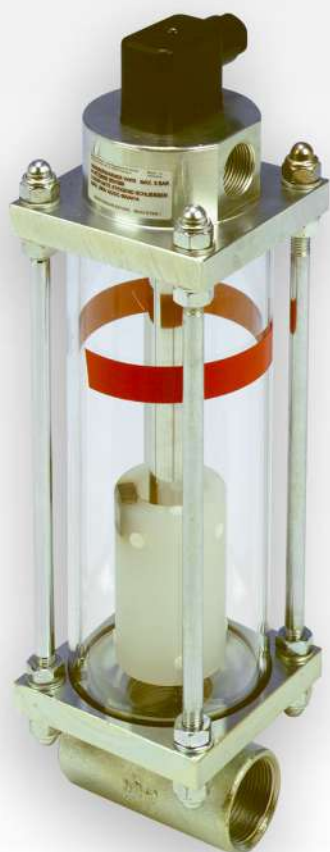




Water alarm unit WW3, WW6, WW10

Installation and Operation Instructions

Original instructions





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
E-Mail: fluidcontrol@buehler-technologies.com

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

Water alarms are used to monitor hydraulic and lubricating oils for ingress water and to alert to condensation water. The devices utilise the natural separation of water and oil to detect any water with a special interface float.

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

The specific weight of the special Water alarm float is balanced so it does not buoy up in oil (specific weight approx. 0.85 kg/dm³) but floats in water.

As the water level rises, the water alarm float gains buoyancy and successively activates contacts 1 and 2 in the WW3 and WW10 (see drawing in appendix). The lower contact 2 expediently triggers a warning, the top contact 1 can be used to shut off the system. There is approx. 1 litre of water in the water alarm and its feed line on the WW3 and WW10 before contact 2 is activated.

The WW6 only has one contact, which is activated at approx. 90 ml of water.

As with the level switches, contact is glandless. The special design of the float allows monitoring even high viscosity lubricants.

The WW3 and WW6 further allow visual inspection, as the casing is made from a transparent material.

1.3 Ordering instructions

Item no.:	Description
30 03 999	Water alarm WW6, one rising NO contact
30 16 999	Water alarm WW6, G1/2 connection turned 90°
30 03 899	WW6 including assembly kit
30 04 999	Water alarm WW6/SW, one change-over contact
30 17 999	Water alarm WW6/SW, G1/2 connection turned 90°
30 04 699	WW6/SW including assembly kit
32 04 999	Assembly kit

Item no.:	Description
30 01 999	Water alarm WW3
30 02 999	Water alarm WW3-SO
30 09 999	Water alarm WW3-SW
30 05 999	Water alarm WW10
30 06 999	Water alarm WW10-SO
30 00 999	Water alarm WW10-SW
31 01 999	Assembly kit

1.4 Scope of Delivery

- Water alarm units
- 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		General information
	Voltage warning		Unplug from mains

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**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.



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

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



4.1 Installation

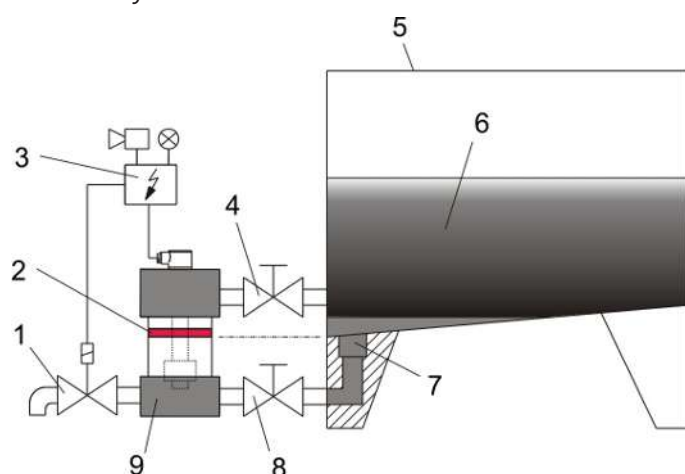
Be sure to install the water alarm with the red mark at the same height of the bottom edge of the oil tank (also see drawing below).

WW3 and WW10 have a G1¼ connection for the bottom connection on the tank and a G3/4 connection for the top connection on the tank. With the WW6, the connections are G3/4 for the bottom and G1/2 for the top tank connection.

Be sure the attached pipe is tight and ensure a short pipe connecting route. Long routes allow more water to collect before the alarm is triggered.

We recommend installing the water alarm to your tank according to the following installation example and using the corresponding shut-off valve.

An assembly kit is available for the water alarm WW6 to allow for compact and easy installation on the oil tank.



