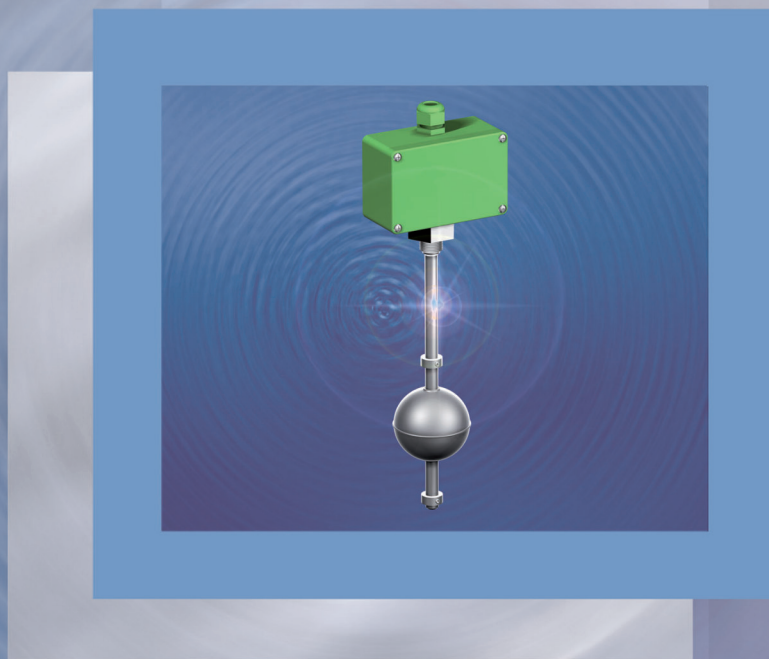




TSR immersion probes

**Controlling devices with
magnetically operated reed contacts,
for signalling or regulation
of liquid levels**



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**Jola Spezialschalter GmbH & Co. KG
sells only business-to-business (B2B).**

**The units described in this documentation
may only be installed, connected,
started up, serviced and replaced
by suitably qualified personnel!**

**Subject to deviations from the diagrams
and technical data.**

**The details in this brochure are product
specification descriptions and
do not constitute assured properties
in the legal sense.**



TSR immersion probes

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Type	Probe tube		Float		
	Material	Ext. Ø	Material	External dimensions	
TSR/.../ED/P	Stainless steel 316Ti	14 mm	PP	Ø 53 mm x 50 mm	3-1-7
TSR/.../ED/PK		12 mm		Ø 29 mm x 50 mm	
TSR/.../ED/E8		14 mm	Stainless steel 316Ti	Ø 72 mm	3-1-9
TSR/.../H/ED/E8				Ø 44.5 mm x 52 mm	
TSR/.../ED/E2					
TSR/.../ED/E7				3-1-11	
TSR/.../H/ED/E7					Ø 98 mm
TSR/.../ED/E5					Ø 97 mm x 80 mm
TSR/.../H/ED/E4		Ø 98 mm			
TSR/.../EW/E5		20 mm		Ø 97 mm x 80 mm	
TSR/.../H/EW/E4				Ø 97 mm x 80 mm	
TSR/.../P/P		PP	14 mm	PP	Ø 53 mm x 50 mm
TSR/.../P/PG	16 mm		Ø 89 mm x 60 mm		
TSR/.../PVDF/D	PVDF	14 mm	PVDF	Ø 53 mm x 50 mm	3-1-15
TSR/.../PVDF/W		16 mm		Ø 89 mm x 60 mm	
TSR/.../TiD/Ti7	Titanium	12 mm	Titanium	Ø 44.5 mm x 52 mm	3-1-17
TSR/.../TiW/Ti4		19 or 20 mm		Ø 79 mm x 95 mm	
TSR/.../ED/E6	Stainless steel 316Ti	14 mm	Stainless steel 316Ti	Ø 44.5 mm x 47.5 mm	3-1-19
Questionnaire for inquiries and orders					3-1-20
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TSR immersion probes

Construction and operating principle

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

It should be noted that 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.

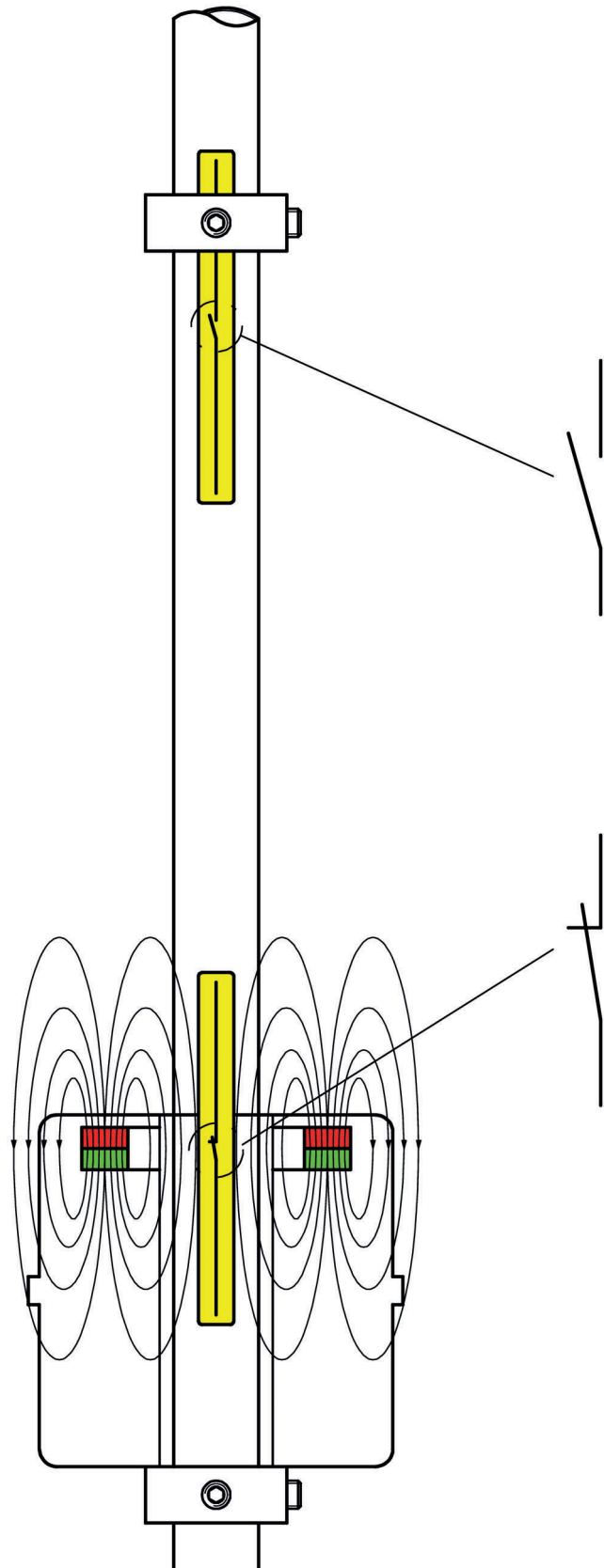
Explanation of abbreviations

NO contact = normally open contact

NC contact = normally closed contact

OC contact = changeover contact

Example of a TSR with 2 NO contacts





TSR immersion probes

Available electrical versions

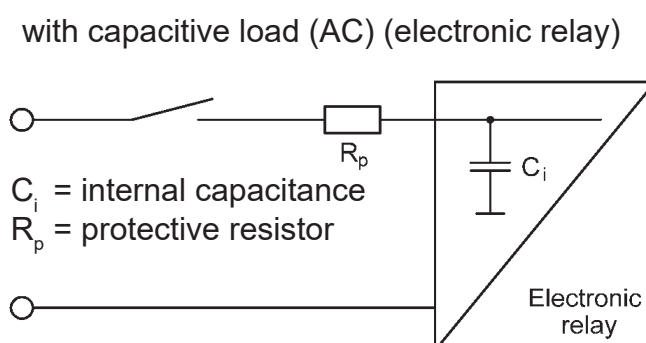
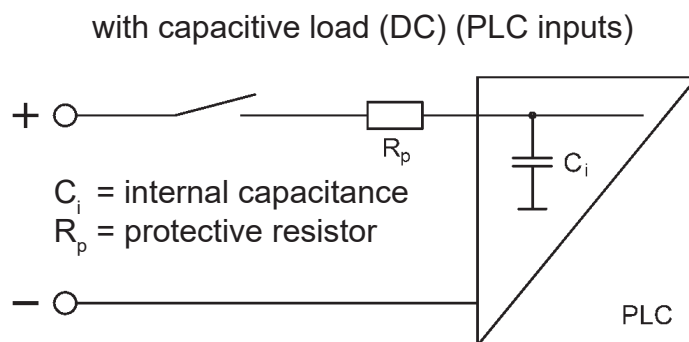
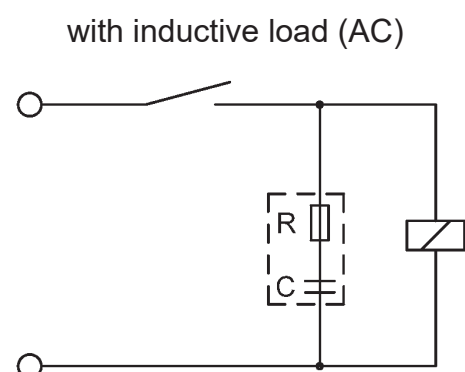
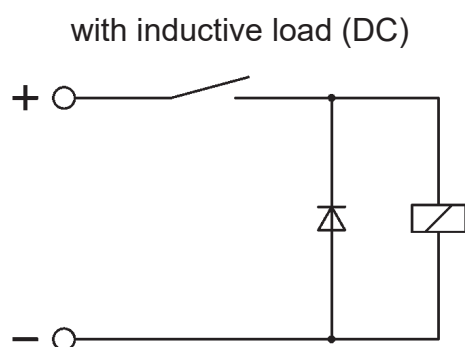
The customer can choose the version TSR/3/... or TSR/1/... (not suitable for the immersion probes TSR/.../ED/E6, see page 3-1-19).

