Fluidcontrol

easyjust

Level- and temperature switch

Nivotemp NT 64, Nivovent NV 74

Installation and Operation Instructions

Original instructions

BE100020
02/2024

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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.

Document information
Document No.....BE100020
Version.....02/2024

Contents

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 easyjust system on the Nivotemp NT64 and Nivovent NV74 allow the use of standardised immersion tube lengths for different size and shape oil tanks. The switching points can be configured to system needs at any time. The level contacts are inside closed housings. These are simply positioned on a contact strip with gold-plated contacts at the desired spacing. The minimum distance between two contacts is 40 mm, the grid is 10 mm.

The colour coded contacts ensure the terminal configuration for the connection is correct. The switching function as falling NC contact (NO) or as falling NO contact (NC) is determined by the position in which the contacts are installed. They can also be used as change-over contacts.

Signalling is entirely electronic, via the switching outputs.

1.2.2 Temperature monitor

The temperature is monitored via thermal element plugged into the end of the carrier board. Here the options are temperature contacts with fixed grading, a Pt 100 or a temperature transmitter with 4-20 mA outputs.

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 NT64

NT 64-□□-□□-□□-nn-nn-□□-□□

Model designation

Version
MS Brass
VA float / VA immersion tube

Plug connector
M3
S6
M12
2M12

Length in mm
280
370
500

Level measurement
1-4 Number of contacts [1)]

Level contacts
K NC/NO
W change-over contact

Optional
SSR Stilling tube

Temperature signal

TK...	*NC contact*	*NO contact*	
	TK50NC	TK50NO	= 50 °C
	TK60NC	TK60NO	= 60 °C
	TK70NC	TK70NO	= 70 °C
	TK80NC	TK80NO	= 80 °C

Pt100 Temperature sensor
KT Temperature transmitter

1) Please specify position and switching function per model key, example: L1 = nnnmm NC

1.5 Model key NV74

NV 74-HY-□□-□□-□□-□□-□□-□□-□□-□□-□□

Type designation, HY filter

Version
MS Brass
VA[1] float / VA immersion tube

Plug connector
M3
S6
M12
2M12

Length in mm
280
370
500

Level measurement
1-4 Number of contacts[2]

Level contacts
K NC/NO
W change-over contact

Options
VS Contamination indicator

BFA*** Filling adapter
SSR*** Stilling tube incl. filling adapter
MT for multiterminal
MTS for multiterminal with stilling tube option
FCT for Fluidcontrolterminal

Temperature signal

TK...	*NC contact*	*NO contact*	
	TK50NC	TK50NO	= 50 °C
	TK60NC	TK60NO	= 60 °C
	TK70NC	TK70NO	= 70 °C
	TK80NC	TK80NO	= 80 °C

Pt100 Temperature sensor
KT Temperature transmitter

[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

1.6 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) Always disconnect the unit from the mains before performing work.

b) Secure the equipment from accidental restarting.

c) The equipment may only be installed, maintained and put into operation by instructed, competent personnel.

d) 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

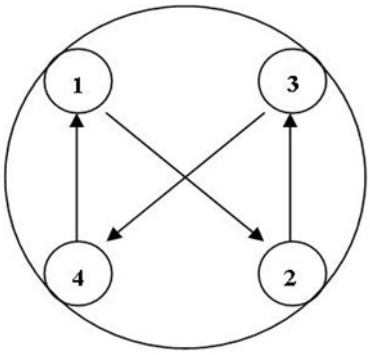
Electric voltage

Risk of electric shock
When connecting devices, please note the maximum voltages and currents 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.

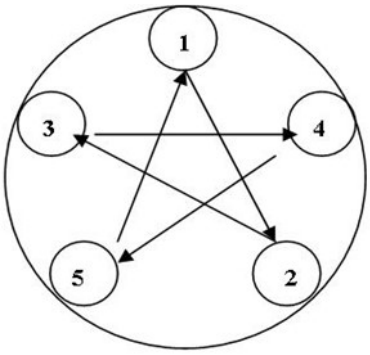
Flange mounting

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

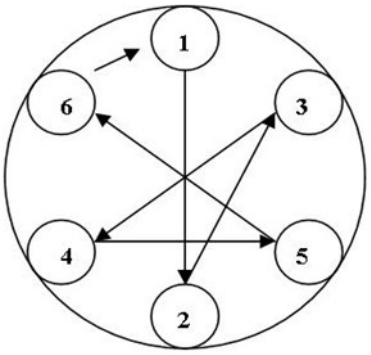
Please use the mounting screws provided to mount the flange! The mounting screws should be tightened to a torque between 3 Nm and 4 Nm. For sensors with flange housing and vent filters, the mounting screws should be tightened to a torque between 2 Nm and 3 Nm. The mounting screws should be tightened 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 reduces by high stress and / or incorrect or the absence of protective circuits when switching inductive, capacitive or lamp loads.

