SUPERDUCER

Liquid Level Transducer Probe
for refrigerants R22, R404, R507 R134a
Type CLP, CLPS, CLPD, CLPSD

FEATURES

- Digital local or remote read-out option.
- Unique probelok connection option.
- Integrated construction achieved by molding the PTFE sleeve directly to the center rod.
- Electrical connection via 3/4" conduit boss or jacketed communications cable of suitable temperature/moisture protection.
- Factory pre-calibrated for R507 refrigerant for 0-100% level output. The electronics may be re-calibrated in the field to permit viewing of liquid level over any segment representing more than 40% of the probe's overall length.
- All wetted parts are stainless steel construction to prevent corrosion.
- Immediate indication of liquid inventory facilitates servicing and charge management.

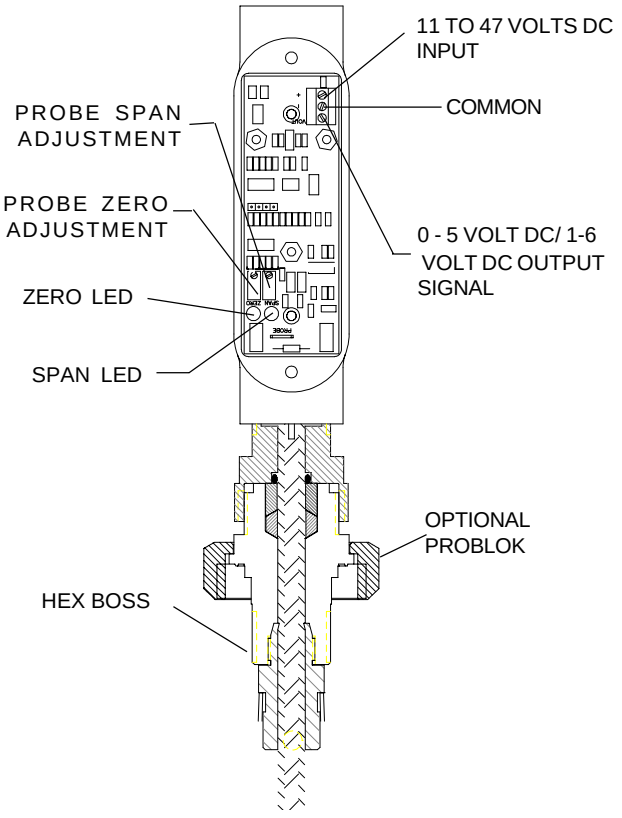


Fig 1

BULLETIN 61-40A
TYPE CLP, CLPSD

July, 2001
Installation,Service and Parts Information

Description

Parker Refrigerating Specialties
has developed multiple lengths of transducer type, liquid level probes for use with halocarbon refrigerants.

Focused directly on supermarket racks, the application supports monitoring, performance and charge management, and troubleshooting via a central microprocessor-based control panel.

These capacitance based probes interpret liquid level in a receiver, accumulator or similar pressure vessel as a selectable DC voltage range of either 0-5 or 1-6V when powered by an 11 to 47V DC regulated remote source.

The signal is proportional to the vertical liquid level surrounding the probe. The probe is mounted, sealed and grounded electrically via a ¾" MPT thread installed into a coupling on the top of the vessel. An available surrounding, vented steel sleeve reinforces and protects the probe while providing repeatability and precision output irrespective of vessel design.

Purpose

The Type CLP Liquid Level Transducer Probe is used to provide a voltage signal proportional to the vertical liquid level. The signal transmitted can be converted by a remote controller or microprocessor functioning as a switching mechanism. This device is for use with halocarbon refrigerants. It may be used with liquid temperatures in a range of –107 to 135 degree F.