	TSR/3/...	TSR/1/...
Switching voltage	between AC/DC 24 V and AC/DC 250 V	between AC/DC 1 V and AC/DC 42 V
Switching current	between AC 100 mA and AC 2 A (0.4 A)	between AC 1 mA and AC 500 mA
Switching capacity	max. 100 VA	max. 20 VA

Specification for working with capacitive or inductive load

A protective circuit adapted to the electrical installation has to be provided for working with inductive or capacitive loads.

Examples:



Safety regulation

The TSR... immersion probes must be connected to the corresponding protective earth (PE).

In addition, suitable ground fault circuit interrupters (RCD) must be integrated in the installation.

Application examples

• Automatic emptying of a tank

The float rises with the liquid to the maximum level and trips the NO contact which in turn sets the pump in operation via the sequential circuit. Liquid is pumped out.

When the minimum level is reached, the NC contact at the bottom is activated, thus interrupting the holding circuit via the sequential circuit and finishing the pump operation.

• Automatic filling of a tank

The float falls with the liquid to the minimum level and trips the NO contact which in turn sets the pump in operation via the sequential circuit. Liquid is then pumped in.

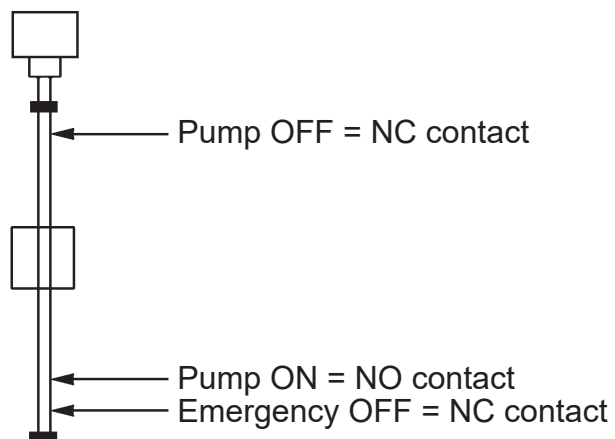
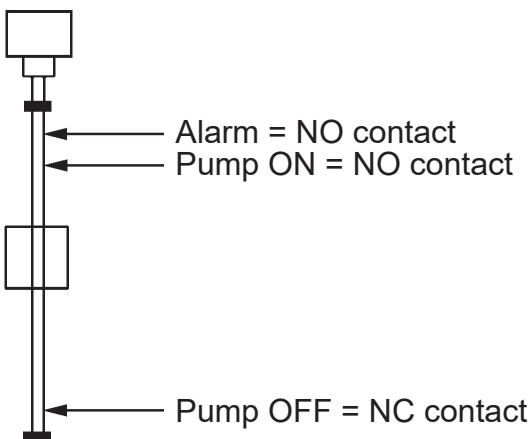
When the maximum level is reached, the upper NC contact is activated, thus interrupting the holding circuit via the sequential circuit and finishing the pump operation.

Examples for standard applications

• with 1 float and 1 collar fitted above the upper contact

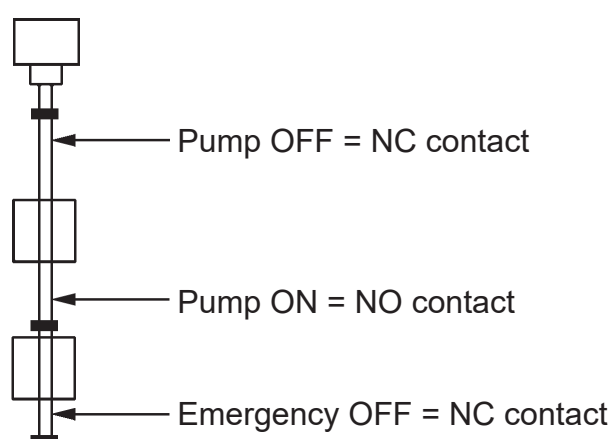
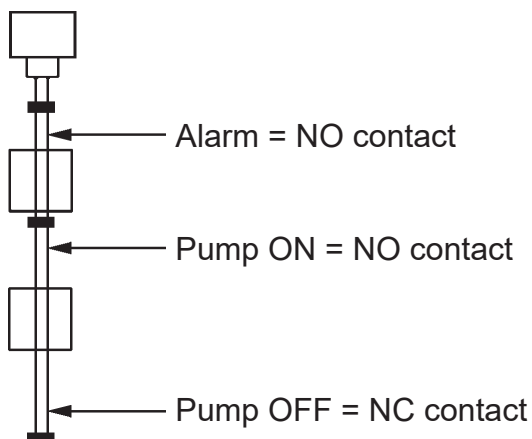
It is recommended to fit an additional collar above the upper contact. This allows a contact switching after a circuit failure by avoiding that the rising of the liquid brings the float outside the area of influence of the magnet on the contact.

The probe tube should be of such a length that when the float reaches the lower contact, it rests on the holding washer. The recommended distance between the lower contact and the end of probe tube corresponds to the min. distance as specified in the table under the technical data of the individual TSR models.

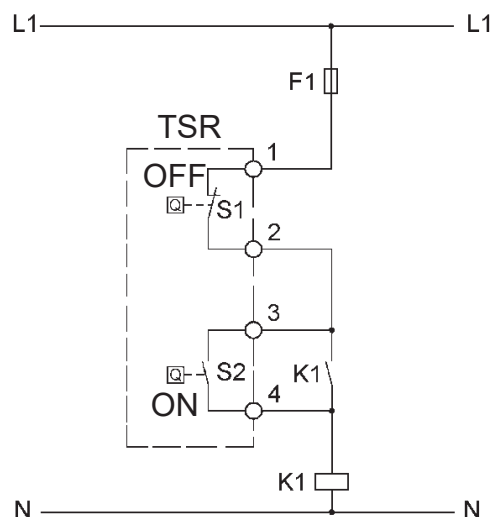
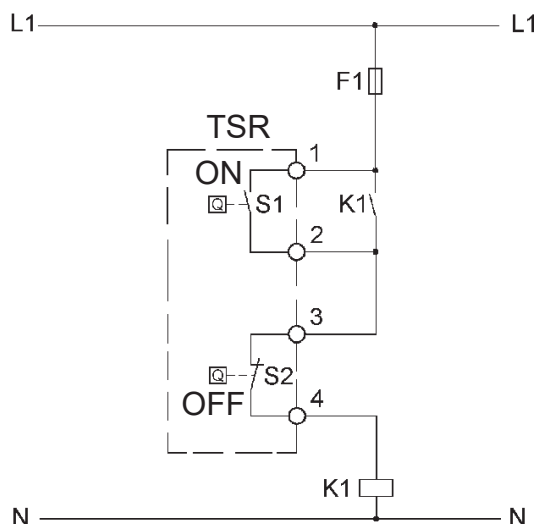


• with 2 or more floats and corresponding collars

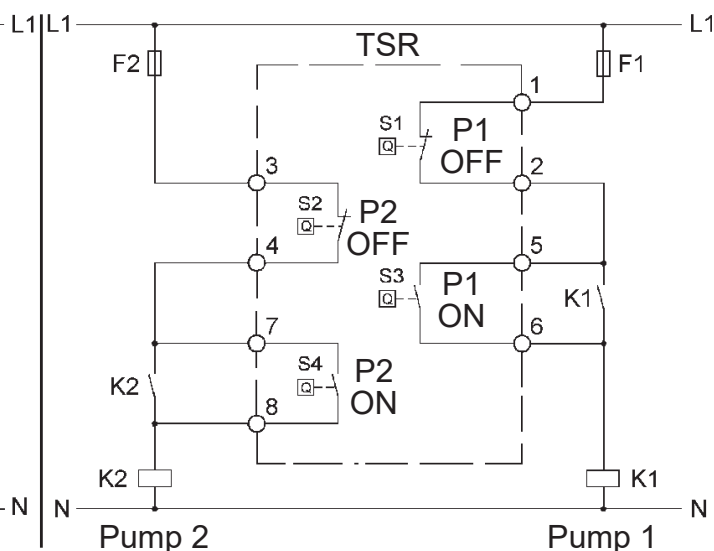
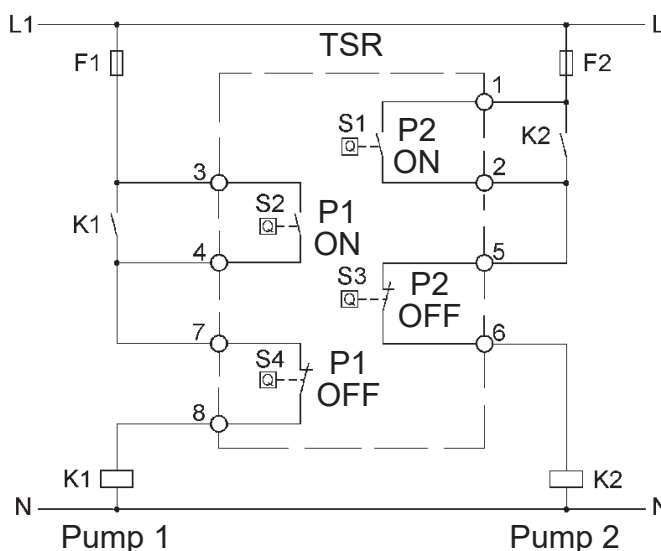
In order to make sure that not only the upper contact and lower contact are held after activation, it is possible to use several floats together with the corresponding collars. Please respect the min. distances between contacts for these applications.



