Fluidcontrol

Level- and temperature switch

Nivotemp NT M

Installation and Operation Instructions

Original instructions

BE100021
01/2022

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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
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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 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.

The contacts are locked into a bent 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 or a resistance thermometer (Pt100).

In the case of continuous temperature measurement (model key "KT"/temperature transmitter) an analogue signal between 4 and 20 mA is output.

When equipped with resistance thermometer (model key "Pt100") the temperature is output using the change in resistance (0 °C = 100 Ω) of the Pt100.

1.3 Design types

The level switch can be equipped with the following options:

OV	Oval flange
FL	Flange
G1	Adapter G3/4 to G1” flange
G1	as direct screw-in unit

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 NT M

NT M - XX - XX - XX - XX - XX - XX - A - B - XX

Model designation

Version
MS = brass
VA = stainless steel

Connection
G3/4
G1 *
FL *
OV *

Plug **
M3
GS4 ***
M12
C7 ***

Length
280
370
500
Variable (please specify)

Number of level contacts
1-4

Contact type
K8 NC/NO
W9 change-over contact (max. 2)

Options
OV = oval flange (for G3/4)
G1 = adapter G3/4 to G1

2nd Temperature contact
(double temperature contact only)

NC contact	*NO contact*	
TM50NC	TM50NO	= 50 °C
	TM55NO	= 55 °C
TM60NC	TM60NO	= 60 °C
TM70NC	TM70NO	= 70 °C
TM80NC	TM80NO	= 80 °C

1st temperature signal
Pt100 **** = temperature sensor

Temperature contact

NC contact	*NO contact*	
TM50NC	TM50NO	= 50 °C
	TM55NO	= 55 °C
TM60NC	TM60NO	= 60 °C
TM70NC	TM70NO	= 70 °C
TM80NC	TM80NO	= 80 °C

* not with VA version
** see "Connector"
*** only available with G3/4 connector
**** Cannot be combined with temperature contact

1.5 Model key NT M with analogue output for temperature

NT M - MS - G3/4 - XX - XX - XX - XX - KT - XX

Model designation

Version
MS = brass

Connection
G3/4

Plug
M12
2M12

Length
280
370
500
Variable (please specify)

Options
OV = oval flange (for G3/4)
G1 = adapter G3/4 to G1

Analogue output
Temperature (4-20 mA)

Contact type
K8 NC/NO

Number of level contacts
1 or 2

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 use the following warning signs:

	Warns of a general hazard		Unplug from mains
	Voltage warning		Wear respiratory equipment
	Warns not to inhale toxic gasses		Wear a safety mask
	Warns of corrosive liquids		Wear gloves
	General information		

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).

The level switch comes fully assembled and can be mounted to the tank by screw-in thread or flange and mounting screws. 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.

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.

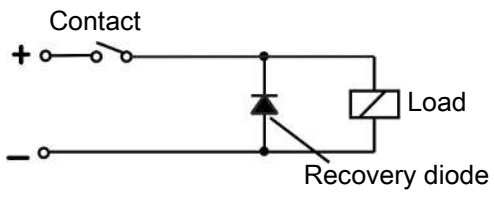
It's therefore important to ensure NEVER to exceed one or several of the maximum approved limits, even temporarily, and to install a contact protective circuit for loads which are not purely ohmic. Using test lamps when installing the devices is also prohibited, as these can temporarily allow too much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

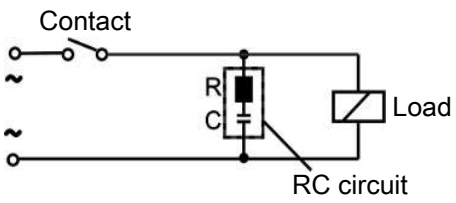
For direct current voltage a recovery diode per figure A must be connected parallel to the contact.

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

(not available for type NT M-MS-OV-M3... with temperature contact or Pt100)

The contacts for level measurement are locked into a bent rail inside the protective tube. They are positioned as specified in the purchase order, but can be moved to any position if necessary.

For devices with 230 V mains voltage:

DANGER **Electrical voltage**

Electrocution hazard.

a) Disconnect the device from power supply.

b) Make sure that the equipment cannot be reconnected to mains unintentionally.

c) The device must be opened by trained staff only.

d) Regard correct mains voltage.

– Disconnect the voltage supply.
– Disconnect the plug.
– Carefully pull the bent 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.

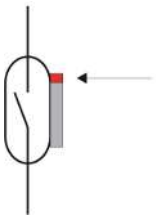
NOTICE

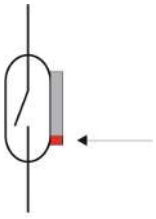
Never attempt to remove the contacts from the front of the bent rail, as this will damage the glass body. Do not pull on the cables.

