

"LB" Point Level Probes for Conductive Liquid Applications

Introduction

The LB Point Level probe assemblies are designed to provide long-term reliability in applications where they are continuously exposed to wide temperature swings and repeated CIP cycles. The LB utilizes a new process developed to seal Teflon® insulation to stainless steel probes providing a smooth, thick, permanent coating that's impervious to conditions encountered in sanitary processing and CIP applications. To simplify installation the LB incorporates an elastomer between the Teflon® and the probe that allows any probe to be shortened by up to six inches in the field.

Switching modules are connected to the probes via a water-tight Quick Disconnect. The module provides Form-C relay contacts for switching or alarming and is supplied with Single Pole/Double Throw (SPDT) contacts. Modules are designed for single level or differential operation and are available in fixed or field adjustable sensitivity. A NEMA 4X enclosure may be specified for mounting the switching module local to the probe.

The LB also features a second proprietary, elastomeric compression seal at the top of each probe to insure a sanitary seal is maintained at the probe-to-fitting junction. No threads exist within or near the product contact zone.

Finally, the LB integrates a stainless steel wiring head that simplifies field wiring and retro-fits to existing electronic controls. The head and fitting assembly can support up to 4 individual probes, plus a separate tank reference connection.

The housing includes a pre-wired and sealed quick-disconnect receptacle and can be specified with a field wireable mating connector or with any length of pre-wired cable.

The quick disconnect even meets NEMA 4X requirements in the disconnected position!

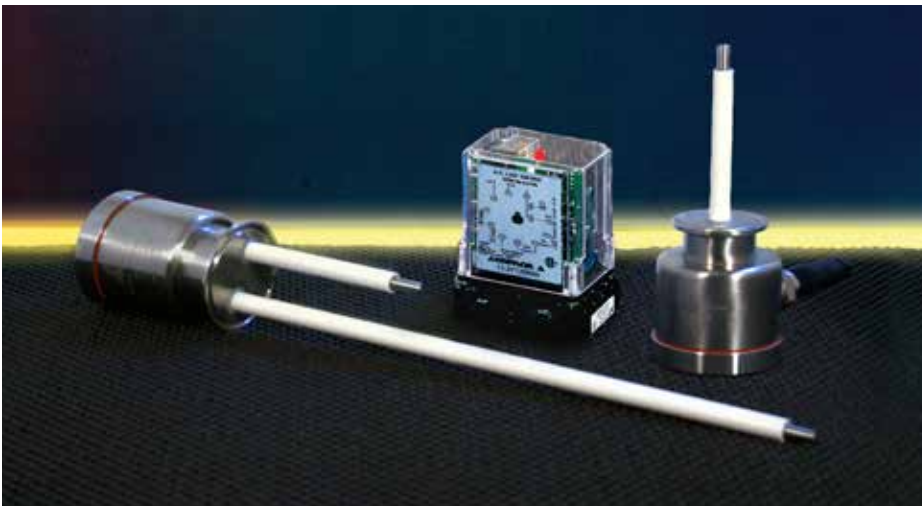
Ordering information can be found within this brochure or by visiting our website at www.anderson-negele.com.

