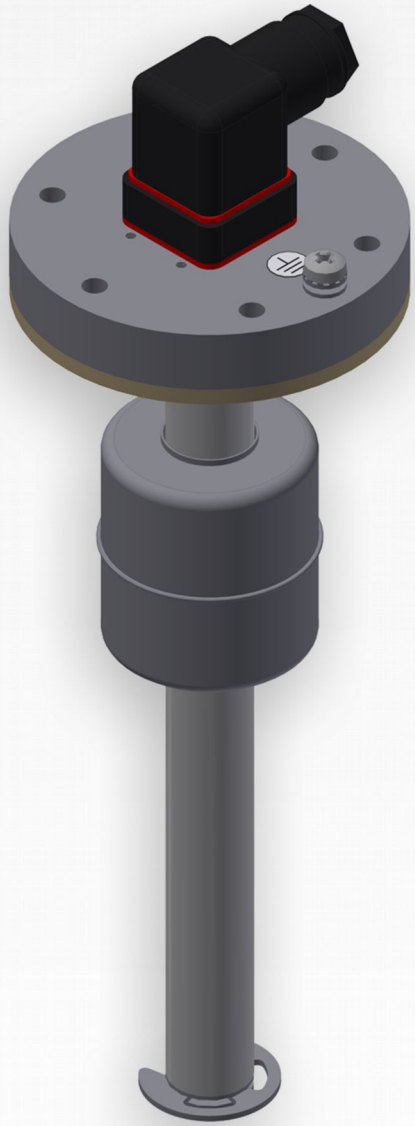
Level and temperature switch
NT 61-Z0-Atex

FluidControl

In hydraulics and lubrication technology the fill level of oil tanks needs to be monitored continuously. Here, modern factory automation requires compatible signals. To minimise production costs and the space required on containers, it makes sense to use one monitor for both e.g. the fill level and oil temperature. The NT 61-Z0...-ATEX series meets virtually all requirements arising in this area of application. This model can be equipped with max. four fixed, bistable level contacts or max. three level plus one temperature contact to monitor the fill level. The temperature can alternatively also be assessed using a Pt100 resistance thermometer.

The NT 61-Z0...-ATEX is a simple electrical equipment without separate voltage source used to monitor the level and temperature inside a tank in explosive areas. Here the stainless steel tube a stainless steel float slides along is located inside the tank in zone 0. The stainless steel flange is mounted to the outside of the tank by 6 screws, meaning the connector plug is located outside the tank in zone 1. A flat seal between the tank and level switch flange provides the seal between the tank and the environment.



EU type test/IECEx certified IECEX: IECEx IBE 17.0020X, ATEX: IBExU16ATEX1183 X
Area of application in Ex zone 0/1
Level/temperature combination
Bistable = only one float
Standardised flange drawing: DIN 24557, part 2
various plug options
variable lengths
Stainless steel version
Maintenance free

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Internet: www.buhlertech.com

Technical Data

NT 61-Z0-Atex

Operating pressure:	max. 1 bar
Operating temperature:	-20 °C to +70 °C (-4 °F to 158 °F)
Ambient temperature:	-20 °C to +70 °C (-4 °F to 158 °F)
Min. fluid density:	0.85 kg/dm³ (0.03 lb/in³)
Weight at L = 280 mm (11 in):	approx. 950 g (2.1 lb)
Each 100 mm (3.9 in) add:	approx. 50 g (0.1 lb)

Material

Float:	1.4571
Immersion tube:	1.4571
Flange (DIN 24557)	1.4571

Includes

Mounting screws (quantity 6) and rubberised cork seal.

Options

Stilling tube (SSR)	1.4571/NBR

The equipment comply with: IEC 60079-0 (Ed.6.0); IEC 60079-11 (Ed.6.0); EN 60079-0:2012+A11:2013; EN 60079-11:2012

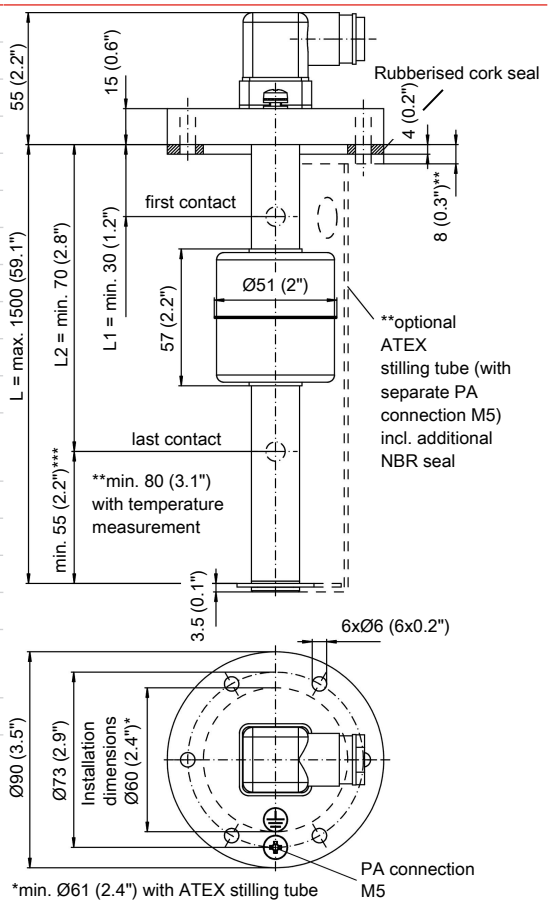
ATEX/IECEx marking

Ex II 1G Ex ia IIC T4 Ga

Ex II 1D Ex ia IIIC T70°C Da

The level switches may only be operated on intrinsically-safe circuits!

