



**CAPACITANCE TYPE LEVEL SWITCH FOR LIQUIDS
114 MLS**

Capacitance Type Level Switch 114 MLS uses SBEM's proven capacitance technology with added feature of Microprocessor . It is a Single/Two point Weatherproof level switch.Can be used in a variety of application for detecting / controlling level of liquids like water,water bound solutions, oils, Chemicals.Wide options of electrode to cover variety of applications is available . The Probe may also be used with solids. (See -Lf -114-0807 R 00).

❖ **APPLICATIONS:**

- ❑ In Thermal Power Station,Chemical Plants, Water & Waste Water Treatment Plants.
- ❑ Non-Conductive liquids:
Edible oil,Turbine oil,Synthetic Oils,Kerosene,Diesel & Other Petroleum products.
- ❑ Conductive liquids:
Water,Effluent, Milk, Beer, Acids & Alkalies etc.

❖ **FEATURES:**

- ❑ Microprocessor based Instrument.
- ❑ Surface/Pipe mounting options.
- ❑ One point or Two point Switch
- ❑ Built inTime delay & probe failure alarm (optional).

❖ **SPECIFICATIONS :**

❖ **CONTROLLER UNIT :**

- ❑ **Power supply:**115VAC / 230VAC/24VDC
- ❑ **Relay contacts:**
2 C/O, 5A @ 230VAC, Resistive
Probe Failure Alarm:
2 C/O, 5A @ 230VAC, Resistive (Optional)

❑ **Function:**

- 1 – Single point level switch with adjustable time delay & with optional probe failure Alarm.
- 2 – Two point level switch with adjustable time delay.

❑ **Fail safe feature:**

DIP switch settable fail safe high (FSH) or fail safe low (FSL)

❑ **Time delay:**

0 – 200 Sec

❑ **Controls:**

Potentiometer to set: Level Alarm,
: Time Delay

DIP-For switch setting.

❑ **Indications:**

Red LED for Level Alarm
Bi- Color LED for Level above set point
Red LED for Probe Failure (Optional)

❑ **Hysteresis:** Min.20 mm (Ref.table)

❑ **Sensitivity :** ± 0.5% (of probe output)



❑ **Environmental conditions :**

Temperature: -10° C to + 60° C
Relative Humidity : 0 % to 95 % (Non condensing)

❑ **Terminals :**

Suitable for 1.5 sq. mm size conductor (Max) (Refer Note 6)

❑ **Cable entries :** 1/2" NPT(F), 3/4" UNF (F)

❑ **Location :** Suitable for installation in safe area.

❑ **Enclosure :** Cast aluminum, Polyurethane painted,Weatherproof to IP-67

❖ **ELECTRODE :**

Electrode	Duties
Rigid PTFE sheathed Dia. !6 mm.	Water,corrosive/Non-Corrosive liquids.
Rigid PTFE sheathed Dia. 16 mm. (With HTSO)	Water, corrosive/Non-corrosive & pressurised duties
Double loop flexible PTFE sheathed (Inner Conductor SS316)	water Non-corrosive liquids in Non-Metallic,Lined tanks.
Flanged PVDF coated double loop flexible PTFE sheathed(Inner conductor (SS316)	water ,corrosive liquids, acids, etc.
Rigid concentric PTFE sheathed 3/4" outer Pipe.	} Edible oils,TurbineOils, Kerosene,Senthetic oils & Other Petroleum Products.
Rigid concentric PTFE sheathed 1/2"outer pipe	

ORDERING CODE :

114 MLS -

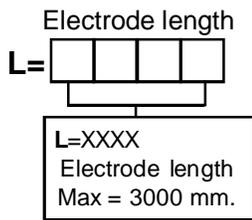
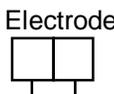
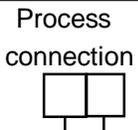
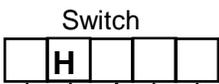
Construction:
 I - Integral Weatherproof
Remote head Weatherproof
 S- Surface mounting
 P- Pipe Mounting

Safety:
 H-Non Intrinsically safe.

