INSTRUCTION MANUAL
MAGNETIC SWITCH

ACCESSORIES FOR WEKA
VISUAL LEVEL INDICATOR (VLI)

MAGNETIC SWITCHES

37557
37589

31130-NN, -NW, -NA, -NK, -NP, -NT, -NB, -NI, -ND, -NM, -NS
31160-NN, -NW, -NA, -NK, -NP, -NT, -NB, -NI, -ND, -NM, -NS

31130-NA-NAM
31130-NW-NAM

DATE: Feb. 19, 2023
VERSION: E 3.1

LEVEL
MEASUREMENT

CONTENTS

1. SYMBOLS AND SIGNS USED IN THE INSTRUCTION MANUAL

WARNING

Indicates potential damage to the device and / or an injury of the operator or user in case of failure to observe the instructions.

CAUTION

Indicates potential damage to the device in case of failure to observe the instructions.

SAFETY NOTE

For equipment with normal conditions of use in explosion-prone environments according to EU-Directive 2014/34/EU (ATEX) or IECEx scheme.
These notes apply in addition to all other notes.

2. SAFETY NOTES AND WARNINGS

The manufacturer is not liable for damages which are caused as a result of failure to observe safety notes and warnings.

- → Burn hazard! Work on hot magnetic level indicators can lead to bodily injuries and burns. The surfaces of the float chambers and the process connections can become hot. Let the tank cool down to ambient temperature prior to carrying out any work on the magnetic level indicator. Wear appropriate PPE (gloves, face protection, possibly respiratory protection equipment). Keep sufficient distance during operation.
- → The magnetic level indicator and thus also the magnetic switch can unnoticeably become inoperative by a blocking of the float. Should you be unsure about the liquid level indicated, another method should be used to check the magnetic level indicator.
- → Should you suspect a defective function, or should you find such defective function, it must be remedied.

→ Only use the magnetic level indicator and the magnetic switch once you have read and understood the complete instruction manual.

→ The present instruction manual must also be accessible for later users.

→ Keep magnetic and magnetisable parts (magnets, construction steel, steel wire or clamps etc.) away from the magnetic level indicator or accessories such as the magnetic switch. This also applies to strong electromagnetic fields (transformers, welding equipment etc.), as both can interfere with the magnetic force of the magnets contained in the magnetic level indicator or the magnetic switch and can lead to malfunctions or failures of the indicator or the accessory parts (switch, data measuring converter) attached.

→ Replace damaged or faulty components with original spare parts.

→ Solvents can blunt the plastic components used or can cause cracks. Clean the devices with soap and water or a plastic cleaner.

→ Falling parts (boltings, floats etc.) can create impact sparks and cause explosions in an explosion-prone atmosphere. Make sure that an explosion-prone atmosphere does not exist, and no parts fall when working on the magnetic level indicator.

→ When working on the magnetic level indicator, use only equipment and tools which were approved for the explosion-prone area according to the European directive.

→ Polycarbonate indicator rails can be electrostatically charged, e.g. during cleaning. When discharging, sparks can cause explosions in an explosion-prone atmosphere. Please clean the parts only with anti-static cleaning agents and auxiliary tools.

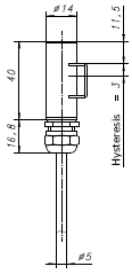
3. INTENDED USE

- → The magnetic switches may only be used in connection with original WEKA magnetic level indicators and their individual parts, e.g. floats.
- → The magnetic switches may only be used for the intended use indicated on the type plate. The data recorded on the type plate and the data sheet must correspond to the maximum operation parameters occurring within the plant.
- → Intended use, rebuilding measures and alterations of the magnetic switch not provided by the manufacturer are carried out at one's own risk and are potentially dangerous (exclusion of warranty).
- → The magnetic switches may only be installed, commissioned, and maintained by trained specialist staff.
- → The manufacturer is not liable for damages which are caused by improper use or incorrect operation.
- → The magnetic switches are classified according EN 61140 to protection level II and will be high voltage tested for 100% each.

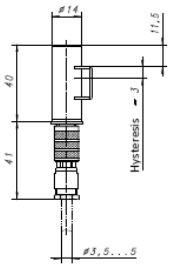
- → The magnetic switches may only be used for the intended use indicated on the type plate and the labelling according to Directive 2014/34/EU and/or IECEx.
- → The magnetic switches may only be installed, commissioned, and maintained by trained specialist staff with knowledge on EX protection.
- → The magnetic switches may only be repaired and modified by the manufacturer (where required in consultation with the mentioned body).

4. OVERVIEW OF MAGNETIC SWITCHES

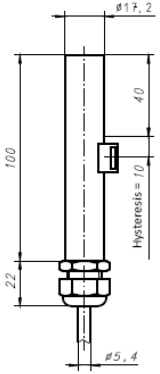
MINI
WITH
CABLE GLAND



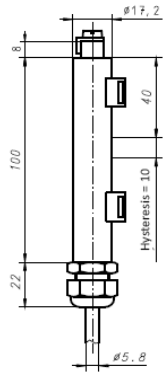
MINI
WITH PLUG
CONNECTOR



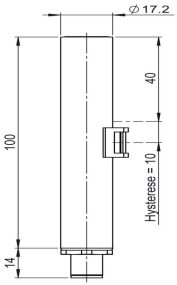
STANDARD
WITH
CABLE GLAND



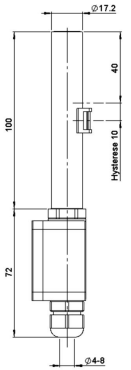
EX I
WITH
CABLE GLAND



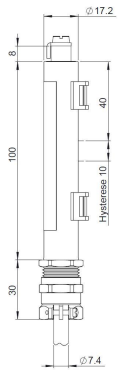
STANDARD
WITH PLUG
CONNECTOR
M12-A



STANDARD
WITH
JUNCTION BOX



EX D
WITH
CABLE GLAND



5. TYPE CODES

31... N... – ...

