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<a href="#">Bi-stable reed</a>	General information about bi-stable reed-switch type level transmitters	5

WEKA transmitters: Resistant output or current supplied voltage output (3-wire)			
Transmitter	Media temperature	Connection	
<a href="#">29710</a>	-50 °C ... +150 °C	Cable	6
<a href="#">29710-W</a>	-50 °C ... +350 °C	Cable	7

WEKA transmitters: Current output 4...20mA (2-wire)			
Transmitter	Media temperature	Connection	
<a href="#">31967</a>	-50 °C ... +150 °C	Cable	8
<a href="#">31967-W</a>	-50 °C ... +250 °C	Cable	9
<a href="#">31967-K</a>	-50 °C ... +150 °C	Terminal box	10
<a href="#">31967-KST</a>	-50 °C ... +150 °C	Plug-in connector	11

WEKA transmitters for hazardous areas: Intrinsically safe (Ex i) 			
Resistant output, current supplied voltage output (3-wire) or current output 4...20mA (2-wire)			
Transmitter	Media temperature	Connection	Approval
<a href="#">29710-NI</a>	-50 °C ... +150 °C	Cable / resistant, voltage	II 2GD T85°C Ex ia IIC T6 ZELM 03 ATEX 0179
<a href="#">32607-NI</a>	-50 °C ... +150 °C	Cable / current	II 2GD T135°C Ex ia IIC T4 ZELM 03 ATEX 0168

WEKA transmitters for hazardous areas: Flameproof enclosures (Ex d) 			
Resistant output, current supplied voltage output (3-wire) or current output 4...20mA (2-wire)			
Transmitter	Media temperature	Connection	Approval
<a href="#">29710-ND</a>	-50 °C ... +150 °C	Cable / resistant, voltage	II 2GD T85°C Ex d IIC T6 ZELM 03 ATEX 0191X
<a href="#">32608-ND</a>	-50 °C ... +150 °C	Cable / current	II 2GD T85°C Ex d IIC T6 ZELM 03 ATEX 0191X

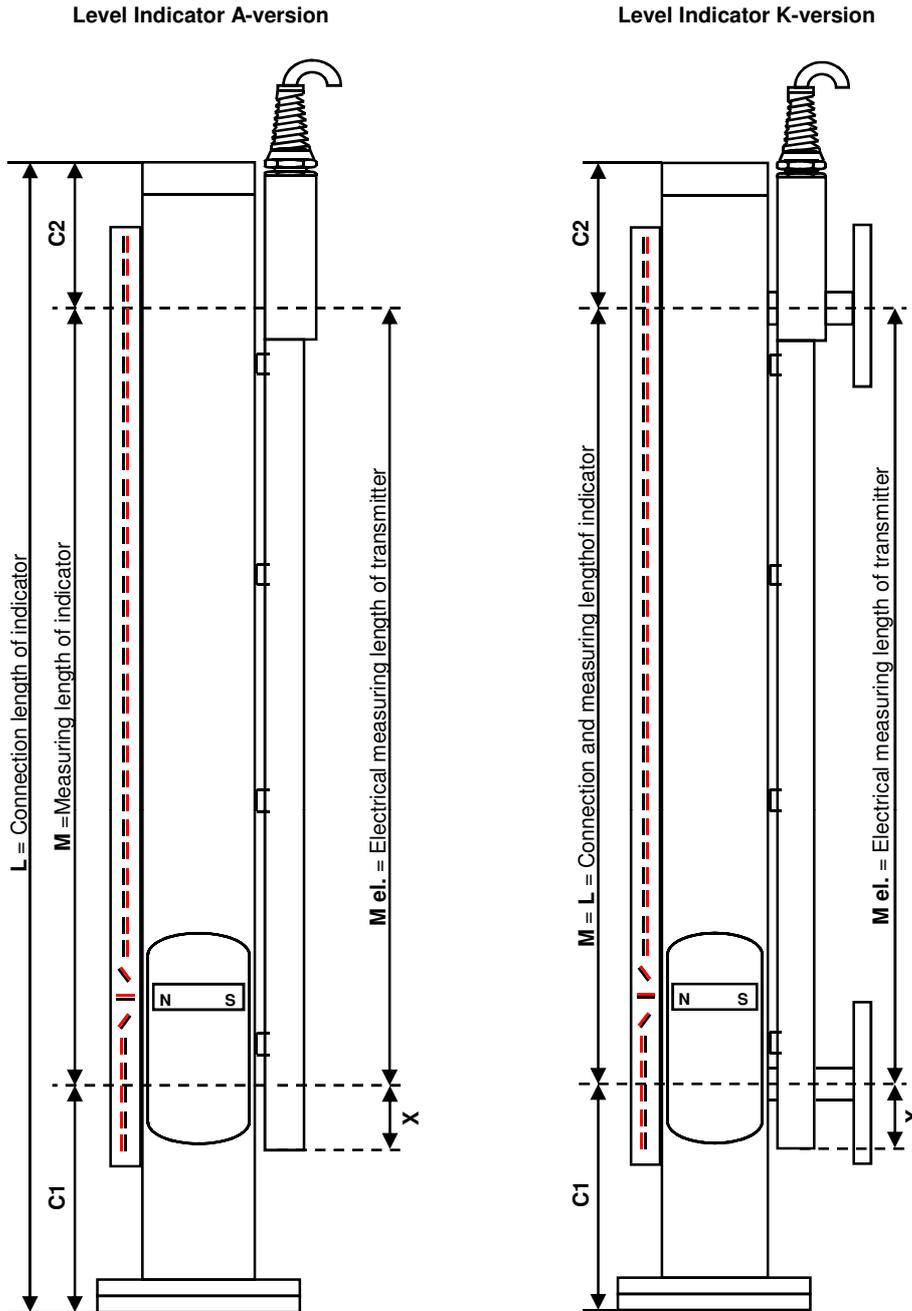
WEKA transmitters for use with HART®, Profibus PA® or Foundation Fieldbus™ converter module interface					
4...20mA current output or resistance output					
WEKA transmitters with resistance output or current supplied voltage output					
Transmitter	Media temperature	Connection	Protection class	Zone	
<a href="#">29710-R</a>	-50 °C ... +150 °C	Cable	Non-hazardous	-	16
<a href="#">29710-R-NI</a> 	-50 °C ... +150 °C	Cable	Ex i	Zone 1 and 2	17
<a href="#">29710-R-W</a>	-50 °C ... +350 °C	Cable	Non-hazardous or Ex i *	Zone 1 and 2	18
<a href="#">29710-R-ND</a> 	-50 °C ... +150 °C	Cable	Ex d	Zone 1 and 2	19
* The transmitter can be used as a simple electrical apparatus as defined by EN50020					
HART® converter, ready to connect, mounted in junction box					
Converter	Description	Compatible transmitters			
<a href="#">HART 37383</a>	HART® converter in IP65 metal enclosure	29710-R and 29710-R-W			20
<a href="#">HART 40038</a>	HART® converter in IP65 metal enclosure with digital display	29710-R and 29710-R-W			21
<a href="#">HART 37384</a> 	HART® converter - Intrinsically safe	29710-R-NI and 29710-R-W			22
<a href="#">HART 38021</a> 	HART® converter - Flameproof enclosures	29710-R-ND			23
Profibus PA® and Foundation Fieldbus™ converter, ready to connect, mounted in junction box					
Converter	Description	Compatible transmitters			
<a href="#">PA+FF 40268</a>	Profibus PA® and FF™ converter in IP65 metal enclosure	29710-R and 29710-R-W			24

Magnetostrictive transmitters with 4- 20 mA current output (2-wire) with HART® protocol 				
<a href="#">Installation</a>	Installation of magnetostrictive transmitters for WEKA Visual Level Indicators			25
Transmitter	Media Temperatures:	Output	Note	Zone
<a href="#">38614</a>	-50 °C ... +120 °C	4...20mA		-
<a href="#">38614-W</a>	-50 °C ... +250 °C	4...20mA	for high media temp.	-
<a href="#">38614-NI</a> 	-50 °C ... +250 °C	4...20mA	Ex i	Zone 1 and 2

<a href="#">Ex-Info</a> 	<b>Classification of hazardous zones and marking of equipment</b>	29
<a href="#">Ex-5.7</a>	<b>Extract of standard of simple electrical apparatus</b>	30

## Type code

	available for:	index:	..... - ..... - ..... - 010 - .....
<b>Type of transmitter</b>			
3-wire: resistant output or current supplied voltage output		29710	
2-wire: 4...20mA current output, current sink		31967	
2-wire: Intrinsically safe Ex ia; 4...20mA current output, current sink		32607	
2-wire: Flameproof enclosures Ex d, 4...20mA current output, current sink		32608	
<b>Specialities</b>			
Standard		no marking	
With resistant output for HART®, Profibus PA® and Foundation Fieldbus™	29710	R	
Transmitter with bi-stable reed switch at the top end	29710 / 31967	BI	
<b>Execution</b>			
Standard		no marking	
for high media temperature	29710 / 31967	W	
with terminal box	31967	K	
with plug connector	31967	KST	
Intrinsically safe Ex ia	29710 / 32607	NI	
Flameproof enclosures, Ex id	29710 / 32608	ND	
<b>Size of resistance</b>			
10 Ohm per step (not applicable for NI/ND)	all	010	
<b>Resolution</b>			
5mm	all	05	
10mm	all	10	



**Terminology:**

- L = Length between process connections
- M = Measuring length (indication length) of level indicator
- M el. = Measuring length of transmitter
- C1 = Bottom float extension
- C2 = Top float extension
- X = Initiating point of transmitter
  - 10 mm resolution -> X = 65 mm
  - 5 mm resolution -> X = 30 mm
  - 29710-R-xx version -> see datasheet

Visual level indicators version -A and -K are recommended for most applications.