Dimensions



Level switching outputs

Level contact	K10	W11
Function	NC/NO*	Change-over contact
U_i	30 V	
I_i	50 mA	
L_i; C_i	Negligible	
P_i	100 mW	

*NC = rising NC contact/falling NO contact, NO = rising NO contact/falling NC contact

Optional temperature switching outputs

Temperature contact	TKÖ	TKS
Function	NC**	NO**
U_i	30 V	
I_i	50 mA	
L_i; C_i	Negligible	
P_i	100 mW	

**NC = NC contact, NO = NO contact

Temperature signal

Pt100 Resistance Thermometer

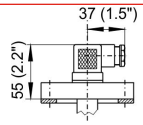
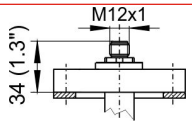
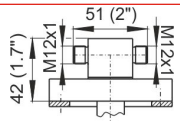
Temperature sensor	Pt100 Class B, DIN EN 60 751
Tolerance:	±0.8 °K
P_i	100 mW
U_i	30 V
I_i	50 mA
I_{Mess} (measuring current)	≤1 mA
L_i; C_i	Negligible

Pt100 measuring resistance base values

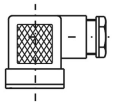
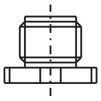
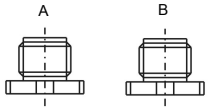
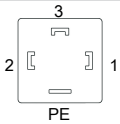
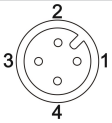
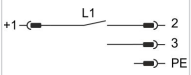
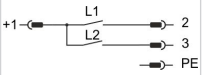
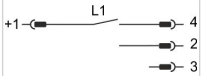
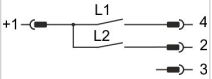
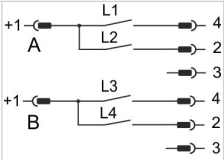
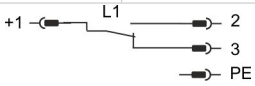
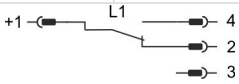
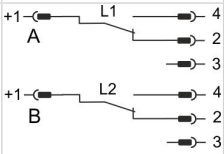
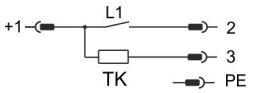
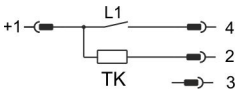
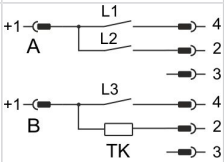
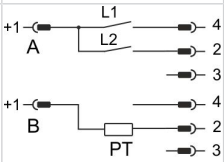
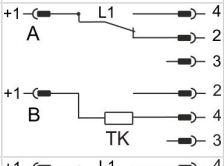
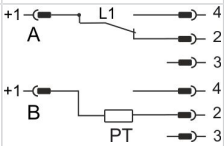
°C (°F)	0 (32)	10 (50)	20 (68)	30 (86)	40 (104)	50 (122)	60 (140)	70 (158)	80 (176)	90 (194)	100 (212)
Ohm	100.00	103.90	107.79	111.67	115.54	119.40	123.24	127.07	130.89	134.70	138.50

Standard pin assignment

Plug connection

	M3	M12	2 x M12
Dimensions			
Number of pins	3-pin + PE	4-pin	4-pin / 4-pin
DIN EN	175301-803	61076-2-101	61076-2-101
Degree of protection	IP65	IP67**	IP67**
Cable fitting	PG 11		

** with respective plug top

	M3	M12 (base)	2 x M12 (base)
			
Connection schematic			
Only level contact(s) type K10 (NC/NO)	1 x K...  2 x K... 	1 x K...  2 x K... 	
Only level contact(s) type W11 (changeover contact)			
Level contact(s) type K10 plus temperature contact TK			
Level contact(s) type K10 plus Pt100 temperature sensor			
Level contact(s) type W11 plus temperature contact TK			
Level contact(s) type W11 plus Pt100 temperature sensor			

Ordering Instructions

NT 61-XX-XX-XX-XX-XX-ATEX-XX

Type designation

Version
Z0 Zone0

Plug connection
M3
M12
2M12

Length in mm (inch) (max. 1500) (59.1)
280 (11)
370 (14.6)
500 (19.7)
variable (please specify)

Level measurement
1-4 Number of contacts

Level contact
K = NC/NO
W = Change-over contact

Options
SSR Stilling tube

Temperature
TK50NC = 50 °C (122 °F) NC
TK60NC = 60 °C (140 °F) NC
TK70NC = 70 °C (158 °F) NC

TK50NO = 50 °C (122 °F) NO
TK60NO = 60 °C (140 °F) NO
TK70NO = 70 °C (158 °F) NO

Pt100 Temperature sensor

Ordering example

You require:	Level switch, M12 plug connection, length L=280 mm (11 in), 1x level contact, contact at L1=100 mm (3.9 in) function NC, temperature contact 60 °C (140°F) function NO, with stilling tube
Order:	NT 61-Z0-M12-280-1K-TK60NO-ATEX-SSR, L1 = 100 NC

Item no.	Description
9144 05 0010	Connecting cable M12x1, 4-pin, 1.5 m (4.9 ft), angular coupling and straight plug
9144 05 0046	Connecting cable M12x1, 4-pin, 3.0 m (9.8 ft), angular coupling and straight plug
9144 05 0047	Connecting cable M12x1, 4-pin, 5.0 m (16.4 ft), angular coupling and strands