



Level- and temperature switch

Nivotemp NT 61, NT 61-HT, NT 63, NT 63-LTD/Nivovent NV 71, NV 73

Installation and Operation Instructions

Original instructions





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Read this instruction carefully prior to installation and/or use. Pay attention particularly to all advises and safety instructions to prevent injuries. Bühler Technologies can not be held responsible for misusing the product or unreliable function due to unauthorised modifications.

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Document information

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1 Introduction

1.1 Intended Use

Level switches are used to monitor the liquid level and temperature in fluid systems.

Level switches must not be used in highly flammable or corrosive liquids.

The medium must not contain particles, particularly metallic particles, to prevent deposits on the float or between the float and switching tube. If necessary, filter the medium.

Please note the technical data in the appendix for the specific intended use, existing material combinations, as well as temperature limits.

WARNING



All device models are solely intended for industrial applications. They are **not safety components**. The devices must not be used if failure or malfunction thereof jeopardises the safety and health of persons. Use in explosive areas is **prohibited**.

1.2 Functionality

1.2.1 Liquid level monitoring

The measuring tube is located inside the tank. The level switches are located inside the measuring tube. These are activated by a magnet inside the level switch float.

On models NT 63 and NV 73 the liquid level is continuously measured via reed-contact. The data is output via 4-20 mA analogue signal. The NT 63-LTD has an IO-Link standard interface for output.

On models NT 61 and NV 71 the contacts are mounted to a perforated rail spaced as specified in the purchase order, but can be moved if necessary.

1.2.2 Temperature monitor

The temperature is monitored via thermal element mounted to the end of the rail. Choose from temperature contacts with fixed increments, a resistance thermometer (Pt100) or a temperature transmitter.

In the case of continuous temperature measurement (model key "KT" / temperature transmitter) an analogue signal between 4 and 20 mA is output. The NT 63-LTD only has an IO-Link standard interface for output.

When equipped with resistance thermometer (model key "Pt100") the temperature is output using the change in resistance ($0\text{ °C} = 100\ \Omega$) of the Pt100.

Please note the technical data in the appendix.

1.3 Design types

The level switch is equipped with different switching and analogue outputs based on the configuration. The outputs are freely programmable.

The Nivovent type can be equipped with the following options:

VS	Optical contamination indicator for the vent filter: analogue negative pressure display, display range 0.35 bar (5.1 PSI).
BFA*	Filling adapter incl. ribbed flange with screen insert: This option enables adding small amounts of oil through the vent filter housing. The selected version is built into the respective housing for this purpose.
SSR*	Stilling tube with centring disc and filling adapter: Just as with the BFA, this contains both the stilling tube option as well as the filler. The stilling tube is made from the same material as the selected immersion tube (MS/VA).
MT	for installation into the multiterminal: Here the basic version is built into the multiterminal (MT).
MTS	for installation into the multiterminal including stilling tube: In addition to the basic version, a stilling tube with centring disc is built into the multiterminal.
FCT	Fluidcontrolterminal: Here the fluid control terminal (FCT) is mounted directly onto the basic version.

* not in conjunction with FCT and MT/MTS option

The SSR option is available for the Nivotemp type.

Please refer to the type plate for your equipment configuration. In addition to the job number, this also contains the item number and type designation.

1.4 Model key NT61

Model designation		Options	
NT 61	□□-□□-nn-nn-□□-□□-□□-□□	SSR	Stilling tube
Version		2nd temperature contacts (TM... only)	
MS	Brass	NC contact NO contact	
VA	float and immersion tube	TM...	TM50NC TM50NO = 50 °C
Plug connector			TM60NC TM60NO = 60 °C
M3			TM70NC TM70NO = 70 °C
S6			TM80NC TM80NO = 80 °C
M12		1st temperature signal	
2M12		NC contact NO contact	
C6F		TK...	TK50NC TK50NO = 50 °C
Length in mm (max. 1500)			TK60NC TK60NO = 60 °C
280	Standard lengths		TK70NC TK70NO = 70 °C
370			TK80NC TK80NO = 80 °C
500		TM ³⁾	TM50NC TM50NO = 50 °C
nn	variable, please specify value		TM60NC TM60NO = 60 °C
Level measurement			TM70NC TM70NO = 70 °C
1-4	Number of contacts		TM80NC TM80NO = 80 °C
Level contact		Pt100	Temperature sensor ¹⁾
K	Model K10 (NC/NO)	KT	Temperature transmitter ^{1) 2)}
W	Model W11 (change-over contact)		

¹⁾ Cannot be combined with temperature contact

²⁾ With KT only 10 - 30 V DC

³⁾ For version with 2 temperature contacts

1.5 Model key NT61-HT

NT 61-□□-□□-nn-nn-□□-□□-□□-□□		Options	
Model designation		SSR	Stilling tube
Version			
HT	Stainless steel		
Plug connector		2nd temperature contacts (TM... only)	
M3		NC contact NO contact	
S6		TM... TM50NC TM50NO = 50 °C	
M12		TM60NC TM60NO = 60 °C	
2M12		TM70NC TM70NO = 70 °C	
C6F		TM80NC TM80NO = 80 °C	
Length in mm (max. 1500)		1st temperature signal	
280	Standard lengths	NC contact NO contact	
370		TK... TK50NC TK50NO = 50 °C	
500		TK60NC TK60NO = 60 °C	
nnn	variable, please specify value	TK70NC TK70NO = 70 °C	
Level measurement		TK80NC TK80NO = 80 °C	
1-4	Number of contacts ¹⁾	TM ⁵⁾ TM50NC TM50NO = 50 °C	
Level contact		TM60NC TM60NO = 60 °C	
K	Model K10 (NC/NO)	TM70NC TM70NO = 70 °C	
K-HT	Model K10HT ²⁾ (NC/NO)	TM80NC TM80NO = 80 °C	
W	Model W11 (change-over contact)	Pt100 Temperature sensor ³⁾	
W-HT	Model W11HT ²⁾ (change-over contact)	KT Temperature transmitter ^{3) 4)}	

1) Please specify position and switching function per model key

Example: L1 = nnn mm NC

2) Not adjustable

3) Cannot be combined with temperature contact

4) With KT only 10 - 30 V DC

5) For version with two temperature contacts

1.6 Model key NT63

NT 63-□□-□□-□□-□□-□□		Optional	
Model designation		SSR	Stilling tube
Measuring mode		Length (max. 1420 mm)	
K	Level and temperature measurement	280	
KN	only level measurement	370	
LTD	Level and temperature measurement (IO-Link)	500	
Version		670	
MS	Brass	820	
VA	float and VA immersion tube	970	
Plug connection		1120	
M3	(only K/KN)	1270	
M12		1420	

1.7 Model key NV71

Type designation, NV 71-HY-□□-□□-nn-□□-□□-□□-□□-□□	Options
HY filter	VS Contamination indicator
Version	BFA ³⁾ Filling adapter
MS Brass	SSR ³⁾ Stilling tube incl. filling adapter
VA ¹⁾ float / VA immersion tube	MT for multiterminal
Plug connector	MTS for multiterminal with stilling tube option
M3	FCT for Fluidcontrolterminal
S6	
M12	
2M12	
Length in mm (max. 1500)	2nd temperature contact (TM... only)
280 Standard lengths	NC contact NO contact
370	TM... TM50NC TM50NO = 50 °C
500	TM60NC TM60NO = 60 °C
nnn variable, please specify value	TM70NC TM70NO = 70 °C
	TM80NC TM80NO = 80 °C
Level measurement	1st temperature signal
1-4 Number of contacts ²⁾	NC contact NO contact
Level contacts	TK... TK50NC TK50NO = 50 °C
K Model K10 (NC/NO)	TK60NC TK60NO = 60 °C
W Model W11 (change-over contact)	TK70NC TK70NO = 70 °C
	TK80NC TK80NO = 80 °C
	TM ⁶⁾ TM50NC TM50NO = 50 °C
	TM60NC TM60NO = 60 °C
	TM70NC TM70NO = 70 °C
	TM80NC TM80NO = 80 °C
	Pt100 Temperature sensor ⁴⁾
	KT Temperature transmitter ^{4) 5)}

¹⁾ Not in conjunction with option FCT

²⁾ Please specify position and switching function per model key, Example: L1 = nnn mm NC

³⁾ not in conjunction with FCT, MT or MTS option

⁴⁾ Cannot be combined with temperature contact

⁵⁾ With KT only 10 - 30 V DC

⁶⁾ For version with two temperature contacts

1.8 Model key NV73

Type designation, NV 73-HY-□□-□□-□□-□□-□□-□□-□□	Options
HY filter	VS contamination indicator
Measuring mode	BFA ²⁾ filling adapter
K level and temperature measurement	SSR ²⁾ stilling tube with filling adapter
KN only level measurement	FCT fluid control terminal
LTD level and temperature measurement (IO-Link)	MT for multiterminal
Version	MTS for multiterminal incl. stilling tube
MS Brass	
VA ¹⁾ float and VA immersion tube	
Plug connection	Length (max. 1420 mm)
M3	280
M12	370
¹⁾ not in conjunction with FCT option	500
²⁾ not in conjunction with FCT, MT or MTS option	670
	820
	970
	1120
	1270
	1420

1.9 Scope of Delivery

- Level switch
- Product documentation
- Connection/mounting accessories (optional)

2 Safety instructions

2.1 Important advice

Operation of the device is only permitted if:

- the product is used under the conditions described in the installation- and operation instruction, the intended application according to the type plate and the intended use. In case of unauthorized modifications done by the user Bühler Technologies GmbH can not be held responsible for any damage,
- when complying with the specifications and markings on the nameplates.
- the performance limits given in the datasheets and in the installation- and operation instruction are obeyed,
- monitoring devices and safety devices are installed properly,
- service and repair is carried out by Bühler Technologies GmbH,
- only original spare parts are used.

This manual is part of the equipment. The manufacturer keeps the right to modify specifications without advanced notice. Keep this manual for later use.

Signal words for warnings

DANGER

Signal word for an imminent danger with high risk, resulting in severe injuries or death if not avoided.

WARNING

Signal word for a hazardous situation with medium risk, possibly resulting in severe injuries or death if not avoided.

CAUTION

Signal word for a hazardous situation with low risk, resulting in damaged to the device or the property or minor or medium injuries if not avoided.

NOTICE

Signal word for important information to the product.

