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**Измерители уровня и температуры Nivovent NV  
74 Buhler**

## ***Level and temperature switch with display NV 74D***

- Highly visible LED display indicates the switching outputs
- High performance air breather with replaceable filter element
- Optional air breather clogging indicator
- Two wireless, variable level switches
- Up to 4 programmable temperature switching outputs
- Continuous temperature signal, (adjustable current or voltage ) plus one programmable output
- Switching output adjustable as window or hysteresis
- Two switching outputs adjustable as frequency output (1 to 100 Hz)
- Menu structure based on VDMA guidelines
- Min/Max memory, logbook function



## ***Level and temperature switch NV 74***

- Wireless, variable level switches
- Flange according to DIN 24557 Part 2
- High performance air breather with replaceable filter element
- Optional air breather clogging indicator
- Multiple connector options
- Up to 4 level contacts or 2 switching outputs for level plus bi-metal, RTD or analog output for temperature
- Reliable dynamic float system
- 24 V standard, 230 V on request

# Technical data

# NV 74

## Basic unit

max. operating pressure	1 bar	
operating temperature	-20 °C to +80 °C	
min. density of fluid	0,80 kg/dm <sup>3</sup> float SK 610 0,85 kg/dm <sup>3</sup> float SK 221	
standard length (in mm)	280, 370, 500 (standard)	
weight	<b>MS</b>	<b>VA*</b>
at L=280 mm	ca. 800 g	ca. 900 g
additional per 100 mm	ca. 30 g	ca. 50 g
<b>Air breather filter</b>	<b>HY</b> Type Hydac BF 7	
grade of filter	3 µm	
Accessories	filling protective cover (not applicable for filling adapter)	

## Material/Design

float	<b>MS</b>	<b>VA*</b>
	hard PU	1.4571
	SK 610	SK 221
immersion tube	brass	
flange / filter housing	PA	

## Level contacts

max. quantity	<b>K</b>	<b>W</b>
function	NO / NC	change over
max. voltage	30 V	30 V
max. current	0,5 A	0,5 A
max. contact load	10 VA	20 VA
min. distance of contact	40 mm	40 mm

NO=<normally open / NC=normally closed, all figures at empty reservoir

## Temperature contact

max. voltage	<b>TK</b>
max. current	30 V
max. contact load	2,5 A
	100 VA

OPT.

## Function

switching point °C	<b>NC</b>	<b>NO</b>
	50/60/70/80	50/60/70/80
switching point tolerance	± 3 K	± 3 K
max. hysteresis	10 K ± 3 K	10 K ± 3 K

NC = normally open / NO = normally closed (all figures at increasing temperature)

## Temperature sensor RTD

Pt100 class B, DIN EN 60 751

tolerance ±0,8 °C

## Temperature transmitter KT

sensor element RTD Pt100 class B, DIN EN 60 751

measurement range 0 °C to +100 °C

operating voltage (U<sub>B</sub>) 10-30 V DC

output 4 - 20 mA

load Ω max. = (U<sub>B</sub> - 7,5 V) / 0,02 A

other measurement ranges on request

## Options/Accessories (see details on page 6)

- VS** visual clogging indicator for the breather
- BFA\*\*** filling adapter incl. ribbed flange with sieve insert:
- SSR\*\*** stilling tube with support ring and filling adapter
- MT** for Multiterminal
- MTS** for Multiterminal including stilling tube
- FCT** Fluidcontrolterminal

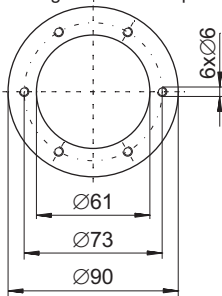
\* not available in combination with the option **FCT**