SWITCH FUNCTION

SPST	130
SPDT	160

VERSION

Stainless steel switch with metric gland	N

DESIGN

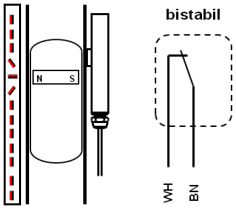
Standard with PA cable gland	N
with stainless steel cable gland	S
with brass cable gland	M
with explosion proof enclosure	D
intrinsically safe design	I
with plug connector	K oder P
with terminal box	T
with terminal box for high medium temperatures	B
with shielded cable for high medium temperatures	A W

SPECIAL DESIGN

with NAMUR circuit	NAM

6. FUNCTIONAL DESCRIPTION

The magnetic switches are fit laterally as an accessory on the WEKA magnetic level indicators and monitor the position of the float by reacting to the magnetic pole contained in the float.
All magnetic switches have a bistable design, i.e. the auxiliary magnet contained in the magnetic switch keeps the switch position until the float magnet changes the switch position by passing by.



As standard, the magnetic switch is mounted on the outside of the standpipe opposite the indication rail. See adjacent drawing.

The switching logic is reversed if

→ the magnetic switch is turned to upside down with the cable outlet on the top or

→ the switch is mounted in the front next to the indication rail, and if this is technically permitted.
(see assembly instruction)

The float magnet activates the reed switch as soon as the liquid reaches the switch position.

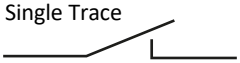
→ Assembly opposite the indication rail
→ Bottom of cable outlet

→ The magnetic switches of type 311x0-NI (Ex i) are to be operated with appropriate intrinsically safe equipment. The inner capacities are negligible. Please find detailed information in the EU type-examination certificates.

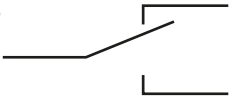
→ For each type, none of the specified values must be exceeded. The values apply to ohmic loads. If the magnetic switch is overloaded, this leads to the reed switch being welded and thus the device is defective. Protective circuitry can significantly increase the life expectancy of the magnetic switch.

7. SWITCH FUNCTION

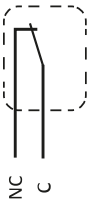
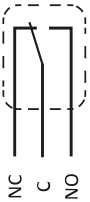
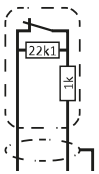
SPST = On/off switch
Single Pole – Single Trace



SPDT = Change-over switch
Single Pole – Double Trace

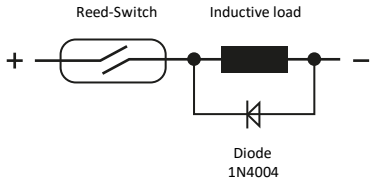


CONNECTION DIAGRAM

	TYPE	NC (NORMALLY CLOSED)	C (COMMON)	NO (NORMALLY OPEN)
	37557	WH	BN	
	37589	terminal 1	terminal 2	
	31130-NN	WH	BN	
	31130-NW	BU	BN	
	31130-NA	WH	BN	
	31130-NK	terminal 1	terminal 2	
	31130-NP	terminal 4	terminal 1	
	31130-NT	WH	BN	
	31130-NB	WH	BN	
	31130-NI	WH	BN	
	31130-ND	BN	BU	
	31130-NM	WH	BN	
	31130-NS	WH	BN	
	31160-NN	WH	BN	GN
	31160-NW	WH	BN	GN
	31160-NA	WH	BN	GN
	31160-NK	terminal 3	terminal 1	terminal 2
	31160-NP	terminal 2	terminal 1	terminal 4
	31160-NT	WH	BN	GN
	31160-NB	WH	BN	GN
	31160-NI	WH	BN	GN
	31160-ND	GY	BK	BN
	31160-NM	WH	BN	GN
	31160-NS	WH	BN	GN
	31130-NA-NAM	WH	BN	
	31130-NW-NAM	BU	BN	

PROTECTION CIRCUITRY

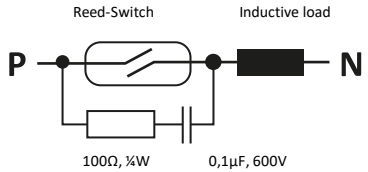
Figure 1 (D.C.)



FOR DC LOADS:

Parallel to inductive load, a diode short-circuits the reversing voltage peak. Thus, the switch is protected against excess load.

Figure 2 (A.C.)



FOR AC LOADS:

A serial combination of resistance and capacitor is assembled parallel to the reed switch. This combination has a high resistance in normal use. In the case of voltage peaks, the resistance is reduced, and the excess load is diverted. Thus, the switch is protected.

