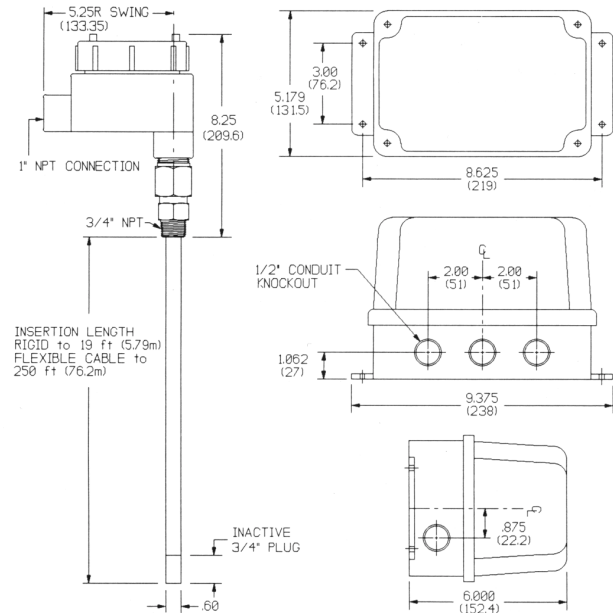




CAP ANALOG 420 R. F. Capacitance Remote Transmitter w/Relay Outputs

Engineering Specification Sheet



Product Features

- *Easy access remote mounted electronics*
- *Universal Power Supplies - Accepts 115, 230 VAC or 24 VDC*
- *Inverted Output - Allows the level of the lower dielectric constant to be monitored in liquid interfaces*
- *Versatile - Analog output plus up to 2 relays*
- *Relays Outputs - Zero and Differential are non-interacting and independent adjustments*
- *Immune to effects of product build-up Built-in coating rejection of approximately 1000 micro mho's.*
- *Built-in static suppression*
- *Up to 800 ft. of cable between probe and electronics*
- **TWO-YEAR PRODUCT WARRANTY**

Purpose

Delavan's Cap Analog 420 is a completely adjustable remote R. F. Capacitance transmitter. The 420 system provides a continuous analog signal plus up to two independently adjustable relays. This versatile transmitter can be used in liquids, slurries and most powder bulk solid applications.

Principle of Operation

Delavan's R. F. Capacitance Cap Analog 420 system uses a compact pre-amplifier mounted on the rear of the probe assembly. The pre-amp is housed in a cast aluminum enclosure that is weather-tight and explosion proof. The electronics are located in a remote NEMA 4X enclosure.

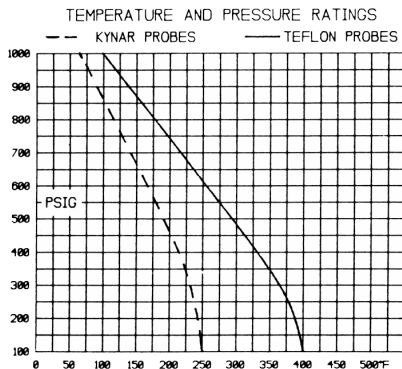
The Cap Analog 420, along with its probe sensor, operates as a capacitance sensitive system that converts changes in level to changes in output signal. After calibration any change in level is recognized and converted to an analog output signal (4-20 mA or 0-10 VDC). The system will operate any standard 4-20 mA DC or 0-10 VDC indicator. The Delavan AFI-150 or DFI-150 indicator is available mounted in a rugged NEMA 4X housing.

The Cap Analog 420 system is available without relays or with one or two relays along with the standard analog outputs. The relay or relays are calibrated independent of the analog circuit.

The Cap Analog 420 is supplied with two 20 turn, ZERO and SPAN adjust potentiometers. These controls are independent and non-interacting. In addition, DIP Switches are provided to extend the range of ZERO and SPAN potentiometers.

Specifications:

Supply Voltage	115 VAC 230 VAC 24 VDC	Absolute Limits 90-135 VAC 180-279 VAC 15-28 VDC
Power	Less than 6 volt-amperes	
Frequency, AC Power	50-60 Hz	
Output	4-20 mA DC 600 ohms maximum with 24 VDC Power Supply or 0-10 VDC	
Output 420-1	1 Relay, 2 Form C DPDT Switches	
Output 420-2	2 Relays, 1 Form C SPDT Switch each, in addition to analog output	
Relay Ratings	5A @ 115 VAC Non-Inductive 2.5A @ 230 VAC Non-Inductive 3A @ 26 VDC Non-Inductive	
Failsafe Switch Selectable (1 set each relay)	High Level Failsafe Position: Relay is de-energized when liquid is present.	
Indicators Status Lights (1 set each relay)	Two, light emitting diodes (LED). RED-Illuminated when probe capacitance is greater than set point. YELLOW-Illuminated when relay is energized.	
Temperature (Elect.)	-40° to +160° F. (-40° to 71° C)	
Zero (Terminal)	Min. 10 pfd	Max. 500 pfd
Stability	0.5 pfd/30° F (at Maximum Sensitivity)	
Span Standard Pre-Amp	Min. 50 pfd	Max. 1000 pfd
Hi-Gain Pre-Amp	10 pfd	200 pfd
Interconnection Cable Length	Up to 800 Ft.	
Build-up tolerance	Up to 1000 Micro Mho's	
Process Connection	3/4" N.P.T. (standard) or flange options	
Pre-Amplifier Cast Aluminum with Fuse Polyester Finish	Meets NEMA 4, 5, 7, 9 & 12 NEC Class I Group C, D, Class II Group E, F & G	
Remote Amplifier Glass-Reinforced Polyester Enclosure, S.S. Trim	NEMA 4X	



Ordering Information

CAP-ANALOG

420-

Special Features

X = No special features
H = High Temperature Lagging ext. (>200° F)

Interconnection Cable

P50 = Standard, PVC 50 ft., 160°F. Max.
P100 = PVC 100 ft.
B = PVC 2 conductor bulk cable (lengths>100 ft.)

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 SS (specify size)

Sensing Probe Type (Specify Insertion Length)

THD	TF
KHD	KF
TCP	DWW
TCT	THDD
BF	KHDD
T	BHS
BHT	

Remote Pre-Amplifier

S = Standard gain
H = High gain (low dielectric materials, Kε<10)

Enclosure Type

G = General Purpose
H = Hazardous Locations

Electronic Control Options

0 = No relays
1 = 1 independently adjustable relay
2 = 2 independently adjustable relays

Model 420 Remote Mount R.F. Capacitance Continuous Transmitter

TWO-YEAR PRODUCT WARRANTY

Delavan control products will be replaced, put in good operating condition, or the purchase price refunded, at the option of Delavan, free of charges except transportation, if defective in their manufacture, labeling, packaging, or shipping, and if notice of said defect is received by Delavan within two years from the date of shipment. The cost of such replacement, repair or refund or purchase price shall be the exclusive remedy for any breach of any warranty, and Delavan shall not be liable to any person for consequential damages for injury or commercial loss resulting from any breach of any warranty of fitness for a particular purpose, and makes no other warranty.



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