DISPLACER OPERATED LEVEL SWITCHES



ALL CONTROLS HAVE BEEN DESIGNED USING MODULAR CONCEPT STANDARD ASSEMBLIES MAY BE INCORPORATED IN A WIDE VARIETY OF ARRANGEMENTS TO MEET VIRTUALL Y ANY CONTROL APPLICATION ALLOWING MAXIMUM INTERCHANGEABILITY OF ASSEMBLIES. DK'S UNIQUE ENGINEERING & MANUFACTURING CAPABILITY HANDLES SPECIAL PROCESS REQUIREMENTS PROMPTLY WITH OUT LONG DELAYS AT AN ECONOMICAL COST.

OPERATING PRINCIPLE:

THESE SWITCHES HAVE A DISPLACER HEAVIER THAN THE LIQUID, WHICH IS SUSPENDED BY A SPRING. WHEN THE LIQUID CONTACTS THE DISPLACER, A BUOYANCY FORCE IS PRODUCED, WHICH CAUSES THE EFFECTIVE WEIGHT OF THE DISPLACER TO CHANGE THIS CAUSES THE SPRING TO RETRACT SLIGHTL Y TO A NEW EQUILIBRIUM POSITION. WHEN THE SPRING RETRACTS THE ATTRACTION SLEEVE MOVES UPWARD INTO THE FIELD OF EXTERNAL 'U' MAGNET (THUS OVERCOMING THE FORCE OFTHE BIAS SPRING & ACTUATING THE SWITCHING ELEMENT).

SALIENT FEATURES:

- □ WIDE DIFFERENTIAL.
- LOW COST & EASY MAINTENANCE.
- □ UNAFFECTED BY LIQUID AGITATION.
- □ EXTERNAL ADJUSTMENT RANGE.
- □ CHOICE OF SWITCHES MICRO SWITCH / MERCURY SWITCH / REED SWITCH.

APPLICATIONS:

FOR WIDE SWITCHING DIFFERENTIALS & HIGHER PRESSURE RATINGS. USED WHERE TRADITIONAL FLOAT OPERA TED UNITS CANNOT WORK.

STANDARD SPECIFICATIONS:

Model	:	8500F
Туре	:	Displacement Type Level Switch
Working Principle	:	Attraction
Material of Construction for	:	AISI 304 SS / AISI 304 SSL / AISI 316 SS / AISI 316
Float & Wetted Parts		SSL / AL / PVC / Polypropylene / Teflon / Ebonite etc.
Switch Cover	:	Cast Aluminium Weatherproof As per IP – 55 / 65 / 66 /
	_	67 Anticorrosive Painted
Process Connection		Flanged 21/2" to 6 " As per ANSI, DIN, JIS, BS, IS
		Standard, 21/2" Screwed connection
Signalisation	:	Micro Switch or Mercury Switch
Contact Form	:	1 NO + 1 NC, 2 NO + 2 NC
Contact Rating	:	5A, 230V AC. 5A, 110V AC. 0.25A, 220V DC. 1.0A,
		110V DC.
Electrical Connection	:	¼ " ET. 1" ET. ¾ " NPT. 1" NPT
On – Off Differential	:	25 ± 5 mm, 45 ± 5 mm, 60 ± 5 mm or Adjustable.
Repeatability	:	± 2 mm
Accuracy	:	± 5 mm
Set Point	:	Adjustable
No. of Displacer	:	Single, Double, Triple & Quadruple
Max. Signalisation Height	:	50 metre
Max. Working Pressure	:	100 Kg / cm²
Max. Working Temperature	:	400°C
Specific Gravity	:	0.55 to 1.55

FLAME PROOF TYPES (SPECIFICATIONS SAME AS ABOVE) Model : 1100F Switch Cover : Cast Aluminium Alloy LM-6 Approved by ERTL (E) / CMRI, Dhanbad for Group IIA & IIB Gases As per IS: 2148 - 1981 & Weatherproof to IP-66 As per IS: 13947 Model 1400F : Switch Cover Cast Aluminium Alloy LM-6 Approved by ERTL (E) for Group : IIC Gases As per IS: 2148 - 1981 & Weatherproof to IP-66 As per IS: 13947

OTHER SPECIAL FEATURES:

- □ External Chamber CS, MSRL, SS, PVC, PPE.
- **Radiating Fins For High Temperature Application.**
- Higher Differential
- □ IBR
- □ Special Models on Request.





An ISO 9001:2000 Certified Company 76/2, Selimpur Road, Dhakuria, Kolkata – 700 031. Ph. No.: 91-33-2415 1310 / 2405 0944, Fax: 91-33-2415 2311. E-mail: dkinst@vsnl.net, Web Site: www.dkinstruments.com



Cat. No. 0004 March 06'

FLOAT OPERATED MAGNETIC LEVEL SWITCH

All controls have been designed using modular concept. Standard assemblies may be incorporated in a wide variety of arrangements to meet virtually any control application allowing maximum interchangeability of assemblies. DK'S unique engineering & manufacturing capability handles your special process requirements promptly with out long delays at an economical cost.



OPERATING PRINCIPLE

The basic operation principle for magnetic switch action results from a change in liquid level, which moves a magnetic attraction sleeve (SS410/MS) into the field of an externally located 'U' magnet.

SALIENT FEATURES

- Single & multiple switch model.
- External adjustment range.
- Robust construction.
- Threaded, Flanged or Socket weld connections.
- Choice of switches: Micro switch / reed switch / Mercury Switch.

APPLICATIONS

These reliable instruments are ideally used for on – off liquid level control, alarm & safety shut-down service in a wide variety of application including large steam-electric generating stations, oil refineries & chemical processing operations

TANDEM FLOAT OPTION

Tandem float design combines two separate narrow differential switch functions in one Level Switch. This option can also be offered with sealed or flanged top external cage in addition to a flanged top-mounting model.

