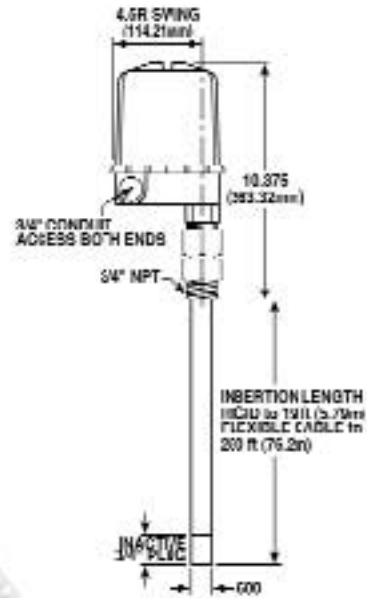


CAP ANALOG 410

DATA SHEET R.F. Capacitance Integral Transmitter



■ PURPOSE

Delavan's Cap Analog 410 is a completely adjustable Integral R.F. Capacitance Transmitter. The 410 system provides a continuous 4-20mA 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 (4-20mA or 0-10 Volts DC). The system will operate any standard 4-20mA DC or 0-10 Volts DC 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.

■ FEATURES

- Self-contained integral electronics
- Explosion proof design
- Isolated 4-20mA and 0-10 Volts DC output
- Simple two-step calibration
- Universal power supplies
Accepts 115, 230 Volts AC or 24 Volts DC
- Immune to effects of product build-up
Built-in coating rejection of approximately 1000 micro mho's
- Built-in static suppression
- Sensing probe lengths to 250 ft.
- Economical and cost effective



SPECIFICATIONS

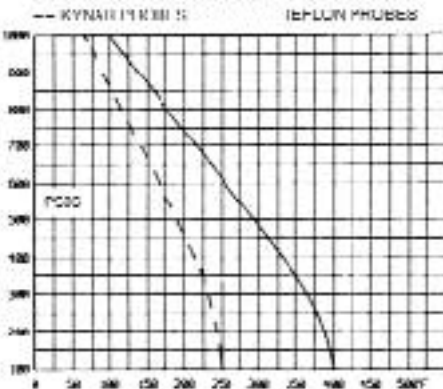
Supply Voltage	NOMINAL 115 Volts AC 230 Volts AC 24 Volts DC	ABSOLUTE LIMITS 90-135 Volts AC 180-279 Volts AC 15-28 Volts DC
Power	Less than 3 volt-amperes	
Frequency, AC Power	50-60 Hz	
Output	4-20mA DC 600 ohms maximum with 24 Volts DC power supply or 0-10 Volts DC	
Temperature Range Electronic	-40°F to +160°F (-40°C to +71°C)	
Zero (Terminal)	Min. 10 pfd	Max. 500 pfd
Stability	0.5 pf/30°F (at maximum sensitivity)	
Span	Low Range 50 pfd	High Range 800 pfd
Standard Pre-Amp	1,000 pfd	10,000 pfd
High-Gain Pre-Amp	200 pfd	—
Build-up Tolerance	Up to 1,000 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 — Groups C, D; NEC Class II — Groups E, F, G	

CUSTOMER CONNECTIONS

CAP ANALOG/410

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

TEMPERATURE AND PRESSURE RATINGS



ORDERING INFORMATION

CAP ANALOG

410-

Special Features
H = High Temperature
12" Lagging Ext. (>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

K3A = Kynar Faced Food-grade

Tri-clover Fitting

FC = Flange C.S.

FSS = Flange 316 Stainless Steel

Sensing Probe Type (Specify Insertion 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 Insulate 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 & KF probes, anchoring

assembly is required.

Pre-Amplifier

S = Standard Gain

H = High Gain (Low Dielectric Materials, Ke < 10)

Model 410 R.F. Capacitance Continuous Transmitter



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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