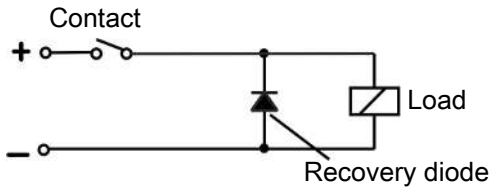
It's therefore important to ensure NEVER to exceed one or several of the maximum approved limits, even temporarily, and to install a contact protective circuit for loads which are not purely ohmic. Using test lamps when installing the devices is also prohibited, as these can temporarily allow too much 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

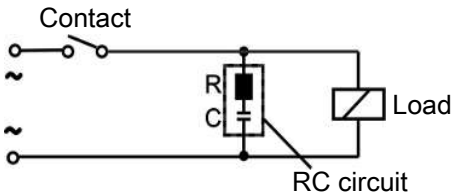
For direct current voltage a recovery diode per figure A must be connected parallel to the contact.

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

A



B



Load in VA	10		25		50	
Voltage at contact V	R/Ohm	C/µF	R/Ohm	C/µF	R/Ohm	C/µF
24	22	0.022	1	0.1	1	0.47
60	120	0.0047	22	0.022	1	0.1
110	470	0.001	120	0.0047	22	0.022
230	470	0.001	470	0.001	120	0.0047

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 µV and minimal switching currents of 1 µA.

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.

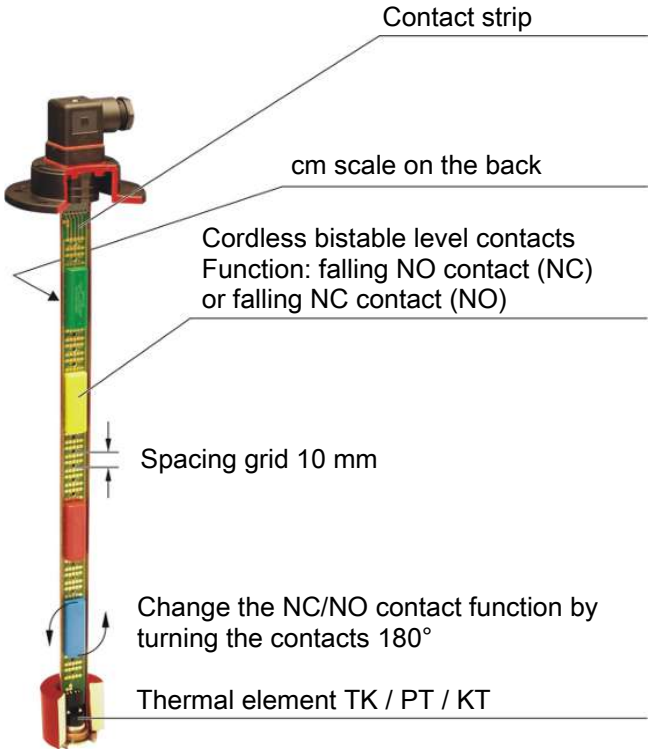
Magnetic fields

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 the level contacts



The contacts required for the float are mounted to a galvanically gold-plated with cm scale with plastic screws. The contact housings have different colours and may only be mounted to the contact strip in the following order.

	NC contact / NO contact	Change-over contact
Top to bottom:	green	white
	yellow	black
	red	
	blue	

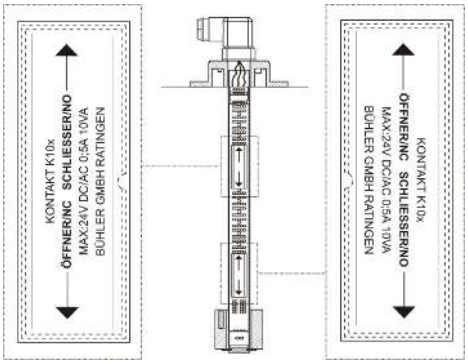
Any other order may result in malfunctions.

The level contacts are arranged per order specifications at the factory but may later be moved along a 10 mm (0.4") grid. The falling NC contact (NO) or falling NO contact (NC) contact function may also be changed by turning the contact housings 180°. The housing has two arrows. The arrow pointing up indicates the current contact function.

NOTICE

Only tighten the plastic screw at maximal 5 cNm!

Function NO:
NO contact with rising level
= NC contact with falling level



Function NC:
NC contact with rising level
= NO contact with falling level

The contact logic assumes the level switch is installed in an empty tank, i.e. it is only in the operating position once filled.

The reference point for the level switching point is at the middle of the EASYJUST level contact.

