Data sheet for temperature range -20°C to 105°C
UniEx-Float switch combinable with temperature measurement
Type: UniEx.SS...

II 1/2G Ex ia IIC T3…T6 Ga/Gb
II 1/- D Ex ia IIIC T* °C Da
II 1 D Ex ia IIIC T* °C Da

To be operated in intrinsically safe circuits - Type of protection Ex i

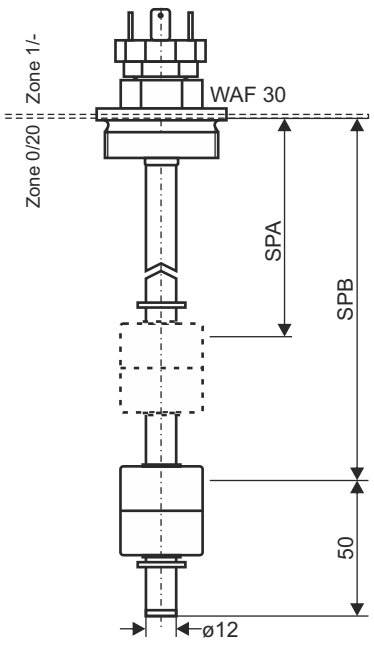
Float switches with ATEX approval are suitable for the use in explosive environment.
The magnet equipped float activates in relation to the level of fluid a reed contact in the sliding tube.
UniEx float switches are manufactured according to customer specifications and are therefore used in the most diverse applications.
Devices of the UniExSS serie may only be operated in connection with an acc. to directive ATEX 2014/34/EU Ex-barrier / switch amplifier. This is not included in the scope of delivery, but can be ordered separately.

Features:
- ATEX approval according to EN 60079-11, EN 60079-26, EN IEC 60079-0
- Several electrical connections, process connections and materials are available
- A large field of application due to the proven functional principle
- Long life span
- Temperature range from -20°C to 105°C (for temperature range to 180°C see separate data sheet)

Applications:
- Level measurement in many liquid media
- Monitoring of processes, predetermined levels as well as pumps and level controls
- Fields of application: chemical, petrochemical, mechanical engineering, shipbuilding industry, offshore facilities, energy plants ...

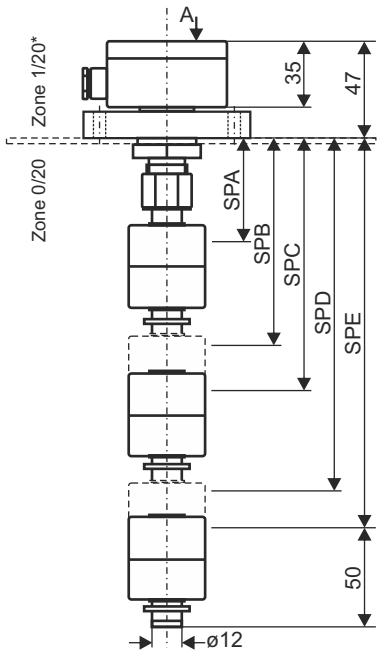
Safety note:
- The float switch may only be operated with certified intrinsically safe circuits with the permissible maximum values.
- The device must be included in the periodic test of the container pressure.
- The float switch must be electrically connected to the equipotential bonding system of the plant.

plug-type connector
3 pole + PE, DIN EN 175301-803
e.g.
UniExSS.E12.x.x.x.x.x.AS03.200.S4.T70S



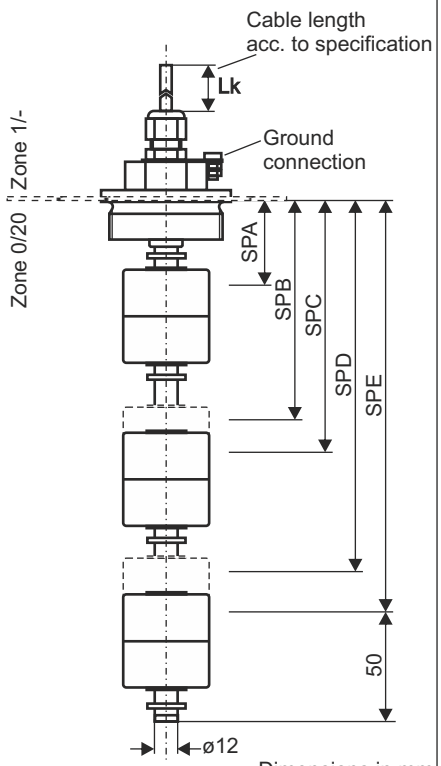
Dimensions in mm

Electrical connection in the housing
e.g.
UniExSS.E12.x.x.x.x.AGN.203.S4.T60S
UniExSS.E12.x.x.x.x.AGU.203.S4.T75O*
UniExSS.E12.x.x.x.x.AGE.203.S4.T75O*



