

## *The new standard for the level and temperature surveillance*

- flange according to DIN 24557 T2
- qualified breather with replacable filter element
- visual surveillance of the breather optional
- combined, continuous surveillance of liquid level and oil temperature
- 4 switching outputs programmable optional as level or temperature signal
- alternative one analogue output (adjustable current or voltage) each for level and temperature plus 2 free programmable switching outputs
- highly visible LED display shows the actual temperature in the basic mode, with status indication of the switching outputs
- menu structure based on VDMA guideline 24574 ff
- switching output characteristic adjustable as window or hysteresis
- two switching outputs adjustable as frequency output (1 to 100 Hz)
- Min/Max memory, logbook function
- 2x M12 connector base 4-pol.
- reliable, dynamic float system
- immersion tube in matched lengths up to 1420 mm max., other lengths on request



# Tecnical data

## Basic unit

operating pressure  
operating temperature  
spec. density of fluid min.

lengths

## Breather filter

grade of filter  
accessories

## Material / Building

display housing  
float  
immersion tube  
flange / filter housing

## Level transmitter

measuring resistor  
resolution

## Temperature measurement

measuring resistor

tolerance

## Display and control unit

display  
operation  
storage  
current consumption at power up  
operating current consumption  
supply voltage ( $U_b$ )

# NV 77

max. 1 bar  
-20 °C to +80 °C  
0,80 kg/dm<sup>3</sup>, float SK 604  
0,85 kg/dm<sup>3</sup>, float SK 221  
280, 370, 500, 670, 820, 970,  
1120, 1270 and 1420 mm  
(other lengths upon request)

**HY** Typ Hydac BF 7  
3 µm  
filling protection cover  
-not applicable for filling adapters

<b>MS</b>	<b>VA*</b>
PA	PA
hard PU (SK 604)	1.4571 (SK 221)
brass	1.4571
PA	PA

reed contact  
5 mm

Pt 100 (RTD)  
class B, DIN EN 60751  
± 0,8 °C

**XP**  
four digit seven segment- LED  
bz 3 keys  
Min. / Max. values  
approx. 100 mA for 100 ms  
approx. 50 mA  
10 - 30 V DC  
(rated voltage 24 V DC)

ambient temperature  
protection class

-20 °C to +70 °C  
IP65

units  
displayed range

**Level**  
%, cm, L, i, Gal  
adjustable  
e. g. 0-100%

**Temperature**  
°C / °F  
-20 °C to +120°C  
or 4 to 248°F  
0 °C to 100 °C  
or 32 to 178°F

range of alarm indication

accuracy

1% of the final value

The following cards are optional available:

**-4S**  
connector (base)  
PNP transistor output,  
alarm memory  
current PNP output

2 x M12 - 4 pol  
4 x free programmable, selectable  
allocation for e.g.  
2 x Level / 2 x Temperature  
1 x PNP output allocable to alarm  
logbook  
max. 0,5 A per output  
1 A over all

**-2S-KN-KT**  
connector (base)  
PNP transistor output  
alarm memory  
current PNP output

2 x M12 - 4 pol  
2 x free programmable,  
free selectable allocation  
1 x PNP output allocable to alarm  
logbook  
max. 0,5 A per output

analogue output  
programmable as  
load max.

**Level**  
1 x 4 - 20 mA, 2-10 V,  
0-10 V, 0-5 V  
( $U_b$ - 8 V) / 0,02 A

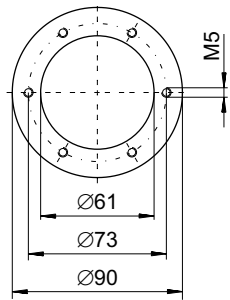
analogue output  
programmable as  
load max.

**Temperature**  
1 x 4-20 mA, 2-10 V,  
0-10 V, 0-5 V  
( $U_b$ - 8 V) / 0,02 A

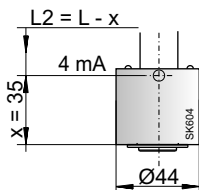
\* not available in combination with option FCT

## Design with options

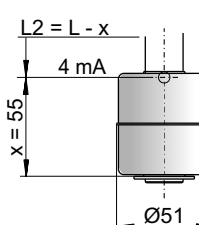
**Flange picture**  
after DIN 24557/part 2