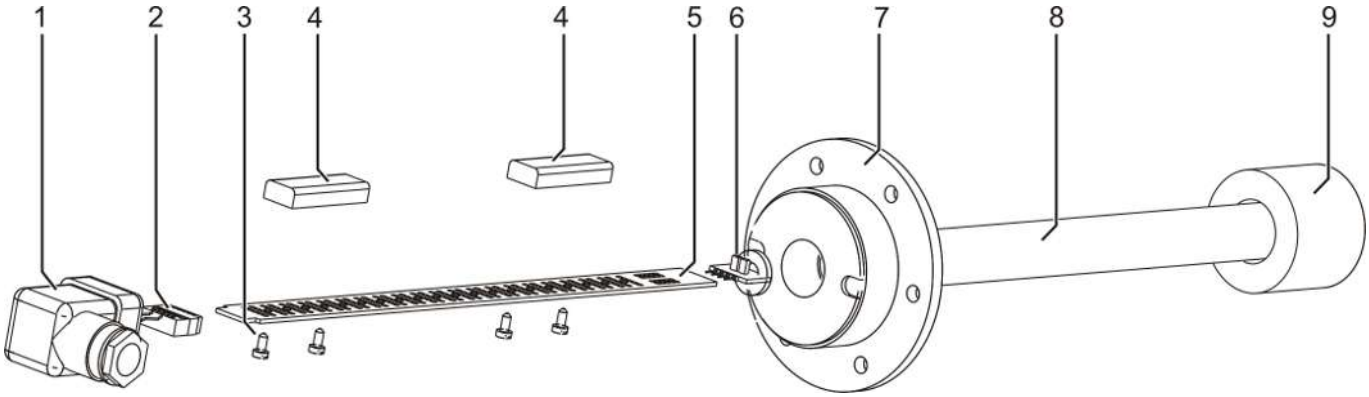
NT64:

- Disconnect the voltage supply.
- Disconnect the plug.
- Unscrew the display housing with base and carefully pull out the top along with the adapter plug and the contact strip.
- Loosen and reposition the plastic screws on the contacts (cm scale on the back of the contact strip). Minimum spacing: 40 mm (1.6").
- If necessary, turn 180° to change the contact function.
- Tighten the plastic screws for fastening the contact. Please note the maximum torque (max. 5 cNm).
- Slide the contact strip back into the protective tube and screw on the plug base.

NOTICE

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

Example:



1	Plug connection M3 with plug base	6	Optional: Temperature contact (TK), Pt100 or 4-20 mA output
2	Adapter plug	7	Flange
3	Plastic screws	8	Switching tube
4	Level contacts	9	Float
5	Contact strip		

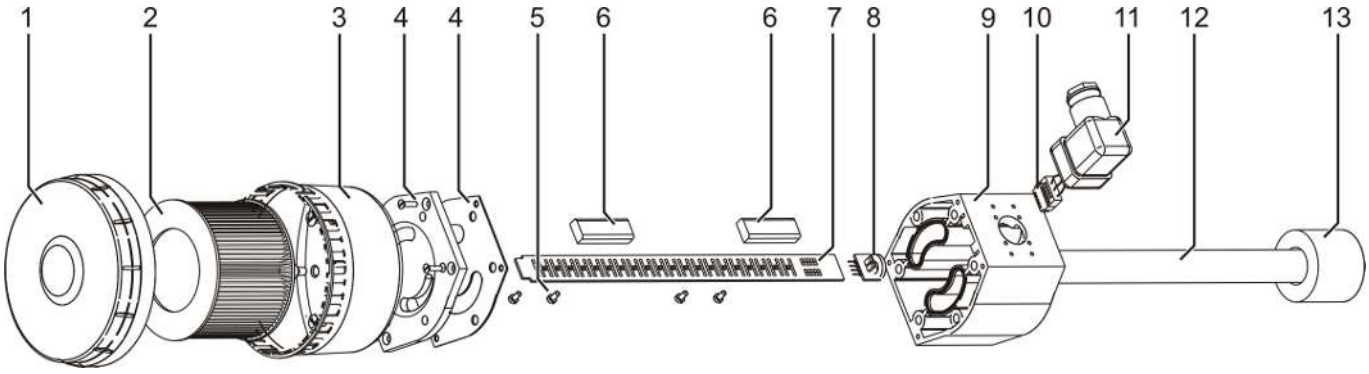
NV74:

- Disconnect the voltage supply.
- Unscrew the filter cover and remove the filter element.
- Loosen the mounting screws and remove the filter case.
- Loosen the screws for the flange cover and remove the cover with cover seal.
- Disconnect the adapter plug from the contact strip and carefully pull the contact strip out the top.
- Loosen and reposition the plastic screws on the contacts (cm scale on the back of the contact strip). Minimum spacing: 40 mm (1.6").
- If necessary, turn 180° to change the contact function.
- Tighten the plastic screws for fastening the contact. Please note the maximum torque (max. 5 cNm).
- Slide the contact strip back into the protective tube.
- Reattach the adapter plug to the contact strip the right way. The markings on the adapter flange and the contact strip must overlap.
- Fasten the flange cover incl. seal.
- Secure filter case, insert filter element and screw on filter cover.