Versions:
 1-One Pt.
 2-Two Pt.
 3-One Pt.+ PF Alarm

Cable entry:
 T-1/2" NPT (F)
 F- 3/4" UNF (F)

Power Supply:
 0 - Not applicable
 1 - 230 VAC
 2 - 115 VAC
 3 - 24 VDC



Electrode code:
 00 - Not applicable
 XX - Refer table

Process connection:
 00 - Not applicable
 01 - 1" BSP(M)
 XX- Refer Flange Table

Flange Table:

Pressure Rating : 150 # (10 kg/cm ²)				
	ANSI	BS	DIN	IS
1"	11	12	13	14
1 1/2"	16	17	18	19
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

Note: Slip on flange of appropriate size order Separately.

ELECTRODE SELECTION GUIDE FOR CONDUCTIVE MEDIA :

Code No	Electrode Description	Service	Process connection			Material of construction		Construction I / R	MTC. V/ H	Electrode Length		HYS In mm Typ	Operating condition	
			THD size Min	Integral flange coating /Lining	Sensing Electrode	counter weight	MIN			MAX	Temp in ° C Max		Pres kg/cm ³ Max	
16	RIGID PTFE SHEATHED , Dia. 16 mm.	Water,Non corrosive/ corrosive liquids in Metallic Tanks.	01	----	----	SS316	NA	I R	V H	100	3000	20	60	ATM.
17	RIGID PTFE SHEATHED, Dia. 16 mm. (With HTSO)	Water, corrosive/Non Corrosive liquids in pressurised metallic tanks.	01	----	----	SS316	NA	R	V H	100	3000	20	180	10
29	DOUBLE LOOP FLEXIBLE PTFE SHEATHED (INNER CONDUCTOR SS316)	Water,Non-Corrosive liquids in Non metallic / Lined tanks.	01	---	----	SS316	SS316	I R	V	300	5000	20	60	ATM
30	DOUBLE LOOP FLEXIBLE PTFE SHEATHED (INNER CONDUCTOR SS 316)	Water, corrosive liquids in Non Metallic/ Lined tanks.	01	1"	PVDF	SS316 PTFE SHEATHED	SS316 PVDF COATED	I R	V	300	5000	20	60	ATM

