

Level and temperature switch with display NT 61D

- Highly visible LED display indicates the switching outputs, able to rotate 270°
- 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 the VDMA guidelines
- Min/Max memory, logbook function



Level and temperature switch NT 61

- Flange according to DIN 24557 / Part 2
- Various connector options
- Up to 4 level outputs or 2 switching level outputs plus RTD or analog output for temperature
- Reliable dynamic float system
- Stainless steel option for temperatures up to 150 °C
- Probe length up to 1.5 m (longer on request)
- Voltage up to 230 V applicable



Technical data

Nivotemp NT 61-...

Basic unit

max. operating pressure
operating temperature
min. spec. density of fluid

1 bar
-20 °C to +80 °C
0,80 kg/dm³ with float SK 610
0,85 kg/dm³ with float SK 221
280, 370, 500 (standard)
variable up to max. 1500

length

weight
at L=280 mm
plus per 100 mm

MS
approx. 200 g
approx. 30 g

VA
approx. 300 g
approx. 50 g

Material / design

float
immersion tube
flange (DIN 24557)
stilling tube (option)

MS
hard PU (SK 610)
brass
PA
brass

VA
SS 1.4571 (SK 221)
SS 1.4571
PA
stainless steel

Level contacts

function
max. voltage
max. current
max. contact load
min. distance of contact

K10
NO / NC*
230 V
0,5 A
10 VA
40 mm

W11
change over
48 V
0,5 A
20 VA
40 mm

*NO= normally open / NC = normally closed at empty reservoir

Included in delivery

mounting bolts M5 (6 pieces) and GI cork-gasket

Temperature contact

of temp. contacts
max. voltage
max. current
max. contact load

TK
1
230 V
2,5 A
100 VA

TM
2
230 V
2 A
100 VA

Function

switching point °C
switching point tolerance
max. hysteresis

NC
50 / 60 / 70 / 80
± 3 K
10 K ± 3 K

NC
50 / 60 / 70 / 80
± 5 K
18 K ± 5 K

Function

switching point °C
switching point tolerance
max. hysteresis

NO
50 / 60 / 70 / 80
± 3 K
10 K ± 3 K

NO
50 / 60 / 70 / 80
± 5 K
26/35/40/45 K ± 5 K

NC = open / NO = closed at **increasing temperature**

Other temperatures and designs with 2x TK contacts on request

Temperature sensor

tolerance

RTD (Pt 100) class B, DIN EN 60 751
±0,8 °C

Temperature transmitter

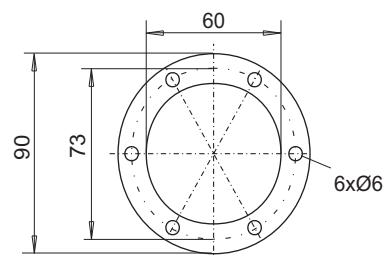
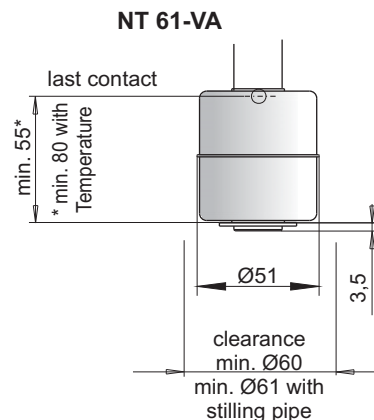
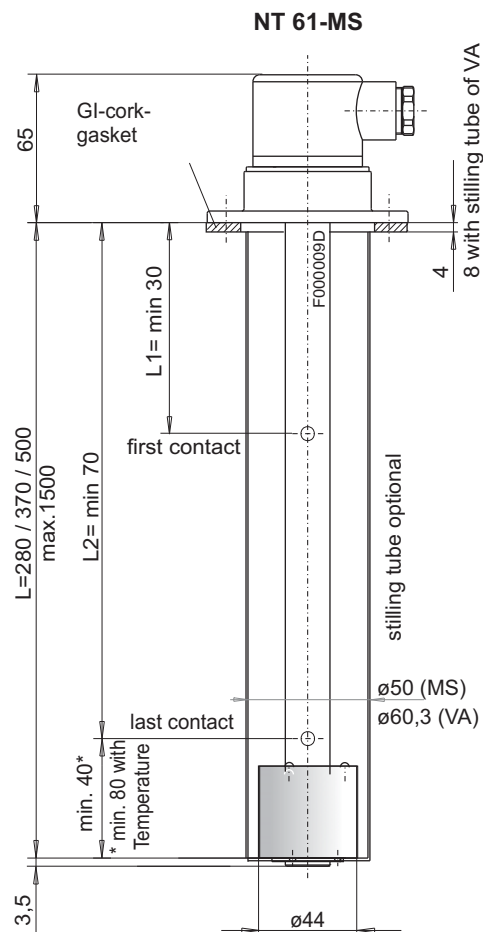
probe element
measuring range
operating voltage (U_B)
output
load Ω max.
other measuring range on request