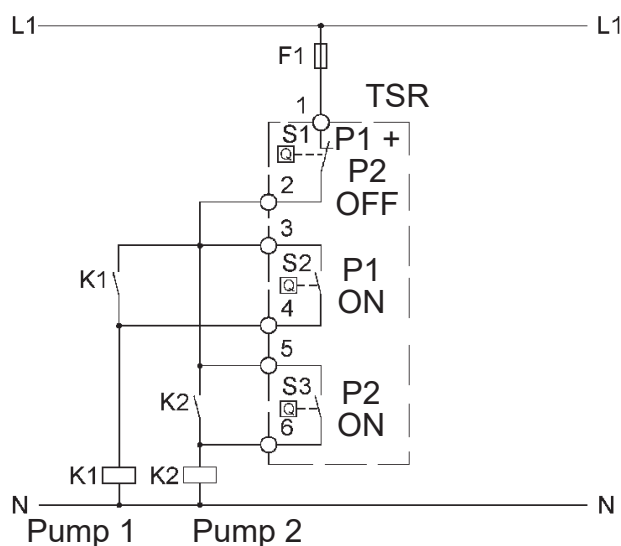
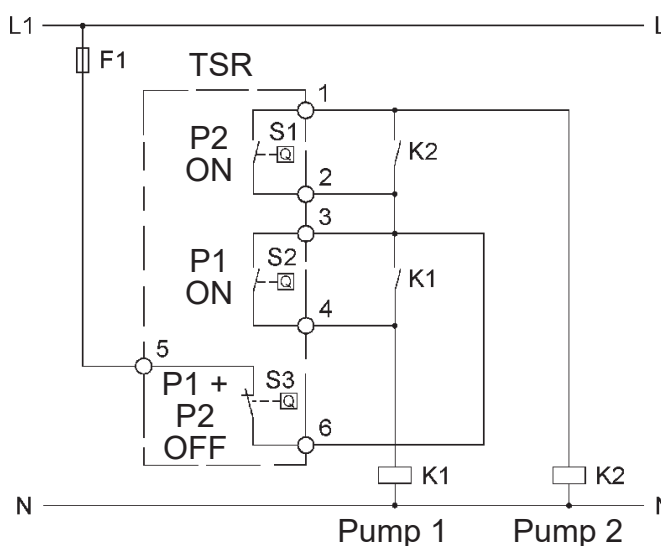
Basic circuit diagram for emptying	Basic circuit diagram for filling
using a TSR for 1 pump	



using a TSR for 2 pumps	
-------------------------	--



using a TSR for 2 pumps with a common switch-off contact	
--	--



The above contact positions correspond to a liquid level situated between the respective switch-on and switch-off points.	
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TSR... immersion probes with

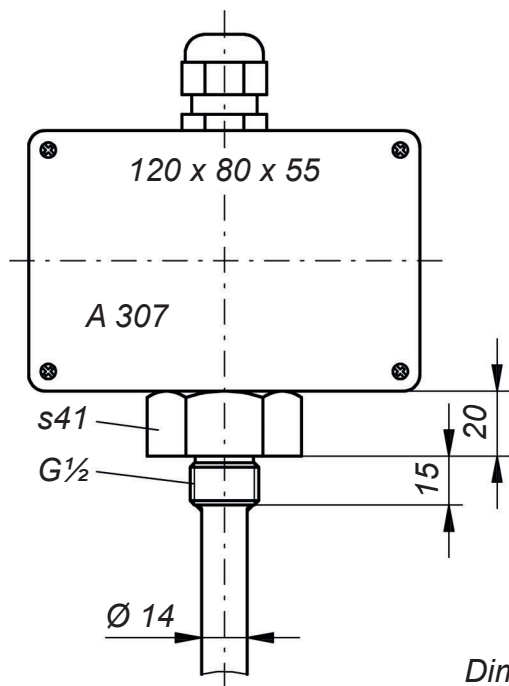
- probe tube made of stainless steel
- float made of PP

	TSR/3/...	TSR/1/...
Switching voltage	between AC/DC 24 V and AC/DC 250 V	between AC/DC 1 V and AC/DC 42 V
Switching current	between AC 100 mA and AC 2 A (0.4 A)	between AC 1 mA and AC 500 mA
Switching capacity	max. 100 VA	max. 20 VA

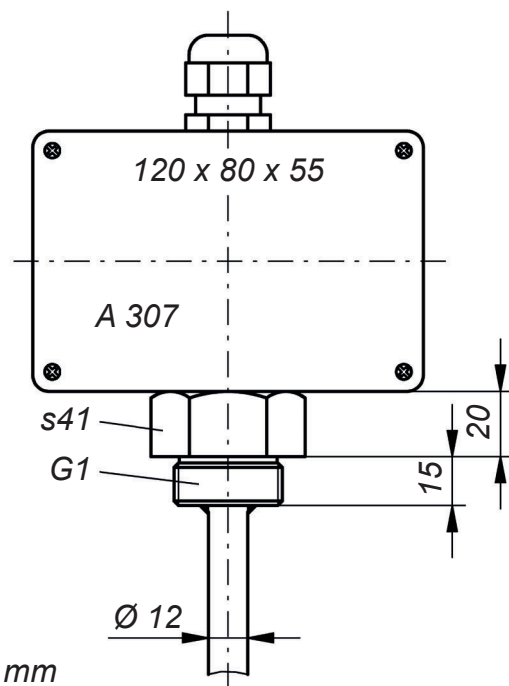
Technical data	TSR/3/ED/P TSR/1/ED/P	TSR/3/ED/PK TSR/1/ED/PK
Probe tube	stainless steel 316Ti Ø 14 mm Ø 12 mm length on request, max. 3,000 mm on request: with angled probe tube for mounting from the side	
Screw-in nipple	stainless steel 316Ti G½ G1 on request: • G¾ or G1 • G½ or G¾ • with R1¼/G½, R1½/G½, R2/G½, G1¼/G½ or G2/G½ reducing nipple	
Float	PP Ø 53 mm x 50 mm Ø 29 mm x 50 mm mounting possible through a G2 or R2 socket G1 socket for liquids with a density ≥ 0.8 g/cm³ ≥ 0.85 g/cm³	
Electrical connection	terminal box A 307 made of PP, 120 x 80 x 55 mm, IP65, with max. 12 terminals on request: • other terminal boxes • with connecting cable: TSR../F/ED/P TSR../F/ED/PK	
Mounting orientation	vertical	
Temperature resistance	– 20°C to + 80°C	
Pressure resistance	max. 2 bar at + 20°C, however only for hydraulic pressures and not suitable for pressures in line with the Pressure Equipment Directive 2014/68/EU	
Contacts: • reed contacts • max. number	NO, NC or OC 6 4	

Type	Min. distances based on liquids with a density of 1 g/cm³			
	from the nipple sealing surface to the upper contact	between contacts when using 1 float	2 floats	from the lower contact to the end of the probe tube (when float is falling)
TSR../ED/P	80 mm	80 mm	80 mm	40 mm
TSR../ED/PK	70 mm			50 mm

The above equipment will be manufactured according to customer's specifications.
For inquiries or orders, please complete the questionnaire on page 3-1-20.



TSR../ED/P



TSR../ED/PK

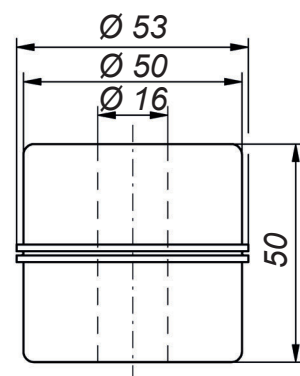
Dimensions in mm



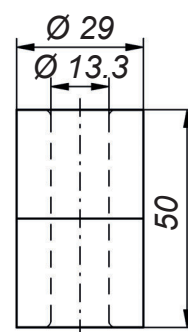
TSR../ED/P

TSR../ED/PK

Float for TSR../ED/P



Float for TSR../ED/PK



**Optional mounting accessories:
see pages 3-1-22 and 3-1-23**



TSR... immersion probes with

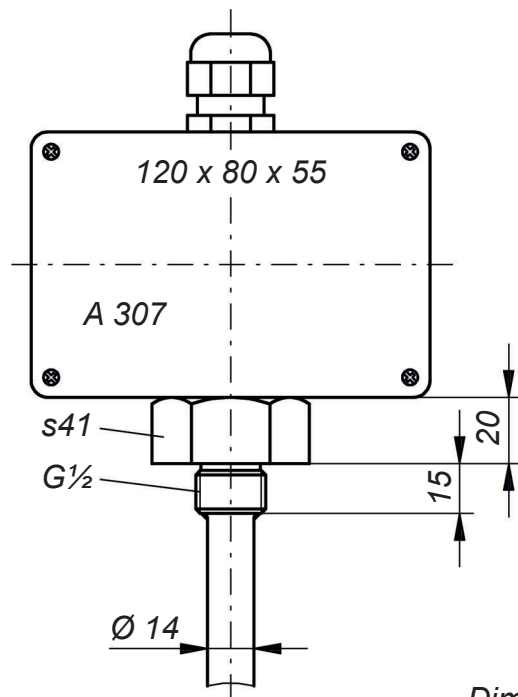
- probe tube made of stainless steel
- float made of stainless steel

	TSR/3/...	TSR/1/...
Switching voltage	between AC/DC 24 V and AC/DC 250 V	between AC/DC 1 V and AC/DC 42 V
Switching current	between AC 100 mA and AC 2 A (0.4 A)	between AC 1 mA and AC 500 mA
Switching capacity	max. 100 VA	max. 20 VA

