



Floating switches and immersion probes

Controlling devices with
microswitch activated
by ball or sliding weight,
for automatic control, regulation
and signalling of liquid levels



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**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.**



Floating switches and immersion probes

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Floating switches and immersion probes

Application area

Floating switches or immersion probes are binary contact devices / combinations of binary contact devices used for the control of liquids.

Floating switches serve as individual switches for signalling a liquid level at a defined point (e.g. high-level alarm or low-level alarm).

The combination of 2 floating switches or an immersion probe with 2 mounted floating switches serves very often to control a pump (ON-OFF via a suitable external downstream pump controller) or a solenoid valve (OPEN-CLOSE via a suitable external downstream solenoid valve controller).

The use of more than 2 floating switches or one immersion probe with more than 2 mounted floating switches allows to perform more complex switching tasks (e.g. overflow protection, high-level alarm, pump ON, pump OFF, low-level alarm, run-dry protection).

Depending on type, the floating switches are designed for mounting from the side and/or from above, the immersion probes only for mounting from above.

Available electrical versions

For use outside potentially explosive atmospheres, the customer can choose between the versions ... 3/I/... and ... 1/I/... .

	... 3/I/...	... 1/I/...
Switching voltage	between AC/DC 12 V and 250 V	between AC/DC 5 V a. AC 42 V / DC 30 V
Switching current	between AC 100 mA and 3 (1) A or between DC 20 mA and 100 mA	between AC 1 mA and 100 (50) mA or between DC 1 mA and 500 mA
Switching capacity	max. 350 VA	max. 15 VA

The floating switches ... 1/K/... are equipped with a gold-plated contact. One of the characteristic properties of gold-plated contacts is that they can reliably switch the smallest voltages and smallest currents, even after extremely long standstill times.

These gold-plated contacts have the following unfavourable properties:

- The gold layer may become burnt off even after just one-off overload.
- Extremely frequent switching actions can also impair or destroy the gold layer.

In both cases, the contact loses its ability to reliably switch the smallest voltages and smallest currents.

If you need to choose between an ... 1/K/... with gold-plated contact and an ... 3/K/... with AgNi contact for an AC/DC 24 V application, your choice should be based on the following criteria:

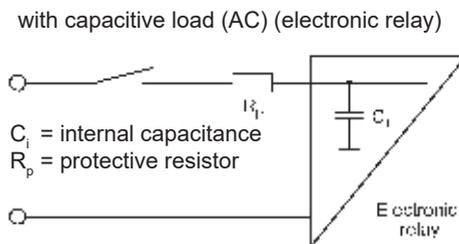
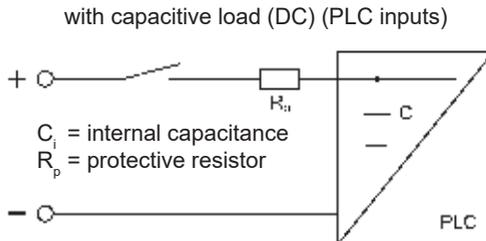
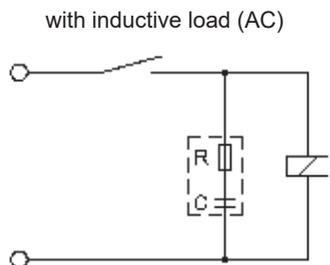
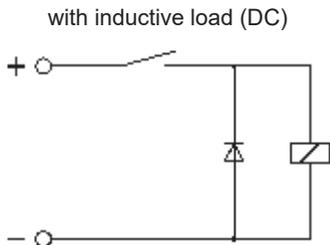
- Floating switch is seldom in operation but should continue to work reliably even after years: ... 1/K/... .
- Floating switch is frequently in operation, is permanently in action: ... 3/K/... .

If a floating switch or an immersion probe is to be used with a KR protection relay, choose the type .../1/... . We recommend this apparatus combination.

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

If floating switches or immersion probes with mounted floating switches are supplied with a voltage **that is not a safety extra-low voltage (SELV) in accordance with the applicable standards for the application in question, the tank and the liquid must be connected to the corresponding protective earth (PE). In addition, suitable ground fault circuit interrupters (RCD) must be integrated in the installation.**

Alternatively, the floating switches or immersion probes with mounted floating switches can be operated using safety extra-low voltage (SELV) in accordance with the applicable standards for the application in question.

These units are not suitable for use in turbulent liquids (e.g. in stirrer tanks).



SSP ./K/... floating switches

These floating switches are designed for mounting **from the side** or **from the top**.

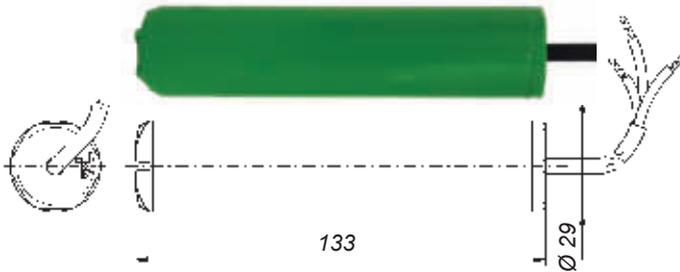
To ensure a correct switching the cable must be fixed at the required height using a

- stuffing gland in case of mounting from the side
- fixing weight or mounting tube in case of mounting from the top

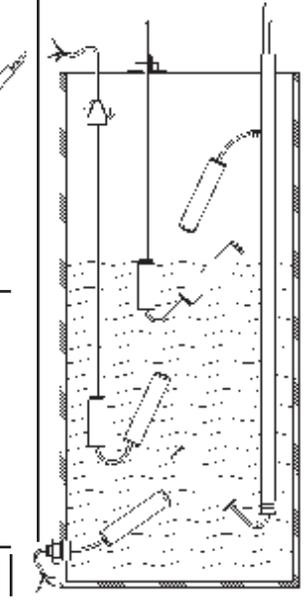
Technical data	SSP 3/K/...	SSP 1/K/...
	... = TPK, RN, Sil, PUR or CM	
Switching voltage	between AC/DC 12 V and 250 V	between AC/DC 5 V a. AC 42 V / DC 30 V
Switching current	between AC 100 mA and 3 (1) A or between DC 20 mA and 100 mA max. 350 VA	between AC 1 mA and 100 (50) mA or between DC 1 mA and 500 mA max. 15 VA
Switching capacity		
Operating principle	ball-operated microswitch, potential-free changeover contact	
Float:	PP	
• material	FKM, on request EPDM	
• seal	IP68	
• protection class		
Electrical connection	connecting cable, see table below length 1 m, longer on request When ordering, please always state the desired cable type and cable length.	
Pressure resistance	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	
Optional extras:		
• stuffing glands	<ul style="list-style-type: none"> • G½, stainless steel 316Ti or PP (floating switch mounting only possible from the inside of a container) • G1, stainless steel 316Ti or PP (floating switch mounting possible from the outside of a container) 	
• fixing weights	Ø 28 mm x approx. 80 mm, stainless steel 316Ti or PP	

Connecting cable selection / Possible use depending on the liquid						
Type	Material or cable designation	Number of cores and mm ² per conductor	Special aspects	Colour	Required liquid density (g/cm ³)	Temperature range (in water)
TPK	TPK	3X0.75	—	black	≥ 0.82	0°C to + 80°C
RN	A05RN-F	3X0.75	—	grey	≥ 1	0°C to + 60°C
Sil	silicone	3X0.75	low mechanical strength	red-brown	≥ 0.82	0°C to + 85°C
PUR	polyurethane	3X0.75	halogen-free	green	≥ 0.92	0°C to + 85°C
CM	cross-linked chlorinated polyethylene	3X0.75	—	black	≥ 1	0°C to + 85°C

