



Capacitance Level Probes For Liquids

SBEM Pvt. Ltd. offers a wide range of level probes for use with capacitance type level switches of series 112 & 114. The most popular range of probes for use with liquids which cover a majority of applications are described here. These applications includes following conductive & non-conductive liquids.

Conductive liquids: Water, Effluent, Milk, Beer, Acids & Alkalies etc.

Non-conductive liquids: Edible oils, Turbine oil, Synthetic oils, Kerosene, Diesel & other petroleum products etc.

For selection of suitable Level Switch Refer Leaflet LF-114-0802 (Single Point Switch) & LF-112-0801 (Two Point / Dual Level Switch).

The probe unit consists of an electrode and a transducer housed in a weatherproof / flameproof probe head. The 12 VDC supply for the transducer comes from the switch unit. Interconnection of switch & probe unit is done with 3 core cable.



FEATURES

- Weatherproof / Flameproof probe head
- Transducer moulded in epoxy for shock and corrosion resistance
- Wide range of electrodes to suit various applications
- Intrinsically safe transducer for flameproof applications

PROBE HEAD

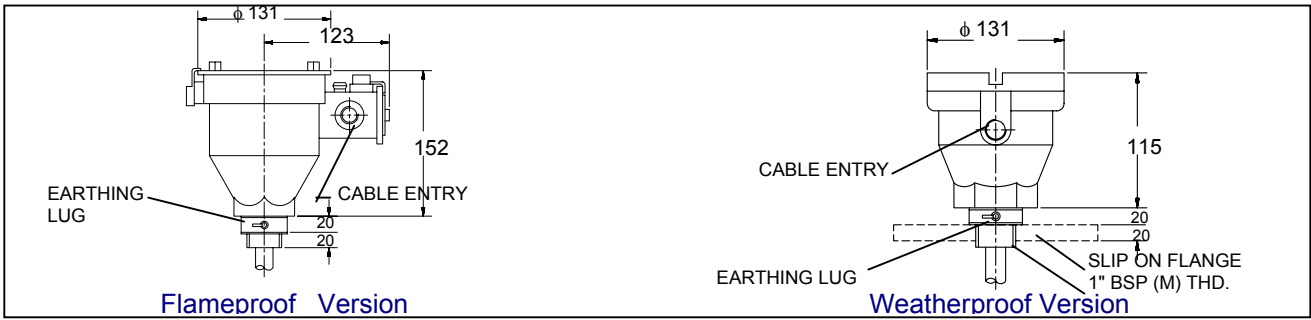
- Enclosure :**
Weatherproof cast aluminium polyurethane painted conforming to IP-65 as per IS 2147-1962.
OR
Flameproof cast aluminium polyurethane painted conforming to Gr. IIA & IIB as per IS: 2148 -1981 vide certificate no. V/1/1/1319, dtd. 2nd March 1990, issued by `CMRS, Dhanbad`.
- Cable entry (1 No.):**
3/4" UNF/ET (F) - Standard
1/2" NPT (F) - Optional
- Process Connection :**
As per the process connection in the "Electrode Selection Guide"

TRANSDUCER

- Packaging :
Epoxy moulded
- Operating Voltage :
12 VDC from switch series 112/114
- Termination :
Suitable for 2.5mm² max. Conductor size
- Operating Conditions :
Temperature - 0 to 55°C max.
Relative Humidity - 95% max. (Non-condensing)
- Transducer type :
As per table below

Type	Range (pf)	Op.freq. (KHz)	Function
T910	0-200,1000,3000	100	Standard
T910C	0-20000	20	High capacitance
T910H	0-100	100	High output
T910S	0-100,500	100	Intrinsically safe