Visual level indicators version -B and -O may require special dimensions and should be confirmed by WEKA before ordering.

**Transmitter length:**

Type -K and -O magnetic level indicators:  
 M el. = M = L or M el. = according to customer order (<M)

Type -A and -B magnetic level indicators:  
 M el. = M or M el. = according to customer order (<M)

**Note:**

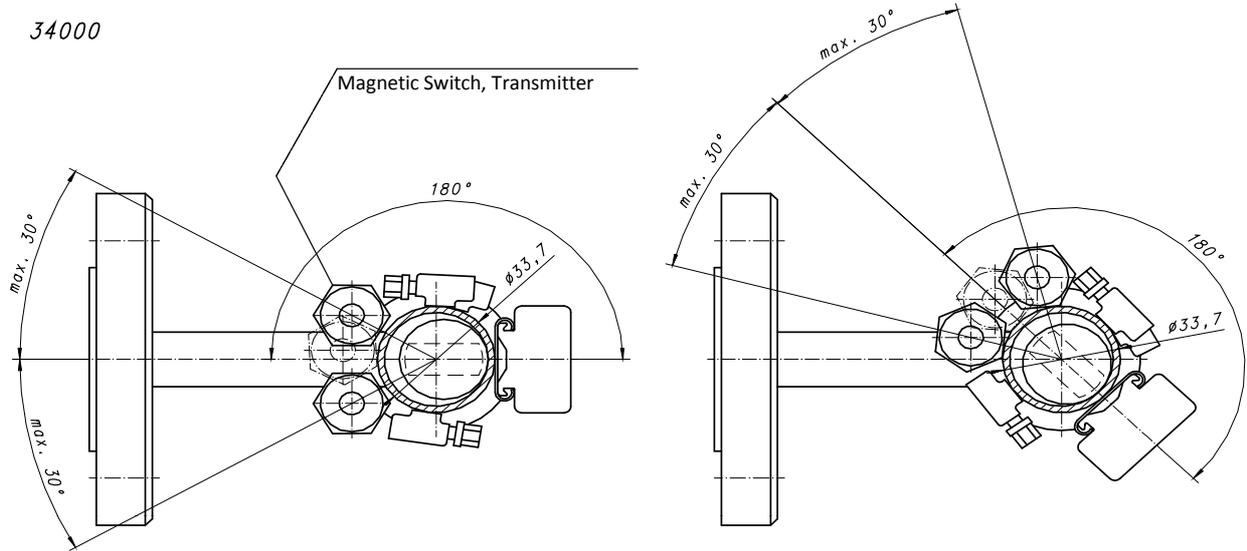
**When M el. < M, then a bi-stable reed switch is necessary.**  
**For transmitters type 29710-R-x-010-xx M el. must be > M.**

### Mounting

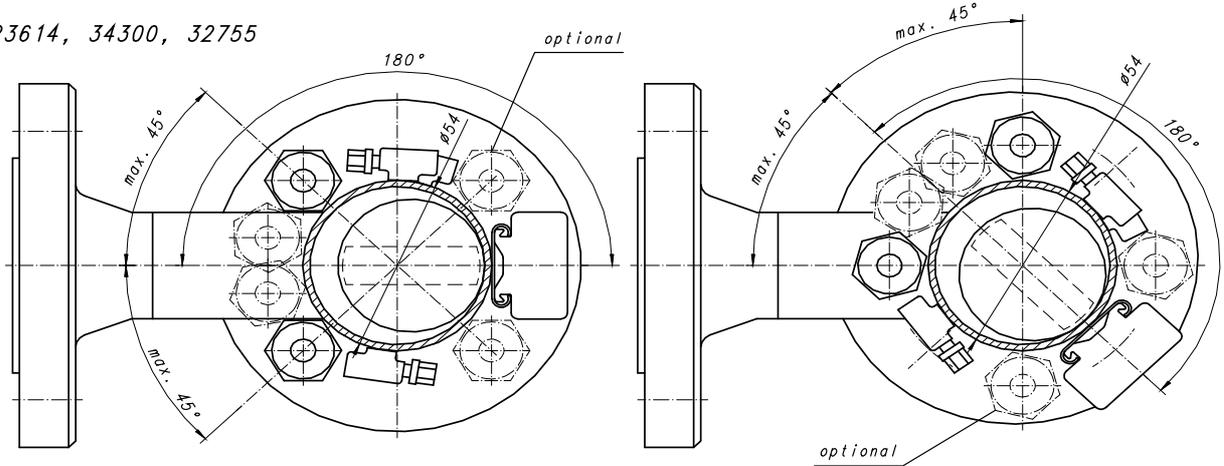
**Normal:** Installation 180 °C opposite of the indication rail with the permitted tolerance according to the tube diameter (refer to layout below)  
Cable exit upwards.

**Variation:** Mounting the Transmitter adjacent to the indication rail except for Smartline.  
Cable exit upwards.

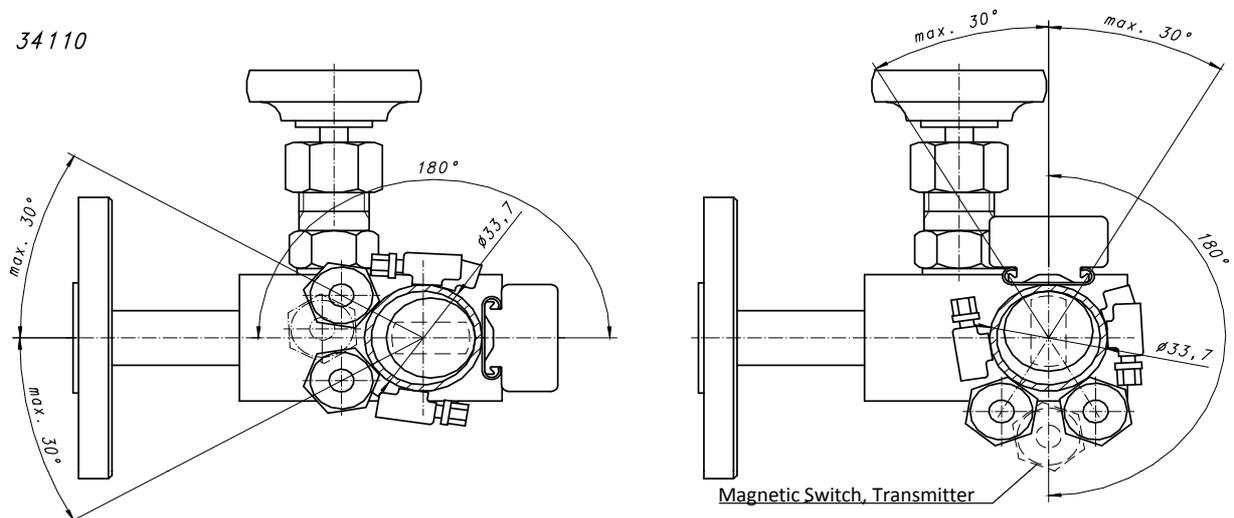
34000



23614, 34300, 32755



34110



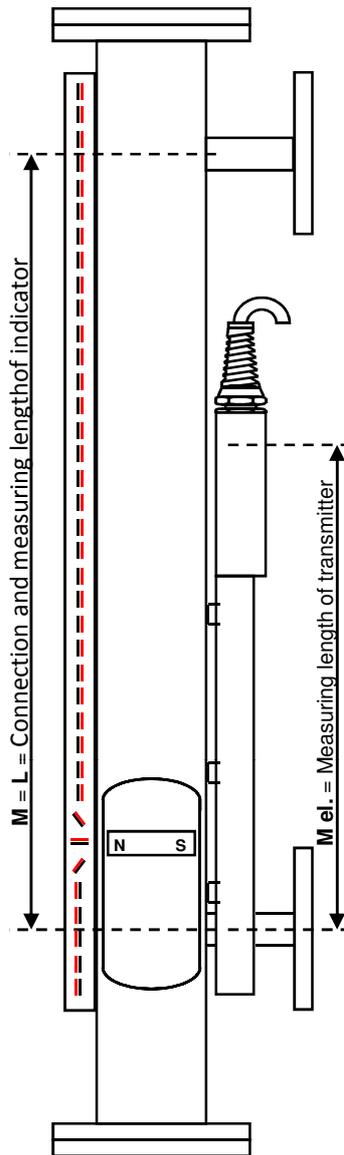


Figure 1

Identification

Type XXXXX-Bi-xx-010-xx

Example

31967-Bi-W-010-05

**Principles of operation:**

The permanent magnet inside the float activates the reed switches of the transmitter depending on the vertical position of the float. This results in an electrical signal output proportional to the level of liquid in the indicator's float chamber.

