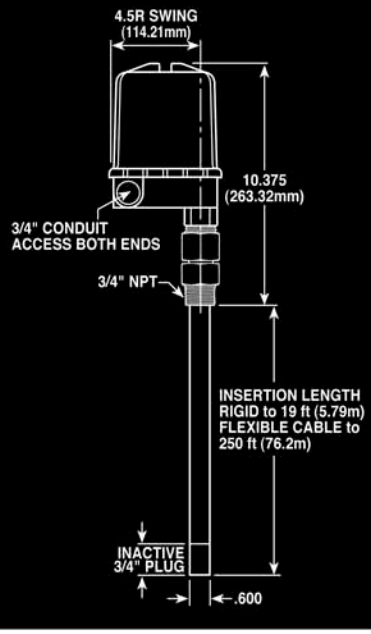
CAPTROL 510

DATA SHEET

R.F. Capacitance Adjustable "Dual-Point" Switch



PURPOSE

Delavan's **Captrol 510** is an Adjustable On/Off R.F. Capacitance Switch with up to 2 independently adjustable non-interacting set points. It may be used in powder bulk solids and liquid applications.

PRINCIPLE OF OPERATION

The **Captrol 510** system consists of a solid state "fail-safe" electronics mounted in an explosion proof enclosure and a sensing probe.

The probe is energized with a R.F. signal (approx. 2 mHz). When the process level changes, a change of capacitance occurs resulting in a change in frequency. This change is compared with preset values and after amplification, is used to actuate up to 2 relays.

Multi-turn potentiometers are used for set-point and differential calibration. An important feature of the **Captrol 510** is the set-point and differential adjustments are non-interacting and are independent of each other.

PUMP CONTROL

Delavan's two set-point operation off of one relay allows our **Captrol 510** to be used as pump control. One set-point turns off a pump and the second set-point (which is adjustable over the entire length of the sensing probe) is used to turn a pump on. Both function with only one relay.

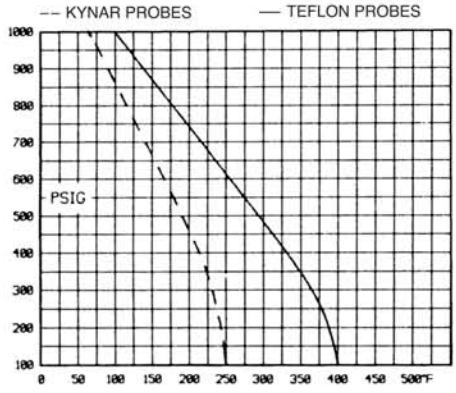
FEATURES

- **Universal power supply**
  Accepts 115, 230 Volts AC, or 24 Volts DC
- **Built-in "coating rejection"**
  designed to eliminate false signals caused by material build-up/coating
- **Field selectable fail-safe modes**
- **Adjustable time delay**
- **Built-in status suppression**
- **Pump control with adjustable set-points over full length of sensing probe**
- **Status indication LED's**
- **General purpose and explosion proof design**
- **3/4" N.P.T. and flange mounting**
- **Sensing probe lengths to 250 feet**
- **Many probe options/materials**
- **Independent set-point and differential adjustments**

SPECIFICATIONS

Supply Voltage	NOMINAL — ABSOLUTE LIMITS 115 Volts AC — 95-135 Volts AC 230 Volts AC — 180-270 Volts AC 24 Volts DC — 18-28 Volts DC
Power	Less than 3 volt-amperes
Frequency, AC Power	50-60 Hz
Output	Relay up to 2 Form C DPDT contacts
Ratings	5 amp @ 115 Volts AC Non-inductive 2.5 amp @ 230 Volts AC Non-inductive 3 amp @ 26 Volts DC Non-inductive
Time Delay **Standard —** **Option —**	 0.5 second on Make Variable 50 milliseconds to 10 seconds
Fail-safe	Switch selectable - High Level or Low Level High Level Fail-safe Position: Relay is de-energized when liquid is present Low Level Fail-safe Position: Relay is de-energized when liquid is not present
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°F to +160°F (-40°C to +71°C)
Housing **Cast Aluminum with Fused Polyester Finish**	 Meets NEMA 4, 5, 7, 9, 12; NEC Class I - Groups C, D; NEC Class II - Groups E, F, G
Stability	0.01%/°F
Sensitivity	0.5 pF or less, i.e. 1% of base capacitance up to 100 pF
Other Features	Set-point and different adjustments are completely independent of each other

TEMPERATURE AND PRESSURE RATINGS



ORDERING INFORMATION

CAPTROL

510- ____ - ____ - ____ - ____ - ____

Special Features
H = High Temperature 12" Lagging Extension (> 200°F)
00 = None

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 Length)
THD = Teflon Insulated Heavy Duty 1/2"
KHD = Kynar Insulated Heavy Duty 1/2"
TCP = Teflon Probe with Concentric Pipe and Flange
TCT = Teflon Probe with Concentric Tube 3/4" N.P.T.
BF = Bare Flexible Cable
T = Teflon Insulated 1/4"
BHT = Bare Probe - High Temperature Packing
TF = Teflon Insulated Flexible Stainless Steel Cable
KF = Kynar Insulated Flexible Stainless Steel Cable
DWW = Polypropylene Flex Probe, 1/8" Cable, 3/4" N.P.T.
THDD = Teflon Heavy Duty Dual Probe with 1/2" and 1/4" Teflon Insulated Probes with 3" Teflon Faced Flange
KHDD = Kynar Heavy Duty Dual Probe with 1/2" and 1/4" Kynar Insulated probes with 3" Kynar Faced Flange
BHS = Bare Probe - High Sensitivity

* Note: For BF, TF and KF probes anchoring assembly is required

Electronic Control Options
1 = 1 Independently adjustable relay
2 = 2 Independently adjustable relays

Model 510 Adjustable "Dual-Point"
R.F. Capacitance Point Level Switch

Note 1: CSA Approved for Class I — Groups C, D; Class II — Groups E, F, G; Divisions 1 & 2 Pending Cenelec Approval for EEx d IIC T6 locations.

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