DIMENSION OF PROBE HEAD



ELECTRODE SELECTION GUIDE FOR CONDUCTIVE MEDIA

CODE NO.	ELECTRODE DESCRIPTION	PROCESS CONNECTION		MATERIAL OF CONSTRUCTION		TRANSDUCER	MTG. V H	ELECTRODE LENGTH		HYS IN mm TYP	OPERATING CONDITION		SERVICE	
		THD	INTEGRAL FLANGE		SENSING ELECTRODE			COUNTER WEIGHT	MIN		MAX	TEMP IN °C MAX		PRES Kg/cm² MAX
			SIZE MIN	COATING /LINING										
11	RIGID POLYPROPYLENE SHEATHED	01	-	-	6	0	T910	V	350	3000	20	60	ATM	WATER, NON-CORROSIVE LIQUIDS IN METALLIC TANKS
16	RIGID PTFE SHEATHED, Ø 16mm	01	1"	0,8	6	0	T910	V H	350 200	3000 500	20	60	ATM	WATER, CORROSIVE/ NON CORROSIVE LIQUIDS IN METALLIC TANKS
17	RIGID PTFE SHEATHED, Ø 16mm	01	1"	0,8	6	0	T910	V H	350 200	3000 500	20	180	10	WATER, CORROSIVE/ NON-CORROSIVE LIQUIDS IN METALLIC TANKS
26	DOUBLE LOOP FLEXIBLE PVC SHEATHED	01	-	-	7	2	T910/ T910HC	V	3000	7000	50	60	ATM	WATER IN SUMP/ RESERVOIRS
29	DOUBLE LOOP FLEXIBLE PTFE SHEATHED (INNER CONDUCTOR SS316)	01	1 1/2"	0,4	6	1,6,8	T910	V	1000	5000	20	60	ATM	WATER, CORROSIVE LIQUIDS IN NON-METALLIC /LINED TANKS
41	RIGID PVDF COATED Ø14mm	01	1"	0,8	6	0	T910	V H	350 200	3000 500	20	140	10	MILK, BEER & OTHER FOOD PRODUCTS IN METALLIC TANKS
77	RIGID Ø16 PTFE SHEATHED WITH Ø6 BARE EARTHING ELECTRODE	-	4"	0	6	0	T910	V H	350 200	3000 500	20	60	ATM	WATER BOUND SOLUTION / NON CORROSIVE LIQUIDS IN NON METALLIC TANKS
80	RIGID Ø16 PTFE SHEATHED WITH Ø6 BARE EARTHING ELECTRODE	-	4"	0	6	0	T910	V H	350 200	3000 500	20	180	10	WATER BOUND SOLUTION / NON CORROSIVE LIQUIDS IN NON METALLIC TANKS
78	RIGID Ø16 PTFE SHEATHED WITH Ø10 PTFE SHEATHED EARTHING ELECTRODE	-	4"	0,8	6	0	T910	V H	1000 350	3000 500	20	60	ATM	WATER BOUND SOLUTION / CORROSIVE LIQUIDS IN NON METALLIC /LINED TANKS
81	RIGID Ø16 PTFE SHEATHED WITH Ø10 PTFE SHEATHED EARTHING ELECTRODE	-	4"	0,8	6	0	T910	V H	1000 350	3000 500	20	180	10	WATER BOUND SOLUTION / CORROSIVE LIQUIDS IN NON METALLIC/LINED TANKS
79	RIGID Ø16 PTFE SHEATHED WITH Ø6 BARE EARTHING ELECTRODE	-	2 1/2"	0	6	0	T910	V	350	3000	20	60	ATM	WATER BOUND SOLUTION / NON CORROSIVE LIQUIDS IN NON METALLIC TANKS
82	RIGID Ø16 PTFE SHEATHED WITH Ø6 BARE EARTHING ELECTRODE	-	2 1/2"	0	6	0	T910	V	350	3000	20	180	10	WATER BOUND SOLUTION / NON CORROSIVE LIQUIDS IN NON METALLIC TANKS

