CONDUCTIVE ROD LEVEL SENSORS
PRODUCT OVERVIEW

WHAT ARE ROD LEVEL SENSORS AND CONTROLLERS?

TURCK liquid level probes may be used in conjunction with TURCK level control monitors, to provide a simple solution for liquid level applications. The resistance between the terminals is measured to determine the level of the medium in the tank.

TURCK also offers stainless steel probes and stainless steel holders with ceramic insulators. The probes are used to provide single-point level control, while the holders are sealed to withstand applications up to 2500 psi at 70° F (21°C).

WHY CHOOSE ROD LEVEL SENSORS AND CONTROLLERS?

- Adjustable sensitivity
- Single set-points
- Multiple inputs
- On/off delay
- Programmable outputs

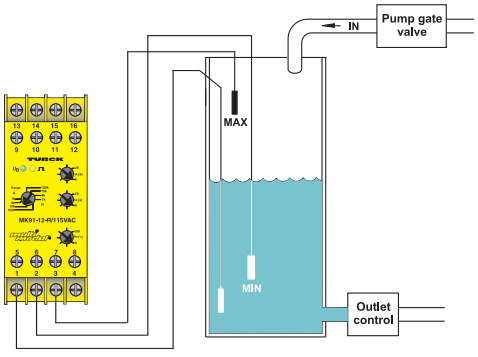
WHERE CAN I USE ROD LEVEL SENSORS AND CONTROLLERS?

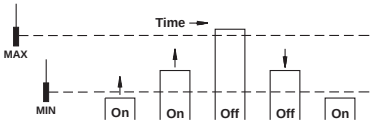
- To control the filling and draining of a tank, or as high and low level alarms.
- To differentiate between a variety of liquids, as well as distinguishing between liquid and foam.
- To set an adjustable on and off-delay for use in turbulent liquid level applications.
- To control overflow monitoring.

Level Detection Application Examples

Control for Pump-in "Filling" a Tank

The MK91-12-R will start a pump or open a fill valve when the liquid drops below the MIN level probe and will remain on until the MAX level probe is reached. The relay then de-energizes and stays off until the MIN level is reached. The pump or valve does not cycle constantly, as would be the case if only one sensor were used.

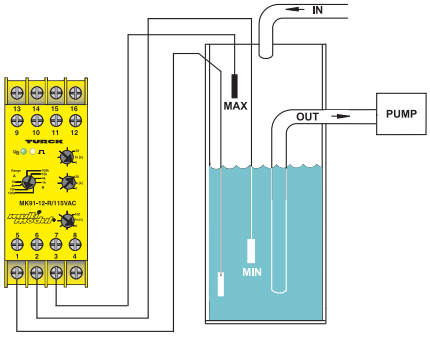


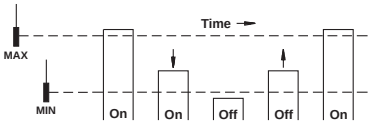


Example Application using MK91-12-R/...

Control for Pump-out "Draining" a Tank

The MK91-12-R will start a pump when the liquid reaches the MAX level probe and remain on until the MIN level probe is reached. The relay then de-energizes and stays off until the MAX level is reached. The pump or valve does not cycle constantly, as would be the case if only one sensor were used.



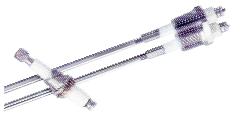


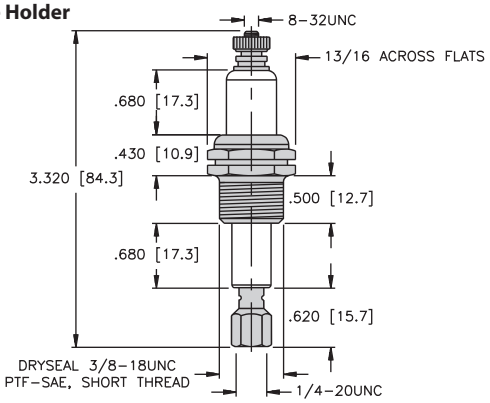
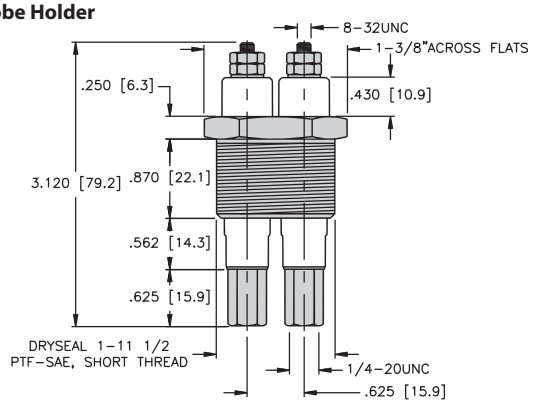
Example Application using MK91-12-R/...

