

Level- and temperature sensor

Nivotemp NT 67-XP

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 67-XP

Connecting flange as per DIN 24557 Part 2

Combined, continuous liquid level and oil temperature monitoring

LED display swivels 270°

Menu structure based on VDMA standard sheet 24574 ff.

6 programmable switching outputs assignable as level or temperature signal

Alternatively with IO-Link and 1 x programmable switching output

Alternatively with one analog output each for level and temperature plus 2 or up to 6 freely programmable switching outputs

Characteristics of switching outputs configurable as window or hysteresis

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

Min/max memory, logbook function

M12 plug base

Proven and tested highly dynamic float system

Immersion tube in matched lengths to max. 1420 mm (55.90 in), other lengths available upon request



Technical Data NT 67-XP
Basic unit

Version	MS	VA
Operating pressure	max. 1 bar (14.5 psi)	max. 1 bar (14.5 psi)
Operating temperature	-20 °C to +80 °C (-4 °F to 176 °F)	-20 °C to +80 °C (-4 °F to 176 °F)
Float	SK 604	SK 221
Min. fluid density	0.80 kg/dm ³ (0.029 lb/in ³)	0.85 kg/dm ³ (0.031 lb/in ³)
Lengths (all versions)	280 (11.02 in), 370 (14.57 in), 500 (19.69 in), 670 (26.38 in), 820 (32.28 in), 970 (38.19 in), 1120 (44.09 in), 1270 (50 in), and 1420 mm (55.90 in) (other lengths available upon request)	

Material/Version

Display housing	PA	PA
Float	rigid PU	1.4571
Immersion tube	Brass	1.4571
Flange (DIN 24557)	PA	PA
Weight at L=280 mm (11.02 in)	approx. 850 g (1.87 lb)	approx. 950 g (2.09 lb)
Each 100 mm (3.94 in) add	approx. 30 g (0.06 lb)	approx. 50 g (0.11 lb)
Degree of protection	IP65	IP65

Options

Stilling tube (SSR)	Brass	VA
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Analysis 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) / with IO-Link 18 – 30 V DC	
Ambient temperature	-20 °C to +70 °C (-4 °F to 158 °F)	
Display units	Level	Temperature
	% , cm, L, i, Gal	°C / °F
Display range	adjustable	-20 °C to +120 °C (-4 °F to 248 °F)
Alarm setting range	e.g. 0 – 100 %	0 °C to 100 °C (32 °F to 212 °F)
Display accuracy	± 1 % from end value	± 1 % from end value

Input values	Level	Temperature
Principle of measurement	Reed-contact	Pt100 Cl. B, DIN EN 60751
	Resolution 5 mm (0.2 in)	Tolerance ± 0.8 °C (1.44 °F)

Optional switching outputs

	1D1S	4S	6S
Plug (base)	1 x M12 – 4-pin	2 x M12 – 4-pin	1 x M12 – 8-pin
Switching outputs	IO-Link and 1 x freely programmable with level or temperature assignment options	4 x freely programmable with assignment options, e.g. 2 x level/ 2 x temperature*	6 x freely programmable with assignment options, e.g. 4 x level/ 2 x temperature*
Alarm memory	with 1 x assignable to alarm logbook	with 1 x assignable to alarm logbook	with 1 x 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	0.5 A per output continuous short-circuit protected
Contact load	max. 1 A total	max. 1 A total	max. 1 A total

