

Level and temperature switch with display NV 74D

- highly visible LED display with status indication of the switching outputs
- qualified breather with replaceable filter element
- optical monitoring of breather optional
- 2 wireless, variable level switches
- up to 4 programmable temperature switching outputs
- alternatively continuous temperature output signal, (current or voltage adjustable) plus one free programmable switching output
- output characteristic for switching output adjustable as window or hysteresis
- two switching outputs adjustable as frequency output (1 to 100 Hz)
- menu structure based on VDMA guideline 24574 ff
- Min/Max memory, logbook function

Level and temperature switch NV 74

- wireless, variable level switches
- flange according to DIN 24557 part 2
- qualified breather with replaceable filter element
- visual surveillance of breather optional
- miscellaneous connector options
- up to 4 level contacts or 2 switching outputs for level plus bi-metal, RTD or analogue output for temperature
- reliable float system with high dynamic
- 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. spec. density of fluid 0,80 kg/dm³ float SK 601
 0,85 kg/dm³ float SK 221
 Length (in mm) 280, 370, 500 (standard)

Breather

grade of filter **HY** Type Hydac BF 7
 3 µm
 Accessories filling protective cover
 (not applicable for filling adapter)

Material/Design

float	MS hard PU SK 601	VA* 1.4571 SK 221
immersion tube	brass	1.4571
flange / filter housing	PA	PA

Level contacts

max. quantity	K 4	W 2
function	fO / fC	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

fO = falling opener / fC = falling closer

Temperature contact

max. voltage	TK 30 V
max. current	2,5 A
max. contact load	100 VA

Function

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

NC = opener / NO = closer (all figures at **increasing temperature**)

Temperature sensor

RTD class B, DIN EN 60 751
 tolerance ±0,8 °C

Temperature transmitter

KT
 sensor element RTD class B, DIN EN 60 751
 measurement range 0 °C to +100 °C
 operating voltage (U_B) 10-30 V DC
 output 4 - 20 mA
 load Ω max. (U_B-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

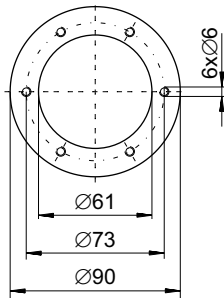
* not available in combination with the option **FCT**

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

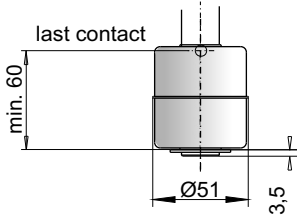
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Flange picture

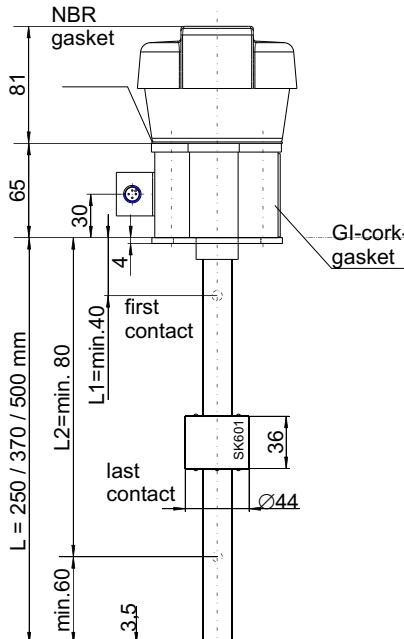
according to DIN 24557/part 2



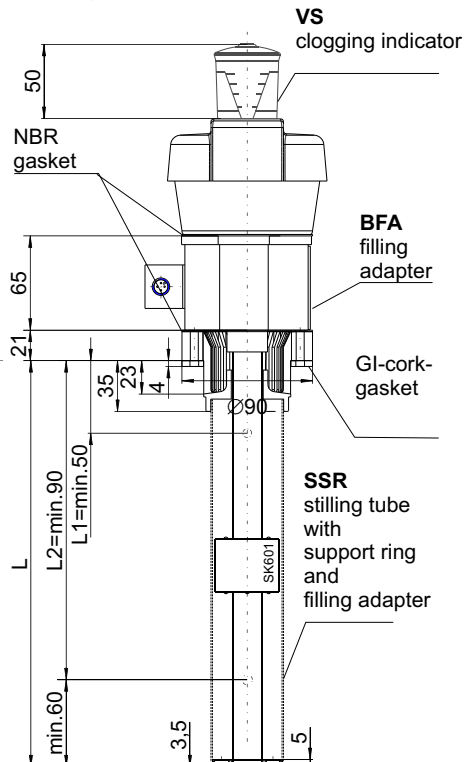
NV 74-VA



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 30 V AC/DC	6 pol. + PE 30 V AC/DC	4 pol. 30 V DC	4 pol./4 pol. 30 V DC
protection class	IP 65	IP 65	IP 67**	IP 67**
cable connection	PG 11	M20x1,5		M12x1
max. quantity of contacts	1 x K10 / 1 x TK	3 x K10 / 1 x TK	1 x K10 / 1 x TK	3 x K 10 / 1 x TK
level/ temp.-contact	- / -	1 x W11 / 1 x TK	- / -	1 x W11 / 1 x TK
level only	2 x K10	4 x K10	2 x K10	4 x K10
or	1 x W11	2 x W11	1 x W11	2 x W11