SSP .JK/TPK



Application examples



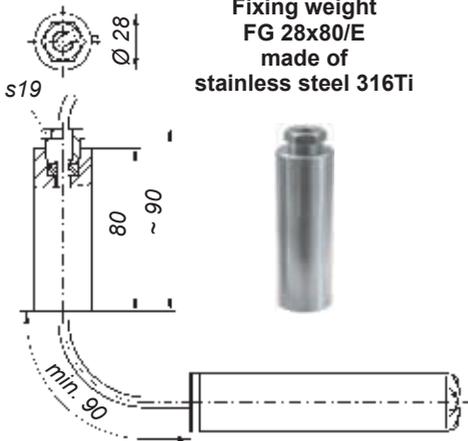
Stuffing glands

G1 made of PP G1 made of stainless steel 316Ti

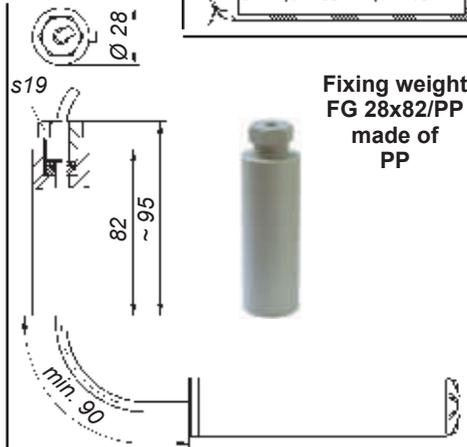


Fixing weight

FG 28x80/E
made of
stainless steel 316Ti



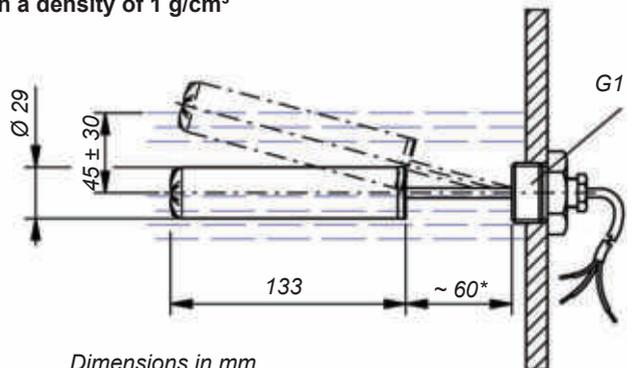
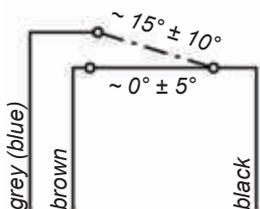
Fixing weight
FG 28x82/PP
made of
PP



Switching action in liquids with a density of 1 g/cm³

*) ~ 100 mm for the CM cable

Contact switches over at



Dimensions in mm



SPH ./K/... floating switches

These floating switches are designed for mounting **from the side** or **from the top**.

To ensure a correct switching the cable must be fixed at the required height using a

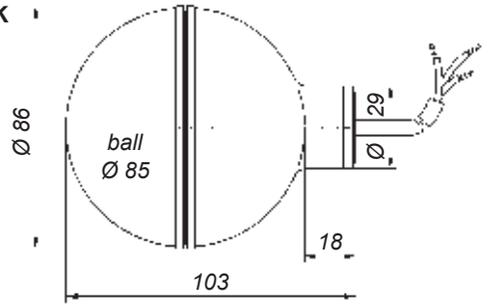
- stuffing gland in case of mounting from the side
- fixing weight or mounting tube in case of mounting from the top

Technical data	SPH 3/K/... ... = TPK, RN, Sil, PUR, CM or PTFE	SPH 1/K/...
Switching voltage	between AC/DC 12 V and 250 V	between AC/DC 5 V a. AC 42 V / DC 30 V
Switching current	between AC 100 mA and 3 (1) A or between DC 20 mA and 100 mA max. 350 VA	between AC 1 mA and 100 (50) mA or between DC 1 mA and 500 mA max. 15 VA
Switching capacity		
Operating principle	ball-operated microswitch, potential-free changeover contact	
Float: • material • seal • protection class	PP FKM, on request EPDM IP68	
Electrical connection	connecting cable, see table below length 1 m, longer on request When ordering, please always state the desired cable type and cable length.	
Pressure resistance	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	
Optional extras	stuffing glands and fixing weights made of stainless steel 316Ti or PP	

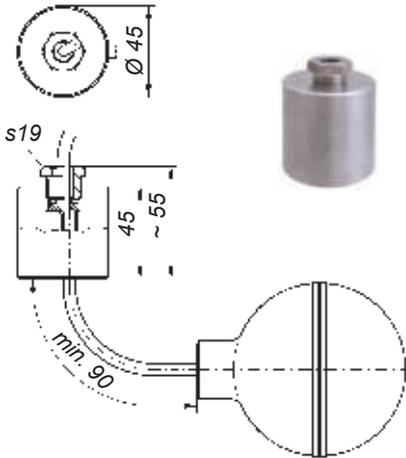
Connecting cable selection / Possible use depending on the liquid						
Type	Material or cable designation	Number of cores and mm ² per conductor	Special aspects	Colour	Required liquid density (g/cm ³)	Temperature range (in water)
TPK	TPK	3X0.75	—	black	≥ 0.7	0°C to + 80°C
RN	A05RN-F	3X0.75	—	grey	≥ 0.7	0°C to + 60°C
Sil	silicone	3X0.75	low mechanical strength	red-brown	≥ 0.7	0°C to + 85°C
PUR	polyurethane	3X0.5	halogen-free	green	≥ 0.7	0°C to + 85°C
CM	cross-linked chlorinated polyethylene	3X0.75	—	black	≥ 0.8	0°C to + 85°C
PTFE	PTFE	3X0.75	—	white	≥ 0.8	0°C to + 85°C



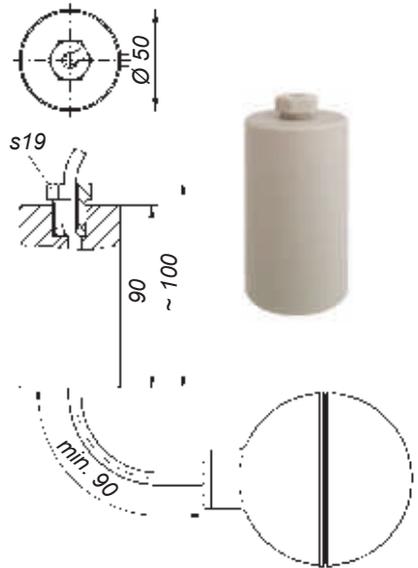
SPH .K/TPK



Fixing weight
FG 45x45/E
made of stainless steel 316Ti

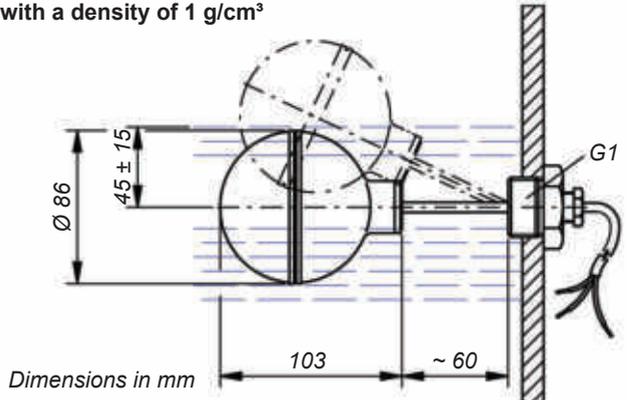
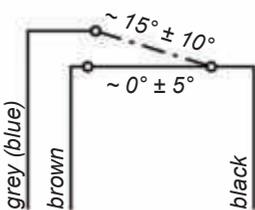


Fixing weight
FG 50x90/PP
aus PP



Switching action in liquids with a density of 1 g/cm³

Contact switches over at





SPH ./Z/... floating switches with larger hysteresis

These floating switches are designed for mounting **from the side** or **from the top**.

