Level Switches

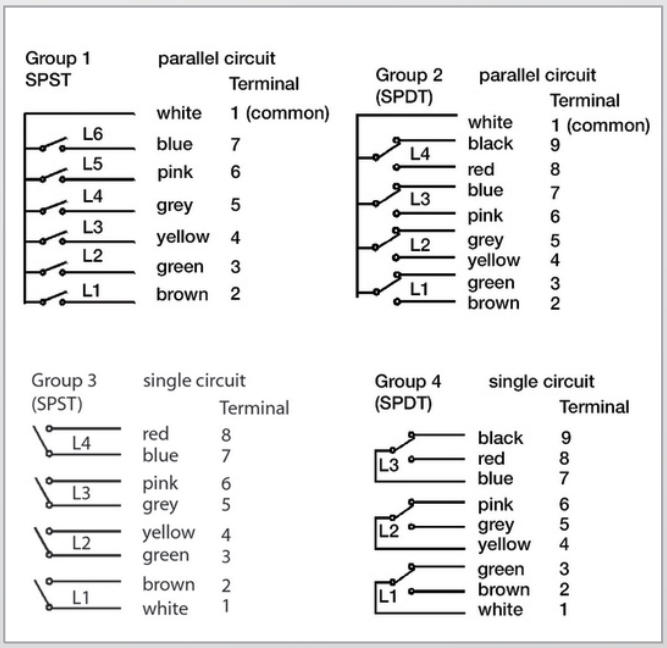
UNS2000

The multi Level Switch Series UNS2000 can be supplied with up to 6 switchpoints (see max. switchpoints) and with a length of max 3000 mm.
Besides the float operated reed contacts to detect liquid levels, the UNS 2000 can be supplied also with a temperature sensor and/ or temperature contact(s), which are to handle as switchpoint(s) - please note max. switchpoints! 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. Very long units or large flanges can cause high shipping and installation costs and "split" versions might be the answer. Consult us for the best combination. The min. dimensions are based upon the medium water.
Depending on the density of other fluids this dimension can vary several millimetres. 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. Temperature sensor (PT100) and/ or the temperature switch, a Bi-metall hermetically sealed element, are installed only in the bottom of the stem.
That means:
Dimensions B + 10 mm with temperature sensor PT100) = B_{PT}
Dimensions B + 40 mm temperature switch (TP) = B_{TP}

