



ASSURED QUALITY &
SERVICE COST LESS
ISO 9001

KOTRON® 810

R.F. Point Level Sensor

The Kotron® Series 810 R.F. Point Level Sensor is a single relay, alarm (narrow differential) device which utilizes R.F. capacitance technology for sensing liquid or bulk materials. The alarm point is tip sensitive in conductive media, and adjustable in non-conductive media. There are no moving parts which come in contact with the medium. These units are integral systems with the sensing probe mounted with the electronics.

FEATURES

- * Guard circuit and probe reject build-up of conductive media.
- * Circuitry designed and tested to IEC electrostatic discharge spec. 801-2.
- * Probe is ideal for high pressure applications - rated to 240 bar at 20°C (3500 PSIG at 70°F), 120 bar at 90°C (1750 PSIG at 200°F).
- * Intrinsically safe probe circuitry allows safe use even with bare probes in hazardous media.
- * 5A DPDT relay is usable in most standard alarm applications.
- * LED shows the status of the relay and aids in calibration and trouble-shooting.
- * Zero to 45 second time delay feature eliminates relay "chatter" due to turbulence.
- * Field selectable high level/low level failsafe provides NO or NC contacts in de-energized state for either fail-safe condition.
- * Cast aluminum, anti corrosive painted enclosure is rated CENELEC EEx d (IP 65) NEMA 4X/7/9.
- * Horizontal or vertical mounting.

Excellent rejection of build - up even of conductive media



APPLICATIONS

- Clean or Dirty Liquids
- Viscous Liquid
- Light Slurries
- High Temperature/
Pressure Liquids
- Foods & Beverages
- Powders & Granulars
- Hydrocarbons & Solvents
- Corrosives, Acids &
Caustics

AGENCY APPROVALS

Agency	Approval
CENELEC	EEx d ia II C T6, explosion proof with intrinsically safe probe
FM/CSA ^①	Explosion proof with intrinsically safe probe circuit Class I, Div. 1, Groups C & D Class II, Div. 1, Groups E, F & G

^① Consult factory for proper selection data.

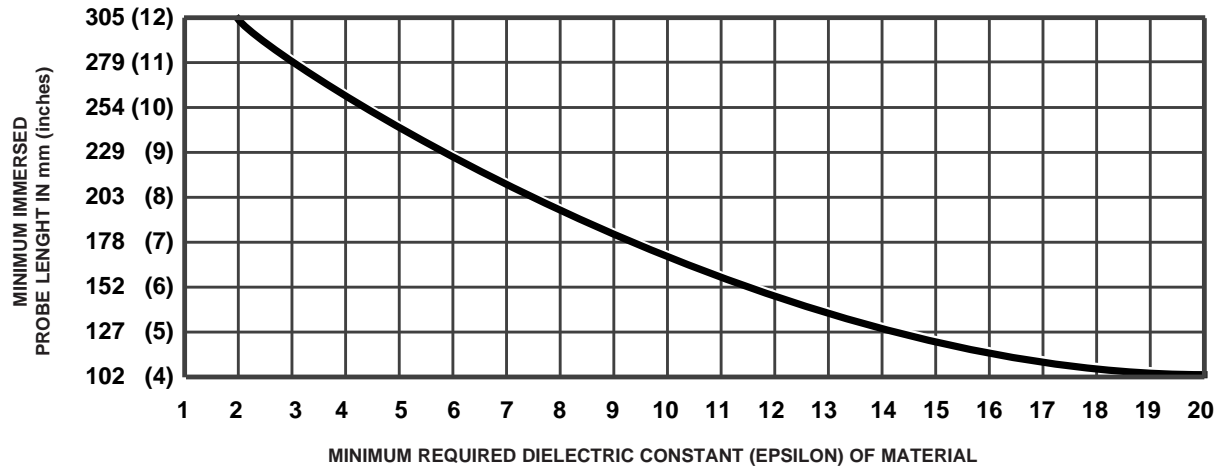
PRINCIPLE OF OPERATION

As the media rises and falls in the tank, the amount of capacitance developed between the probe and the ground reference also rises and falls. This change in capacitance is converted into a pulse waveform proportional to the level change. The amplifier then compares the pulse waveform to