KT
RTD (Pt 100) class B, DIN EN 60 751
0 °C to +100 °C
10 - 30 V DC
4 - 20 mA
(U_B - 7,5 V) / 0,02 A

Options

stilling pipe (SSR)

material same as immersion tube



according to DIN 24557 part 2

Product code for Nivotemp NT 61-...

NT 61- [] - [] - [] - [] - [] - **A** **B** - **C** - []

Series

Nivotemp NT 61

Design

MS brass

VA float and immersion tube
stainless steel

Connector

M3

S6

M12

2M12

C6F

Length (max. 1500 mm)

280

370

500

Variable (please specify length)

level contacts

1-4

Level contact

K = NC/NO

W = change over

SSR = stilling tube

only for double temp. contact

C T2 (2nd Temperature contact)

NC

NO

TM50NC TM50NO = 50 °C

TM60NC TM60NO = 60 °C

TM70NC TM70NO = 70 °C

TM80NC TM80NO = 80 °C

B T1 (1st Temperature contact)

NC

NO

TM50NC TM50NO = 50 °C

TM60NC TM60NO = 60 °C

TM70NC TM70NO = 70 °C

TM80NC TM80NO = 80 °C

A Temperature *

Pt 100 = Temperature sensor (RTD)

KT = Temperature transmitter

TK = Temperature contact

TK50NC = 50 °C NC

TK60NC = 60 °C NC

TK70NC = 70 °C NC

TK80NC = 80 °C NC

TK50NO = 50 °C NO

TK60NO = 60 °C NO

TK70NO = 70 °C NO

TK80NO = 80 °C NO

*cannot be combined with temperature contact TM

Accessories

Part-No. 4-pole Description

9144 05 0010 Connecting cable M12x1, 1,5 m, elbow connector (female) and straight connector (male)

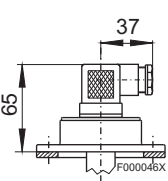
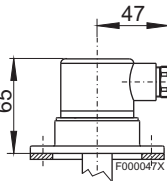
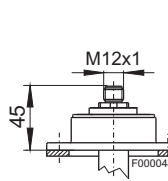
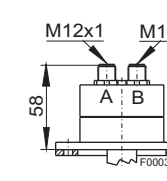
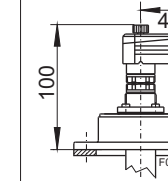
9144 05 0046 Connecting cable M12x1, 3,0 m, elbow connector (female) and straight connector (male)

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

Example for order

You need: Level switch design MS, connector S6, length L= 550 mm, 2 level contacts (NO/NC) and temperature contact 80 °C as NC, 1st contact 100 mm NC, 2nd contact 470 mm NO

You order: NT 61-MS-S6-550-2-K-T80NC, L1=100 NC, L2 = 470 NO

Connection	M3	S6	M12 (base)	2 x M12 (base)	C6F
max. voltage	3 pol. + PE	6 pol. + PE	4 pol.	2 x 4 pol.	6 pol. + PE
protection class	DIN EN 175301-803	DIN EN 175201-804	DIN EN 61076-2-101	DIN EN 61076-2-101	DIN EN 175301-804
cable connection	230 V AC/DC*	230 V AC/DC*	30 V DC	30 V DC	230 V AC/DC*
	IP 65	IP 65	IP 67**	IP 67**	IP 65
	PG 11	M20 x 1,5			PG 11
					