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

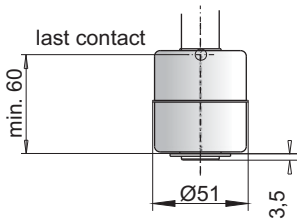
OPT. I O N A L

## Flange picture

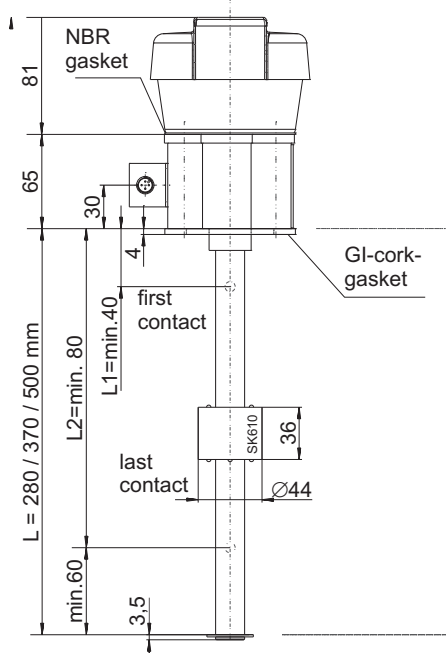
according to DIN 24557/part 2



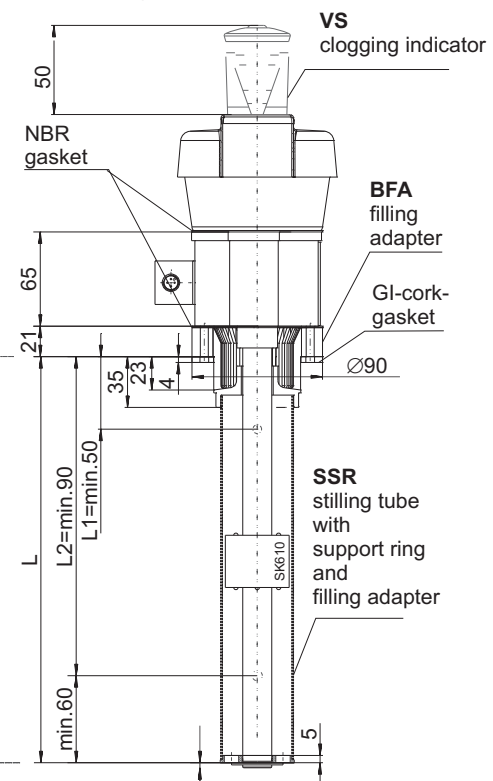
## NV 74-VA



## Basic version



## Design with options



Connector	M3 (DIN EN 175301-803)	S6 (DIN EN 175201-804)	M12 (base)	2x M12 (base)***
max. voltage	3 pol. + PE	6 pol. + PE	4 pol.	4 pol./4 pol.
protection class	30 VAC/DC	30 VAC/DC	30 V DC	30 V DC
cable connection	IP 65 PG 11	IP 65 M20x1,5	IP 67**	IP 67** M12x1
max. quantity of contacts	1 x K / 1 x TK	3 x K / 1 x TK	1 x K / 1 x TK	2 x K / 1 x TK
level/ temp.-contact	- / -	1 x W / 1 x TK	- / -	1 x W / 1 x TK
level only	2 x K	4 x K	2 x K	
or	1 x W	2 x W	1 x W	

\*\* with casted connector head \*\*\* Connectors electrically isolated / on request other connectors

# Product code for NV 74

**Series**  
Nivotemp NV 74-HY

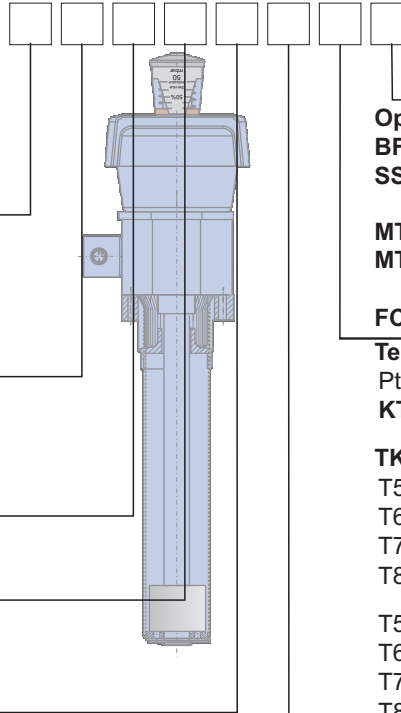
**Design**  
**MS** brass  
**VA\*** float and immersion tube stainless steel

**Connector**  
**M3**  
**S6**  
**M12**  
**2M12**

**Length (mm)**  
**280**  
**370**  
**500**

**Quantity of level contacts**  
**1-4**

**Level contact**  
**K** = NC / NO  
**W** = change over



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

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

**Temperature**  
**Pt 100** = Temperature sensor (RTD)  
**KT** = Temperature transmitter

**TK** = Temperature contact  
T50NO = 50°C NO  
T60NO = 60°C NO  
T70NO = 70°C NO  
T80NO = 80°C NO

T50NC = 50°C NC  
T60NC = 60°C NC  
T70NC = 70°C NC  
T80NC = 80°C NC

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\* 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 switch with breather, clogging indicator, length L = 500 mm, 2 level contacts, temperature contact TK, 80°C as NC, 1st contact 100 mm NC, 2nd contact 420 mm NO