Safe Operation (See also Bulletin RSB)
People doing any work on a refrigeration system must be qualified and completely familiar with the system and the Refrigerating Specialties Division valves involved, or all other precautions will be meaningless. This includes reading and understanding pertinent Refrigerating Specialties Division product Bulletins and Safety Bulletin RSB prior to installation or servicing work

Installation
To select the proper probe size, the receiver inside height and fitting should be known. Subtract the value of the minimum clearance from the probe bottom plus the typical engagement length from the vessel height to determine the maximum insertion length. Actual probe insertion length may be less than maximum length allowed. Probe insertion length must be long enough to measure the lowest receiver level desired. Probe lengths are not field adjustable.

Probe location should allow for adequate installation and removal without bending. Avoid locating near liquid inlet to receiver. The probe location should not interfere with dip tubes or other internal parts.

Caution: Grip and tighten probe on hex boss only. Do not grip circuit board housing.

Electrical
Run wiring through ¾" NPT electrical opening on top of enclosure. Wiring should be at minimum 20 AWG. To protect electronics from moisture, dirt, etc., seal the electrical opening with a watertight cable connector or if a Conduit Fitting is used, install conduit laterally lower than than electrical housing on probe and seal with Silicone Sealant immediately above probe. To prevent electrical noise, it is important not to run wires with or near power wires.

Calibration
All probes are pre-calibrated at the factory for a specific refrigerant. Shielded probes CLPS, CLPSD should not require field adjustment unless a different refrigerant is being used or if only a segment of the probe is represented. To calibrate, disconnect probe from controller or computer. Install voltmeter in parallel with output of control loop. Lower refrigerant level in receiver to a level equal to 0%; the voltmeter should display 0.0 volts D.C. If not adjust using the zero adjustment screw. Raise the liquid level in the receiver to the 50% level or some other known level. The voltmeter should display 2.5 volts D.C. for a 50% probe immersion level and the probe jumper is set for 0 - 5 volt D.C. output. (For 1 - 6 volt D.C. output, the display should be 3 volts D.C. for 50% level.) For other levels the corresponding equivalent voltage should be displayed. If not, adjust the probe span adjustment screw.

