

# 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)

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



### Technical Data

<b>Max. Operating Pressure:</b>	15 bar, BN25, VA27 and VA44 float, 4 bar, BN18 float
<b>Max. Temperature Range:</b>	-10 °C...+105 °C, PVC-cable -40 °C...+150 °C, Silicone cab. (-HT)
<b>Min. Fluid Specific Gravity:</b>	See specifications below
<b>Mounting Position:</b>	Vertical, $\pm 30^\circ$ , through top or bottom
<b>Protection Class:</b>	IP54: ST2, K (Si-cable) IP65: ST1, KL6, KL12, PG, K (PVC cable) IP67, IP68: on request
<b>Weight:</b>	Depends on length and design
<b>Options:</b>	See order code

### 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

### Switch Point Dimensions

Dimensions	Min. distances in mm								
	A <sub>F</sub>	A <sub>T1</sub>	A <sub>D</sub>	B	B <sub>PT</sub>	B <sub>TS</sub>	B <sub>DR</sub>	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

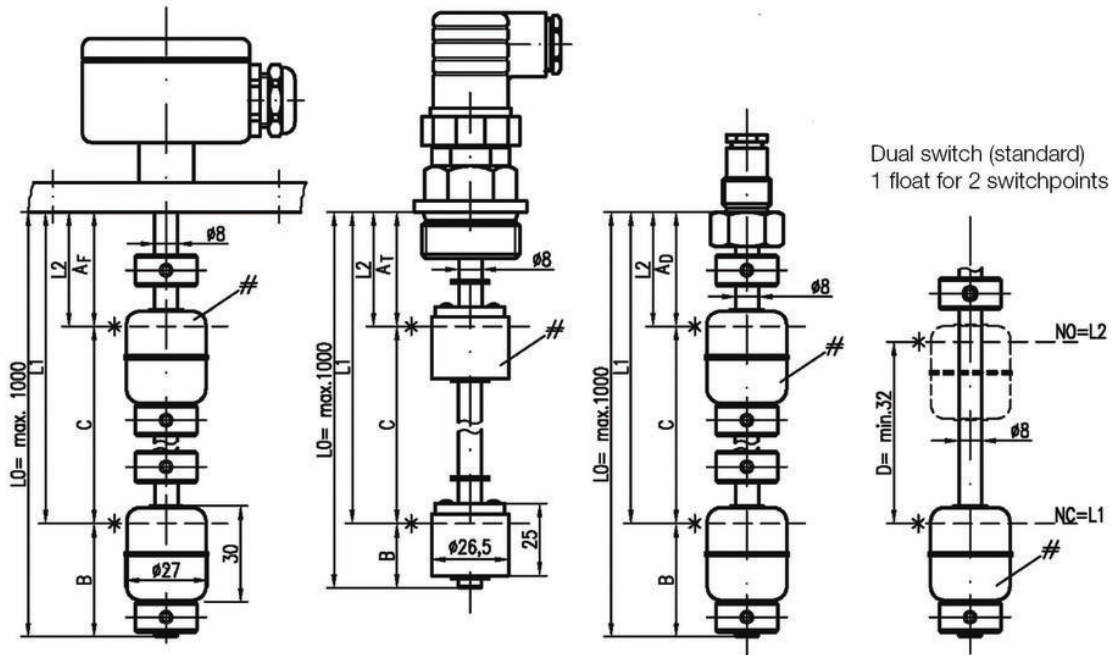
B<sub>PT</sub> = first switch point with option PT100 (mounting on bottom)

B<sub>TS</sub> = first switch point with option TSxx/2 (mounting on bottom)

## Level Switches

**UNS1000**

### Dimensions (mm / inch)



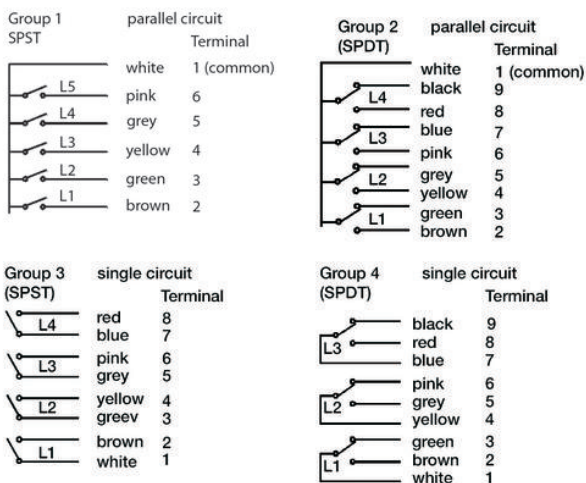
For NPT tank screw connections dimensions from bottom of thread

1. Length tolerance  $\pm 3$  mm
2. LO = max. 1000 mm

- \* Immersion depth at density 1:
- VA27 =  $21 \pm 2$  mm (30 mm high)
  - BN25 =  $13 \pm 2$  mm (30 mm high)
  - VA44 =  $22 \pm 2$  mm (42 mm high)
  - BN18 =  $15 \pm 2$  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

### Contact Wiring



# 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
- M12x1 - M12x1 mm plug, 4-pin, IP65, without mating plug
- KL6 - Aluminum Terminal Box, 6 Terminals, IP65
- KL12 - Aluminum Terminal Box, 9 Terminals, IP65
- PG - Cable Gland with 1 m PVC-cable, other length on request, IP65
- K - PVC-Cable sealed, specify length at order, IP65

(Others on request)

Float type	min.Density Medium	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	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, 2A, 40 / W
- 3 - SPDT (WE) 150 V AC, 100 V / DC, 0.2 A, 3 VA / W

Basic: empty tank

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

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

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

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")

Options:

U = Mounting through bottom

VW = 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

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

DUAL = one float with two level switch points

VA Version

### Order Code

Type:

UNS1000

Material of Stem and Mounting Element:

VA = stainless steel 1.4571 (316 Ti)

#### 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
- M12x1 - M12x1 mm plug, 4-pin, IP65 without mating plug
- KL6 - Aluminum Terminal Box, 6 Terminals, IP65
- KL12 - Aluminum Terminal Box, 9 Terminals, IP65
- PG - Cable Gland with 1 m PVC-cable, other length on request, IP65
- K - PVC-Cable sealed, specify length at order, IP65

(Others on request)

Float type	min.Density Medium	Material	Form	Dia-meter	max. Temp.	max. Pressure (+20 °C)
VA27	0,71 g/cm <sup>3</sup>	SS 1.4571 (316 Ti)	Cylinder	27 mm	150 °C	15 bar
VA44	0,67 g/cm <sup>3</sup>	SS 1.4571 (316 Ti)	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

- 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
- DR = Damping Tube
- 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
- Exi = ATEX Ex ia (intrinsically safe) Approval, see www.barksdale.de
- DUAL = One float with two level switch points

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")