NOTICE

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

Example:



1	Filter cover	8	Optional: Temperature contact (TK) or Pt100
2	Filter element	9	Flange
3	Filter case and seal	10	Adapter plug
4	Flange cover and seal	11	Example: Plug connection M3 with plug base
5	Plastic screws	12	Switching tube
6	Level contacts	13	Float
7	Contact strip		

4.4 Retrofitting a temperature sensor

If necessary, the temperature sensor can be retrofitted. In this case, please contact our Service Department or your local representative. Please have the data in your type plate ready.

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.

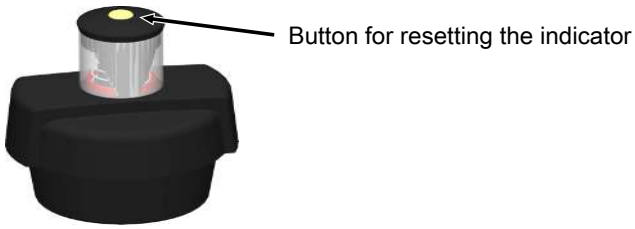
6.1 Replacing the filter element

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.

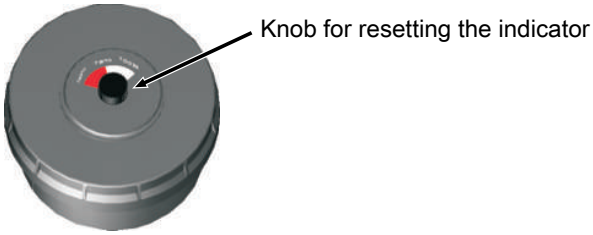
Hydac filter

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

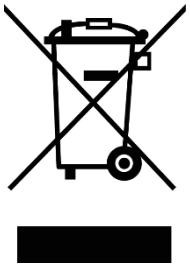
Accessories

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.

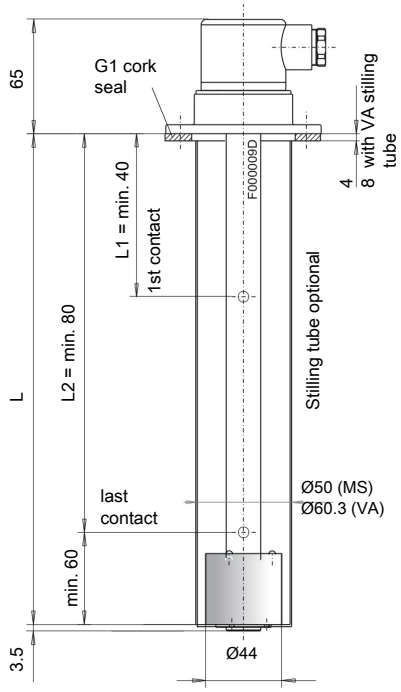
9 Appendices

9.1 Technical Data NT 64

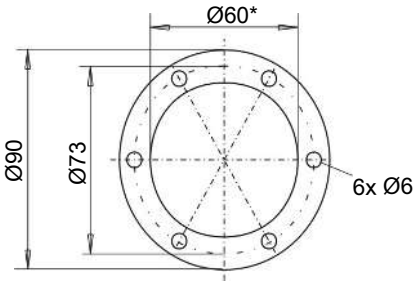
Basic unit

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/dm³	0.85 kg/dm³
Lengths	280, 370, 500 mm (standard)	
Material/Version		
Float	rigid PU (SK 610)	1.4571 (SK 221)
Immersion tube	Brass	1.4571
Flange (DIN 24557)	PA	PA
Weight at L=280 mm Each 100 mm add	approx. 200 g approx. 30 g	approx. 300 g approx. 50 g
Includes: Mounting screws (quantity 6) and rubberised cork seal.		
Options		
Stilling tube (SSR)	Brass	VA
Level switching output	**K101-104**	**W101/102**
Function	NO/NC*	Change-over contact
Max. number	4	2
Voltage max.	30 V DC	30 V DC
Switching current max.	0.5 A	0.5 A
Contact load max.	10 VA	20 VA
Min. contact spacing	40 mm	40 mm
*NO= falling NC contact/NC = falling NO contact		
Optional temperature output		
Temperature contact	TK	
Voltage max.	30 V DC	
Switching current max.	2.5 A	
Contact load max.	100 VA	
Function	**NC***	**NO***
Switching point °C	50/60/70/80	50/60/70/80
Switching point tolerance	± 3 K	± 3 K
Hysteresis max.	10 K ± 3 K	10 K ± 3 K
* NC = NC contact/NO = NO contact, data for rising temperature		
Temperature sensor	Pt 100 Class B, DIN EN 60 751	
Tolerance	±0.8 °C	
Temperature transmitter	**KT**	
Temperature sensor	Pt 100 Class B, DIN EN 60 751	
Measuring range	0 °C to +100 °C	
Supply 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		