*also programmable as frequency output

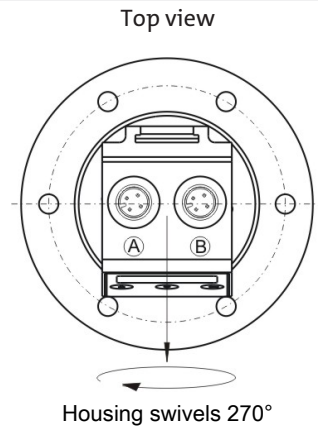
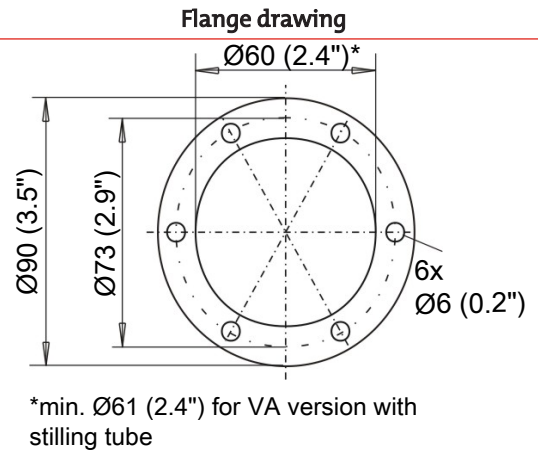
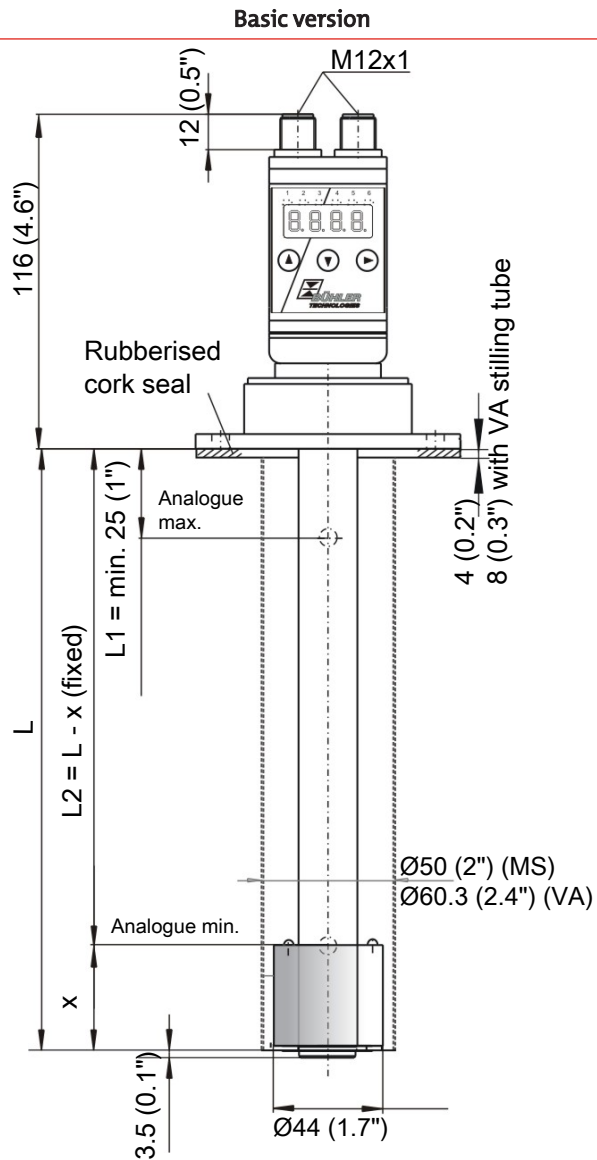
**Output 1 max. 0.2 A.

	2S-KN-KT	4S-KN-KT	6S-KN-KT
Plug (base)	2 x M12 – 4-pin	1 x M12 – 8-pin	2 x M12 – 4-pin / 8-pin
Switching outputs	2 x freely programmable with level or temperature assignment options	4 x freely programmable with level or temperature assignment options	6 x freely programmable with level or temperature assignment options
Alarm memory	with 1 x assignable to alarm logbook	with 1 x assignable to alarm logbook	with 1 x 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	0.5 A per output continuous short-circuit protected
Contact load	max. 1 A total	max. 1 A total	max. 1 A total
Analogue outputs	1x level 1x temperature	1x level 1x temperature	1x level 1x temperature
Programmable as	4 – 20 mA, 2 - 10 V DC, 0 - 10 V DC, 0 - 5 V DC	4 – 20 mA, 2 - 10 V DC, 0 - 10 V DC, 0 - 5 V DC	4 – 20 mA, 2 - 10 V DC, 0 - 10 V DC, 0 - 5 V DC
Max. burden Ω as current output	$(U_B - 8 V) / 0.02 A$	$(U_B - 8 V) / 0.02 A$	$(U_B - 8 V) / 0.02 A$
Min. input load as voltage output	10 k Ω	10 k Ω	10 k Ω

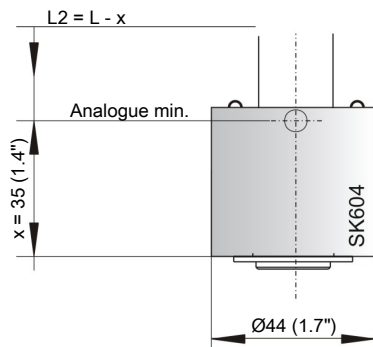
**Output 1 max. 0.2 A.