Warning signs

These instructions include the following warnings:



General warning sign



Unplug from mains



Voltage warning



Wear respiratory equipment



Warning not to inhale toxic gases



Wear a safety mask



Warning of corrosive substances



Wear gloves



General mandatory sign

2.2 General hazard warnings

The equipment must be installed by a professional familiar with the safety requirements and risks.

Be sure to observe the safety regulations and generally applicable rules of technology relevant for the installation site. Prevent malfunctions and avoid personal injuries and property damage.

The operator of the system must ensure:

- Safety notices and operating instructions are available and observed,
- The respective national accident prevention regulations are observed,
- The permissible data and operational conditions are maintained,
- Safety guards are used and mandatory maintenance is performed,
- Legal regulations are observed during disposal,
- compliance with national installation regulations.

Maintenance, Repair

Please note during maintenance and repairs:

- Repairs to the unit must be performed by Bühler authorised personnel.
- Only perform conversion-, maintenance or installation work described in these operating and installation instructions.
- Always use genuine spare parts.
- Do not install damaged or defective spare part. If necessary, visually inspect prior to installation to determine any obvious damage to the spare parts.

Always observe the applicable safety and operating regulations in the respective country of use when performing any type of maintenance.

The method for cleaning the devices must be adapted to the IP protection class of the devices. Do not use cleaners which could damage the device materials.

DANGER

Toxic, acidic gases/liquids

Protect yourself from toxic, corrosive gasses/liquids when performing any type of work.
Wear appropriate protective equipment.



3 Transport and storage

Only transport the product inside the original packaging or a suitable alternative.

The equipment must be protected from moisture and heat when not in use. It must be stored in a covered, dry, dust-free room at room temperature.

4 Setup and connection

DANGER
Electric voltage

Risk of electric shock



- a) De-energise the system.
- b) The equipment may only be installed, maintained and put into operation by instructed, competent personnel.
- c) Always observe the applicable safety regulations for the operating site.


DANGER
Toxic, acidic gases/liquids

Protect yourself from toxic, corrosive gasses/liquids when performing any type of work. Wear appropriate protective equipment.



4.1 Installation

Please note before installing the level switch!

After transport and delivery of the level switch, the switching status of the bistable contacts may be different than required for proper operation.

Therefore slide the float for the level switch along the level switch tube from below immediately before installation.

This ensures all built-in bistable contacts have a clearly defined switching status (NC or NO).

For direct installation to the tank, insert the switching tube into the designated bore (per DIN 24557, Part 2) with rubberised cork seal on the tank. It secures to the flange using the included screws and seals. Please be sure the float can move freely and to leave enough space between the tank wall and add-ons.

After removing the float, where applicable, be sure the magnet inside the float is above the fluid level. This can easily be verified with a piece of iron to determine the magnet position inside the float.

DANGER
Electric voltage
Risk of electric shock

When connecting devices, please note the maximum voltages and currents (see technical data) and use the correct wire cross-sections and circuit breakers.

When selecting the connection lines, also note the maximum operating temperatures of the devices.

Installation in special areas of application:

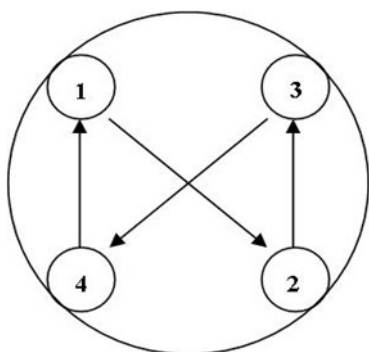
If the device will be installed outdoors or in wet areas, the maximum operating voltage is max. 16 V DC effective or 35 V DC.



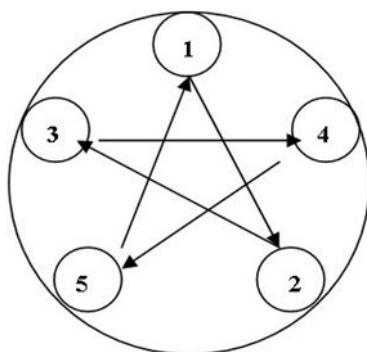
Flange mounting

NOTICE! The description of how to mount the flange is merely a recommendation!

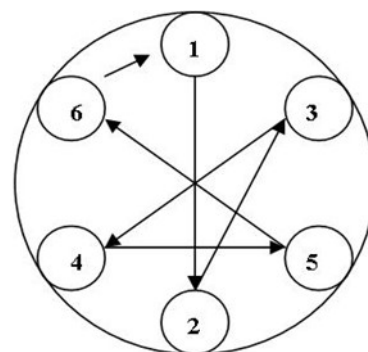
Please use the mounting screws provided to mount the flange! The mounting screws should be tightened to a torque between 3 Nm and 4 Nm. For sensors with flange housing and vent filters, the mounting screws should be tightened to a torque between 2 Nm and 3 Nm. The mounting screws should be tightened as follows:



Four screws



Five screws



Six screws

4.2 Information on the correct operation of reed contacts in Bühler level switches

Based on their construction, reed contacts are very long lasting and reliable components. Yet the following should be considered when using them:

Life of reed switches

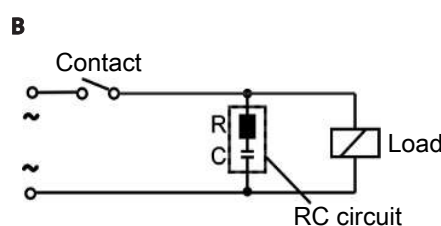
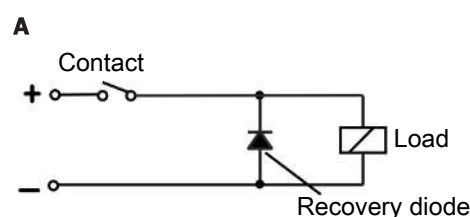
The life of reed switches can be up to 10^9 cycles. This is reduced by high stress and / or incorrect or the absence of protective circuits when switching inductive, capacitive or lamp loads.

It's therefore important to ensure NEVER to exceed one or several of the maximum approved limits, even temporarily, and to install a contact protective circuit for loads which are not purely ohmic. Using test lamps when installing the devices is also prohibited, as these can temporarily allow too much current to flow, which can damage the reed contacts. In this case non-volatile testing equipment should always be used.

Contact protective circuits for reed switches

For direct current voltage a recovery diode per figure A must be connected parallel to the contact.

For alternating current voltage an RC circuit per Figure B and Table 1 must be connected parallel to the contact.



Load in VA	10		25		50	
	Voltage at contact V	R/Ohm	C/μF	R/Ohm	C/μF	R/Ohm
24		22	0.022	1	0.1	1
60		120	0.0047	22	0.022	1
110		470	0.001	120	0.0047	22
230		470	0.001	470	0.001	120

Please note the max. voltage/load ratings of the respective level contacts!

Voltages and currents

All Bühler level contacts with reed switch can switch minimal Switching voltages of 10 μ V and minimal switching currents of 1 μ A.

The maximum values specified for the respective contact types apply.

Level contact with reed switches can therefore be used for SPS applications as well as for high loads (within the maximum limits) without hesitation.

Contact material

All reed switches in Bühler level contacts use rhodium as the contact material for the actual contact areas.

Magnetic fields

Avoid external magnetic fields, including from electric motors. These can interfere with the function of the reed switches.

Mechanical loads

Do not expose the level switch to strong blows or bending.

4.3 Adjusting level contacts (NT61, NV71 only)

The level measurement contacts are mounted on a perforated rail inside the protective tube. These are arranged per order specifications but can be moved if necessary.

Depending on the model, the perforated rail will also have electronic assemblies. These are positioned so they do not limit the setting range of the level contacts. Please be sure not to damage the assemblies during installation or removal. Models with the designation K, KN or LTD supply a continuous 4-20 mA signal. These devices do not require configuration.

For devices with 230 V mains voltage:

DANGER



Electrical voltage

Electrocution hazard.

- Disconnect the device from power supply.
- Make sure that the equipment cannot be reconnected to mains unintentionally.
- The device must be opened by trained staff only.
- Regard correct mains voltage.



- Disconnect the voltage supply.
- Disconnect the plug.
- **Models NT61:** Unscrew the plug base. For plug-in connectors with screw-in plug base, unscrew the top hexagon ring and pull the complete pin insert up until the bottom of the base can be unscrewed freely.
- **Models NV71:** Remove filter cover and element. Unscrew and remove the filter case. Unscrew the flange cover from the level switch.
- Carefully pull the perforated rail with contacts out the top.

NOTICE

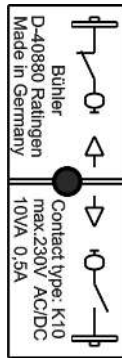


On versions with earth wire, this is run as a loop and soldered to the protective tube from the inside in the insertion direction. To prevent breaking off the earth wire it should not be pulled all the way out.

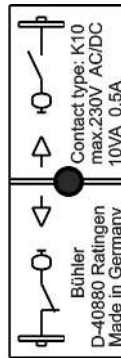
- Mark the original contact position.
- Lock the contacts in place in the desired positions. Please note the minimum spacing!

If the contacts are configured as NO contact (NO) or NC contact (NC), the contact function can be reversed by turning the contacts 180°. The housing has symbols for NC contact and NO contact as well as an arrow. The arrow, which points up when installed, indicates the current contact function. The contact logic assumes the level switch is installed in an empty tank, i.e. it is only in the operating position once filled.

Function NO contact (NO)
with rising level



Function NC contact (NC)
with rising level



- If the earth wire was pulled out of the protective tube, first insert this wire into the protective tube.
- Make a loop of the additional cable length and carefully slide the perforated rail in again.
- **Models NT61:** Screw on the plug base. For plugs with screw-in thread, attach the plug base clean and screw in hand tight. Leave the pin insert free so the base can turn around the cables. Now slide the cables all the way in, lock the pin insert into the guide and slide all the way in. Tighten the top hexagon ring hand tight.
- **Models NV71:** Screw on the flange cover. Screw on the filter case. Attach the filter cover and element.

NOTICE



Ensure the seals are positioned correctly. Replace defective seals immediately!

4.4 Settings

All models in the series named "63-K..." continuously capture the liquid level and the temperature via reed-contact or a Pt100. Sensor versions "63-K... and 63-KN..." output 4 – 20 mA analogue signals (normally: 4 mA lowest point, 20 mA highest point). These devices require no configuration.

Sensor versions "63-LTD" are available with digital interface.