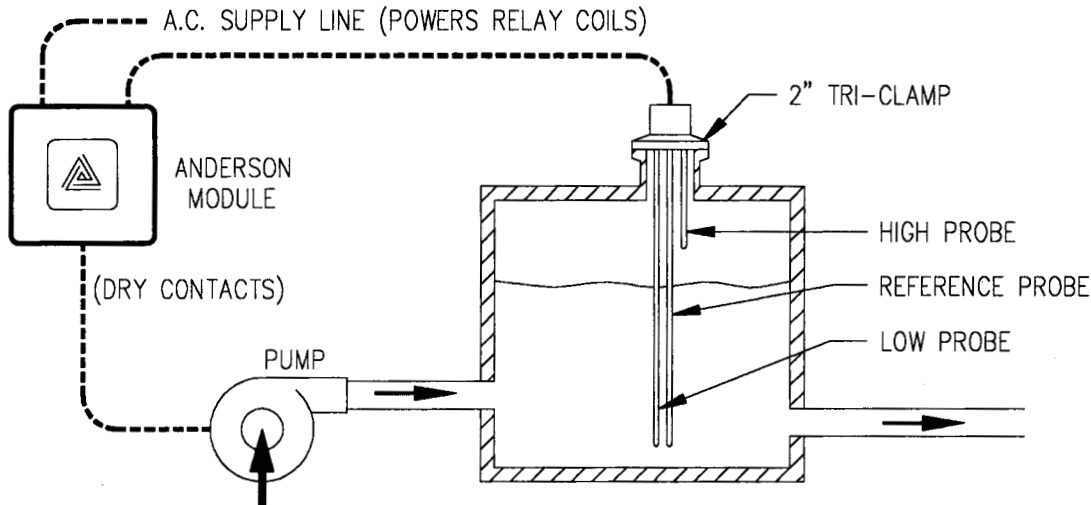
Features

- Long-Term sterility and cleanability via:
- all new patent-pending compressed elastomeric seal between the probe and Teflon® coating
- Proprietary elastomeric compression seal at the probe-to-fitting junction
- Integrated stainless steel head makes retrofits simple
- Water-tight quick-disconnect includes pre-wired tank ground reference
- Up to four probes per fitting for multiple level applications
- Rated for Process temperatures from 30°F (-1°C) to 200°F (94°C).

Applications

- HTST Balance Tanks
- Cream Balance Tanks
- CIP System Tanks
- Silo High Level Alarm
- Any Atmospheric Tank Containing a Conductive Fluid





The drawing illustrates a typical control system installation handling a "pump-up" (inverse) operation. In this arrangement the pump starts when the liquid drops below the low probe and stops when the liquid touches the high probe for the purpose of replenishing liquid drawn from the vessel. The level varies but is maintained within the limits established by the tips of the probes. A "pump-down" (direct) application is opposite, with the pump starting at the high level and removing liquid from the tank until the low level probe is clear of liquid.

Typical Fluids: Average Sensitivity

Liquid or Material	Sensitivity (Ohms/cm)	Liquid or Material	Sensitivity (Ohms/cm)
Baby Foods	1K	Mustard	1K
Beer	2.2K	Oil-Soluble	10K
Bourbon	200K	Soap Foam	18K
Buttermilk	1K	Soups	1K
Cake Batter	5K	Starch Solutions	5K
Catsup	2.2K	Sugar Solutions	90K
Cream	1K	Vinegar-Aqueous	2.2K
Cream (foam)	4.7K	Water	
Coffee	2.2K	Carbonated	3K
Corn Syrup	45K	Condensate	18K
Corn-Cream Style	2.2K	Chlorinated	5K
Jams/Jellies	45K	Distilled	450K
Juices-Fruit/Vegetable	1K	De-ionized	2.0M
Mayonnaise	5K	Hard/Natural	5K
Milk	1K	Wine	2.2K
Molasses	10K		

Note: For low sensitivity liquids (milk, cream), when foam is normally present, use 800 ohm module sensitivity to ignore foam and 4.7K ohm sensitivity to sense foam.

Specifications

Physical Specifications:

Wetted Material:	316L Stainless Steel, Teflon, Silicone
Wetted Material Surface Finish:	Ra max = 25 micro inches (.6 microns)
Housing Material:	304 Stainless Steel
Housing Ratings:	NEMA 4X, IP-66
Electrical Connections:	5 pin M12 Quick Disconnect Receptacle

Recommended Cable: 18-24 AWG, foil shielded, and PVC coated.