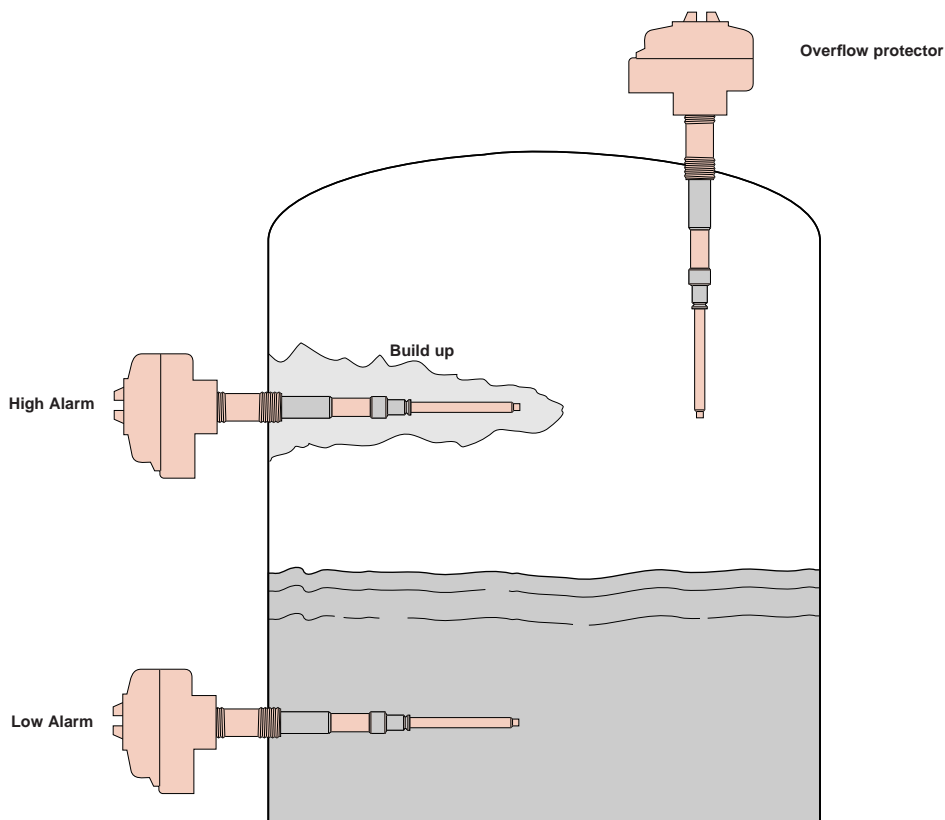
the adjustable set point and changes the state of the relay when they are equal. In conductive media the amount of capacitance generated by contact of the probe with the medium will trip the relay immediately.

PROBE LENGTH VS. DIELECTRIC CONSTANT

If the geometry of the application requires a probe shorter than 305 mm (12") of active length, consult the chart to determine the minimum dielectric constant in which it can be used.



MOUNTING



EXPEDITE SHIP PLAN (ESP)

Magnetrol has implemented a quick delivery programme 'ESP', for the most popular units and options. The colour coded selections represent those that benefit from the shortest lead times.

SELECTION DATA

A complete measuring system consists of:

1. Order code for standard KOTRON® electronics - non hazardous area

INPUT POWER

1	240 V AC
2	24 V DC
0	120 V AC
3	12 V DC

HOUSING MATERIALS OF CONSTRUCTION

D	Dual cable entry 3/4" NPT - anti corrosive coated aluminium
Y	Single cable entry 3/4" NPT - stainless steel

PROBE SELECTION

1	Guarded probe 457 mm (18")
2	Guarded probe 914 mm (36")

8 1 0 0 0 5 0 0 complete order code for standard KOTRON® 810

2. Order code for CENELEC KOTRON® electronics - hazardous area

INPUT POWER

1	240 V AC
2	24 V DC
0	120 V AC
3	12 V DC

HOUSING MATERIALS OF CONSTRUCTION

V	3/4" NPT dual cable entry - anti corrosive coated aluminium
W	M 20 x 1.5 dual cable entry - anti corrosive coated aluminium
U	PG 13.5 dual cable entry - anti corrosive coated aluminium
S	PG 16 dual cable entry - anti corrosive coated aluminium
5	3/4" NPT single cable entry - stainless steel

PROBE SELECTION

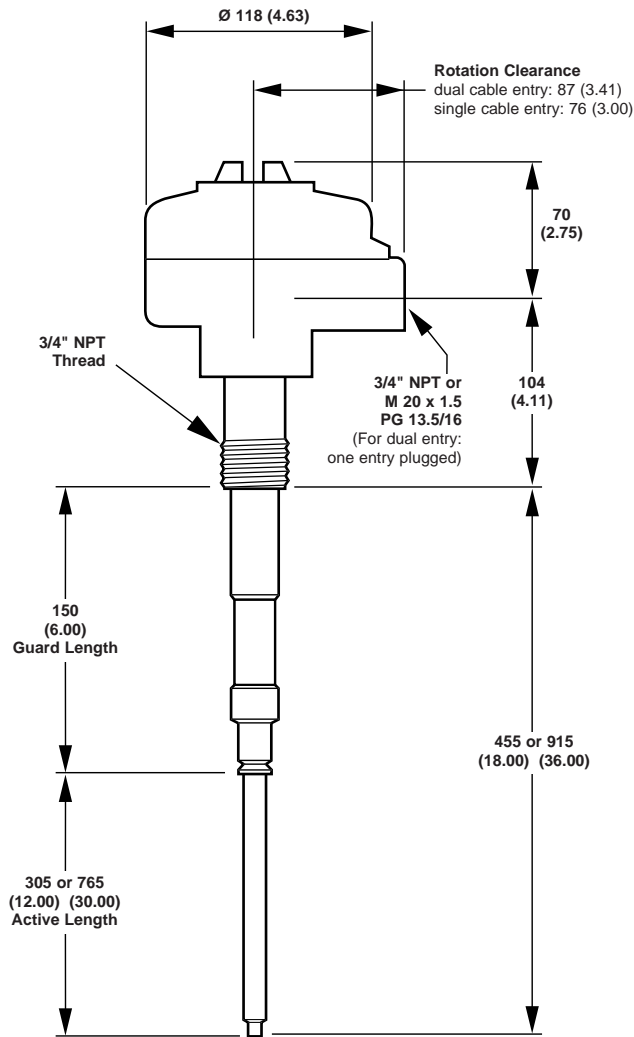
A	Guarded probe 457 mm (18")
B	Guarded probe 914 mm (36")