MK91-121-R.. and MK91-12-R..	
Galvanic Isolation	between input, output and supply circuits, test voltage 2.5 kVrms
Probe Voltage	0.02-5 V_{pp}/150 Hz (delta)
Sensitivity Ranges (Switching Thresholds)	
- Range 1	0.2-1 kΩ
- Range 2	0.8-4 kΩ
- Range 3	2.5-15 kΩ
- Range 4	10-100 kΩ
Hysteresis	approx. 10%
Switch-on Delay	0-20 s (adj.)
Switch-off Delay	0-20 s (adj.)
Contact Material	silver alloy + 3 µ Au
Switching Capacity	≤500 VA / 60 W
Protection	IP20
Mounting	DIN 50022 or pull-out tabs
Operating Temperature	-25°C to +60°C (-13°F to +140°F)
Line Frequency (AC)	48-62 Hz
Ripple (DC)	≤10%

MS91-12-R..	
Galvanic Isolation	between input, output and supply circuits
Probe Voltage	typ. 5 V_{pp}/100 Hz (delta)
Sensitivity Ranges (Switching Thresholds)	
- Range 1	0.1-1 kΩ
- Range 2	0.5-5 kΩ
- Range 3	2-20 kΩ
- Range 4	10-100 kΩ
Hysteresis	10%
Switch-on /Switch-off Delay	0.1-15 s (adj.
Contact Material	AgCdO
Switching Capacity	≤500 Va/60 W
Protection	IP20
Mounting	DIN 50022 or pull-out tabs
Operating Temperature	-25°C to +60°C (-13°F to +140°F)
Line Frequency (AC)	48-62 Hz
Ripple (DC)	≤10%

MK91-R11..	
Galvanic Isolation	between input and output circuit, insulation test voltage 4 kV/8 mm input circuit and supply voltage galvanically connected
Switching Point Deviation in Supply Voltage Range	≤1%
Operating Characteristics at:	V = 24 V, R_M = 40 k
- Rectangular Signal	f = 1 Hz
- Amplitude of Electrode Voltage	±2 V
- Amplitude of electrode current	±50 µA
Contact Material	silver alloy + 3µ Au
Switching Capacity	≤500 VA / 60 W
Protection	IP20
Mounting	DIN 50022 or pull-out tabs
Operating Temperature	-25°C to +60°C (-13°F to +140°F)
Line Frequency (AC)	48-62 Hz
Ripple (DC)	≤10%

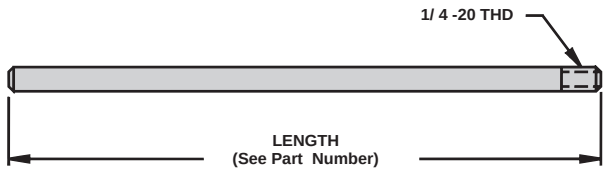


Housing Style	Part Number	ID Number	Number of Probes	Maximum Pressure (psi)	Fluid Connection
Probe Holder 	WCC-1138	A3365	1	2500	Dryseal 3/8-18UNC PTF-SAE Short thread
Probe Holder 	WCT-2	A3375	2	2500	Dryseal 1-11 1/2 UNC PTF-SAE Short thread

Material

Probe Holders	303/304 Stainless Steel
Insulators	Ceramic
Probes	304 Stainless Steel

Housing Style	Part Number	ID Number	Material
Stainless Steel Probes	91-SSP 01 Ft	A3000	304 Stainless Steel
	91-SSP 02 Ft	A3002	304 Stainless Steel
	91-SSP 03 Ft	A3004	304 Stainless Steel
	91-SSP 04 Ft	A3006	304 Stainless Steel
	91-SSP 05 Ft	A3008	304 Stainless Steel
	91-SSP 06 Ft	A3010	304 Stainless Steel
	91-SSP 07 Ft	A3014	304 Stainless Steel
	91-SSP 08 Ft	A3016	304 Stainless Steel
	91-SSP 09 Ft	A3018	304 Stainless Steel
	91-SSP 10 Ft	A3020	304 Stainless Steel



For use with Amplifiers on pages D55.