Max. # of contacts					
Level/ Temp. contact	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	3 x K10 / 1 x TK
	- / -	2 x K10 / 2 x TM	- / -	2 x K10 / 2 x TM	2 x K10 / 2 x TM
	- / -	1 x W11 / 1 x TK	- / -	1 x W11 / 1 x TK	1 x W11 / 1 x TK
		1 x W11 / 2 x TM		1 x W11 / 2 x TM	1 x W11 / 2 x TM
Only level	2 x K10	4 x K10	2 x K10	4 x K10	4 x K10
or	1 x W11	2 x W11	1 x W11	2 x W11	2 x W11

* max. 48 V at switch contacts / **with casted connector head / other connectors on request

Technical data

Nivotemp NT 61D-...

Basic unit

max. operating pressure	1 bar	
operating temperature	-20 °C to +80 °C	
min. density of fluid	0.80 kg/dm ³ with float SK 610 0.85 kg/dm ³ with float SK 221	
standard length mm	280, 370, 500 variable up to max. 1.5 m	
weight	MS	VA
at L=280 mm., approx.	300 g	400 g
plus per 100 mm., approx.	30 g	50 g

Material	MS	VA
display housing	PA	PA
float	hard PU (SK 610)	SS 1.4571 (SK 221)
immersion tube	brass	SS 1.4571
flange (DIN 24557)	PA	PA
stilling tube (option)	brass	stainless steel

Level contacts	K10
max. #	2
function	NO/NC*
max. voltage	30 V
max. current	0.5 A
max. contact load	10 VA
min. distance of contact	40 mm

*NO= normally open / NC = normally closed at empty reservoir

Display

Temperature display range	-20 °C to +120 °C
alarm range	0 °C to 100 °C
accuracy	1%
resolution	0.5 °C
protection class	IP65
display	4 digit 7 segment LED display
operation	3 button keypad
current consumption at power up	approx. 100 mA for 100 ms
operating current consumption	approx. 50 mA
supply voltage (U _B)	10 - 30 V DC (nominal voltage 24 V DC)
ambient temperature	-20 °C to 70 °C

Temperature sensor

RTD (Pt 100) class B, DIN EN 60751

Included in delivery

mounting bolts M5 (6 pieces) and GI cork-gasket

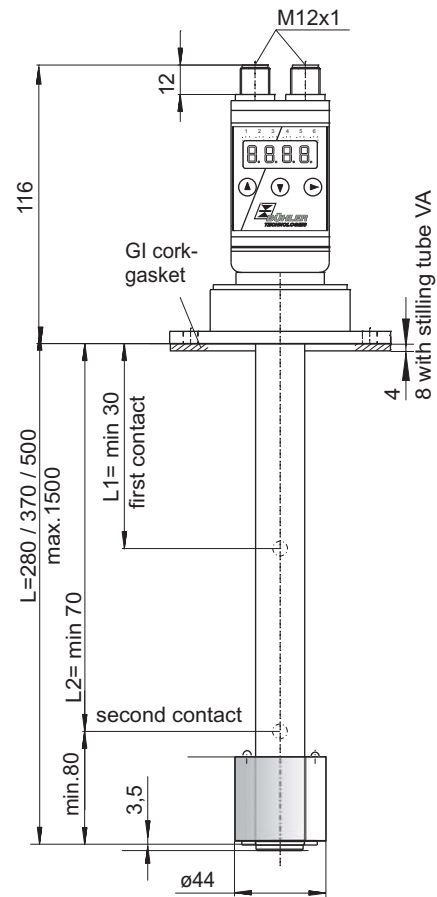
Following temperature outputs are available:

	-2T	
connector (base)	2 x M12 - 4 pol	
max. contact load	1 A	
PNP transistor output, max. current PNP output	2 x free programmable 0.5 A per output	
short-circuit proof		
	-1T-KT	
connector (base)	2 x M12 - 4 pol	
max. contact load.	1 A	
PNP transistor output, max. current PNP output	1 x free programmable max. 0.5 A per output	
short-circuit proof		
analog output	1 x 4 - 20 mA, 2-10 V, 0-10 V or 0-5 V	
load analog output	max. 500 Ω	
	-4T	
connector (base)	1 x M12 - 4 pole 1 x M12 - 8 pole	
max. contact load	1 A	
PNP transistor output, max. current PNP output	4 x free programmable 0.5 A per output / 1 A overall	
short-circuit proof		

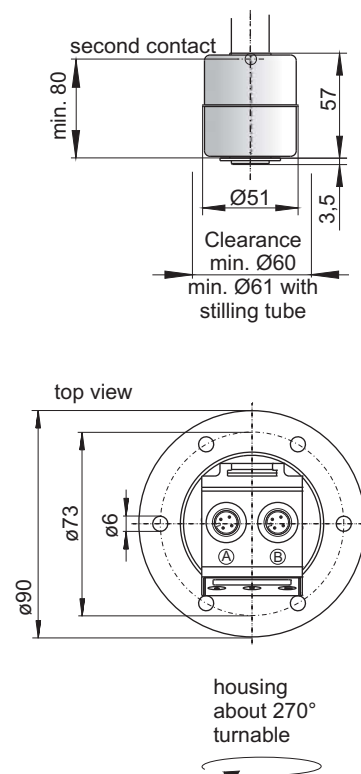
Options

stilling tube	SSR Material same as immersion tube
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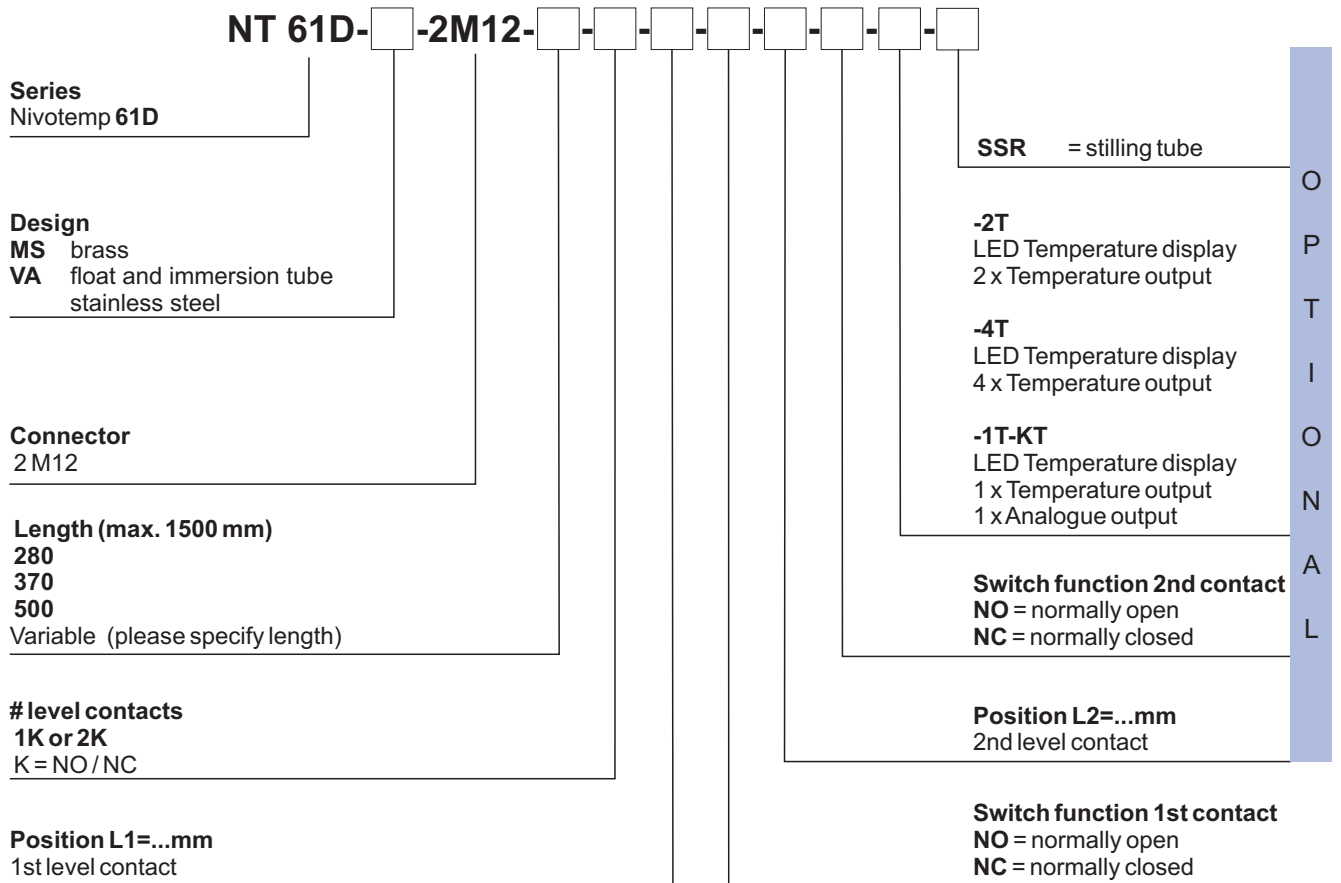
NT 61D-MS