Technical data	TSR/3/ED/E8 TSR/1/ED/E8	TSR/3/H/ED/E8 TSR/1/H/ED/E8	TSR/3/ED/E2 TSR/1/ED/E2	TSR/3/ED/E7 TSR/1/ED/E7	TSR/3/H/ED/E7 TSR/1/H/ED/E7
Probe tube	stainless steel 316Ti Ø 14 mm length on request, max. 3,000 mm on request: with angled probe tube for mounting from the side				
Screw-in nipple	stainless steel 316Ti, G $\frac{1}{2}$, on request: • G $\frac{3}{4}$ or G1 • with R1 $\frac{1}{4}$ /G $\frac{1}{2}$, R1 $\frac{1}{2}$ /G $\frac{1}{2}$, R2/G $\frac{1}{2}$, G1 $\frac{1}{4}$ /G $\frac{1}{2}$ or G2/G $\frac{1}{2}$ reducing nipple				
Float	stainless steel 316Ti Ø 72 mm Ø 44.5 mm Ø 52 mm x 88 mm — x 52 mm mounting possible through a socket G1 $\frac{1}{2}$ or R1 $\frac{1}{2}$ G2 or R2 for liquids with a density ≥ 0.7 g/cm ³ ≥ 0.95 g/cm ³ ≥ 0.7 g/cm ³				
Electrical connection	terminal box A 307 A 119 A 307 A 307 A 119 A 307 made of PP: 120 x 80 x 55 mm, IP65, with max. 12 terminals A 119 made of cast alu.: 125 x 80 x 57 mm, IP65, with max. 12 terminals on request: • other terminal boxes • with connecting cable: TSR/./F/ED/E8 TSR/./F/H/ED/E8 TSR/./F/ED/E2 TSR/./F/ED/E7 TSR/./F/H/ED/E7				
Mounting orientation	vertical				
Temperature resistance	– 20°C to + 100°C + 125°C + 100°C + 100°C + 125°C				
Pressure resistance	max. 12 bar at + 20°C, however only for hydraulic pressures and not suitable for pressures in line with the Pressure Equipment Directive 2014/68/EU				
Contacts: • reed contacts • max. number	NO, NC or OC 6				

Type	Min. distances based on liquids with a density of 1 g/cm ³			
	from the nipple sealing surface to the upper contact	between contacts when using 1 float	2 floats	from the lower contact to the end of the probe tube (when float is falling)
TSR/.../ED/E8	90 mm	80 mm	100 mm	50 mm
TSR/.../ED/E2	70 mm		80 mm	55 mm
TSR/.../ED/E7	90 mm		120 mm	65 mm

The above equipment will be manufactured according to customer's specifications.
For inquiries or orders, please complete the questionnaire on page 3-1-20.



TSR/./ED/E.

Dimensions in mm

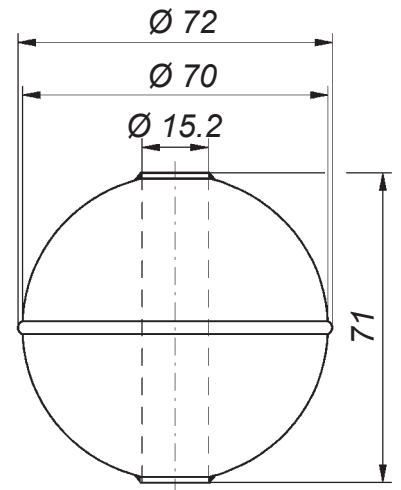


TSR/./ED/E8

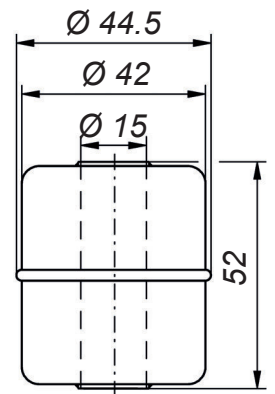
TSR/./ED/E2

TSR/./ED/E7

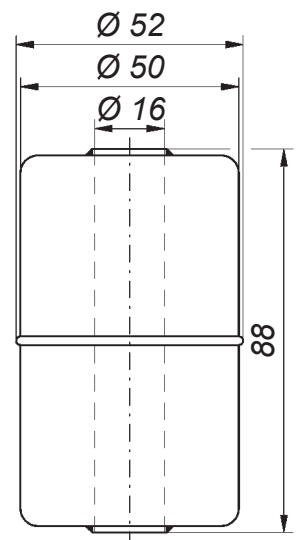
Float for TSR/.../ED/E8



Float for TSR/.../ED/E2



Float for TSR/.../ED/E7



Optional mounting
accessories: see pages
3-1-22 and 3-1-23



TSR... immersion probes with

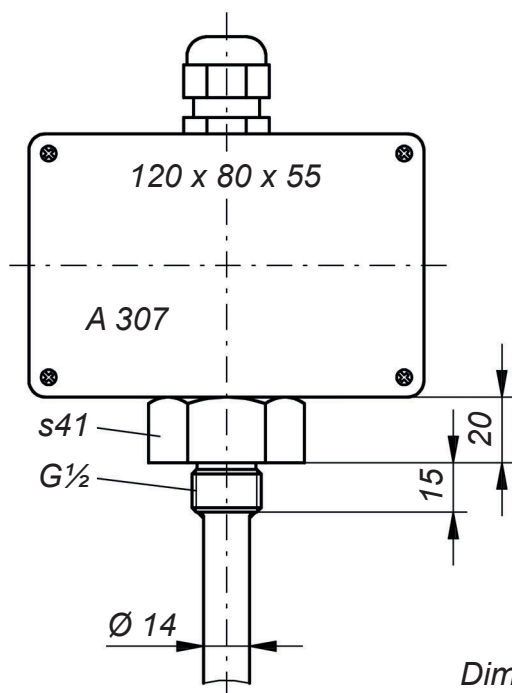
- probe tube made of stainless steel
- float made of stainless steel

	TSR/3/...	TSR/1/...
Switching voltage	between AC/DC 24 V and AC/DC 250 V	between AC/DC 1 V and AC/DC 42 V
Switching current	between AC 100 mA and AC 2 A (0.4 A)	between AC 1 mA and AC 500 mA
Switching capacity	max. 100 VA	max. 20 VA

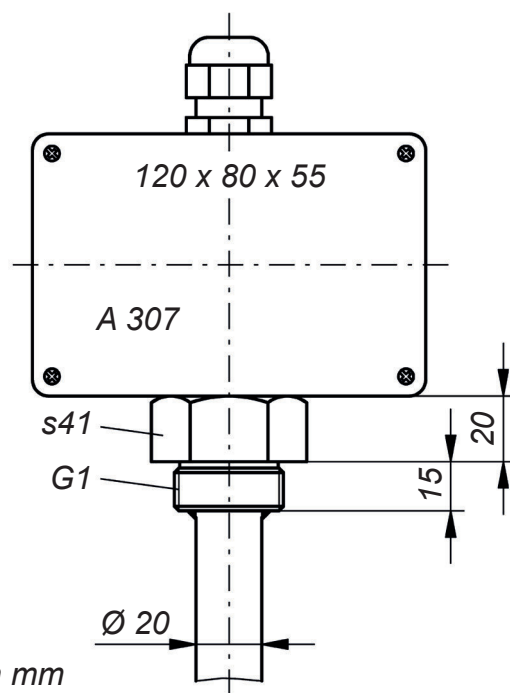
Technical data	TSR/3/ED/E5 TSR/1/ED/E5	TSR/3/H/ED/E4 TSR/1/H/ED/E4	TSR/3/EW/E5 TSR/1/EW/E5	TSR/3/H/EW/E4 TSR/1/H/EW/E4
Probe tube	stainless steel 316Ti Ø 14 mm Ø 20 mm length on request: max. 3,000 mm max. 6,000 mm on request: with angled probe tube for mounting from the side			
Screw-in nipple	stainless steel 316Ti G $\frac{1}{2}$ G1 on request: • G $\frac{3}{4}$ or G1 • with R1 $\frac{1}{4}$ /G $\frac{1}{2}$, R1 $\frac{1}{2}$ /G $\frac{1}{2}$, R2/G $\frac{1}{2}$, G1 $\frac{1}{4}$ /G $\frac{1}{2}$ or G2/G $\frac{1}{2}$ reducing nipple			
Float	stainless steel 316Ti Ø 98 mm Ø 97 mm x 80 mm Ø 98 mm Ø 97 mm x 80 mm for liquids with a density $\geq 0.7 \text{ g/cm}^3$			
Electrical connection	terminal box A 307 A 119 A 307 A 119 A 307 made of PP: 120 x 80 x 55 mm, IP65, with max. 12 terminals A 119 made of cast alu.: 125 x 80 x 57 mm, IP65, with max. 12 ter. on request: • other terminal boxes • with connecting cable: TSR../F/ED/E5 TSR../F/H/ED/E4 TSR../F/EW/E5 TSR../F/H/EW/E4			
Mounting orientation	vertical			
Temperature resistance	– 20°C to + 100°C + 125°C + 100°C + 125°C			
Pressure resistance	max. 12 bar max. 3 bar max. 12 bar max. 3 bar at + 20°C, however only for hydraulic pressures and not suitable for pressures in line with the Pressure Equipment Directive 2014/68/EU			
Contacts: • reed contacts • max. number	NO, NC or OC 6 8			

Type	Min. distances based on liquids with a density of 1 g/cm^3			
	from the nipple sealing surface to the upper contact	between contacts when using 1 float 2 floats	from the lower contact to the end of the probe tube (when float is falling)	
TSR../ED/E5	100 mm	80 mm	125 mm	65 mm
TSR../EW/E5				75 mm
TSR../ED/E4	110 mm	110 mm		50 mm
TSR../EW/E4				60 mm

The above equipment will be manufactured according to customer's specifications.
For inquiries or orders, please complete the questionnaire on page 3-1-20.



