

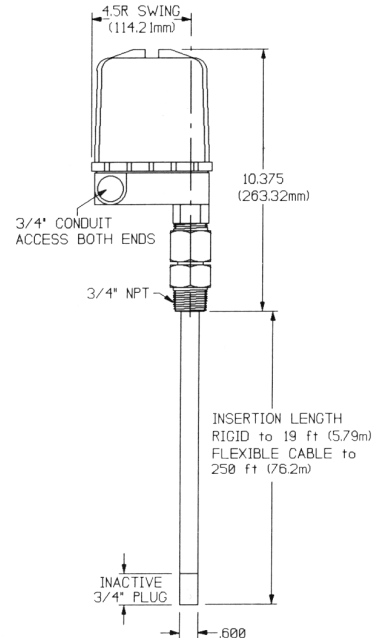
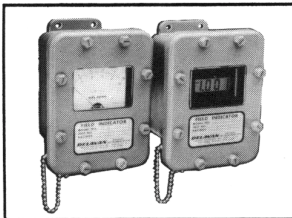


CAP ANALOG 410 R. F. Capacitance Integral Transmitter

Engineering Specification Sheet



Optional
Indicators



Product Features

- *Self contained integral electronics*
- *Explosion proof design*
- *Isolated 4-20 mA and 0-10 VDC output*
- *Simple two-step calibration*
- *Universal Power Supplies - Accepts 115, 230 VAC or 24 VDC*
- *Immune to effects of product build-up*
*Built-in coating rejection of approxi-
mately 1000 micro mho's.*
- *Built-in static suppression*
- *Sensing probe lengths to 250 ft.*
- *Economical and cost effective*
- **TWO-YEAR PRODUCT WARRANTY**

Purpose

Delavan's Cap Analog 410 is a completely adjustable integral R.F. Capacitance transmitter. The 410 system provides a continuous 4-20 mA analog signal proportional to the level. 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 410 system consists of an electronic amplifier mounted in a cast aluminum explosion proof housing. The housing is integrally mounted on the top of the probe.

The Cap Analog 410, 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.

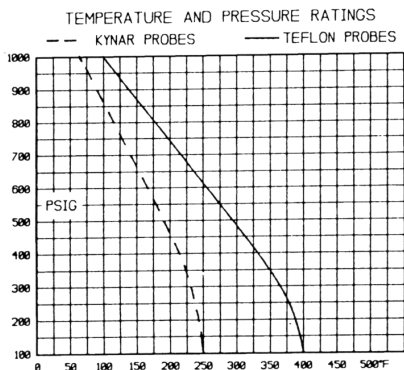
The Cap Analog 410 is supplied with two 20 turn, (ZERO and SPAN) potentiometer adjustments. These controls are independent and non-interacting. In addition, DIP Switches are provided to extend the range of ZERO and SPAN potentiometers.

Specifications:

Supply Voltage	115 VAC 230 VAC 24 VDC	Absolute Limits 90-135 VAC 180-279 VAC 15-28 VDC
Power	Less than 3 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	
Temperature (Elect.)	-40° to +160°F (-40° to +71°C)	
Zero (Terminal)	Min. 10 pfd	Max. 500 pfd
	Min. 10 pfd	Max. 2,000 pfd
Stability	0.5 pf/30°F (at Maximum Sensitivity)	
Span	Low Range	High Range
Standard Pre-Amp	50 pfd	1000 pfd
Hi-Gain Pre-Amp	10 pfd	200 pfd
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Build-up Tolerance	Up to 1000 Micro Mho's	
Process Connection	3/4" N.P.T. (standard) or flange options	
Cast Aluminum Housing with Fuse Polyester Finish	Meets NEMA 4, 5, 7, 9 & 12 NEC Class I Group C, D, Class II Group E, F & G	

Customer Connections CAP ANALOG/410

GND.	NEUT	115 VAC	230 VAC	SPARE	LOW VOLT INPUT	+	SIGNAL GROUND	4-20 IN	0-10V OUT	4-20 OUT	+12V OUT
1	2	3	4	5	6	7	8	9	10	11	12



Ordering Information

CAP-ANALOG

410- - - - -

Special Features

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

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	

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

Pre-Amplifier

S = Standard Gain
H = High Gain (low dielectric materials, $K_e < 10$)

Enclosure Type

G = General Purpose
H = Hazardous Locations (See Note 1 below)

Model 410 R.F. Capacitance Continuous Transmitter

NOTE 1: CSA approved for Class I, Groups C and D, Class II Groups E, F and G, Divisions 1 and 2 Pending Cenelec approval for EEx d IIC T6 locations.



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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