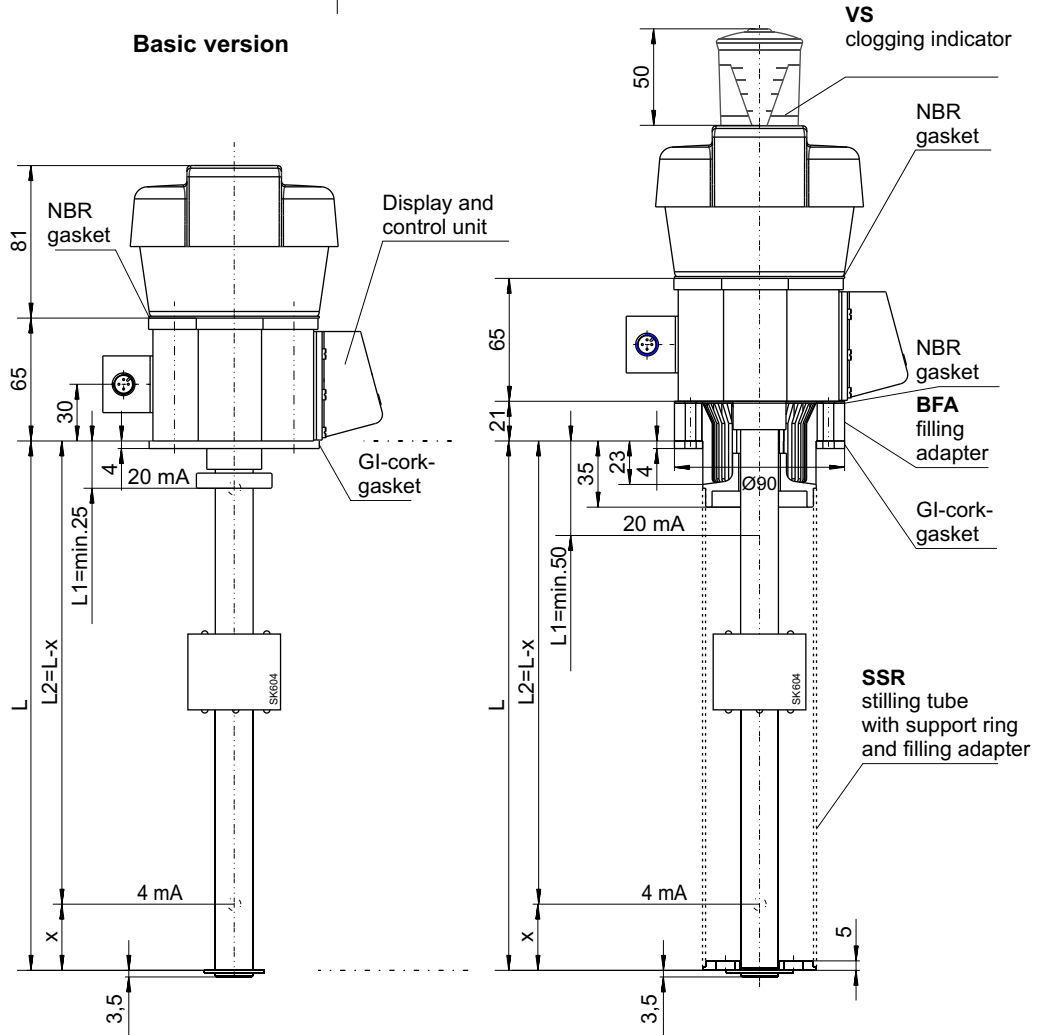
**Float SK 604 for NV 77-XP-MS**



**Float SK 221 for NV 77-XP-VA**



## Basic version



**Options / Accessories**

- VS** clogging indicator visual for the breather: analogue underpressure indicator, display range 0,35 bar.
- BFA\*** filling adapter incl. ribbed flange with sieve insert: this option allows that small oil quantities can be filled via the breather housing. Therefore the corresponding housing is equipped in that version.
- SSR\*** stilling tube with support ring and filling adapter: This includes the option stilling tube as well as the option for filling as the **BFA**. The stilling tube is made of the same material as the requested immersion tube (MS/VA).
- MT** for integration in Multiterminal: The basic unit will be mounted to the Multiterminal. For specification we refer to data sheet DE 10 0201.
- MTS** for integration in Multiterminal including stilling tube: in addition to the basic unit, a stilling tube with support ring is mounted to the Multiterminal.
- FCT** Fluidcontrolterminal: The Fluidcontrolterminal (**FCT**) will be mounted to the basic product. For specification we refer to data sheet DE 10 0202.