Basic model

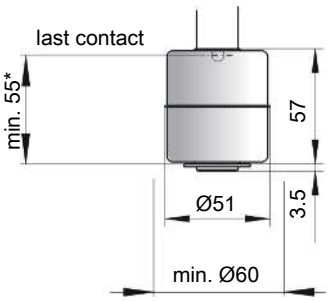


Flange drawing



*min. Ø61 for VA version with stilling tube

SK 221 Float



min. Ø61 with stilling tube
* min. 80 with temperature

9.2 Technical Data NV 74

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/dm³ with float	0.85 kg/dm³ with float
Lengths	280, 370, 500 mm (standard)	
*Not available in conjunction with FCT option		

Material/Version		
Float	rigid PU (SK 610)	1.4571 (SK 221)
Immersion tube	Brass	1.4571
Flange (DIN 24557)	PA	PA
Weight at L=280 mm Each 100 mm add	approx. 800 g approx. 30 g	approx. 900 g approx. 50 g
Includes: Mounting screws (quantity 6) and rubberised cork seal.		

Options		
Stilling tube (SSR)	Brass	VA

Vent filter	All versions HY type Hydac BF 7
Filter fineness	3 µm
Additional equipment	Filler cap – n/a with filling adapter

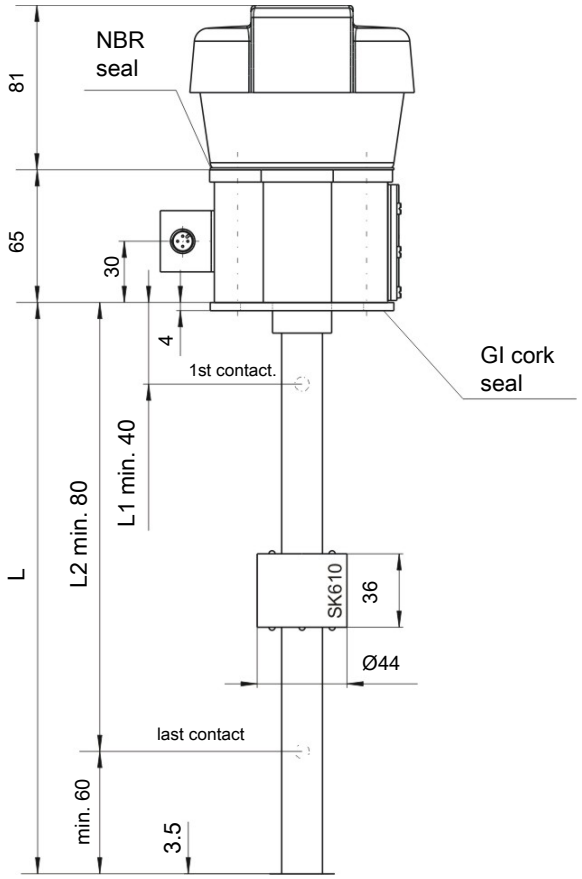
Level switching output	K101-104	W101/102
Max. number	4	2
Function	NO / NC*	Change-over contact
Voltage max.	30 V DC	30 V DC
Switching current max.	0.5 A	0.5 A
Contact load max.	10 V AC	20 V AC
Min. contact spacing	40 mm	40 mm
*NO= falling NC contact / NC = falling NO contact		

Temperature contact	TK	
Voltage max.	30 V DC	
Switching current max.	2.5 A	
Contact load max.	100 VA	
Function	**NC***	**NO***
Switching point °C	50 / 60 / 70 / 80	50 / 60 / 70 / 80
Switching point tolerance	± 3 K	± 3 K
Max. hysteresis	10 K ± 3 K	10 K ± 3 K
*NC NC contact / NO NO contact. All data for rising temperature)		