1	Drain valve	2	red mark
3	Control/signal unit	4	upper check valve
5	Tank	6	Oil
7	Water	8	lower check valve
9	Water alarm units		

4.2 Electrical Connections

The device must be installed by an authorised 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.

The WW3 and WW10 have a 6-pin (+PE) plug type S6 to connect to electricity, the WW6 has a 3 pin (+PE) plug type M3.

On both plugs, the top of the plug must be removed from the plug base to connect to electricity. Loosen the screw on the top of the plug for this purpose.

The contact assignment of the plug varies by version. The contacts are illustrated so the float is in the bottom of the tank and no contact has been activated yet.

Please refer to chapter [Pin assignment](#) [> page 14] in the appendix for the pin assignment.

5 Operation and control

NOTICE



The device must not be operated beyond its specifications.

6 Cleaning and 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.

During regular device inspection, the water and sludge which have collected inside the water alarm should be drained via the drain valve.

Closing the shut-off valve on one of the two connecting lines between the water alarm and oil tank then opening the drain valve will flush the open connecting line well, flushing out any sludge deposit. After flushing the other connecting line the same way, close the drain valve; both drain valves must be open all the way.

NOTICE



Collect the drained oil/water mixture and dispose properly.

For a list of spare parts and explanation of the replacement, see chapter [Service and repair](#) [> page 9].

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

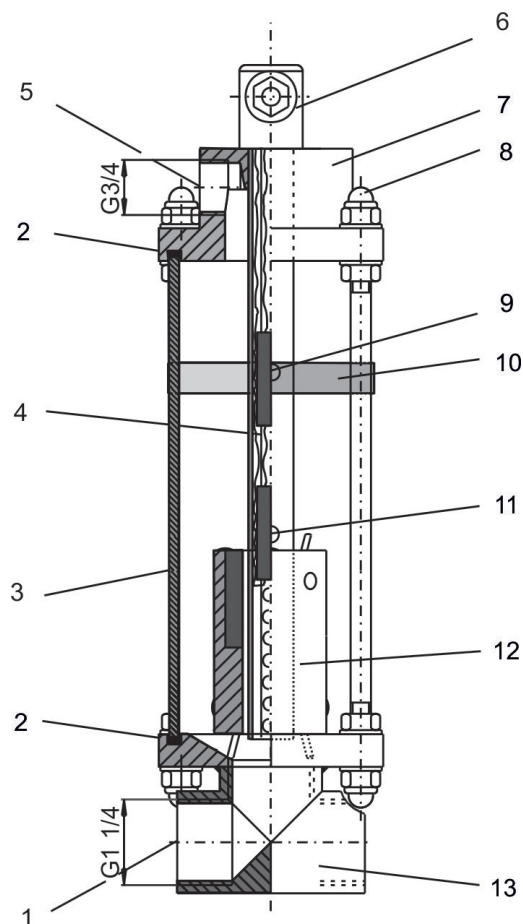
Germany

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 drawing/location WW3 and WW10



1	Bottom tank connection	2	Bottom seal
3	Water alarm glass resp. steel casing	4	Contact rail
5	Upper connection	6	Plug
7	Header	8	Cap nuts
9	1st contact	10	Red mark
11	2nd contact	12	Float
13	Bottom piece		