STANDARD SPECIFICATIONS

Model	:	8000F
Туре	:	Vertically mounted float type.
Working Principle	:	Attraction.
Material of Construction	:	AISI 304 SS/AISI 304 SSL/AISI
for float & wetted parts		316 SS/AISI 316 SSL/AL./PVC/ Polypropylene / Teflon / Ebonite etc.
Switch Cover	:	Cast AI. weatherproof as per IP-55 / 65 / 66 / 67,anticorrosive painted.
Process Connection	:	Flanged 1 ¹ / ₂ inch to 6inch or screwed As per ANSI, DIN, JIS, BS, IS Standard.
External Cage Connection	:	Flanged / Socket Welded / Screwed (As per requirement.)
Signalisation	:	Micro / Reed / Mercury switch.
Contact Form	:	1 NO + 1 NC, 2 NO + 2 NC.
Contact Rating	:	5A, 240V AC OR 0.25A, 220V DC.
Electrical Connection	:	¾" ET, 1" ET, ½ " NPT, ¾" NPT, 1" NPT
On – Off Differential	:	12 mm ± 2 mm (fixed). OR 12 – 25 MM ± 2 MM (Adjustable)
Accuracy	:	± 1 %.
Set Point	:	Fixed / Adjustable.
Max. Signalisation Height	:	3 metre.
Max. Working Pressure	:	200 Kg/cm².
Max. Working Temperature	:	540°C.
Specific Gravity	:	0.55 to 1.5
FLAME PROOF TYPE	(S	
MODEL	: 1	200F
SWITCH COVER	: C	CAST AL. ALLOY LM-6 APPROVED BY ERTL (E) / CMRI, DHANBAD FOR
	G	GROUP IIA & IIB GASES AS PER IS : 2148-1981 & WEATHERPROOF TO
	IF	P-66 AS PER IS:13947
MODEL	· 1	300F

SWITCH COVER: CAST AL. ALLOY LM-6 APPROVED BY ERTL (E) FOR GROUP IIC GASES
AS PER IS: 2148-1981 & WEATHERPROOF TO IP-66 AS PER IS: 13947.

OTHER SPECIAL FEATURES

- □ EXTERNAL CHAMBER CARBON/ALLOY STEEL, MSRL, SS, PVC, PPE.
- □ REDIATING FINS FOR HIGH TEMPRATURE APPLICATION.
- □ HIGHER DIFFERENTIAL.
- □ IBR.
- SPECIAL MODELS ON REQUEST.

D. K. INSTRUMENTS PVT. LTD.



An ISO 9001:2000 Certified Company

76/2, Selimpur Road, Dhakuria, Kolkata – 700 031. Ph. No.: 91-33-2415 1310 / 2405 0944, Fax: 91-33-2415 2311. E-mail: dkinst@vsnl.net, Web Site: www.dkinstruments.com



Cat. No. 0006 March 06'

FLOAT SWITCH

DK'S MAGNET OPERATED FLOAT SWITCH is equipped with glass encapsulated Reed Switch. Float embedded with Magnet moves up & down around the guide tube according to the level. Reed switches are actuated by the Magnetic Field of an annular Magnet

SPECIAL FEATURES:

SPECIFICATION:

- Only moving part float
- Large gap between guide tube and float hence reliable and insensitive to the floating particles in the liquid
- Float switches available with single or multilevel switching
- Hermitically Sealed Switch
- Minimum maintenance, minimum down time, minimum inventory
- Glandless no seal, no spring & no diaphragm
- Shock and vibration effect minimum
- Highly reliable and dependable
- Sparkless operation with solid state contact protector system



Model Working Principle Material of Construction for Float Body, Guide Tube & other Wetted Parts	: 1000 : Attraction : AISI 304 S.S / AISI 316 S.S / PVC/ Polypropylene etc.
Switch Cover	: Cast AI weatherproof IP – 55 / 65 / 66 / 67 as per IS - 2147 1962 anticorrosive painted
Process Connection	: Screwed 1" to 2" BSPT (M) Flanged 1½" to 6" as per ANSI / BS / DIN / IS Standards
Signalisation	: Hermitically sealed glass encapsulated Reed Switch
Contact Form	: NO/NC, 1NO+1NO & 2NO + 2NC
Contact Rating	: 1A, 230 V A/C, 250 VADC. higher current rating is available with solid state contact protector system
Electrical Connection	: 3/4" to 1" NPT / ET
Max. Working Pressure	: 40 kg/ cm ²
Max. Working Temperature	: 200° c
ON - OFF Differential	: 6 \pm 2 mm (fixed) / 20 \pm 5 mm (fixed)
Repeatability	: ± 1 mm

OPTIONAL:

Model No.-1000 EX - Explosion Proof duly approved by CMRS Dhanbad for Hazardous area IIA, IIB and IIC As Per IS : 2148 : 1981





An ISO 9001:2000 Certified Company

76/2, Selimpur Road, Dhakuria, Kolkata – 700 031. Ph. No.: 91-33-2415 1310 / 2405 0944, Fax: 91-33-2415 2311. E-mail: dkinst@vsnl.net, Web Site: www.dkinstruments.com ANAB CAN SEE

Cat. No. 0008 March 06'

MAGNETIC LEVEL SWITCHES

The Float assembly carries with it a permanent magnet, which is opposed by a similar magnet in the switch assembly. The adjacent poles of the two magnets are arranged so that they repel each other. It is this principle, which is employed to change over the contacts with a snap action.

SPECIAL FEATURES

- □ Safe & reliable magnetic coupling
- Glandless No seal, no spring & no diaphragm
- □ Self lubricating teflon washer for friction free operation
- □ ¹/₂" NPT or flanged mounting
- □ Shock & vibration effect minimum

OPTIONS

- □ External-Cage (Carbon Steel, MSRL & Stainless Steel)
- □ Wide variety of IS/ANSI/BS/DIN/JIS flanges
- Higher Differential/Adjustable Differential SS/Neoprene Bellows
- □ IBR

APPLICATIONS

- □ Interface detection:
- □ High/Low level alarm Day storage tanks
- Process vessels
- Explosion proof areas
- Other applications



TECHNICAL SPECIFICATIONS

SERIES - 3000 F

Туре	- Magnetically coupled float type
Working Principle	- Repulsion
Mounting	- Horizontal
Material of construction for floa	t- AISI 304SS / AISI 304 SSL / AISI 316SS / AISI 316SSL/ PVC /
body & welted parts	polypropylene / Teflon / Ebonite etc.
Switch Cover	- Cast Aluminum / PP weatherproof as per IP - 55 / 65 / 66 / 67, anticorrosive painted
Process Connection	- Flanged 1 1/2" NB to 6" NB as per IS/ ANSI/ BS/ DIN /JIS standard Standard Size :
	OD - 120 mm, PCD - 92 mm
	Thickness - 12 mm
	Hole Dia - 14 mm (off centre)
	No. of Holes - 4
Signalisation	 Hermetically sealed glass encapsulated Reed Switch / Micro Switch or Air Break Switch
Contact Form	- NO / NC, 1NO +1NC, 2NO + 2NC
Contact Rating	- 5A 230V AC or 0.25A, 220 V DC
Electrical Connection	- 3/4 Inch ET, 1 Inch ET, 1/2 Inch NPT, 3/4 Inch NPT, 1 Inch NPT
On – Off Deferential	 - 12 ± 2 mm (upto 350 mm in case of adjustable differential models)
Max. Pressure	- 400 Kg / cm ²
Max. Temperature	- 550° C
Specific Gravity	- 0.55 to 1.5