TSR../ED/E5



TSR../EW/E5

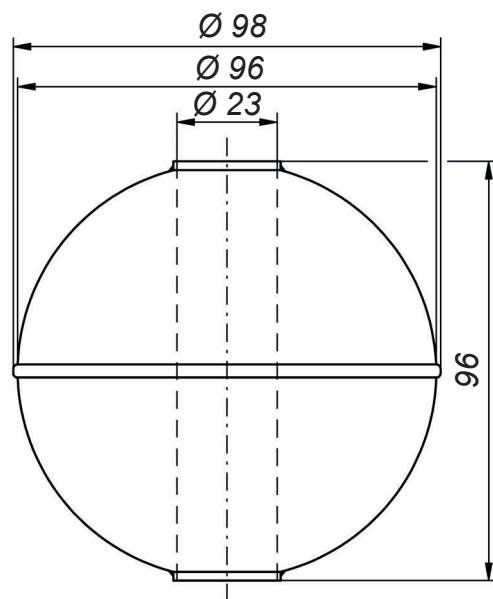
Dimensions en mm



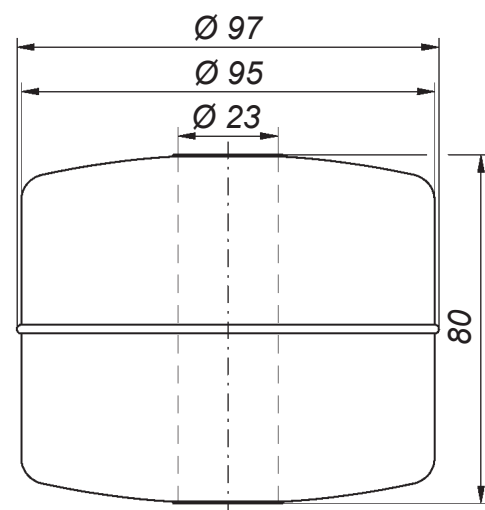
TSR../ED/E5

TSR../EW/E5

Float for TSR../ED/E5



Float for TSR../ED/E4



TSR... immersion probes with

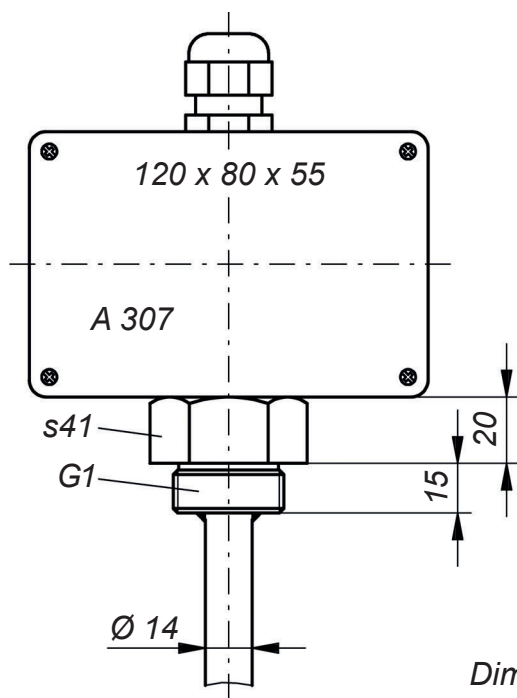
- probe tube made of PP
- float made of PP

	TSR/3/...	TSR/1/...
Switching voltage	between AC/DC 24 V and AC/DC 250 V	between AC/DC 1 V and AC/DC 42 V
Switching current	between AC 100 mA and AC 2 A (0.4 A)	between AC 1 mA and AC 500 mA
Switching capacity	max. 100 VA	max. 20 VA

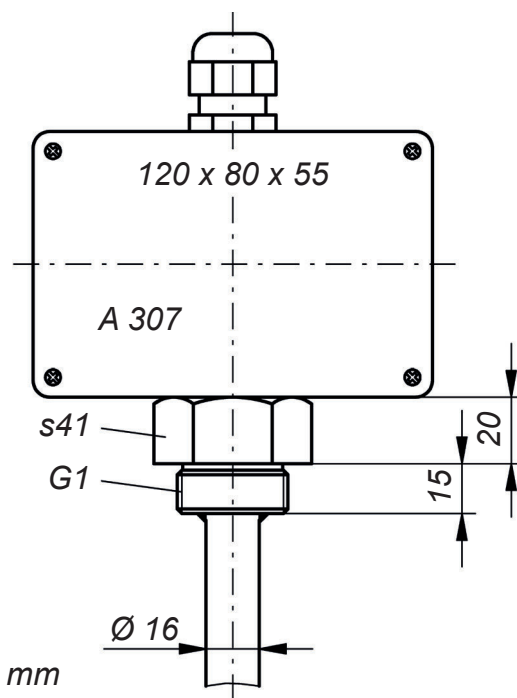
Technical data	TSR/3/P/P TSR/1/P/P	TSR/3/P/PG TSR/1/P/PG
Probe tube	Ø 14 mm max. 1,000 mm however shorter with temperatures above + 50°C (see "Temperature resistance..." below)	PP length on request: max. 2,000 mm + 35°C on request: with inner tube to strengthen the probe tube
Screw-in nipple	PP, G1, on request: • G2 • with G2/G1 reducing nipple	
Float	Ø 53 mm x 50 mm mounting possible through a G2 socket for liquids with a density $\geq 0.8 \text{ g/cm}^3$	PP Ø 89 mm x 60 mm
Electrical connection	terminal box A 307 made of PP, 120 x 80 x 55 mm, IP65, with max. 12 terminals on request: • other terminal boxes • with connecting cable: TSR/.F/P/P TSR/.F/P/PG	
Mounting orientation	vertical	
Temperature resistance acc. to the probe tube length up to:	0°C to + 35°C 0°C to + 40°C 0°C to + 50°C 0°C to + 60°C 0°C to + 75°C 0°C to + 80°C	
Pressure resistance	max. 2 bar at + 20°C, however only for hydraulic pressures and not suitable for pressures in line with the Pressure Equipment Directive 2014/68/EU	
Contacts: • reed contacts • max. n° without inner tube • max. n° with inner tube	4 —	NO, NC or OC 5 3

Type	Min. distances based on liquids with a density of 1 g/cm ³			
	from the nipple sealing surface to the upper contact	between contacts when using 1 float	2 floats	from the lower contact to the end of the probe tube (when float is falling)
TSR/.../P/P	80 mm	80 mm	80 mm	60 mm
TSR/.../P/PG	100 mm		90 mm	55 mm

**The above equipment will be manufactured according to customer's specifications.
For inquiries or orders, please complete the questionnaire on page 3-1-20.**



TSR../P/P



TSR../P/PG

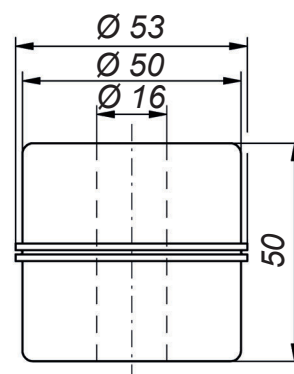
Dimensions in mm



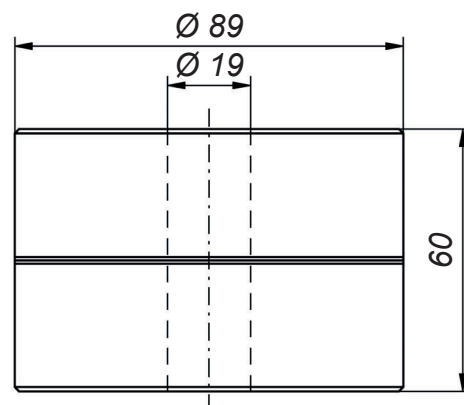
TSR../P/P

TSR../P/PG

Float for TSR../P/P



Float for TSR../P/PG



**Optional mounting accessories:
see pages 3-1-22 and 3-1-23**

TSR... immersion probes with

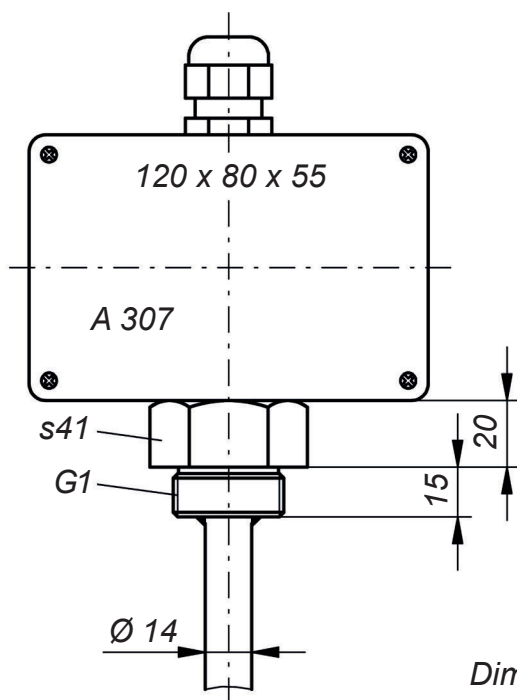
- probe tube made of PVDF
- float made of PVDF

	TSR/3/...	TSR/1/...
Switching voltage	between AC/DC 24 V and AC/DC 250 V	between AC/DC 1 V and AC/DC 42 V
Switching current	between AC 100 mA and AC 2 A (0.4 A)	between AC 1 mA and AC 500 mA
Switching capacity	max. 100 VA	max. 20 VA