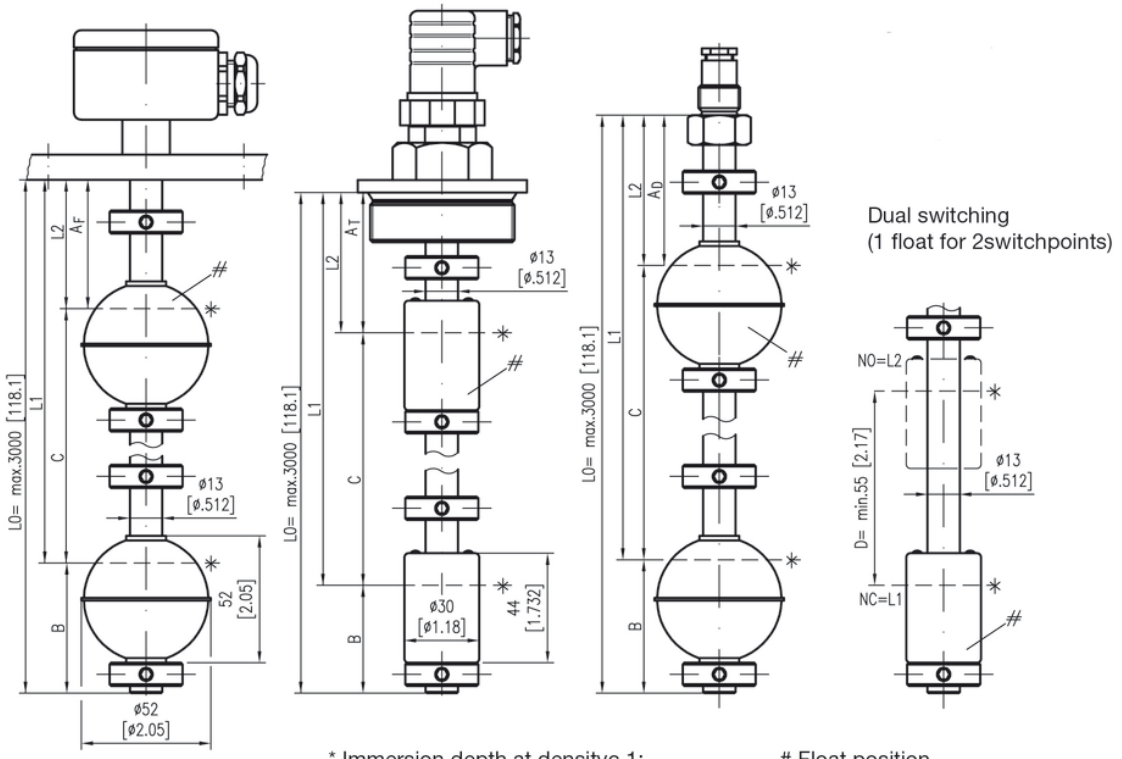
Technical Data

Max. Operating Pressure:	40 bar, depends on mounting element and float
Max. Temperature Range:	-10 °C...+105 °C, PVC-cable -40 °C...+150 °C, Silicone cab.(-HT; ATEX Exi limited to -40°C...+75 °C) and KL6 / KL12
Min. Fluid Specific Gravity:	See specifications below
Mounting Position:	Vertical, ±30°, through top or bottom
Protection Class:	IP65 for ST-, KL- and PG-design, IP67, IP68 on request IP54 for K-design
Weight:	Depends on length and design
Options:	See order code
Approvals, ATEX and IECEx Exi intrinsically safe. 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 (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 °C ≤ Ta ≤ +75 °C switch with SI, PUR, FEP-cable material: -40 °C ≤ Ta ≤ +75 °C Maximum values: Ui = 28 V, Ii = 125 mA, Pi = 0.5 W Effective internal capacitance Ci = Capacitance of 10 m connection cable = 2 nF Effective internal inductance Li = Inductance of 10 m connection cable = 10 µH

Contact Wiring



Dimensions (mm / *inch*)



L0 = max. 3000 mm
For NPT thread tank fittings all lengths from bottom edge.

* Immersion depth at densityc 1:
VA52 = 36 ±2 mm
BN30 = 20 ±2 mm
VA44 = 36 ±2mm (52 mm high)
VA80 = 36 ±2 mm (80 mm high)

\# Float position

VA52 =	NO/NO	⇨see float marking
	WE	⇨NO-function
BN30 =	NO	⇨compound points at bottom
	NC	⇨compound points at top
	WE	⇨compound points at bottom

Switch Point Dimensions

Dimensions	Min. distances in mm								
Float type	A F	AT	A D	B	BPT	BTP	BDR	C	D
VA52, VA44	32	52	44	55	65	95	75	85	55
BN30	30	60	52	39	49	79	59	77	55
VA80	63	83	75	60	70	100	80	115	55
BPT = first switch point with option PT100 (mounting on bottom)									
BTP = first switch point with option TPxx/2 (mounting on bottom)									

Max. Switchpoints

	KL6	KL12	ST1	ST2	Pg Cable connect.
Connect. group 1	5	6	2	5	6
Connect. group 2	2	4	1	2	4
Connect. group 3	3	4	1	3	4
Connect. group 4	2	3	1	2	3

(not valid for "HT" option)

Brass Version

Order Code

Type:

UNS2000

Material of Stem and Mounting Element:

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

Mounting Element (other on request)

