

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.

Max. temperature range: -10°C...+105°C (Standard), Option: -40°C...+150°C, Silicone cable (-HT), HT: ATEX Exi limited to (-40°C ... +75°C).

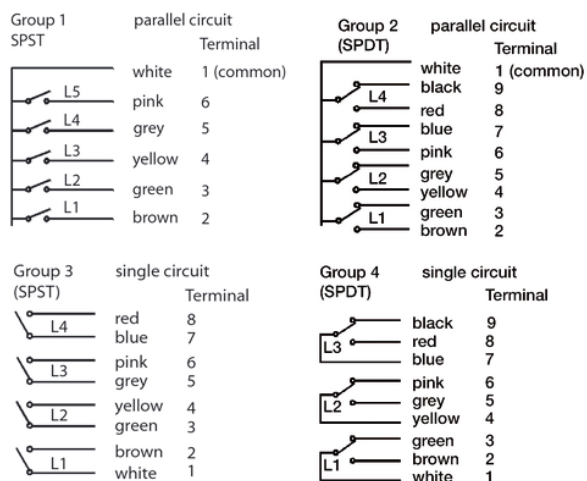
The mounting position should be vertical, $\pm 30^\circ$, though top or bottom.



Technical Data

Max. Temperature Range:	-10 °C...+105 °C, PVC-cable -40 °C...+150 °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
Certificate TÜV 18 ATEX 214370 X Issue 01, IECEx TUN 17.0039X Issue 01	<p>EX: switch with floats from Buna-N or other plastic material (PE, PVC, PTFE or PA), as well as with ST1-plug</p> <p>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</p> <p>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</p> <p>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: $U_i = 28\text{ V}$, $I_i = 125\text{ mA}$, $P_i = 0.5\text{ W}$</p>

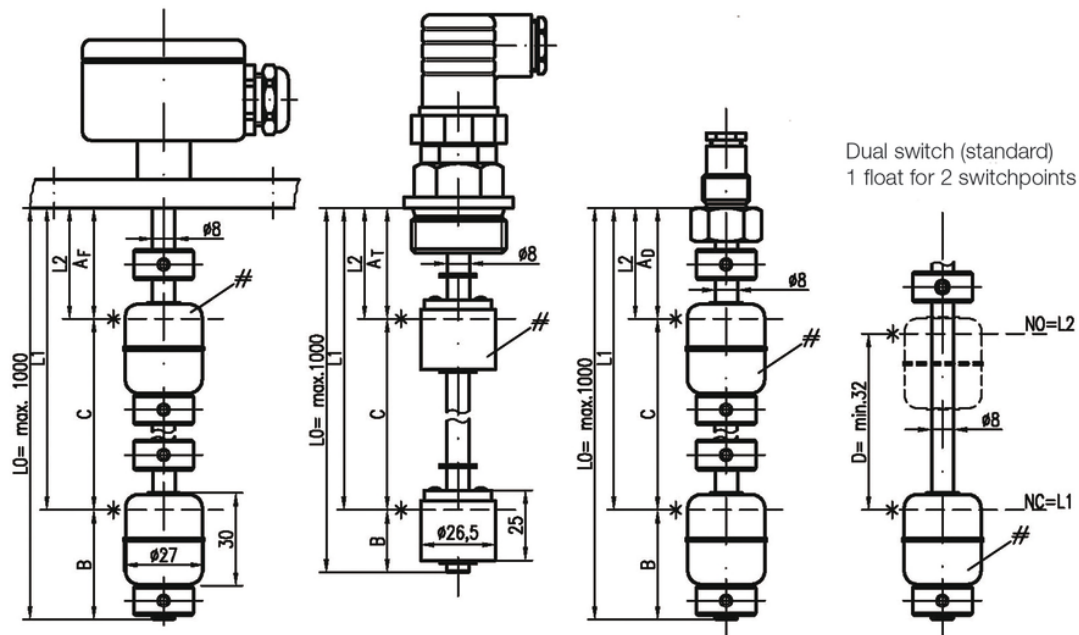
Contact Wiring



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 → see float marking
 (VA44) SPDT → NO-function
 BN25 = NO, WE (SPDT) → compound points at bottom
 NC → compound points at top
 (BN18) NO, WE (SPDT) → magnet ring at bottom
 NC → magnet ring at top

Switch Point Dimensions

Dimensions	Min. distances 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)

Max. Switchpoints

	KL6	KL12	ST1	ST2	Pg Cable connect.
Connect. group 1	5	5	2	5	3
Connect. group 2	2	4	1	2	1
Connect. group 3	3	4	1	3	2
Connect. group 4	2	3	1	2	1