SERIES - 6000 S

Specifications same as model 3000F except Process Connection: ½ NPT (M) to 2" NPT (M)

MODEL - 1000F

Specification same as Model Switch Cover - 3000 F except Cast Aluminium. Alloy LM-6 approved by CMRI Dhanbad for group IIA & Group IIB gases as per IS : 2148 - 1981 for flame proof & weatherproof IP -65 as per IS : 2147-1962

MODEL - 1110 F

Specification same as Model - 3000 F Switch Cover - Cast Al. Alloy LM 6 approved by CMRI Dhanbad for group IIC gases as per IS : 2148– 1981 for flame proof / weatherproof IP - 65 as per IS : 2147 - 1965



D. K. INSTRUMENTS PVT. LTD.

An ISO 9001:2000 Certified Company

76/2, Selimpur Road, Dhakuria, Kolkata – 700 031. Ph. No.: 91-33-2415 1310 / 2405 0944, Fax: 91-33-2415 2311. E-mail: dkinst@vsnl.net, Web Site: www.dkinstruments.com



Cat. No. 0017 March 06'

BALLOON TYPE FLOAT SWITCH

 SPECIAL FEATURES: Hermitically Sealed Prevents dust, dirt, moisture etc. Low cost, easy installation. Choice of Switches
 Mercury / Micro / Reed The **DK's Balloon type Float Switch** has a body exterior made of a durable and oil/acid resisting synthetic compound. The device has been found extremely useful and dependable as a means for governing pumps and for signaling purposes. A weight body attached to the cable effectively prevents the cable from being sharply flexed. The switching elements to which the cable conductors are connected consist of a sealed micro / mercury / reed switch.



TECHNICAL SPECIFICATIONS

<u>MODEL - 4000</u>

Switch Type No. of Contacts Max. Rating Max. Resistance Operating Angle Cable Max. Working Pressure. Max. Working Depth Max. Working Temperature Float Mercury Switch / Reed Switch / Micro Switch 1 SPDT / 2 SPDT 2A 230V AC / 10 A, 250V AC / 5A, 230V AC / 0.25A, 220V DC 3 ohms. 35 ± 5°. Flexible PVC cable. 10 Kg/cm². 20 mtrs. 90°C. Polypropylene / PVC,/SS 316, etc.

OPTIONAL

- Process connection either screwed or flanged as per ANSI, DIN, JIS, BS, IS Standard.
- Current rating can be increased as per requirement.
- □ Material of construction as per requirement.



An ISO 9001:2000 Certified Company

D. K. INSTRUMENTS PVT. LTD.

76/2, Selimpur Road, Dhakuria, Kolkata – 700 031. Ph. No.: 91-33-2415 1310 / 2405 0944, Fax: 91-33-2415 2311. E-mail: dkinst@vsnl.net, Web Site: www.dkinstruments.com



Cat. No. 0001 March'06

RF LEVEL MONITORING INSTRUMENTS

The RF type level switch is a simple, low cost; rugged level point controller designed for detection of materials kept in a tank, bin or vessel. This level switch can be used for detecting high, low level or for differential level control and is used in chemical industry, power utilities industry, food industry, pulp/paper industry, pharmaceuticals industry, water / waste industry, foundry industry etc.

The specialty of the probe is that it tends to ignore the build up on the probe, thus making it suitable for application, which tends to stick on the probe.

The unit has integral electronics along with time delay feature, LED indication, fail safe mode etc.



COAT CHECK PRINCIPLE

Normal probe tends to fail when there is a build up on the probe. The COAT CHECK electrode senses the build up on the probe by employing a special technique. The COAT CHECK electrode which is insulated from the active electrode and the ground is driven with same RF frequency as that of active electrode and having the same polarity. When a coating is formed on the probe, the RF current from the COAT CHECK electrode tends to saturate the build up area between COAT CHECK electrode and tank body thereby no electrical energy will flow from active electrode to tank wall. When the material rises and touches the active electrode , a RF current will flow from the active electrode to ground over and above the saturated region formed by the COAT CHECK electrode.



SALIENT FEATURES

- Wide range of application
- Easy installation and maintenance.
- Weatherproof/Flameproof enclosure as per requirement
- Sturdy electrode to withstand impact due to accidental clinker formation
- Alumina insulated electrode capable of withstanding 300°C
- No moving parts, no mechanical wear and tear.
- Adjustable time delay with ON/OFF delay
- Fail Safe High/Low Selection Feature (Field configurable) Available
- Ignores Build Up of Sticky and Conductive Material between Probe and Vessel Walls

SPECIFICATIONS

MODEL NUMBER	RFS - 100
SUPPLY VOLTAGE	230VAC or 110VAC (factory selectable)
OUTPUT TYPE	DPDT Relay (2 nos.)
CONTACT RATING	5 AMPS at 230VAC /24VDC, Resistive load
CABLE ENTRY	Dual, ¾ " ET or ½" NPT
TEMPERATURE	Probe: 0-80°C (above 80°C with extension pipe or heat sink)
	Electronics: 0-60°C
PROBE	Type: Rigid rod with COAT CHECK electrode
	Insulation: Teflon/Ceramic (for high temperature)
	Length: As per requirement
MATERIALS	Housing: Cast aluminum
	Electrode (active and coat check electrode): SS316/SS304
	Flange/Adapter: SS316/SS304/C.S.
MOUNTING	Flanged or threaded process connection as per requirement.
PROTECTION	Weatherproof as per IP 66
	Flameproof (optional)
FREQUENCY	93.8 KHz
TIME DELAY	0 To 10 seconds adjustable With ON/OFF delay selection
FAIL SAFE	Selectable Max. / Min.

INFORMATION REQUIRED ON ORDERING

- Process Parameters: Temperature, pressure, atmosphere hazardous or not.
- Application media characteristics: Sp. Gr., Dielectric constant, hazardous or not, corrosiveness, viscosity.
- Vessel details- Dimension, Mounting location and MOC.



D. K. INSTRUMENTS PVT. LTD.

An ISO 9001:2000 Certified Company 76/2, Selimpur Road, Dhakuria, Kolkata – 700 031.

Ph. No.: 91-33-2415 1310 / 2405 0944, Fax: 91-33-2415 2311. E-mail: dkinst@vsnl.net, Web Site: www.dkinstruments.com



Cat. No. 0015 March 06'

CONDUCTIVITY LEVEL CONTROLLER

Conductivity type Level Switch is simple, low cost, point Level controller that is used in variety of application for detecting level of conductive liquids. It is available in two versions – one is non integral (remote) and other is integral.