8. SCOPE OF DELIVERY

→ When ordering a level indicator with magnetic switches, hose clamps are included.
→ When ordering magnetic switches as spare parts, hose clamps are never included and must be ordered separately. Should you place an order, the hose clamp sizes must be specified:

For pipe diameter	30…40mm	Article number 89249
For pipe diameter	40…57mm and 57…80mm	Article number 89250

9. UNPACKING

1. Open the packaging and remove the magnetic switch.
2. Make sure that no further parts remain in the packaging.
3. Visually check the magnetic switch and all parts delivered for potential transport damages. Do not use any damaged or hazardous parts.

10. DISPOSING OF PACKAGING MATERIALS

Preserve the environment and properly dispose of or recycle the packaging material.

11. ASSEMBLY

→ Prior to assembly, the preparations for unpacking the magnetic switch must be completed.
→ Prepare the tools (screwdriver size 4 or nut driver SW 7 – older clamp versions SW 6) and materials (hose clamps) required for the assembly of the magnetic switch.
→ Position the magnetic switch on the magnetic level indicator in the subsequent specified assembly position and at the level on which you want the switch function. It may be that you must loosen the closely located hose clamps of the indicator rail to introduce the hose clamp of the magnetic switch. After the assembly, all hose clamps must again be tightened.
→ Check the position and the seat of the magnetic switch after you have finished the work.

ASSEMBLY POSITION

→ The magnetic switch is to be assembled 180° opposite the indication rail with the cable outlet towards the bottom, considering the tolerances. The tolerances depend on the respective pipe diameter (see subsequent drawing).

OPTIONAL

→ With the exception of Smartline, there is an option to assemble the magnetic switch directly next to the indication rail.

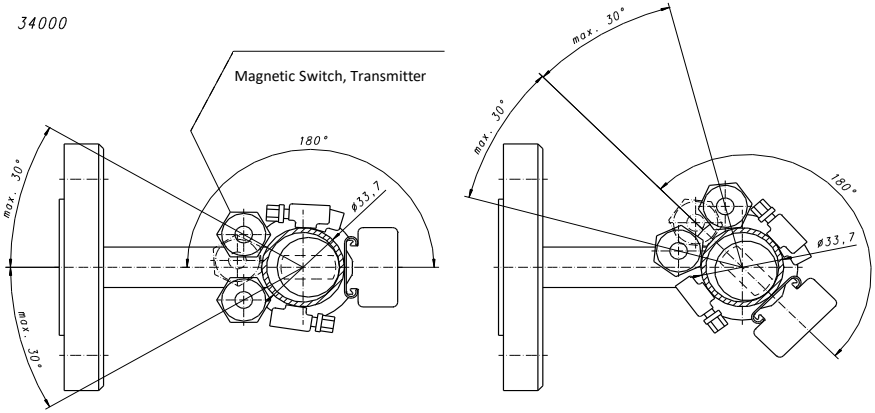
→ The cable is to be laid in fixed position.
→ The hose clamps should be tightened with a torque of 3 … 5 Nm.
→ After the assembly, the switch must be fixed tightly and in line with the float chamber.

→ With regard to use in explosion-prone environments created by dusts, the maximum medium temperature is to be observed instead of the ambient temperature.

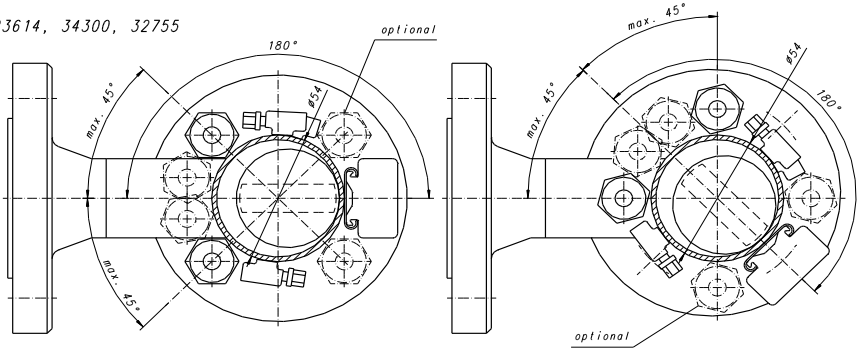
MAX. FLUID TEMPERATURE (VLI)	AMBIENT TEMPERATURE (Ta)	TEMPERATURE CLASS
-50°C … +150°C	-20°C bis +80°C	T3 (200°C)
-50°C … +135°C	-20°C bis +80°C	T4 (135°C)
-50°C … +100°C	-20°C bis +80°C	T5 (100°C)
-50°C … +85°C	-20°C bis +80°C	T6 (85°C)

→ Potential equilisation is only guaranteed if both hose clamps are assembled on the standing pipe. If there is no continuous connection between the standing pipe and the potential equalisation or if only a hose clamp can be used due to constructive reasons, a connection to the terminal designed for this purposed must be ensured.

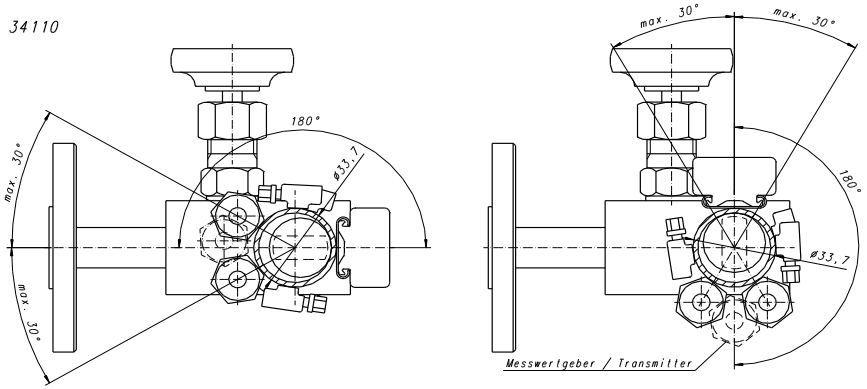
34000



23614, 34300, 32755



34110



12. COMMISSIONING

Prior to commissioning, the entire assembly (11) must be completed.