If the float rises above the transmitter's measuring range (M el.), the value of the electrical signal output will jump to 115% of the total measuring range. This over-limit value of the signal will remain constant for any level above the total measuring range (M el.). See figure 2.

Since the over-limit output signal represents a non-defined level, a second high-limit **bi-stable** reed switch can be fitted.

This bi-stable reed switch closes when the south pole of the float's magnet reaches the high-limit level and remains closed while the float is at any level above this limit. It opens again when the float drops below this limit again. See figure 2.

**Possible error condition:**

If the bi-stable reed switch is closed due to any other reasons such as during transport, or forced by an external magnetic field, the output signal will be incorrect. See Figure 3.

**Corrective actions:**

- Install the transmitter module 180° opposite to the indication rail. See Installation Instructions, datasheet 20010501.
- OR fill the vessel on which the level indicator is installed so that the float rises above the bi-stable reed switch. Empty the vessel, so the bi-stable reed switch is operated through one complete close-open cycle.
- OR pass a permanent bar magnet with its south pole pointing towards the transmitter downwards from top to bottom over the bi-stable reed switch and that the switch opens.

As a result the level transmitter will give the correct output signal. See Figure 2.

**Signal output with correctly adjusted transmitter**

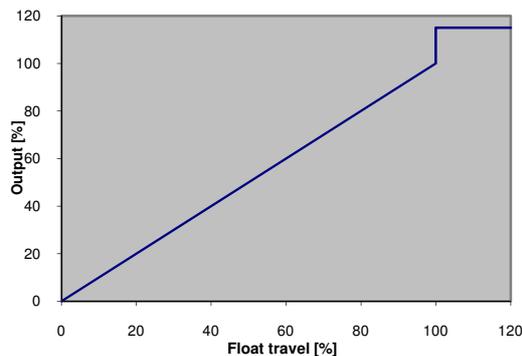


Figure 2

**Faultive signal output with closed bi-stable reed-switch**

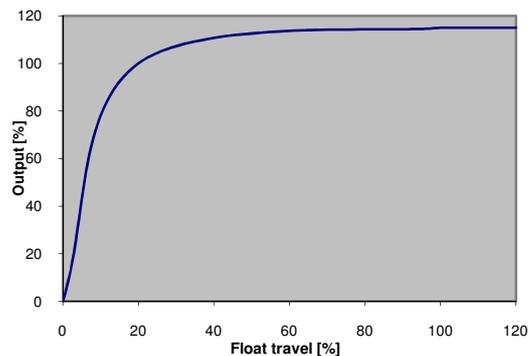
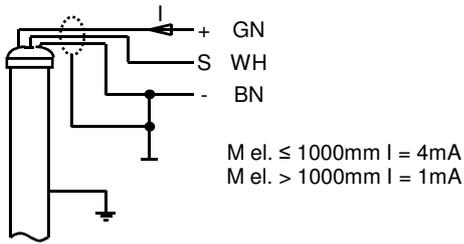


Figure 3

**External electrical connections**



**Description:**

**Transmitter for use with WEKA Visual Level Indicators media temperature ≤ 150°C**

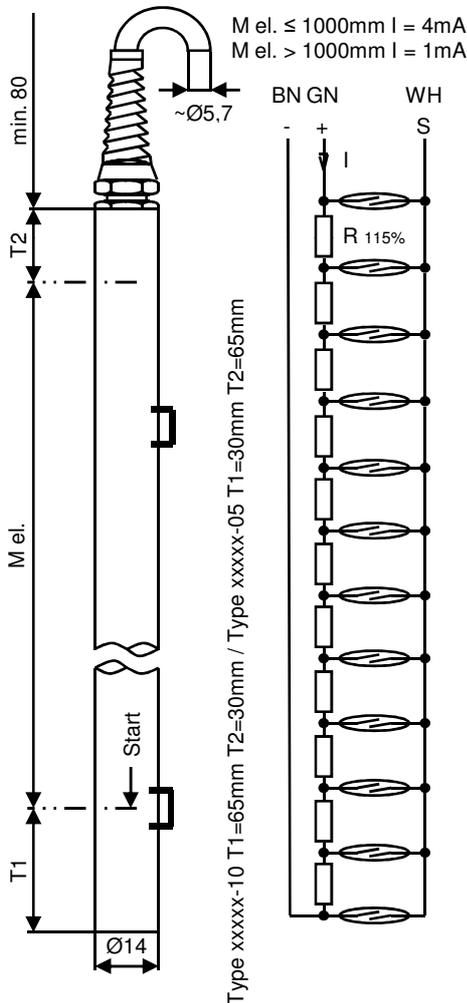
The transmitter is mounted outside of the float chamber opposite to the indication rail (see datasheet 20010501). The magnet inside the float activates the reed switches in the transmitter, depending on the level of liquid in the float chamber, thereby changing the effective value of a resistance network. This converts a current input into a variable voltage output signal that can be fed directly to a remote display or recording instrument. If the liquid level rises above the measuring range of the transmitter (30mm) the output signal jumps to 115% and remains on that limit.

**Product code:**  
[For details see page 2](#)

**29710-010-10**      **10mm resolution**  
**29710-010-05**      **5mm resolution**  
**M el. = Measuring length in mm**

**Dimensions**

**Internal circuit**



**Resolution**

**29710-010-10**      **29710-010-05**  
10mm                      5mm

**Transmitter housing tube dia.**

Ø 14 / 10                      Ø 17 / 14

**Measuring length "M el."**

200mm (min.) to 4000mm (max.)

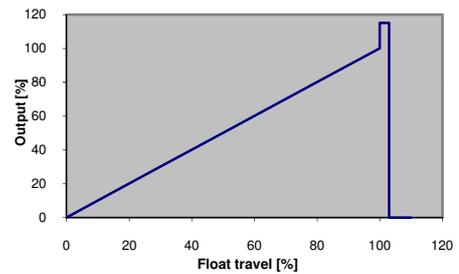
Longer M el. available with types 34067, 34167, and 34267 (more piece design)

**Supply current**

M el. ≤ 1000mm I = 4mA  
M el. > 1000mm I = 1mA

**Signal output**

- With R = 10Ω and I = 1mA  
10mV per step (1cm)
- With R = 10Ω and I = 4mA  
40mV per step (1cm)



**Operating temperature**

Media temperature      -50°C ... +150°C  
Ambient temperature (Ta)      -20°C ... +50°C

**Enclosure**

IP68 - 10bar (EN60529)

**Materials**

Housing tube                      Stainless steel 316 / 316L  
Cable gland                      PA: with bend protection, grey  
- Seal                                  Perbunan (NBR)  
Cable (Standard 5m)              PVC: grey, 3 x 0.34mm<sup>2</sup>, Ø ~ 5.7mm, shielded, largely resistant to oils/petroleum products  
Type label                          Polyester: silver, black printing

**Fixation**

When ordering level indicators with transmitters, hose clamps are included.  
When ordering transmitters as spare parts, hose clamps are never included and must be ordered separately.  
In case of ordering hose clamps pipe size must be indicated:

For pipe diameter	30...40mm	Part no.	80648
For pipe diameter	40...57mm and 57...80mm	Part no.	84043

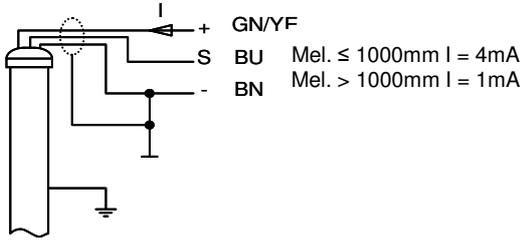
**Note**

Please read the instructions in our datasheet 20010501 before performing installation.  
The cable shielding is not connected with the transmitter housing. This connection should be effected by the user.  
The transmitter can be used as a resistor network only when leads WH and BN or WH and GN are connected.

**External electrical connections**

**Description:**

**Transmitter for use with WEKA Visual Level Indicators media temperature ≤ 350°C**



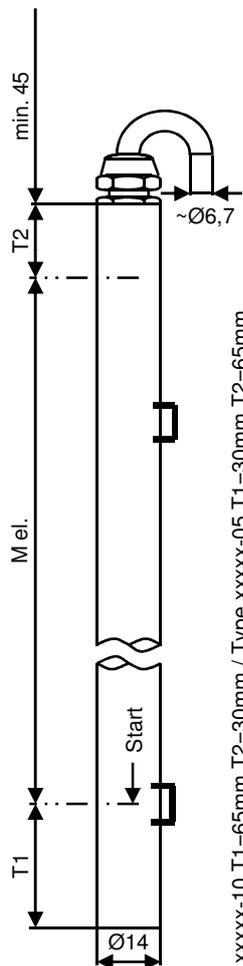
The transmitter is mounted outside of the float chamber opposite to the indication rail (see datasheet 20010501). The magnet inside the float activates the reed switches in the transmitter, depending on the level of liquid in the float chamber, thereby changing the effective value of a resistance network. This converts a current input into a variable voltage output signal that can be fed directly to a remote display or recording instrument. If the liquid level rises above the measuring range of the transmitter (30mm) the output signal jumps to 115% and remains on that limit.

