OIL REFINERY DESALTER INTERFACE POSITION TRANSMITTER

TS IPT

Model IPT for Lighter Normally Separating Crudes
Use Model IFP Profiler for Heavy, Hard to Separate Crudes

- Provides Accuracy from Turnaround to Turnaround
- Run Your Desalter on Automatic Control
- Continuous Interface Position Signal
- Up to 6 Foot (1800mm) Elevation Range
- Improves Refinery Efficiency
- Lower Cost of Operation and Maintenance
- Extract/Remove the Sensor or Clean it in Place
- Pushbutton Calibration at Any Time
- 2 Wire 4-20 mA Interface Position Signal

MEASURING DESALTER INTERFACE

Measurement of the interface position between water/oil in refinery desalters has commonly been attempted through the use of analog type capacitance level transmitters. Unfortunately, the measuring probe of these devices quickly becomes coated with carbon, water emulsions, and other material. This coating and buildup creates interface position errors and eventually renders the output signal meaningless. Probe cleaning is effective, but is not practical because the hot, pressurized desalter must be shut down before the continuous transmitter can be removed. A modern refinery cannot tolerate the shutdowns and resulting recalibration expense required by this type transmitter.

The Delta Contols Model IPT especially designed probe type interface transmitter does not require shutdown of the desalter. The sensing probe design is less sensitive to buildup. It also permits extraction, cleaning of the probe and reinsertion without disturbing operation of the desalter unit. The IPT design allows the needed infrequent cleaning of the probe to be easily and safely done.

The Model IPT assembly is mounted on top of a desalter drum isolation valve, which allows its removal without depressurizing the desalter. The sensing probe is withdrawn into a chamber located above the block valve whenever access to the probe is desired. The valve is then closed beneath it, permitting depressurization of only the withdrawal chamber for cleaning. If required, the entire Model IPT can be completely removed without disturbing the desalter.

The Delta Controls Model IFP Profiler should be utilized when the crude oil is heavy or difficult to separate. The IFP produces a graphical display of water/oil concentration versus elevation in the desalter. It can also produce 4 isolated 4-20mA signals indicating dynamic water concentration at selected elevation positions on the probe. 4 separate concentration alarm points are also available.

IPT INSTALLED IN A GULF COAST REFINERY

How the Model IPT Senses Interface Position in a Desalter Water/Oil Svstem

Maximum sensing changes occur in a crude oil/water separator when the sensing probe is completely covered by crude oil or by water. The energy transfer is at a minimum when it is covered with crude oil and at a maximum when it is covered with water. The Model IPT transmitter is calibrated by locating two interface elevation points and pushing a button. The IPT then automatically calculates a curve through those points. The result is a 4-20 mA output signal, which is proportional to the elevation of the interface position. This information is displayed on the integral LCD screen.

DESALTER INTERFACE POSITION TRANSMITTER
MODEL NUMBERING SYSTEM

	BASIC TYPE	–	INSERTION LENGTH	–	SENSING LENGTH	–	PROCESS CONN	–	OPTION
MODEL NO. EXAMPLE	IPT	–	186”	–	60”	–	4”150RS	–	AA

M/N	DESCRIPTION
IPT	FOR LIGHT, NORMALLY SEPERATING CRUDE OILS

INCHES	DESCRIPTION
AS REQUIRED	DISTANCE FROM GLAND TO END OF SEALING SHAFT

INCHES	DESCRIPTION
AS REQUIRED	ACTIVE SENSING LENGTH OF PROBE

M/N	DECRIPTION
AA	NONE
7T	SS HOUSING
BV	FIREPROOF BLOCK VALVE, GASKETS, STUDS, NUTS

M/N – PROCESS CONNECTION FLANGE		
SIZE	RATING	FACE MATERIAL

WE OFFER WORLDWIDE QUALITY SERVICE

SPECIFICATIONS

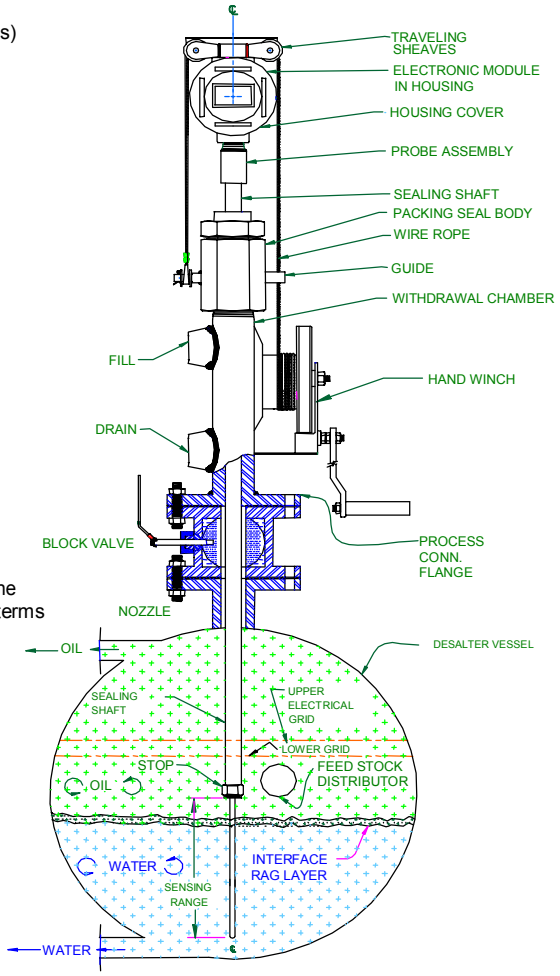
Output.....4-20 mADC loop signal, isolated
Loop Impedance, maximum: 500Ω @ 24 VDC; 900Ω @ 30 VDC
Range: 11,000 sensitivity units (refer to Delta probe Engineering notes #00-00039 and #9900040 for details)
Linearization Curves.....Cubic Polynomial
Display: LCD Screen, 2 line, 8 character, Alphanumeric
Calibration Entry: Four pushbutton X switches
Memory Protection.....Non-volatile
Voltage Requirements: 12-30 VDC Loop Power
Ambient Temperature Range: From 30 to 125ºF (0 to 50ºC), for good readability of display: From -20ºF to +175ºF (-30 to 80ºC), transmitter function
Housing.....Aluminum, Class 1, Division 1, Groups BCD; 4x, Class III CSA (Canada); NRTL/C (U.S.)

Process connections:.....4”(100mm) recommended; 2” (50mm) minimum; ANSI or equivalent DIN, JIS Flanges
Wetted materials:.....Carbon steel, 316 stainless steel, and PTFE Teflon are basic; others available
Insertion and other Dimensions:... As required by desalter design
Required Application Data:.....Please complete Data Sheet 00-IPT05

Maintenance:.....(When buildup on sensor causes an error) Retract sensor up into chamber; close block valve; Clean buildup off with steam or solvents; open block valve and reinsert sensor into desalter.

NOTE: Frequency of cleaning required is determined by the crude oil being run. The time period will normally be in terms of months.

INSTALLATION SCHEMATIC



LONG TERM INTERFACE TRANSMITTER USERS

Aramco	Refinery	Saudi-Arabia
Petrobras	Refinery	Brazil
Exxon	Refinery	Louisiana
Amoco	Refinery	Arkansas
Murphy	Refinery	Pennsylvania
Pemex	Refinery	Mexico
Sun	Refinery	Oklahoma
Petrfina	Refinery	Texas
Howe-Baker	OEM	Texas
PVDSA	Refinery	Venezuela
Skelly	Refinery	Kansas
CPC	Refinery	Taiwan

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