Dimensions in mm

Electrical connection via cable
e.g.
UniExSS.E12.x.x.x.x.x.AKx.200.S4.T70O



Dimensions in mm

Data sheet for temperature range -20°C to 105°C
UniEx-Float switch combinable with temperature measurement
Type: UniEx.SS...

Order key

Example for 2 switching points: UniExSS. E12 . A1 . B4 . 100 . 200 .AGN. 200 . S4 . T60O

Type UniExSS

Material tube
stainless steel tube ø12 -- E12

Function of switching point A 30V/100mA
Switching logic: installation position from above
closes on level rise -- A1
opens on level rise --- A2
closes on level drop - A3
opens on level drop -- A4
change-over contact - A5

Function of switching point B 30V/100mA
Switching logic: installation position from above
closes on level rise -- B1
opens on level rise--- B2
closes on level drop-- B3
opens on level drop-- B4
change over contact- B5

Note:
For a device with only one switching point use switching point B
e.g.: UniExSS.E12.B4.100.AGN.201.S4

Switching length SPA
in mm, acc. to customer sepcification

Switching length SPB
in mm, acc. to customer sepcification

For further switching points
SPC, SPD, SPE... follow the method above
AGU/AGN housing max. 5SP possible
AGE housing max. 3SP possible

Optional*
Temperature switch:
40°C n.c./n.o. contact --- T40O/T40S
in 5°C steps up to 100°C

Temperature sensor PT100 / PT1000
PT100 2 wire --- PT100
PT100 3 wire --- PT103
PT100 4 wire --- PT104
PT1000 2 wire --- PT1000
PT1000 3 wire --- PT1003
PT1000 4 wire --- PT1004

*Max. 2x additional options
further on demand

Float
ø45x53mm material stainless steel --- S4
ø52mm bullet material stainless steel --- S7
ø52mm bullet material titanium --- S22

Process connection *see table 1*
- 200 > G1 ½" thread DIN 3852 form A stainless steel 1.4301
- 201 > G2" thread DIN 3852 form A stainless steel 1.4301
- 203 > standard flange AD120 LK100, stainless steel 1.4301
- 204 > standard flange AD120 LK100 with conduit stainless steel 1.4301
- 205 > standard flange AD74 LK60, stainless steel 1.4404
- 206 > G1 ½" thread, stainless steel 1.4571, 90° right angled
- 207 > G1/2" thread stainless steel 1.4571 ((only in connection with AK)
- 208 > G3/8" thread stainless steel 1.4571 ((only in connection with AK)
- 214 > G1/4" thread stainless steel 1.4571 ((only in connection with AK)

further process connections on demand

Electrical connection *see table 1*
alu housing painted
(***II 1/2 G Ex ia IIC T3...T6 Ga/Gb***) --- AGN
alu housing unpainted
(***II 1 D Ex ia IIIC T*°C Da*** and ***II 1/2 G Ex ia IIC T3...T6 Ga/Gb***) --- AGU
stainless steel housing 1.4571
(***II 1 D Ex ia IIIC T*°C Da*** and ***II 1/2 G Ex ia IIC T3...T6 Ga/Gb***) --- AGE

The following apple to ***II 1/2 G Ex ia IIC T3...T6 Ga/Gb*** and
II 1/- D Ex ia IIIC T*°C Da
plug-type connector 3 pole + PE DIN --- AS03
plug-type connector M12 4 pole --- AS04
plug-type connector M12 5 pole --- AS05
plug-type connector M12 6 pole --- AS06
plug-type connector M12 8 pole --- AS07
sheathed cable (length in mm) --- AK, e.g. AK2500 = cable length 2500mm

Table 1	Electrical connection								
Process connection	AS03	AS04	AS05	AS06	AS07	AGN	AGU	AGE	AK
200, 201, 203, 204, 205, 206	x	x	x	x	x	x	x	x	x
207, 208, 214									x