To ensure a correct switching the cable must be fixed at the required height using a

- stuffing gland in case of mounting from the side
- fixing weight or mounting tube in case of mounting from the top

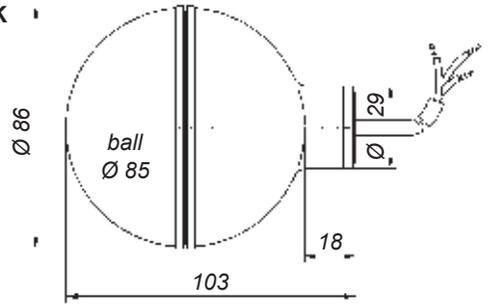
Technical data	SPH 3Z/... ... = TPK, RN, Sil, PUR, CM or PTFE	SPH 1Z/...
Switching voltage	between AC/DC 12 V and 250 V	between AC/DC 5 V a. AC 42 V / DC 30 V
Switching current	between AC 100 mA and 3 (1) A or between DC 20 mA and 100 mA max. 350 VA	between AC 1 mA and 100 (50) mA or between DC 1 mA and 500 mA max. 15 VA
Switching capacity		
Operating principle	microswitch operated by a sliding weight, potential-free changeover contact	
Float: • material • seal • protection class	PP FKM, on request EPDM IP68	
Electrical connection	connecting cable, see table below length 1 m, longer on request When ordering, please always state the desired cable type and cable length.	
Pressure resistance	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	
Optional extras	stuffing glands and fixing weights made of stainless steel 316Ti or PP	

Connecting cable selection / Possible use depending on the liquid

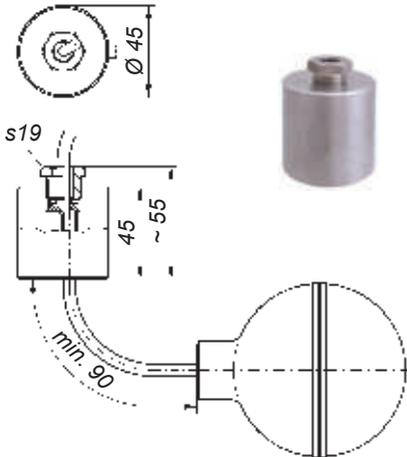
Type	Material or cable designation	Number of cores and mm ² per conductor	Special aspects	Colour	Required liquid density (g/cm ³)	Temperature range (in water)
TPK	TPK	3X0.75	—	black	≥ 0.7	0°C to + 80°C
RN	A05RN-F	3X0.75	—	grey	≥ 0.7	0°C to + 60°C
Sil	silicone	3X0.75	low mechanical strength	red- brown	≥ 0.7	0°C to + 85°C
PUR	polyurethane	3X0.5	halogen-free	green	≥ 0.7	0°C to + 85°C
CM	cross-linked chlorinated polyethylene	3X0.75	—	black	≥ 0.8	0°C to + 85°C
PTFE	PTFE	3X0.75	—	white	≥ 0.8	0°C to + 85°C



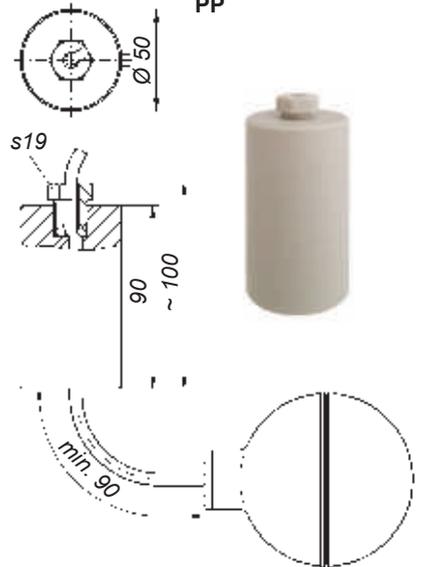
SPH .JZ/TPK



Fixing weight
FG 45x45/E
made of
stainless steel 316Ti



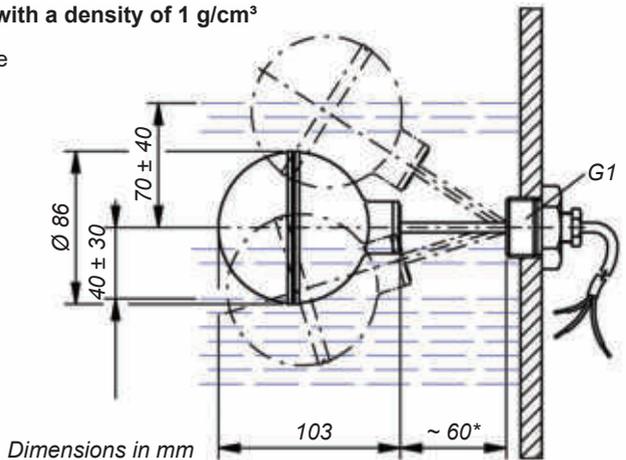
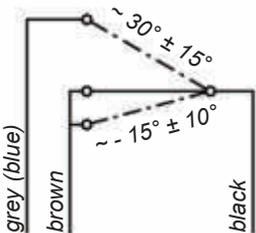
Fixing weight
FG 50x90/PP
made of
PP



Switching action in liquids with a density of 1 g/cm³

*) ~ 80 mm for the PTFE cable

Contact switches over at



Dimensions in mm



SSX ./K/... floating switches

These floating switches are designed for mounting **from the side** or **from the top**.

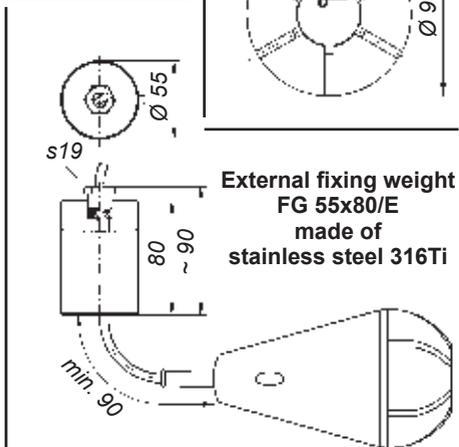
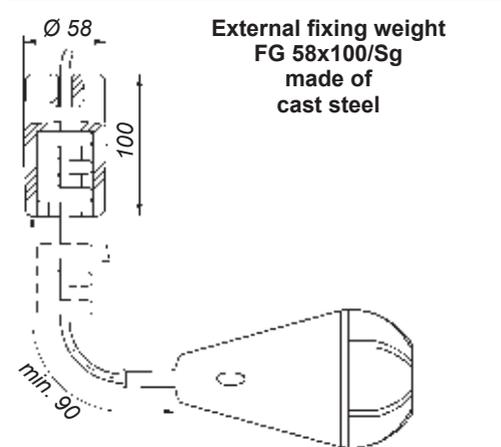
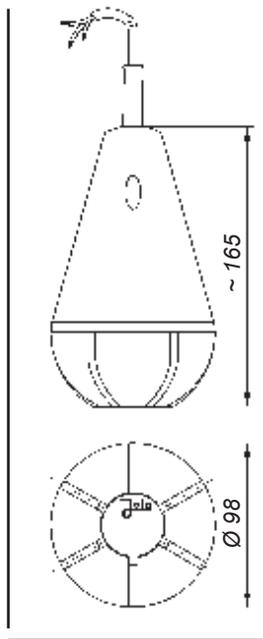
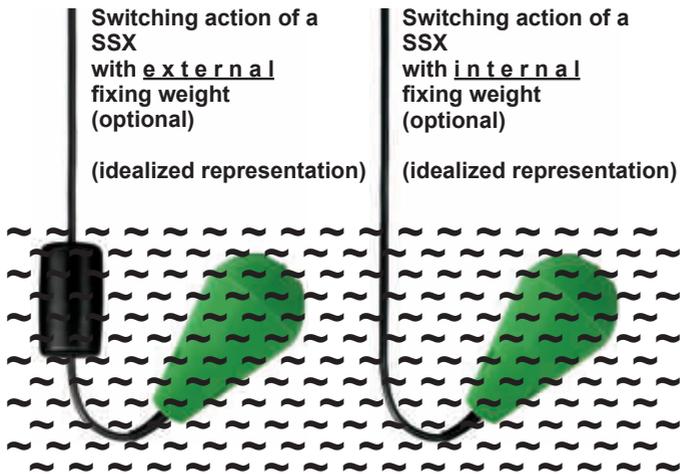
To ensure a correct switching the cable must be fixed at the required height using a