Here the sensor uses the standardised technology **IO-Link**, an efficient point-to-point communication. It uses the previous, proven and tested connection technology.

Compatibility with the previous technology is guaranteed. If no IO-Link master is connected, the outputs can be used as regular switching outputs (1 PNP liquid level output, 1 PNP temperature output).

This allows configuring the switching points via the IO-Link interface.

For the respective IODD configuration data, please visit <https://ioddfinder.io-link.com>.



5 Operation and control

NOTICE



The device must not be operated beyond its specifications.

6 Cleaning and Maintenance

This device is maintenance-free.

The method for cleaning the devices must be adapted to the IP protection class of the devices. Do not use cleaners which could damage the device materials.

For versions with filter:

The filter element must be replaced as needed, at least 1x annually. In exceptional cases a small amount of oil can be added via the filter.

During maintenance, remember:

- The equipment must be maintained by a professional familiar with the safety requirements and risks.
- Only perform maintenance work described in these operating and installation instructions.
- Observe the respective safety regulations and operating specifications when performing any type of maintenance.
- Always use genuine spare parts.

6.1 Replacing the filter element

Replace the filter element as follows:

- Temporarily shut down the system.
- The filter cover counter-clockwise to open.
- Remove the filter element and dispose according to legal regulations.
- Insert the new filter element. Be sure to use the correct filter fineness!
- Screw on the filter cover.
- For filters with optical contamination indicator: Set the display to zero.

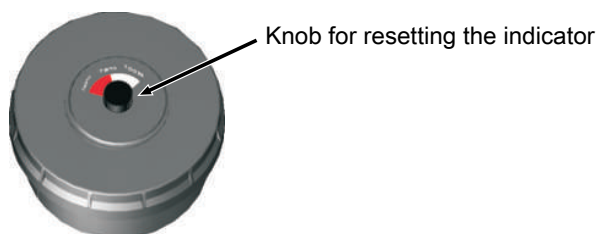
Hydac filter

When the maximum display value is reached, the red indicator piston will lock in place, indicating the filter service is required. Press the yellow Reset button to reset the display to zero.



Filtration Group filter

Filter contamination is indicated in percent (50%, 75% and 100 %). To reset the display to zero, turn the knob in the direction of the arrow until the red part of the indicator disc is turned all the way back.



6.2 Adding small amounts of oil

Nivovent type with BFA or SSR option only:

- Temporarily shut down the system.
- The filter cover counter-clockwise to open.
- Remove the filter element.
- Slowly add oil through the nodular holes.
- Reinsert the filter element and close the cover.
- Restart the system.

7 Service and repair

This chapter contains information on troubleshooting and correction should an error occur during operation.

Repairs to the unit must be performed by Bühler authorised personnel.

Please contact our Service Department with any questions:

Tel.: +49-(0)2102-498955 or your agent

For further information about our services and customised maintenance visit <http://www.buehler-technologies.com/service>.

If the equipment is not functioning properly after correcting any malfunctions and switching on the power, it must be inspected by the manufacturer. Please send the equipment inside suitable packaging to:

Bühler Technologies GmbH

- Reparatur/Service -

Harkortstraße 29

40880 Ratingen

Germany

Please also attach the completed and signed RMA decontamination statement to the packaging. We will otherwise be unable to process your repair order.

You will find the form in the appendix of these instructions, or simply request it by e-mail:

service@buehler-technologies.com.

7.1 Spare parts

Accessories

Item no.	Description
9144050010	Connecting cable M12x1, 4-pin, 1.5 m, angular coupling and straight plug
9144050046	Connecting cable M12x1, 4-pin, 3.0 m, angular coupling and straight plug
9144050047	Connecting cable M12x1, 4-pin, 5.0 m, angular coupling and strands

8 Disposal

The applicable national laws must be observed when disposing of the products. Disposal must not result in a danger to health and environment.

The crossed out wheelie bin symbol on Bühler Technologies GmbH electrical and electronic products indicates special disposal notices within the European Union (EU).



The crossed out wheelie bin symbol indicates the electric and electronic products bearing the symbol must be disposed of separate from household waste. They must be properly disposed of as waste electrical and electronic equipment.

Bühler Technologies GmbH will gladly dispose of your device bearing this mark. Please send your device to the address below for this purpose.



We are obligated by law to protect our employees from hazards posed by contaminated devices. Therefore please understand that we can only dispose of your waste equipment if the device is free from any aggressive, corrosive or other operating fluids dangerous to health or environment. **Please complete the "RMA Form and Decontamination Statement", available on our website, for every waste electrical and electronic equipment. The form must be applied to the packaging so it is visible from the outside.**

Please return waste electrical and electronic equipment to the following address:

Bühler Technologies GmbH
WEEE
Harkortstr. 29
40880 Ratingen
Germany

Please also observe data protection regulations and remember you are personally responsible for the returned waste equipment not bearing any personal data. Therefore please be sure to delete your personal data before returning your waste equipment.

9 Appendices

9.1 Technical Data NT 61

Basic Unit

Version	MS	VA
Operating pressure	max. 1 bar	max. 1 bar
Operating temperature	-20 °C to +80 °C	-20 °C to +80 °C
Float	SK 610	SK 221
Min. fluid density	0.80 kg/dm ³	0.85 kg/dm ³
Lengths (all versions)	280, 370, 500 mm (Standard), variable to max. 1500 mm in 10 mm increments	

Material/Version	MS	VA
Float	rigid PU	1.4571
Immersion tube	Brass	1.4571
Flange (DIN 24557)	PA	PA
Weight at L=280 mm	approx. 200 g	approx. 300 g
Each 100 mm add	approx. 30 g	approx. 50 g

Includes:

Mounting screws (quantity 6) and rubberised cork seal.

Options

Stilling tube (SSR)	Brass	VA
Level switching output	K10	W11
Function	NO/NC*	Change-over contact
Voltage max.	230 V AC/DC**	48 V AC/DC**
Switching current max.	0.5 A	0.5 A
Contact load max.	10 VA	20 VA
Min. contact spacing	40 mm	40 mm

Contact position in 10 mm increments

*NO = falling NC contact / NC = falling NO contact

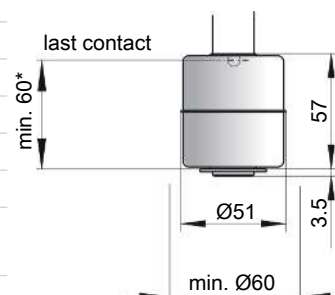
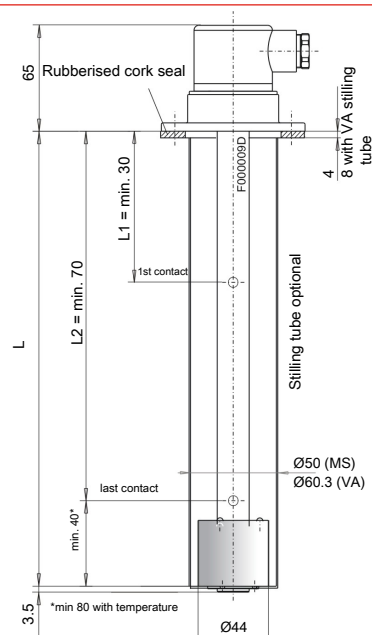
**for configuration with temperature transmitter KT max. 30 V DC

Temperature contact	TK	TM
Number of temp. contacts	1	2
Voltage max.	230 V AC/DC	230 V AC/DC
Switching current max.	2.5 A	2 A
Contact load max.	100 VA	100 VA

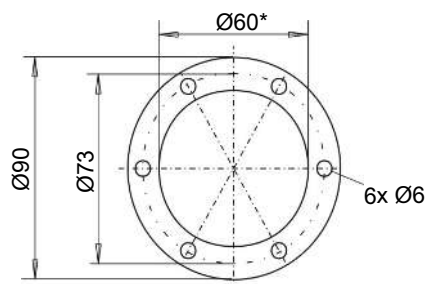
Function	NC*	NC*
Switching point °C	50/60/70/80	50/60/70/80
Switching point tolerance	± 3 K	± 5 K
Hysteresis max.	10 K ± 3 K	18 K ± 5 K

Function	NO*	NO*
Switching point °C	50/60/70/80	50/60/70/80
Switching point tolerance	± 3 K	± 5 K
Hysteresis max.	10 K ± 3 K	26/35/40/45 K ± 5 K

*NO= NO contact / NC = NC contact Other temperatures and versions with 2 x TK contact available upon request



* min. 80 with temperature



*min. Ø61 for VA version with stilling tube

Basic Unit

Temperature signal

Temperature sensor **Pt 100** Class B, DIN EN 60 751 Tolerance $\pm 0.8\text{ }^{\circ}\text{C}$

Temperature transmitter **KT**

Temperature sensor Pt100 Class B, DIN EN 60 751

Measuring range $0\text{ }^{\circ}\text{C}$ to $+100\text{ }^{\circ}\text{C}$

Operating voltage (U_B) 10 - 30 V DC

Output 4 - 20 mA

Burden Ω max. $= (U_B - 7.5\text{ V}) / 0.02\text{ A}$

Accuracy $\pm 1\%$ from end value

Other measuring ranges available upon request

9.2 Technical Data NT 61-HT

Basic Unit

Operating pressure	max. 1 bar
Operating temperature	-20 °C to +80 °C
Float	SK 221
Min. fluid density	0.85 kg/dm ³
Lengths (all versions)	280, 370, 500 mm (Standard), variable to max. 1500 mm in 10 mm increments

Material/Version

Float	1.4571
Immersion tube	1.4571
Flange (DIN 24557)	1.4571
Weight at L=280 mm	approx. 950 g
Each 100 mm add	approx. 50 g

Includes:

Mounting screws (quantity 6) and rubberised cork seal.

