

Data sheet

UniEx-Mini float switch combinable with temperature measurement Type: UniEx.M...

- 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

Mini - 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.M float switches are manufactured according to customer specifications and are therefore used in the most diverse applications.

Devices of the UniExM series may only be operated in connection with according 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:

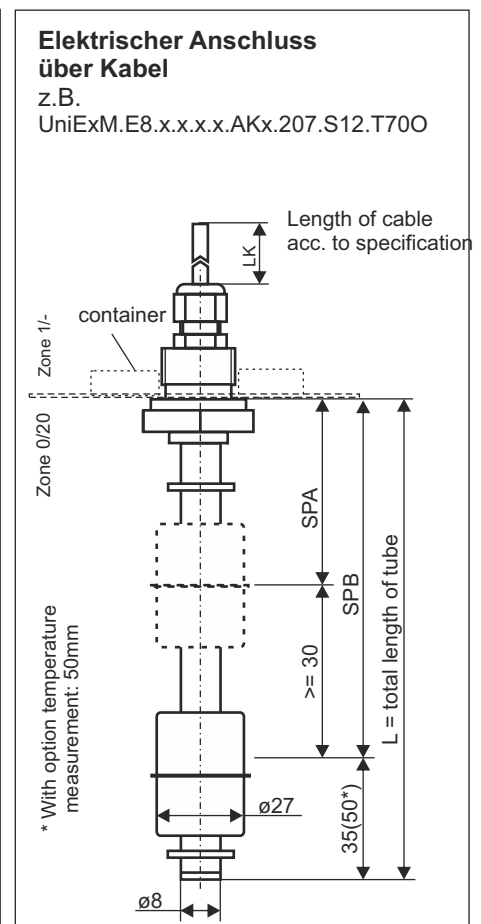
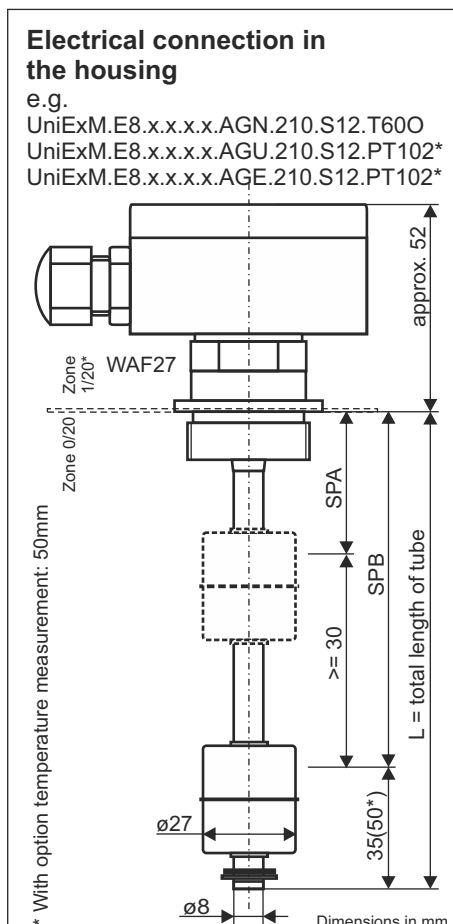
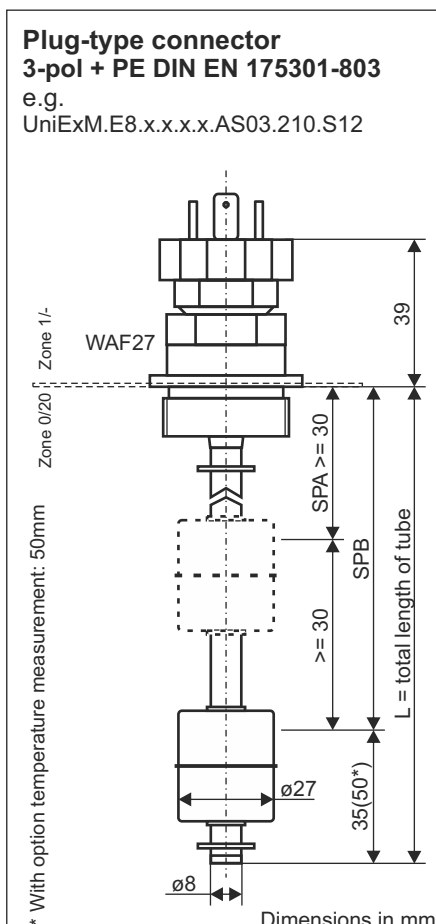
- ATEX approval according to EN 60079-11, EN 60079-26, EN IEC 60079-0
- Several electrical connections, process connections and materials are available
- A large field of application due to the proven functional principle
- Long life span

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 unit.



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UniEx-Mini float switch combinable with temperature measurement

Type: UniEx.M...