→ Should the data recorded on the type label (switching capacity, maximum operating temperature, switch function etc.) not match the application, the magnetic switch can be damaged and represent danger to human life and the environment. Make sure that the data recorded on the type plate is a match with the application.

→ Inappropriate mounting components (magnetic etc.) can cause error functions and damage and can endanger human life and the environment. Only use components suitable for the application.

→ Prior to the first commissioning, the switch position is undefined. Observe the following procedure to establish a defined switching state.

→ Prior to use, check the magnetic switch for visible exterior damages. Do not commission a damaged magnetic switch.

→ The magnetic switch may only be used for intended purposes recorded on the type plate and in the labelling according to guideline 2014/34/EU and/or IECEx scheme.

The magnetic level indicator is filled with liquid via the tank. As soon as the float floats, it needs some time to adjust itself with regard to the magnetic band of the indication rail. From that point on, the float should indicate the level by turning down the indication leaves.
In order to bring the magnetic switches into a defined switching state, we recommend once driving off the complete tank volume under supervision and visually checking the level so as to be able to guarantee perfect functioning.
It is also possible to bring the switches into the specified position by means of a weak hand magnet (e.g. magnet board). In this way, you can also manually test the mobility of the indication leaves. However, the leaves should always be put back into starting position.

13. MAINTENANCE

In general, the magnetic level indicator is maintenance-free. You should only check the magnetic switch in cases of suspected error function. You find notes on the approach in chapter “Commissioning” (12).

→ Should you suspect or detect an error function, it must be immediately rectified. Damaged or faulty components must be replaced with original spare parts.

→ When checking the switch function, only use hand magnets which are not too strong and which cannot influence the inner magnet of the switch with regard to its values. Otherwise, this can result in a malfunction of the magnetic switch.

→ Clean the magnetic switch only with a damp cloth. Solvents and abrasive cleaners can destroy cables, plastic cable gland and type plate.

→ Magnetic switches for the Ex area may only be repaired and modified by the manufacturer (where required in consultation with the named authority).

14. TRANSPORT AND STORAGE CONDITIONS

→ Protect magnetic switches against strong thrusts.
→ Do not place any heavy items on the magnetic switch and its packaging.
→ Store the magnetic switch in a dry environment.
→ Avoid contact with water and humidity.
→ Protect magnetic switch against strong magnetic fields.
→ Temperature: -10°C … +50°C
→ Relative humidity: 10% … 95%

15. TECHNICAL DATA

Dimensions:	see data sheet	
Minimum medium temperature:	all Types	-50°C
Maximum medium temperature:	311x0-NW	+350°C
	31130-NW-NAM	+250°C
	all other types	+150°C
Minimum medium temperature:	all Types	-20°C
Maximum medium temperature:	all Types	+80°C
Standard cable lengths:	xxxxx/3	3m
	xxxxx/5	5m
	xxxxx/10	10m
	xxxxx/20	20m
Hysteresis:	37557, 37589	3mm
	all other types	10mm

SWITCHING CAPACITIES

TYPe	MAXIMUM VOLTAGE [V]	MAXIMUM CURRENT [A]	MAXIMUM AC OUTPUT [VA]	MAXIMUM DC OUTPUT [W]
37557, 37589	100	0.5	10	10
all 31130 (SPST)	250	1.3	80	80
all 31160 (SPDT)	230	1.0	60	60
all -NAM	10.6	0.06	-	0.2

PROTECTION CLASS

TYPE	Protection class according to EN 60529
37557 31130-NN, -NW, -NA, -NM, -NS, -NP 31160-NN, -NW, -NA, -NM, -NS, -NP 31130-NA-NAM 31130-NW-NAM	IP68 - 5bar
31130-NI, -ND 31160-NI, -ND	IP68 - 10bar
37589 (when plugged) 31130-NT, -NB 31160-NT, -NB	IP65
31130-NK (when plugged) 31160-NK (when plugged)	IP67

Housing material:	Stainless steel, 316L
Cable gland material:	see data sheet
Cable material:	see data sheet

16. DISMANTLING / DISPOSAL

→ Dismantling
Prior to dismantling, make sure that the magnetic switch has been disconnected from the mains and that the missing switch function does not have any effect on the subsequent processes.

→ Disposal
Preserve the environment and properly dispose of the magnetic switch.

17. TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSES	POSSIBLE SOLUTION
1. No visual level display despite liquid being in the tank.	Float is blocked due to dirt in the float chamber.	Clean float chamber and float (see instruct-tion manual of the magnetic level indicator)
	Float is damaged, filled with liquid and has sunk.	Replace the float. Compare test pressure of the system with the type plate information.
	Float is stuck on magnetic or magnetisable components assembled outside the float chamber.	Look for iron parts along the magnetic level indicator by means of magnet (clamps, screws etc.), remove them and respectively replace them with original add-on components.
2. No switch function	The attachment does not correspond to the assembly instructions.	Check correctly assembled. Consider that accessories have to be moved/turned when “moving/turning” the indication rail. Without indicator float, the float has no guidance and thus cannot activate the accessories!
	The magnetic switch is not activated by the float.	Check the function of the magnetic level indicator according to point 1. Ensure that the right combination of float chamber type and float was selected.
3. Magnetschalter reagiert nicht bistabil (monostabil)	It could be that the auxiliary magnet in the magnetic switch has been demagnetised or moved.	Check the float selection with a second magnet. Where required, replace the faulty magnetic switch.
4. Switch contacts are permanently open/closed.	The magnetic switch was probably overloaded.	Check the applied voltages and currents and make sure that their values are below the maximum values indicated on the type plate. Where required, check the protective circuitry. When the switch is opened, this changes the internal position of the reed switch and causes error functions!