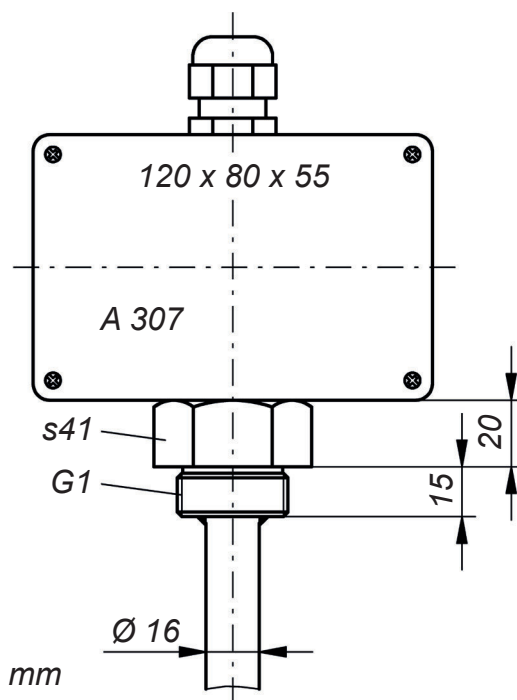
Technical data	TSR/3/PVDF/D TSR/1/PVDF/D	TSR/3/PVDF/W TSR/1/PVDF/W
Probe tube	<p>Ø 14 mm</p> <p>length on request: max. 1,000 mm however shorter with temperatures above + 55°C (see “Temperature resistance...” below)</p> <p>—</p>	<p>PVDF</p> <p>Ø 16 mm</p> <p>length on request: max. 2,000 mm + 40°C on request: with inner tube to strengthen the probe tube</p>
Screw-in nipple	PVDF, G1, on request G2	
Float	<p>Ø 53 mm x 50 mm</p> <p>mounting possible through a G2 socket</p> <p>for liquids with a density $\geq 1 \text{ g/cm}^3$</p>	<p>PVDF</p> <p>Ø 89 mm x 60 mm</p>
Electrical connection	<p>terminal box</p> <p>A 307 made of PP, 120 x 80 x 55 mm, IP65, with max. 12 terminals on request: • other terminal boxes • with connecting cable:</p> <p>TSR/./F/PVDF/D TSR/./F/PVDF/W</p>	
Mounting orientation	vertical	
Temperature resistance acc. to the probe tube length up to:	<p>—</p> <p>—</p> <p>0°C to + 55°C 0°C to + 70°C 0°C to + 80°C</p>	<p>0°C to + 40°C 0°C to + 45°C</p>
Pressure resistance	<p>max. 2 bar at + 20°C, however only for hydraulic pressures and not suitable for pressures in line with the Pressure Equipment Directive 2014/68/EU</p>	
Contacts: • reed contacts	NO, NC or OC	
• max. n° without inner tube	4	5
• max. n° with inner tube	—	3

Type	Min. distances based on liquids with a density of 1 g/cm ³			
	from the nipple sealing surface to the upper contact	between contacts when using 1 float	between contacts when using 2 floats	from the lower contact to the end of the probe tube (when float is falling)
TSR/.../PVDF/D	80 mm	80 mm	80 mm	70 mm
TSR/.../PVDF/W	90 mm		100 mm	65 mm

**The above equipment will be manufactured according to customer's specifications.
For inquiries or orders, please complete the questionnaire on page 3-1-20.**



TSR../PVDF/D



TSR../PVDF/W

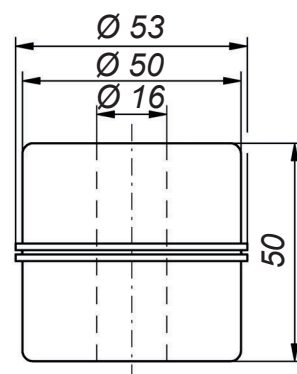
Dimensions in mm



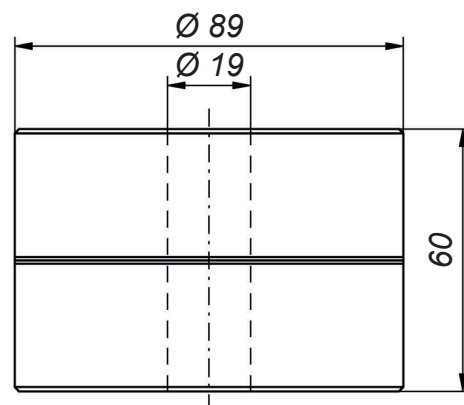
TSR../PVDF/D

TSR../PVDF/W

Float for TSR../PVDF/D



Float for TSR../PVDF/W



**Optional mounting accessories:
see pages 3-1-22 and 3-1-23**



TSR... immersion probes with

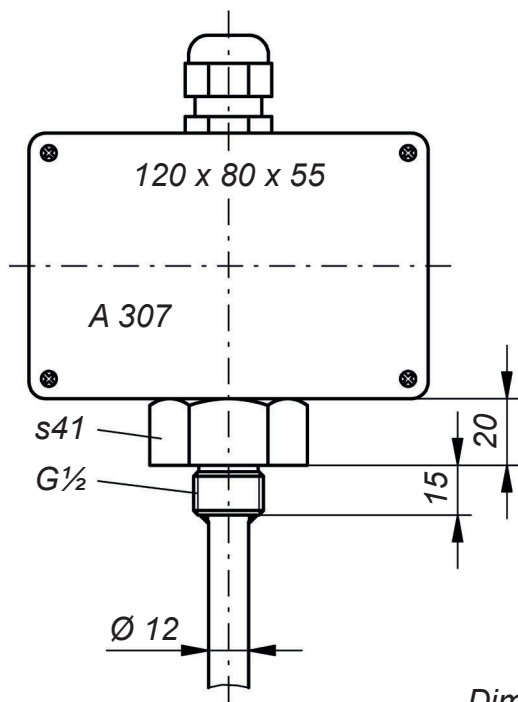
- probe tube made of titanium
- float made of titanium

	TSR/3/...	TSR/1/...
Switching voltage	between AC/DC 24 V and AC/DC 250 V	between AC/DC 1 V and AC/DC 42 V
Switching current	between AC 100 mA and AC 2 A (0.4 A)	between AC 1 mA and AC 500 mA
Switching capacity	max. 100 VA	max. 20 VA

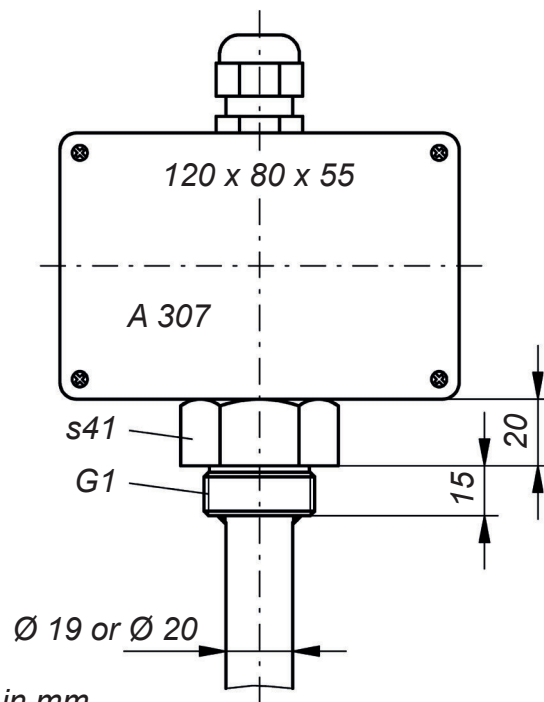
Technical data	TSR/3/TiD/Ti7 TSR/1/TiD/Ti7	TSR/3/TiW/Ti4 TSR/1/TiW/Ti4
Probe tube	titanium Ø 12 mm Ø 19 or Ø 20 mm length on request: max. 3,000 mm max. 6,000 mm on request: with angled probe tube for mounting from the side	
Screw-in nipple	titanium G½ G1	
Float	titanium Ø 44.5 mm x 52 mm Ø 79 mm x 95 mm for liquids with a density ≥ 0.95 g/cm³ ≥ 0.7 g/cm³	
Electrical connection	terminal box A 307 made of PP, 120 x 80 x 55 mm, IP65, with max. 12 terminals on request: • other terminal boxes • with connecting cable: TSR../F/TiD/Ti7 TSR../F/TiW/Ti4	
Mounting orientation	vertical	
Temperature resistance	– 20°C to + 100°C	
Pressure resistance	max. 10 bar max. 7 bar at + 20°C, however only for hydraulic pressures and not suitable for pressures in line with the Pressure Equipment Directive 2014/68/EU	
Contacts: • reed contacts • max. number	NO, NC or OC 4 8	

Type	Min. distances based on liquids with a density of 1 g/cm³			
	from the nipple sealing surface to the upper contact	between contacts when using 1 float	2 floats	from the lower contact to the end of the probe tube (when float is falling)
TSR../TiD/Ti7	90 mm	80 mm	125 mm	70 mm
TSR../TiW/Ti4				65 mm

The above equipment will be manufactured according to customer's specifications.
For inquiries or orders, please complete the questionnaire on page 3-1-20.



