

Level Switches

UNS1000

Function

The multi Level Switch Series UNS1000 can be supplied with up to 5 switchpoints (see "Max. Switchpoints"). Besides the float operated reed contacts to detect liquid levels, the UNS1000 can be supplied also with a PT100 temperature sensor or with a temperature switch TS.

A wide selection of mounting elements, electrical connections, various materials and options allow you to "design" your own switch, within the given dimension limits, for your particular application. (see "Order code") The min. dimensions are based upon the medium water. Depending on the density of other fluids this dimension can vary several millimeters. The contact modes (NO or NC) are defined on the basis of an empty tank and for installation through the top or through the bottom (when specified as "-U"). When not specified otherwise we will set the switch position for density 1 (water) and the switch action to be on moving upward.

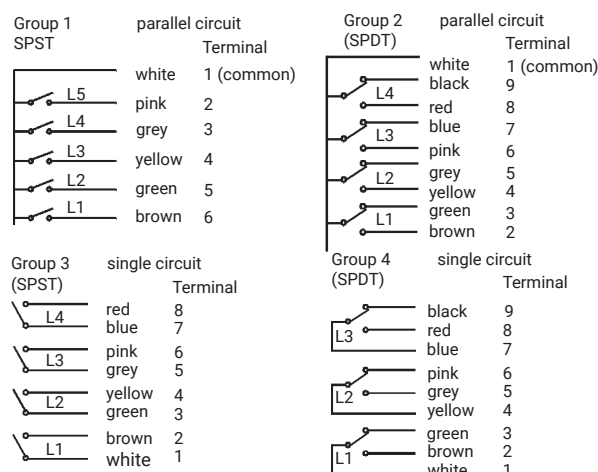
The mounting position should be vertical, $\pm 30^\circ$, though top or bottom.



Technical Data

Max. Temperature Range	PVC-cable; flexible: -5°C ... +70°C, fixed: -40°C ... +80°C, Silicone cab. (-HT): ATEX Exi limited to -40°C ... +75°C.
Min. Fluid Specific Gravity	See specifications below
Mounting Position	Vertical, $\pm 30^\circ$, through top or bottom
Protection Class	IP54: ST2, K (Si-cable) IP65: ST1, KL6, KL12, PG, K (PVC cable) IP67, IP68: on request
Weight	Depends on length and design
Options	See order code
Approvals	cULus - E42816
Certificate TÜV 18 ATEX 214370 X Issue 01, IECEx TUN 17.0039X Issue 01	EX: switch with floats from Buna-N or other plastic material (PE, PVC, PTFE or PA), as well as with ST1-plug
	II 1 G Ex ia IIB T6 Ga or II 1/2 G Ex ia IIB T6 Ga/Gb or II 2 G Ex ia IIB T6 Gb or II 1 D Ex ia IIIC T100°C Da
	other float switches: II 1 G Ex ia IIC T6 Ga or II 1/2 G Ex ia IIC T6 Ga/Gb or II 2 G Ex ia IIC T6 Gb or II 1 D Ex ia IIIC T100°C Da
Ambient temperature range: switch with PVC and CR-cable material: $-20^\circ\text{C} \leq T_a \leq +75^\circ\text{C}$ switch with SI, PUR, FEP-cable material: $-40^\circ\text{C} \leq T_a \leq +75^\circ\text{C}$ Maximum values: $U_i = 28\text{ V}$, $I_i = 125\text{ mA}$, $P_i = 0.5\text{ W}$	

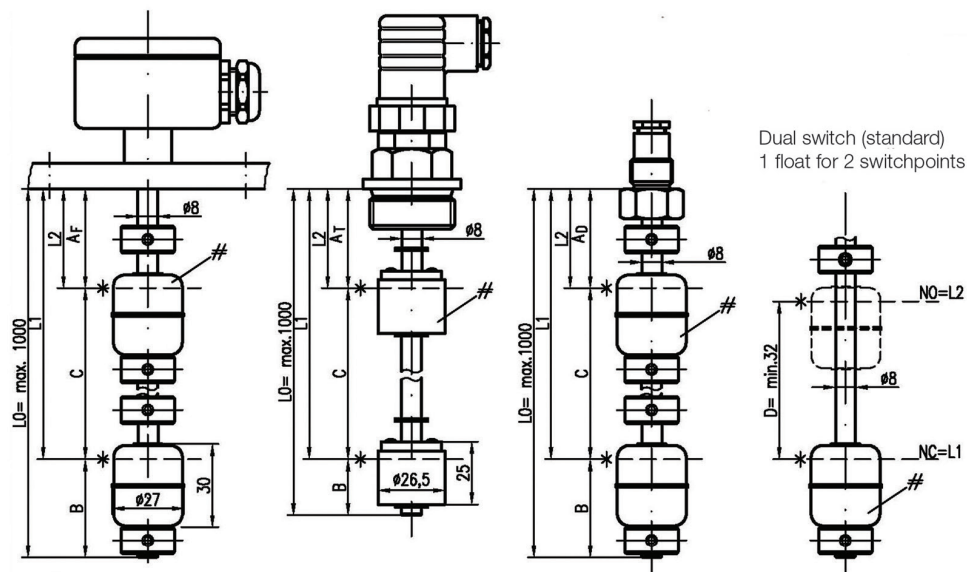
Contact Wiring



Level Switches

UNS1000

Dimensions (mm / inch)