- stuffing gland in case of mounting from the side
- fixing weight or mounting tube in case of mounting from the top

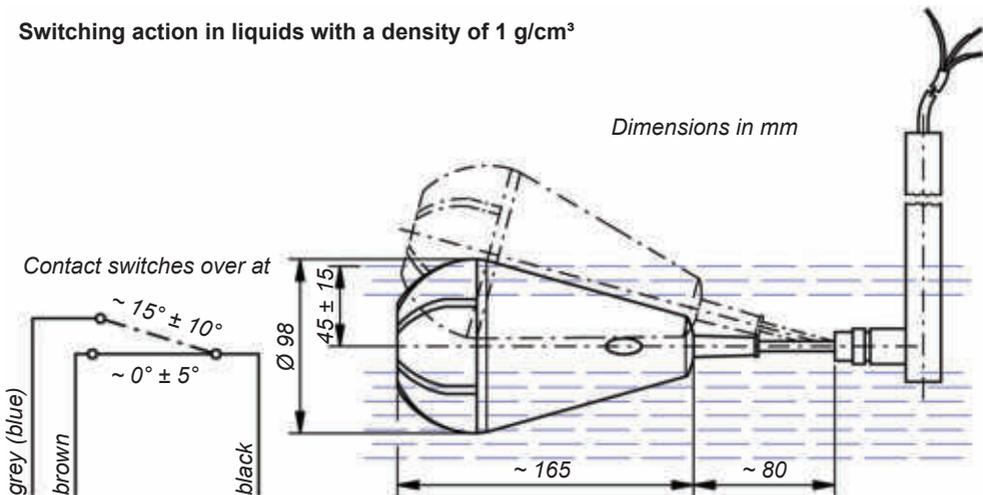
Technical data	SSX 3/K/... ... = TPK, RN, Sil, PUR, CM or PTFE	SSX 1/K/...
Switching voltage	between AC/DC 12 V and 250 V	between AC/DC 5 V a. AC 42 V / DC 30 V
Switching current	between AC 100 mA and 3 (1) A or between DC 20 mA and 100 mA max. 350 VA	between AC 1 mA and 100 (50) mA or between DC 1 mA and 500 mA max. 15 VA
Switching capacity		
Operating principle Float: • material • seal • protection class	ball-operated microswitch, potential-free changeover contact PP FKM, on request EPDM IP68	
Electrical connection	connecting cable, see table below length 2 m, longer on request When ordering, please always state the desired cable type and cable length.	
Pressure resistance	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	
Optional extras	• fixing weight made of cast steel or stainless steel 316Ti for liquids with a density $\geq 0.7 \text{ g/cm}^3$ • internal weight – additional reference .../IG – for liquids with a density between 0.95 and 1.05 g/cm ³	

Connecting cable selection / Possible use depending on the liquid

Type	Material or cable designation	Number of cores and mm ² per conductor	Special aspects	Colour	Required liquid density (g/cm ³)	Temperature range (in water)
TPK	TPK	3X0.75	—	black	≥ 0.7	0°C to + 80°C
RN	A05RN-F	3X0.75	—	grey	≥ 0.7	0°C to + 60°C
Sil	silicone	3X0.75	low mechanical strength	red-brown	≥ 0.7	0°C to + 85°C
PUR	polyurethane	3X0.5	halogen-free	green	≥ 0.7	0°C to + 85°C
CM	cross-linked chlorinated polyethylene	3X0.75	—	black	≥ 0.8	0°C to + 85°C
PTFE	PTFE	3X0.75	—	white	≥ 0.8	0°C to + 85°C



Switching action in liquids with a density of 1 g/cm³





FS ./K/... floating switches

with internal weight for fixing of switching point

These floating switches are designed for **mounting from the top**.

They are fitted with an **internal weight for fixing the switching point** at the desired height, this renders **additional fastening** unnecessary.

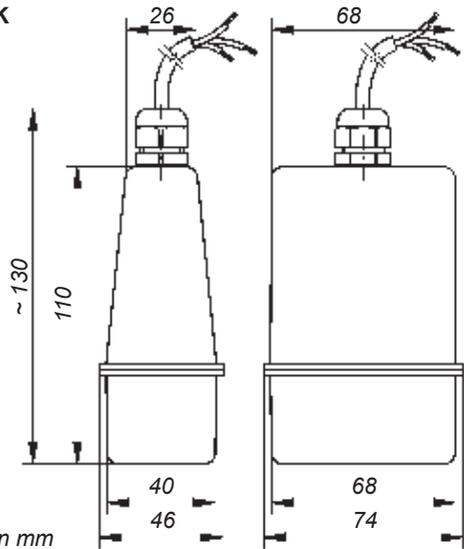
This weight is dimensioned in such a way that the switch tilts around its own axis when the liquid level rises and then follows the rising liquid level (see function diagram on page 1-1-14). This tilting action of the float activates the switching process.

Technical data	FS 3/K/... ... = TPK, RN, Sil, PUR or CM	FS 1/K/...
Switching voltage	between AC/DC 12 V and 250 V	between AC/DC 5 V a. AC 42 V / DC 30 V
Switching current	between AC 100 mA and 3 (1) A or between DC 20 mA and 100 mA max. 350 VA	between AC 1 mA and 100 (50) mA or between DC 1 mA and 500 mA max. 15 VA
Switching capacity		
Operating principle	ball-operated microswitch, potential-free changeover contact	
Float: • material • seal • protection class	PP FKM, on request EPDM IP68	
Electrical connection	connecting cable, see table below length 1 m, longer on request When ordering, please always state the desired cable type and cable length.	
Pressure resistance	for pressureless applications, use only under atmospheric conditions	

Connecting cable selection / Possible use depending on the liquid						
Type	Material or cable designation	Number of cores and mm ² per conductor	Special aspects	Colour	Required liquid density (g/cm ³)	Temperature range (in water)
TPK	TPK	3X0.75	—	black	between 0.95 and 1.05	0°C to + 80°C
RN	A05RN-F	3X0.75	—	grey		0°C to + 60°C
Sil	silicone	3X0.75	low mechanical strength	red-brown		0°C to + 85°C
PUR	polyurethane	3X0.5	halogen-free	green		0°C to + 85°C
CM	cross-linked chlorinated polyethylene	3X0.75	—	black		0°C to + 85°C