Options

Stilling tube (SSR)	Same material as immersion tube
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Level switching contact

	K10	W11	K10HT**	W11HT**
Function	NO/NC*	Change-over contact	NO/NC*	Change-over contact
Voltage max.	230 V AC/DC	48 V AC/DC	230 V AC/DC	48 V AC/DC
Switching current max.	0.5 A	0.5 A	0.5 A	0.5 A
Contact load max.	10 VA	20 VA	10 VA	20 VA
Min. contact spacing	40 mm	40 mm	40 mm	40 mm
Operating temperature	105 °C	105 °C	150 °C	150 °C

Contact position in 10 mm increments

*NO= falling NC contact / NC = falling NO contact **HT= not adjustable

Optional temperature switching outputs

Temperature contact	TK	TM
Number of temp. contacts	1	2
Voltage max.	230 V AC/DC	230 V AC/DC
Switching current max.	2.5 A	2 A
Contact load max.	100 VA	100 VA
Function	NC*	NC*
Switching point °C	50/60/70/80	50/60/70/80
Switching point tolerance	± 3 K	± 5 K
Hysteresis max.	10 K ± 3 K	18 K ± 5 K
Function	NO*	NO*
Switching point °C	50/60/70/80	50/60/70/80
Switching point tolerance	± 3 K	± 5 K
Hysteresis max.	10 K ± 3 K	26/35/40/45 K ± 5 K

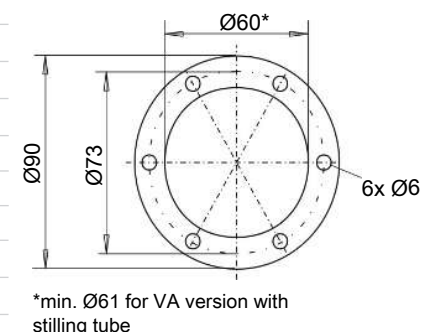
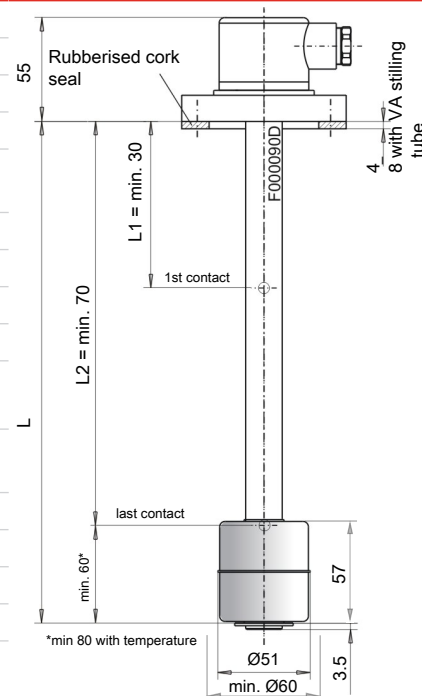
*NO = NO contact / NC = NC contact Data for rising temperature. Other temperatures and version with 2 x TK contact available upon request.

Optional temperature signal

Temperature sensor	Pt 100 Class B, DIN EN 60 751 Tolerance ±0.8 °C
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Temperature transmitter KT

Temperature sensor	Pt100 Class B, DIN EN 60 751
Measuring range	0 °C to +100 °C
Operating voltage (U _B)	10 - 30 V DC
Output	4 - 20 mA
Burden Ω max.	= (U _B - 7.5 V) / 0.02 A
Accuracy	± 1 % from end value
Other measuring ranges available upon request	



9.3 Technical Data NT 63

Basic unit

K = continuous liquid and temperature measurement

KN = continuous level measurement

LTD = level and temperature measurement (IO-Link)

Version	MS	VA
Operating pressure:	max. 1 bar	max. 1 bar
Medium temperature:	-20 °C to +80 °C	-20 °C to +80 °C
Float:	SK604	SK221
Min. fluid density:	0.80 kg/dm ³	0.85 kg/dm ³
Lengths (all versions):	280, 370, 500, 670, 820, 970, 1120, 1270 and 1420 mm (other lengths available upon request)	

Material/Version

Float:	PU	1.4571
Immersion tube:	Brass	1.4571
Flange DIN 24557 Part 2:	PA	PA
Weight at L=280 mm:	approx. 200 g	approx. 300 g
Each 100 mm add:	approx. 30 g	approx. 50 g

Includes:

Mounting screws (quantity 6) and rubberised cork seal.

Options

Stilling tube (SSR):	Brass	VA
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Input values	Level	Temperature
Measuring principle:	Reed-contact	Pt100 Cl. B, DIN EN 60751
Resolution:	5 mm	
Tolerance:		± 0.8 °C

Analogue version

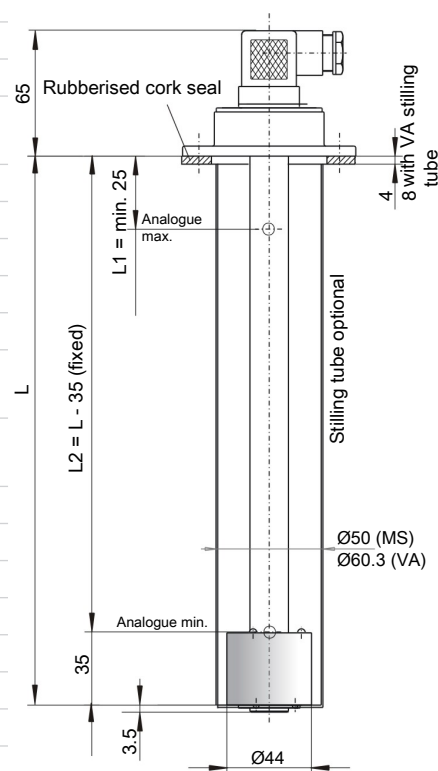
Ambient temperature:	-20 °C to 80 °C	
Operating voltage (U _B):	10 – 30 V DC	10 – 30 V DC
Analysis display electronics accuracy:	± 1 % from end value	± 1 % from end value
Output:	4-20 mA	4-20 mA (0-100 °C*) *Other ranges upon request
Max. burden Ω:	$= (U_B - 7.5 \text{ V}) / 0.02 \text{ A}$	$= (U_B - 7.5 \text{ V}) / 0.02 \text{ A}$

Digital version

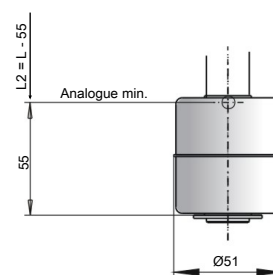
Ambient temperature:	-20 °C to 70 °C	
Operating voltage (U _B):	18 – 30 V DC	18 – 30 V DC
Analysis display electronics accuracy:	± 1 % from end value	± 1 % from end value
IO-Link version:	Revision 1.1	
Baudrate:	COM3 (230.4 k)	
SIO Mode:	Yes	
min. time period:	10 ms	

Dimensions

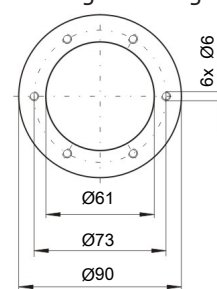
Basic model



SK 221 Float



Flange drawing



9.4 Technical Data NV 71

Basic unit

Version	MS	VA
Operating pressure	max. 1 bar	max. 1 bar
Operating temperature	-20 °C to +80 °C	-20 °C to +80 °C
Float	SK 610	SK 221
Min. fluid density	0.80 kg/dm ³	0.85 kg/dm ³
Lengths (all versions)	280, 370, 500 mm (standard), variable to max. 1500 mm in 10 mm increments	

Material/Version

Float	rigid PU	1.4571
Immersion tube	Brass	1.4571
Flange (DIN 24557)	PA	PA
Weight at L=280 mm	approx. 790 g	approx. 870 g
Each 100 mm add	approx. 30 g	approx. 50 g

Options

Stilling tube (SSR)	Brass	VA
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Vent filter **All versions HY type Hydac BF 7**

Filter fineness	3 µm
Additional equipment	Filler cap – n/a with filling adapter

Level switching output	K10	W11
Function	NO/NC*	Change-over contact
Voltage max.	230 V AC/DC**	48 V AC/DC**
Switching current max.	0.5 A	0.5 A
Contact load max.	10 VA	20 VA
Min. contact spacing	40 mm	40 mm
Contact position in 10 mm increments		

*NO = falling NC contact / NC = falling NO contact

**for configuration with temperature transmitter KT max. 30 V DC

Optional temperature switching outputs	TK		TM	
Number of temp. contacts	1		2	
Voltage max.	230 V AC/DC		230 V AC/DC	
Switching current max.	2.5 A		2 A	
Contact load max.	100 VA		100 VA	
Function	NO*	NC*	NO	NC
Switching point °C	50/60/70/80	50/60/70/80	50/60/70/80	50/60/70/80
Switching point - tolerance	± 3 K	± 3 K	± 5 K	± 5 K
Hysteresis max.	10 K ± 3 K	10 K ± 3 K	26/35/40/45 K ± 5 K	18 K ± 5 K

*NO = NO contact / NC = NC contact

Data for rising temperature. Other temperatures and versions with 2 x TK contact available upon request

Temperature sensor

Temperature sensor	Pt 100 Class B, DIN EN 60 751 Tolerance ± 0.8 °C
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Temperature transmitter **KT**

Temperature sensor	Pt100 Class B, DIN EN 60 751
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Measuring range	0 °C to +100 °C
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Operating voltage (U_B)	10 - 30 V DC
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Output	4 - 20 mA
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Burden Ω max.	$= (U_B - 7.5 \text{ V}) / 0.02 \text{ A}$
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Accuracy	± 1 % from end value
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Other measuring ranges available upon request

9.5 Technical Data NV 73

Version	MS	VA*
Operating pressure	max. 1 bar	max. 1 bar
Operating temperature	-20 °C to +80 °C	-20 °C to +80 °C
Float	SK604	SK221
Min. fluid density	0.80 kg/dm ³	0.85 kg/dm ³
Lengths (all versions)	280, 370, 500, 670, 820, 970, 1120, 1270 and 1420 mm (other lengths available upon request)	

Material/Version

Float	PU	1.4571
Immersion tube	Brass	1.4571
Flange / filter housing	PA	PA
Weight at L=280 mm	approx. 800 g	approx. 900 g
Each 100 mm add	approx. 30 g	approx. 50 g

Includes:

Mounting screws (quantity 6) and GI-cork seal.