18. LABELLING

→ The magnetic switch may only be used for the intended use recorded on the type plate. Please observe the information on the type plate.

19. CUSTOMER SERVICE

You find a list with all WEKA representatives worldwide under
www.weka-ag.ch → representatives and your choice of country

or contact us directly under

WEKA AG

Schürlistrasse 8 | CH-8344 Bäretswil | Switzerland
Phone +41 43 833 43 43 | level@weka-ag.ch

20. EU- TYPE EXAMINATION CERTIFICATE

eurofins | E&E

(1) **EU-Baumusterprüfbescheinigung**

(2) Geräte und Schutzsysteme zur bestimmungsgemässen Verwendung in explosionsgefährdeten Bereichen - **Richtlinie 2014/34/EU**

(3) Prüfbescheinigungsnummer: **SEV 22 ATEX 0586**

(4) Produkt: Magnetschalter, Typ: 311*0-NI**

(5) Hersteller: WEKA AG

(6) Anschrift: Schürlistrasse 8, 8344 Bäretswil, Switzerland

(7) Die Bauart dieses Produktes sowie die verschiedenen zulässigen Ausführungen sind in der Anlage zu dieser Prüfbescheinigung festgelegt.

(8) Eurofins, benannte Stelle Nr. 1258 nach Artikel 17 der Richtlinie 2014/34/EU des Parlaments der europäischen Gemeinschaften und des Rates vom 26. Februar 2014, bescheinigt die Erfüllung der grundlegenden Sicherheits- und Gesundheitsanforderungen für die Konzeption und den Bau von Produkten zur bestimmungsgemässen Verwendung in explosionsgefährdeten Bereichen gemäss Anhang II der Richtlinie.
Die Ergebnisse der Prüfung sind im vertraulichen Prüfbericht 21CH-01282.X01 festgehalten.

(9) Die grundlegenden Sicherheits- und Gesundheitsanforderungen werden erfüllt durch Übereinstimmung mit:

EN IEC 60079-0:2018
EN 60079-11:2012

Ausgenommen sind die Bedingungen welche unter Punkt 18 aufgeführt sind.

(10) Falls «X» hinter der Bescheinigungsnummer steht, wird auf besondere Bedingungen für die sichere Anwendung des Produktes in der Anlage zu dieser Bescheinigung hingewiesen. Falls "U" hinter der Bescheinigungsnummer steht, sind die zertifizierten Geräte oder Schutzsysteme unvollständig. Solche Teilzertifizierungen können als Basis für Geräte- oder Schutzsystem-Zertifizierungen verwendet werden.

(11) Diese EU-Baumusterprüfbescheinigung bezieht sich nur auf Konzeption und Bau des festgelegten Produktes. Weitere Anforderungen dieser Richtlinie gelten für die Herstellung und das Inverkehrbringen des Produktes, diese sind jedoch nicht Gegenstand dieser Bescheinigung.

(12) Die Kennzeichnung des Produktes muss die folgenden Angaben enthalten:

II 2G Ex ib IIC T6...T3 Gb
II 2D Ex ib IIIC T85 °C...T200 °C Db

Eurofins Electric & Electronic Product Testing AG
Notified Body ATEX

Martin Plüss
Produktzertifizierung

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(13) **Anlage**

(14) **EU-Baumusterprüfbescheinigung SEV 22 ATEX 0586**

(15) **Beschreibung des Produktes**

Die Magnetschalter werden als Zubehör seitlich an den Weka Magnet-Niveauanzeigern (Visual Level Indicator - VLI) angebracht und überwachen die Position des Schwimmers, indem sie auf den im Schwimmer enthaltenen Magnetpol ansprechen.
Alle Magnetschalter sind bistabil aufgebaut, d.h. der im Magnetschalter enthaltene Hilfsmagnet hält die Schaltstellung solange, bis der Schwimmermagnet durch Vorbeifahren die Schaltstellung ändert.

Installations- und Gebrauchsart:	stationär
Schutzart:	IP66
Umgebungstemperatur (°C):	-20 °C bis +65 °C
Umgebungstemperatur für Ex-Komponenten (°C):	N/A

Elektrische Daten:
Nur zum Anschluss an bescheinigte eigensichere Stromkreise mit folgenden Höchstwerten:

Typ 31130-NI	Typ 31160-NI
Ui = 250 V	Ui = 250 V
Ii = 1.3 A	Ii = 1.0 A
Ci = vernachlässigbar	Ci = vernachlässigbar
Li = vernachlässigbar	Li = vernachlässigbar

Zuzsätzlich zu den wirksamen inneren Kapazitäten und inneren Induktivitäten ist die angeschlossenen Verbindungsleitung mit folgenden Werten zu berücksichtigen:

Cc = 110 pF/m
Lc = 0.7 µH/m.

