

Level switch

HD NS 250/HD NS 360-AM-G1-V



Fluidcontrol

 **IO-Link**

Forging and press technology require large fluid volumes to be moved very rapidly under high overpressure. For this purpose, hydraulic accumulators are charged with the fluid up to the required operating pressure and pressurised to release the desired volume at the correct pressure at the defined time.

The NS 250 and NS 360 series are suitable for monitoring variable fill volumes in these types of systems. Available with up to 250 or 360 bar (3626 or 5221 psi) pressure ratings, they indicate the desired liquid level via clearly visible sight glass float, as well as via variable switching contacts and/or continuous output position encoder. A magnetic field generated by the interior unsinkable main float moves the sight glass float. The same magnetic field also triggers the electric contacts and the position encoder.

Level switch HD NS for external installation

Visual and electric liquid level monitoring

Operating pressure up to 360 bar (5221 psi)

TÜV (Technical Inspection Agency) approval

Lengths up to 4780 mm (188.2")

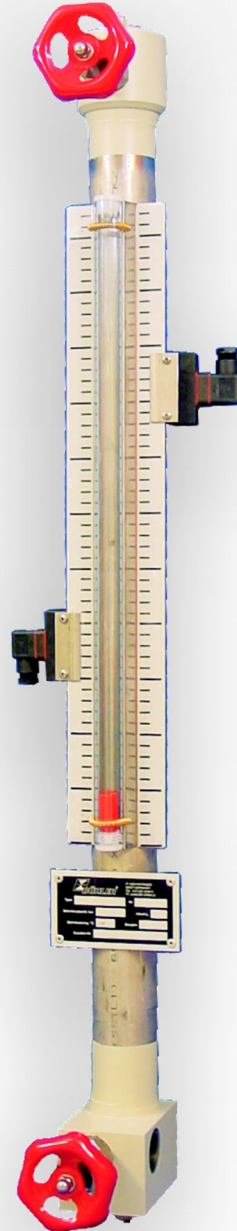
Adjustable level contacts

Optional analog output 4-20 mA or IO-Link

Display with scale

Compact design

Special versions available upon request



Technical Data HD NS 250 ..-AM

Basic unit

Max. operating pressure	250 bar (3626 psi)
Max. operating temperature	50 °C (122 °F)
spec. min. fluid weight	0.80 kg/dm ³ (0.029 lb/in ³)
L1 max.	4780 mm (188.2")
Weight at L1=500 mm (19.7")	approx. 15 kg (33.1 lb)
Weight L1+100 mm (3.9")	approx. 0.65 kg (1.4 lb)

Longer version available upon request

Material

Float SK597	Solid plastic
Riser	1.4571
Upper end piece	Steel
Bottom end piece	Steel
Check valve	1.4571
Bleeder valve	1.4571
Sight glass	PC

Connection

Air end	G1
Water end	G1

Options

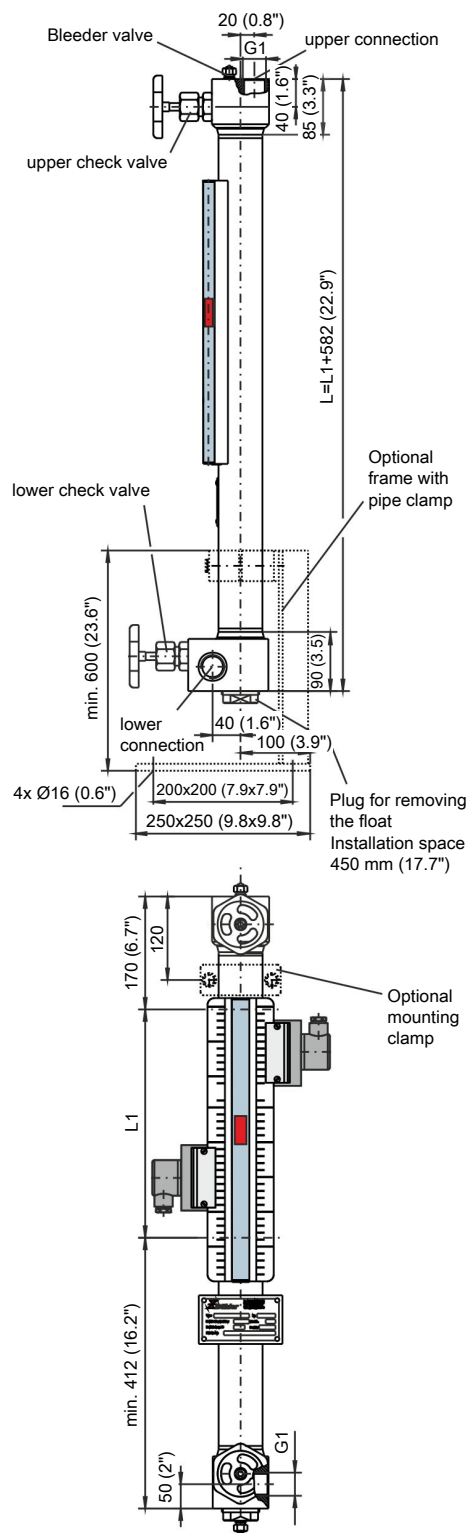
Continuous liquid level measurement BLT-AM or switching contacts, see below