Process Limits:

30°F to 200°F (-1°C to 94°C)
Vacuum or vented non-pressurized vessels

Standards:

Designed and manufactured to sound engineering practices in accordance with Article 3.3 of the PED 97/23/EC

Order Information

PROBE ASSEMBLIES

BODY (FITTING) STYLE

- C 1-1/2" Tri-Clamp¹
- B 2" Tri-Clamp
- D 2-1/2" Tri-Clamp
- E 3" Tri-Clamp

SENSOR WIRING

- 0 Quick Disconnect Receptacle(QDR)
- 1 QDR w/ connector (field wireable)
- 2 QDR w/25 ft 5-Conductor Molded Cordset
- 3 QDR w/50 ft 5-Conductor Molded Cordset
- 5 QDR w/100 ft 5-Conductor Molded Cordset

NUMBER OF PROBES

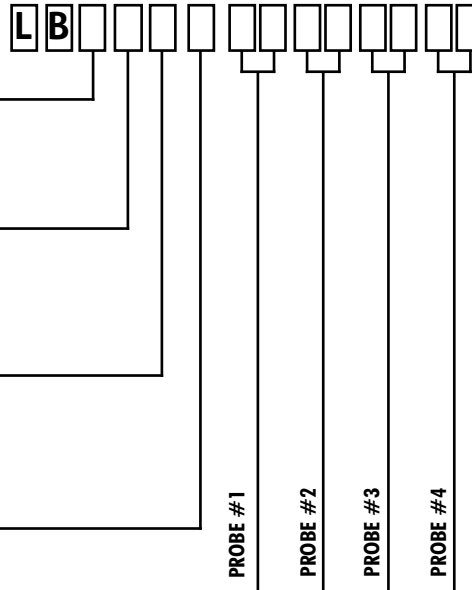
- 1 One (1) Probe
- 2 Two (2) Probes
- 3 Three (3) Probes
- 4 Four (4) Probes
- 5 One (1) Probe offset⁵

PROBE COATING

- T Teflon®

PROBE LENGTH² (Probes 1-4)

- 00 None
- 03 3" long
- 06 6" long
- 12 12" long
- 18 18" long
- 24 24" long
- 30 30" long
- 36 36" long
- 42 42" long
- 48 48" long
- 54 54" long
- 60 60" long
- 66 66" long
- 72 72" long



NOTES:

1. 1-1/2" Tri-Clamp available with 1 or 2 probes only.
2. All standard probe lengths listed are available at standard lead-times. Probes may be specified to the nearest whole inch between 3" and 72" by simply inserting the length in the part number. Allow an extra three days for delivery.
3. Offset probe is available for 1-1/2" and 2" Tri-Clamp only. Probe offset from fitting centerline:
 1-1/2" = 0.34"
 2" = 0.58"

ON/OFF SWITCHING MODULES

"POINT" LEVEL SWITCH MODULES

RELAY TYPE

- 1 SPDT (8 pin)
- 3 SPDT w/Adjustable Sensitivity (11 pin)

SENSITIVITY/ACTION

- A 800 ohm, Direct
- K 800 ohm, Inverse
- Y Adjustable Sensitivity (Direct) *
- Z Adjustable Sensitivity (Inverse) *

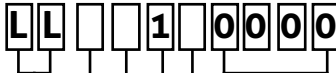
SUPPLY VOLTAGE

- 1 110 VAC

SOCKET STYLE

- 1 Octal, 8 pin (Relay Type 1)
- 2 Octal, 11 pin (Relay Type 3)

0000 FIXED CHARACTERS



Note:

Some multiple probe applications may require more than one Relay Module. Contact the Anderson Technical Service Department at 1-800-833-0081.

* Unit supplied as 4.7K, adjustable sensitivity by customer supplied resistors, or p/n 56014R0070, adjustable sensitivity board; (provides 5K to 700K ohms sensitivity adjustment) one included per module.

Accessories:

NEMA4X Enclosure (includes mounting plate) PN 73220A0001

Adjustable Sensitivity Board (Socket Style 2 only)
(One included with each type 3 relay) PN 56014R0070