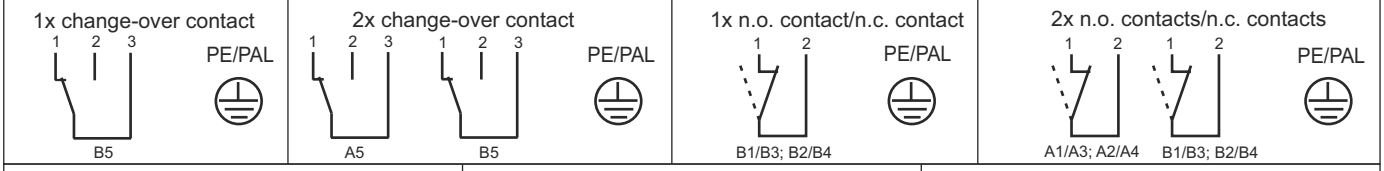
Technical data

Connection:	see electrical connection above, further electrical connections on demand
Process connection:	see respective design, special mounting on demand
Tube:	ø12mm - material stainless steel 1.4571, further materials on demand
Tube length:	according to specification, max. 3000mm
Float:	ø45x52mm cylinder, material stainless steel 1.4571, type S4 ø52mm bullet, material stainless steel 1.4571 or titanium, Typ S7
Reed contacts:	max. 6x n.o. contact / n.c. contact or change-over contact
Switching capacity:	Ui.30V Ii: 100mA / Pi according to type examination certificate BVS 15 ATEX E086 X
Pressure:	atmospheric, max. 6bar, higher pressures on request
Protection rating:	IP 65
Operating temperature:	-20°C to 105°C in medium, -20°C to 70°C above process connection
Limit density	ρ≥0,75g/cm³

Data sheet for temperature range -20°C to 105°C
UniEx-Float switch combinable with temperature measurement
Type: UniEx.SS...

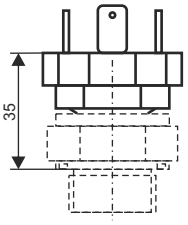
Terminal diagrams

Further termial diagrams on demand

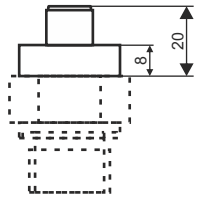


Electrical connections

Connection: AS03
plug-type connecto 3-pole + PE, DIN EN 175301-803

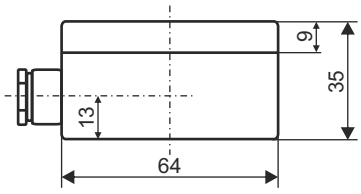


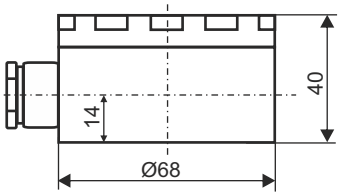
Connection: AS04 to AS07
plug-type connector M12x1



Equipotential bonding via
housing / process connection

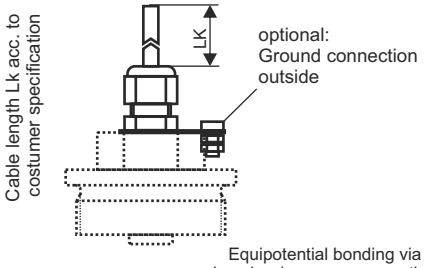
Connection: AGN, AGU or AGE
in the housing circuit board with terminals 1,5mm²





AGU= connection housing alu 64x58x35 unpainted with screw gland metal
AGN= connection housing alu 64x58x35 painted with screw gland plastic / blue (only for gas atmosphere)
AGE= connection housing stainless steel Ø68x40 with screw gland metal

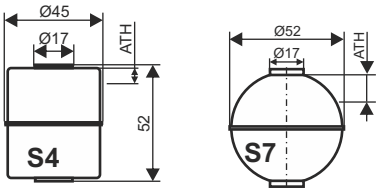
Connection: AK
with sheathed cable e.g. Ak2500 = Lk 2500mm