NT 61D-VA



Product code for Nivotemp NT 61D-...



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

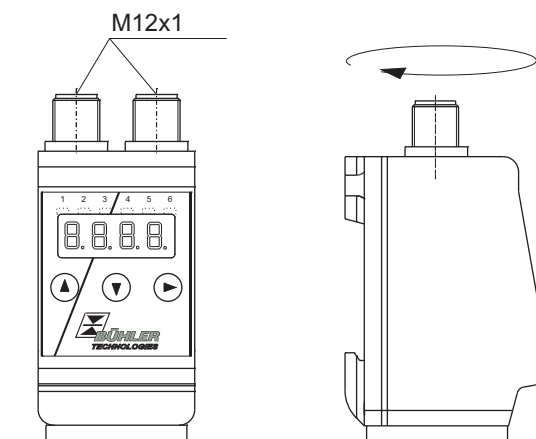
You need: Level switch Design VA, length L= 550 mm, 2 level contacts: 1st contact 100 mm NC, 2nd contact 470 mm NO, 1 temperature output, 1 analogue output, stilling tube

You order: NT 61D-VA-2M12-550-2K-100-NC-470-NO-1T-KT-SSR

Connector

2 x M12 (base)
 2 x 4 pol.
 DIN EN 61076-2-101
 max. voltage 30 V DC
 protection class IP 67**

housing
able to rotate 270 degrees



Technical data

Nivotemp NT 61-HT

Basic unit

max. operating pressure	1 bar
operating temperature	-20 °C to 150 °C (only with HT contacts)
min. density of fluid	0.85 kg/dm ³ with float SK 221
standard length mm	280, 370, 500
	variable up to max. 1.5 m
weight	VA
at L=280 mm	approx. 950 g
plus per 100 mm	approx. 50 g

Material

float	SS 1.4571
immersion tube	SS 1.4571
flange	SS 1.4571

Level contacts

	K10	W11	K10HT*	W11HT*
max. voltage	230 V	48 V	230 V	48 V
max. current	0.5 A	0.5 A	0.5 A	0.5 A
max. contact load	10 VA	20 VA	10 VA	20 VA
min. distance of contact	40 mm	40 mm	40 mm	40 mm
max. operating temperature	105 °C	105 °C	150 °C	150 °C

*NO= normally open / NC = normally closed at empty reservoir

***HT = not adjustable**

Included in delivery

mounting bolts M5 (6 pieces) and GI cork-gasket

Temperature contact

	TK	TM
# of temp. contacts	1	2
max. voltage	230 V	230 V
max. current	2.5 A	2 A
max. contact load	100 VA	100 VA

Function

	NC	NC
switching point in °C	50 / 60 / 70 / 80	50 / 60 / 70 / 80
switching point tolerance	± 3 K	± 5 K
max. hysteresis	10 K ± 3 K	18 K ± 5 K