WIRING DIAGRAM

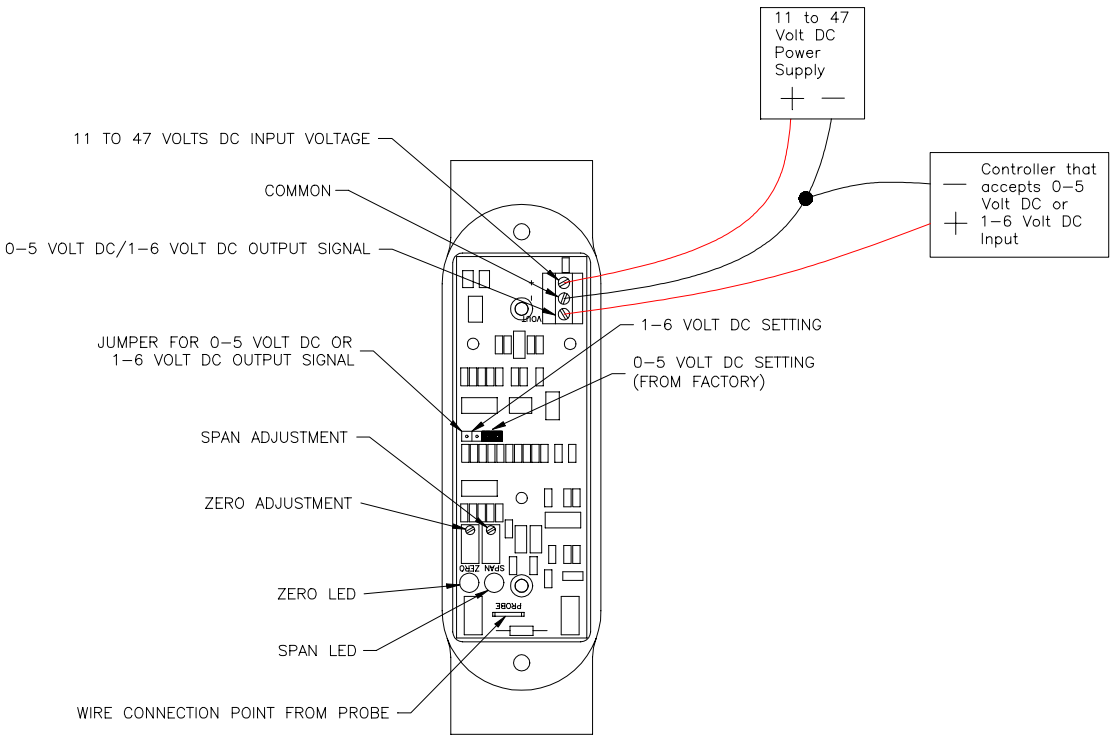
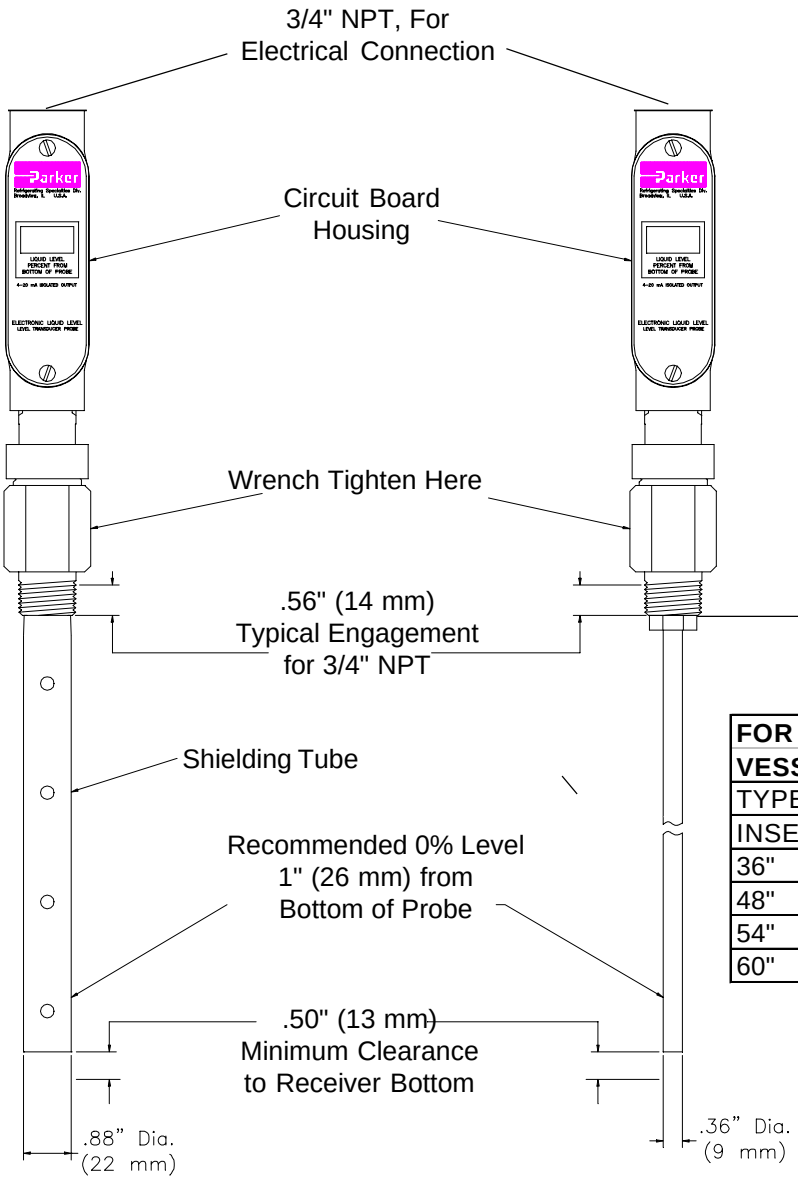
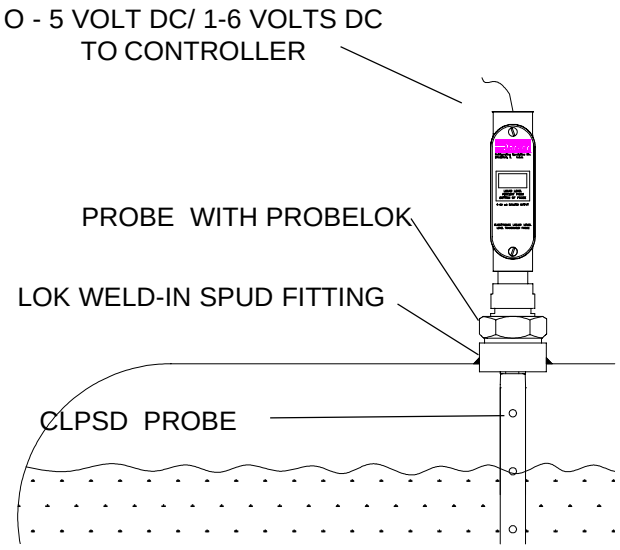