ELECTRODE SELECTION GUIDE FOR NON-CONDUCTIVE MEDIA

CODE NO.	ELECTRODE DESCRIPTION	PROCESS CONNECTION		MATERIAL OF CONSTRUCTION			TRANSDUCER	MTG. V H	ELECTRODE LENGTH		OPERATING CONDITIONS		SERVICE	
		THD	INT FLGD MIN	SENSING ELECTRODE	OUTER PIPE	COUNTER WEIGHT			MIN	MAX	HYS mm TYP	TEMP. IN °C MAX.		PRES IN kg/cm² MAX.
31	RIGID CONCENTRIC, PVDF COATED, 1/4" OUTER PIPE	01	-	6	4,6	0	T910H	V H	350 100	800 500	20	140	10	EDIBLE OILS, TURBINE OIL, KEROSENE, SYNTHETIC OILS & OTHER PETROLEUM PRODUCTS
33	RIGID CONCENTRIC, PTFE SHEATHED, 1/2" OUTER PIPE	01	-	6	4,6	0	T910	V H	500 100	2000 500	40	60	ATM	
34	RIGID CONCENTRIC, PTFE SHEATHED, 1/2" OUTER PIPE	01	-	6	4,6	0	T910	V H	500 100	2000 500	40	180	10	
32	RIGID CONCENTRIC, PTFE SHEATHED, 3/4" OUTER PIPE	01	-	6	4,6	0	T910	V H	1000 100	3000 500	40	60	ATM	
35	RIGID CONCENTRIC, PTFE SHEATHED, 3/4" OUTER PIPE	01	-	6	4,6	0	T910	V H	1000 100	3000 500	40	180	10	

Notes :

- V/H indicates mounting orientation: V = Vertical; H = Horizontal.
- These are commonly used electrodes. For special applications, please contact factory.
- High temperature stand off is recommended for process temperature above 60 deg C.
- For food industries PVDF coated electrodes are recommended.
- For corrosive duties, only integral flanged process connections are recommended as threaded process connections are prone to deterioration in corrosive atmosphere.
- Hysteresis is measured for i) Conductive liquid - Water; ii) Non conductive liquid - Kerosene. It varies as per medium.
- For horizontal mounted electrodes 15 deg. downward angle of repose is recommended.

ORDERING CODE FOR ELECTRODE

PROBE HEAD TRANSDUCER PROCESS CONNECTION SENSING ELECTRODE ELECTRODE LENGTH IN mm

L =

PROBE HEAD
1 - Weatherproof (WP)
4 - WP with High Temperature Stand Off (HTSO) in SS316
5 - Flameproof (FIP)

TRANSDUCER
00 - T 910
0C - T 910 HC
0H - T 910 H
0S - T910 S

MOUNTING (NOTE 1)
T - Threaded
I - Integral flange
S - Slip on flange

PROCESS CONNECTION
01 - 1" BSP (M)
XX - Flange as per flange table

FLANGE TABLE
Pressure rating = 150 # (10 Kg/cm²)

	ANSI	BS	DIN	IS
1"	11	12	13	14
1 1/2"	16	17	18	19
2"	21	22	23	24
2 1/2"	26	27	28	29
3"	31	32	33	34
4"	41	42	43	44
5"	51	52	53	54
6"	61	62	63	64

PROCESS CONNECTION MATERIAL
2 - CS (For flanges only)
4 - SS304
6 - SS316

COATING / LINING
0 - No coating / lining
4 - Rubber Natural (lining)
8 - PVDF (coating)

ELECTRODE CODE (NOTE 2)
XX - As per electrode Selection Guide

MATERIAL OF CONSTRUCTION
6 - SS316
7 - Copper

COATING / SHEATHING
0 - No coating / Sheathing
1 - Polypropylene (sheathing)
2 - PVC (sheathing)
3 - PTFE (sheathing)
8 - PVDF (coating)