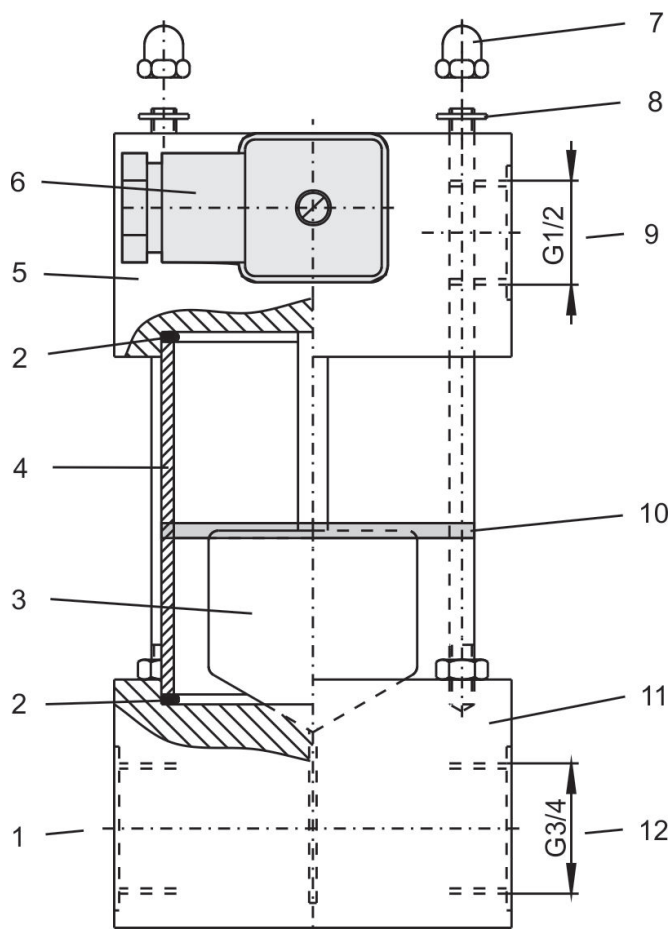
Spare Parts

Item no.	Qty.	Description	for type	No.
3201999	1	Float	WW3, WW10	12
3005001	1	Steel casing	WW10	3
3221000	1	Water alarm glass	WW3	3
3223000	2	Seal	WW3	2
3205003	2	Seal	WW10	2

Installing/removing spare parts

- Close both shut-off vales and drain remaining liquid from the water alarm.
- Loosen the four Cap nuts (8) and remove along with the lock washers.
- Remove the header (7) incl. plug (6) and switching tube. The top seal (2) can now be replaced.
- The water alarm glass or the steel casing (3) can also easily be removed.
- The bottom seal (2) and the float (12) are now exposed and can be replaced. Be sure to centre the new float (12) in the bottom piece (13).
- Insert the new water alarm glass or steel casing (3) in the groove on the bottom piece (13).
- Lastly, reassemble the individual parts in reverse order.

7.2 Spare parts drawing/location WW6



1	Water drain	2	Bottom seal
3	Float	4	Water alarm glass
5	Header	6	Plug
7	Cap nuts	8	Lock screws
9	Upper connection	10	Bottom edge, oil tank, red ring
11	Bottom piece	12	Lower connection

Spare Parts

Item no.	Qty.	Description	for type	No.
3202999	1	Float	WW6	3
3222000	1	Water alarm glass	WW6	4
3224000	2	Seal	WW6	2

Installing/removing spare parts

- Close both shut-off vales and drain remaining liquid from the water alarm.
- Loosen the four cap nuts (7) and remove along with the lock washers (8).
- Remove the header (5) incl. plug (6). The top seal (2) can now be replaced.
- The water alarm glass (4) can also easily be removed.
- The bottom seal (2) and float (3) are now exposed and can be replaced. Be sure the new float (3) is centred in the bottom piece (11) and the top float pin is inside the header (5).
- Insert the new water alarm glass (4) in the groove on the bottom piece (11).
- Lastly, reassemble the individual parts in reverse order.

NOTICE! Note: The tightening torque for the four cap nuts is max. 4 Nm.

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

Technical Data WW6

Max. operating pressure:	6 bar
Operating temperature:	min. 0 °C, max. 80 °C
Max. viscosity:	1200 mm ² /s
Max. density of oil:	0.86 kg/dm ³

Material

Housing:	Al/PC
Float	PP
Contact type:	Reed contact as NO or change-over contact
Max. operating voltage:	230 V AC/DC
Max. switching output:	50 VA/40 VA
Max. switching current:	1 A
Plug connection:	M3 (3-pin + PE DIN EN 175301-803)
IP rating:	IP65
Cable fitting:	PG 11
Weight:	approx. 1.35 kg