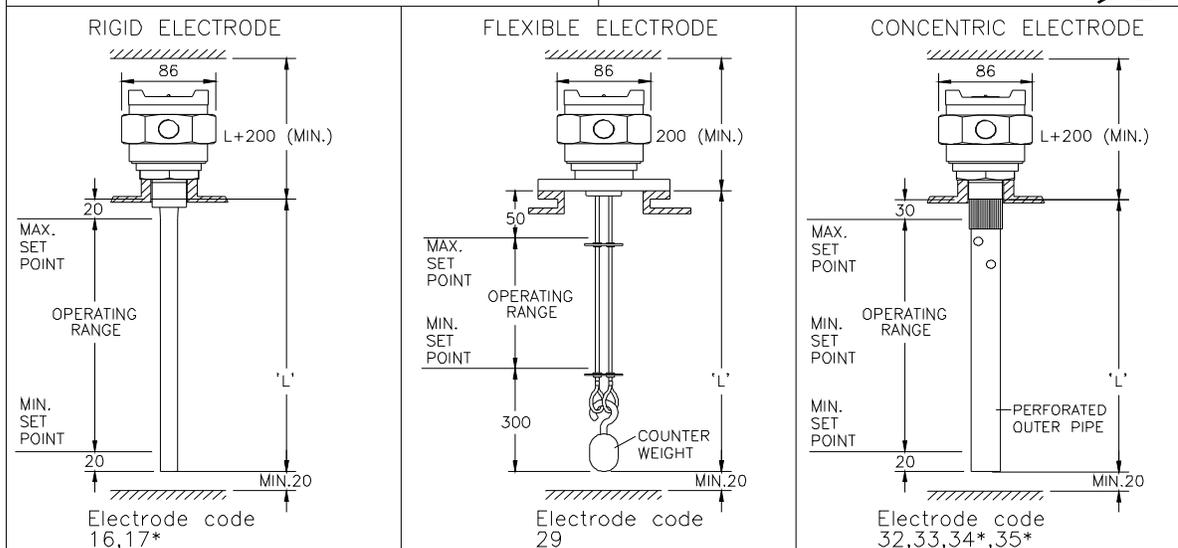
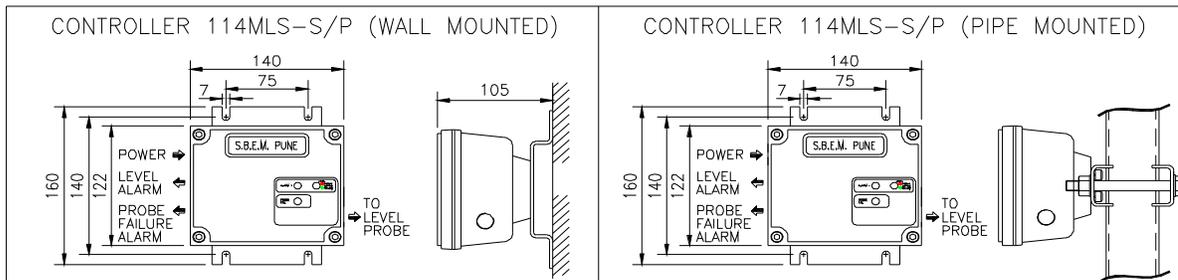
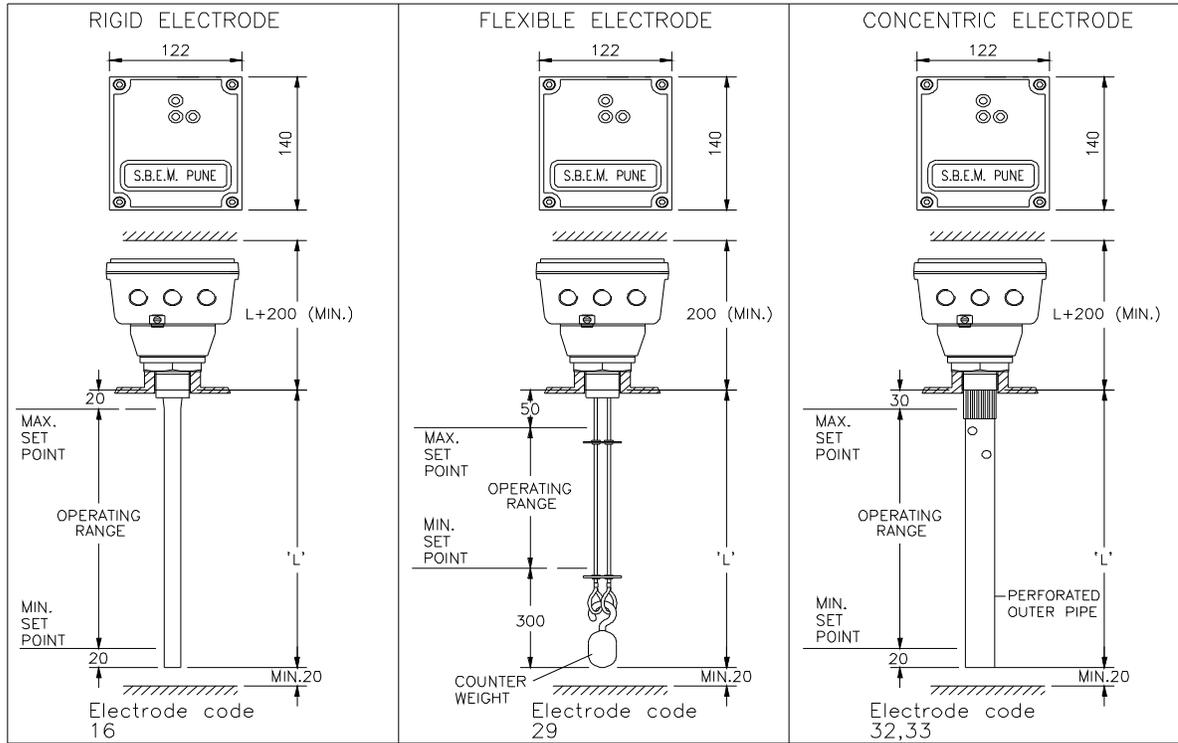
ELECTRODE SELECTION GUIDE FOR NON CONDUCTIVE MEDIA :