A low AC Voltage is connected via the control unit between the sensing electrodes and reference electrodes (tank wall in case of metallic tanks). As soon as the conductive material touches the electrodes, a low AC current starts to flow which operates the relay in the control unit.

Probe unit consists of electrode assembly and probe head. Electrode assembly consists of sensing electrodes (whose tip is at the point where level detection are required) and a reference electrode (required for non metallic tank). Control unit provides the visual indication for level and relay output whose potential free contacts are available for subsequent operation. The control unit houses sensing electronics consisting of power supply and signal conditioning circuit, which provide a low AC voltage across sensing electrodes and reference electrodes. Integral version does not have a separate control unit and the controller electronics is provided in the probe head.

Salient Features

- o Uses proven level control techniques;
- Wide range of application including corrosive media;
- o Simple to install;
- Fail safe features incorporated;
- It can be operated as independent level controller or differential level controller;
- o Separate module system for automatic home pump control;
- Latching of switch is optional.

Application

Any conductive liquid used in industries. Such as water, Acids, Salts, Brewery Liquids, Juices, Milk, Liquid Ammonia, Condensate etc.



MODEL NO. - KLS-100

Specifications

Enclosure	: Cast Aluminium / Ms Fabricated / Fiber Glass /				
	DMC with polyurethane painted / Plastic.				
Enclosure Protection	: IP-66.				
Cable entry	: ¾ " ET, ½ " NPT, etc.				
Process connection	: Flanged/Threaded as per BIS,BS,ANSI & others.				
Probe type	: Rigid up to 3 Meters and Flexible up to 10 Meters.				
Electrode material	:CS / SS 304, 304L, 316, 316L / Titanium /				
	Hastalloy 'C' tip can be provided if required.				
Electrode insulation	: PVC/PTFE/Rubber Lined, etc.				
No. of preset level	: Up to 4 (four) for non-integral and				
	Up to 2 (two) for integral.				
Resistance	: 200Kohms between Reference & Sensing Electrodes.				
Maximum operating Temp.	: 200°C for non-integral and 60°C integral				
	Version / control unit.				
Maximum Pressure	: 25 Kg/cm ² for rigid probe and 20 Kg/cm ² for Flexible.				
Output	: DPDT/SPDT.				
Rating	: 5A, 230V AC resistive, 0.25A, 230V DC inductive.				
Power supply	:110/230 ± 10% V AC, 50 Hz.				
Indication	: LED red for Alarm & Green for normal.				
Fail safe features	: Both high & low (Jumper Selectable).				
Power consumption	:Less than 5 VA.				
Operating Mode	: Independent of Differential (Jumper Selectable).				
Maximum Humidity	: 95%.				
Mounting	: Horizontal (with electrode guard) / Vertical.				

Installation Accessories

Counter flanges with suitable gaskets, bolts, nuts, washers etc. It can be mounted internally or externally with a chamber to dampen the liquid level fluctuation due to stirrer inflow of liquid.



D. K. INSTRUMENTS PVT. LTD.



An ISO 9001:2000 Certified Company

76/2, Selimpur Road, Dhakuria, Kolkata – 700 031. Ph. No.: 91-33-2415 1310 / 2405 0944, Fax: 91-33-2415 2311. E-mail: dkinst@vsnl.net, Web Site: www.dkinstruments.com

Cat. No. 0003 March 06'

CAPACITANCE TYPE LEVEL MONITORING INSTRUMENTS

DK INSTRUMENT brings you proven RF Technology to solve all process Level measurement and control problem. Whatever may be your application or control requirement we have the widest range to cater to all your needs.

The principle of detection involved is the Capacitance phenomenon, which is developed between the probe and the reference. The amount of capacitance developed in any vessel is determined by the size (surface area) of the probe, the distance from the probe to its ground reference, and the dielectric constant of the medium being measured. The amount of capacitance developed in a vessel becomes dependent upon the amount of the probe, which is covered with media. 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 detected by employing Radio Frequency (RF) and converted to a digital waveform proportional to the change in level which in turn is used for level detection and monitoring.



Ranges we offer:

- Single Point Capacitance type Level Switch This is to be used where only a particular fixed level is to be monitored. Output is relay contact, which can be used to operate, pump, agitator etc. This is suitable for most solid/liquid and can be mounted horizontally / vertically as per requirement. For vertically mounted unit the alarm point can be adjusted anywhere throughout the probe length, if required.
- 2) Multipoint Capacitance type Level Switch This switch is suitable when you need to control the level at various points (max up to 4 nos.) and can be used for most liquids. The output for each alarm points can be independent or latched. Latched version is suitable for starting & stopping of pumps at two different levels. The alarm point can be adjusted anywhere throughout the probe length.
- 3) Capacitance type Level Transmitter The output of transmitter, which may be 420mA signal or 0-5VDC, can be used for remote indication or control application. This is suitable for most liquids and provides cost effective solution whenever you need to monitor the level continuously.
- 4) Loop Powered Capacitance type Level Transmitter Whenever you want to reduce the cabling cost, loop powered transmitter is the best answer. The current signal (4 to 20mA) and the supply line (24 VDC) reside in the same two wire that is connected to transmitter.
- 5) Capacitance type Level Indicator This can be used to judge the level position at any instance. This is suitable for most liquids and is available with 420mA outputs and alarms Set Points. The display can be seven segments LED or LCD as required.

Each instruments comes with a probe electronics unit and a control electronics unit. The probe electronics unit senses the capacitance changes and converts it into an equivalent signal, which is processed by the control electronics unit for level indication and or for operating alarm set point(s) or for generating retransmission output as the case may be. When the control electronics unit is merged with the probe electronics unit and housed inside the same probe unit housing, we get integral version. In case of non-integral version the control electronics unit is housed in a separate unit known as Remote unit.

All the above are available either in Integral and Non-Integral version. Besides for hazardous area application CMRI/ERTL approved Flameproof enclosure is also available.

Features:

- No moving part.
- Wide range of application.
- Easy installation and maintenance.
- Weatherproof/Flameproof enclosure as per requirement.
- Wide range of probes to suit applicator requirement.
- Fail safe mode with On-Off delay available for alarm set point.
- ✤ Adjustable time delay for turbulence problem.
- Process connection threaded or flanged.
- Remote indication and control possible.
- Separate non-interacting zero & span controls to ease calibration at site.