Part number code:
311x0-NI/yy

Schaltfunktion (x):	3	SPST
	5	SPDT
Kabellänge (yy)	3	3 m
	5	5 m
	10	10 m
	20	20 m

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EU-Baumusterprüfbescheinigung

(1)

(2) Geräte und Schutzsysteme zur bestimmungsgemässen Verwendung in explosionsgefährdeten Bereichen **- Richtlinie 2014/34/EU**

(3) Prüfbescheinigungsnummer: **SEV 22 ATEX 0605**

(4) Produkt: Magnetschalter, Typ: 31130-ND/* and 31160-ND/*

(5) Hersteller: WEKA AG

(6) Anschrift: Schürlistrasse 8, 8344 Bäretswil, Switzerland

(7) Die Bauart dieses Produktes sowie die verschiedenen zulässigen Ausführungen sind in der Anlage zu dieser Prüfbescheinigung festgelegt.

(8) Eurofins, benannte Stelle Nr. 1258 nach Artikel 17 der Richtlinie 2014/34/EU des Parlaments der europäischen Gemeinschaften und des Rates vom 26. Februar 2014, bescheinigt die Erfüllung der grundlegenden Sicherheits- und Gesundheitsanforderungen für die Konzeption und den Bau von Produkten zur bestimmungsgemässen Verwendung in explosionsgefährdeten Bereichen gemäss Anhang II der Richtlinie.
Die Ergebnisse der Prüfung sind im vertraulichen Prüfbericht 21CH-01283.X01 festgehalten.

(9) Die grundlegenden Sicherheits- und Gesundheitsanforderungen werden erfüllt durch Übereinstimmung mit:

EN IEC 60079-0:2018
EN 60079-1:2014
EN 60079-31:2014

Ausgenommen sind die Bedingungen welche unter Punkt 18 aufgeführt sind.

(10) Falls «X» hinter der Bescheinigungsnummer steht, wird auf besondere Bedingungen für die sichere Anwendung des Produktes in der Anlage zu dieser Bescheinigung hingewiesen. Falls "U" hinter der Bescheinigungsnummer steht, sind die zertifizierten Geräte oder Schutzsysteme unvollständig. Solche Teilzertifizierungen können als Basis für Geräte- oder Schutzsystem-Zertifizierungen verwendet werden.

(11) Diese EU-Baumusterprüfbescheinigung bezieht sich nur auf Konzeption und Bau des festgelegten Produktes. Weitere Anforderungen dieser Richtlinie gelten für die Herstellung und das Inverkehrbringen des Produktes, diese sind jedoch nicht Gegenstand dieser Bescheinigung.

(12) Die Kennzeichnung des Produktes muss die folgenden Angaben enthalten:

II 2G Ex db IIC T6...T3 Gb
II 2D Ex tb IIIC T85 °C...T200 °C Db

Eurofins Electric & Electronic Product Testing AG
Notified Body ATEX

Martin Plüss
Produktzertifizierung

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(13) **Anlage**

(14) **EU-Baumusterprüfbescheinigung SEV 22 ATEX 0605**

(15) **Beschreibung des Produktes**
Die Magnetschalter Typ 31130-ND/* und Typ 31160-ND/* dienen als Signalgeber bei einem Füllstandswechsel von Medien. Daher wird der Schalter zusammen mit einer visuellen Füllstandsanzeige verwendet.
Die Magnetschalter sind für den Einsatz in explosionsgefährdeten Bereichen bestimmt. Der Typ 31130-ND / * verwendet einen Ein-/Ausschalter, der Typ 31160-ND / * einen Umschalter. Der Stern (*) gibt die Länge in Metern des fest angeschlossenen Kabels an.

Zulässiger Umgebungstemperaturbereich: -20 °C ≤ T_{amb} ≤ +80 °C

Bei Mediums-Temperaturen von über 85°C ist die Temperaturklasse entsprechend den Angaben in der Betriebsanleitung anzupassen.

Elektrische Daten:
Nennwerte Schaltleistung:
Typ 31130-ND / * : U = 250 V, I = 1.3 A, S = 80 VA, P = 80 W
Typ 31160-ND / * : U = 230 V, I = 1.0 A, S = 60 VA, P = 60 W

Installations- und Gebrauchsart:	stationär
Schutzart:	IP68
Umgebungstemperatur (°C):	-20 °C bis +80 °C
Umgebungstemperatur für Ex-Komponenten (°C):	---

(16) **Prüfbericht** 21CH-01283.X01

(17) **„Besondere Bedingungen" / „Einschränkungen"**
N/A

(18) **Grundlegende Sicherheits- und Gesundheitsanforderungen**
Zusätzlich zu den grundlegenden Sicherheits- und Gesundheitsanforderungen, welche durch die unter Punkt 9 aufgeführten Normen erfüllt sind, sind noch folgende im Testbericht überprüften Bedingungen relevant:

Paragraph	Thema
Keine	

(19) **Zeichnungen und Dokumente**
Siehe Testbericht „Hersteller Dokumente"

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21. IECEX- CERTIFICATE OF CONFORMITY

IECEx

IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification System for Explosive Atmospheres
for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	**IECEx SEV 22.0002**	Page 1 of 3	Certificate history:
Status:	**Current**	Issue No: 0	
Date of Issue:	2022-02-24		
Applicant:	**WEKA AG** Schürlistrasse 8 8344 Bäretswil **Switzerland**		
Equipment:	**Magnetic switch, Type: 311*0-NI***		
Optional accessory:			
Type of Protection:	**ib**		
Marking:	Ex ib IIC T6…T3 Gb Ex ib IIIC T85 °C…T200 °C Db		

SWISS ACCREDITATION SCESP 0035 admin.ch

Approved for issue on behalf of the IECEx Certification Body: **Martin Plüss**

Position: **Manager Product Certification**

Signature: (for printed version)

Date: (for printed version) 2022-02-24

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.

