</p> <p><b>Process Mounting</b>  All Flanges Available  00 = None</p> <p><b>Sensing Probe</b>  (Specify insertion length)  GIMF = Guarded Injection Molded Fortron, 316 Stainless Steel, 14" Length  GIMN = Guarded Injection Molded Noryl, 316 Stainless Steel, 14" Length  GT = Guarded Teflon, 1/4" Center Rod, 316 Stainless Steel, 18" Length  GT1/2 = Guarded Teflon, 1/2" center rod, 316 Stainless Steel, 6" Length  GC = Guarded Ceramic, High Temp., (750°F max)  GFC = GIMN with 316 Stainless Steel Flexible Cable, (25 ft. max)  GTH = Guarded Teflon, 1/4" Center Rod, Hastelloy, 36" or Less  GTT = Guarded Teflon, Teflon Sealed Active, 18" Length  GAR = Guarded Abrasion Resistant Stainless Steel with Durable Plastic Insulator  THD = Non-guarded, Teflon Sealed Active, (Available Bare)</p> <p><b>Electronic Control Options</b>  I = Integrated  R = Remote Mounted Electronics with 50-ft. Cable (50-ft. max)  R10 = Includes: 10-ft. cable, 1" Mounting Flange, Enclosure</p>
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CSA Approved for NEC Class I - Groups C, D;  
NEC Class II - Groups E, F, G;  
Divisions 1 & 2 When Used with THD or KHD Probe  
CSA Approved for Ord. Loc.

**DELAVAN** Process Instrumentation  
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