FS ./K/TPK



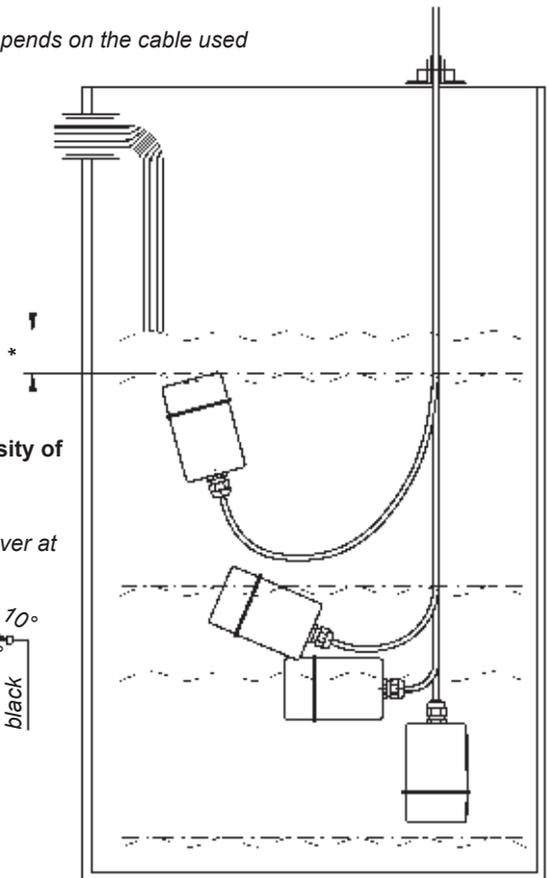
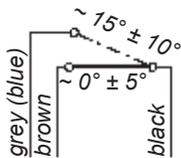
Dimensions in mm

Function diagram of the FS floating switch (idealized representation)

* depends on the cable used

Switching action in liquids with a density of 1 g/cm³

Contact switches over at





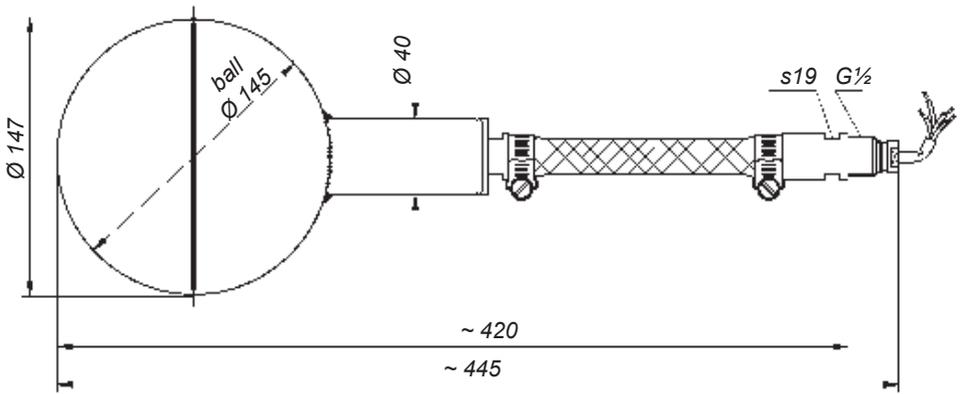
SSR .K/RN floating switches

These floating switches are designed for mounting **from the side** or **from the top**.

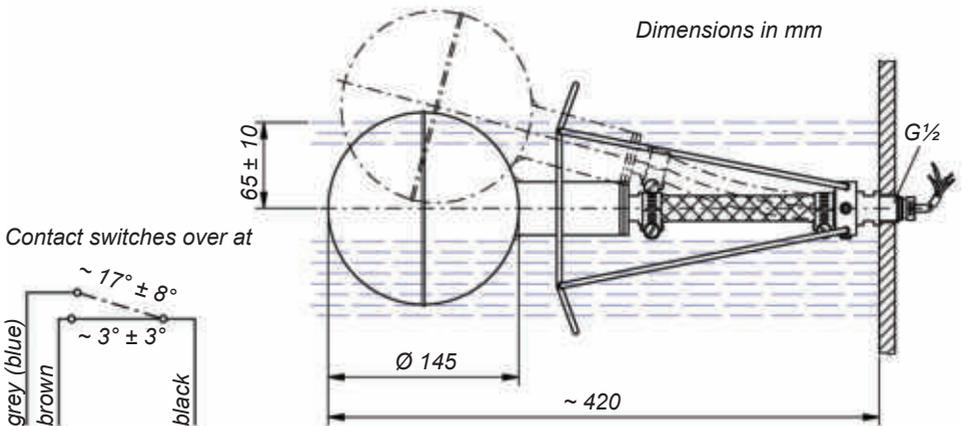
To ensure correct switching the G½ screw-in nipple must be screwed and tightened in a horizontal G½ sleeve of a tank or a mounting tube.

Technical data	SSR 3/K/RN	SSR 1/K/RN
Switching voltage	between AC/DC 12 V and 250 V	between AC/DC 5 V a. AC 42 V / DC 30 V
Switching current	between AC 100 mA and 3 (1) A or between DC 20 mA and 100 mA max. 350 VA	between AC 1 mA and 100 (50) mA or between DC 1 mA and 500 mA max. 15 VA
Switching capacity		
Operating principle	ball-operated microswitch, potential-free changeover contact	
Float / protective bellows / screw-in nipple: • material • seal • protection class	stainless steel 316Ti / 316L PTFE in installed condition inside the tank: IP68, on the stuffing gland screw fitting outside the tank: IP54	
Electrical connection	connecting cable, see table below The connecting cable is routed through a protective bellows to which a G½ screw-in nipple is fastened. length 2 m, longer on request When ordering, please always state the desired cable length.	
Pressure resistance	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	
Optional extra	recommended: stainless steel stirrup to limit the movement of the float	

Connecting cable						
Type	Material or cable designation	Number of cores and mm ² per conductor	Special aspects	Colour	Required liquid density (g/cm ³)	Temperature range (in water)
RN	A05RN-F	4G0.75	—	black	≥ 0.7	0°C to + 70°C



Switching action in liquids with a density of 1 g/cm³
 Diagram of SSR ... with stainless steel stirrup (optional)





SS/PTFE 55/A ./K floating switches

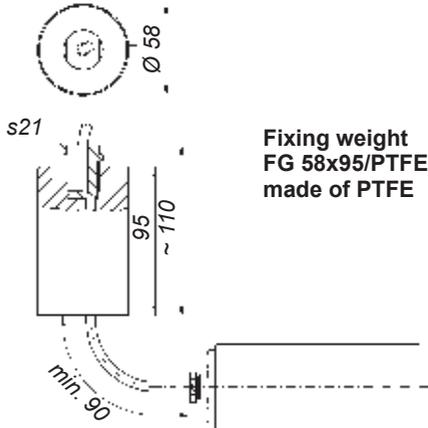
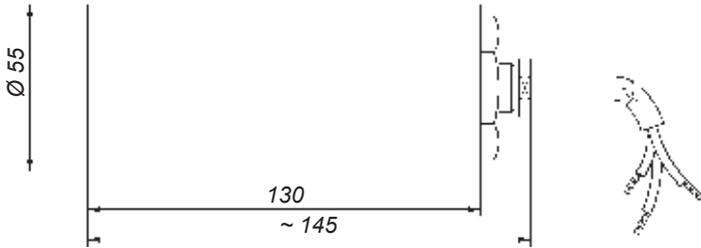
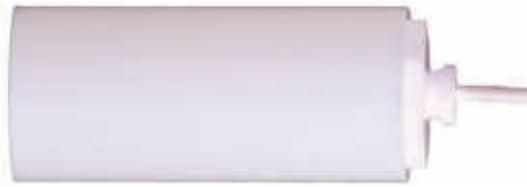
These floating switches are designed **for mounting from the top**.