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

Product code for NV 74

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

Series

Nivotemp NV 74-HY

Design

MS brass

VA* float and immersion tube VA

Connector

M3

S6

M12

2M12

Length (mm)

280

370

500

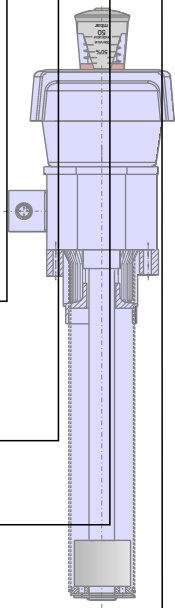
Quantity of level contacts

1-4

Level contact

K = opener/closer

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

Temperatur

Pt 100 = Temperature sensor (RTD)

KT = Temperature transmitter

TK = Temperature contact

T50NO = 50°C closer

T60NO = 60°C closer

T70NO = 70°C closer

T80NO = 80°C closer

T50NC = 50°C opener

T60NC = 60°C opener

T70NC = 70°C opener

T80NC = 80°C opener

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 TK80°C as opener, 1. contact 100 mm falling closer, 2. contact 420 mm falling opener

You order: NV 74-HY-MS-S6 500-2-K-TK80NC-VS 100 fC, 420 fO

* not available in combination with option FCT

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

Standard pin assignment NV 74

Connector	M3	S6	M12 (Sockel)	2 x M12 (Sockel)
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				
level contact(s) Type K and PT100				

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. spec. density of fluid	0,80 kg/dm ³ float SK 601 0,85 kg/dm ³ float SK 221
length (mm)	280, 370, 500

Breather

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

Material / Design

display housing	PA	VA*	PA
float	hard PU SK 601		1.4571 SK 221
immersion tube	brass		1.4571
flange / filter housing	PA		PA
SSR (option)	brass		VA

Level contacts

max. quantity	K	2
function	fO / fC	fO / fC
max. voltage		30 V
max. current		0,5 A
max. contact load		10 VA
min. distance of contact		40 mm
fO = falling opener / fC = falling closer		

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	by 3 keys

current consumption at power up
operating current consumption
supply voltage (U_B)

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:

-2T
connector (base) 2 x M12 - 4 pol
max. contact load 1A
PNP transistor output, current PNP output 2 x free programmable
max. 0,5 A per output

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

-4T
max. load analogue output 500 Ω
connector (base) 1 x M12 - 4 pol.
1 x M12 - 8 pol.
max. contact load 1 A
PNP transistor output, current PNP output 4 x free programmable
max. 0,5 A per output

Options/ Accessories (see details on page 6)

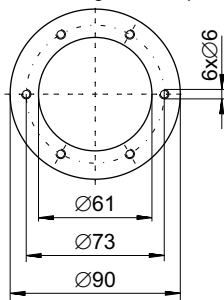
VS visual clogging indicator for the breather
BFA** filling adapter incl. ribbed flange with sieve insert:
SSR** stilling tube with support ring and filling adapter
MT for Multiterminal
MTS for Multiterminal including stilling tube
FCT Fluidcontrolterminal

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

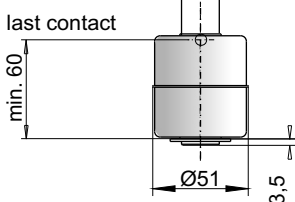
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Flange picture

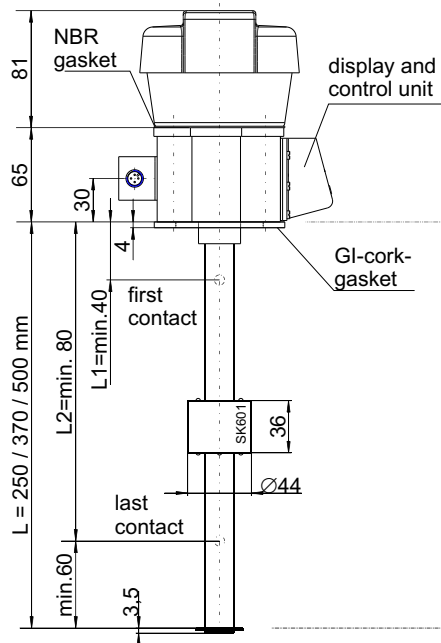
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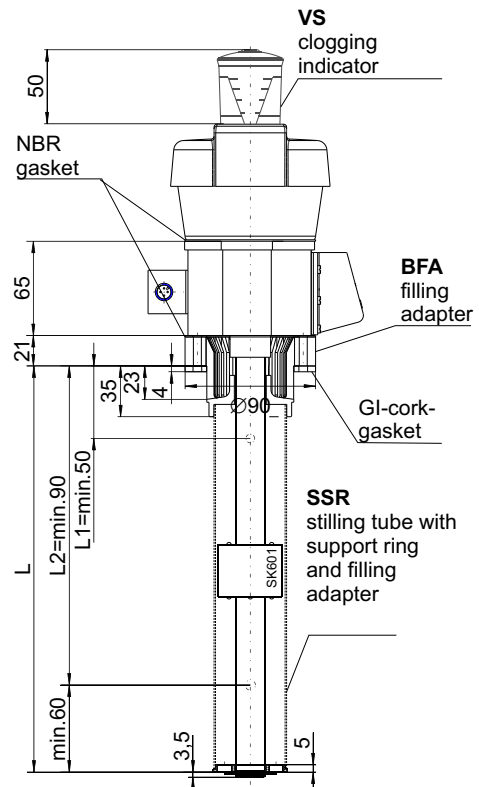
NV 74-VA