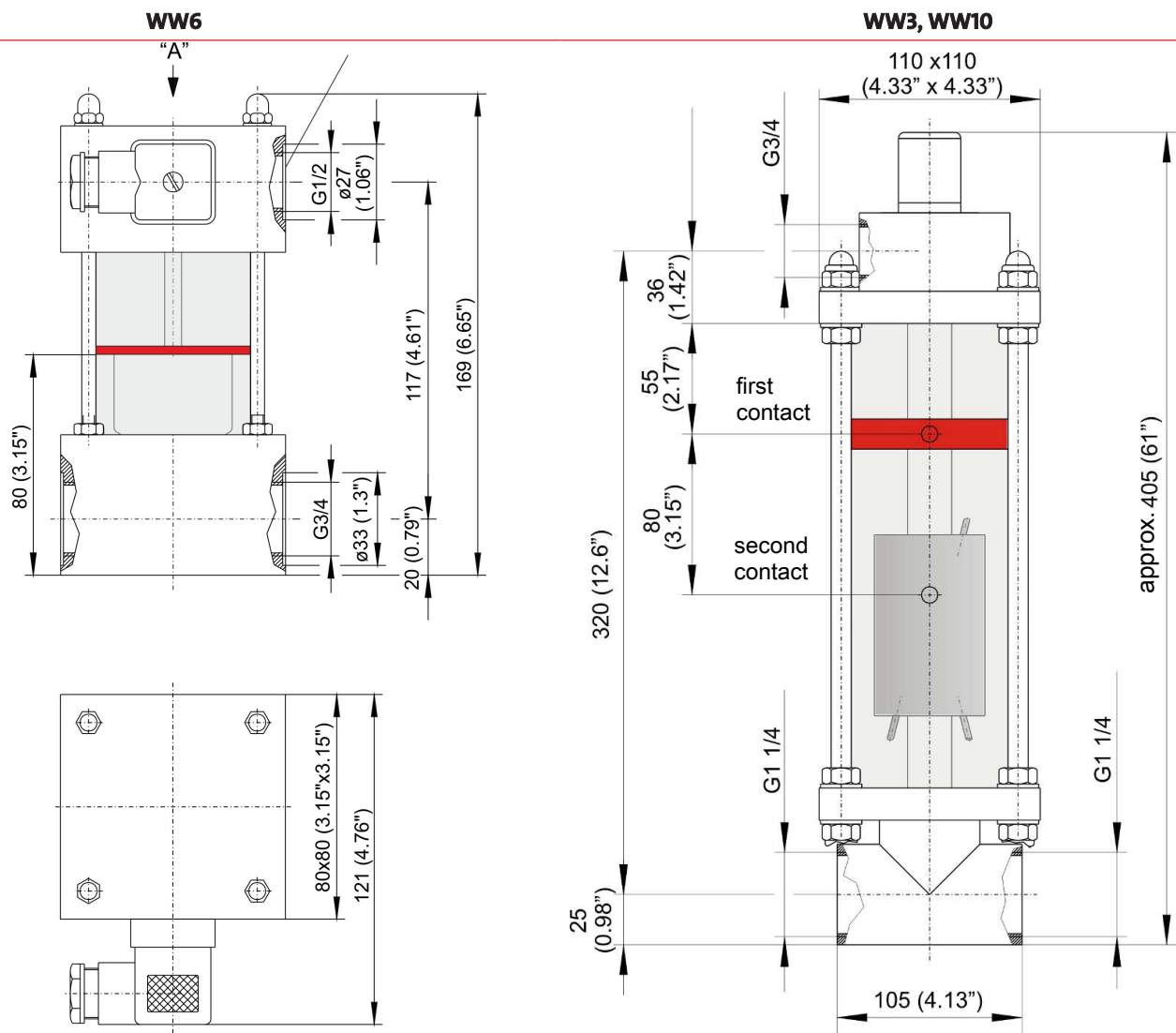
Technical Data WW3 and WW10

Max. operating pressure:	WW3 = 3 bar WW10 = 10 bar
Operating temperature:	0 °C to 80 °C
Max. viscosity:	1200 mm ² /s
Max. density of oil:	0.86 kg/dm ³

Material

Housing:	WW3 = transparent shell WW10 = steel shell
Float:	PP
Contact type:	Reed contacts, 2x each as NO contact, NC contact or change-over (also see contact assignment)
Max. operating voltage:	230 V AC/DC
Max. switching output:	NO contact/NC contact 50 VA (AC)/50 W (DC) Change-over 40 VA/40 W
Max. switching current:	1 A
Plug connection:	S6 (6 pin + PE DIN EN 175301-803)
IP rating:	IP65
Cable fitting:	PG 11
Weight:	WW3 = 6 kg WW10 = 8 kg

9.2 Dimensions



9.3 Pin assignment

WW3/WW10	WW3-SO/WW10-SO	WW3-SW/WW10-SW
WW6	WW6/SW	

10 Attached documents

- Declaration of Conformity KX300001
- 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 Richtlinien wurden berücksichtigt:

The following directives were regarded:

2014/30/EU (EMV/EMC)

Produkt / products: Wasserwarner / water alarm unit
Typ / type: WW3, WW6, WW10

Das Betriebsmittel dient zur Überwachung von Hydraulik- und Schmierölen auf Wassereinbruch sowie
Meldung von Schwitzwasser.

The equipment is designed for monitoring ingress of water in hydraulic and lubrication 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

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

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: Water alarm unit
Types: WW3
WW6
WW10

The equipment is designed for monitoring ingress of water in hydraulic and lubrication 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

A handwritten signature in blue ink, appearing to read 'Stefan Eschweiler'.

Stefan Eschweiler
Managing Director

A handwritten signature in blue ink, appearing to read 'Frank Pospiech'.

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.