8 1 0 0 0 5 0 0 complete order code for CENELEC KOTRON® 810

ELECTRICAL SPECIFICATIONS

Description	Specification
Supply Voltage	240/120 V AC, 50-60 Hz – 24/12 V DC
Power Consumption	240/120 V AC, less than 5 V A – 24/12V DC, 1 Watt max.
Zero Range	0 pF (Min.) to 500 pF (Max.)
Fixed Differential	0.5 pF
Output Relays	AC Reversible DPDT – 250 V AC 5A Resistive DC Reversible DPDT – 30 V DC 5A Resistive
Response Time	100 milliseconds
Ambient Temperature at Electronics	-40°C to +70°C (-40°F to +160°F)
Operating Process Pressure/Temperature	240 bar @ 20°C (3500 PSIG @ 70°F) 120 Bar @ 90°C (1750 PSIG @ 200°F)
Temperature Coefficient of Setpoint -40°C to +70°C (-40°F to +160°F)	± 0.018 pF/°C ± 0.01 pF/°F
Electrostatic Discharge Protection	per IEC spec. 801-2

DIMENSIONS IN mm (inches)



QUALITY ASSURANCE - ISO 9001

THE QUALITY ASSURANCE SYSTEM IN PLACE AT MAGNETROL GUARANTEES THE HIGHEST LEVEL OF QUALITY DURING THE DESIGN, THE CONSTRUCTION AND THE SERVICE OF CONTROLS. OUR QUALITY ASSURANCE SYSTEM IS APPROVED AND CERTIFIED TO ISO 9001 AND OUR TOTAL COMPANY IS COMMITTED TO PROVIDING FULL CUSTOMER SATISFACTION BOTH IN QUALITY PRODUCTS AND QUALITY SERVICE.

PRODUCT WARRANTY

ALL MAGNETROL ELECTRONIC AND ULTRASONIC LEVEL CONTROLS ARE WARRANTED FREE OF DEFECTS IN MATERIALS AND WORKMANSHIP FOR ONE FULL YEAR FROM THE DATE OF ORIGINAL FACTORY SHIPMENT. IF RETURNED WITHIN THE WARRANTY PERIOD; AND, UPON FACTORY INSPECTION OF THE CONTROL, THE CAUSE OF THE CLAIM IS DETERMINED TO BE COVERED UNDER THE WARRANTY; THEN, MAGNETROL INTERNATIONAL WILL REPAIR OR REPLACE THE CONTROL AT NO COST TO THE PURCHASER (OR OWNER) OTHER THAN TRANSPORTATION. MAGNETROL SHALL NOT BE LIABLE FOR MISAPPLICATION, LABOR CLAIMS, DIRECT OR CONSEQUENTIAL DAMAGE OR EXPENSE ARISING FROM THE INSTALLATION OR USE OF THE EQUIPMENT. THERE ARE NO OTHER WARRANTIES EXPRESSED OR IMPLIED, EXCEPT, SPECIAL WRITTEN WARRANTIES COVERING SOME MAGNETROL PRODUCTS.



BULLETIN N°: BE 50-102.2
EFFECTIVE: APRIL 1996
SUPERSEDES: October 1994

UNDER RESERVE OF MODIFICATIONS

BELGIUM	Heikensstraat 6, 9240 Zele Tel. (052) 45.11.11	Fax. (052) 45.09.93
DEUTSCHLAND	Schloßstraße 76, D-51429 Bergisch Gladbach-Bensberg Tel. (02204) 9536-0	Fax. (02204) 9536-53
FRANCE	11, Rue A. Einstein, Espace Descartes, 77420 Champs-sur-Marne adresse postale : 77436 Marne-la-Vallée Cédex 2 Tel. (0) 164.68.58.28	Fax. (0) 164.68.58.27
ITALIA	Via Arese 12, I-20159 Milano Tel. (02) 607.22.98 (R.A.)	Fax. (02) 668.66.52
UNITED KINGDOM	Unit 1 Regent Business Centre Jubilee Road Burgess Hill West Sussex RH 15 9TL Tel. (01444) 871313	Fax (01444) 871317
INDIA	B4/115 Safdurjung Enclave, New Delhi 110 029 Tel. 91 (11) 6186211	Fax 91 (11) 6186418

OUR NEAREST REPRESENTATIVE