*Not available in conjunction with FCT option

Options

Stilling tube (SSR)	Brass	VA
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Vent filter

All versions HY type Hydac BF 7

Filter fineness	3 µm
Additional equipment	Filler cap – n/a with filling adapter

Input values

Level

Temperature

Principle of measurement	Reed-contact	Pt100 Cl. B, DIN EN 60751
Resolution	5 mm	

Analogue version

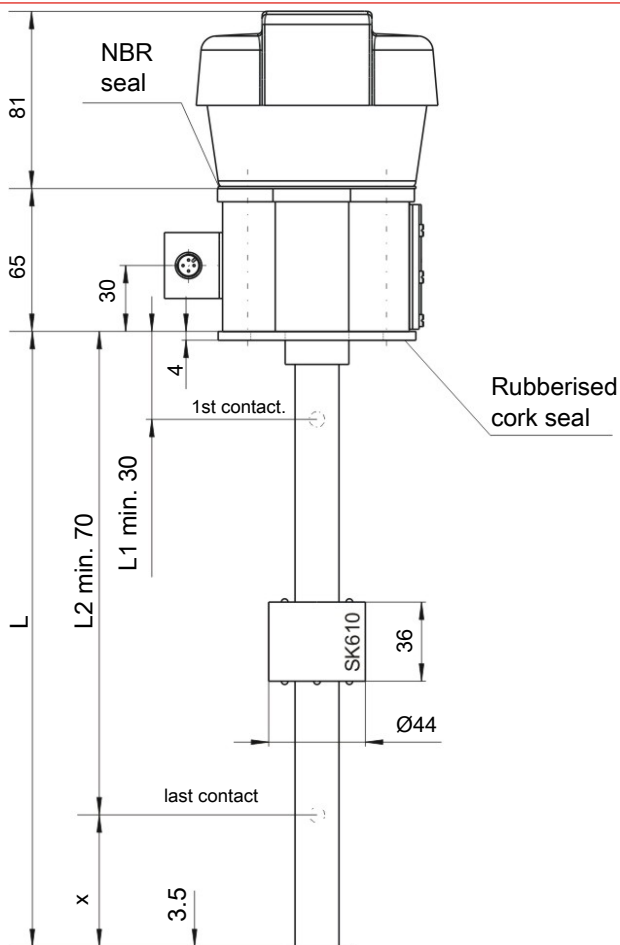
Tolerance		± 0.8 °C
Operating voltage (U _B)	10 – 30 V DC	10 – 30 V DC
Analysis display electronics accuracy	± 1 % from end value	± 1 % from end value
Output	4-20 mA	4-20 mA (0-100 °C*) *Other ranges upon request
Burden Ω max.	=(U _B -7.5 V) / 0.02 A	=(U _B -7.5 V) / 0.02 A

Digital version

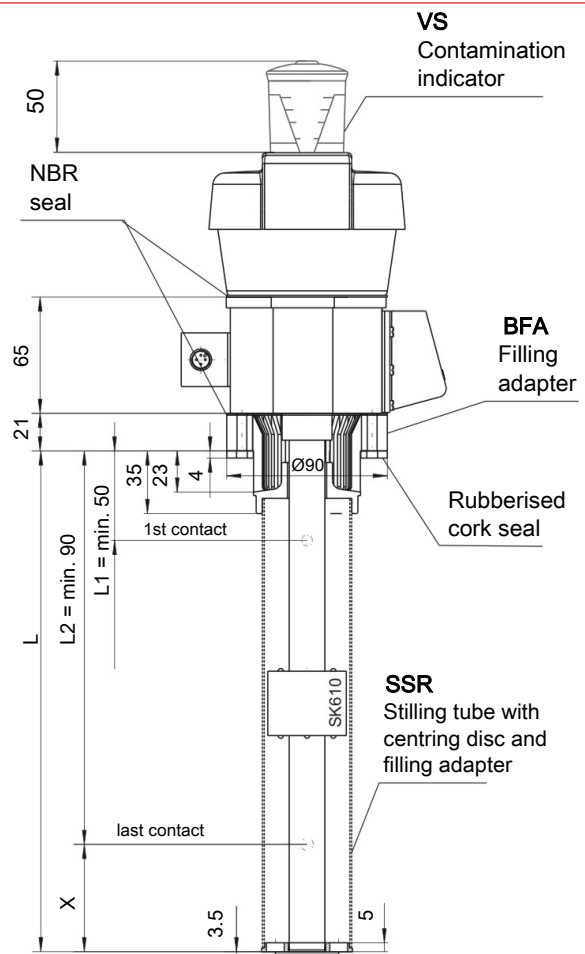
Ambient temperature	-20 °C to 70 °C	
Operating voltage (U _B)	18 – 30 V DC	18 – 30 V DC
Analysis display electronics accuracy	± 1 % from end value	± 1 % from end value
IO-Link version:	Revision 1.1	
Baudrate	COM3 (230.4 k)	
SIO Mode	Yes	
min. time period	10 ms	

9.6 Dimensions NV 71

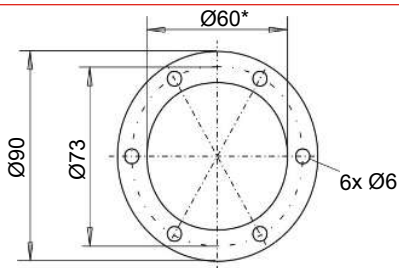
Basic version



With options

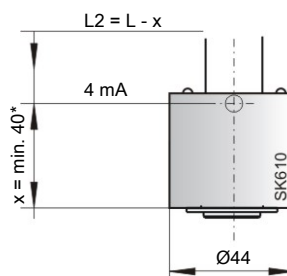


Flange drawing



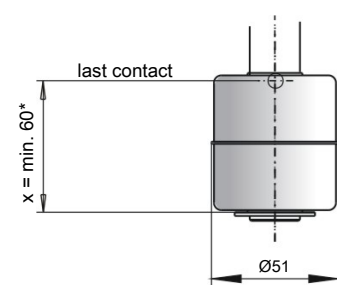
*min. Ø61 for VA version with stilling tube

SK 610 float for NV 71--MS



* min. 80 with temperature

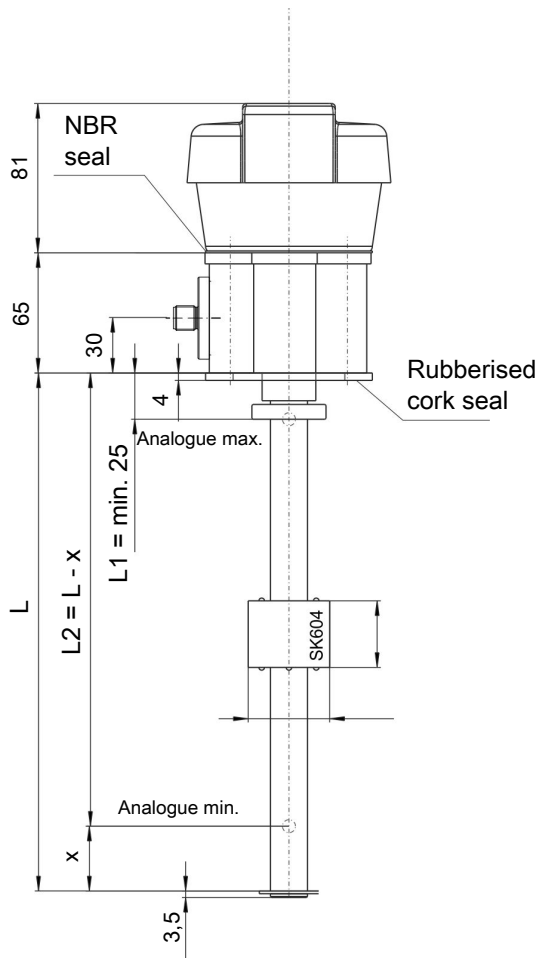
SK 221 float for NV 71-VA



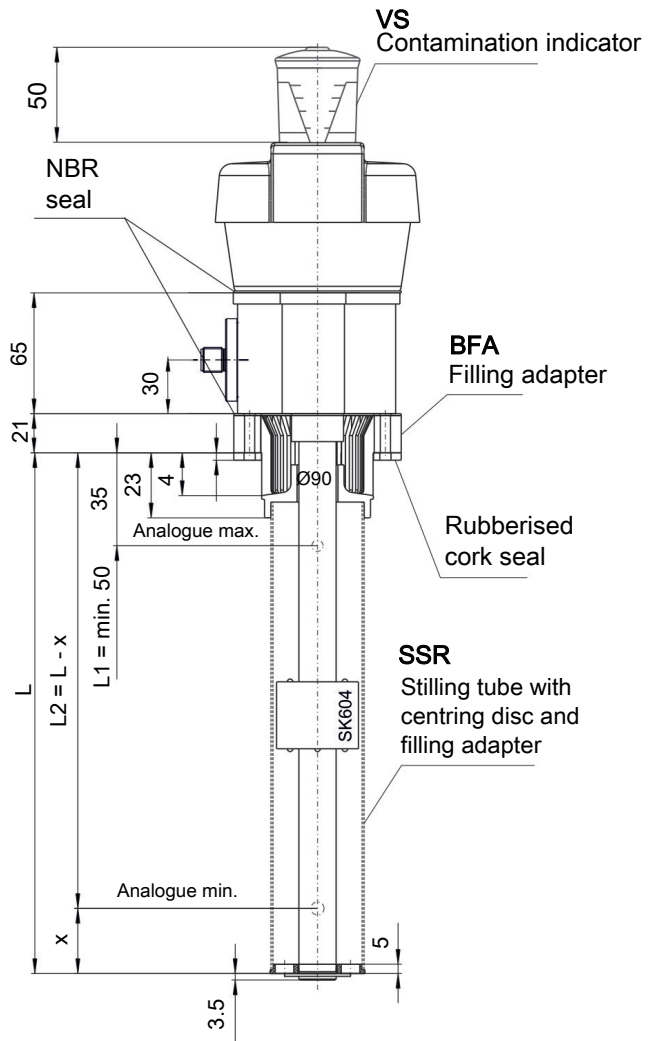
* min. 80 with temperature

9.7 Dimensions NV 73

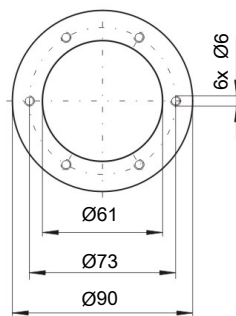
Basic version



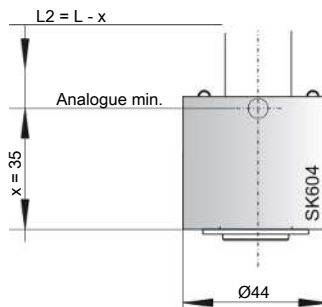
With options



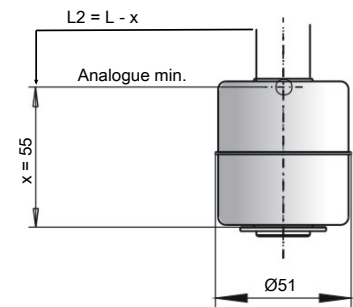
Flange drawing



SK 604 float for NV 73-MS

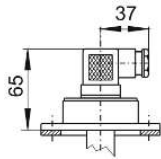
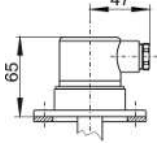
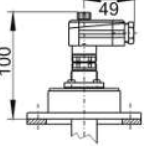
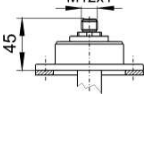
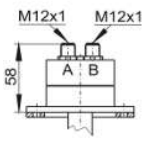