To ensure a correct switching the cable must be fixed at the required height using for example a fixing weight or a mounting tube.

Technical data	SS/PTFE 55/A 3/K	SS/PTFE 55/A 1/K
Switching voltage	between AC/DC 12 V and 250 V	between AC/DC 5 V a. AC 42 V / DC 30 V
Switching current	between AC 100 mA and 3 (1) A or between DC 20 mA and 100 mA max. 350 VA	between AC 1 mA and 100 (50) mA or between DC 1 mA and 500 mA max. 15 VA
Switching capacity		
Operating principle	ball-operated microswitch, potential-free changeover contact	
Float: • material • seal • protection class	PTFE FKM IP68	
Electrical connection	connecting cable, see table below length 2 m, longer on request When ordering, please always state the desired cable length.	
Pressure resistance	for pressureless applications, use only under atmospheric conditions	
Optional extras	fixing weight made of PTFE	

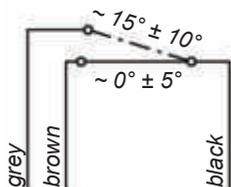
Connecting cable						
Type	Material or cable designation	Number of cores and mm ² per conductor	Special aspects	Colour	Required liquid density (g/cm ³)	Temperature range (in water)
PTFE	PTFE	3X0.75	—	white	≥ 1	0°C to + 85°C

SS/PTFE 55/A .JK

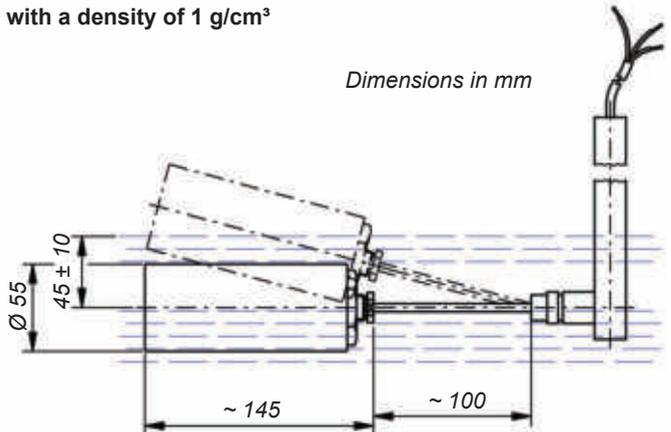


Switching action in liquids with a density of 1 g/cm^3

Contact switches over at



Dimensions in mm

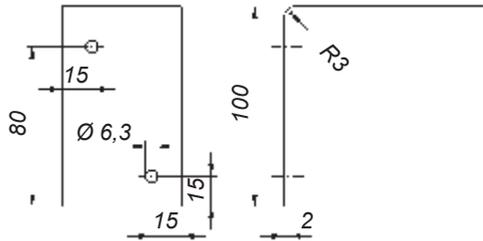




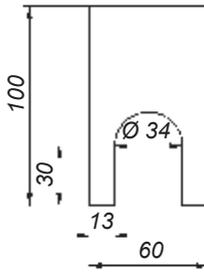
Further mounting accessories

MW 100x100x60/G1/L stainless steel 316Ti mounting bracket with open lateral oblong hole

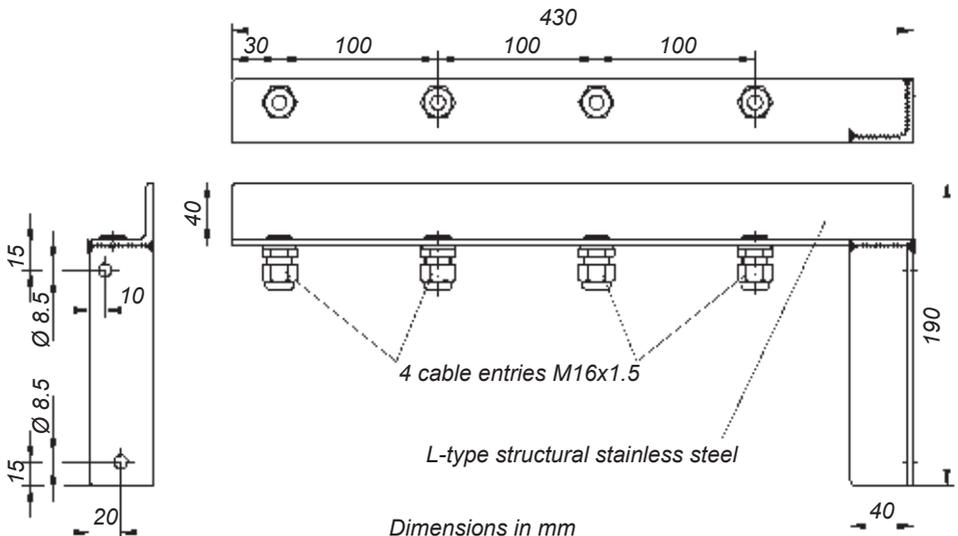
For G1 stuffing gland or
screw-in nipple
(fixing of the G1 stuffing gland or
screw-in nipple via
a G1 counter nut)



Further mounting brackets for
respectively 1 floating switch
see pages 16-1-...



MW 190x430x40/4xM16-Ms stainless steel 316Ti mounting bracket with 4 cable entries made of nickel-plated brass (on request made of PP or stainless steel) suitable for 4 floating switches





Application example:
MW 190x430x40/4xM16-PP mounting bracket
with 4 cable entries made of PP,
with 4 SSX ./K/TPK/IG floating switches
(with internal fixing weight)



TSV/... level monitors

For maximum or minimum display or warning signal

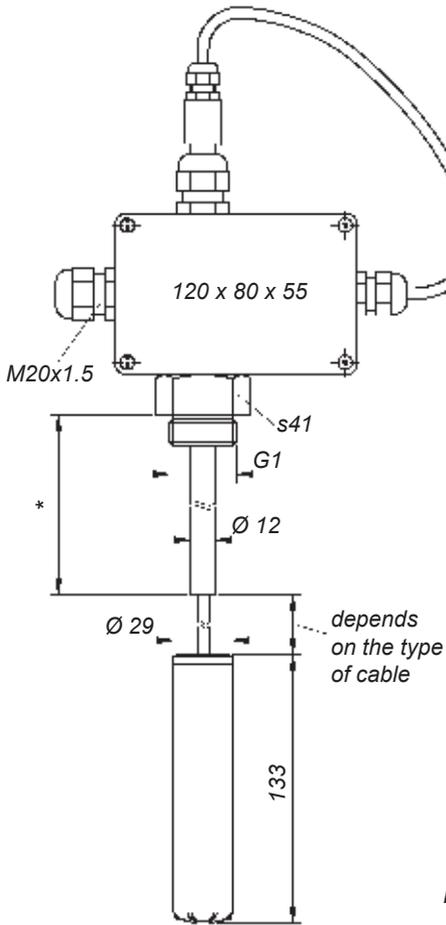


Probe tube in terminal box / screw-in nipple adjustable

Any desired level can be detected along the entire length of the probe tube.