**Product code:**  
[For details see page 2](#)

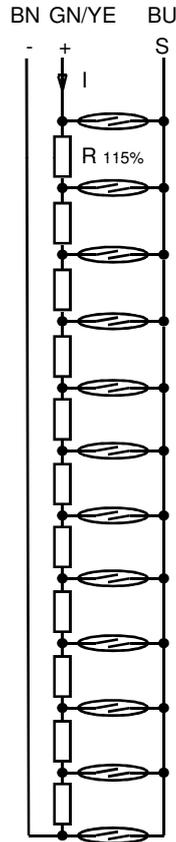
**29710-W-010-10 10mm resolution**  
**29710-W-010-05 5mm resolution**  
**M el. = Measuring length in mm**

**Dimensions**

**Internal circuit**



Mel. ≤ 1000mm I = 4mA  
 Mel. > 1000mm I = 1mA



**Resolution**

**29710-W-010-10 10mm resolution**  
**29710-W-010-05 5mm resolution**

**Transmitter housing tube dia.**

Ø 14 / 10      Ø 17 / 14

**Measuring length "M el."**

200mm (min.) to 4000mm (max.)

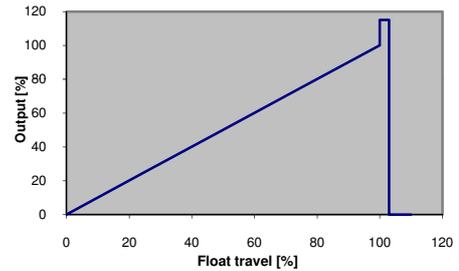
Longer M el. available with types 34067, 34167, and 34267 (more piece design)

**Supply current**

M el. ≤ 1000mm I = 4mA  
 M el. > 1000mm I = 1mA

**Signal output**

- With R = 10Ω and I = 1mA  
10mV per step (1cm)
- With R = 10Ω and I = 4mA  
40mV per step (1cm)



**Operating temperature**

Media temperature -50°C ... +350°C  
 Ambient temperature (Ta) -20°C ... +50°C

**Enclosure**

IP68 - 10bar (EN60529)

**Materials**

Housing tube Stainless steel 316 / 316L  
 Cable gland Brass: nickel plated  
 - Seal FKM / Fluoroelastomere  
 Cable (Standard 5m) Silicone: red, 3 x 0.75mm<sup>2</sup>, Ø ~ 6.7mm, largely resistant to oils/petroleum products  
 Type label Polyester: silver, black printing

**Fixation**

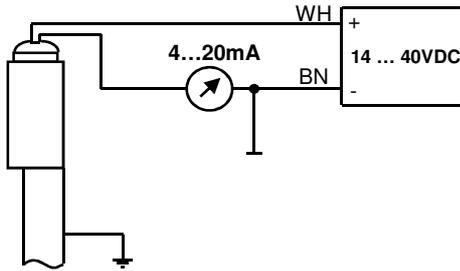
When ordering level indicators with transmitters, hose clamps are included.  
 When ordering transmitters as spare parts, hose clamps are never included and must be ordered separately.  
 In case of ordering hose clamps pipe size must be indicated:

For pipe diameter	30...40mm	Part no.	80648
For pipe diameter	40...57mm and 57...80mm	Part no.	84043

**Note**

Please read the instructions in our datasheet 20010501 before performing installation.  
 The transmitter can be used as a resistor network only when leads BU and BN or BU and GN/YE are connected.

**External electrical connections**



**Description**

**Transmitter, 4...20mA current output for use with WEKA Visual Level Indicators media temperature ≤ 150 °C**

The transmitter is mounted outside of the float chamber opposite to the indication rail (see datasheet 20010501). The magnet inside the float activates the reed switches in the transmitter, depending on the level of liquid in the float chamber, thereby changing the effective value of a resistance network. The resulting voltage output is converted by an internal electronic circuit to a 4...20mA signal. If the liquid level rises above the measuring range of the transmitter (30 mm) the output signal jumps to 115% (ca. 22,5mA) and remains on that limit.

**Product code:**  
[For details see page 2](#)

**31967-010-10**      **10mm resolution**  
**31967-010-05**      **5mm resolution**  
**M el. = Measuring length in mm**

**Dimensions**

**Internal circuit**

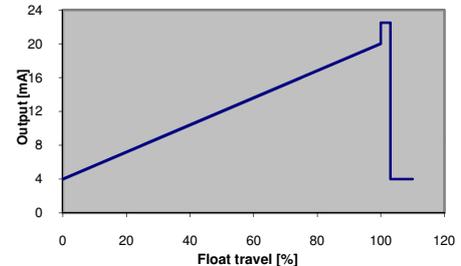
**Resolution**

**31967-010-10**      **31967-010-05**  
10mm                      5mm

**Transmitter housing tube dia.**    Ø 14 / 10                      Ø 17 / 14

**Measuring length "M el."**            200mm (min.) to 4000mm (max.)  
Longer M el. available with types 34067, 34167, and 34267 (more piece design)

**Signal output**  
4...20mA current loop



**Loop supply voltage**  
14 ... 40VDC

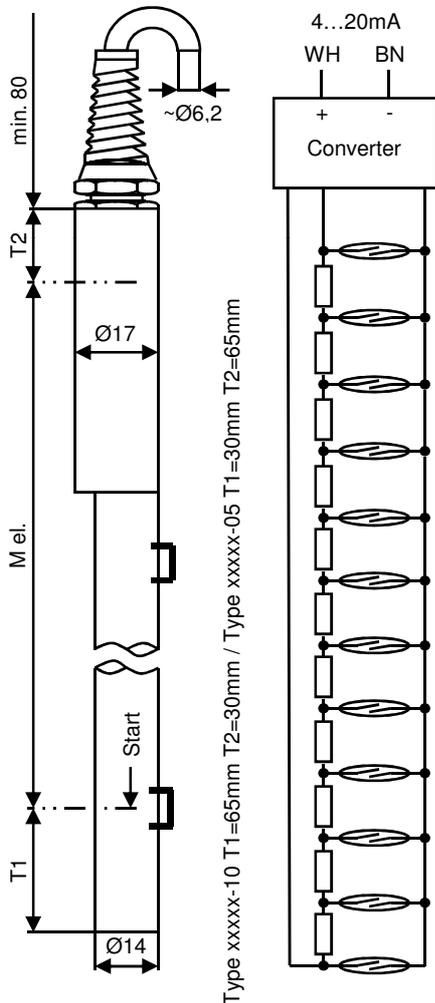
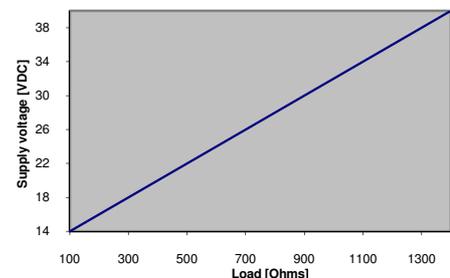
**Operating temperature**  
Media temperature                      -50 °C ... +150 °C  
Ambient temperature (Ta)            -20 °C ... +50 °C

**Enclosure**                                      IP68 - 10bar (EN60529)

**Materials**  
Housing tube                                      Stainless steel 316 / 316L  
Cable gland                                        PA: with bend protection, grey  
- Seal    Perbunan (NBR)  
Cable (Standard 5m)                            PVC: grey, 2 x 0.75mm<sup>2</sup>, Ø ~ 6.2mm, largely resistant to oils/petroleum products

Type label                                        Polyester: silver, black printing

**Output load**  
max. 100Ω at 14VDC  
max. 1.4KΩ at 40VDC



**Fixation**

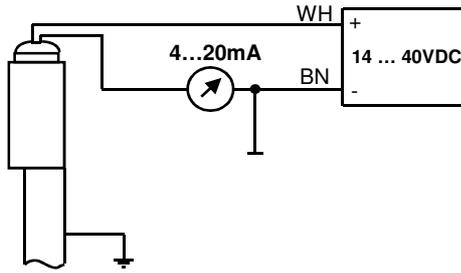
When ordering level indicators with transmitters, hose clamps are included.  
When ordering transmitters as spare parts, hose clamps are never included and must be ordered separately.  
In case of ordering hose clamps pipe size must be indicated:

For pipe diameter	30...40mm	Part no.	80648
For pipe diameter	40...57mm and 57...80mm	Part no.	84043

**Note**

Please read the instructions in our datasheet 20010501 before performing installation.

