

LSY... Technical Specification Document

Admittance Level Switch for Solids & Powders

Approvals & Certifications:

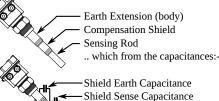






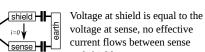
Operating Principle

The three elements of Admittance probe has three elements:-



Shield Sense Capacitance Sense Earth Capacitance A Sine wave of high frequency

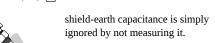
is fed into both Sensing Rod as well as Compensation Shield.



Trend Analyzing Algorithm

voltage at sense, no effective current flows between sense and shield.

This removes shield-sense



This removes the effect of material coating on probe.

capacitance from the measurement

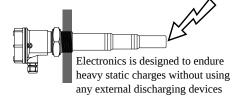
Material is detected by measuring sense-earth capacitance.

> sensor tracks the material trend and coating behavior to further enhance the dependability of the device

against false alarm due to

material coating on probe

Static Charge Safe



Compact Size

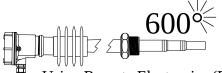
Durable Construction

Easy Installation

Order Code

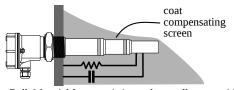
- LSY Admittance Level Switch for Solids
- Hxx Enclosure: HAN: Aluminum Non-Hazardous IP-65/68, HAX: Aluminum Flameproof IIa, IIb and IIc,
 - HSN: Stainless steel, HES: Specially designed enclosure as per customer requirement
- Material Temperature (T1: max 100°C, T2: max 200°C, T3: max 250°C, T4: max 600°C, TS: Specially designed) Tx
- Rx Sensor rigid/flexible type, RD: Rigid Rod Sensor, RP: Flexible Rope Sensor, RS: Specially designed sensor
- Sensing Rod/Rope Material (S4: SS-304, S6:SS-316, SL, SS-316L, SS: Special material) Sx
- Insulation type: IP: Partly PTFE insulated, IT: Full PTFE insulated, IC: Partly ceramic insulated, Ix
- Gx Sensor Extension Material (G4: SS-304, G6: SS-316, GL: SS-316-L, GS: special material)
- Process Connection Type (PFL: Flanged Type description of flange FL -at the end of order code) (PB1: BSP 1", PB2: BSP 1½", PB4: BSP 1¼", PB5: BSP2")
 - (PN1: NPT 1", PN2: NPT 11/2", PN4: NPT 11/4", PN5: NPT2")
 - (PT1: Triclover/Triclamp 1..11/2", PT2: Triclover/Triclamp 2")(PCS: Special Process Connection)
- Cx Process Connection Material: (C4: SS-304, C6: SS-316, CL: SS-316L, CS: Special material) Electronic Power Supply and Outputs:-
- Integral Electronics with Universal supply (15-80V DC & 15-260V AC) & 1 DPDT potential-free relay output EIUD
- Integral Electronics with DC power supply (15-80V DC) & one short circuit safe PNP output EIDP
- **EIDL** Integral Electronics with Two wire DC supply with 8/16mA current output suitable for 4-20mA analog inputs
- EIFS Integral Electronics Specially designed with special output
- **ERUD** Remote Electronics with Universal supply (15-80V DC & 15-260V AC) & 1 DPDT potential-free relay output with 10 meter special admittance cable.
- ERFS Specially Designed Remote Electronics
- Insertion length (100mm to 3000mm) Lxxxx
- Flange type and bore size specified for ASA/ANSI/JIS/DIN/Custom

High Temperature Probes



Using Remote Electronics (ER)

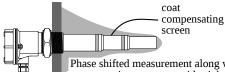
Tru-Admittance Measurement



Bulk Material forms resistive path as well as capacitive path between sense and earth. The phase of current is 90° ahead in capacitor than that of voltage applied to it.



90° shifted measurement of sense RF current flowing through the material removes the measurement error caused by resistive path in the material (e.g. mositure etc.)

