

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

- Flange according to DIN 24557 Part 2
- High performance air breather with replaceable filter element
- Visual monitoring of the air breather optional
- Combined, continuous monitoring of level and oil temperature
- Four switching outputs programmable for level or temperature signal
- Optional one analogue output (adjustable current or voltage) each for level and temperature plus 2 or 4 programmable switching outputs
- Highly visible LED display shows the actual temperature in the basic mode, with status indicator of the switching outputs
- Menu structure based on VDMA guidelines
- Switching output adjustable as window or hysteresis
- Two switching outputs adjustable as frequency output (1 to 100 Hz)
- Min/Max memory, logbook function
- Reliable dynamic float system
- Immersion tube in matched lengths up to 1420 mm (55.9") max., other lengths on request



## Technical data

## NV 77

### Basic unit

max. operating pressure	1 bar
operating temperature	-20 °C to +80 °C
min. density of fluid	0.80 kg/cm <sup>3</sup> / SK 604 0.85 kg/cm <sup>3</sup> / SK 221
lengths (mm/inch)	280, 370, 500, 670, 820, 970, 1120, 1270 and 1420 (other lengths upon request)

### Air breather filter

grade of filtration	<b>HY</b> Typ Hydac BF 7
accessories	3 µm filling protection cover -not applicable for filling adapters

### Material / Building

display housing	<b>MS</b>	<b>VA</b>
float	PA	PA
immersion tube	hard PU	SS 1.4571
flange / filter housing	(SK 604)	(SK 221)
	brass	SS 1.4571
	PA	PA

### Level transmitter

measuring resistor	reed contact
resolution	5 mm

### Temperature measurement

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

### Display and control unit

display	<b>XP</b>
operation	four digit seven segment- LED
storage	3 button keypad
current consumption at power up	Min. / Max. values
operating current consumption	approx. 100 mA for 100 ms
supply voltage (U <sub>b</sub> )	approx. 50 mA
	10 - 30 V DC
	(rated voltage 24 V DC)

ambient temperature	-20 °C to +70 °C (4 °F to 248°F)
protection class	IP65

units	<b>Level</b>	<b>Temperature</b>
displayed range	%, cm, L, i, Gal	°C / °F
	adjustable	-20 °C to +120°C
	e. g. 0-100%	(4 °F to 248°F)

alarm indicator range	0 °C to 100 °C
	(32 °F to 178°F)

accuracy	1% of the final value
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### The following cards are optional:

#### -4S

connector (base)	2 x M12 - 4 pol
PNP transistor output,	4 x free programmable, selectable allocation for e.g.
	2 x Level / 2 x Temperature
alarm memory	1 x PNP output as alarm logbook
max. current PNP output	0.5 A per output
	Sustained short-circuit proof

#### -2S-KN-KT

connector (base)	2 x M12 - 4 pol
PNP transistor output	2 x free programmable, free selectable allocation
alarm memory	1 x PNP output allocable to alarm logbook
max. current PNP output	0.5 A per output
sustained short-circuit proof	

#### analogue output

programmable as	<b>Level</b>
load Ω max.	1 x 4 - 20 mA, 2-10 V, 0-10 V, 0-5 V (U <sub>b</sub> - 8 V) / 0.02 A

#### analogue output

programmable as	<b>Temperature</b>
load Ω max.	1 x 4-20 mA, 2-10 V, 0-10 V, 0-5 V (U <sub>b</sub> - 8 V) / 0.02 A

#### -4S-KN-KT

connector (base)	1 x M12 - 8 pol
PNP transistor output	4 x free programmable, free selectable allocation
alarm memory	1 x PNP output allocable to alarm logbook
max. current PNP output	0,5 A per output
	sustained short-circuit proof

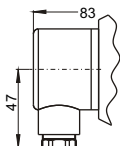
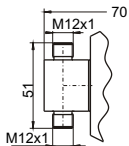
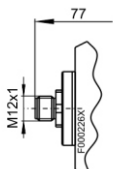
#### analogue output

programmable as	<b>Level</b>
load Ω max.	1 x 4 - 20 mA, 2-10 V, 0-10 V, 0-5 V (U <sub>b</sub> - 8 V) / 0,02 A

#### analogue output

programmable as	<b>Temperature</b>
load Ω max.	1 x 4-20 mA, 2-10 V, 0-10 V, 0-5 V (U <sub>b</sub> - 8 V) / 0,02 A

Other output options on request

Connection	S6	2x M12 (base)* <sup>2</sup>	M12 (base)
voltage max.	6 pol. + PE 30 V AC/DC	4 pol./4 pol. 30 V DC	8 pol. 30 V DC
contact load max	0,5 A per output	0,5 A per output	0,5 A per output
over all max.	1 A	1 A	1 A
protection class	IP 65	IP67* <sup>3</sup>	IP67* <sup>3</sup>
cable connection			

\*<sup>2</sup> Connectors electrically isolated

\*<sup>3</sup> with casted connector head

on request other connectors

## Options / Accessories

- VS** visual clogging indicator for the air breather: analog underpressure indicator, display range 0.35 bar.
- BFA**<sup>\*2</sup> filling adapter incl. ribbed flange with sieve insert: this option allows that small oil quantities can be filled via the air breather housing. Therefore the corresponding housing is equipped with that version.
- SSR**<sup>\*2</sup> stilling tube with support ring and filling adapter: This includes the optional 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 DA 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 DA 10 0202.