Other output cards available upon request.

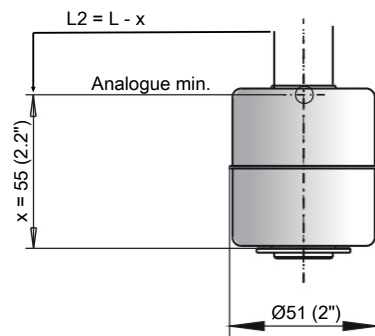
Dimensions NT 67-XP



SK 604 float for NT67-XP-MS



SK 221 float for NT67-XP-VA



Ordering Instructions NT 67-XP

Model key

NT67-XP-□□-□□-□□-□□-□□	
Type designation with display, control unit	Optional SSR
Version	Stilling tube
MS Brass	Output card
VA float and VA immersion tube	1D1S 1 x IO-Link 1 x PNP switching output
Plug connection	4S 4 x PNP switching output
2M12 - 4-pin	6S 6 x PNP switching output
M12 ¹⁾ - 8-pin	2S-KN-KT 2 x PNP switching output 1 x analogue level output 1 x analogue temperature output
2M12 ²⁾ - 1 x 4-pin, 1 x 8-pin	4S-KN-KT 4 x PNP switching output 1 x analogue level output 1 x analogue temperature output
Length (max. 1420 mm/55.9")	6S-KN-KT 6 x PNP switching output 1 x analogue level output 1 x analogue temperature output
280 (11")	
370 (14.6")	
500 (19.7")	
670 (26.4")	
820 (32.3")	
970 (38.2")	
1120 (44.1")	
1270 (50")	
1420 (55.9")	

¹⁾ for version 4S-KN_KT and 6S only
²⁾ for 6S-KN-KT version only

Accessories

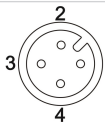
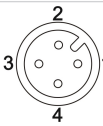
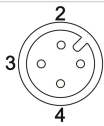
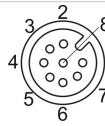
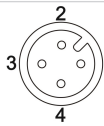
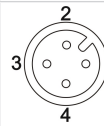
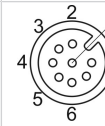
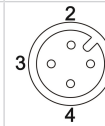
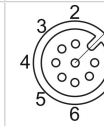
Item no. 4-pin	Item no. 8-pin	Description
9144050010	9144050048	Connecting cable M12x1, 1.5 m (4,92 ft), angular coupling and straight plug
9144050046	9144050049	Connecting cable M12x1, 3.0 m (9,84 ft), angular coupling and straight plug
9144050047	9144050033	Connecting cable M12x1, 5.0 m (16,40 ft), angular coupling and strands

Ordering example

You require:	Level and temperature measurement with 5 mm (0.2") resolution, MS version, 2xM12 connector, L=670 mm (26.4") with 2 programmable PNP switching points and analogue output for level and temperature.
Order:	NT 67-XP- MS-2M12 / 670-2S-KN-KT

Standard pin assignment NT 67-XP

Plug connections

Version	1D1S	4S		6S	2S-KN-KT		4S-KN-KT	6S-KN-KT	
Plug	M12 4-pin	2xM12 4-pin		M12 8-pin	2xM12 4-pin		M12 8-pin	2xM12 4-pin/8-pin	
		Plug A	Plug B		Plug A	Plug B		Plug A	Plug B
Connection schematic									
		Display			Display			Display	
Pin									
1	+24 V DC	+24 V DC*	+24 V DC*	+24 V DC	+24 V DC*	+24 V DC*	+24 V DC	+24 V DC	+24 V DC
2	S2 (PNP)	S2 (PNP)	S4 (PNP)	S2 (PNP)	Temp (analog)	S2 (PNP)	S2 (PNP)	Temp (analog)	S2 (PNP)
3	GND	GND	GND	GND	GND	GND	GND	GND	GND
4	C/Q (IO-Link)	S1 (PNP)	S3 (PNP)	S1 (PNP)	Level (analog)	S1 (PNP)	S1 (PNP)	Level (analog)	S1 (PNP)
5				S3 (PNP)			S3 (PNP)		S3 (PNP)
6				S4 (PNP)			S4 (PNP)		S4 (PNP)
7				S5 (PNP)			Level (analog)		S5 (PNP)
8				S6 (PNP)			Temp (analog)		S6 (PNP)

*Plugs A & B must be connected to ensure proper function! It is important to note here that the plug for the display should be connected last, otherwise an error will occur (error 1024).