**External electrical connections**



**Description:**

**Transmitter, 4...20mA current output for use with WEKA Visual Level Indicators media temperature ≤ 250 °C**

The transmitter is mounted outside of the float chamber opposite to the indication rail (see datasheet 20010501). The magnet inside the float activates the reed switches in the transmitter, depending on the level of liquid in the float chamber, thereby changing the effective value of a resistance network. The resulting voltage output is converted by an internal electronic circuit to a 4...20mA signal. If the liquid level rises above the measuring range of the transmitter (30 mm) the output signal jumps to 115% (ca. 22,5mA) and remains on that limit.

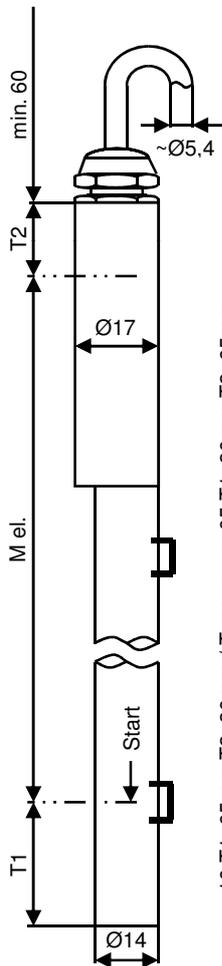
**Product code:**

**31967-W-010-10    10mm resolution**  
**31967-W-010-05    5mm resolution**  
**M el. = Measuring length in mm**

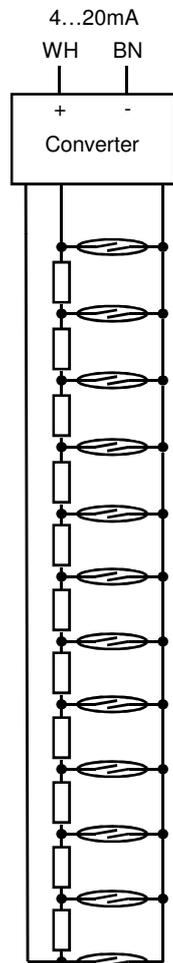
[For details see page 2](#)

**Dimensions**

**Internal circuit**



Type xxxxx-10 T1=30mm T2=65mm / Type xxxxx-05 T1=30mm T2=65mm



**Resolution**

**31967-W-010-10    10mm**  
**31967-W-010-05    5mm**

**Transmitter housing tube dia.**

Ø 14 / 10                      Ø 17 / 14

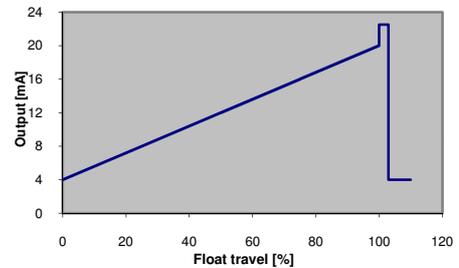
**Measuring length "M el."**

200mm (min.) to 4000mm (max.)

Longer M el. available with types 34067, 34167, and 34267 (more piece design)

**Signal output**

4...20mA current loop



**Loop supply voltage**

14 ... 40VDC

**Operating temperature**

Media temperature                      -50 °C ... +250 °C  
Ambient temperature (Ta)            -20 °C ... +50 °C

**Enclosure**

IP68 - 10bar (EN60529)

**Materials**

Housing tube  
Cable gland  
- Seal  
Cable (Standard 5m)

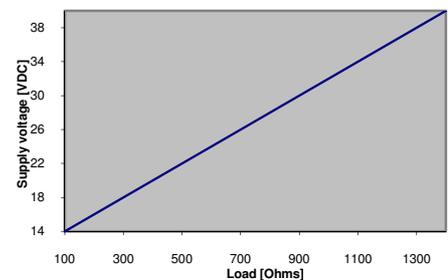
Stainless steel 316 / 316L  
Brass: nickel plated  
FKM / Fluoroelastomere  
Silicone: red; 2 x 0.5mm<sup>2</sup>, Ø ~ 5.4mm, largely resistant to oils/petroleum products

**Type label**

Polyester: silver, black printing

**Output load**

max. 100Ω at 14VDC  
max. 1.4KΩ at 40VDC



**Fixation**

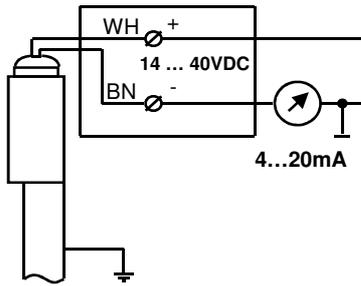
When ordering level indicators with transmitters, hose clamps are included.  
When ordering transmitters as spare parts, hose clamps are never included and must be ordered separately.  
In case of ordering hose clamps pipe size must be indicated:

For pipe diameter                      30...40mm                      Part no.                      80648  
For pipe diameter                      40...57mm and 57...80mm    Part no.                      84043

**Note**

Please read the instructions in our datasheet 20010501 before performing installation.

### External electrical connections



### Description:

**Transmitter, 4...20mA current output and terminal box connections for use with WEKA Visual Level Indicators media temperature  $\leq 150^\circ\text{C}$**

The transmitter is mounted outside of the float chamber opposite to the indication rail (see datasheet 20010501). The magnet inside the float activates the reed switches in the transmitter, depending on the level of liquid in the float chamber, thereby changing the effective value of a resistance network. The resulting voltage output is converted by an internal electronic circuit to a 4...20mA signal. If the liquid level rises above the measuring range of the transmitter (30 mm) the output signal jumps to 115% (ca. 22.5mA) and remains on that limit.

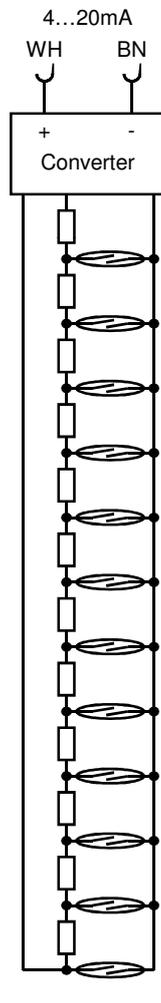
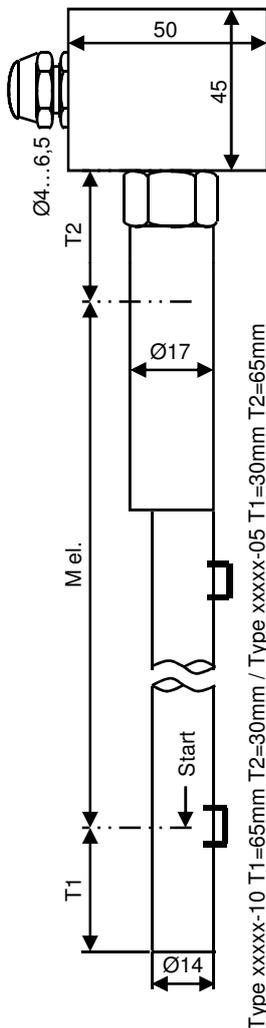
### Product code:

**31967-K-010-10** 10mm resolution  
**31967-K-010-05** 5mm resolution  
**M el. = Measuring length in mm**

[For details see page 2](#)

### Dimensions

### Internal circuit



Type xxxxx-10 T1=65mm T2=30mm / Type xxxxx-05 T1=30mm T2=65mm

### Resolution

**31967-K-010-10** 10mm  
**31967-K-010-05** 5mm

### Transmitter housing tube dia.

$\varnothing$  14 / 10       $\varnothing$  17 / 14

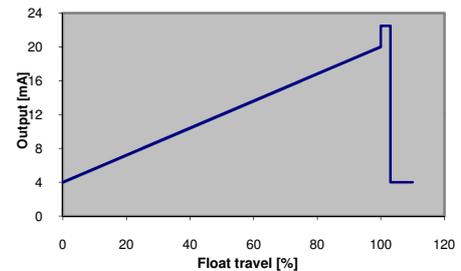
### Measuring length "M el."

200mm (min.) to 4000mm (max.)

Longer M el. available with types 34067, 34167, and 34267 (more piece design)

### Signal output

4...20mA current loop



### Loop supply voltage

14 ... 40VDC

### Operating temperature

Media temperature

$-50^\circ\text{C} \dots +150^\circ\text{C}$

Ambient temperature (Ta)

$-20^\circ\text{C} \dots +50^\circ\text{C}$

### Enclosure

IP65 (EN60529)

### Materials

Housing tube

Stainless steel 316 / 316L

Terminal box

Alu. DIN1725: unpainted, 45 x 50 x 30mm

Cable gland

Brass: nickel plated, M12 x 1.5

- Cable compatibility

$\varnothing$  4...6.5mm, max. 2 x 0.5mm<sup>2</sup>

- Seal

Perbunan (NBR)

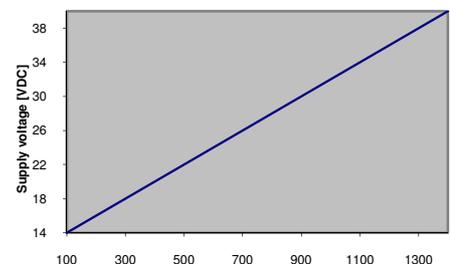
Type label

Polyester: silver, black printing

### Output load

max. 100 $\Omega$  at 14VDC

max. 1.4K $\Omega$  at 40VDC



### Fixation

When ordering level indicators with transmitters, hose clamps are included.