You order: NV 74-HY-MS-S6 500-2-K-TK80NC-VS 100 NC, 420 NO

## Standard pin assignment NV 74

Connector	M3	S6	M12 ( base )	2 x M12 ( base )
only level contact(s) Type K				
only level contact(s) Type W				
level contact(s) Type K and temperature				
level contact(s) Type W and temperature				

TK = Thermo contact

KT = Temperature transmitter

PT = Temperature sensor Pt 100 (RTD)

other assignments on request

## Technical data

## NV 74D

### Basic unit

max. operating pressure	1 bar
operating temperature	-20 °C to +80 °C
min. density of fluid	0,80 kg/dm <sup>3</sup> float SK 610 0,85 kg/dm <sup>3</sup> float SK 221
standard length (mm)	280, 370, 500

weight	<b>MS</b>	<b>VA*</b>
at L=280 mm approx.	850 g	950 g
add. per 100 mm approx.	30 g	50 g

### Air breather filter

grade of filtration	<b>HY</b> Typ Hydac BF 7
Accessories	3 µm filling protective cover (not applicable for filling adapter)

### Material / Design

display housing	<b>MS</b>	<b>VA*</b>
flange / filter housing	PA	PA
immersion tube	hard PU	1.4571
flange / filter housing	SK 610	SK 221
SSR (option)	brass	1.4571
	PA	PA
	brass	stainless steel

### Level contacts

max. quantity	<b>K</b>
function	2
max. voltage	NO / NC
max. current	30 V
max. contact load	0,5 A
min. distance of contact	10 VA
	40 mm
NO= normally open / NC = normally closed, all figures at empty reservoir	

### Display

temperature display range	-20 °C to +120 °C (4 °F to 248 °F)
alarm range setting	0 °C to 100 °C (32 °F to 178 °F)
accuracy	1%
resolution	0,5 °C (1 °F)
protection class	IP65
display	4 digit 7 segment LED
operation	3 button keypad

current consumption at power up  
operating current consumption  
supply voltage (U<sub>B</sub>)

approx. 100 mA for 100 ms  
approx. 50 mA  
10 - 30 V DC  
(nominal voltage 24 V DC)  
-20 °C to +70 °C  
RTD  
class B; DIN EN 60751

ambient temperature  
temperature sensor

### Following temperature outputs are available:

	<b>-2T</b>
connector (base)	2 x M12 - 4 pol
max. contact load	1A
PNP transistor output, max. current PNP output	2 x free programmable 0,5 A per output
short-circuit proof	

	<b>-1T-KT</b>
connector (base)	2 x M12 - 4 pol
max. contact load	1 A
PNP transistor output, max. current PNP output	1 x free programmable 0,5 A per output
short-circuit proof	
analogue output	1 x 4 - 20 mA, 2-10 V, 0-10 V or 0-5 V

max. load analogue output	500 Ω
---------------------------	-------

	<b>-4T</b>
connector (base)	1 x M12 - 4 pol. 1 x M12 - 8 pol.
max. contact load	1 A
PNP transistor output, max. current PNP output	4 x free programmable max. 0,5 A per output
short-circuit proof	

### Options/ Accessories (see details on page 6)

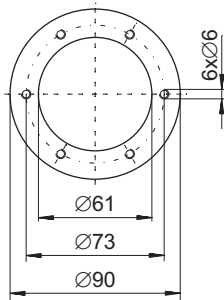
- VS** visual clogging indicator for the air breather
- BFA\*\*** filling adapter incl. ribbed flange with **filter** insert:
- SSR\*\*** stilling tube with support ring and filling adapter
- MT** for Multiterminal
- MTS** for Multiterminal including stilling tube
- FCT** Fluidcontrolterminal

\* not available in combination with option **FCT**

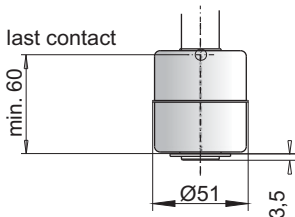
\* not available in combination with option **FCT** and **MT/MTS**

