

EZ-track® Liquid Level Probe

The **EZ-track** line from **TURCK** is a line of magnetostrictive linear displacement transducers. These devices detect the position of an external magnet along the active stroke of the sensor without causing any wear on the sensor parts. Because there are no parts to wear or break, the sensors can offer better performance over a longer life than competing technologies. They also offer an alternative when a continuous, absolute reading is necessary in the application.

The **EZ-track** R16 Liquid Level Sensor is a programmable, two-wire loop powered intrinsically safe probe that is ideal for continuous level monitoring in a variety of liquids and tank designs. The R16 sensor uses magnetostrictive technology to monitor the position of a magnetic float along the active stroke of the sensing tube, which is then converted into a configurable 4-20 mA output. The IP 68 rated R16 liquid level sensors are available in a rigid 316 stainless steel housing or a flexible PVDF design. The probe lengths vary between 18 and 288 inches. The stainless steel version is also available in an optional Food Grade or 3A Rated Sanitary finish probe for use in an array of food service, dairy and beverage applications. A variety of floats, fittings, and accessories are available to fit virtually any application requirement.

All of the electronics for the R16 sensor are incorporated within the 5/8 inch sensing rod, which eliminates the need for an electronics enclosure at the top of the sensor. This feature when ordered with the standard 4-pin **minifast**® quick disconnect, offers greater mounting options, and a faster, more reliable installation. The R16 liquid level sensor has a resolution of 0.02 inches of full scale, and an accuracy of 0.1% over the programmable monitoring span, making it the ideal sensor for applications where continuous level position is required.