When ordering transmitters as spare parts, hose clamps are never included and must be ordered separately.

In case of ordering hose clamps pipe size must be indicated:

For pipe diameter 30...40mm Part no. 80648

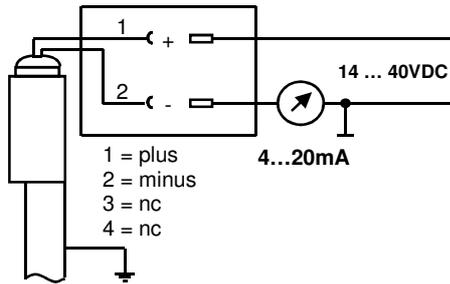
For pipe diameter 40...57mm and 57...80mm Part no. 84043

### Note

Please read the instructions in our datasheet 20010501 before performing installation.

Terminal box included.

**External electrical connections**



**Description:**

**Transmitter, 4...20mA current output and plug-in connector for use with WEKA Visual Level Indicators media temperature ≤ 150 °C**

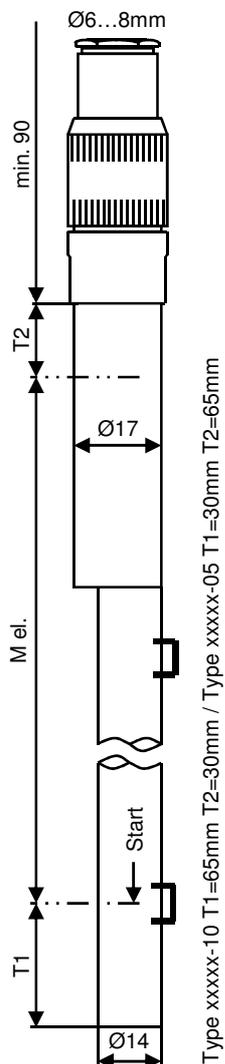
The transmitter is mounted outside of the float chamber opposite to the indication rail (see datasheet 20010501). The magnet inside the float activates the reed switches in the transmitter, depending on the level of liquid in the float chamber, thereby changing the effective value of a resistance network. The resulting voltage output is converted by an internal electronic circuit to a 4...20mA signal. If the liquid level rises above the measuring range of the transmitter (30 mm) the output signal jumps to 115% (ca. 22,5mA) and remains on that limit.

**Product code:**

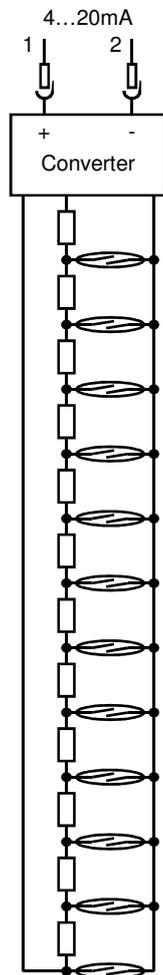
[For details see page 2](#)

**31967-KST-010-10 10mm resolution**  
**31967-KST-010-05 5mm resolution**  
**M el. = Measuring length in mm**

**Dimensions**



**Internal circuit**



Type xxxxx-10 T1=65mm T2=30mm / Type xxxxx-05 T1=30mm T2=65mm

**Fixation**

When ordering level indicators with transmitters, hose clamps are included.  
When ordering transmitters as spare parts, hose clamps are never included and must be ordered separately.  
In case of ordering hose clamps pipe size must be indicated:

For pipe diameter	30...40mm	Part no.	80648
For pipe diameter	40...57mm and 57...80mm	Part no.	84043

**Note**

Please read the instructions in our datasheet 20010501 before performing installation.  
Connector plug included.

**Resolution**

**31967-KST-010-10 10mm**    **31967-KST-010-05 5mm**

**Transmitter housing tube dia.**

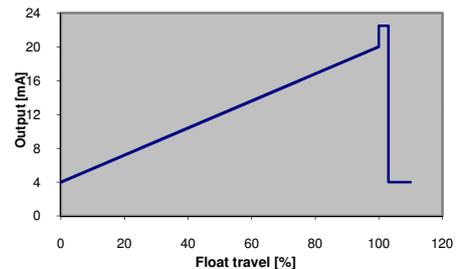
Ø 14 / 10                      Ø 17 / 14

**Measuring length "M el."**

200mm (min.) to 4000mm (max.)  
Longer M el. available with types 34067, 34167, and 34267 (more piece design)

**Signal output**

4...20mA current loop



**Loop supply voltage**

14 ... 40VDC

**Operating temperature**

Media temperature                      -50 °C ... +150 °C  
Ambient temperature (Ta)            -20 °C ... +50 °C

**Enclosure**

IP67 (EN60529) in plugged configuration

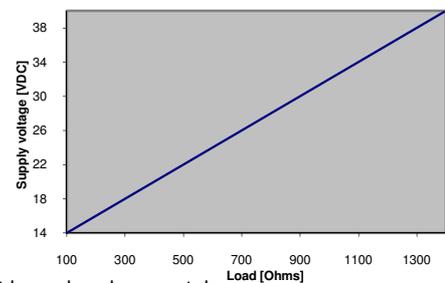
**Materials**

- Housing tube
- Connector body
- Contacts
- Cable compatibility
- Seal
- Type label

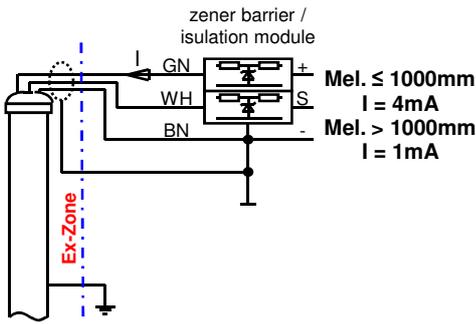
- Stainless steel 316 / 316L
- CuZn alloy: matt chrome-plated
- 4-pin, soldered, CuZn alloy, gold-plated
- Ø 6...8mm, Conductors = 1mm<sup>2</sup> max.
- Perbunan (NBR)
- Polyester: silver, black printing

**Output load**

max. 100Ω at 14VDC  
max. 1.4KΩ at 40VDC



External electrical connections



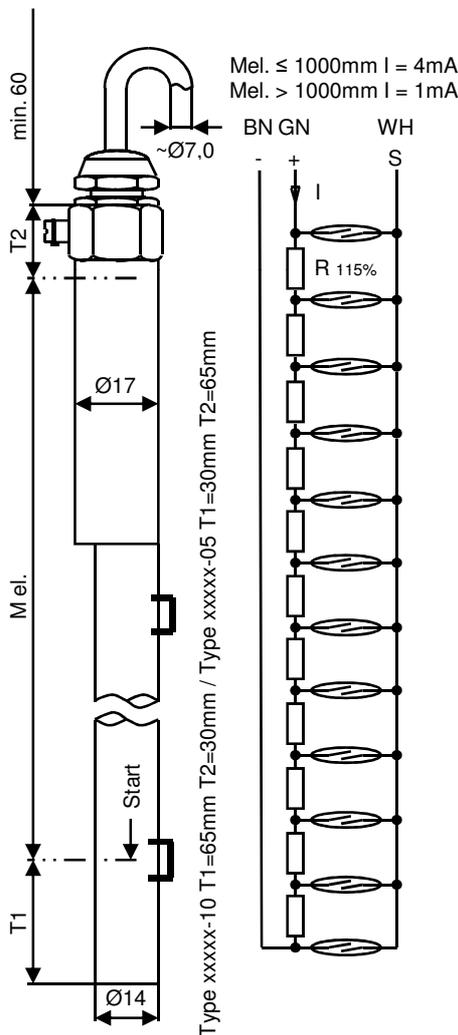
Description

**Intrinsically safe transmitter with ATEX certificate for use with WEKA Visual Level Indicators media temperature ≤ 150°C**

The transmitter is mounted outside of the float chamber opposite to the indication rail (see datasheet 20010501). The magnet inside the float activates the reed switches in the transmitter, depending on the level of liquid in the float chamber, thereby changing the effective value of a resistance network. This converts a current input into a variable voltage output signal that can be fed directly to a remote display or recording instrument. If the liquid level rises above the measuring range of the transmitter (30mm) the output signal jumps to 115% and remains on that limit. This transmitter is compatible with Zones 1 and 2, gas groups IIA, IIB, and IIC, and temperature classes T1 to T6. The transmitter must be connected with a certified energy limiting device (e.g. Zener barrier) installed in a safe area. This device guarantees the electrical limit values specified below, including the cable. The metal housing of the transmitter must be connected to protection ground.