SK 221 float for NV 73-VA

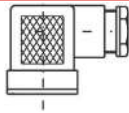
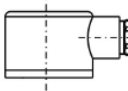
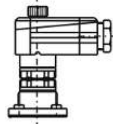
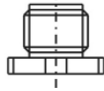
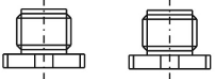
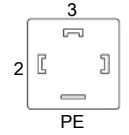
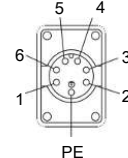
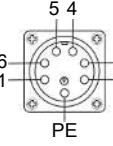
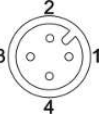
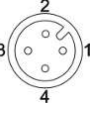
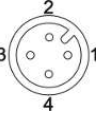
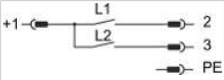
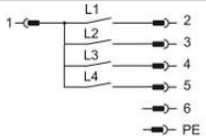
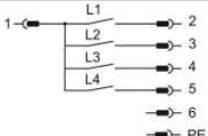
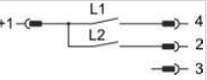
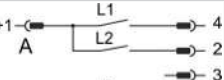
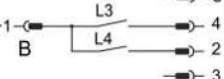
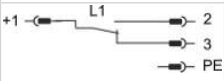
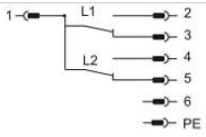
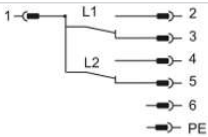
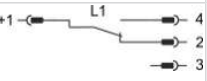
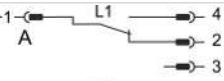
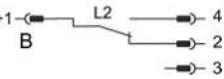
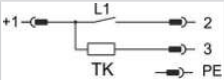
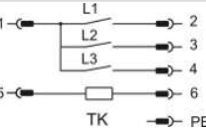
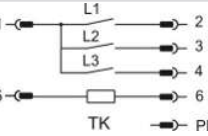
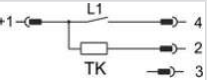
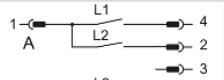
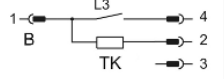
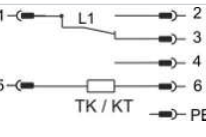
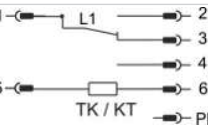
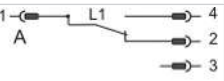
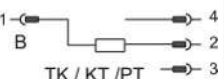
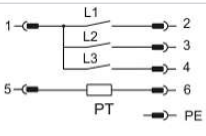
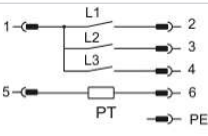
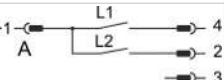
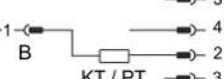
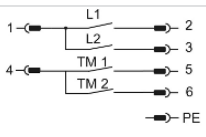
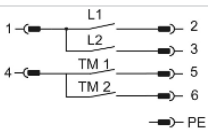
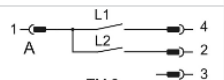
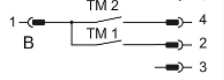
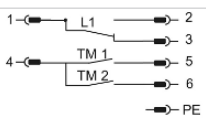
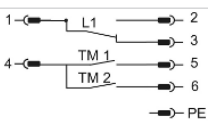
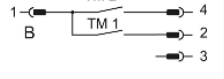


9.8 Standard pin assignment NT 61, NT 61-HT

Plug connection

	M3	S6	C6F	M12	2xM12
Dimensions					
Number of pins	3-pin + PE	6-pin + PE	6-pin + PE	4-pin	4-pin / 4-pin
DIN EN	175301-803		175301-804	61076-2-101	61076-2-101
Max. voltage	230 VAC / DC*	230 VAC / DC*	230 VAC / DC*	30 VDC	30 VDC
IP rating	IP65	IP65	IP65	IP67**	IP67**
Cable fitting	PG 11	M20 x 1.5	PG 11		
Max. Number of contacts					
Level/temp. contacts	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	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 K10 / 1 x TK 2 x K10 / 2 x TM 1 x W11 / 1 x TK 1 x W11 / 2 x TM
Level contacts only	2 x K10 1 x W11	4 x K10 2 x W11	4 x K10 2 x W11	2 x K10 1 x W11	4 x K10 2 x W11

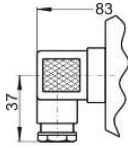
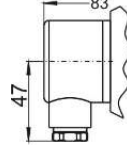
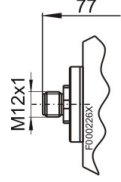
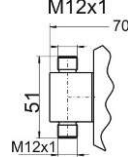
*Max. 48 VAC/ VDC for change-over contact. **with IP67 cable box attached. Other plug connections available upon request

	M3	S6	C6F	M12 (base)	2 x M12 (base)
					
Connection schematic					Plug A  Plug B 
K10 Level contact(s)					Plug A  Plug B 
W11 Level contact(s)					Plug A  Plug B 
K10 Level- and temperat- ure contact					Plug A  Plug B 
W11 Level- and temperat- ure contact(s)					Plug A  Plug B 
K10 / Pt100 Level- and temperat- ure contact(s)					Plug A  Plug B 
K10 Level and 2 x temper- ature contact(s)					Plug A  Plug B 
W11 Level and 2 x temper- ature contact(s)					Plug A  Plug B 

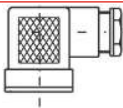
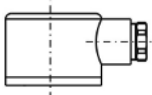
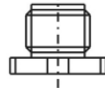
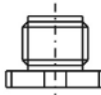
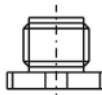
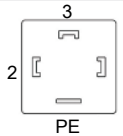
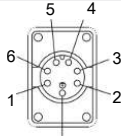
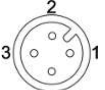
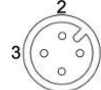
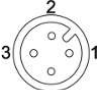
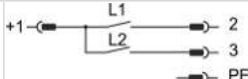
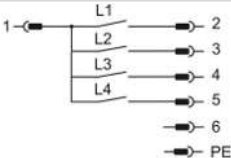
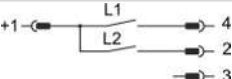
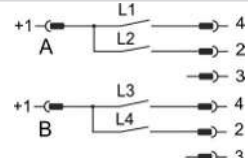
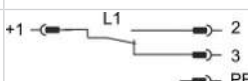
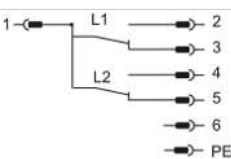
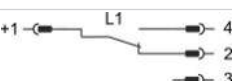
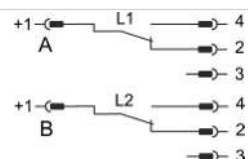
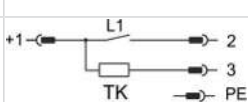
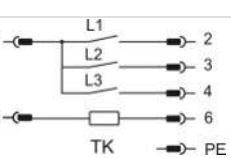
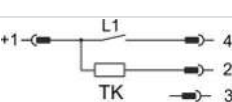
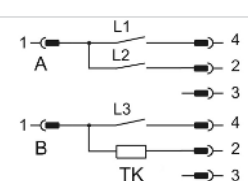
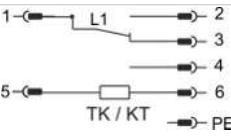
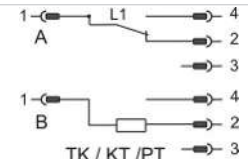
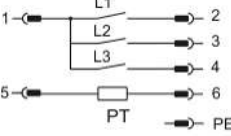
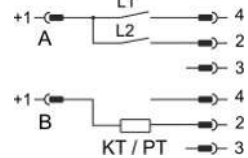
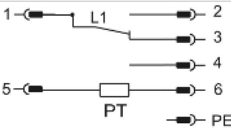
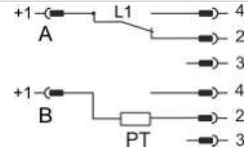
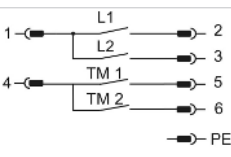
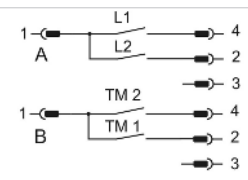
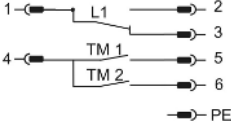
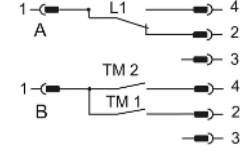
The standard assignment specified here refers to the max. number of contacts possible and contact function NO (contact type K10).

9.9 Standard pin assignment NV 71

Plug connection

	M3	S6	M12 (base)	2xM12 (base)
Dimensions				
Number of pins	3-pin + PE	6-pin + PE	4-pin	4-pin / 4-pin
DIN EN	175301-803		61076-2-101	61076-2-101
Max. voltage	230 V AC/DC*	230 V AC/DC*	30 VDC	30 VDC
IP rating	IP65	IP65	IP67**	IP67**
Cable fitting	PG 11	M20 x 1.5		
Max. Number of contacts				
Level/temp. contacts	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 K10 / 1 x TK 2 x K10 / 2 x TM 1 x W11 / 1 x TK 1 x W11 / 2 x TM
Level contacts only	2 x K10 1 x W11	4 x K10 2 x W11	2 x K10 1 x W11	4 x K10 2 x W11

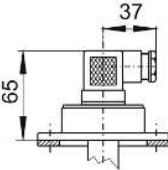
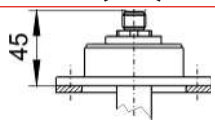
*Max. 48 V AC/DC for change-over contact. **with IP67 cable box attached. Other plug connections available upon request.