TSR./TiD/Ti7



TSR./TiW/Ti4

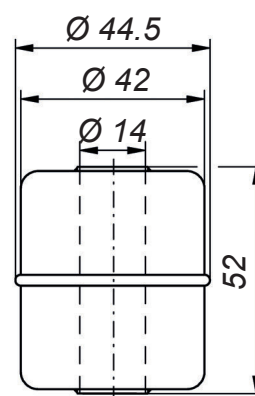
Dimensions in mm



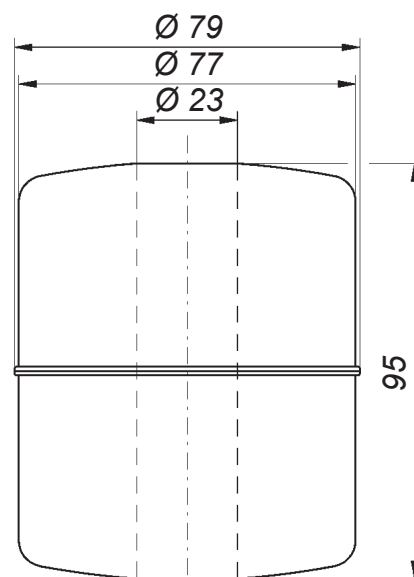
TSR./TiD/Ti7

TSR./TiW/Ti4

Float for TSR./.../TiD/Ti7



Float for TSR./.../TiW/Ti4



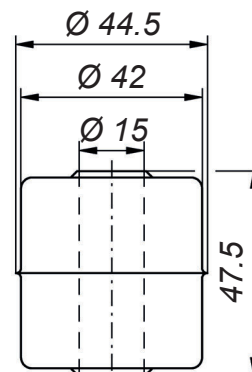


TSR/.../ED/E6 immersion probes with

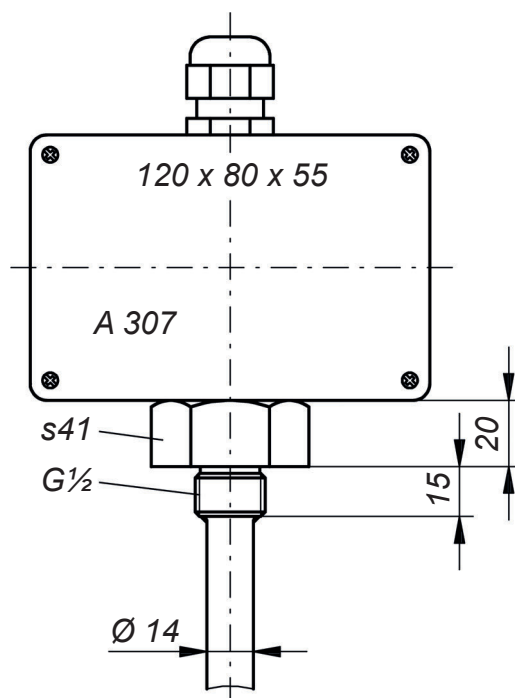
- probe tube made of stainless steel
 - float made of stainless steel
- with mini-contacts for small contact distances

Technical data	TSR/0/ED/E6
Switching voltage	between AC/DC 1 V and AC/DC 42 V
Switching current	between AC 1 mA and AC 100 mA
Switching capacity	max. 2 VA
Probe tube	stainless steel 316Ti Ø 14 mm length on request, max. 3,000 mm on request: with angled probe tube for mounting from the side
Screw-in nipple	stainless steel 316Ti, G $\frac{1}{2}$, on request: • G $\frac{3}{4}$ or G1 • with R1 $\frac{1}{4}$ /G $\frac{1}{2}$, R1 $\frac{1}{2}$ /G $\frac{1}{2}$, R2/G $\frac{1}{2}$, G1 $\frac{1}{4}$ /G $\frac{1}{2}$ or G2/G $\frac{1}{2}$ reducing nipple
Float	stainless steel 316Ti Ø 44.5 mm x 47.5 mm mounting possible through a G $\frac{1}{2}$ or R1 $\frac{1}{2}$ socket for liquids with a density ≥ 0.95 g/cm 3
Electrical connection	terminal box A 307 made of PP 120 x 80 x 55 mm, IP65 with max. 12 terminals on request: • other terminal boxes • with connecting cable: TSR/0/F/ED/E6
Mounting orientation	vertical
Temperature resistance	– 20°C to + 100°C
Pressure resistance	max. 12 bar at + 20°C, however only for hydraulic pressures and not suitable for pressures in line with the Pressure Equipment Directive 2014/68/EU
Contacts: • reed contacts • max. number	NO, NC or OC 6

Float for
TSR/.../ED/E6



Dimensions in mm

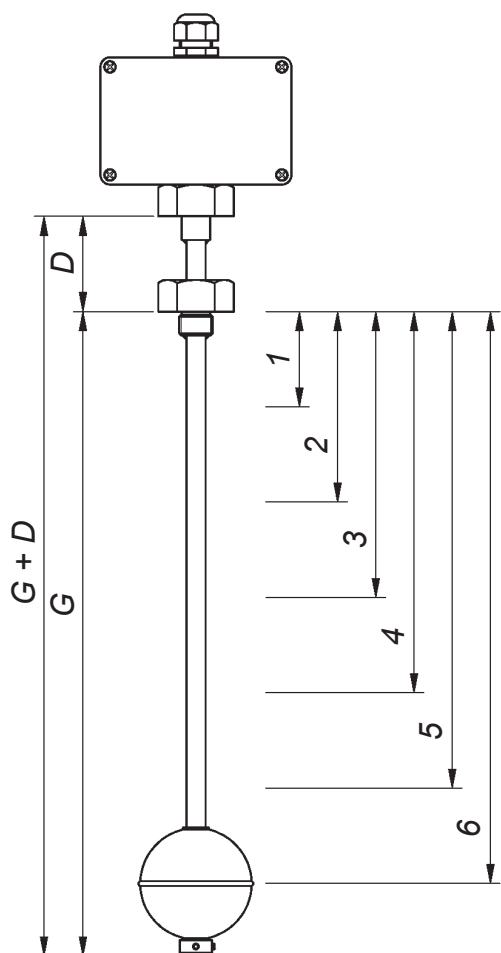


Type	Min. distances based on liquids with a density of 1 g/cm 3			
	from the nipple sealing surface to the upper contact	between contacts when using		from the lower contact to the end of the probe tube (when float is falling)
		1 float	2 floats	
TSR/.../ED/E6	50 mm	20 mm	80 mm	45 mm

The above equipment will be manufactured according to customer's specifications.
For inquiries or orders, please complete the questionnaire on page 3-1-20.

For inquiries or orders, please complete the following questionnaire

Tank dimensions and installation conditions (attach sketch if necessary)			
Type of liquid			
Density		Temperature	
Hydraulic pressure, not suitable for pressure in line with the Pressure Equipment Directive 2014/68/UE			



Desired type	TSR/
Desired probe tube length (dimension G)	
Please mark desired floats and collars on the probe tube. $D = 20$ mm, other dimension on request	
Desired options	

Desired version (please tick off)			
	<input type="checkbox"/> TSR/3/...	<input type="checkbox"/> TSR/1/...	<input type="checkbox"/> TSR/0/...
Switching voltage	AC/DC 24 V to AC/DC 250 V	AC/DC 1 V to AC/DC 42 V	
Switching current	AC 100 mA to AC 2 A (0.4 A)	AC 1 mA to AC 500 mA	AC 1 mA to AC 100 mA
Switching capacity	max. 100 VA	max. 20 VA	max. 2 VA

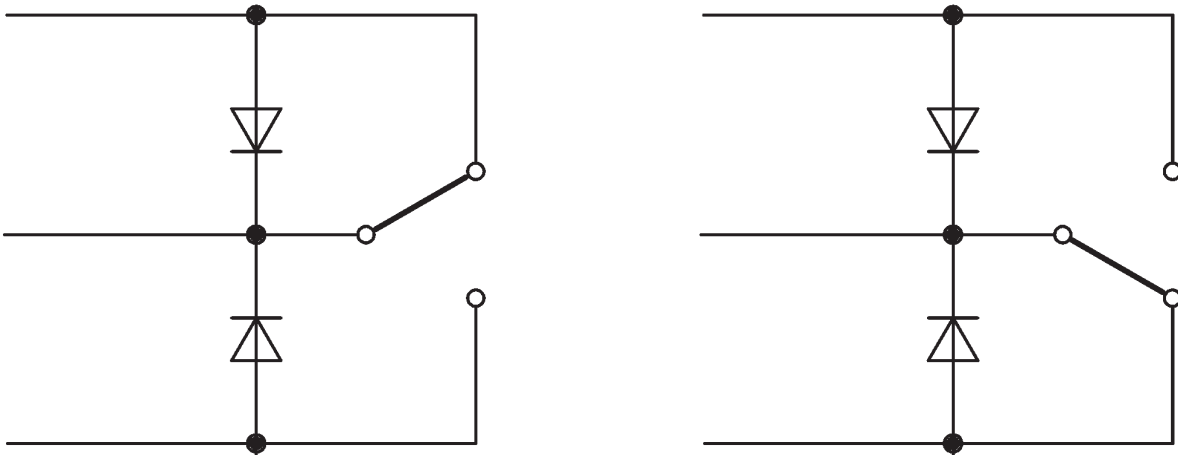
	Contact type (NO, NC or OC)	Distance from the sealing surface of the screw-in nipple, in mm	Switching function (e.g. high alarm, pump ON, pump OFF, run-dry protection)	Float working direction: rising = ↑ falling = ↓
1				
2				
3				
4				
5				
6				
7				
8				

**Immersion probes will be manufactured according to customer's specifications.
It is therefore not possible to return these special designs.**

**Options for the TSR/1/... versions:
Incorporation of electronic components at a reed contact**

Variant 1:

Two diodes of the type 1N4004 or equivalent



Variant 2:

Three resistors

Standard versions:

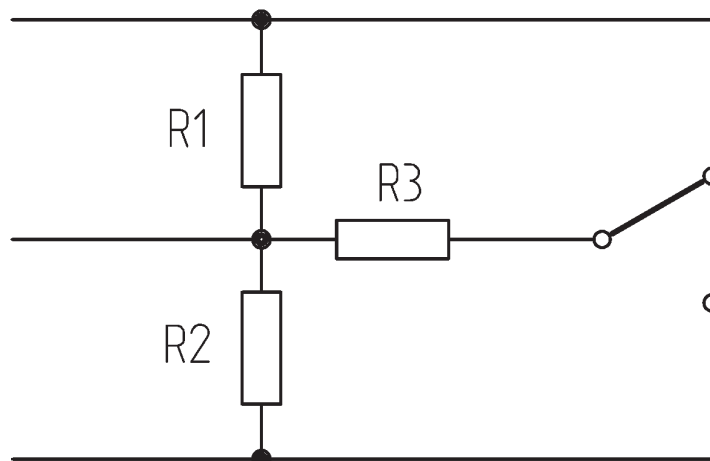
$R_1, R_2 \geq 2 \text{ k}\Omega$ and $\geq \frac{1}{4} \text{ W}$

$R_3 \geq 330 \text{ }\Omega$ and $\geq 1 \text{ W}$

NAMUR version:

$R_1, R_2 = 15 \text{ k}\Omega$ and $\geq \frac{1}{4} \text{ W}$

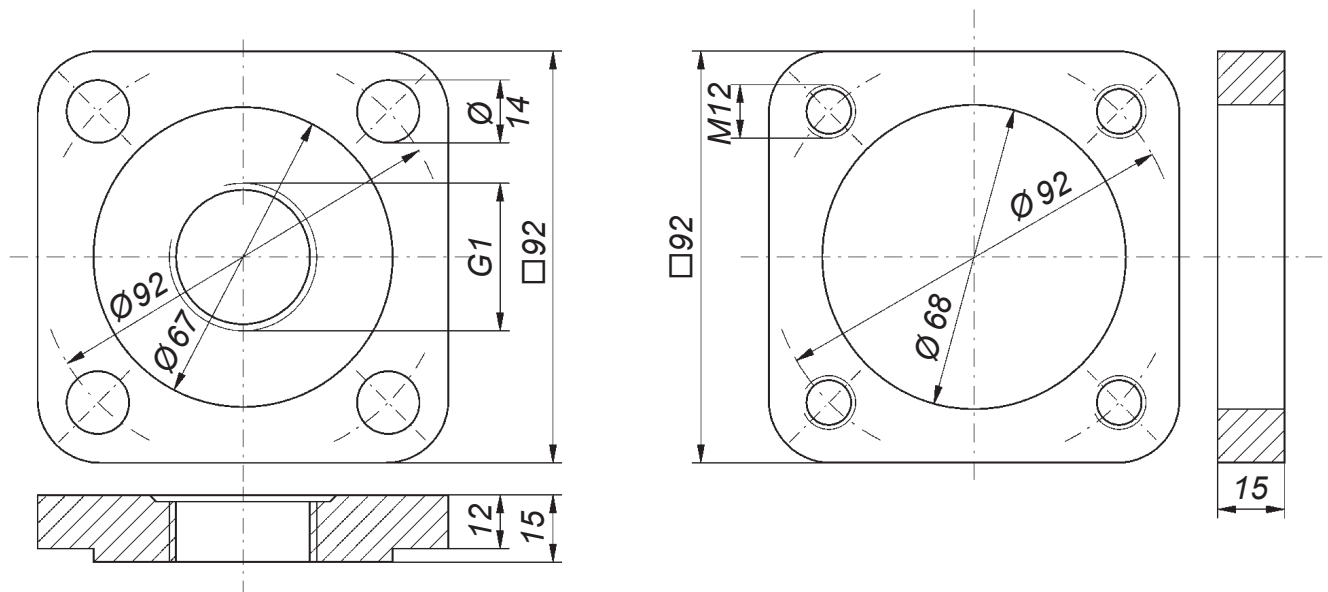
$R_3 = 1.2 \text{ k}\Omega$ and $\geq 1 \text{ W}$



Optional mounting accessories
suitable for the TSR/... immersion probes with G1 screw-in nipple:
Square blind flange with G1 threaded hole
and
corresponding counter flange

Square blind flange
FL 92x92/G1/PP made of PP
FL 92x92/G1/PVDF made of PVDF
or
FL 92x92/G1/E
made of stainless steel 316Ti

Counter flange
GF 92x92/68/E
made of stainless steel 316Ti

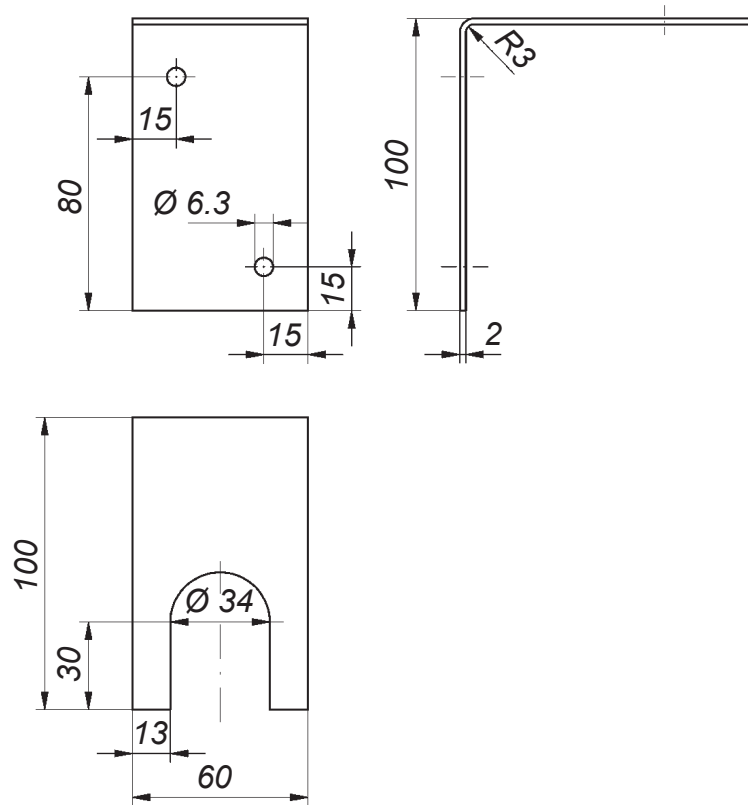


Dimensions in mm

**Optional mounting accessories:
Mounting brackets**

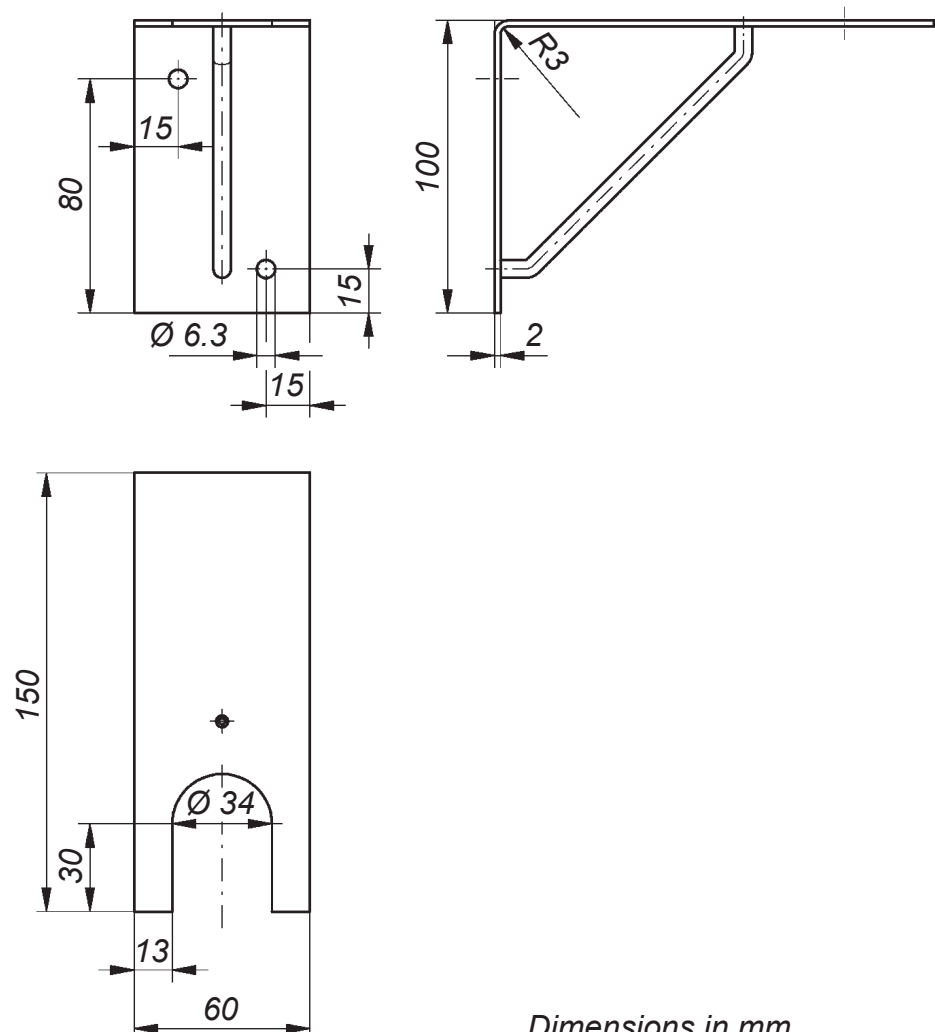
MW 100x100x60/G1/L
made of
stainless steel 316Ti
with lateral oblong hole

For immersion probe
with G1 screw-in nipple
(fixing of the
screw-in nipple
via G1 counter nut)



MW 100x150x60/G1/L
made of
stainless steel 316Ti
with lateral oblong hole

For immersion probe
with G1 screw-in nipple
(fixing of the
screw-in nipple
via G1 counter nut)



Dimensions in mm