Fig 2

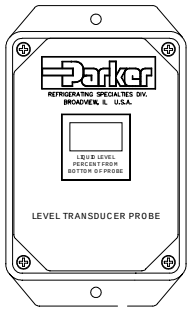


FOR HORIZONTAL VESSELS	
TYPE CLPS, CLPSD	
INSERTION LENGTH	
6"	152 mm
8"	203 mm
12"	305 mm
15"	381 mm
19"	487 mm
23"	586 mm

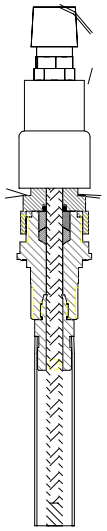
FOR VERTICAL VESSELS	
TYPE CLP & CLPD	
INSERTION LENGTH	
36"	914 mm
48"	1219 mm
54"	1372 mm
60"	1524 mm



HORIZONTAL VESSEL



REMOTE DIGITAL DISPLAY



PROBE FOR REMOTE DISPLAY

Safe Operation (See also Bulletin RSB)
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Where cold refrigerant liquid lines are used, it is necessary that certain precautions be taken to avoid damage that could result from liquid expansion. Temperature increase in a piping section full of solid liquid will cause high pressure due to the expanding liquid that can possibly rupture a gasket, pipe or valve. All hand valves isolating such sections should be marked, warning against accidental closing, and must not be closed until the liquid is removed. Check valves must never be installed upstream of solenoid valves, or regulators with electric shut-off, nor should hand valve upstream of solenoid valves or downstream of check valves be close until the liquid has been removed. It is advisable to properly install relief devices in any section where liquid expansion could take place.

Avoid all piping or control arrangements that might produce thermal or pressure shock. For the protection of people and products, all refrigerant must be removed from the section to be worked on before a valve, strainer, or other device is opened or removed. Flanges with ODS connections are not suitable for ammonia service.

Warranty
All Refrigerating Specialties products are warranted against defects in workmanship and materials for a period of one year from date of shipment from originating factory. This warranty is in force only when products are properly installed, field assembled, maintained, and operated in use and service as specifically stated in Refrigerating Specialties Catalogs or Bulletins for normal refrigeration applications, unless otherwise approved in writing by Refrigerating Specialties Division. Defective products, or parts thereof returned to the factory with transportation charges prepaid and found to be defective by factory inspection will be replaced or repaired at Refrigerating Specialties option, free of charge F.O.B. factory. Warranty does not cover products that have been altered, or repaired in the field; damaged in transit, accidents, misuse, or abuse. Products disabled by dirt or other foreign substances will not be considered defective.
The express warranty above constitutes the only warranty of Refrigerating Specialties products, and is in lieu of all other warranties, expressed or implied, written or oral, including any warranty of merchantability or warranty of fitness for a particular purpose and in no event is Refrigerating Specialties responsible for any consequential damages of any nature whatsoever. No employee, agent, dealer or other person is authorized to give any warranties on behalf of Refrigerating Specialties nor to assume for Refrigerating Specialties any other liability in connection with any of it products.