### Flange picture

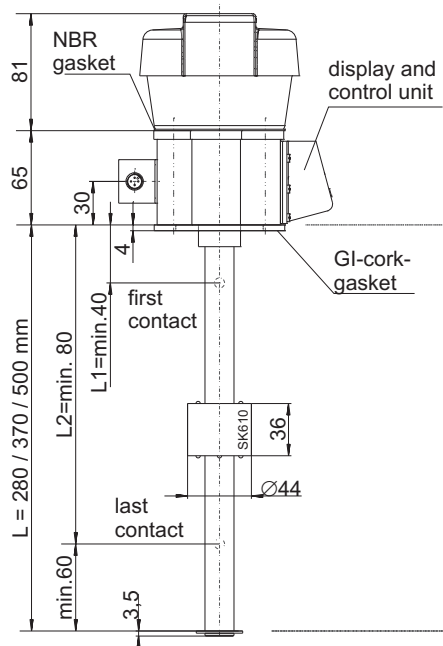
according to 24557/part2



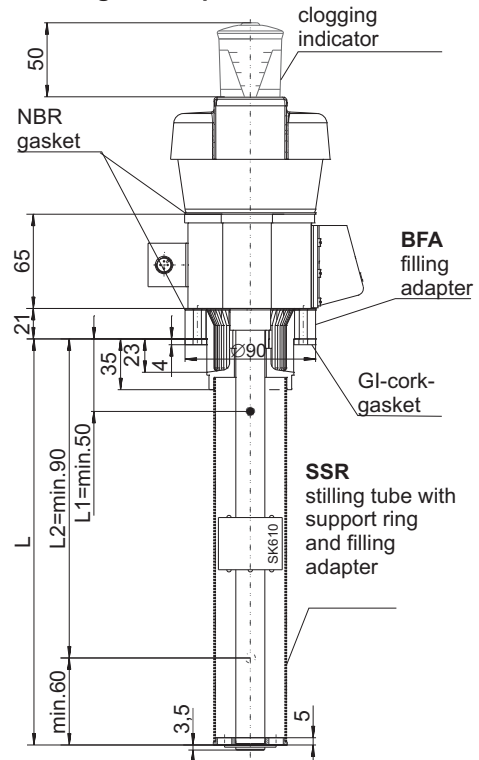
### NV 74-VA



### Basic version



### Design with options VS



# Product code for NV 74D

NV 74D-HY- [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]

## Series

Nivovent NV 74D-HY

## Design

MS brass

VA\* float and immersion tube VA

## Connector

2M12

S6

## Length (mm, max. 1500)

280

370

500

## Quantity level contacts

1K or 2K

K = NO / NC

## Position L1 = ...mm

1st level contact

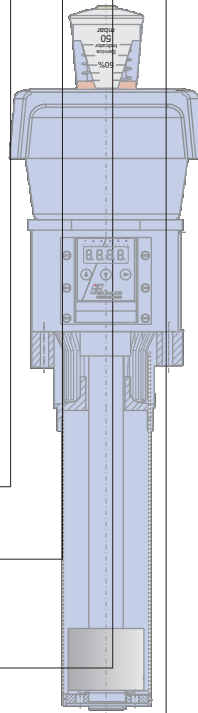
## Switch function 1. contact

NO = normally open

NC = normally closed

\* not available in combination with option FCT

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



## Accessories

VS = clogging indicator

## Options

BFA\*\* = filling adapter

SSR\*\* = stilling tube with filling adapter

MT = for Multiterminal

MTS = for Multiterminal incl. stilling tube

FCT = fluidcontrolterminal

## -2T

LED temperature display

2 x temperature output

## -4T

LED temperature display

4 x temperature output

## -1T-KT

LED temperature display

1 x temperature output

1 x analogue output 4-20 mA

## Switch function 2. contact

NO = normally open

NC = normally closed

## Position L2 = ...mm

2nd level contact

## 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)

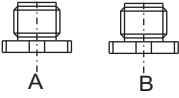

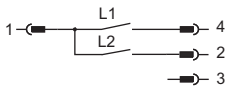
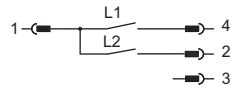
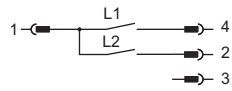