– Carefully slide the contacts to the desired position on the bent rail. Use a small screwdriver or similar tool to do so. Use a drop of oil if the contacts are very tight. 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.

Red marking up	Red marking down
Function NC contact with falling level (NO)	Function NO contact with falling level (NC)





– To reverse the switching function, slide the contact out the top or bottom of the bent rail, turn 180° and slide back in, and slide into the desired position.
– 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 bent rail back in.

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.

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

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 and accessories

Accessories

Item no.	Description
9144 05 0010	Connecting cable M12x1, 4-pin, 1.5 m, angular coupling and straight plug
9144 05 0046	Connecting cable M12x1, 4-pin, 3.0 m, angular coupling and straight plug
9144 05 0047	Connecting cable M12x1, 4-pin, 5.0 m, angular coupling and strands

8 Disposal

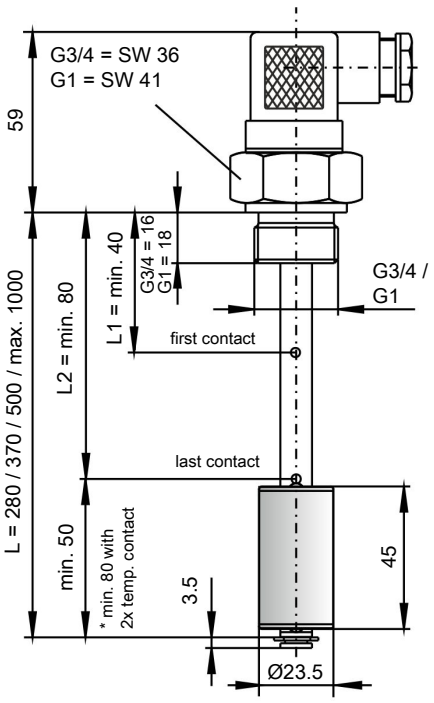
Dispose of parts so as not to endanger the health or environment. Follow the laws in the country of use for disposing of electronic components and devices during disposal.

9 Appendices

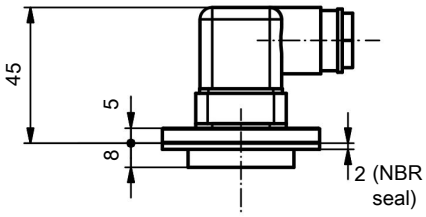
9.1 Technical Data NT M

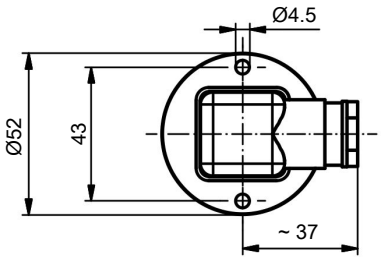
Version	MS	VA
Operating pressure:	max. 1 bar *	max. 1 bar
Operating temperature:	-20 °C to +80 °C	-20 °C to +80 °C
Float:	SK 161	SK 161
Min. fluid density:	0.80 kg/dm³	0.80 kg/dm³
Lengths (all versions):	280, 370, 500 mm (standard) variable to max. 1000 mm	
Weight at L=500 mm:	approx. 300 g	approx. 350 g
** max. atmospheric for PA oval flange*		
Material		
Float:	NBR	NBR
Immersion tube:	Brass	1.4571
G3/4 connection:	Brass	1.4571
G1 connection:	Brass	Brass via adapter
Flange connection:	Aluminium	--
Oval flange:	PA	VA/brass via adapter
Level switching output	**K8**	**W9**
Max. number	4	2
Function:	NO/NC*	Change-over contact
Max. voltage:	230 V AC/DC	48 V AC/DC
Max. switching current:	0.5 A	0.5 A
Max. contact load:	10 VA	20 VA
Min. contact spacing:	40 mm	40 mm
**NO = falling open / NC = falling close*		
Optional temperature		
Temperature contact:	**TM xx**	
Max. voltage:	230 V AC/DC	
Max. switching current:	2 A	
Max. contact load:	100 VA	
Function:	NC	NO
Switching point °C:	50/60/70/80	50/60/70/80
Switching point tolerance:	± 5 K	± 5 K
Max. hysteresis:	18 K ± 5 K	26/35/40/45 K ± 5 K
Temperature sensor		
Pt100:	DIN EN 60 751 (tolerance ± 0.8 °C)	
Analogue output:	See "Technical Data NT M with Analogue Output for Temperature"	
Adapter		
OV:	Adapter to oval flange incl. seal and locking nut	
G1:	Adapter G3/4 to G1	