\* not available in combination with option **FCT** and **MT/MTS**

**Product code for NV 77-XP**

**Series**  
Nivotemp **NV 77-XP-HY**  
with display and control unit

**Resolution**  
5 = 5 mm

**Design**  
**MS** brass  
**VA\*** float and switching tube VA

**Connector**  
**2M12**  
**S6**

**Length (max. 1420 mm)**  
280  
370  
500  
670  
820  
970  
1120  
1270  
1420

**NV 77-XP-HY-5**

**Accessories**  
**VS** = clogging indicator

**Optionen**  
**BFA\*\*** = filling adapter  
**SSR\*\*** = stilling tube with filling adapter  
**FCT** = Fluidcontrolterminal  
**MT** = for Multiterminal  
**MTS** = for Multiterminal incl. stilling tube

**Card**  
**-4S**  
4 x PNP transistor output  
**-2S-KN-KT**  
2 x PNP transistor output  
1 x analogue output level  
1 x analogue output temperature

\* not available in combination with option **FCT**  
\*\* not available in combination with the option **FCT**, **MT** and **MTS**

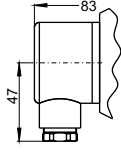
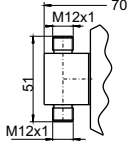
**Accessories**

Part-No.	4-pole Description
9144 05 0010	Connecting cable M12x1, 1,5 m, elbow connector (female) and straight connector (male)
9144 05 0046	Connecting cable M12x1, 3,0 m, elbow connector (female) and straight connector (male)
9144 05 0047	Connecting cable M12x1, 5,0 m, elbow connector (female) and wire

**Example for order**

You need: Level and temperature measurement with 5 mm resolution, design MS, 2xM12 connector, L=670mm, clogging indicator, display and control unit with 2 PNP - switching outputs and analogue signals for level and temperature


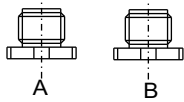
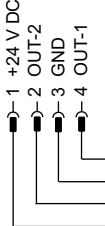
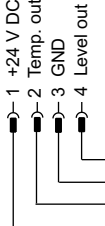
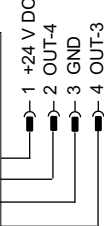
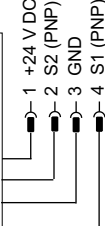
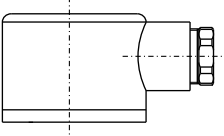
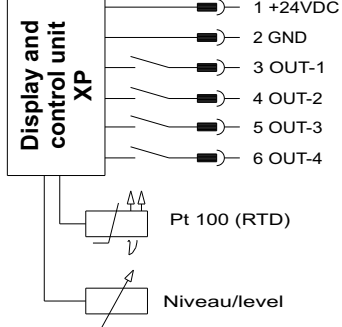
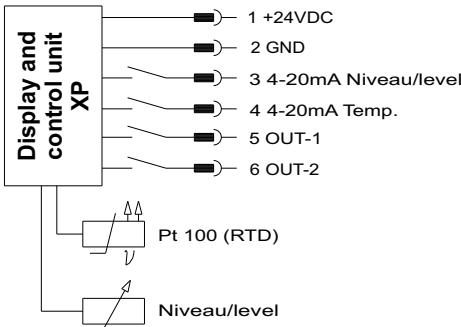
You order: NV 77-XP-HY-5-MS-2M12 / 670-2S-KN-KT-VS

<b>Connection</b>	<b>S6</b>	<b>2x M12 (base)**</b>
	6 pol. + PE 30 VAC/DC 0,5A per output over all max. 1 A IP 65 M20x1,5	4 pol./4 pol. 30 V DC 0,5A per output 1 A IP67*
voltage max.		
contact load max		
over all max.		
protection class		
cable connection		
		

\*with connector mounted / on request other connectors available

\*\* connectors are electrically isolated

## Standard pin assignment NV 77-XP

	<b>Type NV 77-XP..-4S</b> 4 x PNP - transistor output	<b>Type NV 77-XP..-2S-KN-KT</b> 2 x PNP-transistor output 1 x analogue output level 1 x analogue temperature
<b>Connector 2xM12</b>  	<b>Connector A</b>  Niveau (Level)	<b>Connector A</b>  Pt 100 (RTD)
	<b>Connector B</b>  Pt 100 (RTD)	<b>Connector B</b>  Niveau (Level)
<b>Connector S6</b> 	4 output switches, free programmable  Pt 100 (RTD) Niveau/level	2 output switches, free programmable + 2 analogue outputs 4-20mA  Pt 100 (RTD) Niveau/level