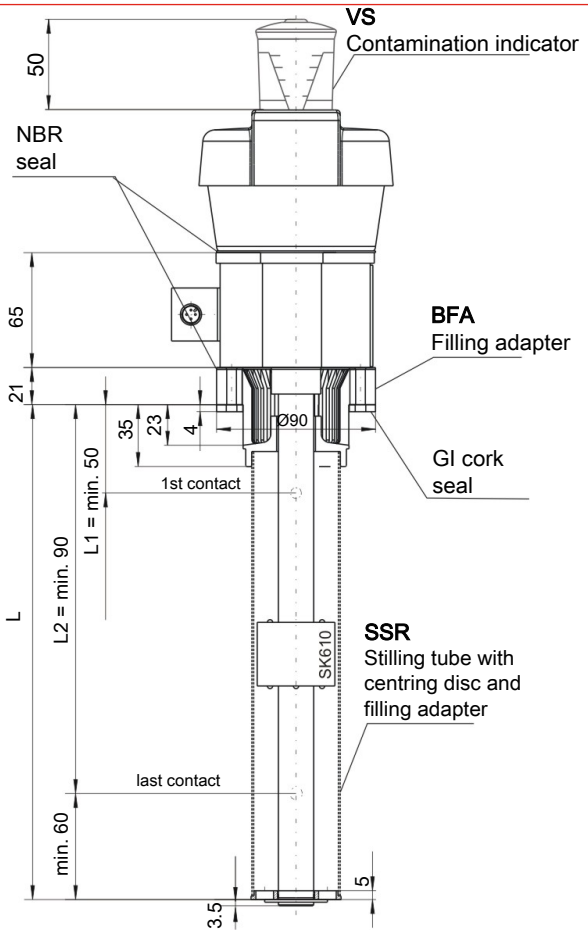
Temperature contact	TK
Temperature sensor	Pt 100 Class B, DIN EN 60 751
Tolerance	± 0.8 °C
Temperature transmitter	**KT**
Temperature sensor	Pt 100 Class B, DIN EN 60 751
Measuring range	0 °C to +100 °C
Supply voltage (U_B)	10 - 30 V DC
Output	4 - 20 mA
Max. burden Ω	=(U_B -7.5 V) / 0.02 A
Accuracy	± 1 % from end value
Other measuring ranges available upon request	

9.3 Dimensions NV 74

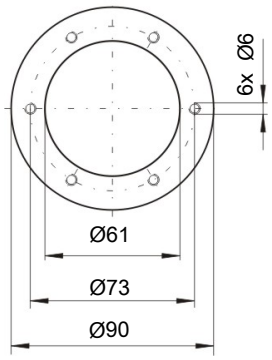
Basic version



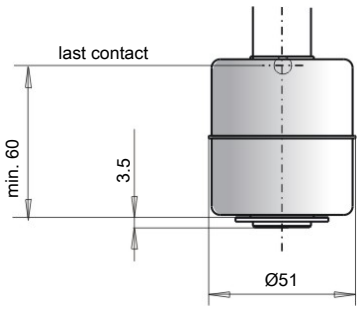
With options



Flange drawing

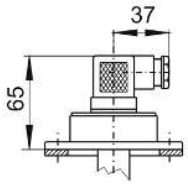
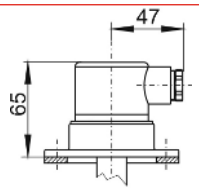
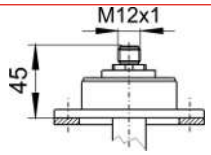
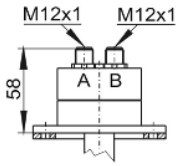


SK 221 float for NV 74-VA

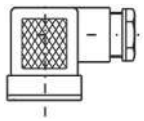
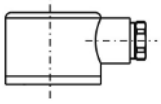
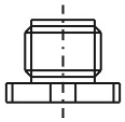
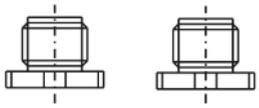
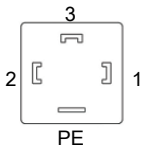
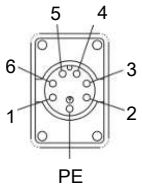
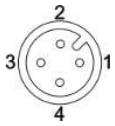
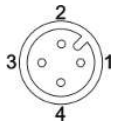
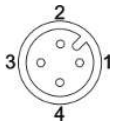
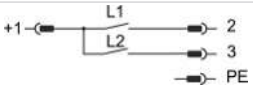
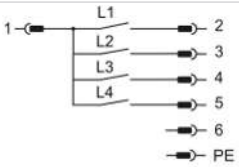
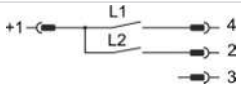
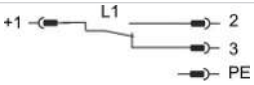
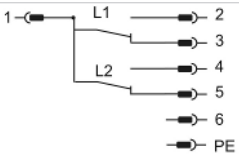
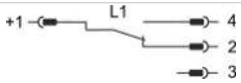
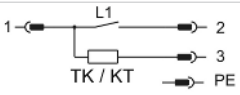
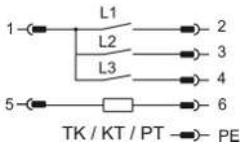
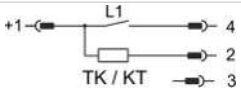
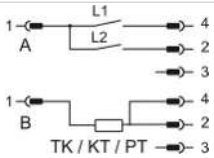
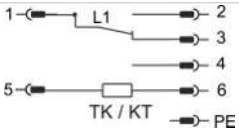
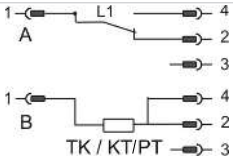