Equipotential bonding via
housing / process connection

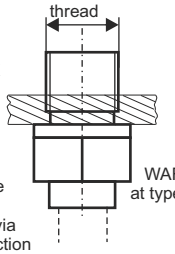
Float

Cylindrical and bullet float material stainless steel
- ATH: Height above medium
surface: 0,998 g/cm³
S4:12mm / S7:21mm
Limiting density ρ≥0.75g/cm³



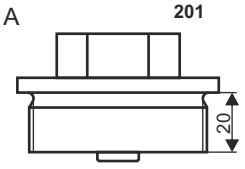
Process connections

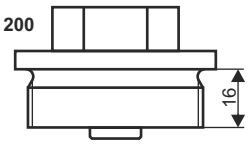
Thread with cable outlet:
207 - G1/2”
208 - G3/8”
214 - G1/4”
only in connection with AK



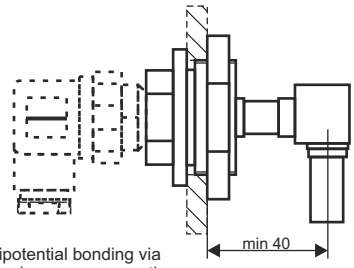
Mounted on the inside
of the tank
Equipotential bonding via
housing / process connection

thread:
200 - G1 1/2” form A
201 - G2” form A



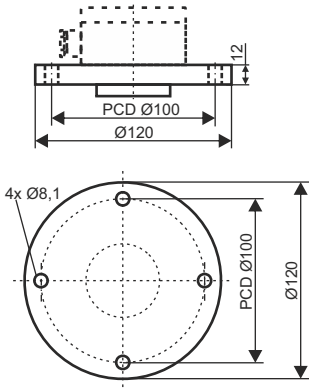


Thread: 206 - G1 1/2” angled

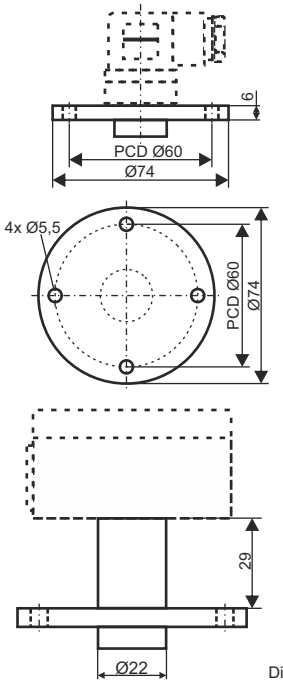


Equipotential bonding via
housing / process connection

Standard flange
203 - OD120 PCD4/100 stainless steel
204 - stainless steel with conduit



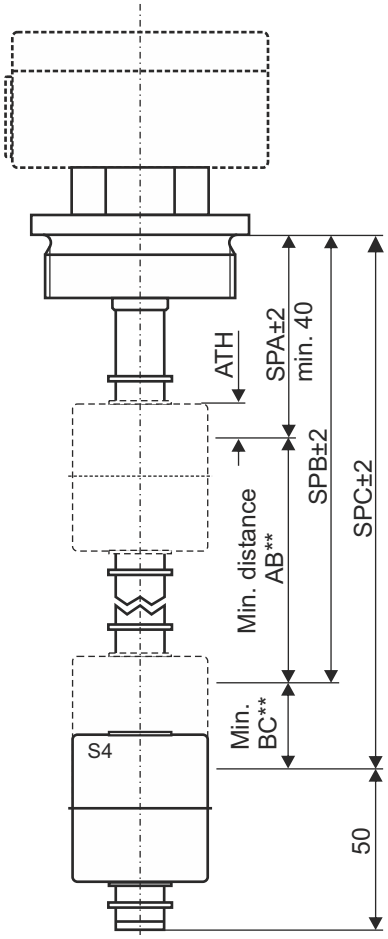
Standard flange stainless steel
205 - OD74 PCD4/60



Dimensions in mm

Data sheet for temperature range -20°C to 105°C
UniEx-Float switch combinable with temperature measurement
Type: UniEx.SS...