MATERIAL OF OUTER PIPE
0 - No outer pipe
4 - SS304
6 - SS316

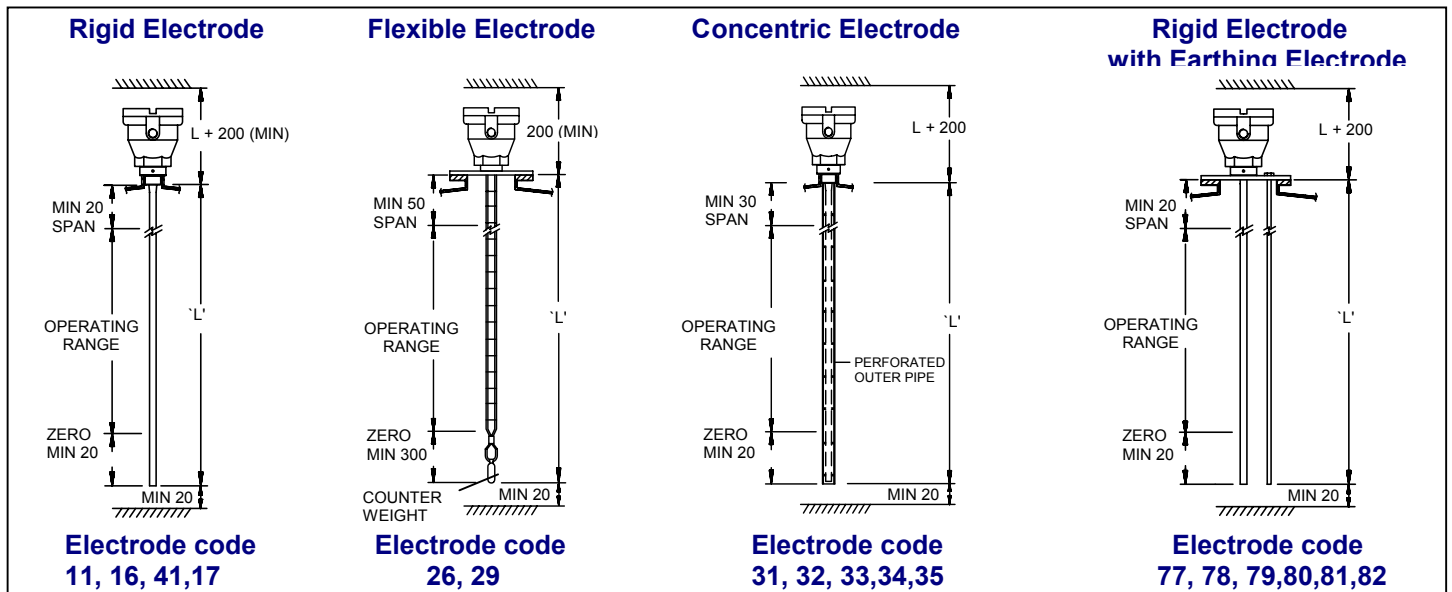
MATL. OF COUNTER WEIGHT
0 - No counter weight
1 - Glass leadshot filled
2 - CS Cd plated
6 - SS316
8 - SS316 PVC coated

*NOTE : 1. Slip on flanges of appropriate size can be supplied for electrodes having threaded process connections.
2. All combinations are not possible. Please refer " Electrode Selection Guide " for compatible options.*