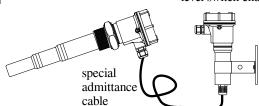


Phase shifted measurement along with compensation screen provides inherent immunity against the material coating

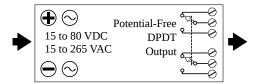
Remote Electronics

level sensor end

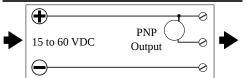
level switch end



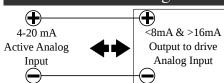
Universal In DPDT Output



PNP with DC Supply



Two wire 8/16 mA Signal



Technical Specification

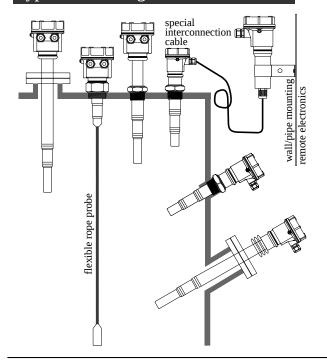
Features

- 1. Fast Switching Response 2 sec
- 2. High temperature endurable probes
- 3. 90° Phase shifted admittance measurement
- 4. Easy calibration with or without material
- 5. Remote electronics with std 10 meters cable length
- 6. Electrostatic discharge protected electronics
- 7. Tropicalized & potted electronics module
- 8. Threaded & Flanged Mountings
- 9. Electronic Inserts support all requirements
- 10. Ingress protection: IP 68/66 (as per IS-13947)
- 11. Ex-proof (Ex d T6 IP-66 IIC)
 - Flameproof as per IS/IEC 60079-1:2007
 - Weatherproof (IP-66) as per IS/IEC 60529:2001
 - Suitable for Gas Group: IIC
 - Suitable for Zone 1 & 2 atmospheres
- 12. Compact size
- 13. Vibration complied as per IEC 60068 part 2-6
- 14. Low power consumption
- 15. Active shield compensation against material build-up

Applications

- Suitable for all sticky/non-sticky bulk solids & liquids
- 2. Suitable for side as well as top mounting
- 3. Minimum and maximum failsafe field selectable
- 4. Process temperature max 600°C (ceramic insulation)
- 5. Process pressure max. 15 bar

Typical Mountings



Specifications

EIIID /EDIID	I . I/P . El DDDTO
EIUD / ERUD	Integral / Remote Electronics DPDT Output
Supply & Output	Universal Power Supply, DPDT Relay Output
	15 to 80 VDC and 15 to 260 VAC 50/60Hz
	Potential Free DPDT Relay Output
Relay Type	5 A each @ 24VDC or 220VAC
EIDP / ERDP	Integral / Remote Electronics for PNP Output
Supply & Output	15 to 60 VDC, PNP
Output Limit	250mA max. Short Circuit Safe
Sensor Cable	Remote electronics require special admittance
	cable from probe to controller.
	10 meter standard length
	more available on demand
Min. Dielectric Constant	1.6 (non-hygroscopic)
Ambient Temp.	-20 °C 80 °C (-4 °F 176 °F)
Process Temp.	-20 °C 100 °C (-4 °F 212 °F)
Extended Process	PTFE Insulation:
Temperature	-30 °C 250 °C (-22 °F 482 °F)
	Ceramic Insulation:

-30 °C ... 600 °C (-22°F ... 1,112 °F) (extensions & heat sinks required)

Process Pressure absolute / max. 15 bar (with PTFE insulation)

absolute / max. 2.5 bar (with Ceramic insulation)

Wetted Parts SS-304, SS 316, SS-316L, PTFE, part ceramic

Process Connection NPT / BSP 1", 1¼", 1½", 2" etc

Flanged: ANSI/JIS/DIN/ASA/custom

Vibration Test As per IEC 60068 part 2-6 sinusoidal, 10-55Hz, 0.15mm

Probe Insertion Length:

Rigid Rod 50mm to 3,000mm Flexible Rope 100mm to 20,000mm

Specifications are subject to change without prior notice



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