*not valid for "HT" option

Level Switches

UNS1000

Brass Version

Order Code

Type:

UNS1000

Material of Stem and Mounting Element:

MS - Brass, CW614N / CW508L (former Ms58 / Ms63)

Mounting Element (other on request)

1/8 - G1/8" mounting thread for inside mounting: only with cable (K)

3/8 - 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 - Aluminum Terminal Box, 6 terminals, not ATEX Ex ia approved, IP65

KL12 - Aluminum Terminal Box, 9 terminals, not ATEX Ex ia approved, IP65

PG - Cable Gland with 1 m PVC-cable, other length on request, IP65

K - PCV-Cable sealed, specify length at order, IP54

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 Medium	Material	Form	Dia-meter	max. Temp.	max. Pressure (+20 °C)
BN25	0,57 g/cm ³	NBR foamed	Cylinder	25 mm	100 °C	15 bar
BN18	0,64 g/cm ³	NBR foamed	Cylinder	18 mm	100 °C	4 bar

Number of Switchpoints

L1 = 1 Switchpoint

L2 = 2 Switchpoint

L3 = 3 Switchpoint

L4 = 4 Switchpoint

L5 = 5 Switchpoint

See also "Connections Groups" in table "Max. Switchpoints"

Contact Modes

Contact Rating

1 - SPST (NO) 230 V AC / DC, 2 A, 40 VA / W

2 - SPST (NC) 230 V AC / DC, 2 A, 40 VA / W

3 - SPDT (WE) 150 V AC, 100 V / DC, 0.2 A, 3 VA / W

Total Length: L0 = ...mm (max. 1000 mm)

Specify with your order: L1 = ...mm, L2 = ...mm, etc

Basic: empty tank

UNS1000 - MS/ - T1 -KL6 -BN25 L2/ 2.1 (Example)

Options:

U = Mounting through bottom

VV = Vertical Adjustment (max. 5bar)

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, see www.barksdale.de

DR = Damping Tube

HT = High Temperature Application (-40 °C...+100 °C), cable and wires in silicone, ATEX Exi limited to -40 °C ... + 75 °C

DUAL = one float with two level witch points

* Others electrical connections upon request

Needed order information, e.g.:

L0 = 215 mm

L1 = 185 mm NC

L2 = 140 mm NO

Connection group: 3

(see table "max. Switching point/Connection code")

VA Version

Order Code

Type:

UNS1000

Material of Stem and Mounting Element:

VA = stainless steel 1.4571

Mounting Element (other on request)

1/8	- G1/8" mounting thread for inside mounting: only with cable (K)
3/8	- G3/8" mounting thread for inside mounting: only with (PG) or (K)
T1/2	- G½" Tank screw, only with BN18 float
T1	- G1" Tank screw (not with VA44 float)
T1.5	- G1½" 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 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	- Aluminum Terminal Box, 6 terminals, IP65, not ATEX Exi approved
KL12	- Aluminum Terminal Box, 9 terminals, IP65, not ATEX Exi approved
PG	- Cable Gland with 1 m PVC-cable, other length on request, IP65
K	- PCV-Cable sealed, specify length at order, IP54
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 Medium	Material	Form	Dia-meter	max. Temp	max. Pressure (+20 °C)
VA27	0,71 g/cm3	Stainl. Steel 1.4571	Cylinder	27 mm	150 °C	15 bar
VA44, not ATEX Exi approved	0,67 g/cm3	Stainl. Steel 1.4571	Ball	44 mm	150 °C	15 bar

Number of Switchpoints

L1	= 1 Switchpoint
L2	= 2 Switchpoint
L3	= 3 Switchpoint
L4	= 4 Switchpoint
L5	= 5 Switchpoint

See also "Connections Groups" in table "Max. Switchpoints"

Contact Modes

Contact Modes	Contact Rating
1 - SPST (NO)	230 V AC / DC, 2 A, 40 VA / W
2 - SPST (NC)	230 V AC / DC, 2 A, 40 VA / W
3 - SPDT (WE)	150 V AC, 100 V / DC, 0.2 A, 3 VA / W

Total Length: L0 = ...mm (max. 1000 mm)

Specify with your order: L1 = ...mm, L2 = ...mm, etc

Order: L1, L2, L3, L4, L5

Basic: empty tank

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

Options:

U =	Mounting through bottom
HT =	High Temperature Application (-40 °C...+150 °C), cable and wires in silicone, ATEX Exi limited to -40 °C ... + 75 °C
DR =	Damping Tube
VV =	Vertical Adjustment (max. 5bar)
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.:

L0 = 200 mm
L1 = 150 mm NC
L2 = 85 mm NO
Connection group: 3 (see table "max. Switching point/Connection code")