Function

	NO	NO
switching point in °C	50 / 60 / 70 / 80	50 / 60 / 70 / 80
switching point tolerance	± 3 K	± 5 K
max. hysteresis	10 K ± 3 K	18 K ± 5 K

NO= normally open / NC = normally closed at **increasing temperature**)

other temperatures and designs with 2 x TK contacts on request

Temperature sensor

tolerance **RTD (Pt 100)** class B, DIN EN 60751

±0,8 °C

Temperature transmitter

probe element **KT** Pt 100 class B, DIN EN 60751

alarm range 0 °C to +100 °C

operating voltage (U_B) 10 - 30 V DC

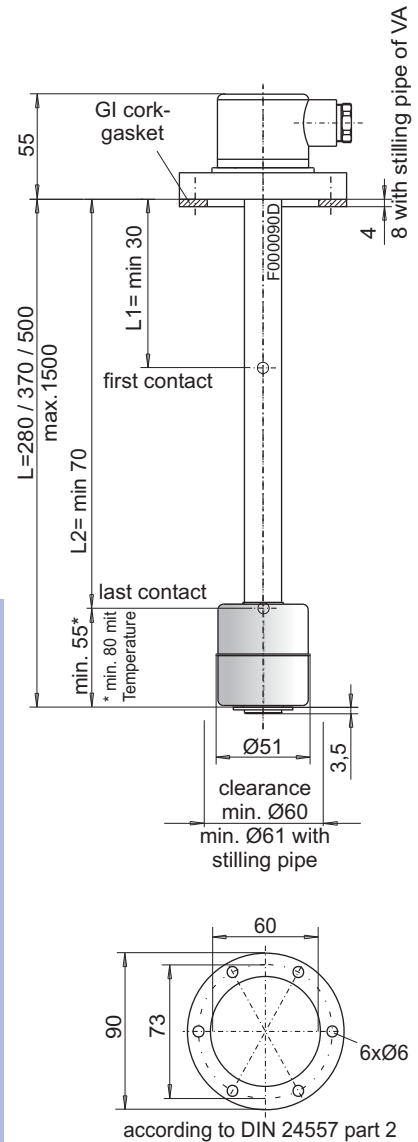
output 4 - 20 mA

load Ω max. = (U_B - 7.5 V) / 0.02 A

other measuring ranges on request

Options

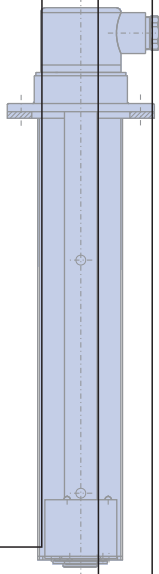
stilling pipe	SSR
	Material same as immersion tube



Product code for Nivotemp NT 61-...

NT 61-HT- [] - [] - [] - [] - **A** **B** - **C** - []

Series	Nivotemp	NT 61
Design	-HT	stainless steel
Connector	M3 S6 M12 2M12 C6F	
Length (max. 1500mm)	280 370 500 Variable (please specify length)	
# level contacts	1-4	
Level contact	K = NO/NC K-HT = NO/NC W = change over W-HT = change over	



SSR = stilling tube

Only for double temp. contact

C T2 (2nd Temperature contact)

NC	NO	
TM50NC	TM50NO	=50 °C
TM60NC	TM60NO	=60 °C
TM70NC	TM70NO	=70 °C
TM80NC	TM80NO	=80 °C

B T1 (1st Temperature contact)

NC	NO	
TM50NC	TM50NO	=50 °C
TM60NC	TM60NO	=60 °C
TM70NC	TM70NO	=70 °C
TM80NC	TM80NO	=80 °C

A Temperature *

Pt 100	= Temperature sensor (RTD)
KT	= Temperature transmitter
TK	= Temperature contact
TK50NC	= 50 °C NC
TK60NC	= 60 °C NC
TK70NC	= 70 °C NC
TK80NC	= 80 °C NC
TK50NO	= 50 °C NO
TK60NO	= 60 °C NO
TK70NO	= 70 °C NO
TK80NO	= 80 °C NO