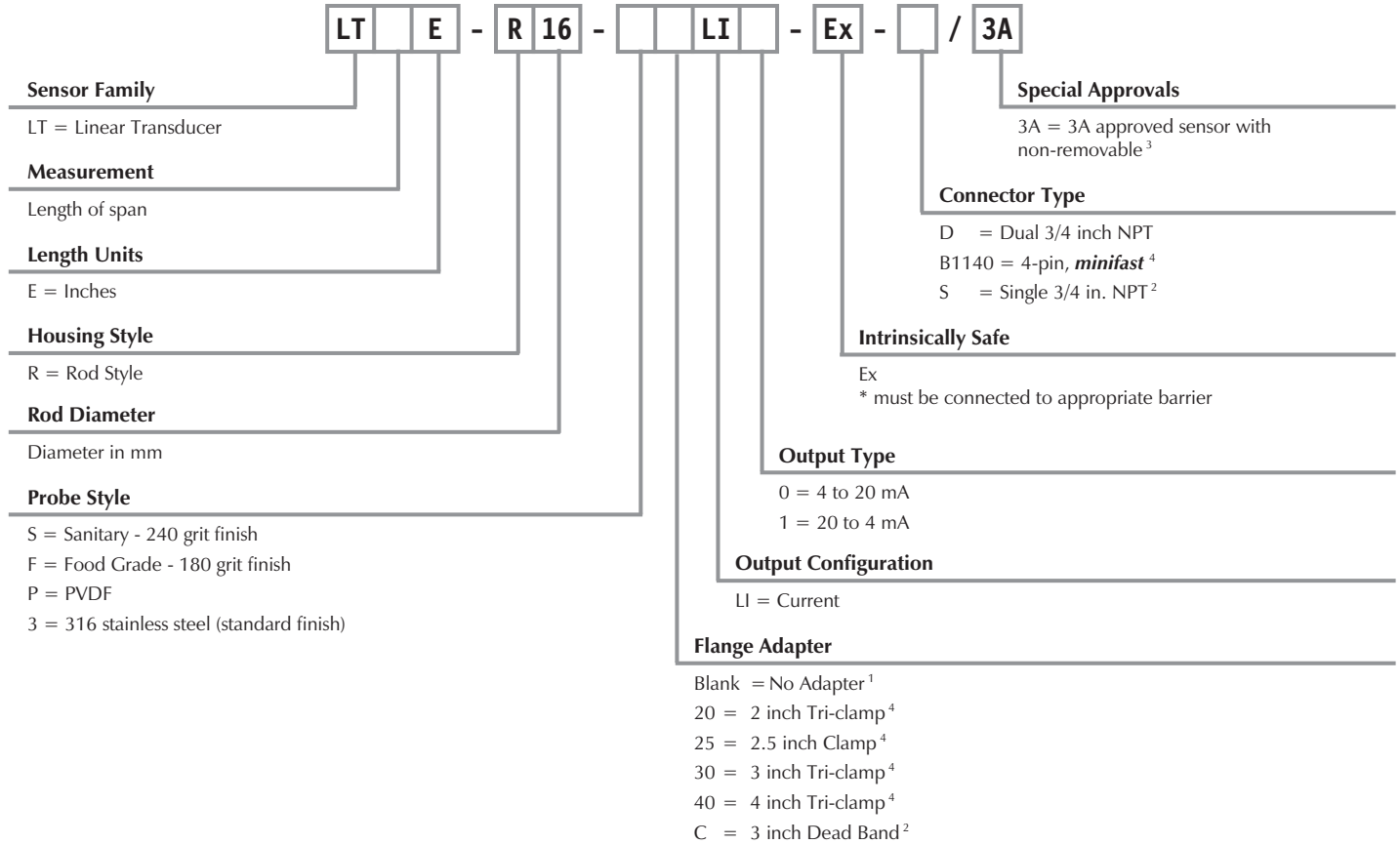


TURCK

Process Automation – Instrumentation

R16 Level Probe Part Number Key

Part Number Keys are to assist in IDENTIFICATION ONLY. Consult factory for catalog items not identified.



¹ Available on probe styles 3 or P only.
² Available on probe styles P only.
³ Available on probe styles S only.
⁴ Not available on probe style P.



PVDF Probe Specifications

Output	4 to 20 mA, 20 to 4 mA
Span	7 to 288 in.
Repeatability	0.014 in. + 0.5% of programmable span typical; max 0.014 in. + 0.4% of programmable span
Resolution	0.25% of programmable span or 0.02 in., whichever is greater
Operating Temperature	-20° to +70°C (-4° to +158°F)
Null Zone	12 in.
Dead Zone	6 to 8 in. (span 7 in. to 126 in.: 6 in.; span 127 in. to 288 in.: 8 in.)
Operational Voltage	13.5-30 VDC
Current Consumption	Loop Powered
Enclosure Rating	IP 69
Non-linearity	0.1% of programmable span
Reading Rate	40 ms
Rod Diameter	0.625 in. (15.9 mm)
Pressure	145 psi
Electronics	PVDF
Rod	PVDF
Agency Approvals	FM
FM-Approval	Class I, Div 1, Group C and D Class II, Div 1, Group E, F, and G Class I, Zone 0 or 1, Groups IIA or IIB

Stainless Steel Probe Specifications

Output	4 to 20 mA, 20 to 4 mA
Span	10 to 288 inches
Repeatability	0.014 in. + 0.5% of programmable span typical; max 0.014 in. + 0.4% of span
Resolution	0.25% of programmable span / 0.02 in., whichever is greater
Operating Temperature	-20° to +70°C (-4° to +158°F)
Null Zone	8 in.
Dead Zone	2 in.
Operational Voltage	13.5 to 30 VDC
Current Consumption	Loop Powered
Enclosure Rating	IP 69
Non-linearity	0.1% of programmable span
Reading Rate	40 ms
Rod Diameter	0.625 in. (15.9 mm)
Pressure	1015 psi
Electronics	Stainless Steel 316L
Rod	Stainless Steel 316L
Agency Approvals	FM
FM-Approval	Class I, Div 1, Group C and D Class II, Div 1, Group E, F, and G Class I, Zone 0 or 1, Groups IIA or IIB



Housing Style	Part Number	Output Current
Stainless Steel Level Probe, <i>minifast</i>® Connection 	LT***E-R16-3LI0-EX-B1140	4-20 mA Loop Powered
	LT***E-R16-3LI1-EX-B1140	20-4 mA Loop Powered
Stainless Steel Level Probe, Dual 3/4 NPT Connection 	LT***E-R16-3LI0-EX-D	4-20 mA Loop Powered
	LT***E-R16-3LI1-EX-D	20-4 mA Loop Powered
Stainless Steel Level Probe, <i>minifast</i> Connection, Tri-clamp Adapter 	LT***E-R16-3**LI0-EX-B1140	4-20 mA Loop Powered
	LT***E-R16-S**LI0-EX-B1140	
	LT***E-R16-F**LI0-EX-B1140	
Stainless Steel Level Probe, Dual 3/4 NPT Connection, Tri-clamp Adapter 	LT***E-R16-3**LI1-EX-B1140	20-4 mA Loop Powered
	LT***E-R16-S**LI1-EX-B1140	
	LT***E-R16-F**LI1-EX-B1140	
Stainless Steel Level Probe, Dual 3/4 NPT Connection, Tri-clamp Adapter 	LT***E-R16-3**LI0-EX-D	4-20 mA Loop Powered
	LT***E-R16-3**LI1-EX-D	20-4 mA Loop Powered

* Float ordered separately, see page M118.