9.4 Standard pin assignment NT 64

Plug connection

	M3	S6	M12 (base)	2M12 (base)
Dimensions				
Number of pins	3-pin + PE	6-pin + PE	4-pin	4-pin / 4-pin
DIN EN	175301-803	175201-804	61076-2-101	61076-2-101
Voltage max.	30 V AC / V DC	30 V AC / V DC	30 V DC	30 V DC
Contact load max.	0.5 A per output	0.5 A per output	0.5 A per output	0.5 A per output
Degree of protection	IP65	IP65	IP67*	IP67*
Cable fitting	PG11	M20x1.5		
Max. number of contacts				
Level/temp. contacts	1 x K101 / 1 x TK - / -	3 x K101-104 / 1 x TK 1 x W101/102 / 1 x TK	1 x K101 / 1 x TK - / -	3 x K101-104 / 1 x TK 1 x W101/102 / 1 x TK
Level contacts only	2 x K101-102 1 x W101	4 x K101-104 2 x W101/102	4 x K101-102 2 x W101	4 x K101-104 1 x W101/102

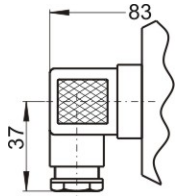
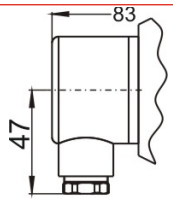
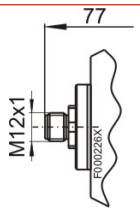
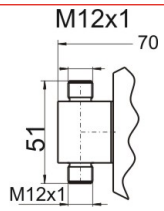
* with IP67 cable box attached. Other plug connections available upon request.

	M3	S6	M12 (base)	2 x M12 (base)	
					
Connection schematic				Plug A 	Plug B 
K101-104 Level contact(s)					
W101/102 Level contact(s)					
K101-104 Level contact(s) and Pt100					
W101/102 Level- and temperature contact(s)					

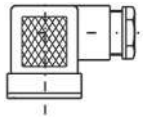
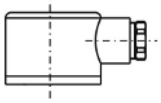
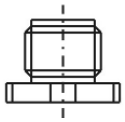
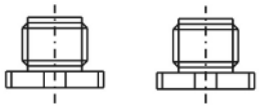
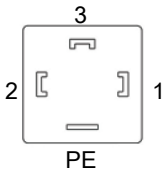
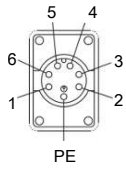
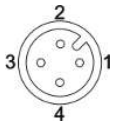
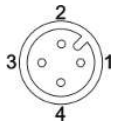
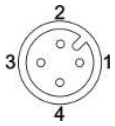
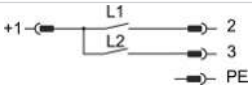
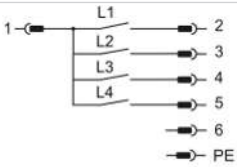
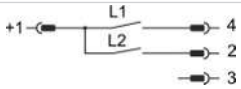
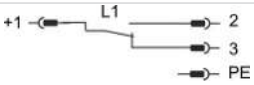
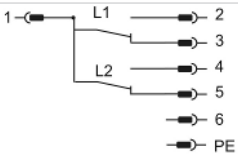
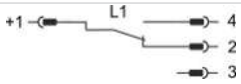
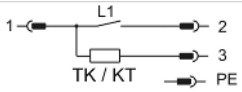
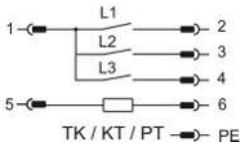
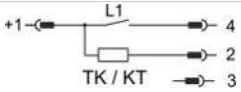
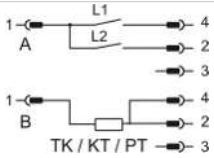
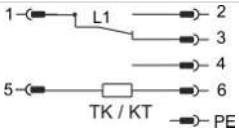
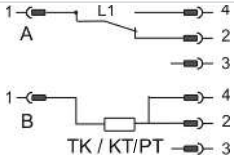
The standard assignment specified here applies to the max. number of contacts possible and contact function NO.