*cannot be combined with temperature contact TM

Accessories

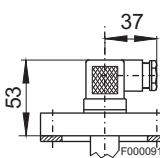
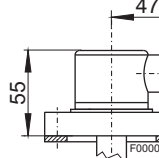
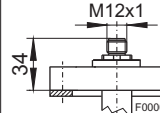
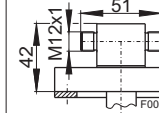
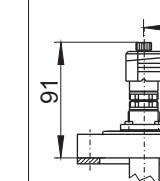
Part-No. 4-pole Description

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, connector M3, length L= 550 mm, 2 level contacts (NO/NC)
 1st contact 100 mm NC, 2nd contact 470 mm NO, temperature sensor, stilling tube

You order: NT 61HT-M3-550-2-K-HT-Pt 100-SSR, L1=100 NC, L2 = 470 NO

Connector	M3	S6	M12 (base)	2 x M12 (base)	C6F
max. voltage	3 pol. + PE	6 pol. + PE	4 pol.	2 x 4 pol.	6 pol. + PE
protection class	DIN EN 175301-803	DIN EN 175301-804	DIN EN 61076-2-101	DIN EN 61076-2-101	DIN EN 175301-804
cable connection	230 V AC/DC* IP 65 PG 11	230 V AC/DC* IP 65 M20 x 1,5	30 V DC IP 67**	30 V DC IP 67**	230 V AC/DC* IP 65 PG 11
max. # of contacts					
level/ temp. contact	1 x K10 / 1 x TK - / - - / -	3 x K10 / 1 x TK 2 x K10 / 2 x TM 1 x W11 / 1 x TK 1 x W11 / 2 x TM	1 x K10 / 1 x TK - / - - / -	3 x K 10 / 1 x TK 2 x K10 / 2 x TM 1 x W11 / 1 x TK 1 x W11 / 2 x TM	3 x K10 / 1 x TK 2 x K10 / 2 x TM 1 x W11 / 1 x TK 1 x W11 / 2 x TM
only level or	2 x K10 1 x W11	4 x K10 2 x W11	2 x K10 1 x W11	4 x K10 2 x W11	4 x K10 2 x W11

* max. 48 V at change over contacts / **with casted connector head / other connectors on request

Standard pin assignment NT 61 and NT 61-HT

Connector	M3	S6/C6	M12 (base)	2 x M12 (base)
only level contact(s) Type K10				
only level contact(s) Type W11				
level contact(s) Type K10 and temperature				
level contact(s) Type K10 and Pt 100 (RTD)				
level contact(s) Type W11 and temperature				
level contact(s) Type W11 and Pt 100 (RTD)				
level contact(s) Type K10 and 2 Temp. contacts				
level contact Type W11 and 2 Temp. contacts				

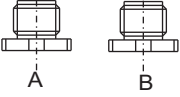

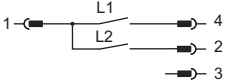
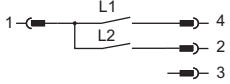
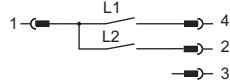

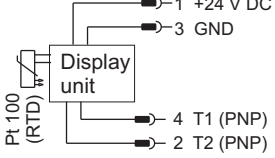
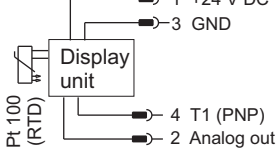
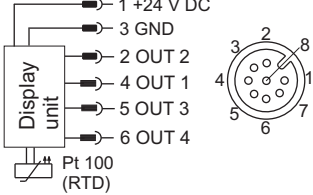
TK/TM = Thermo contact

KT = Temperature transmitter

PT = Temperature sensor Pt 100 (RTD)

other assignment on request

Standard pin assignment NT 61D

	Type NT 61D-2T level contact(s) 2 x Temperature output	Type NT 61D-1T-KT level contact(s) 1 x Temperature output 1 x Analogue output	Type NT 61D-4T level contact(s) 4 x Temperature output
Connector A = Level 			
Connector B = Temperature 			

Note:

If the switching output is measured with high-impedance measuring equipment or if the frequency output is used, connect a 10 kΩ resistor between output and ground to avoid faulty measurements.