General Specification:

:	CLS – 100
:	304 SS / 316 SS / Hastalloy C, etc.
:	Cast Aluminium.
:	Weatherproof / Flameproof (if required).
:	Rigid or flexible
:	PTFE / PVC insulation full or partial
:	230V AC or 110V AC or 24V DC.
:	0 to 10 sec.
:	Flanged / Threaded as per requirement
:	Horizontal / Vertical as per type.
:	LED for alarm and seven segment LED or LCD for Level Display.
:	Alarm – DPDT Relay.
	Transmitter – 4-20mA.

For Transmitter Output, Model No. – CLT 100

Probe Selection:

Probe is the active element that goes inside the vessel and plays the important role in capacitance forming. So proper selection of probe type is needed for trouble free functioning of capacitance type level instruments. The probe is available in various design type to suit your application need. The following Information is required for providing you best possible level monitoring solution.

- a) Process Parameters: Temperature, pressure, atmosphere hazardous or not.
- b) Application media characteristics: Sp. Gr., Dielectric constant, hazardous or not, corrosiveness, viscosity.
- c) Type of monitoring required: Single point alarm, multipoint alarm, indication or transmission.
- d) Vessel details- Dimension, Mounting location and MOC.

D. K. INSTRUMENTS PVT. LTD.



An ISO 9001:2000 Certified Company

76/2, Selimpur Road, Dhakuria, Kolkata – 700 031. Ph. No.: 91-33-2415 1310 / 2405 0944, Fax: 91-33-2415 2311.



E-mail: dkinst@vsnl.net, Web Site: www.dkinstruments.com

Cat. No. 0002 March 06'



The vibratory level sensor provides reliable point level detection in a wide variety of process control applications in bins, silos and hoppers, filled with grained or powdered materials or for liquids in a tank. The vibrating probe principle eliminates problems associated with temperature, humidity and material changes, while providing state-of-the-art electronic reliability and accuracy that requires **no calibration**.

The vibratory level sensor utilizes piezoelectric technology to create a vibration and then constantly monitors the presence or absence of that vibration. The electronically stimulated fork vibrates at its mechanically resonance frequency of 400 Hz when the fork is free of the service material.

This vibration causes physical deformation of a second crystal which generates a voltage to be analyzed by the electronic circuitry. If the fork is covered by the bulk material, a damping effect is produced and the piezo-crystal does not produce the voltage and the amplifier will switch and a corresponding signal output is actuated. The vibration of the fork has self-cleaning properties.

This switch is available in 4 types of configuration namely standard, extended pipe, flexible cable extension and remote electronics for high temperature.

Salient Features

- Suitable for level detection for Wide range of material density
- **4** Unaffected by Environmental and Material Changes
- **4** Multiple Configurations for a Wide Range of Applications
- Fast and Easy Installation-No Calibration required
- Field selectable operation logic.-Can be configured either for High or Low Level point switching.

Application

Powdered Milk, Peanuts, Frozen Potato Chips, Tobacco, Beans, Wood Shavings, Sugar, Chalk, Sweets, Coffee, Powdered Cellulose, Glass, Granular Plastics, Tea (Leaf), Gravel, Salt, Powdered Clay, Flour, Polystyrene Powder, Foundry Sand, Styrofoam, Spices, Soda, Animal Food, Soot, Dry Pellets Etc



TECHNICAL SPECIFICATIONS (STANDARD):

MODEL : VLS-100

SWITCHING UNIT:

:	Aluminum, weather proof, powder coated. Integral with The probe suitable for		
	back panel mounting.		
:	2 nos.		
:	0 ° C to +60° C		
:	2 VA		
:	230/110 V AC (+/-15%), 50 Hz or 24 V Dc		
:	2 sets of potential free c/o contacts rated at 5 amps, 230 V AC for non-		
	inductive loads.		
:	Continuously adjustable from 2 to 20 sec. probe free or probe covered.		
:	Field selected switch over for min. or max. (FSL/FSH) switching points.		
:	Green LED shows Normal, Red LED shows alarm.		
	· · · · · · · · · · · · · · · · · · ·		

FORK (SENSING PROBE):

Mounting	:	Screwed – 1 " BSP (standard) Or Flanged (optional)
Sense	:	Fork, Stainless steel
Extension	:	Pipe
Length	:	120 mm (standard) upto 3000 mm and as per application
Operating Temp in	:	150 deg for the integral switching vessel unit. (Standard)



An ISO 9001:2000 Certified Company

D. K. INSTRUMENTS PVT. LTD.

76/2, Selimpur Road, Dhakuria, Kolkata – 700 031. Ph. No.: 91-33-2415 1310 / 2405 0944, Fax: 91-33-2415 2311. E-mail: dkinst@vsnl.net, Web Site: www.dkinstruments.com



Membrane level sensor



The *DK's Membrane Level Sensor* is a simple and economical instrument suitable for the minimum and maximum level control inside silos or hoppers that contain non sticky materials, powders or granules like rice, corns, plastics, coffee, sand, lime, etc.

A membrane level sensor provides level indication by detecting pressure applied by the bulk material to the sensing membrane. The unit is installed to a vessel wall so that the membrane is exposed to the material to be sensed. As material contacts the membrane, a force is exerted through the diaphragm to a pressure plate within the level sensor. Physical deflection of the pressure plate actuates an internal micro switch for signaling alarms, lights or PLC inputs. When material recedes from the membrane, a light duty spring returns the pressure plate and internal switch back to their original positions. Humidity and temperature variations do not affect working; the membrane is collision and vibration proof.

The mounting is external on the silo's wall by the means of 3 holes placed on the fixing flange.

TECHNICAL SPECIFICATIONS:-	MODEL – MLS–100
Output: SPDT dry contact, 15A @ 250 VAC.	Wire Entry: 1/2" NPT
Enclosure: die cast aluminum, weather proof to	IP-65. Diaphragm Material: Neoprene/ PTFE, etc.
Mounting Connection flanged	Operating Temperature: -40°C to 80°C.
Pressure Rating: atmospheric pressure only	Minimum Vessel Dia. :14' (Smaller vessels will require modifications and extra gasketing.)

D. K. INSTRUMENTS PVT. LTD.

An ISO 9001:2000 Certified Company

76/2, Selimpur Road, Dhakuria, Kolkata – 700 031. Ph. No.: 91-33-2415 1310 / 2405 0944, Fax: 91-33-2415 2311. E-mail: dkinst@vsnl.net, Web Site: www.dkinstruments.com



Magnetic liquid Level Gauge

SPECIAL FEATURES

Rugged construction. Absolutely safe. Safe for Flammable, Toxic & Corrosive fluids. No Spillage of liquid. High pressure & vacuum application. Ensures safety of operating personnel. In built Reed Switch for Alarm / Trip.