Dimensions

Internal circuit



Product code:

**29710-NI-10 10mm resolution**  
**29710-NI-05 5mm resolution**  
**M el. = Measuring length in mm**

[For details see page 2](#)

**29710-NI-10 29710-NI-05**  
 10mm 5mm  
 Ø 14 / 10 Ø 17 / 14  
 min. 200mm ... max. 4000mm

Resolution

Transmitter tube dia.  
 Measuring length "M el."

Certificate

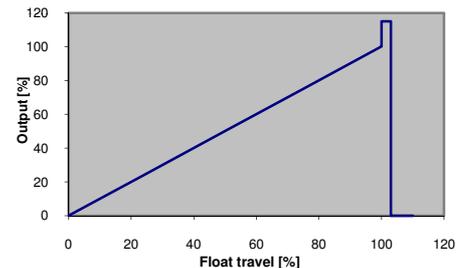


Supply current

M el. ≤ 1000mm I = 4mA  
 M el. > 1000mm I = 1mA

Signal output

- with R = 10Ω and I = 1mA 10mV per step (1cm)
- with R = 10Ω and I = 4mA 40mV per step (1cm)



Operating temperature

Media temperature  
 Ambient temperature (Ta)  
 Surface temperature

-50°C ... +150°C  
 -20°C ... +50°C  
 T6 (max. 85°C)  
 IP68 - 10bar (EN60529)

Enclosure

Materials  
 Housing tube  
 Cable gland  
 - Seal  
 Cable (Standard 5m)

Stainless steel 316 / 316L  
 PA: blue  
 Perbunan (NBR)  
 PVC blue 3 x 0.75mm<sup>2</sup>, Ø ~7,0mm, shielded, largely resistant to oils/petroleum products  
 Polyester: silver, black printing

Type label

Electrical limit values

U<sub>max</sub> = 15VDC  
 I<sub>max</sub> = 4mA

U<sub>i</sub> = max. 22,6V  
 I<sub>i</sub> = max. 160mA  
 P<sub>i</sub> = max.  
 C<sub>i</sub> ≈ 0  
 L<sub>i</sub> ≈ 0

Fixation

When ordering level indicators with transmitters, hose clamps are included.  
 When ordering transmitters as spare parts, hose clamps are never included and must be ordered separately.  
 In case of ordering hose clamps pipe size must be indicated:

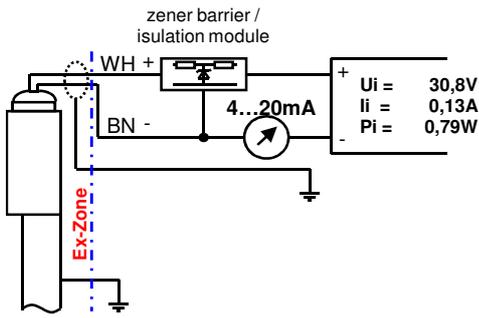
For pipe diameter	30...40mm	Part no.	80648
For pipe diameter	40...57mm and 57...80mm	Part no.	84043

Note

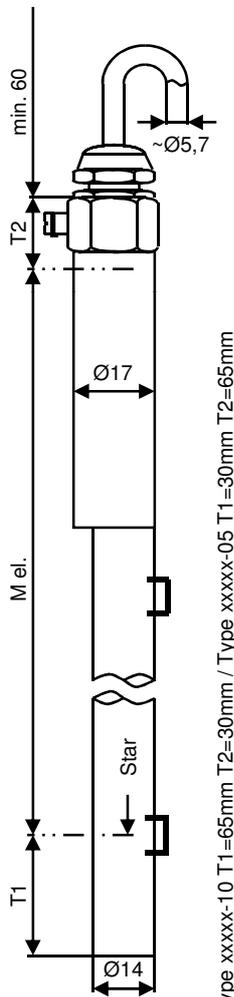
Please read the instructions in our datasheet 20010501 before performing installation.  
 The cable shielding is not connected with the transmitter housing. This connection should be effected by the user.  
 The cable must be durably installed. This device is maintenancefree and repair work is prohibited.

The relevant certificates are available at [www.weka-ag.ch](http://www.weka-ag.ch)

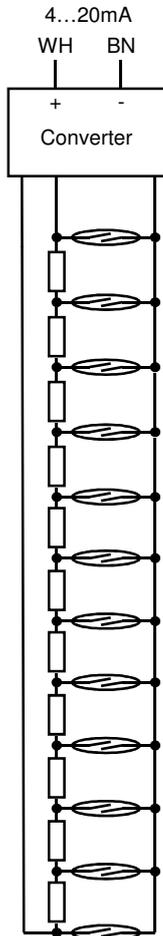
**External electrical connections**



**Dimensions**



**Internal circuit**



**Description**

**Intrinsically safe transmitter, 4...20mA current output with ATEX certificate for use with WEKA Visual Level Indicators media temperature ≤ 150°C**

The transmitter is mounted outside of the float chamber opposite to the indication rail (see datasheet 20010501). The magnet inside the float activates the reed switches in the transmitter, depending on the level of liquid in the float chamber, thereby changing the effective value of a resistance network. The resulting voltage output is converted by an internal electronic circuit to a 4...20mA signal. If the liquid level rises above the measuring range of the transmitter (30 mm) the output signal jumps to 115% (ca. 22,5mA) and remains on that limit.

This transmitter is compatible with Zones 1 and 2, gas groups IIA, IIB, and IIC, and temperature classes T1 to T4. The transmitter must be connected with a certified energy limiting device (e.g. Zener barrier) installed in a safe area. This device guarantees the electrical limit values specified below, including the cable. The metal housing of the transmitter must be connected to protection ground.

**Product code:**

**32607-NI-10**      **10mm resolution**  
**32607-NI-05**      **5mm resolution**  
**M el. = Measuring length in mm**

[For details see page 2](#)

<b>32607-NI-10</b>	<b>32607-NI-05</b>
10mm	5mm
Ø 14 / 10	Ø 17 / 14
min. 200mm ... max. 4000mm	

**Resolution**

**Transmitter tube dia.**

**Measuring length "M el."**

**Certificate**



**Signal output**

4...20mA current loop

**Electrical limit values**

Ui = max. 30,8V  
li = max. 130mA  
Pi = max.  
Ci = max. 48nF  
Li ~ 0mH

**Operating temperature**

Media temperature      -50°C ... +150°C (for T<sub>M</sub>>135°C, T3 applies)  
Ambient temperature (T<sub>a</sub>)      -20°C ... +50°C  
Surface temperature      T4 (max. 135°C)

**Enclosure**

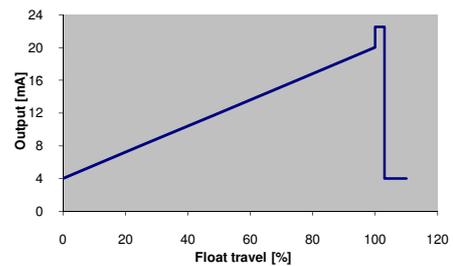
**Materials**

Housing tube  
Cable gland  
- Seal  
Cable (Standard 5m)

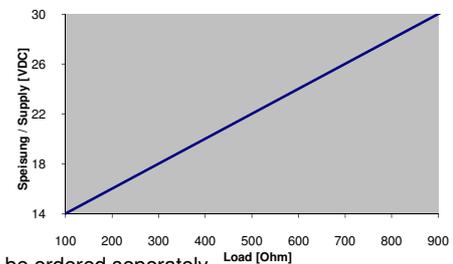
**Type label**

**Output load (including energy limiting device and cables)**

max. 100Ohm at 14VDC  
max. 900Ohm at 30VDC



Stainless steel 316 / 316L  
PA: blue  
Perbunan (NBR)  
PVC: blue, 2 x 0.75mm<sup>2</sup>, Ø ~5,7mm, shielded, largely resistant to oils/petroleum products  
Polyester: silver, black printing



**Fixation**

When ordering level indicators with transmitters, hose clamps are included.

When ordering transmitters as spare parts, hose clamps are never included and must be ordered separately.

In case of ordering hose clamps pipe size must be indicated:

For pipe diameter	30...40mm	Part no.	80648
For pipe diameter	40...57mm and 57...80mm	Part no.	84043

**Note**

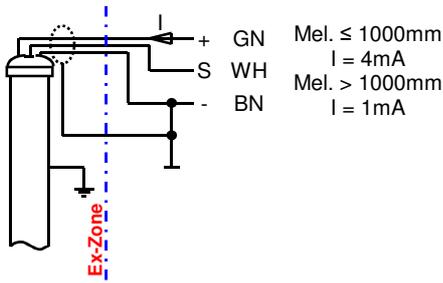
Please read the instructions in our datasheet 20010501 before performing installation.

The cable shielding is not connected with the transmitter housing. This connection should be effected by the user.

The cable must be durably installed. This device is maintenancefree and repair work is prohibited.