3/8	- G3/8" mounting thread for inside mounting: only with PG
T1	- G1" Tank screw (only with BN18 float)
T2	- G2" Tank screw (not with VA80 float)
T2NPT	- 2"NPT-Tank screw (not with VA80 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, -HT with silicon cabel, other length on request, IP65
K	- PVC-Cable sealed, specify length at order, IP67
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)
BN30	0,6 g/cm³	Buna N	Cylinder	30 mm	100°C (oil) (80°C (water)	15 bar

Number of Switchpoints

L1	= 1 Switchpoint
L2	= 2 Switchpoint
L3	= 3 Switchpoint
L4	= 4 Switchpoint
L5	= 5 Switchpoint
L6	= 6 Switchpoint, L6 is not in ATEX certificate

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

Contact Modes	Contact Rating	Order:L1, L2, L3, L4, L5, L6
1 - SPST (NO)	250 V AC / DC, 3 A, 100 VA / W	
2 - SPST (NC)	250 V AC / DC, 3 A, 100 VA / W	**Basic: empty tank**
3 - SPDT (WE)	140 V AC, 100 V / DC, 1 A, 60 VA / W	

Total Length: L0 = …mm (max. 3000 mm)

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

UNS2000	- MS/	T2	-KL6	-BN30	-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
TPxx/2 =	Temperature Switch TP, Contact Rating: 3A, 12 or 24 V DC xx = Standard: +50 °C, +60 °C, +70 °C, +80 °C, +90 °C /2 = NC
Exi =	ATEX Ex ia (intrinsically safe) Approval, see www.barksdale.de

* Others 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")

VA Version
Order Code

Type:

UNS2000

Material of Stem and Mounting Element:

VA = stainless steel 1.4571 (316 Ti)

Mounting Element (other on request)

3/8	- G3/8" mounting thread for inside mounting: only with PG
T1	- G1" Tank screw (only with BN30 float)
T2	- G2" Tank screw (not with VA80/VX80 float)
FL4	- Flange DIN 2527, DN 65/PN16 (not with VA80 float)
FL5	- Flange DIN 2527, DN 80/PN16
FL6	- Flange DIN 2527, DN 100/PN16, not ATEX approved
FLA3	- Flange ASME 16.5, 2" 150lbs, RF (not with VA80)
FLA5	- Flange ASME 16.5, 3" 150lbs, RF (not with VA80)
FLA6	- Flange ASME 16.5, 4" 150lbs, RF
T2NPT	- 2"NPT-Tank screw (not with VA80 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, -HT with silicon cable, other length on request, IP65
K	- PVC-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)
VA44, for ATEX Exi float VA44/ VX44	0,84 g/cm3	Stainl. Steel 1.4571	Cylinder	44 mm	150 °C	15 bar
VA52 for ATEX Exi float VX52	0,78 g/cm3	Stainl. Steel 1.4571	Ball	52 mm	150 °C	40 bar
VA80 for ATEX Exi float VX80	0,54 g/cm3	Stainl. Steel 1.4571	Ball	80 mm	150 °C	17 bar

Number of Switchpoints

L1	= 1 Switchpoint
L2	= 2 Switchpoint
L3	= 3 Switchpoint
L4	= 4 Switchpoint
L5	= 5 Switchpoint
L6	= 6 Switchpoint, L6 is not ATEX approved

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

Contact Modes	Contact Rating	Order:L1, L2, L3, L4, L5, L6
1 - SPST (NO)	250 V AC / DC, 3 A, 100 VA / W	
2 - SPST (NC)	250 V AC / DC, 3 A, 100 VA / W	**Basic: empty tank**
3 - SPDT (WE)	140 V AC, 100 V / DC, 1 A, 60 VA / W	

Total Length: L0 = ...mm (max. 3000 mm)

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

UNS2000	**- VA/**	**T2**	**-KL6**	**-VA52**	**-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
TPxx/2 =	Temperature Switch TP, Contact Rating: 3A, 12 or 24 V DC xx = Standard: +50 °C, +60 °C, +70 °C, +80 °C, +90 °C /2 = NC

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")