APPLICATION

Gauge Glass has got limitations for use in flammable, toxic, corrosive process liquid and also High Temperatures and Pressures application. Rugged construction is suitable for High and Low Temperature and High Pressure and vacuum applications. This can be used for most process liquids encountered in the Chemical, Fertilizer, and Refinery, Petro chemical. Thermal Power Stations, Steel, Oil, Food and Automotive Industries.



Working Principle

A magnet embedded inside the float moves up & down according to the liquid level in the main vessel. Magnetically coupled follower or bi-colour roller / wafer indicate the liquid level externally against an adjacent graduated scale.

Specifications

Model – MLG-100 Level Range – 6000 mm Max Accuracy: ±3 mm (for follower type) & ±12.5 mm (for roller / wafer) Sp Gr.: 0.75 to 1.5 Max working Pressure – 100 Kg/cm² Max working Temperature – 350°C Magnetic Indicator – Follower / Roller / Wafer.

D. K. INSTRUMENTS PVT. LTD.



An ISO 9001:2000 Certified Company

76/2, Selimpur Road, Dhakuria, Kolkata – 700 031. Ph. No.: 91-33-2415 1310 / 2405 0944, Fax: 91-33-2415 2311. E-mail: dkinst@vsnl.net, Web Site: www.dkinstruments.com



Cat. No. 0011 March 06'

DIFFERENTIAL LEVEL INDICATOR CUM CONTROLLER

.....

MODEL: DLI-100

The differential type level indicator cum controller is used for measurement of difference of two liquid levels. The level is detected by capacitance principle. The capacitance is formed between the active electrode (flexible Teflon taped wire) and the reference wire. As the liquid level rises(or falls) the capacitance between the active electrode and reference increases(or decreases) which is converted into equivalent signal. The output of two probe unit is fed to the controller

unit to display the difference in level

and operate alarm output at any

desired differential level.

FEATURES

- Continuous Differential Level Monitoring
- Flexible Design- Control unit Interfaces with two wire loop Powered Transmitter
- ☞3 X Adjustable switch points
- 4-20mÅ Output (Differential as well Individual level)
- PMeasurement upto 20meter
- No moving parts
- Time delay to avoid relay chattering due to turbulence in level





D. K. INSTRUMENTS PVT. LTD.

76/2, Selimpur Road, Dhakuria, Kolkata - 700 031. Ph. No.: 91-33-2415 1310 / 2405 0944, Fax: 91-33-2415 2311.

E-mail: info@dkinstruments.com, Web Site: www.dkinstruments.com

DIFFERENTIAL LEVEL INDICATOR CUM CONTROLLER

SPECIFICATIONS

i)Probe Unit(Transmitter)

MOUNTING : Flanged .

LENGTH: As per requirement

REFERENCE: Wire

TEMPERATURE : 0-80°C (upto 150°C with extension pipe or heat sink)

SUPPLY: 12 to 18VDC from controller unit.

OUTPUT: 4-20mA(loop powered two wire)

ii)Controller unit

SUPPLY VOLTAGE : 230VAC /110VAC

OUTPUT

No. of Alarm points: 3(max), adjustable throughout the differential range

Type: DPDT Relay

Contact rating : 5 AMPS at 230VAC /24VDC , Resistive load

Time delay for alarm point: 0 to 10 second (adjustable), along with ON and OFF delay feature.

RETRANSMITION OUTPUT :

4 to 20mA current signal proportional to actual level with max load of 450 ohm.

4 to 20mA current signal proportional to differential level with max load of 450 ohm

TEMPERATURE Electronics : 0-60°C

Ambient temperature : 60 °C(Max)

INDICATION: Differential Level Display- Digital (seven segment)

Alarm- Red LED



D. K. INSTRUMENTS PVT. LTD.

76/2, Selimpur Road, Dhakuria, Kolkata – 700 031. Ph. No.: 91-33-2415 1310 / 2405 0944, Fax: 91-33-2415 2311. E-mail: info@dkinstruments.com, Web Site: www.dkinstruments.com

MECHANICAL LEVEL INDICATOR



TECHNICAL SPECIFICATIONS

Model – LI-100 Material of Construction Float – 316 SS / 304 SS / Polypropylene / PTFE, etc. Float Cable – 316 SS / 304 SS / Polypropylene, etc. Guide Wire – 316 SS / 304 SS / Polypropylene, etc. Bottom Anchor – 316 SS / 304 SS / C.S., etc. Pulley & Pulley Housing – Aluminium / SS / C.I., etc. Guide Pipe – M.S. / SS, etc. Pulley Shaft – C.S. / 304 SS, etc. Spring – Spring Steel / SS Fittings – C.S. / SS, etc. Mounting – Side / Top



D. K. INSTRUMENTS PVT. LTD.

An ISO 9001:2000 Certified Company 76/2, Selimpur Road, Dhakuria, Kolkata – 700 031. Ph. No.: 91-33-2415 1310 / 2405 0944, Fax: 91-33-2415 2311. E-mail: dkinst@vsnl.net, Web Site: www.dkinstruments.com



REFLEX LEVEL GAUGES

This instrument consists of a metal body, machined to have an internal chamber and one or more front windows (on one side only of the gauge). On each window a special high resistance plate reflex glass is fitted with sealing joint and metal cover plates hold by bolts and nuts. The chamber is connected to vessel with cross fittings and flanged, threaded or welded ends. Usually, between the instrument and its connecting ends, valves are fitted to consent shut-off piping and to disassemble the level gauge without emptying the vessel. Drain valves can also be fitted to cross fittings device. To avoid leakage in case of glass breakage, safety ball-check device can be provided.

WORKING PRINCIPLE:

Reflex level gauges working principle is based on the light refraction and reflection laws. Reflex level gauges use glasses having the face fitted towards the chamber shaped to have prismatic grooves with section angle of 90°. When in operation, the chamber is filled with liquid in the lower zone and gases or vapors in the upper zone; the liquid level is distinguished by different brightness of the glass in the liquid and in the gas/vapor zone.



GENERAL SPECIFICATIONS

Model No. Valve body Main Chamber Cover Plate Glass Gasket Trim Max. Working pressure Max. C/C Distance Connection Valve type

RG 100

CS/A - 105/F 304/F 316 CS/SS - 304/SS 316 A - 105 / C.S. Toughened Borosilicate-Moulded Make CAF/PTFE SS-304/SS-316 150 Kg/cm² 2.5 MTRS. Screwed / Flanged Quick closing/Plain/Auto shut off with ball check arrangement

ENQUIRY SPECIFICATIONS

C/C distance. Service liquid Working pressure & Temperature. Process Connection Vent Drain Details



D. K. INSTRUMENTS PVT. LTD.

An ISO 9001:2000 Certified Company 76/2, Selimpur Road, Dhakuria, Kolkata – 700 031. Ph. No.: 91-33-2415 1310 / 2405 0944. Fax: 91-33-2415 2311.