Dimensions

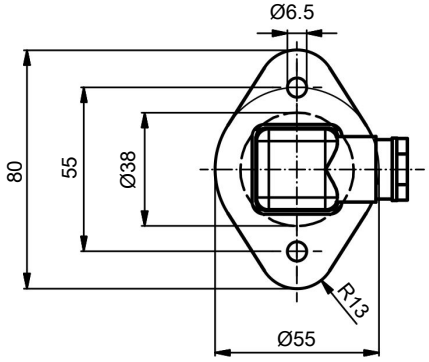


Flange style

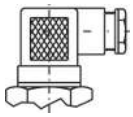
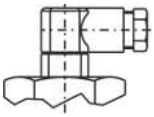
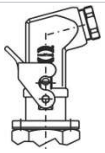
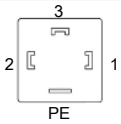
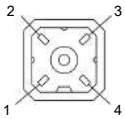
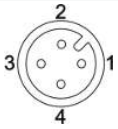
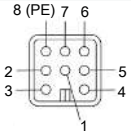




Oval flange

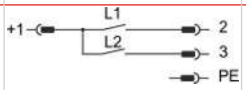
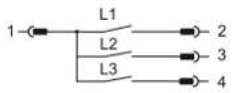
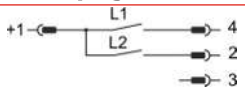
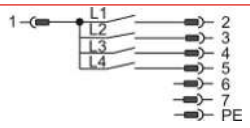
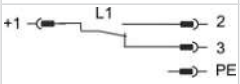
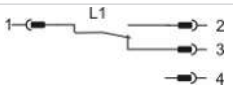
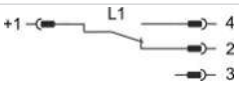
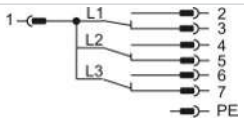
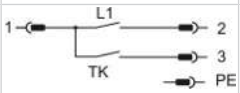
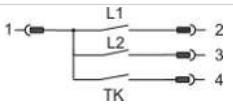
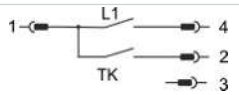
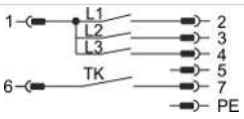
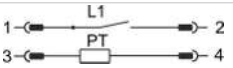
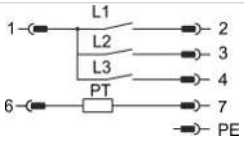
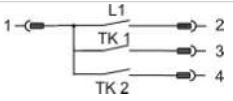
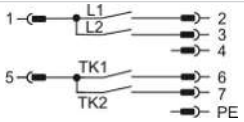
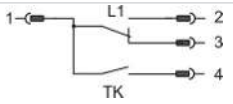
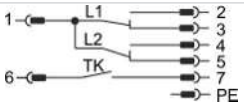
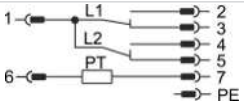


9.2 NT M connector

Plug connection	M3 valve connector	GS4 G4A	M12 plug A coded	C7 HAN 3 A
G3/4	X	X	X	X
G1	X	-*	X	-*
Flange	X	-	X	-
OV	X	-*	X	-*
* G3/4 connection with respective adapter				
Dimensions				
Connection schematic				
Number of pins	3-pin + PE	4-pin	4-pin	7-pin + PE
DIN EN	175301-803		61076-2-101	175301-801
Max. voltage	230 V AC/DC*	30 V DC	30 V DC	230 V AC/DC*
IP rating	IP65	IP65	IP67**	IP65***
Cable fitting	PG 11	PG 7		PG 11
Max. Number of contacts				
Level/temp. contacts	1 x K8, 1 x TK	2 x K8, 1 x TK	1 x K8, 1 x TK	3 x K8, 1 x TK
Level contacts only	2 x K8 1 x W9	3 x K8 1 x W9	2 x K8 1 x W9	4 x K8 3 x W9

*Max. 48 V AC/V DC for change-over contact. **IP67 with cable box attached. ***IP44 with gland/without gasket.