Accessories

Item no.:	Description:
2051002	Mounting clamp heavy series SPAL 6060
2254999	Frame for ground anchoring the level switch with SPAL 6060 pipe clamp
2274999	Masonry screws 4x DIN529-M12x300 with nuts

Note!

These level switches include TÜV-approval.
Tested to Pressure Equipment Directive 2014/68/EU (Module G).



Model key HD NS 250

Model key

Model designation, high pressure level switch		HD NS250-AM-G1-V-XX-SK597/-XX		Length L1 = mm
Tank top installation				Float
Connection G1				No optional continuous liquid level measurement BLT-AM (max. 4650 mm/183.1")
Valve				LD5 IO-Link 5 mm (0.2") resolution
				LD10 IO-Link 10 mm (0.4") resolution
				LA5 Analog 4...20 mA 5 mm (0.2") resolution
				LA10 Analog 4...20 mA 10 mm (0.4") resolution
				if not required

Ordering example:

You need: Level switch for outdoor installation, operating pressure 250 bar (3626 psi), measuring length L1 = 2400 mm (94.5"), with 2 changeover contacts and M3 plug connection

You order: HD NS 250-AM-G1-V-SK597 / L1 = 2400
2 x item no. 2889999 contact MKS 1/W-M3

Ordering example with continuous liquid level measurement:

You need: Level switch for outdoor installation, operating pressure 250 bar (3626 psi), measuring length L1 = 2400 mm (94.5"), with continuous level output, transducer tube IO-Link 5 mm (0.2") and 2 changeover contacts and M3 plug connection

You order: HD NS 250-AM-G1-V-LD5-SK597 / L1 = 2400
2 x Item no.: 2889999 contact MKS 1/W-M3

Technical Data HD NS 360 ..-AM

Basic unit

Max. operating pressure	360 bar (5221 psi)
Max. operating temperature	50 °C (122 °F)
spec. min. fluid weight	0.80 kg/dm ³ (0.029 lb/in ³)
L1 max.	4780 mm (188.2")
Weight at L1=500 mm (19.7")	approx. 20 kg (44.1 lb)
Weight L1+100 mm (3.9")	approx. 1.0 kg (2.2 lb)

Longer version available upon request

Material

Float SK597	Solid plastic
Riser	1.4571
Upper end piece	Steel
Bottom end piece	Steel
Check valve	1.4571
Bleeder valve	1.4571
Sight glass	PC

Connection

Air end	G1
Water end	G1

Options

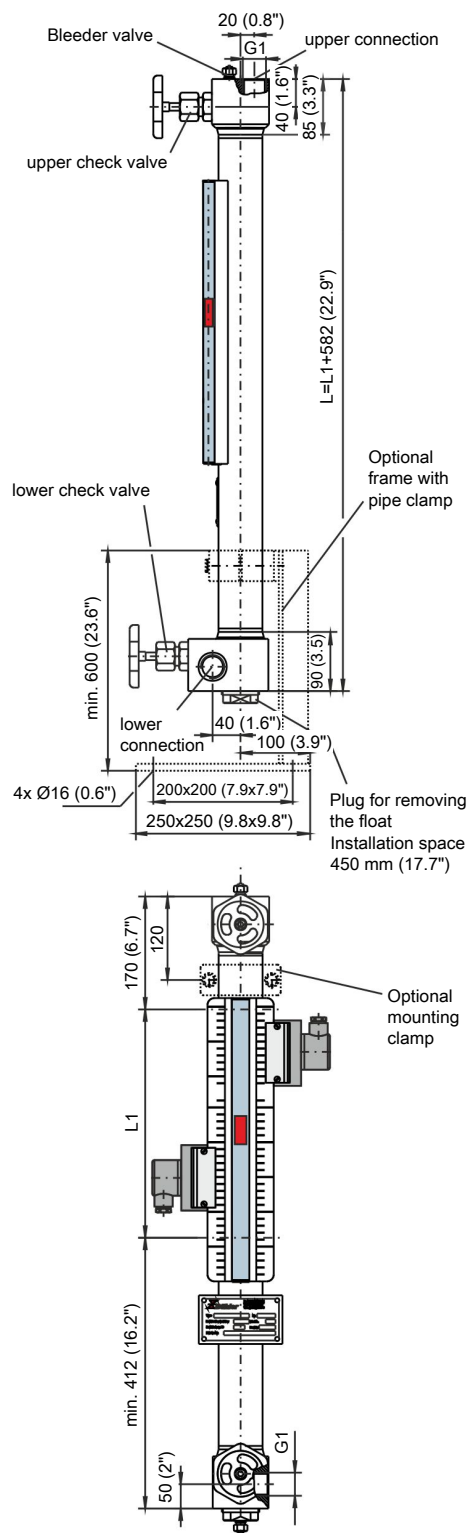
Continuous liquid level measurement BLT-AM or switching contacts, see below