Basic version



Design with options



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 = opener / closer

Position L1=...mm

1. level contact

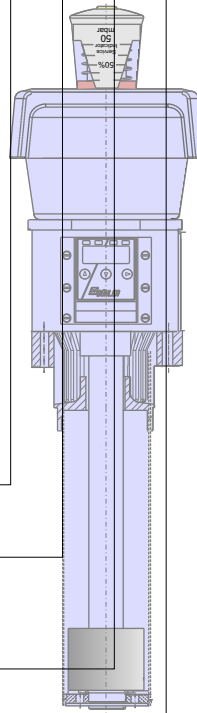
Switch function 1. contact

fO = falling opener

fC = falling closer

* 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

fO = falling opener

fC = falling closer

Position L2=...mm

2. 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)

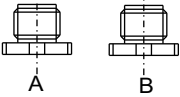

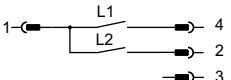
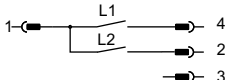
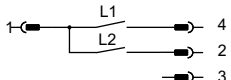

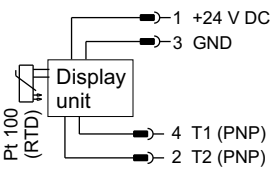
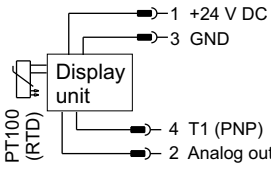
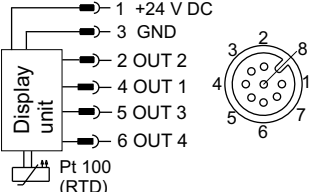
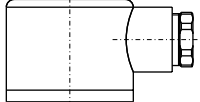
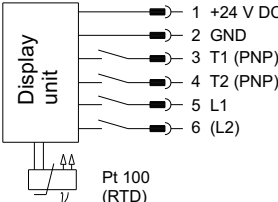
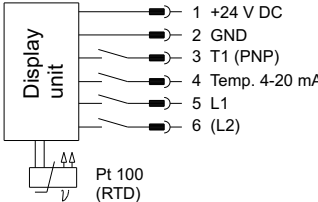
9144 05 0047 9144 05 0033 Connecting cable M12x1, 5,0 m, elbow connector (female) and wire

Example for order

You need: Level switch and breather, clogging indicator, length L = 500 mm, 2 level contacts, temperature contact TK80°C as opener, 1. contact 100 mm falling closer, 2. contact 420 mm falling opener

You order: NV 74-HY-MS-S6 500-2K -TK80NC-VS-100-fC-420 fO

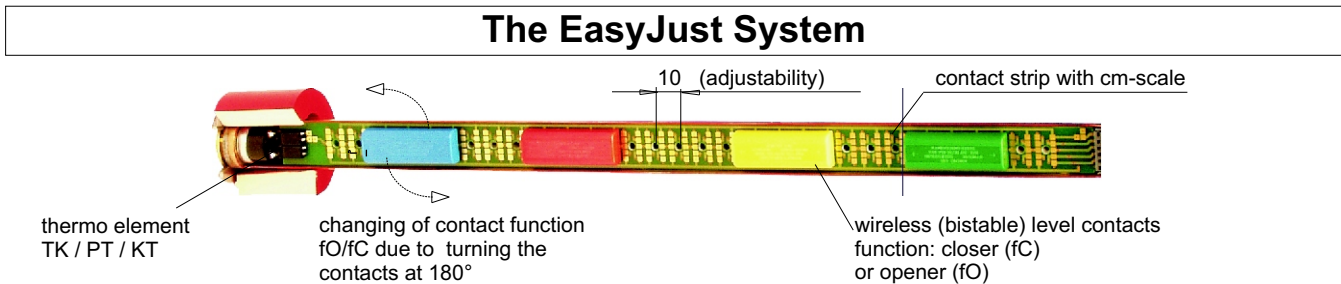
Standard pin assingment NV 74D

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 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 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 standardised 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 level contacts are electric items which need to be in contact with the respective circuit. Therefore normally wires are used which results in difficult adjustability when using several contacts.

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

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

The contacts' function (fO or fC) 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 surveillance.