** For flange dimensions, see page M117.



TURCK 'R16' level probes are FM approved as intrinsically safe for installation in Class I, Division 1 hazardous locations when installed per TURCK control drawing IS-1.111 (www.turck.com/fmcd).

Voltage	Probe Style (Finish)	Pressure Rating (psi)	Connection Type	Agency Approval	Mating Cord, Cable Length/Jacket	Wiring Diagram #	Wiring Diagrams
13.5-30 VDC	316 Stainless Steel	1015	4-pin <i>minifast</i>	FM	RKM 46-*M	1	<p>Diagram 1</p> <p>Diagram 2</p>
	316 Stainless Steel	1015	4-pin <i>minifast</i>	FM	RKM 46-*M	1	
13.5-30 VDC	316 Stainless Steel	1015	Dual 3/4 NPT	FM	2M/PVC	2	<p>BK Loop IN - WH Program RD Loop IN + GN GND</p>
	316 Stainless Steel	1015	Dual 3/4 NPT	FM	2M/PVC	2	
13.5-30 VDC	316 Stainless Steel	1015	4-pin <i>minifast</i>	FM	RKM 46-*M	1	<p>BK Loop IN - WH Program RD Loop IN + GN GND</p>
	Sanitary (316 SS w/240 grit)	1015	4-pin <i>minifast</i>	FM	RKM 46-*M	1	
	Food Grade (316 SS w/180 grit)	1015	4-pin <i>minifast</i>	FM	RKM 46-*M	1	
	316 Stainless Steel	1015	4-pin <i>minifast</i>	FM	RKM 46-*M	1	
	Sanitary (316 SS w/240 grit)	1015	4-pin <i>minifast</i>	FM	RKM 46-*M	1	
	Food Grade (316 SS w/180 grit)	1015	4-pin <i>minifast</i>	FM	RKM 46-*M	1	
13.5-30 VDC	316 Stainless Steel	1015	Dual 3/4 NPT	FM	2M/PVC	2	<p>BK Loop IN - WH Program RD Loop IN + GN GND</p>
	316 Stainless Steel	1015	Dual 3/4 NPT	FM	2M/PVC	2	

* Length in meters.



Housing Style	Part Number	Output
Stainless Steel Level Probe, minifast® Connection, Tri-clamp Adapter, Non-removable Float 	LT***E-R16-S**LI0-EX-B1140/3A	4-20 mA Loop Powered
	LT***E-R16-S**LI1-EX-B1140/3A	20-4 mA Loop Powered
PVDF Level Probe, Dual 3/4 NPT Connection 	LT***E-R16-PLI0-EX-D	4-20 mA Loop Powered
	LT***E-R16-PLI1-EX-D	20-4 mA Loop Powered
PVDF Level Probe, Single 3/4 NPT Connection 	LT***E-R16-PLI0-EX-S LT***E-R16-PCLI0-EX-S	4-20 mA Loop Powered
	LT***E-R16-PLI1-EX-S LT***E-R16-PCLI1-EX-S	20-4 mA Loop Powered

* Float ordered separately, see page M118.
 ** For flange dimensions, see page M117.



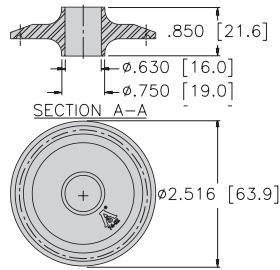
TURCK 'R16' level probes are FM approved as intrinsically safe for installation in Class I, Division 1 hazardous locations when installed per TURCK control drawing IS-1.111 (www.turck.com/fmcd).

Voltage	Probe Style (Finish)	Pressure Rating (psi)	Connection Type	Agency Approval	Mating Cord, Cable Length/Jacket	Wiring Diagram #	Wiring Diagrams
13.5-30 VDC	Sanitary (316 SS w/240 grit)	1015	4-pin <i>minifast</i>	3A, FM	RKV 46-*M	1	<p>Diagram 1</p> <p>Diagram 2</p>
	Sanitary (316 SS w/240 grit)	1015	4-pin <i>minifast</i>	3A, FM	RKV 46-*M	1	
13.5-30 VDC	PVDF	145	Dual 3/4 NPT	FM	2M/PVC	2	
	PVDF	145	Dual 3/4 NPT	FM	2M/PVC	2	
13.5-30 VDC	PVDF	145	Single 3/4 NPT	FM	2M/PVC	2	
	PVDF	145	Single 3/4 NPT	FM	2M/PVC	2	
	PVDF	145	Single 3/4 NPT	FM	2M/PVC	2	
	PVDF	145	Single 3/4 NPT	FM	2M/PVC	2	

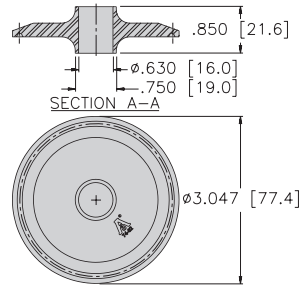
* Length in meters.