Accessories

Item no.:	Description:
2051003	Mounting clamp heavy series SPAL 6063.5
2055999	Frame for level switch ground anchoring with pipe clamp SPAL 6063.5
2274999	Masonry screws 4x DIN529-M12x300 with nuts

Note!

These level switches include TÜV-approval.
Tested to Pressure Equipment Directive 2014/68/EU (Module G).



Model key HD NS 360

Model key

HD NS360-AM-G1-V-XX-SK597/-XX		Length L1 = mm
Model designation, high pressure level switch		Float
Tank top installation		No optional continuous liquid level measurement BLT-AM (max. 4650 mm/183.1")
Connection G1		LD5 IO-Link 5 mm (0.2") resolution
Valve		LD10 IO-Link 10 mm (0.4") resolution
		LA5 Analog 4...20 mA 5 mm (0.2") resolution
		LA10 Analog 4...20 mA 10 mm (0.4") resolution if not required

Ordering example:

You need: Level switch for outdoor installation, operating pressure 360 bar (5221 psi), measuring length L1 = 3200 mm (126"), with 2 changeover contacts and M3 plug connection

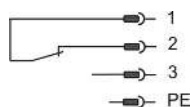
You order: HD NS 360-AM-G1-V-SK597 / L1=3200
2 x Item no.: 2889999 contact MKS 1/W-M3

Contacts for NS ...AM

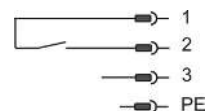
Pin assignment (Contact position empty tank)

Type	MKS-1/K-M3 (-60)
Function	NC contact/NO contact
Max. voltage	230 VAC/DC
Max. switching current	1 A
Max. contact load	50 VA
Connector	M3 (DIN EN 175301-803)
	3-pin + PE
IP class	IP 65
Item no.	2888999

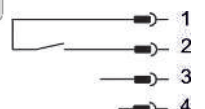
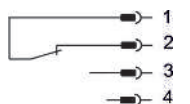
Mounted left



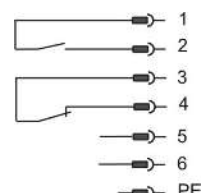
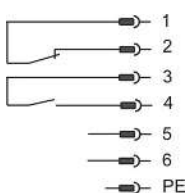
Mounted right



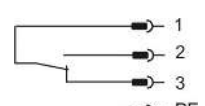
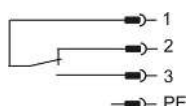
Type	MKS-1/K-M12
Function	NCC/NOC
Max. voltage	24 V DC
Max. switching current	1 A
Max. contact load	50 VA
Connector	M12 (DIN EN 61076-2-101)
	4 pol.
IP class	IP65*
Item no.	2893999



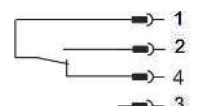
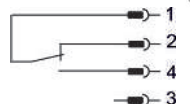
Type	MKS-2/K-S6
Function	2 x NC contact/NO contact
Max. voltage	230 VAC/DC
Max. switching current	1 A
Max. contact load	50 VA
Connector	S6
	6-pin + PE
IP class	IP 65
Item no.	2891999



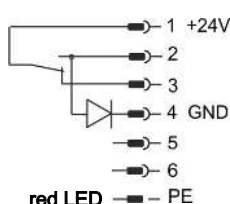
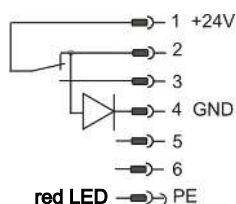
Type	MKS-1/W-M3 (-60)
Function	Changeover switch
Max. voltage	230 V AC/DC
Max. switching current	1 A
Max. contact load	50 VA
Connector	M3 (DIN EN 175301-803)
	3 pol. + PE
IP class	IP65
Item no.	2889999



Type	MKS-1/W-M12
Function	Changeover switch
Max. voltage	24 V DC
Max. switching current	1 A
Max. contact load	50 VA
Connector	M12 (DIN EN 61076-2-101)
	4 pol.
IP class	IP65*
Item no.	2889899



Type	MKS-1/W-L 24V-S6 (-60)
Function	Changeover switch with LED
Max. voltage	24 V DC
Max. switching current	1 A
Max. contact load	25 VA
Connector	S6
	6 pol. + PE
IP class	IP65
Item no.	2890999



*IP65 with cable box attached.

