

Level switch

Nivotemp NT-EL, NT-ELD



Fluidcontrol

In hydraulics and lubrication technology the fill level of oil tanks needs to be monitored continuously. Here, modern factory automation requires compatible signals. Despite central system control, visualising the current level on the actual tanks is often desired. 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 Nivotemp series meets virtually all requirements arising in this area of application.

NT-EL

Tank connections G1/2, M20x1.5, 7/8-14UNF

M12 plug connection

Level and/or temperature control

Small, compact design

Proven, highly dynamic float system

NT-ELD

Tank connections G1/2, M20x1.5, 7/8-14UNF

Fixed fill level monitor switching outputs

LED display swivels 270°

Standardised VDMA-based menu structure

Two programmable temperature switching output

Alternatively, one continuous temperature output signal plus one freely programmable switching output

Switching output configurable as window or hysteresis

Switching output configurable as frequency output (1-100 Hz)

Min./Max. value memory, logbook



NT-EL Technical Data

Version	MS
Operating pressure:	max. 14.5 PSI
Operating temperature:	-4 °F to 176 °F
Float:	SK 174
Min. fluid density:	0.029 lb/in ³
Lengths (all versions):	280, 370, 500 mm (11, 14.6, 19.7 in) (standard) variable to max. 500 mm (19.7 in)
Weight at L = 500 mm (19.7 in):	approx. 0.4 lb

Material

Float:	PU
Immersion tube:	Brass
G1/2 connection, M20 x 1,5, 7/8-14UNF:	Aluminium

Level switching output

K40

Number max.:	2 not adjustable
Function:	NO / NC*
Max. voltage:	30 V DC
Max. switching current:	0.5 A
Max. contact load:	5 VA
Min. contact spacing:	30 mm (1.2 in) (in 10 mm / 0.4 in increments)

*NO= falling NC contact / NC = falling NO contact

Optional temperature

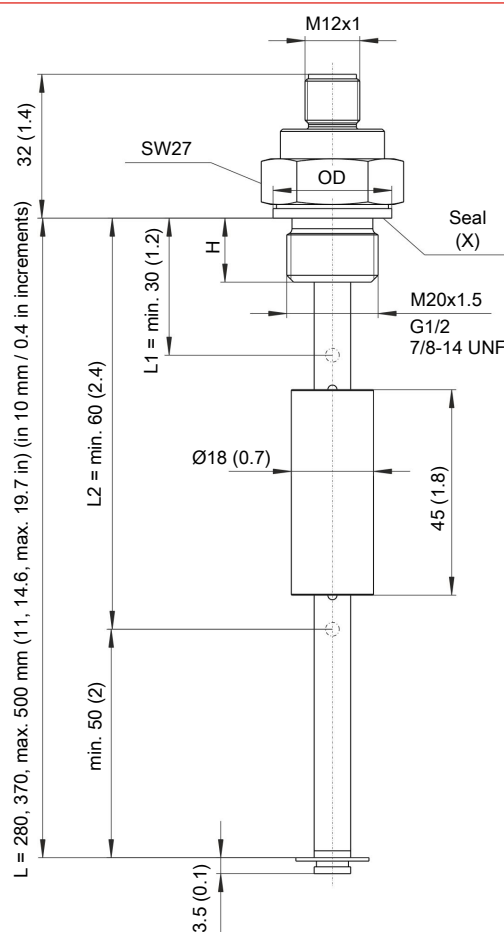
Temperature contact:	TEL xx
Max. voltage:	30 V DC
Max. switching current:	1 A
Max. contact load:	10 VA
Function:	NC
Switching point °F:	122 / 140 / 158 / 176
Switching point tolerance:	± 9 °Ra
Max. hysteresis:	20 ± 9 °Ra

Other temperatures and switching function available upon request

Temperature sensor

Pt100	DIN EN 60 751 (Tolerance ± 1.4 °F)
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Dimensions given in mm (inch)