For NPT tank screw connections dimensions from bottom of thread

L0 = max. 1000 mm

* Immersion depth at density 1:
 VA27 = 21 ± 2 mm (30 mm high)
 BN25 = 13 ± 2 mm (30 mm high)
 VA44 = 22 ± 2 mm (42 mm high)
 BN18 = 15 ± 2 mm (25 mm high)

Float position:

VA27 = NO/NC

(VA44) SPDT

BN25 = NO, WE (SPDT)

NC

(BN18) NO, WE (SPDT)

-> see float marking

-> NO-function

-> compound points at bottom

-> compound points at top

-> magnet ring at bottom

Switchpoint Dimensions

Dimensions	Distances between L1 and L0 ¹ in mm								
Float type	A _F	A _{T1}	A _D	B	B _{PT}	B _{TS}	B _{DR}	C	D
VA27	26	42	38	40	50	55	60	65	32
BN25/BN18	22	37	34	25	35	40	45	45	32
VA44	36	52	48	35	45	50	55	70	32

B_{PT} = First switch point with option PT100 (mounting on bottom)

B_{TS} = First switch point with option TSxx/2 (mounting on bottom)

¹ others on request

Max. Switchpoints

Connection group	KL6	KL12	ST1	ST2	PG / Cable connection
1	5	5	2	5	3
2	2	4	1	2	1
3	3	4	1	3	2
4	2	3	1	2	1

Max. Switchpoints with HT-version

Connection group	PG / Cable connection
1	2 NO
2	1 SPDT
3	1 NO
4	1 SPDT

Level Switches

UNS1000

Brass Version

Order Code

Type	Level Switch					
UNS1000						
Material of Stem and Mounting Element						
-MS	- Brass, CW614N / CW508L (former Ms58 / Ms63)					
Mounting Element (other on request)						
-G1/8	- G1/8" mounting thread for inside mounting; only with cable (K) - not available with option TS					
-G3/8	- G3/8" mounting thread for inside mounting; only with (PG) or (K)					
-T1/2	- G1/2" tank screw, only with BN18 float					
-T1	- G1" tank screw (not with VA44 float)					
-M20x1,5	- Tank screw M20x1,5 mm (only BN18)					
-T1NPT	- 1" NPT-tank screw (not with VA44 float)					
Electrical Connection (see table "max. Switchpoints")*						
- ST1	- Cube Plug DIN EN 175301-803-A (former DIN 43650), 3-pin + ground, IP65 with mating plug					
- ST2	- Angle Plug DIN 43651, 6-pin + ground, IP54 with mating plug, not ATEX approved					
- M12x1	- M12x1 mm plug, 4-pin, IP65, without mating plug					
- KL6	- Aluminium Terminal Box, 6 terminals, not ATEX Ex ia approved, IP65					
- KL12	- Aluminium Terminal Box, 9 terminals, not ATEX Ex ia approved, IP65					
- PG	- Cable Gland with 1 m PVC-cable, other length on request, IP65					
- K	- PVC-cable sealed, specify length on order, IP65					
- KX4	- Aluminium Terminal Box, 4 terminals, ATEX Ex ia approved, IP67					
- KX8	- Aluminium Terminal Box, 8 terminals, ATEX Ex ia approved, IP67					
Float type	min. Density	Material	Form	Dia-meter	max. Temp.	max. Pressure (+20°C)
-BN25	0,57 g/cm³	NBR foamed	Cylinder	25 mm	100 °C	15 bar
-BN18	0,64 g/cm³	NBR foamed	Cylinder	28 mm	100 °C	4 bar
Number of Switchpoints						
L1	= 1 Switchpoint					
L2	= 2 Switchpoints					
L3	= 3 Switchpoints					
L4	= 4 Switchpoints					
L5	= 5 Switchpoints					
Contact Modes			Contact Rating			
1 - SPST (NO)			230 V AC / DC, 2 A, 40 VA / W			Basic: empty tank
2 - SPST (NC)			230 V AC / DC, 2 A, 40 VA / W			
3 - SPDT (WE)			150 V AC, 100 V / DC, 0,1 A, 3 VA / W			
Total Length: L0 = ... mm (max. 1000 mm)						
Specify with your order: L1 = mm, L2 = ... mm, etc.						