Order key

UniExM. E8 . A1 . B4 . 100 . 200 . AGN. 205. S12. T600

Type UniExM

Material tube
stainless steel tube ø8 -- E8

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.: UniExM.E8.B4.100.AGN.208.S12
„C“ is used for devices with 3 switching points

Switching length SPA
in mm, acc. to customer specification

Switching length SPB
in mm, acc. to customer specification

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 und 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 und II 1/2 G Ex ia IIC T3...T6 Ga/Gb) --- AGE
The following apply 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

Optional*
Temperature switch:
60°C n.c. /n.o. contact --- T600/T60S
65°C n.c. /n.o. contact --- T650/T65S
70°C n.c. /n.o. contact --- T700/T70S
75°C n.c. /n.o. contact --- T750/T75S
80°C n.c. /n.o. contact --- T800/T80S
85°C n.c. /n.o. contact --- T850/T85S

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. 1x additional option further options on demand

Float
S12 - ø27x31mm material stainless steel

Process connections see table 1

- 200 > G1 1/2" thread, DIN 3852 Form A, stainless steel 1.4301
- 205 > standard flange AD74 PCD60, stainless steel 1.4571
- 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)
- 210 > G1" thread, stainless steel 1.4301
- 214 > G1/4" thread, stainless steel 1.4571 (only in connection with AK)

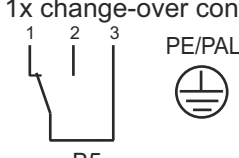
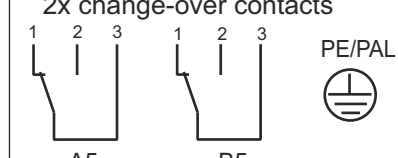
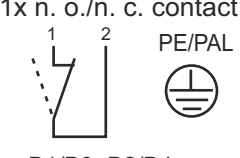
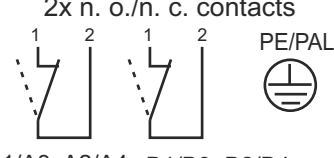
further process connections on demand

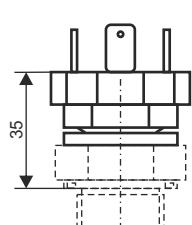
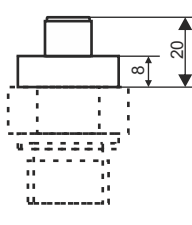
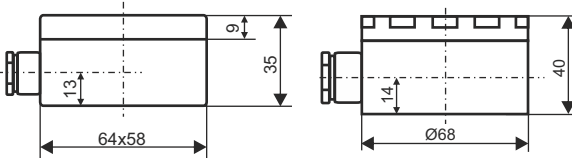
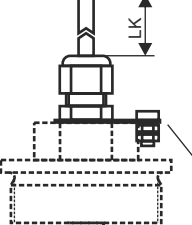
* The variety of configuration options can't be shown in full. Any device combination must be checked and confirmed by Engler

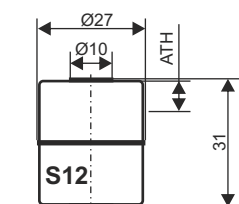
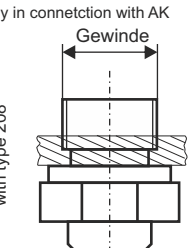
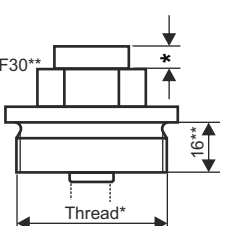
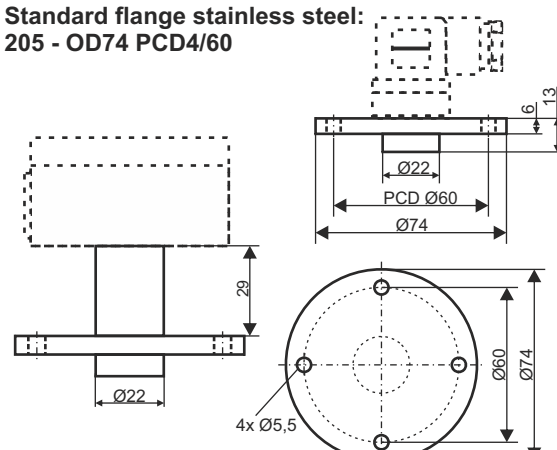
Table 1	Electrical connection								
Process connections	AS03	AS04	AS05	AS06	AS07	AGN	AGU	AGE	AK
200	X	X	X	X	X	X	X	X	X
205	X	X	X	X	X	X	X	X	X
207									X
208									X
210	X	X	X	X	X	X	X	X	X
214									X

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Terminal diagrams		Other terminal diagrams on demand	
<p>1x change-over contact</p>  <p>B5</p>	<p>2x change-over contacts</p>  <p>A5 B5</p>	<p>1x n. o./n. c. contact</p>  <p>B1/B3; B2/B4</p>	<p>2x n. o./n. c. contacts</p>  <p>A1/A3; A2/A4 B1/B3; B2/B4</p>