Ph. No.: 91-33-2415 1310 / 2405 0944, Fax: 91-33-2415 2311. E-mail: dkinst@vsnl.net, Web Site: www.dkinstruments.com



Cat. No. 0014 March 06'

TRASPARENT LIQUID LEVEL GAUGE

Transparent Liquid Level Gauge consists of a metal body, machined to have an internal chamber and one or more front windows (on each side of the gauge).

On each window a special high resistance plate transparent glass is applied with sealing joint and metal cover plate hold by bolts and nuts.

The chamber is connected to vessel with cross fittings and flanged, threaded or welded ends. Usually, between the instrument and its connecting ends, valves are fitted to consent shut-off piping and to disassemble the level gauge without emptying the vessel. Drain valves can also be fitted to cross fittings device.

To avoid leakage in case of glass breakage, safety ball-check device can be provided in cross-fittings or shut-off valves. To protect glass surfaces from corrosive action of the process fluid, Transparent Level Gauges can be fitted with CAF, Mica shields or PTFE shields. This kind of indicator is suitable for liquids colorless and very fluid.



WORKING PRINCIPLE

Fluid level indication is the result of the different transparency property of the two media (i.e. liquid and air or vapour).

GENERAL SPECIFICATIONS

Model No. Valve body Main Chamber Cover Plate Glass Gasket Trim Max. Working pressure Max. C/C Distance Connection Valve type TG 100 CS/A - 105/F 304/F 316,etc. CS/SS-304/SS 316, etc. A - 105 / CS, etc. Toughened Borosilicate - Moulded CAF/PTFE SS-304/SS-316 60 Kg/cm² 2.5 MTRS. Screwed/Flanged Quick closing/Plain/Auto shut off with ball check arrangement

ENQUIRY SPECIFICATIONS

C/C distance. Service liquid Working pressure & Temperature. Vessel Connection. Vent & Drain Details



D. K. INSTRUMENTS PVT. LTD.

An ISO 9001:2000 Certified Company 76/2, Selimpur Road, Dhakuria, Kolkata – 700 031. Ph. No.: 91-33-2415 1310 / 2405 0944, Fax: 91-33-2415 2311. E-mail: dkinst@vsnl.net, Web Site: www.dkinstruments.com



Cat. No. 0019 March 06'

TUBULAR LEVEL GAUGE

TUBULAR LEVEL GAUGE IS THE SIMPLEST FORM OF LEVEL INDICATION IN PROCESS INDUSTRY. IT IS SIMPLE AND RELIABLE DEVICE FOR DIRECT READING IN ATMOSPHERIC OR PRESSURIZED TANK APPLICATIONS. IT IS MOUNTED PARALLEL, ALONG THE SIDE OF TANK. AS THE PROCESS LEVEL FLUCTUATES, THE LEVEL IN THE TRANSPARENT GLASS TUBE CHANGES ACCORDINGLY AND GIVES LOCAL LIQUID INDICATION.



GENERAL SPECIFICATIONS

Model No.	LG 100		
Valve body	CS/A - 105/SS 304/SS 316 C/C dista		
	/PVC / POLYPROPYLENE, etc	Working p	
Glass	Toughened Borosilicate	Temperati	
Gasket	CAF/PTFE	Connectio	
Guide Rod	SS-304/SS-316 / CS / MS etc.	Vent & Dr	
Max. Working pressure	10 Kg/cm²		
Max. C/C Distance	2.5 MTRS.		
Connection	Screwed/Flanged		
Valve type	Quick closing/Plain/Auto shut off		

with ball check arrangement

ENQUIRY SPECIFICATIONS

C/C distance. Working pressure & Temperature. Vessel Connection. Vent & Drain Details

K

D. K. INSTRUMENTS PVT. LTD. An ISO 9001:2000 Certified Company

76/2, Selimpur Road, Dhakuria, Kolkata – 700 031. Ph. No.: 91-33-2415 1310 / 2405 0944, Fax: 91-33-2415 2311. E-mail: dkinst@vsnl.net, Web Site: www.dkinstruments.com



Cat. No. 0020 March 06'

ULTRASONIC LEVEL MADE EASY





www.gpc.co.za

Marketed By:

D. K. INSTRUMENTS PVT. LTD. An ISO 9001:2000 Certified Co. 76/2, Selimpur Road, Dhakuria, Kolkata - 700 031 Ph. No.: 91-33-2415 1310 / 2405 0944, Fax: 91-33-2415 2311 Email: dkinst@vsnl.net, info@dkinstruments.com Web Site: http://www.dkinstruments.com

NEW 2 WIRE ULTRASONIC PROBES - THE FASTEST IN THE WORLD.

GPC has introduced a family of 2 wire ultrasonic probes. The probes cover distances from 200mm to 10m with 2"NPT, mountings. The probes can take up to 16 shots per second, making them the fastest in the industry. Speed is especially important in applications involving fast filling tanks.

New, high efficiency, ultrasonic transducers with very narrow beams and wide frequency bandwidth work in any conditions over a wide temperature range. They are insensitive to mountings and with help of the transceiver and smart signal processing, they eliminate unwanted echoes from tank walls, standpipes and any other buildups. The transducers provide self-cleaning operation, so their faces eliminate any buildup and condensation.

The probes require a power supply of between 12 and 28 VDC and provide an output of 4 to 20 mA. Their maximum power consumption is 750 mW.

When the top of a tank is a dome, Rf2 sensor must be mounted 2/3 of distance between center and wall.



Continuous 2 Wire UI trasonic Level Transmitter



FEATURES

- * Simple push-button calibration
- * Output 4-20mA or 20-4mA
- * Built in temperature compensation
- * Compact size for easy mounting

APPLICATIONS

- * Food and Bevarages
- * Water / Wastewater
- * Chemicals
- * Oils
- * Solids ranges Requires 3 wire sensors

CALIBRATION - 4-20mA or 20-4mA

Full: (Set near target)

- 1. Calibration mode LED color is blinking green.
- Push button and hold until LED turns Orange (20mA).
 Or push button and hold until LED turns Red (4mA).
- 3. Release button, observe LED flashes to acknowledge the calibration.

Empty: (Set far target)

- 1. Calibration mode LED color is blinking green.
- Push button and hold until LED turns Red (4mA).
 Or push button and hold until LED turns Orange (20mA).
- 3. Release button, observe LED flashes to acknowledge the calibration.