9.5 Standard pin assignment NV 74

Plug connection

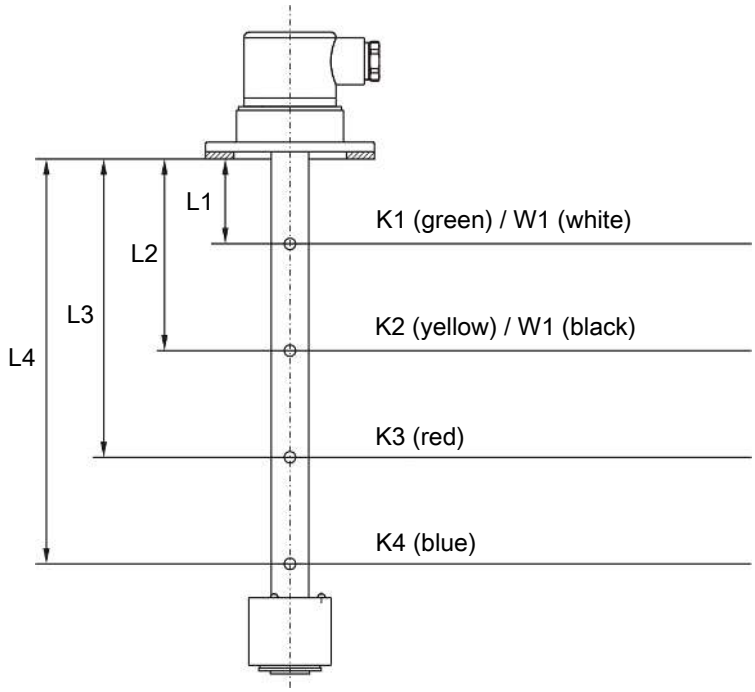
	M3	S6	M12 (base)	2M12 (base)
Dimensions				
Number of pins	3-pin + PE	6-pin + PE	4-pin	4-pin / 4-pin
DIN EN	175301-803	175201-804	61076-2-101	61076-2-101
Voltage max.	30 V AC / V DC	30 V AC / V DC	30 V DC	30 V DC
Contact load max.	0.5 A per output	0.5 A per output	0.5 A per output	0.5 A per output
Degree of protection	IP65	IP65	IP67*	IP67*
Cable fitting	PG11	M20x1.5		
Max. number of contacts				
Level/temp. contacts	1 x K101-104 / 1 x TK - / -	3 x K101-104 / 1 x TK 1 x W101/102 / 1 x TK	1 x K101-104 / 1 x TK - / -	3 x K101-102 / 1 x TK 1 x W101 / 1 x TK
Level contacts only	2 x K101-104 1 x W101/102	4 x K101-104 2 x W101/102	4 x K101-104 2 x W101/102	4 x K101-104 1 x W101/102

* with IP67 cable box attached. Other plug connections available upon request.

	M3	S6	M12 (base)	2 x M12 (base)
				
Connection schematic				Plug A  Plug B 
K101-104 Level contact(s)				
W101/102 Level contact(s)				
K101-104 Level contact(s) and Pt100				
W101/102 Level- and temperature contact(s)				

The standard assignment specified here applies to the max. number of contacts possible and contact function NO.

9.6 Definitions



NO = NO contact

NC = NC contact

TK = thermal contact

KT = temperature transmitter

PT = temperature sensor Pt100

Note on the temperature transmitter: The analogue output can be loaded with max. +30 V DC.

10 Attached documents

- Declaration of conformity: KX100020
- 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*

KX 10 0020

Bühler Technologies GmbH, Harkortstr. 29, D-40880 Ratingen,
Tel. +49 (0) 21 02 / 49 89-0, Fax. +49 (0) 21 02 / 49 89-20
Internet: www.buehler-technologies.com

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

Stefan Eschweiler
Managing Director

Frank Pospiech
Managing Director

KX 10 0020UK

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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	

Ansprechpartner/ Person in charge

Name/ Name	
Abt./ Dept.	
Tel./ Phone	
E-Mail	

Gerät/ Device	
Anzahl/ Quantity	
Auftragsnr./ Order No.	

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	gesundheitsgefährdend/ harmful to health	gesundheitsschädlich/ health hazard	umweltgefährdend/ 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 comission an external service provider to clean the goods and invoice it to your account.

Firmenstempel/ Company Sign

Datum/ Date _____

rechtsverbindliche Unterschrift/ Legally binding signature

Bühler Technologies GmbH, Harkortstr. 29, D-40880 Ratingen
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Internet: www.buehler-technologies.com

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 assembles 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.

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