	M20 x1.5	G1/2	7/8-14UNF
OD	26 (1)	26.6 (1.05)	26 (1)
H	14 (0.6)	14 (0.6)	12.7 (0.5)
X	Eolastic seal	Eolastic seal	O-ring

NT-EL default pin assignment

IP rating IP67*	Level contact(s) only	Only level contact K40 and temperature contact (TK)	Level contact K40 and temperature sensor (PT)	Level contacts K40 and temperature contact (TK) with special connection
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* with IP67 cable box attached

Ordering instructions NT-EL

Model key

	NT-EL	XX	XX	XX	XX	XX	XX
Model designation							
Version MS Brass							
Connection G1/2 = G1/2 M20 = M20x1.5 UNF = 7/8-14 UNF							
Plug M12							
Length 280 370 500 variable (please specify)							
Number of level contacts 1K or 2K (NC / NO)							

Temperature signal

Pt100 = temperature sensor *
 Temperature contact NC contact
 TE50NC = 50 °C (122 °F)
 TE60NC = 60 °C (140 °F)
 TE70NC = 70 °C (168 °F)
 TE80NC = 80 °C (176 °F)

* max. 1 level contact

Ordering example

You require: Level switch with connector M20x1.5, length L= 370 mm (14.6 in),
 2 level contacts, L1 = 280 mm (11 in) NC / L2 = 320 mm (12.6 in) NO

Order NT-EL-MS-M20-M12/370-2K-280NC/320NO

Technical Data NT-ELD

Version	MS
Operating pressure:	max. 14.5 PSI
Operating temperature:	-4 °F to 176 °F
Float:	SK 174
Min. fluid density:	0.029 lb/in ³
Lengths (all versions):	280, 370, 500 mm (11, 14.6, 19.7 in) (standard) variable to max. 500 mm (19.7 in)
Weight at L = 500 mm (19.7 in):	approx. 0.7 lb

Material

Float:	PU
Immersion tube:	Brass
G1/2 connection, M20 x 1,5, 7/8-14UNF:	Anodised aluminium

Level switching output K40

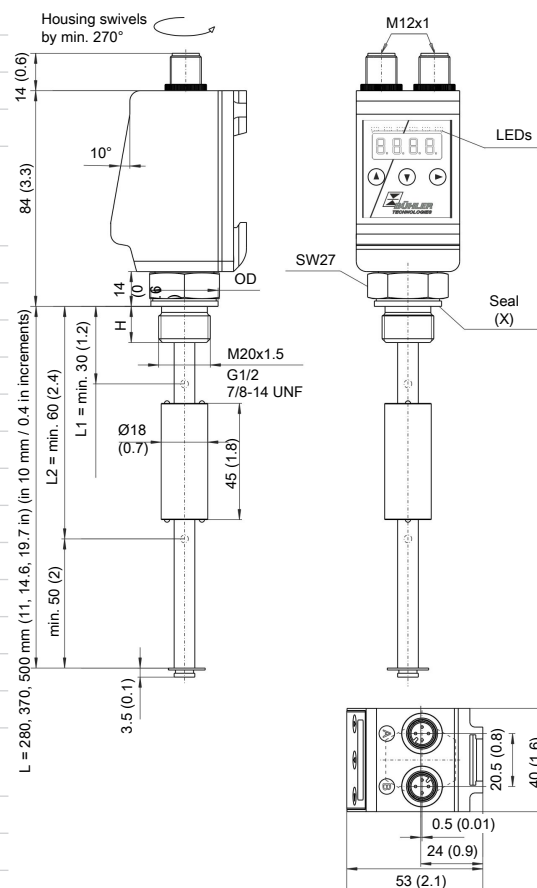
Number max.:	2 not adjustable
Function:	NO / NC*
Max. voltage:	30 V DC
Max. switching current:	0.5 A
Max. contact load:	5 VA
Min. contact spacing:	30 mm (1.2 in) (in 10 mm / 0.4 in increments)