Certificate issued by:

Eurofins Electric & Electronic Product Testing AG
Luppmenstrasse 3
8320 FEHRALTORF .
Switzerland

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IECEx Certificate of Conformity

Certificate No.: **IECEx SEV 22.0002** Page 2 of 3

Date of Issue: 2022-02-24 Issue No: 0

Manufacturer: **WEKA AG**
Schürlistrasse 8
8344 Bäretswil
Switzerland

Manufacturing locations:

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements.This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

STANDARDS :
The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

IEC 60079-0:2017 Edition:7.0 — Explosive atmospheres - Part 0: Equipment - General requirements

IEC 60079-11:2011 Edition:6.0 — Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:
A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Report:

CH/SEV/ExTR22.0002/00

Quality Assessment Report:

CH/SEV/QAR16.0005/03

IECEx Certificate of Conformity

Certificate No.: **IECEx SEV 22.0002** Page 3 of 3

Date of issue: 2022-02-24 Issue No: 0

EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

Magnetic switch, Type: 311x0-NI/yy

The magnetic switches are fit laterally as an accessory on the Weka magnetic level indicators (visual level indicator - VLI) and monitor the position of the float by reacting to the magnetic pole contained in the float.
All magnetic switches have a bi-stable design, i.e. the auxiliary magnet contained in the magnetic switch keeps the switch position until the float magnet changes the switch position by passing by.

Classification of installation and use: stationary
Ingress protection: IP66
Rated ambient temperature range (°C): -20 °C to +65 °C
Rated ambient temperature range (°C) for Ex Components: N/A

Rating:
Only for connection to certified intrinsically safe circuits with the following maximum values:

Type 31130-NI	Type 31160-NI
Ui = 250 V	Ui = 250 V
Ii = 1.3 A	Ii = 1.0 A
Ci = negligible	Ci = negligible
Li = negligible	Li = negligible

Additionally, the maximum effective capacitance and inductance of the firmly connected cable have to be considered with

Cc = 110 pF/m
Lc = 0.7 µH/m

Part number code:
311x0-NI/yy

Switch function (x):	3	SPST
	6	SPDT
Cable length (yy):	3	3 m
	5	5 m
	10	10 m
	20	20 m

SPECIFIC CONDITIONS OF USE: NO

IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification System for Explosive Atmospheres
for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	**IECEx SEV 22.0010**	Page 1 of 3	Certificate history:
Status:	**Current**	Issue No: 0	
Date of Issue:	2022-06-13		
Applicant:	**WEKA AG** Schürlistrasse 8 8344 Bäretswil **Switzerland**		
Equipment:	**Magnetic switch, Type: 31130-ND/* and 31160-ND/***		
Optional accessory:			
Type of Protection:	**db, tb**		
Marking:	Ex db IIC T6...T3 Gb Ex tb IIIC T85 °C ... T200 °C Db		

Approved for issue on behalf of the IECEx Certification Body: **Martin Plüss**

Position: **Manager Product Certification**

Signature: (for printed version)

Date: (for printed version) 2022-06-13

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.

Certificate issued by:

Eurofins Electric & Electronic Product Testing AG
Luppmenstrasse 3
8320 FEHRALTORF .
Switzerland

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IECEx Certificate of Conformity

Certificate No.:	**IECEx SEV 22.0010**	Page 2 of 3
Date of issue:	2022-06-13	Issue No: 0

Manufacturer: **WEKA AG**
Schuerlistrasse 8
8344 Baeretswil
Switzerland

Manufacturing locations: **WEKA AG**
Schuerlistrasse 8
8344 Baeretswil
Switzerland

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements.This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

STANDARDS :
The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

IEC 60079-0:2011 Edition:6.0 — Explosive atmospheres - Part 0: General requirements

IEC 60079-1:2014-06 Edition:7.0 — Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"

IEC 60079-31:2013 Edition:2 — Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:
A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Report:

CH/SEV/ExTR22.0011/00

Quality Assessment Report:

CH/SEV/QAR16.0005/03

IECEx Certificate of Conformity

Certificate No.: **IECEx SEV 22.0010** Page 3 of 3

Date of issue: 2022-06-13 Issue No: 0

EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

The magnetic switches type 31130-ND / * and type 31160-ND / * are for the generation of a signal at a level change of media. Therefore the switch will be used together with a visual level indicator.
The magnetic switches are intended for use in hazardous areas. The type 31130-ND / * uses an on/off switch, the type 31160-ND / * uses a changeover switch. The star (*) indicates the length in meter of the permanently connected cable.

Permissible ambient temperature range: -20 °C...+80 °C

For medium temperatures above 85°C, the temperature class must be adjusted according to the specifications in the operating instructions.