When installing a BLT transducer tube with continuous output signal, the contacts can only be mounted on the left.

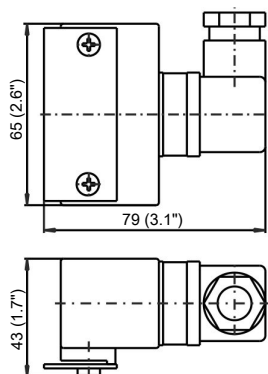
Other contacts available upon request

For applications in high shock and vibration environments we recommend using the contacts MKS-1/K-M3, MKS-1/K-M12 or MKS-2/K-S6.

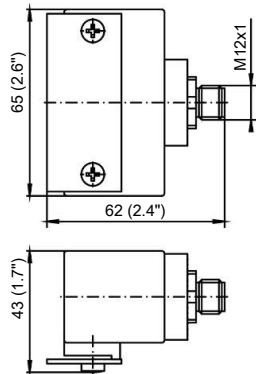
Versions ending in -60 are for switch type NS 3/20 AM and have a pipe clamp for mounting to the level switch tube.

Dimensions for contacts for NS ..-AM

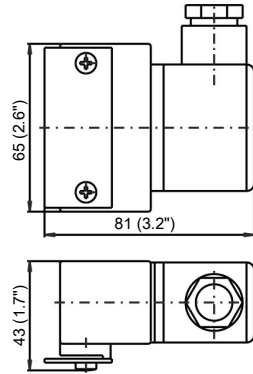
MKS-1/K-M3, MKS-1/W-M3



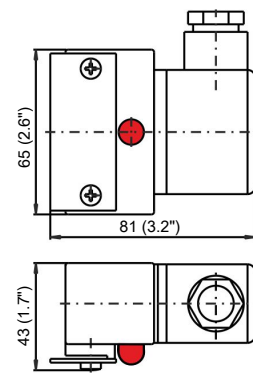
MKS-1/K-M12, MKS-1/W-M12



MKS-2/K-S6



MKS-1/W-L24V-S6



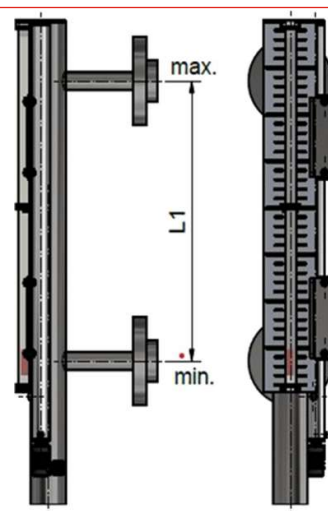
Technical Data BLT-AM

BLT-AM1(2)-LD-5(10)-1D1S-/VAR with IO-Link interface

BLT-AM1(2)-LA-5(10)-1A-/VAR with 4-20 mA output

	1D1S	1A
Transducer tube material:	Nickel-plated brass	
Ambient temperature:	-20 °C to +70 °C (-4 °F to 158 °F)	
Lengths:	L1 variable to max. 4650 mm (183.1 in)	
Input value		
Sensor element:	Reed chain 5 or 10 mm (0.2" or 0.4") resolution	
Tolerance:	±1% FS	
Operating voltage (UB):	18 - 30 VDC	10 - 30 VDC
Measuring range:	0 to 100 %	4-20 mA > 0-100 %
Output:	IO-Link	4-20 mA
IO-Link	Rev. 1.1	-
Baudrate:	COM3 (230.4k)	-
SIO Mode:	Yes	-
Min. Time Period	10 ms	-
Max. Load:	-	(UB-8V)/0.02 A

Dimensions



Standard Pin Assignment BLT-AM

Connector	M12 (base)	M12 (base)
Number of pins	4-pin	4-pin
DIN EN 61076-2-101	30 VDC	30 VDC
IP rating with IP67 cable box attached	IP67	IP67
Version	1D1S	1A
Connection schematic		
	1D1S (IO-Link)	1A (4-20 mA)
1	+24 VDC	+24 VDC
2	S2 (PNP max. 200 mA)	OUT 4-20 mA
3	GND	GND
4	C/Q (IO-Link)	NC