Technical data	TSV/PP/SSP 1/K/...	TSV/E/SSP 1/K/...
	TSV/PP/SSP 3/K/...	TSV/E/SSP 3/K/...
	... = connecting cable type	
Probe tube: • material • Ø • length	PP	stainless steel 316Ti 12 mm approx. 500 mm, longer on request
Screw-in nipple	PP, G1	stainless steel 316Ti, G1
Electrical connection	A 307 terminal box made of PP, 120 x 80 x 55 mm, protection class IP54	
Mounting orientation	vertical	
Temperature range	depends on the type of cable used, see page 1-1-5	
Pressure resistance	for pressureless applications, use only under atmospheric conditions	
Floating switch	SSP ./K/... (to be specified), see page 1-1-5	

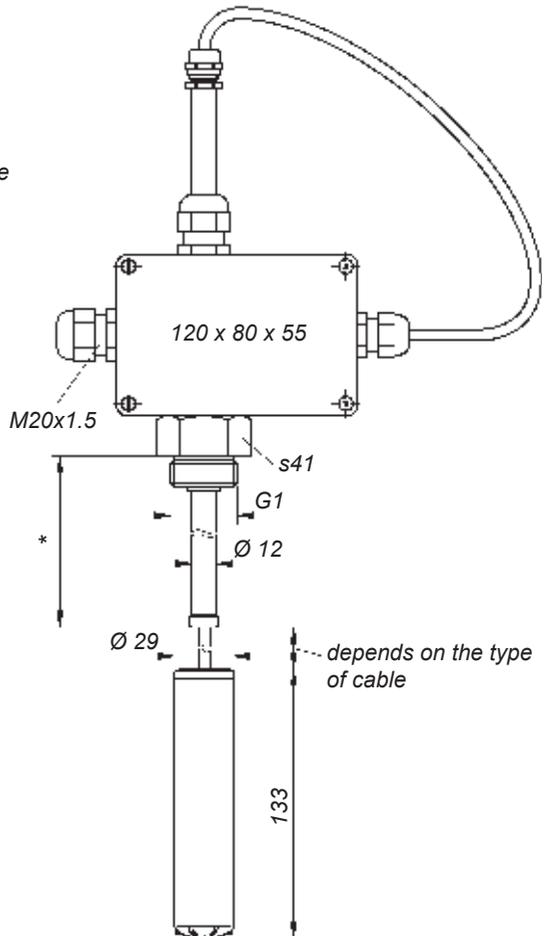
TSV/PP/SSP .IKI...



* standard approx. 500 mm,
longer on request

Dimensions in mm

TSV/E/SSP .IKI...



depends on the type
of cable



TS/O/... immersion probes

for the automatic regulation of liquid levels

Functional description based on a switching example:

Automatic filling of a tank

The bottom floating switch falls together with the liquid to a minimum level and acts on the contactor when it falls below the horizontal.

Liquid is then pumped into the tank. When the maximum level is reached, the top floating switch rises above the horizontal, the contactor holding circuit is interrupted, and the filling process is stopped.



Technical data	TS/O/ x SSP ./K/...
Probe tube: <ul style="list-style-type: none"> • material • Ø • length 	PP depends on the type and number of switches according to customer's specifications
Screw-in nipple (on request) Flange	PP (dimensions see table below) on request
Electrical connection	terminal box, protection class IP65, <ul style="list-style-type: none"> • A 307, PP, for max. 12 terminals, 120 x 80 x 55 mm • A 113, polyester, for more than 12 terminals, 160 x 160 x 90 mm
Mounting orientation	vertical
Temperature range	depends on the type of cable used, see page 1-1-5
Pressure resistance	for pressureless applications, use only under atmospheric conditions
Floating switches	SSP ./K/... (to be specified), see page 1-1-5

Type designation	Number of mounted floating switches	Floating switches	Probe tube diameter	Screw-in nipple (on request)
TS/O/1 x SSP ...	1	SSP ...	16 mm	G1½ or G2
TS/O/2 x SSP ...	2		20 mm	G2
TS/O/3 x SSP ...	3		25 mm	G2
TS/O/4 x SSP ...	4		25 mm	G2
TS/O/5 x SSP ...	5		25 mm	G2

... = to be specified: see page 1-1-5

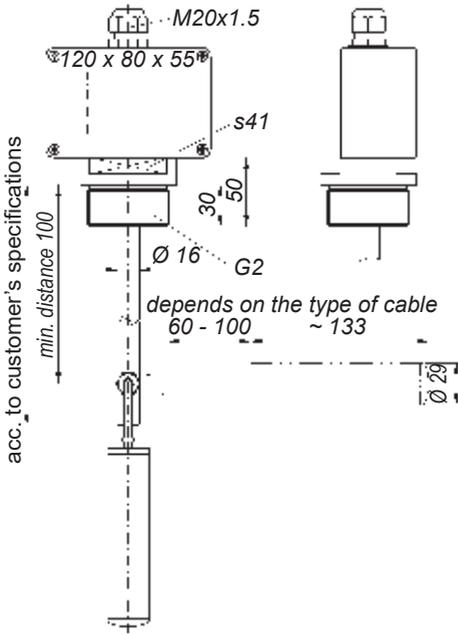
On request:

- with more than 5 mounted floating switches
- with adjustable screw-in nipple

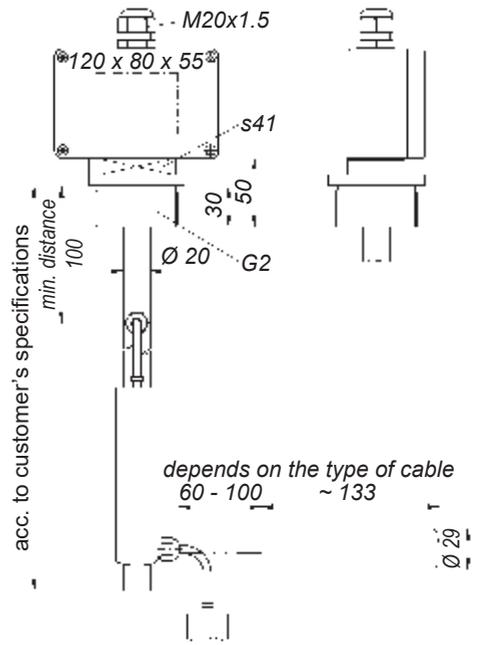
The above equipment will be manufactured in accordance with customer's specifications.

For enquiries or orders, please complete the questionnaire on page 1-1-27 or 1-1-28.

TS/O/1 x SSP ...

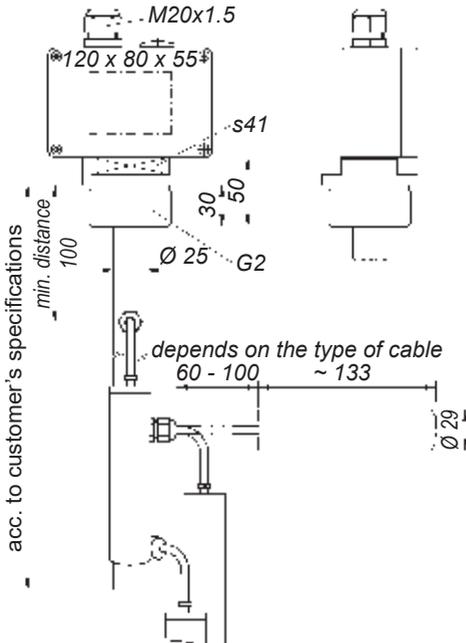


TS/O/2 x SSP ...

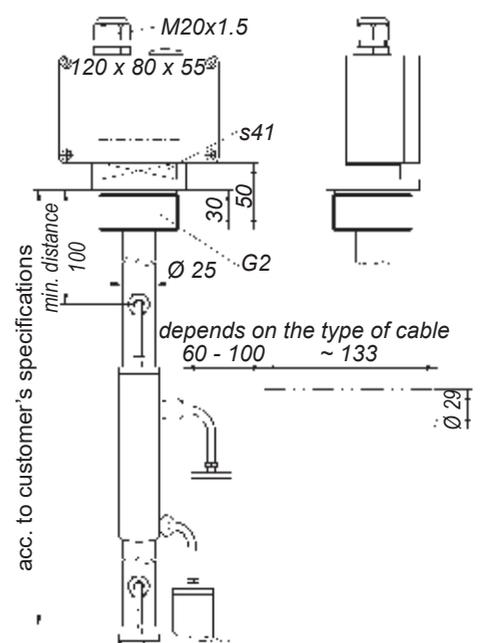


Dimensions in mm

TS/O/3 x SSP ...



