TSR… immersion probes

Magnetically operated liquid level controllers

Ex versions also available. Detailed information on request.

The TSR immersion probes have a probe tube with built-in monostable reed contacts. The float is fitted with a permanent ring magnet and moves freely up and down the probe tube, activating the reed contacts as it rises and falls.

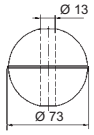
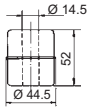
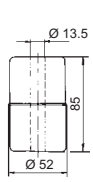
It should be noted that monostable reed contacts do **not** lock but that they switch only for as long as they are influenced by the magnetic field.

Once the float passes beyond a contact upwards or downwards, the latter returns to its original position. However, the contacts can be made to hold by using collars to limit the motion of the float.

For use outside potentially explosive atmospheres, the customer can choose between the models TSR/3/... and TSR/1/...:

Models	TSR/3/...	TSR/1/...
Application Switching voltage Switching current Switching capacity	for standard applications AC/DC 24 V - 250 V AC 100 mA - 2 A (0.4 A) max. 100 VA	for light current applications AC/DC 1 V - 42 V AC 1 mA - 500 mA max. 20 VA

Also available with angled probe tube for mounting from the side.

Technical data	TSR/./ED/E 1	TSR/./ED/E 2	TSR/./ED/E 3
Probe tube material	**stainless steel 316 Ti**		
Probe tube diameter	**12 mm**		
Probe tube length	according to customer specifications		
Screw-in nipple	G½, on request G1, G1½ or G2;	on request with reducing nipple made of malleable cast iron G/R1½ conical	on request with reducing nipple made of malleable cast iron G/R2 conical or cast steel G2
Float	stainless steel 316 Ti,		
	Ø 73 mm (ball)	Ø 44.5 mm x 52 mm high (mounting through a G1½ socket possible)	Ø 52 mm x 85 mm high (mounting through a G2 socket possible)
			
Float suitable for use in media with a specific gravity	≥ 0.7 g/cm³	≥ 0.95 g/cm³	≥ 0.7 g/cm³
Terminal box	PP, A 307, 120 x 80 x 55 mm, protection class II		
Mounting orientation	vertical		
Admissible temperature range taking into account the probe tube length - max. 2,000 mm - max. 1,500 mm - max. 1,000 mm - max. 750 mm - max. 500 mm - max. 400 mm	from – 20°C to + 100°C		from – 20°C to + 10 on request from – 20°C to
Pressure resistance at + 20°C	max. 12 bar, higher pressure resistance on request		
Contacts	reed contacts: make (NO), break (NC) or changeover (OC) contacts		
Max. number of contacts	3		6
Max. number of contacts when the probe tube is fitted with an inner tube	—		
Min. distances (based on liquids with a specific gravity of 1 g/cm³): - from the nipple sealing surface to the upper contact - between contacts - from the lower contact to the end of the probe tube (when float is falling)	80 mm 80 mm 60 mm		80 mm 80 mm 75 mm

TSR/./ED/E 1 with additional collar	TSR/./ED/E 2 with additional collar	TSR/./ED/E 3 with additional collar	TSR/./EW/E 5 with additional collar	TSR/./P/P with additional collar	TSR/./P/PG with additional collar	TSR/./PVDF/D with additional collar	TSR/./PVDF/W with additional collar

TSR/./EW/E 5	TSR/./P/P	TSR/./P/PG	TSR/./PVDF/D	TSR/./PVDF/W
	PP,		PVDF,	
	——	**on request with metal inner tube to strengthen the plastic probe tube**	——	**on request with metal inner tube to strengthen the plastic probe tube**
20 mm	**14 mm**	**16 mm**	**14 mm**	**16 mm**
	according to customer specifications, but			
	max. approx. 1,000 mm	max. approx. 2,000 mm	max. approx. 1,000 mm	max. approx. 2,000 mm
	taking into account the max. temperature in the tank and possible liquid turbulence			
G1, on request $G1^1/_2$ or G2; on request with reducing nipple made of malleable cast iron $1^1/_2$ or 2 conical or cast steel G2	G1, on request G2			
	PP,		PVDF,	
Ø 97 mm (ball) or Ø 97 mm x 80 mm high (heat-resistant version)	Ø 53 mm x 50 mm high (mounting through a G2 socket possible)	Ø 90 mm x 60 mm high	Ø 53 mm x 50 mm high (mounting through a G2 socket possible)	Ø 90 mm x 60 mm high
≥ 0.7 g/cm³	≥ 0.8 g/cm³	≥ 0.8 g/cm³	≥ 1 g/cm³	≥ 1 g/cm³
ss IP 65, with max. 12 terminals; other terminal boxes on request; with connecting cable on request				
	vertical			
	——	from 0°C to + 35°C	——	from 0°C to + 40°C
100°C; C to + 130°C	——	from 0°C to + 40°C	——	from 0°C to + 45°C
	from 0°C to + 50°C from 0°C to + 60°C from 0°C to + 75°C from 0°C to + 80°C		from 0°C to + 55°C from 0°C to + 70°C from 0°C to + 80°C from 0°C to + 80°C	
	max. 2 bar			
	reed contacts: make (NO), break (NC) or changeover (OC) contacts			
6, more on request	3	6	3	6
	——	3	——	3
	80 mm 80 mm	80 mm 80 mm	80 mm 80 mm	
	60 mm	55 mm	75 mm	