Electrical connections			
<p>Connection: AS03 plug-type connector 3-pol. + PE, DIN EN 175301-803</p>  <p>Dimensions in mm</p>	<p>Connection: AS04 to AS07 plug-type connector M12x1</p>  <p>Equipotential bonding via Housing / process connection</p>	<p>Connection: AGN, AGU or AGE Connection in the housing board with terminals 1.5mm²</p>  <p>AGU = connection housing alu 64x58x35 unpainted with screw gland metal AGN = connection housing alu 64x58x35 painted with screw gland plastic / blue AGE = connection housing stainless steel Ø68x40 with screw gland metal</p>	<p>Connection: AK with sheathed cable e.g. Ak2500 = Lk 2500mm</p>  <p>Cable length Lk acc. to customer specification</p> <p>Ground connection outside</p> <p>Equipotential bonding via Housing / process connection</p>

Float	Process connections	
<p>Cylindrical float material stainless steel - ATH: Height above medium surface at density: 0,998 g/cm³ for float S12 = 6mm Limiting density $\rho \geq 0.75 \text{ g/cm}^3$</p>  <p>Dimensions in mm</p>	<p>Thread with cable outlet: 207 - G1/2" 208 - G3/8 214 - G1/4" only in connection with AK</p>  <p>with type 208</p> <p>Mounted on the inside of the tank Equipotential bonding via Housing / process connection</p>	<p>Thread: 200 - G1 1/2" form A 210 - G1"</p>  <p>WAF30**</p> <p>Thread*</p> <p>**value only valid for thread type 200</p>
	<p>Standard flange stainless steel: 205 - OD74 PCD4/60</p> 	

Technical data	
Connection:	see electrical connection above, further electrical connections on demand
Process connection:	see respective design, special mounting on demand
Tube:	Ø8mm - material stainless steel 1.4571, further materials on demand
Tube length:	according to specification, max. 1500mm
Float:	material stainless steel 1.4571, cylinder Ø27x31mm, type S12
Reed contacts:	max. 3 normally open/ normally closed contacts or change-over contacts (without temperature switch or PT100/PT1000)
Switching capacity:	Ui: 30V Ii: 100mA - Pi gemäß Baumusterprüfbescheinigung BVS 15 ATEX E086 X
Pressure:	atmospheric, max. 6bar higher pressures on request
Protection rating:	IP 65
Operating temperature:	see temperature classification, above mounting -20°C to 70°C
Temperature switch:	in combination with max. 2 switching contacts n.o. / n.c. contact or change over contact
PT100 / Pt1000:	in combination with max. 2 switching contacts n.o. / n.c. contact or change over contact
Limit density:	$\rho \geq 0,75 \text{ g/cm}^3$

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UniEx-Mini float switch combinable with temperature measurement

Type: UniEx.M...

Float S12	
Process connection	minimum distance SPA
200	35
205	25
207	30
208	30
210	30
214	30

*see page 2

S12	Distances between the switching points	
	Number switching points	AB: min. distance between SPA and SPB
2	10	–
3	30	10
3	10	30

* with option temperature measurement 50mm

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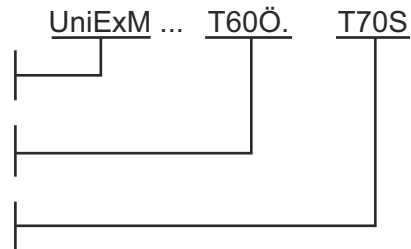
Temperature switches are **bimetallic**. Due to their small size they are a popular alternative for detecting temperatures. The combination of temperature switch and float switch in a single device, represents a variant often used in industrial applications.

Formular types

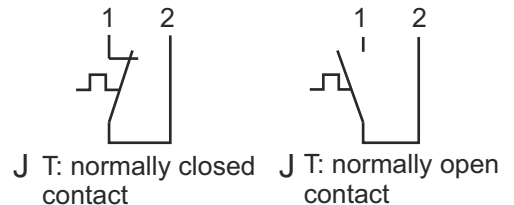
Type - see page 2
float switch

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

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



Terminal diagrams



Technical data temperature switch

Temperature switch: Bi-metal

Switching function: normally closed / normally open contact

Accuracy: $\pm 5^{\circ}\text{C}$, smaller tolerances on demand
reset-temperature = Temp.-switching point - $30^{\circ}\text{C} \pm 15^{\circ}\text{C}$

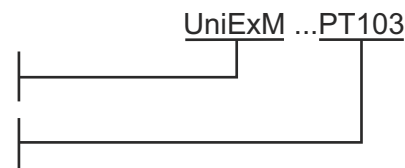
Number of contacts: max. 2 temperature switches

Switching capacity: U_i : 30V
 I_i : 100mA - P_i according to type examination certificate BVS 15 ATEX E086 X

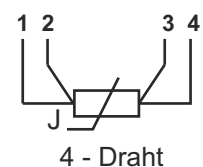
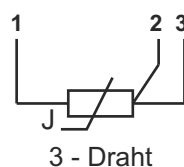
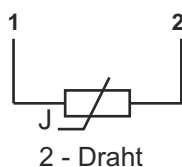
Order key

Type - see page 2
float switch

Temperature sensor
e.g. PT100-3-wire



Terminal diagrams PT100/PT1000



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

PT100: 0,4 K/mW

PT1000: 0,2 K/mW

Long-term stability after 1000h at 150°C: $R_0 < 0.06\%$