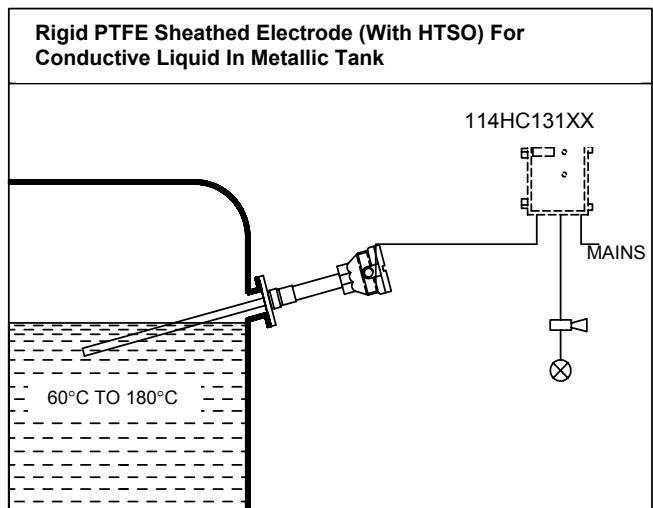
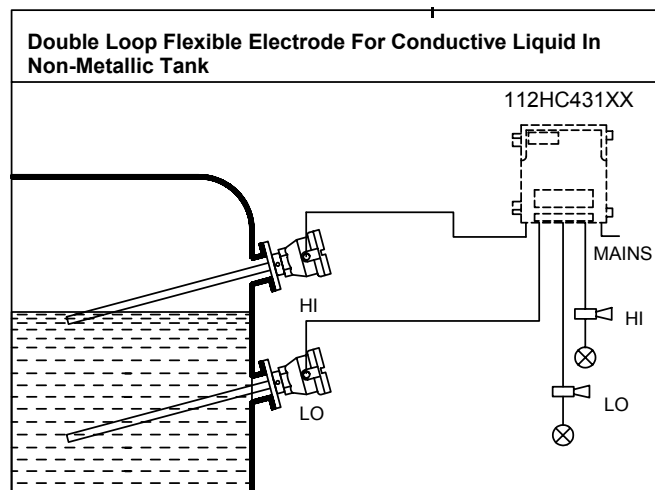
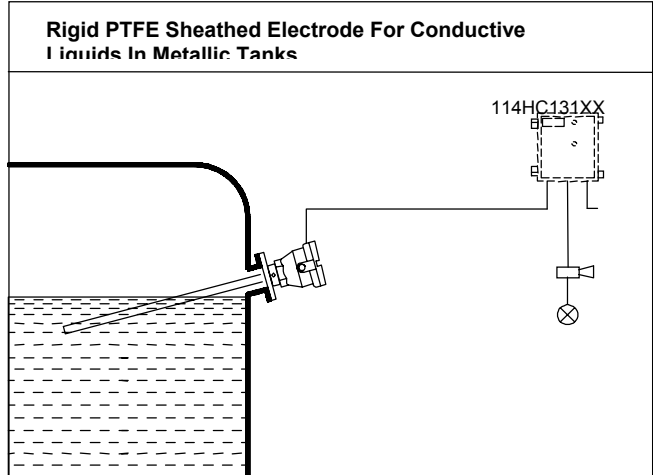
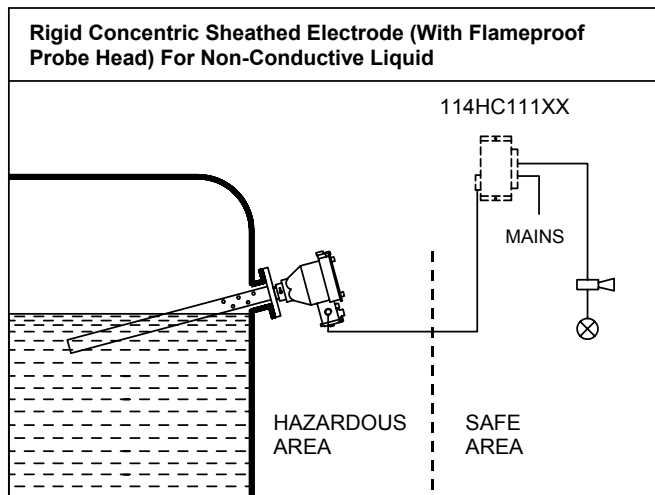
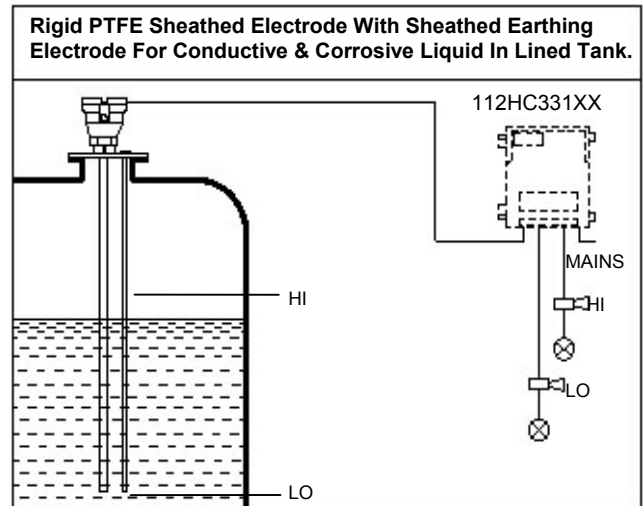
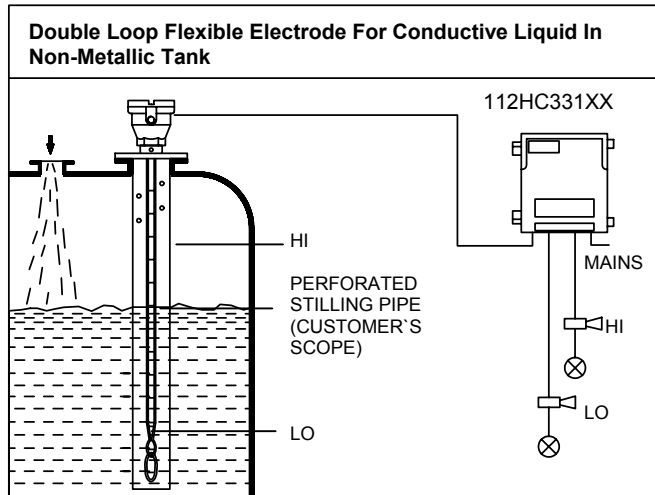
EXAMPLES :