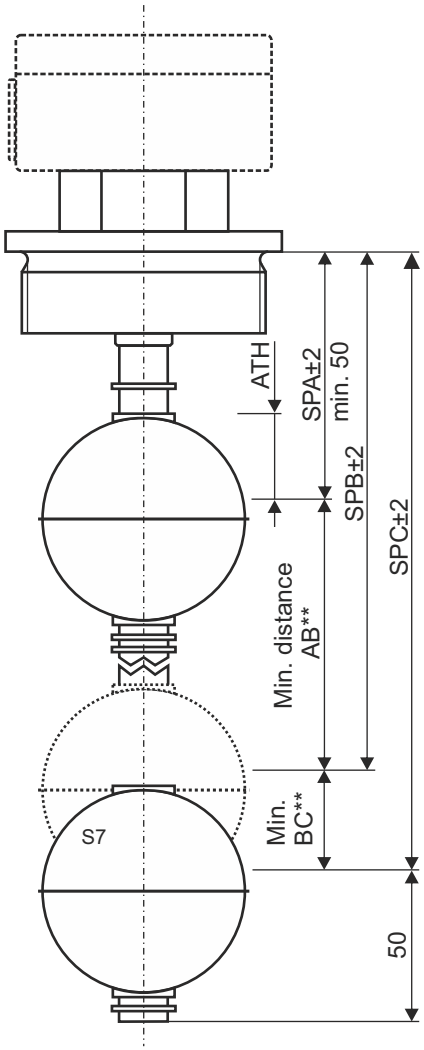
Process connection 200



Float S4	
Process connection	minimum distance SPA
200	40
201	45
203	35
204	35
205	35
206	40
207	40
208	40
214	40

S4	Distances between the switching points	
Number switching points	**AB:** min. distance between SPA and SPB	**BC:** min. distance between SPB and SPC
2	10	–
3	70	10
3	10	70

Process connection 201



Float S7	
Process connection	minimum distance SPA
201	50
203	35
206	45
207	45
208	45
214	45

S7	distances between the switching points	
Number switching points	**AB:** min. distance between SPA and SPB	**BC:** min distance between SPB and SPC
2	10	–
3	70	10
3	10	70

Data sheet for temperature range -20°C to 105°C
UniEx-Float switch combinable with temperature measurement
Type: UniEx.SS...

Formular types

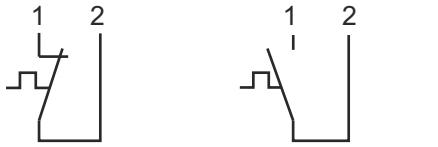
UniExSS... T60Ö. T70S

Type - see page 2
float switch

Temperature switch 1
e.g. 60°C n.c. contact

Temperature switch 2
e.g. 70°C n.o. contact

Terminal diagram



J T: n.c. contact J T: n.o. contact

Technical data temperature switch

Temperature switch:	Bi-Metal
Switching function:	normally closed / normally open contact
Accuracy:	±5°C, smaller tolerances on demand
	reset-temperature = Temp.-switching point - 3KC±15K
Number of contacts:	max. 2 temperature switches
Switching capacity:	Ui: 30V
	Ii: 100mA / Pi according to type examination certificate BVS 15 ATEX E086 X

Platinum Resistors according to DIN EN 60751 - class B are used in all float switches with PT100 / PT1000 temperature sensors.
PT100 / PT1000 temperature sensors are designed in 2-, 3- and 4-wire technology. When combined with float switches it provides a space-saving and cost-effective solution.

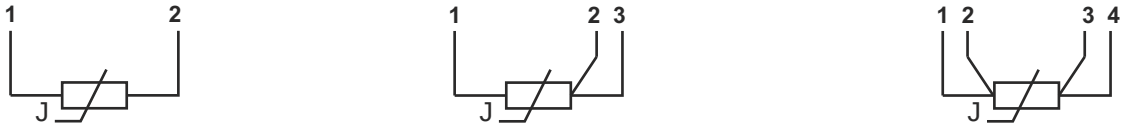
Formular types

UniExSS...PT103

Type - see page 2
float switch

Temperature sensor
e.g. PT100-3-wire

Terminal diagrams PT100/PT1000



2 - Draht 3 - Draht 4 - Draht

Technical data temperature sensor

Temperature sensor:	platinum resistor PT100 / PT1000 according DIN EN 60751, class B
Nominal resistance	
PT100:	100 Ohm
PT1000:	1000 Ohm
Temperature coefficient:	0.00385
Tolerance class:	DIN EN 60751, class B
Self-heating	0,4 K/mW
PT100:	0,2 K/mW
PT1000:	
Long-term stability after 1000h at 150°C:	R0 Drift < 0.06 %