	M3	S6	M12 (base)	2 x M12 (base)	
					
Connection schematic					
K10 Level contact(s)					
W11 Level contact(s)					
K10 Level- and temperature contact					
W11 Level- and temperature contact(s)					
K10 / Pt100 Level- and temperature contact(s)					
W11 / Pt100 Level- and temperature contact(s)					
K10 Level and 2 x temperature contact(s)					
W11 Level and 2 x temperature contact(s)					

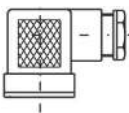
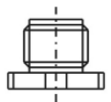
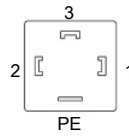
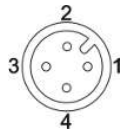
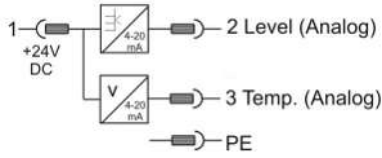
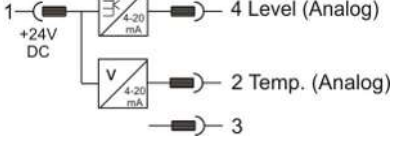
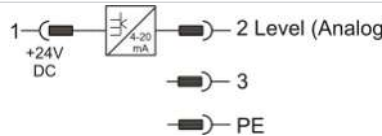
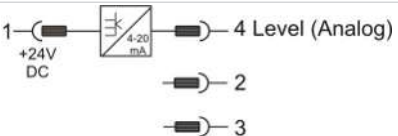
The standard assignment specified here refers to the max. number of contacts possible and contact function NO (contact type K10).

9.10 Standard pin assignment NT 63

Plug connection

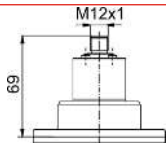
	M3	M12 (base)
Dimensions		
Number of pins	3-pin + PE	4-pin
DIN EN	175301-803	61076-2-101
IP rating	IP65	IP67*
Cable fitting	PG11	

*with IP67 cable box attached

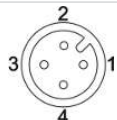
	M3	M12 (base)
		
Connection schematic		
K continuous level and temperature measurement		
KN continuous level measurement		

9.11 Standard pin assignment NT 63-LTD

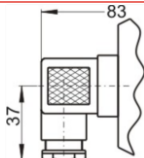
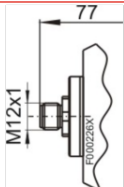
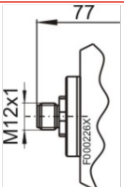
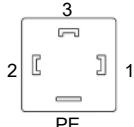
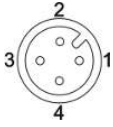
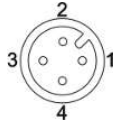
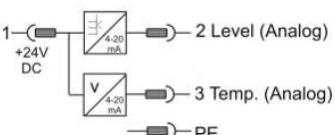
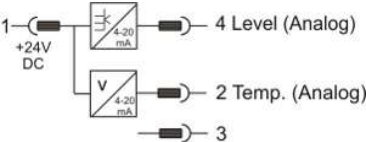
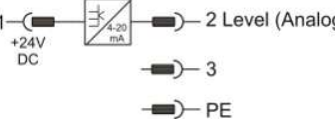
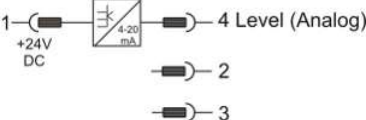
Connector

Dimensions	M12 
Number of pins	4-pin
DIN EN	61076-2-101
IP rating	IP67*

*with IP67 cable box attached

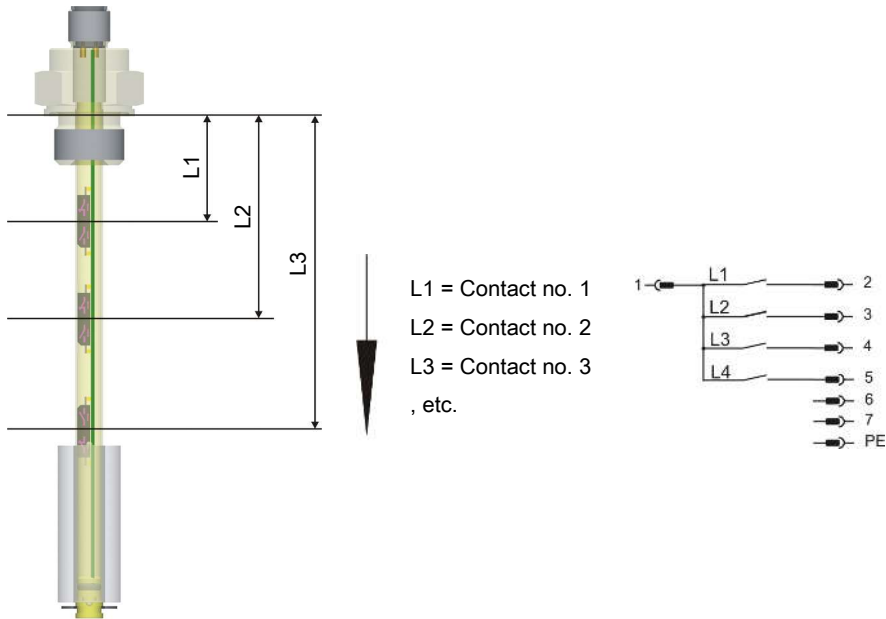
Version	LTD-1D1S
Plug	M12 4-pin
Connection schematic	
Pin	
1	+24VDC
2	S2 (PNP max. 200 mA)
3	GND
4	C/Q (IO-Link)

9.12 Standard pin assignment NV 73

Pin assignment	M3 valve connector	M12 plug A coded	M12 plug A coded LTD style
Dimensions			
Connection schematic			
Number of pins	3-pin + PE	4-pin	4-pin
DIN EN	175301-803	61076-2-101	61076-2-101
IP rating	IP65	IP67*	IP67*
Cable fitting	PG11	-	-
K continuous level and temperature measurement			Pin 1 2 3 4 +24 V DC S2 (PNP max. 200 mA) GND C/Q (IO-Link)
KN continuous level measurement			

*IP67 with cable box attached.

9.13 Definitions



NO = NO contact

NC = NC contact

TK = thermal contact

KT = temperature transmitter

PT = temperature sensor Pt100

Information about analogue output: The analogue output can be loaded with max. +30 V DC. Unless explicitly specified, the connection for +24 V DC is the left and the analogue output on the right in connection diagrams.



10 Attached documents

- Declarations of conformity: KX100020, KX100023, KX100033
- RMA - Decontamination Statement

EU-Konformitätserklärung
EU-declaration of conformity



Hiermit erklärt Bühler Technologies GmbH,
dass die nachfolgenden Produkte den
wesentlichen Anforderungen der Richtlinie

*Herewith declares Bühler Technologies GmbH
that the following products correspond to the
essential requirements of Directive*

2014/30/EU

(Elektromagnetische Verträglichkeit / *electromagnetic compatibility*)

in ihrer aktuellen Fassung entsprechen.

in its actual version.

Produkt / products: Niveauschalter und –geber / *Level switches and gauges*

Typ / type: Nivotemp 61D, 63, 64, 64D, 67XP, MD, M-XP

Nivovent 71D, 73, 74, 74D, 77XP, 84, 85, 86

Die Betriebsmittel dienen zur Überwachung des Füllstandes und der Temperatur in Fluidsystemen.
The equipment is designed for monitoring level and temperature in fluid systems.

Das oben beschriebene Produkt der Erklärung erfüllt die einschlägigen
Harmonisierungsrechtsvorschriften der Union:

*The object of the declaration described above is in conformity with the relevant Union harmonisation
legislation:*

EN 61326-1:2013

Die alleinige Verantwortung für die Ausstellung dieser Konformitätserklärung trägt der Hersteller.
This declaration of conformity is issued under the sole responsibility of the manufacturer.

Dokumentationsverantwortlicher für diese Konformitätserklärung ist Herr Stefan Eschweiler mit
Anschrift am Firmensitz.

*The person authorised to compile the technical file is Mr. Stefan Eschweiler located at the company's
address.*

Ratingen, den 17.02.2023

Stefan Eschweiler
Geschäftsführer – *Managing Director*

Frank Pospiech
Geschäftsführer – *Managing Director*

UK Declaration of Conformity



The manufacturer Bühler Technologies GmbH declares, under the sole responsibility, that the product complies with the requirements of the following UK legislation:

Electromagnetic Compatibility Regulations 2016

Product: Level switches and gauges
Types: Nivotemp 61D, 63, 64, 64D, 67XP, MD, M-XP
Nivovent 71D, 73, 74, 74D, 77XP, 84, 85, 86

The equipment is designed for monitoring level and temperature in fluid systems.

The object of the declaration described above is in conformity with the relevant designated standards:

EN 61326-1:2013

Ratingen in Germany, 17.02.2023

A handwritten signature in blue ink, appearing to read 'Stefan Eschweiler', written over a horizontal line.

Stefan Eschweiler
Managing Director

A handwritten signature in blue ink, appearing to read 'Frank Pospiech', written over a horizontal line.

Frank Pospiech
Managing Director

EU-Konformitätserklärung
EU-declaration of conformity



Hiermit erklärt Bühler Technologies GmbH,
dass die nachfolgenden Produkte den
wesentlichen Anforderungen der Richtlinie

*Herewith declares Bühler Technologies GmbH
that the following products correspond to the
essential requirements of Directive*

2014/35/EU
(Niederspannungsrichtlinie / low voltage directive)

in ihrer aktuellen Fassung entsprechen.

in its actual version.

Folgende Richtlinie wurde berücksichtigt:

The following directive was regarded:

2014/30/EU (EMV/EMC)

Produkt / products: Niveauschalter und -geber / *Level switches and gauges*
Typ / type: Nivotemp 61, 61-WW, NT M, NT M...-Atex
Nivovent 71

Die Betriebsmittel dienen zur Überwachung des Füllstandes und der Temperatur in Tanks für
Fluidsysteme.

*The equipment is intended for monitoring the liquid level and the temperature in tanks for fluid
systems.*

Das oben beschriebene Produkt der Erklärung erfüllt die einschlägigen
Harmonisierungsrechtsvorschriften der Union:
*The object of the declaration described above is in conformity with the relevant Union harmonisation
legislation:*

EN 61010-1:2010/A1:2019/AC:2019-04

EN 61326-1:2013

Die alleinige Verantwortung für die Ausstellung dieser Konformitätserklärung trägt der Hersteller.
This declaration of conformity is issued under the sole responsibility of the manufacturer.