All dimensions shown as: Inches [mm]

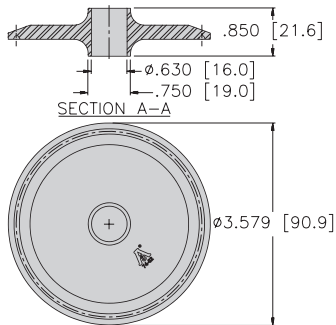
Flange Options



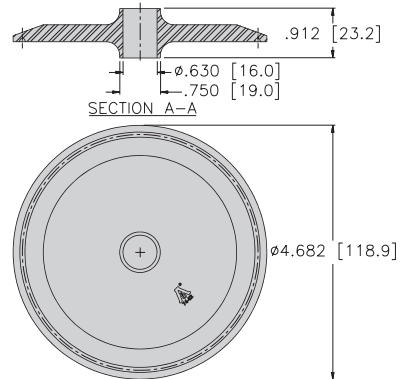
Flange, 2 inch Tri-clamp



Flange, 2.5 inch Tri-clamp



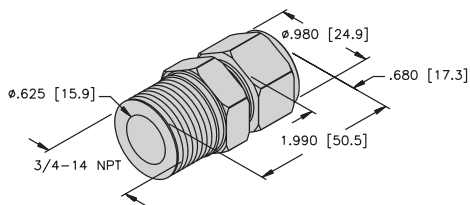
Flange, 3 inch Tri-clamp



Flange, 4 inch Tri-clamp

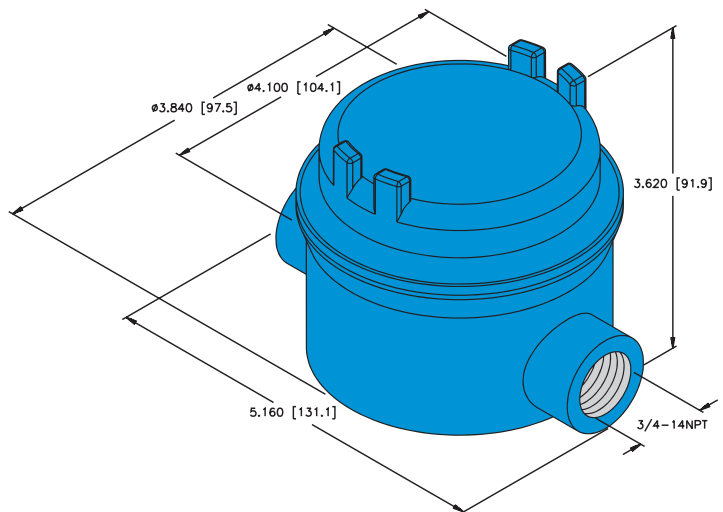
Level Probe Accessories

Tube Coupling



TC-R16-SS
(LT0305)

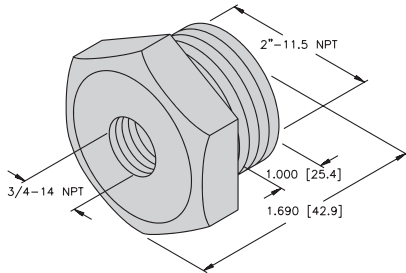
Junction Box



TB-R16S
(LT0294)

Level Probe Accessories

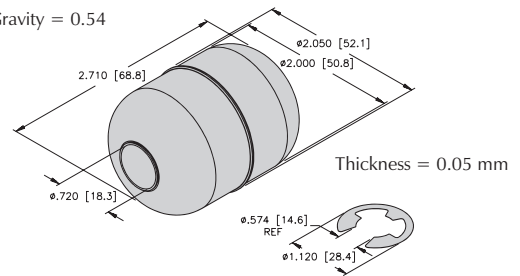
Bushing (316 Stainless Steel)



BU-R16-2x3/4 NPT-SS (LT0306)

Float Kit (316 Stainless Steel)