Code No	Electrode Description	Service	Process connection	Material of construction		Construction I / R	MTC. V/ H	Electrode Length		HYS In mm Typ	Operating condition	
			Threaded	sensing Electrode	Outer Pipe			MIN	MAX		Temp in ° C Max	Pres kg/cm ³ Max
32	RIGID CONCENTRIC PTFE SHEATHED 3/4" OUTER PIPE	EDIBLE OILS,TURBINE OILS KEROSENE ,SYNTHETIC OILS & OTHER PETROLEUM PRODUCTS.	01	SS316	SS316	I R	V H	1000	3000	40	60	ATM.
33	RIGID CONCENTRIC PTFE SHEATHED 1/2" OUTER PIPE		01	SS316	SS316	I R	V H	500	2000	40	60	ATM.
34	RIGID CONCENTRIC PTFE SHEATHED 1/2" OUTER PIPE (WITH HTSO)		01	SS316	SS316	R	V H	500	2000	40	180	10
35	RIGID CONCENTRIC PTFE SHEATHED 3/4" OUTER PIPE		01	SS316	SS316	R	V H	1000	3000	40	180	10

Notes:

1. Separate model code for Electrode & probe are required in case of remote mounting (Refer Page 4).
2. All Electrode combinations not possible please contact factory for further details.
3. V/H indicates orientation V = Vertical ,H = Horizontal.
4. I/R Indicates construction I = Integral, R = Remote.
5. Slip on Flange with suitable threaded hole in required material e.g. CS/SS316/SS304,available optionally.
6. Higher operating temperature 0-180° C is possible with addition of HTSO (High Temperature Stand Off).
7. Cable between remote head and electrode is 3 Core Tinned copper multistrands X 0.5 sq.mm. Recommended.

MECHANICAL DIMENSIONS:



NOTE : *For Electrode type 17,34,35 HTSO will be added.

♦ **Example of model code selection for Integral Mounting.** Model no.: 114 MLS IH1T1 01 35 L=0600

The above model code specifies that Capacitance Type Level Switch 114 MLS with Integral mounting, Non-intrinsically safe single point having cable entry of 1/2" NPT(F) & Power supply of 230 VAC. Process connection for this switch is 1" BSP(M) & Electrode is of following type i.e. Rigid concentric PTFE sheathed 3/4" outer pipe having length of 600 mm.

- ♦ Model code selection for remote mounting is as follows.