Loss of Echo - 22mA or 3.5mA

- 1. To chose 22mA press and hold button until the LED goes off 2 flashes.
- 2. To chose 3.5mA press and hold button until the LED goes off 1 flash.





INSTRUCTION MANUAL FOR RF2 ULTRASONIC SENSORS



TYPICAL INSTALLATION

- * Direct mounting Ultrasonic sensor.
- * Simply thread sensor directly into METAL or PLASTIC nozzle.



- 1. To chose 22mA press and hold button until the LED goes off 2 flashes.
- 2. To chose 3.5mA press and hold button until the LED goes off 1 flash.

OPERATION: An Ultrasonic pulse is transmitted from the RF2 sensor. The pulse travels to the surface being monitored and is reflected off the surface back to the sensor.

The time of flight is divided by 2 and converted to an output signal directly proportional to the material level.

RF2 Wiring Connection





RADAR LEVEL MADE EASY





www.gpc.co.za

Marketed By: D. K. INSTRUMENTS PVT. LTD.

An ISO 9001:2000 Certified Co. 76/2, Selimpur Road, Dhakuria, Kolkata - 700 031

76/2, Selimpur Road, Dhakuria, Kolkata - 700 031 Ph. No.: 91-33-2415 1310 / 2405 0944, Fax: 91-33-2415 2311 Email: dkinst@vsnl.net, info@dkinstruments.com Web Site: http://www.dkinstruments.com

NEW NOISELESS SELF ADJUSTING PULSE RADAR PROBES

GPC is proud to announce release to production of very low cost pulse radar probes for 10m, 15m and 30m distances. This revolutionary designing offers very low noise performance, which is due to operation of the receiver that is activated by incoming echoes from wanted targets. Our radar probe adjusts microwave pulse amplitude and its width to a target distance and target reflection properties. The receiver changes its sensitivity with amplitude of received echoes. In addition to that, we also analyze the shapes of the received echoes and eliminate the ones coming from tanks' walls, standpipes and other obstructions. These features allow our radar to track any wanted target from the top of the rod antenna down to bottom of any shape tank regardless of tanks' shapes and environment conditions. Any build up on the rod antenna does not deteriorate the performance of the radar probe. Our radar does not have any mismatch between resonator and transceiver. This eliminates problems when a target is close to antenna and gives optimal performance of the radar. User interface of our radar is the same as of our ultrasonic probes, which is very simple and does not require any manuals. Communication software is also the same for ultrasonic and microwave probes. This allows a user to use radar and ultrasonic probes in the same network.



Continuous 3 Wire Radar Level Transmitter



FEATURES

- * Simple push-button calibration
- * Output 4-20mA or 20-4mA
- * Compact size for easy mounting
- * Optional Rs232 or Rs485 Communications

APPLICATIONS

- * Food and Bevarages
- * Water / Wastewater
- * Chemicals (With Vapors)
- * Oils
- * Solids (Vapors and Dusty applications)

CALIBRATION - 4-20mA or 20-4mA

Full: (Set near target)

- 1. Calibration mode LED color is blinking green.
- Push button and hold until LED turns Orange (20mA).
 Or push button and hold until LED turns Red (4mA).
- 3. Release button, observe LED flashes to acknowledge the calibration.

Empty: (Set far target)

- 1. Calibration mode LED color is blinking green.
- Push button and hold until LED turns Red (4mA).
 Or push button and hold until LED turns Orange (20mA).
- Release button, observe LED flashes to acknowledge the calibration.

Loss of Echo - 22mA or 3.5mA

- 1. To chose 22mA press and hold button until the LED goes off 2 flashes.
- 2. To chose 3.5mA press and hold button until the LED goes off 1 flash.

ORDERING INFORMATION

MODEL	RANGE	RESOLUTION	MOUNTING	FREQUENCY	
RF3-10-RC	0 - 10m	5mm	2" NPT	6.3GHZ	
RF3-15-RC	0 - 15m	5.7mm	2" NPT	6.3GHZ	
RF3-30-RC	0 - 30m	11mm	2" NPT	6.3GHZ	
For Sanitary version (2" ferrule) add S to model number.					



SPECIFICATIONS

MECHANICAL

- 2 x 1/2" NPT gland entry
- * Alumini um or SS Enclosure
- * IP 65 Protection

ENVIROMENTAL

- Temp 40 to + 60 Deg C
- Pressure 1 10 bar
- Approvals: FCC Part 15
- * CE

OPERATIONAL

- * Accuracy: +- 0.25% of full span
- * Transmitter Power: 50uW Ave.
- * Beam Angle: 8 10 deg.
- * Loss of Echo: (30 sec) 22mA

ELECTRICAL

- * Power: 12 to 28Vdc
- * 0.07 A max @24 Vdc
- * Output: 4-20mA / 20-4mA 6.1uA Resolution

CALIBRATION

- * Push button or Programmable via comms port
 Optional: RS232 or RS 485 (Modbus)

INSTRUCTION MANUAL FOR RF3R Radar SENSORS



TYPICAL INSTALLATION Direct mounting Radar sensor. Simply thread sensor directly into METAL or PLASTIC nozzle. Sensor Mtg. CALIBRATION - 4-20mA or 20-4mA 2" NPT Full: (Set near target) Measument can be from tip of antenna 1. Calibration mode LED color is blinking green. 2. Push button and hold until LED turns Orange (20mA). 4 or 20mA Or push button and hold until LED turns Red (4mA). 3. Release button, observe LED flashes to acknowledge the calibration. **SPAN** Accuracy. Empty: (Set far target) +/- 0.25% 1. Calibration mode LED color is blinking green. 2. Push button and hold until LED turns Red (4mA). Or push button and hold until LED turns Orange (20mA). 20 OR 4mA 3. Release button, observe LED flashes to acknowledge the calibration. Loss of Echo - 22mA or 3.5mA

- 1. To chose 22mA press and hold button until the LED goes off 2 flashes.
- 2. To chose 3.5mA press and hold button until the LED goes off 1 flash.

OPERATION: An Electromagnetic pulse is transmitted from the RF3R sensor. The pulse travels to the surface being monitored and is reflected off the surface back to the sensor. The time of flight is divided by 2 and converted to an output signal directly proportional to the material level.

Low Dielectric Material operation mode on / off

- 1. To turn LDM ON. Push button and hold until LED goes off after the sequence of yellow, red and turns off. The LDM operation is on when the LED's green light blinks constantly.
- To turn LDM OFF. Push button and hold until LED goes off after the sequence of yellow, red and turns off. The LDM operation is off when the LED is continuously green.

RF3R Wiring Connection