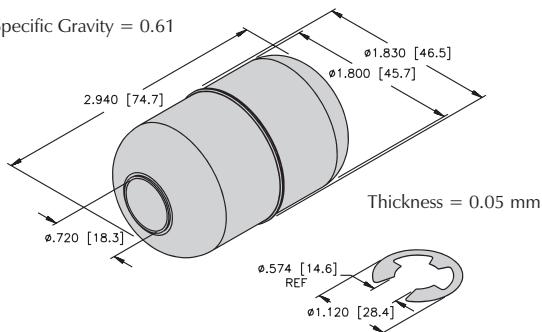
Specific Gravity = 0.54



FK-R16-205-SSES (LT0299)

Float Kit (316 Stainless Steel)

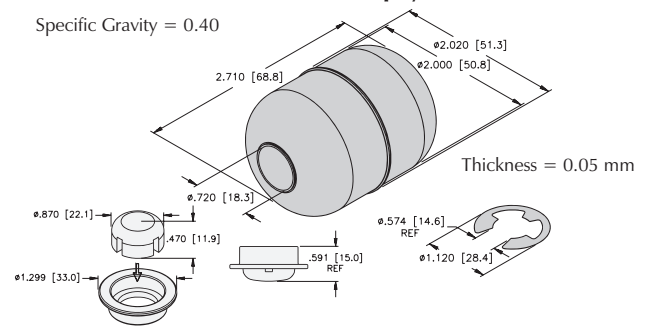
Specific Gravity = 0.61



FK-R16-183-SSES (LT0296)

Float Kit (Nitrophyll)

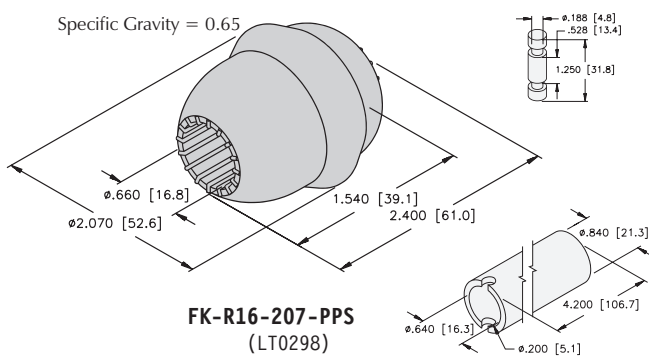
Specific Gravity = 0.40



FK-R16-202-NSH (LT0297)

Float Kit (PVDF)

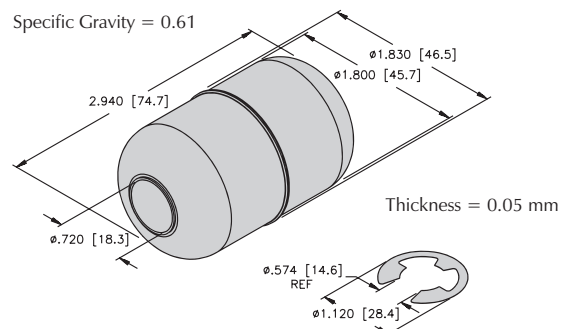
Specific Gravity = 0.65



FK-R16-207-PPS (LT0298)

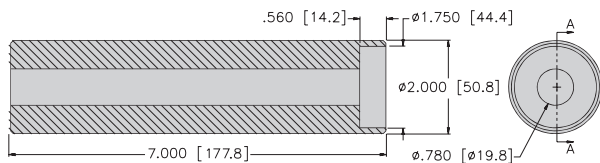
Float Kit (316 Polished Stainless Steel)

Specific Gravity = 0.61



FK-R16-183-SSFE (LT0302)

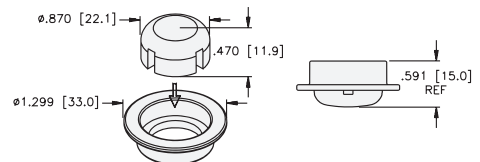
Weight Kit (316 Stainless Steel)



For use on PVDF probes 145-288 inches long.

WK-R16 Weight Kit (LT0295)

Probe Foot (ECTFE)



PF-R16 (LT0292)

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R16 Level Probe Worksheet

Liquid to be measured _____

Fluid Properties (check all that apply)

Turbulent

Foam

Solids

Product Build-Up Yes No

Temperature Range _____ °F to _____ °F

Pressure Range _____ to _____

Viscosity Range _____ to _____

Specific Gravity _____

4 mA Starting Point Top Bottom

Approvals Required

UL CSA FM 3A Food Grade

Tank Location Indoors Outdoors

Tank Material _____

Additional Comments _____

**Allow overhead clearance for installation and removal of sensor.*

Customer

Phone Number

Date

Project

Quantity