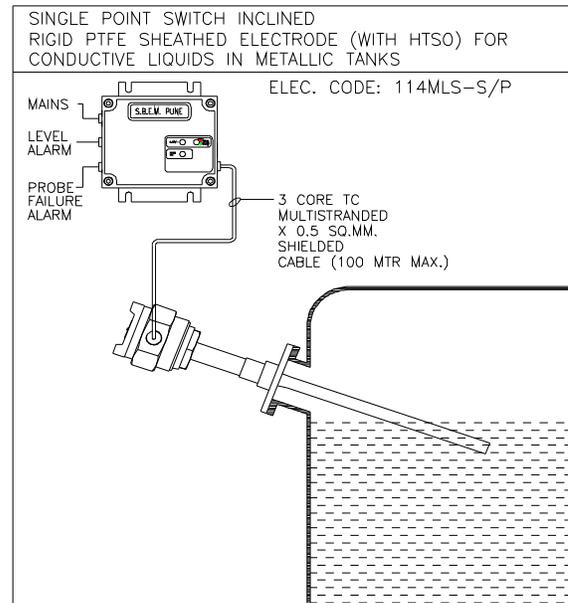
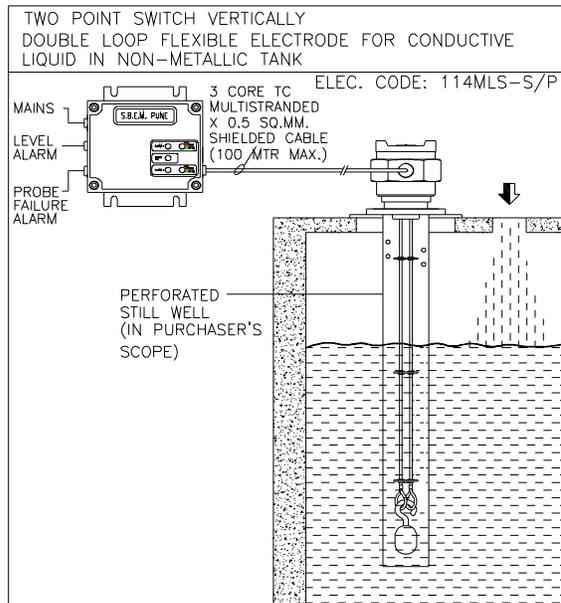
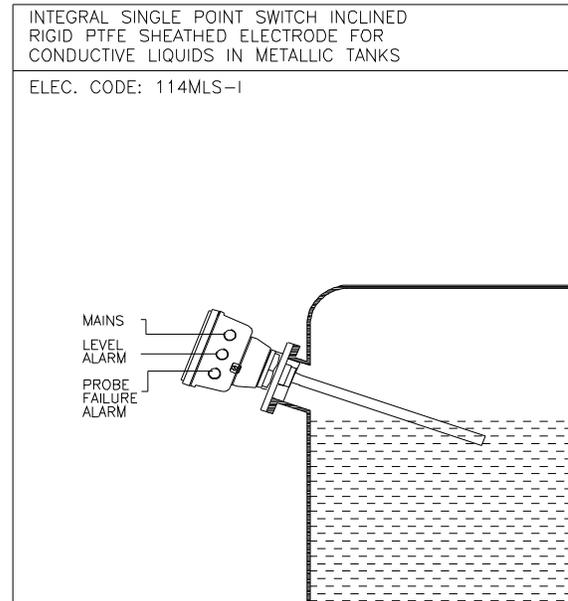
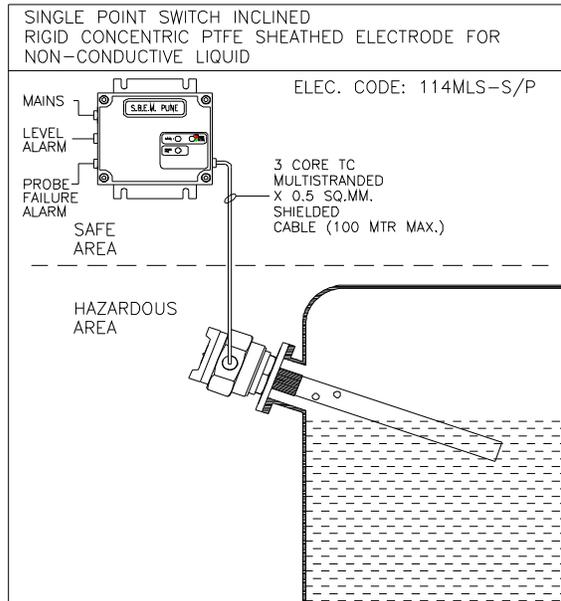
Controller: Model No.: 114 MLS SH1T1 00 00 XXXX

Capacitance type level switch 114 MLS Surface mounting, Non-intrinsically safe single point having cable entry of 1/2" NPT(F) & power supply of 230 VAC.

Electrode: Model No.: 114 MLS XXXXX 01 35 0600

Rigid Concentric PTFE Sheathed, 3/4" outer pipe having 1" BSP(M) process connection & 600 mm Length.

APPLICATION DRAWINGS :



* Continuous developments may necessitate changes without notice.

LF-114-0806 Rev.04 7/2011

LF_CapLvlSwLiq-114MLS



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ISO 9001: 2008

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• Our Product Range •

Level Switches: Float, Displacer, Capacitance, Conductivity, Vibration, Rotary Paddle
Level Transmitters: Pulse Radar, Guided Wave Radar, Ultrasonic, Capacitance, Hydrostatic
Tank Gauging: Servo, Float & Tape, Magnetostrictive, Float & Board
Flow Meters: Electromagnetic, Ultrasonic