9.3 Standard pin assignment NT M

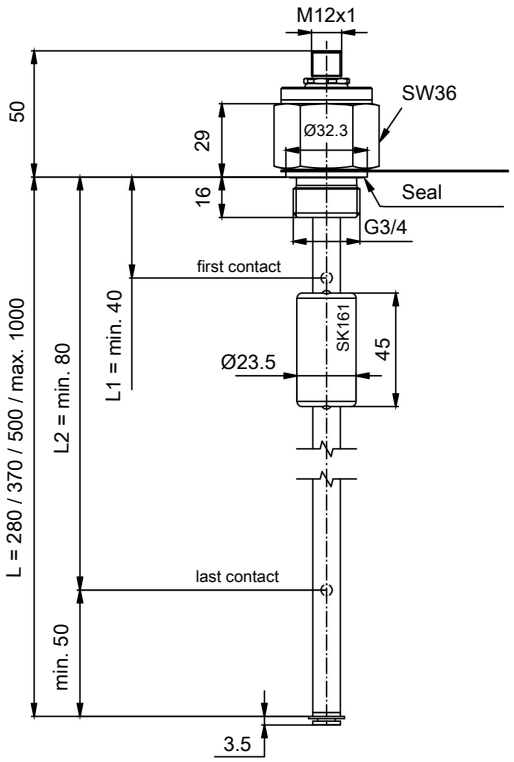
	M3 valve connector	GS4 G4A	M12 plug A coded	C7 HAN 3 A
K8 Level contact(s)				
W9 Level contact(s)				
K8 Level contact(s) and temperature contact				
K8 / Pt100 Level- and temperature sensor				
K8 Level- and temperature contact(s)				
W9 Level contact(s) and temperature contact				
W9 / Pt100 Level- and temperature sensor				

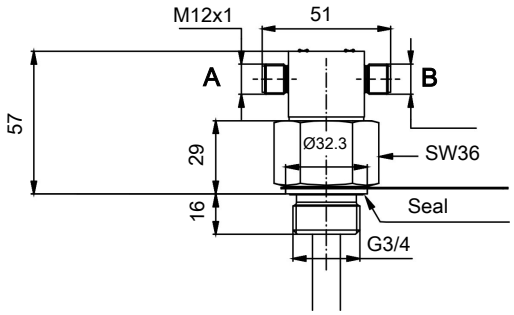
The pin assignments shown always show the max. population possible for the respective plug connection.

9.4 Technical Data NT M with analogue output for temperature

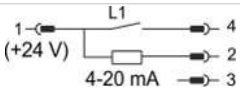
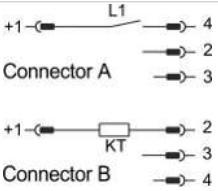
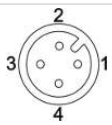
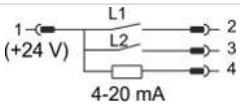
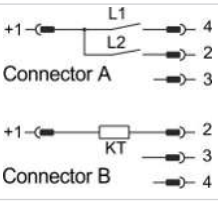
Version	MS
Material	
Float:	NBR
Immersion tube:	Brass
G3/4 connection:	Brass
Level switching output	**K8**
Max. number:	2
Function:	NO/NC*
Max. voltage:	30 V DC
Max. switching current:	0.5 A
Max. contact load:	10 VA
Min. contact spacing:	40 mm
**NO = falling open / NC = falling close*	
Optional temperature	
Temperature	**KT**
Detector:	PT100 Class B, DIN EN 60 751
Measuring range*:	0 °C to 100 °C
Operating voltage (UB):	10-30 V DC
Outlet:	4-20 mA
Max. burden Ω:	= (UB-7.5 V)/0.02 A
**Other measuring ranges available upon request*	
Adapter	
OV:	Adapter to oval flange incl. seal and locking nut
G1:	Adapter G3/4 to G1

Dimensions





9.5 Connector NT M with analogue output for temperature

Plug connection	M12 plug A coded		2 x M12 plug A coded
Number of pins	4-pin		2 x 4-pin
DIN EN	61076-2-101		175201-804
Connection schematic	1 x level contact and analog output		
	2 x level contact and analog output		

10 Attached documents

- Declaration of conformity: KX100023
- 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

2014/35/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, M
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 **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 20.04.2016

Stefan Eschweiler
Geschäftsführer – *Managing Director*

Frank Pospiech
Geschäftsführer – *Managing Director*

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

RMA-Formular und Erklärung über Dekontaminierung
RMA-Form and explanation for decontamination

RMA-Nr./ RMA-No.

Die RMA-Nummer bekommen Sie von Ihrem Ansprechpartner im Vertrieb oder Service./ You may obtain the RMA number from your sales or service representative.

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
- ☐ 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

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

rechtsverbindliche Unterschrift/ Legally binding signature

Die Analyse defekter Baugruppen ist ein wesentlicher Bestandteil der Qualitätssicherung der Firma Bühler Technologies.

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.

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.

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.

Analysing defective assemblies is an essential part of quality assurance at Bühler Technologies.

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.

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.

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.

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