<sup>\*2</sup> 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

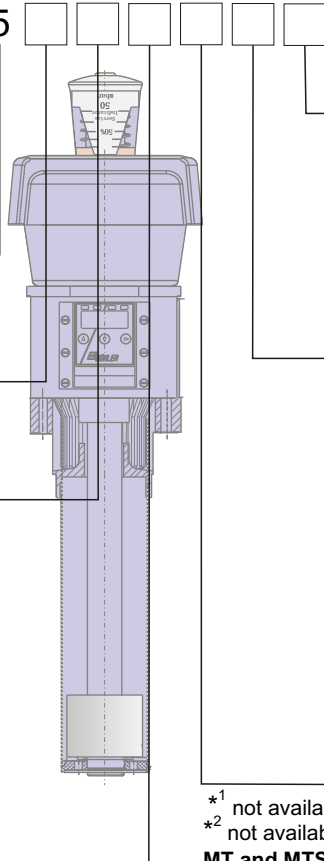
**Resolution**  
5 = 5 mm

**Design**  
**MS** brass  
**VA**<sup>\*1</sup> float and switching tube stainless steel

**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**<sup>\*2</sup> = filling adapter  
**SSR**<sup>\*2</sup> = 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

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

<sup>\*1</sup> not available in combination with option **FCT**  
<sup>\*2</sup> not available in combination with option **FCT**, **MT** and **MTS**

### Accessories

Part-No. 4-pole	Part-No. 8-pole	Description
9144 05 0010	9144 05 0048	Connecting cable M12x1, 1.5 m, elbow connector (female) and straight connector (male)
9144 05 0046	9144 05 0049	Connecting cable M12x1, 3.0 m, elbow connector (female) and straight connector (male)
9144 05 0047	9144 05 0033	Connecting cable M12x1, 5.0 m, elbow connector (female) and wire

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

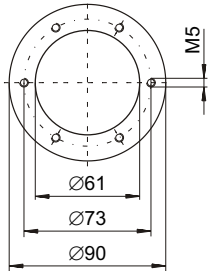
You order: NV 77-XP-HY-5-MS-2M12 / 670-2S-KN-KT-VS

# Standard pin assignment NV 77-XP

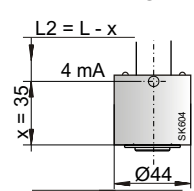
<b>Type NV 77-XP.-4S</b> 4 x PNP - transistor output free programmable	<b>Type NV 77-XP.-2S-KN-KT</b> 2 x PNP-transistor output free programmable 1 x analogue output level 1 x analogue output temperature	<b>Type NV 77-XP.-4S-KN-KT</b> 4 x PNP-transistor output free programmable 1 x analogue output level 1 x analogue output temperature
<b>Connector 2xM12 4 - pol</b> 	<b>Connector 2xM12 4 - pol</b> 	<b>Connector M12 8 - pol</b> 
<b>Connector S6</b> 	<b>Connector S6</b> 	

## Flange picture

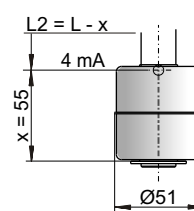
after DIN 24557/part 2



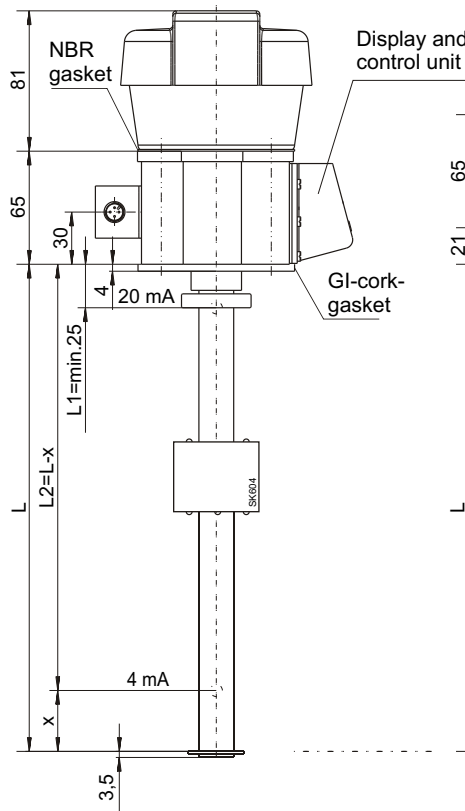
## Float SK 604 for NV 77-XP-MS



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



## Basic version



## Design with options