TS/O/4 x SSP ...





TS/... immersion probes

for the automatic regulation of liquid levels

Mode of operation:
see example on page 1-1-23



TS/E/1 x SSR ./K/...
with stainless steel stirrup to limit float movement and with cable in place of terminal box

Technical data	TS/PP/. x SSX ./K/...	TS/G/. x SSX ./K/...	TS/E/. x SSR ./K/...
Probe tube: <ul style="list-style-type: none"> • material • Ø • length 	PP	stainless steel 316Ti	see table on page 1-1-26 according to customer's specifications
Flange	on request, but making allowance for the installation dimensions of the mounted floating switches		
Electrical connection	<ul style="list-style-type: none"> • terminal box, protection class IP65 - A 307, PP, for max. 9 terminals, 120 x 80 x 55 mm - A 113 (polyester) or A 113b (cast aluminium), for more than 12 terminals, 160 x 160 x 90 mm • with connecting cable on request 		
Mounting orientation	vertical		
Temperature range	depends on the type of cable used, see page 1-1-11 1-1-11 1-1-15		
Pressure resistance	for pressureless applications, use only under atmospheric conditions		
Floating switches	SSX ./K/... 1-1-11	SSX ./K/... (to be specified) see page 1-1-11	SSR ./K/... 1-1-15

The above equipment will be manufactured in accordance with customer's specifications.

For enquiries or orders, please complete the questionnaire on page 1-1-27 or 1-1-28.

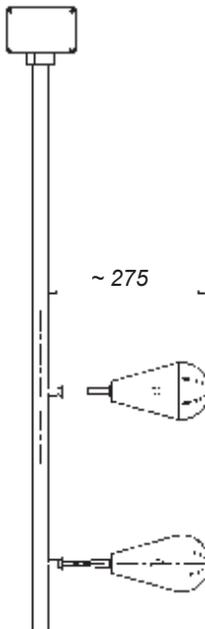
Type overview			
Type designation	Number of mounted floating switches	Floating switches	Probe tube diameter
TS/PP/1 x SSX ... TS/PP/2 x SSX ... TS/PP/3 x SSX ... TS/PP/4 x SSX ... TS/PP/5 x SSX ...	1 2 3 4 5	SSX ...	32 mm
TS/G/1 x SSX ... TS/G/2 x SSX ... TS/G/3 x SSX ... TS/G/4 x SSX ... TS/G/5 x SSX ...	1 2 3 4 5	SSX ...	28 mm 28 mm 34 mm 34 mm 34 mm
TS/E/1 x SSR ... TS/E/2 x SSR ... TS/E/3 x SSR ... TS/E/4 x SSR ... TS/E/5 x SSR ...	1 2 3 4 5	SSR ...	28 mm 28 mm 34 mm 34 mm 34 mm
... = please state exact type designation when ordering On request also with more than 5 mounted floating switches.			

**TS/E/4 x SSR .IK/...
with stirrups**

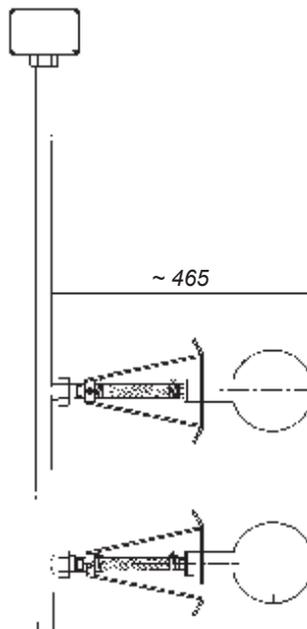


Design examples

TS/G/2 x SSX .IK/...

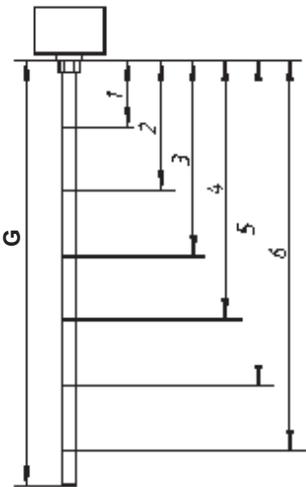


**TS/E/2 x SSR .IK/...
with stirrups**



**Questionnaire for enquiries and orders
for immersion probes with screw-in nipple or flange**

Tank dimensions and installation conditions (sketch if applicable)	
Type of liquid	
Density	
Viscosity	
Temperature	
Desired type	TS/...



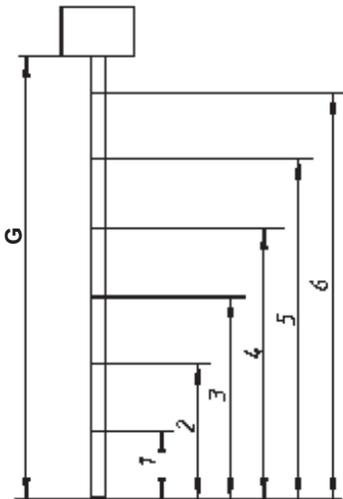
When planning the design of the immersion probes, please consider that **when the liquid level rises**, the contact of the floating switches is not activated when the floating switches reach the horizontal position, but is activated as depicted in the diagrams of the various floating switches on page 1-1-6 and on the following pages.

When the liquid level sinks, the contact of the floating switches is activated **shortly below their horizontal position**.

	Desired floating switch type	Distance from sealing surface of screw-in nipple or flange in mm	Switching function (e.g. high alarm, pump ON, pump OFF, dry-run or overflow protection)	Working direction of the floating switch: rising = ↑ falling = ↓
1				
2				
3				
4				
5				
6				
Desired options:				

**Questionnaire for enquiries and orders
for immersion probes without screw-in nipple or flange**

Tank dimensions and installation conditions (sketch if applicable)	
Type of liquid	
Density	
Viscosity	
Temperature	
Desired type	TS/...



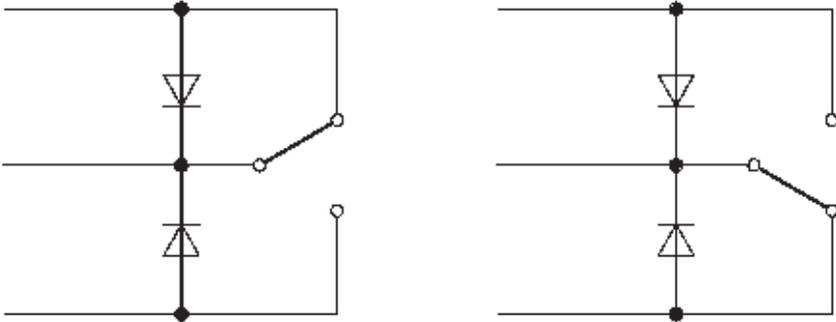
When planning the design of the immersion probes, please consider that **when the liquid level rises**, the contact of the floating switches is not activated when the floating switches reach the horizontal position, but is activated as depicted in the diagrams of the various floating switches on page 1-1-6 and on the following pages.

When the liquid level sinks, the contact of the floating switches is activated **shortly below their horizontal position.**

	Desired floating switch type	Distance from end of probe tube in mm	Switching function (e.g. high alarm, pump ON, pump OFF, dry-run or overflow protection)	Working direction of the floating switch: rising = ↑ falling = ↓
1				
2				
3				
4				
5				
6				
Desired options:				

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