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Ratingen, den 17.02.2023

Stefan Eschweiler
Geschäftsführer – *Managing Director*

Frank Pospiech
Geschäftsführer – *Managing Director*

UK Declaration of Conformity



The manufacturer Bühler Technologies GmbH declares, under the sole responsibility, that the product complies with the requirements of the following UK legislation:

Electrical Equipment Safety Regulations 2016

The following legislation were regarded:

Electromagnetic Compatibility Regulations 2016

Product: Level switches and gauges
Types: Nivotemp 61, 61-WW, NT M, NT M...-Atex
Nivovent 71

The equipment is intended for monitoring the liquid level and the temperature in tanks for fluid systems.

The object of the declaration described above is in conformity with the relevant designated standards:

EN 61010-1:2010/A1:2019/AC:2019-04

EN 61326-1:2013

Ratingen in Germany, 17.02.2023

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Stefan Eschweiler
Managing Director

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Frank Pospiech
Managing Director

EU-Konformitätserklärung
EU-declaration of conformity



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that the following products correspond to the
essential requirements of Directive*

2014/30/EU (EMV/EMC)

in ihrer aktuellen Fassung entsprechen.

in its actual version.

Folgende Richtlinie wurde berücksichtigt:

The following directive was regarded:

2014/35/EU
(Niederspannungsrichtlinie / low voltage directive)

Produkt / products: Niveau- und Temperatursensoren / Level and temperature sensors
Typ / type: NT 63-LTD, NT M-LTD

Die Betriebsmittel dienen zur Überwachung des Füllstandes und der Temperatur in Fluidsystemen.
The equipment is intended for monitoring the liquid level and the temperature in fluid systems.

Das oben beschriebene Produkt der Erklärung erfüllt die einschlägigen
Harmonisierungsrechtsvorschriften der Union:
*The object of the declaration described above is in conformity with the relevant Union harmonisation
legislation:*

EN 61010-1:2010/A1:2019/AC:2019-04

Zusätzlich wurden berücksichtigt:
In addition, the following standards have been used:

EN 61326-1:2013

Die alleinige Verantwortung für die Ausstellung dieser Konformitätserklärung trägt der Hersteller.
This declaration of conformity is issued under the sole responsibility of the manufacturer.

Dokumentationsverantwortlicher für diese Konformitätserklärung ist Herr Stefan Eschweiler mit
Anschrift am Firmensitz.

*The person authorized to compile the technical file is Mr. Stefan Eschweiler located at the company's
address.*

Ratingen, den 17.02.2023

Stefan Eschweiler
Geschäftsführer – Managing Director

Frank Pospiech
Geschäftsführer – Managing Director

UK Declaration of Conformity



The manufacturer Bühler Technologies GmbH declares, under the sole responsibility, that the product complies with the requirements of the following UK legislation:

Electrical Equipment Safety Regulations 2016

The following legislation were regarded:

Electromagnetic Compatibility Regulations 2016

Product: Level and temperature sensors
Types: NT 63-LTD
NT M-LTD

The equipment is intended for monitoring the liquid level and the temperature in fluid systems.

The object of the declaration described above is in conformity with the relevant designated standards:

EN 61010-1:2010/A1:2019/AC:2019-04

In addition, the following standards have been used:

EN 61326-1:2013

Ratingen in Germany, 17.02.2023

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Stefan Eschweiler
Managing Director

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Frank Pospiech
Managing Director

RMA-Formular und Erklärung über Dekontaminierung

RMA-Form and explanation for decontamination



RMA-Nr./ RMA-No.

Die RMA-Nr. bekommen Sie von Ihrem Ansprechpartner im Vertrieb oder Service. Bei Rücksendung eines Altgeräts zur Entsorgung tragen Sie bitte in das Feld der RMA-Nr. "WEEE" ein./ You may obtain the RMA number from your sales or service representative. When returning an old appliance for disposal, please enter "WEEE" in the RMA number box.

Zu diesem Rücksendeschein gehört eine Dekontaminierungserklärung. Die gesetzlichen Vorschriften schreiben vor, dass Sie uns diese Dekontaminierungserklärung ausgefüllt und unterschrieben zurücksenden müssen. Bitte füllen Sie auch diese im Sinne der Gesundheit unserer Mitarbeiter vollständig aus./ This return form includes a decontamination statement. The law requires you to submit this completed and signed decontamination statement to us. Please complete the entire form, also in the interest of our employee health.

Firma/ Company

Firma/ Company

Straße/ Street

PLZ, Ort/ Zip, City

Land/ Country

Gerät/ Device

Anzahl/ Quantity

Auftragsnr./ Order No.

Ansprechpartner/ Person in charge

Name/ Name

Abt./ Dept.

Tel./ Phone

E-Mail

Serien-Nr./ Serial No.

Artikel-Nr./ Item No.

Grund der Rücksendung/ Reason for return

- ☐ Kalibrierung/ Calibration ☐ Modifikation/ Modification
☐ Reklamation/ Claim ☐ Reparatur/ Repair
☐ Elektroaltgerät/ Waste Electrical & Electronic Equipment (WEEE)
☐ andere/ other

bitte spezifizieren/ please specify

Ist das Gerät möglicherweise kontaminiert?/ Could the equipment be contaminated?

- ☐ Nein, da das Gerät nicht mit gesundheitsgefährdenden Stoffen betrieben wurde./ No, because the device was not operated with hazardous substances.
☐ Nein, da das Gerät ordnungsgemäß gereinigt und dekontaminiert wurde./ No, because the device has been properly cleaned and decontaminated.
☐ Ja, kontaminiert mit:/ Yes, contaminated with:



☐
explosiv/
explosive



☐
entzündlich/
flammable



☐
brandfördernd/
oxidizing



☐
komprimierte
Gase/
compressed
gases



☐
ätzend/
caustic



☐
giftig,
Lebensgefahr/
poisonous, risk
of death



☐
gesundheitsge-
fährdend/
harmful to
health



☐
gesund-
heitsschädlich/
health hazard



☐
umweltge-
fährdend/
environmental
hazard

Bitte Sicherheitsdatenblatt beilegen! / Please enclose safety data sheet!

Das Gerät wurde gespült mit:/ The equipment was purged with:

Diese Erklärung wurde korrekt und vollständig ausgefüllt und von einer dazu befugten Person unterschrieben. Der Versand der (dekontaminierten) Geräte und Komponenten erfolgt gemäß den gesetzlichen Bestimmungen.

This declaration has been filled out correctly and completely, and signed by an authorized person. The dispatch of the (decontaminated) devices and components takes place according to the legal regulations.

Falls die Ware nicht gereinigt, also kontaminiert bei uns eintrifft, muss die Firma Bühler sich vorbehalten, diese durch einen externen Dienstleister reinigen zu lassen und Ihnen dies in Rechnung zu stellen.

Should the goods not arrive clean, but contaminated, Bühler reserves the right, to commission an external service provider to clean the goods and invoice it to your account.

Firmenstempel/ Company Sign

Datum/ Date

rechtsverbindliche Unterschrift/ Legally binding signature



Vermeiden von Veränderung und Beschädigung der einzusendenden Baugruppe

Die Analyse defekter Baugruppen ist ein wesentlicher Bestandteil der Qualitätssicherung der Firma Bühler Technologies GmbH. Um eine aussagekräftige Analyse zu gewährleisten muss die Ware möglichst unverändert untersucht werden. Es dürfen keine Veränderungen oder weitere Beschädigungen auftreten, die Ursachen verdecken oder eine Analyse unmöglich machen.

Umgang mit elektrostatisch sensiblen Baugruppen

Bei elektronischen Baugruppen kann es sich um elektrostatisch sensible Baugruppen handeln. Es ist darauf zu achten, diese Baugruppen ESD-gerecht zu behandeln. Nach Möglichkeit sollten die Baugruppen an einem ESD-gerechten Arbeitsplatz getauscht werden. Ist dies nicht möglich sollten ESD-gerechte Maßnahmen beim Austausch getroffen werden. Der Transport darf nur in ESD-gerechten Behältnissen durchgeführt werden. Die Verpackung der Baugruppen muss ESD-konform sein. Verwenden Sie nach Möglichkeit die Verpackung des Ersatzteils oder wählen Sie selber eine ESD-gerechte Verpackung.

Einbau von Ersatzteilen

Beachten Sie beim Einbau des Ersatzteils die gleichen Vorgaben wie oben beschrieben. Achten Sie auf die ordnungsgemäße Montage des Bauteils und aller Komponenten. Versetzen Sie vor der Inbetriebnahme die Verkabelung wieder in den ursprünglichen Zustand. Fragen Sie im Zweifel beim Hersteller nach weiteren Informationen.

Einsenden von Elektroaltgeräten zur Entsorgung

Wollen Sie ein von Bühler Technologies GmbH stammendes Elektroprodukt zur fachgerechten Entsorgung einsenden, dann tragen Sie bitte in das Feld der RMA-Nr. „WEEE“ ein. Legen Sie dem Altgerät die vollständig ausgefüllte Dekontaminierungserklärung für den Transport von außen sichtbar bei. Weitere Informationen zur Entsorgung von Elektroaltgeräten finden Sie auf der Webseite unseres Unternehmens.

Avoiding alterations and damage to the components to be returned

Analysing defective assemblies is an essential part of quality assurance at Bühler Technologies GmbH. To ensure conclusive analysis the goods must be inspected unaltered, if possible. Modifications or other damages which may hide the cause or render it impossible to analyse are prohibited.

Handling electrostatically conductive components

Electronic assemblies may be sensitive to static electricity. Be sure to handle these assemblies in an ESD-safe manner. Where possible, the assemblies should be replaced in an ESD-safe location. If unable to do so, take ESD-safe precautions when replacing these. Must be transported in ESD-safe containers. The packaging of the assemblies must be ESD-safe. If possible, use the packaging of the spare part or use ESD-safe packaging.

Fitting of spare parts

Observe the above specifications when installing the spare part. Ensure the part and all components are properly installed. Return the cables to the original state before putting into service. When in doubt, contact the manufacturer for additional information.

Returning old electrical appliances for disposal

If you wish to return an electrical product from Bühler Technologies GmbH for proper disposal, please enter "WEEE" in the RMA number box. Please attach the fully completed decontamination declaration form for transport to the old appliance so that it is visible from the outside. You can find more information on the disposal of old electrical appliances on our company's website.