Example

UNS1000 -MS/ -T1 -KL6 -BN25 L2/ 2.1

Options

U = Mounting through bottom

UL = Underwriters Laboratories (only with AC voltage)

VV = Vertical Adjustment (max. 5 bar), on request

PT100 = PT100-Sensor

TSxx/2 = Temperature Switch TS, Contact Rating: 24 V AC/DC 1A, 20 VA / W
xx = Standard: +60°C, +70°C, +80°C +90°C
/2 = NC, not available in ATEX Exi version

Exi = ATEX Ex ia (intrinsically safe) approval, siehe www.barksdale.de

HT = High Temperature Application (-40 °C...+150 °C), cable and wires in silicone, ATEX Exi limited to -40 °C...+ 75 °C.

DUAL = one float with two level switch points

* Other electrical connections upon request

Needed order information, e.g.

L1 = 150 mm NC

L2 = 85 mm NO

Connection group: 3
(see tab. "Max. Switchpoints and "Wiring code")

Schwimmerschalter UNS1000

VA Version

Order Code

Typ:		Level Switch					
UNS1000							
Material of Stem and Mounting Element							
-VA	- stainless steel 1.4571						
Mounting Element							
-G1/8	- G1/8" mounting thread for inside mounting: only with cable (K)						
-G3/8	- G3/8" mounting thread for inside mounting: only with (PG) or (K)						
-T1/2	- G1/2" Tank screw, only with BN18 float						
-T1	- G1" Tank screw (not with VA44 float)						
-T1.5	- G1 1/2" Tank screw						
-FL2	- Flange DIN 2527, DN 32/PN16, (not with VA44 float)						
-FL3	- Flange DIN 2527, DN 50/PN16						
-FLA3	- Flange ASME 16.5, 2" 150lbs, RF						
-T1NPT	- 1" NPT-Tank screw (not with VA44 float)						
Electrical Connections (see table "Max. Switchpoints")*							
-ST1	- Cube Plug DIN EN 175301-803-A (former DIN 43650), 3-pin+ ground, IP65 with mating plug						
-ST2	- Angle Plug DIN 43651, 6-pin + ground, IP54 with mating plug, not ATEX approved						
-M12x1	- M12x1 mm plug, 4-pin, IP65, without mating plug						
-KL6	- Aluminium Terminal Box, 6 terminals, not ATEX Ex ia approved, IP65						
-KL12	- Aluminium Terminal Box, 9 terminals, not ATEX Ex ia approved, IP65						
-PG	- Cable Gland with 1 m PVC-cable, other length on request, IP65						
-K	- PVC-cable sealed, specify length on order, IP65						
-KX4	- Alminium Terminal Box, 4 terminals, ATEX Ex ia approved, IP67						
-KX8	- Aluminium Terminal Box, 8 terminals, ATEX Ex ia approved, IP67						
Float type	min. Density Medium	Material	Form	Dia- meter	max. Temp.	max. Pressure (+20°C)	
-VA27	0,71 g/cm³	SS 1.4571	Cylinder	27 mm	150 °C	15 bar	
-VA44, not ATEX Exi approved	0,67 g/cm³	SS 1.4571	Ball	44 mm	150 °C	15 bar	
Number of Switchpoints							
L1	= 1 Switchpoint						
L2	= 2 Switchpoints						
L3	= 3 Switchpoints						
L4	= 4 Switchpoints						
L5	= 5 Switchpoints						
Contact Mode			Contact Rating				
1 - SPST (NO)			230 V AC / DC, 2 A, 40 VA / W		Basic: empty tank		
2 - SPST (NC)			230 V AC / DC, 2 A, 40 VA / W				
3 - SPDT (WE)			150 V AC, 100 V / DC, 0,1 A, 3 VA / W				
Total Length: L0 = ... mm (max. 1000 mm)							
Specify with your order: L1 = mm, L2 = ... mm, etc.							

Example
UNS1000 -VA/ -T1 -KL6 -VA27 L2/ 2.1

Options

U =	Mounting through bottom
UL =	Underwriters Laboratories (only with AC voltage)
HT =	High Temperature Application (-40 °C...+150 °C), cable and wires in silicone, ATEX Exi limited to -40 °C...+ 75 °C.
VV =	Vertical Adjustment (max. 5 bar), on request
PT100 =	PT100-Sensor
Exi =	ATEX Ex ia (intrinsically safe) approval, see www.barksdale.de
DUAL =	One float with two level switch points

* Other electrical connections upon request

Needed order information, e.g.

L1 = 150 mm NC
L2 = 85 mm NO
Connection group: 3 (see table "max. Switchpoints" and "Wiring Code")