Electrical data:
Rated values switching capacity:
Type 31130-ND / * : U = 250 V, I = 1.3 A, S = 80 VA, P = 80 W
Type 31160-ND / * : U = 230 V, I = 1.0 A, S = 60 VA, P = 60 W

Classification of installation and use:	stationary
Ingress protection:	IP68
Rated ambient temperature range (°C):	-20 °C to +80 °C
Rated service temperature range (°C) for Ex Components:	—

SPECIFIC CONDITIONS OF USE: NO

22. DECLARATION OF CONFORMITY

EU - KONFORMITÄTSERKLÄRUNG
EU - DECLARATION OF CONFORMITY

Wir
We **WEKA AG**

(Name des Herstellers) (Manufacturers name)

erklären in alleiniger Verantwortung, dass das Produkt
declare under our sole responsibility that the product

Magnetschalter / Magnetic Switch

Typen: **37557; 37589; 20000714; 31130-NN; 31160-NN; 31130-NW; 31160-NW; 31130-NA; 31160-NA; 31130-NK; 31160-NK; 31130-NP; 31160-NP; 31130-NT; 31160-NT; 31130-NB; 31160-NB; 31130-NM; 31160-NM; 31130-NS; 31160-NS; 31130-NA-NAM; 31130-NW-NAM**

(Diese Produkte dürfen NICHT für Ex- Anwendungen eingesetzt werden /
These products should NOT be used for Ex applications)

(Bezeichnung Typ oder Modell, Los-, Chargen- oder Seriennummer, möglichst Herkunft und Stückzahl)
(Name, type or model, lot, batch or serial number, possibly sources and numbers of items)

auf das sich diese Erklärung bezieht, mit den folgenden Normen oder normativen Dokumenten übereinstimmt
to which this declaration relates is in conformity with the following standards or other normative documents

EN 61326-1:2011
EN 61010-1:2011

(Titel und/oder Nummer sowie Ausgabedatum der Normen oder der anderen normativen Dokumente)
(Title and/or number and date of issue of the standards or other normative documents)

Gemäss den Bestimmungen der Richtlinie(n),
Following the provisions of Directive(s),
(falls zutreffend) (if applicable)

2014/30/EU (EMV); 2014/35/EU (LVD)

(Ort und Datum der Ausstellung) **(Place and date of issue)**	**(Name und Unterschrift des Befugten)** **(Name and signature of authorized person)**	
Bäretswil, den 25.07.2016	Robert Schaupi (Quality Manager)	Stefan Otto (Produkt Manager)

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EU - KONFORMITÄTSERKLÄRUNG
EU - DECLARATION OF CONFORMITY

Wir
We **WEKA AG**

(Name des Herstellers) (Manufacturers name)

erklären in alleiniger Verantwortung, dass das Produkt
declare under our sole responsibility that the product

Magnetschalter / Magnetic Switch

Typen: **31130-NI, 31160-NI**

(Bezeichnung Typ oder Modell, Los-, Chargen- oder Seriennummer, möglichst Herkunft und Stückzahl)
(Name, type or model, lot, batch or serial number, possibly sources and numbers of items)

auf das sich diese Erklärung bezieht, mit den folgenden Normen oder normativen Dokumenten übereinstimmt
to which this declaration relates is in conformity with the following standards or other normative documents

EN 61326-1:2011
EN 60079-0:2018
EN 60079-11:2012
EN 60241-11:2006

EG- Baumusterprüfbescheinigung / EC Type Examination Certificate SEV 22 ATEX 0586

(Titel und/oder Nummer sowie Ausgabedatum der Normen oder der anderen normativen Dokumente)
(Title and/or number and date of issue of the standards or other normative documents)

Gemäss den Bestimmungen der Richtlinie(n),
Following the provisions of Directive(s),
(falls zutreffend) (if applicable)

2014/30/EU (EMV); 2014/34/EU (ATEX)

(Ort und Datum der Ausstellung) **(Place and date of issue)**	**(Name und Unterschrift des Befugten)** **(Name and signature of authorized person)**
Bäretswil, den 15.06.2022	Marc Hofmann (Quality Manager)
	Stefan Otto (Produkt Manager)

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EU - KONFORMITÄTSERKLÄRUNG
EU - DECLARATION OF CONFORMITY

Wir
We **WEKA AG**

(Name des Herstellers) (Manufacturers name)

erklären in alleiniger Verantwortung, dass das Produkt
declare under our sole responsibility that the product

Magnetschalter / Magnetic Switch

Typen: 31130-ND, 31160-ND

(Bezeichnung Typ oder Modell, Los-, Chargen- oder Seriennummer, möglichst Herkunft und Stückzahl)
(Name, type or model, lot, batch or serial number, possibly sources and numbers of items)

auf das sich diese Erklärung bezieht, mit den folgenden Normen oder normativen Dokumenten übereinstimmt
to which this declaration relates is in conformity with the following standards or other normative documents

EN 61326-1:2011
EN 60079-0:2018
EN 60079-1:2014
EN 60079-31:2014

EG- Baumusterprüfbescheinigung / EC Type Examination Certificate SEV 22 ATEX 0605

(Titel und/oder Nummer sowie Ausgabedatum der Normen oder der anderen normativen Dokumente)
(Title and/or number and date of issue of the standards or other normative documents)

Gemäss den Bestimmungen der Richtlinie(n),
Following the provisions of Directive(s),
(falls zutreffend) (if applicable)

2014/30/EU (EMV); 2014/34/EU (ATEX)

(Ort und Datum der Ausstellung) **(Place and date of issue)**	**(Name und Unterschrift des Befugten)** **(Name and signature of authorized person)**	
Bäretswil, den 15.06.2022	Marc Hofmann (Quality Manager)	Stefan Otto (Produkt Manager)

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NOTES

ORDER:

DATE:

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MEASUREMENT