- | | |
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| <p>1) 1-00-11648-91663000 L = 500mm.
Weatherproof probe head with Transducer T910.
Integral flange, 1 1/2" ANSI in SS304, PVDF coated.
Rigid PTFE sheathed ϕ16mm, SS316 Electrode
(Without outer pipe) 500mm long.</p> | <p>2) 5-OS-T0160-9336360 L = 1500mm.
Flameproof probe head with IS Transducer T910S.
1" BSP threaded process connection in SS316.
Rigid concentric, SS316, PTFE sheathed electrode,
1/2" outer pipe in SS316, 1500mm long.</p> |
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ELECTRODE DETAILS



APPLICATIONS



*** Continuous developments may necessitate changes without notice.

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SBEM Pvt. Ltd.

39, Electronic Co-Operative Estate, Pune-Satara Road, Pune - 411 009 (INDIA)

Tel. - 91-20-4220505, 4223375 Fax - 91-20-4215670

Email: sales@sbem.co.in, sbemsales@vsnl.com, Web: www.sbem-india.com

Works: Bibwewadi Industrial Estate, 691/A/2, Pune-Satara Road, Pune-411 037(India) Email: mfg@sbem.co.in

Office MUMBAI

Tele. 91-22-2782 3601, 2782 3603

Fax 91-22-2782 3603

Email mumbai@sbem.co.in

CHENNAI

91-44-2445 1235, 2441 2947

91-44-2441 2947

chennai@sbem.co.in

NEW DELHI

91-11-2656 0647, 2696 9679

91-11-2696 9679

newdelhi@sbem.co.in

VADODARA

91-265-233 5196, 235 8184

91-265-233 0906

vadodara@sbem.co.in