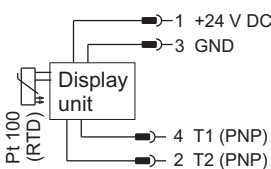
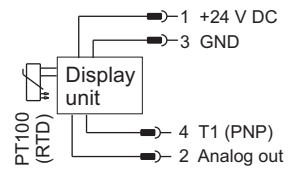
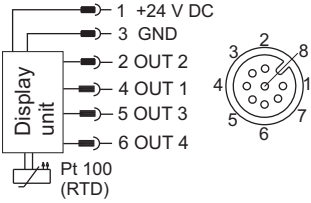
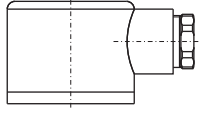
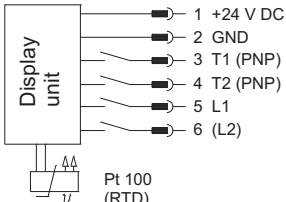
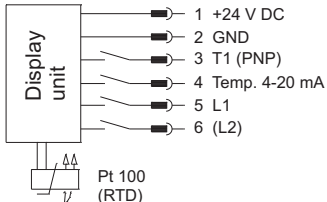
9144 05 0047 9144 05 0033 Connecting cable M12x1, 5,0 m, elbow connector (female) and wire

## Example for order

You need: Level switch and breather, clogging indicator, length L = 500 mm, 2 level contacts, temperature contact TK 80°C as NC, 1st contact 100 mm NC, 2nd contact 420 mm NO

You order: NV 74-HY-MS-S6 500-2K -TK80NC-VS-100-NC-420 NO

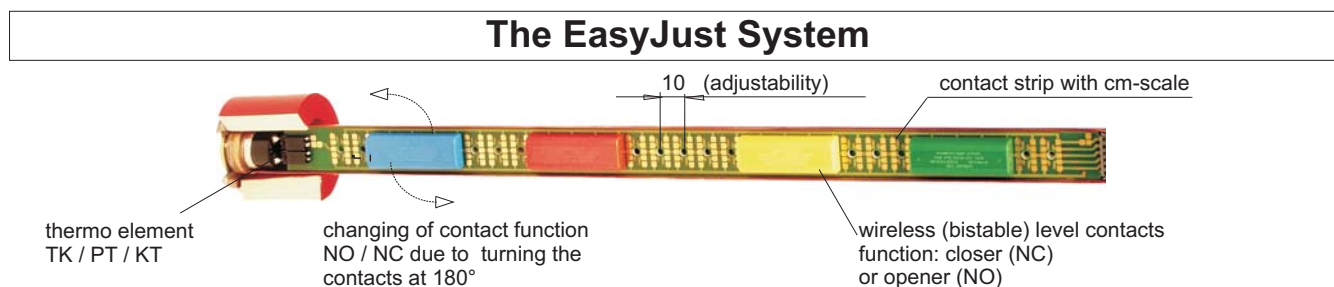
## Standard pin assingment NV 74D

Connector 2xM12 	Type NV 74D-2T Level contact(s) 2 x Temperature output	Type NV 74D-1T-KT Level contact(s) 1 x Temperature output 1 x Analogue output	Type NV 74D-4T Level contact(s) 4 x Temperature output
Connector A Level 			
Connector B Temperature 			
Connector S6 			

## Details about options and accessories:

- VS** visual clogging indicator for the air breather: analog 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 air breather housing. Therefore the corresponding housing is equipped with 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 into Multiterminal: The basic unit will be mounted to the Multiterminal. For specification we refer to data sheet DE 10 0201.
- MTS** for integration into 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**



Using adjustable level contacts allows the application of standardized immersion tubes in oil tanks of different sizes and geometrical shapes.

The switching points are changeable to the requirement of the individual application at any time without purchasing a specific level switch.

This facilitates design and logistics for the users and OEMs.

The Easy Just System is based on a wireless structure of the contacts.

The contacts are designed of closed and color coded housings. They are positioned on a printed circuit board with gold plated contacts. The colors are used for the coding of the different contacts and assure the allocation of the connector's assignments.

The contacts' function (NO or NC) is determined by the 180° rotation on the printed circuit board.

An adjusted temperature switch (bi-metal, NO or NC), a Pt 100 (RTD) or a 4-20 mA transmitter is fixed at the lower end of the printed circuit board, depending on the chosen option for the temperature monitoring.



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