*NO= falling NC contact / NC = falling NO contact

Temperature display electronics

Display:	4 character 7 segment LED
Operation:	Via 3 keys
Memory:	Min. / Max. Data memory
Starting current input:	approx. 100 mA for 100 ms
Current input during operation:	approx. 50 mA (without current- and switching outputs)
Supply voltage (U _B):	10–30 V DC (nominal voltage 24 V DC)
Ambient temperature:	-4 °F to 158 °F
Temperature display units:	°C / °F
Display range:	-4 °F to 248 °F
Alarm setting range:	32 °F to 212 °F
Display accuracy:	± 1 % FS
Measuring principle:	Pt 100 Class B, DIN EN 60751

Dimensions given in mm (inch)



	M20 x1.5	G1/2	7/8-14UNF
OD	26 (1)	26.9 (1.1)	26 (1)
H	14 (0.6)	14 (0.6)	12.7 (0.5)
X	Eolastic seal	Eolastic-seal	O-ring

NT-ELD temperature outputs

Choose from the following switching outputs:

Version	2T	1T-KT
Plug (base):	2 x M12 – 4-pin	2 x M12 – 4-pin
Switching outputs:	2 x freely programmable	1 x freely programmable
Alarm memory:	1 switching output assignable to alarm logbook	1 switching output assignable to alarm logbook
max. switching current*	0.5 A per output continuous short-circuit protected	0.5 A per output continuous short-circuit protected
Contact load:	max. 1 A total	max. 1 A total
1 switching output configurable as frequency output:	0 – 100 Hz	
Analogue output:		1 x 4 – 20 mA, 2-10 V DC, 0-10 V DC or 0-5 V DC
Max. burden Ω as current output:		$= (U_B - 8 \text{ V}) / 0.02 \text{ A}$
Min. input load min. as voltage output:		10 k Ω

**Output 1 max. 0.2 A.

Ordering instructions NT-ELD

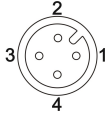
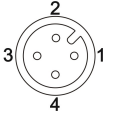
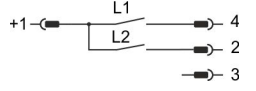
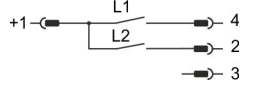
Type designation	NT-ELD - XX - XX - XX - XX - XX - XX - XX - XX - XX - XX
Version	
MS Brass	
Connection	
G1/2 = G1/2	
M20 = M20x1.5	
UNF = 7/8-14 UNF	
Plug	
2 x M12	
Length	
280 (11 in)	
370 (14.6 in)	
500 (19.7 in)	
variable (please specify)	
Number of level contacts	
1K or 2K (NC / NO)	
Installation dimensions L1 = ...mm	
1st level contact	
	LED temperature display
	2T
	2 x temperature output
	1T-KT
	1 x temperature output
	1 x analogue output
	Switching function 2nd contact
	NO / NC
	Installation dimensions L2 = ...mm
	2nd level contact
	Switching function 1st Contact
	NO / NC

Ordering example

You require: Level switch with G1/2 connection, brass, length L= 500 mm (19.7 in), 2 level contacts, 1st contact 100 mm (3.9 in) NC, 2nd contact 450 mm (17.7 in) NO, temperature analysis with display and 2 programmable outputs.

Order: NT-ELD-MS-G1/2-2M12/500-2K-100NC-450NO-2T

NT-ELD standard pin assignment

	Plug A level M12 (base)		Plug B temperature M12 (base)
Connection schematic:			
Number of poles:	4-pin		4-pin
DIN EN:	61076-2-101		61076-2-101
Max. voltage:	30 VDC		30 VDC
IP rating:	IP65		IP65
2T		PIN	
2 x temperature output		1 2 3 4	+24 V S2 (PNP) GND S1 (PNP)
1T-KT		PIN	
1 x Temperature output 1 x Analog output		1 2 3 4	+24 V Analogue GND S1 (PNP)