The relevant certificates are available at [www.weka-ag.ch](http://www.weka-ag.ch)

External electrical connections



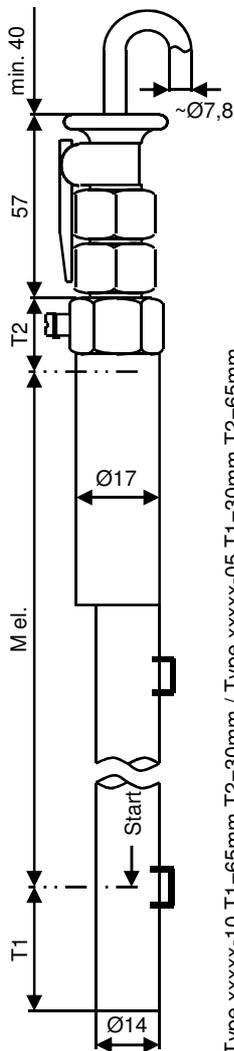
Description

Flameproof enclosures Transmitter with ATEX certificate for use with WEKA Visual Level Indicators media temperature ≤ 150°C

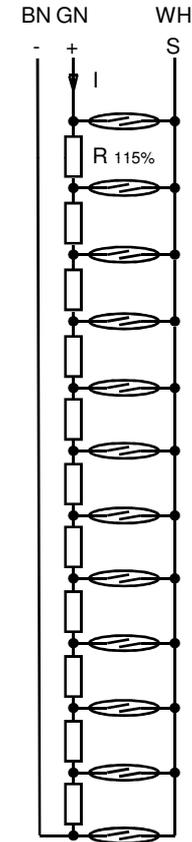
The transmitter is mounted outside of the float chamber to the indication rail (see datasheet 20010501). The magnet inside the float activates the reed switches in the transmitter, depending on the level of liquid in the float chamber, thereby changing the effective value of a resistance network. This converts a current input into a variable voltage output signal that can be fed directly to a remote display or recording instrument. If the liquid level rises above the measuring range of the transmitter (30mm) the output signal jumps to 115% and remains on that limit. This transmitter is compatible with Zones 1 and 2, gas groups IIA, IIB, and IIC, and temperature classes T1 to T6. The metal housing of the transmitter must be connected to protection ground. ATEX 0191X = special conditions: Ambient temperature must be limited to a maximum of +50°C.

Dimensions

Internal circuit



Mel. ≤ 1000mm I = 4mA  
 Mel. > 1000mm I = 1mA



Type xxxxx-10 T1=65mm T2=30mm / Type xxxxx-05 T1=30mm T2=65mm

Product code:

29710-ND-10 10mm resolution  
 29710-ND-05 5mm resolution  
 M el. = Measuring length in mm

For details see page 2

Resolution

29710-ND-10 10mm  
 29710-ND-05 5mm

Transmitter tube dia.

29710-ND-10 Ø 14 / 10  
 29710-ND-05 Ø 17 / 14

Measuring length "M el."

min. 200mm ... max. 4000mm

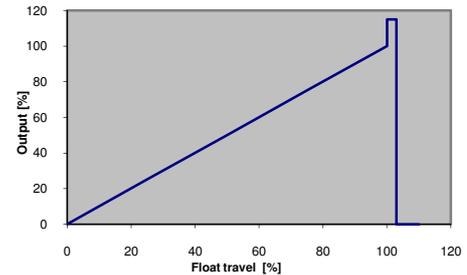
Certificate



Supply current

M el. ≤ 1000mm I = 4mA  
 M el. > 1000mm I = 1mA

- Signal output with R = 10Ω and I = 1mA
- 10mV per step (1cm)
- with R = 10Ω and I = 4mA
- 40mV per step (1cm)



Operating temperature

Media temperature  
 Ambient temperature (Ta)  
 Surface temperature

-50°C ... +150°C  
 -20°C ... +50°C  
 T6 (max. 85°C)  
 IP68 - 10bar (EN60529)

Enclosure

**Materials**  
 Housing tube  
 Cable gland  
 - Seal  
 Cable (Standard 5m)

Stainless steel 316 / 316L  
 Brass: nickel plated, PTB 00 ATEX 1059  
 Perbunan (NBR)  
 PVC: grey, 3 x 1.0mm<sup>2</sup>, Ø ~7,8mm, shielded, largely resistant to oils/petroleum products  
 Polyester: silver, black printing

Type label

Electrical limit values

Umax = 15VDC  
 Imax = 4mA

Fixation

When ordering level indicators with transmitters, hose clamps are included.  
 When ordering transmitters as spare parts, hose clamps are never included and must be ordered separately.  
 In case of ordering hose clamps pipe size must be indicated:

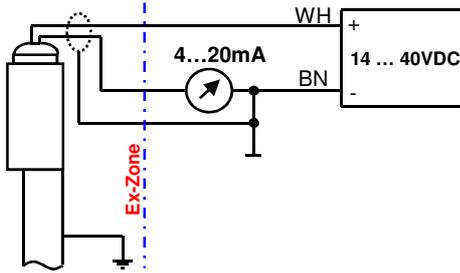
For pipe diameter 30...40mm Part no. 80648  
 For pipe diameter 40...57mm and 57...80mm Part no. 84043

Note

Please read the instructions in our datasheet 20010501 before performing installation.  
 The cable shielding is not connected with the transmitter housing. This connection should be effected by the user.  
 The cable must be durably installed. This device is maintenancefree and repair work is prohibited.

The relevant certificates are available at [www.weka-ag.ch](http://www.weka-ag.ch)

External electrical connections



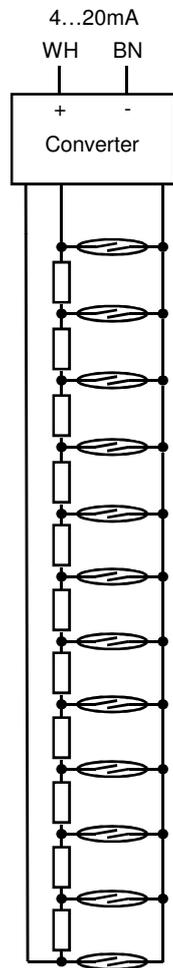
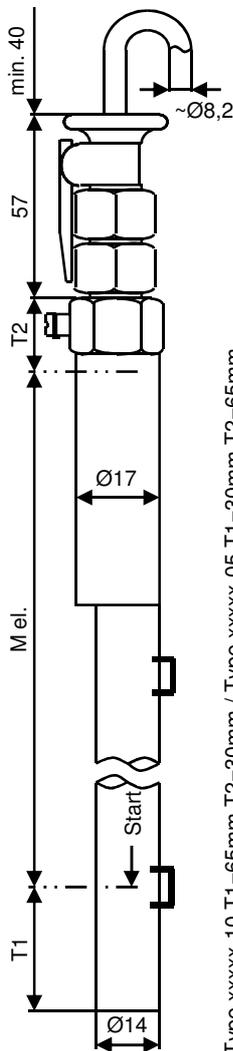
Description

Flameproof enclosures Transmitter, 4...20mA current output with ATEX certificate for use with WEKA Visual Level Indicators media temperature ≤ 150°C

The transmitter is mounted outside of the float chamber opposite to the indication rail (see datasheet 20010501). The magnet inside the float activates the reed switches in the transmitter, depending on the level of liquid in the float chamber, thereby changing the effective value of a resistance network. The resulting voltage output is converted by an internal electronic circuit to a 4...20mA signal. If the liquid level rises above the measuring range of the transmitter (30 mm) the output signal jumps to 115% (ca. 22,5mA) and remains on that limit. This transmitter is compatible with Zones 1 and 2, gas groups IIA, IIB, and IIC, and temperature classes T1 to T6. The metal housing of the transmitter must be connected to protection ground. ATEX 0191X = special conditions: Ambient temperature must be limited to a maximum of +50°C.

Dimensions

Internal circuit



Type xxxxx-10 T1=65mm T2=30mm / Type xxxxx-05 T1=30mm T2=65mm

Product code:

32608-ND-10 10mm resolution

For details see page 2

32608-ND-05 5mm resolution

M el. = Measuring length in mm

Resolution

32608-ND-10 10mm

Transmitter tube dia.

32608-ND-05 5mm

Measuring length "M el."

Ø 14 / 10

Ø 17 / 14

min. 200mm ... max. 4000mm

Certificate



Signal output

4...20mA current loop

Electrical limit values

U nominal = 24VDC

U maximal = 40VDC

I nominal = 4...20mA

I maximal = 23mA

Operating temperature

Media temperature

-50°C ... +150°C

Ambient temperature (Ta)

-20°C ... +50°C

Surface temperature

T6 (max. 85°C)

Enclosure

IP68 - 10bar (EN60529)

Materials

Housing tube

Stainless steel 316 / 316L

Cable gland

Brass: nickel plated, PTB 00 ATEX 1059

- Seal

Perbunan (NBR)

Cable (Standard 5m)

PVC: grey, 2 x 0.75mm<sup>2</sup>, Ø ~8,2mm, shielded, largely resistant to oils/petroleum products

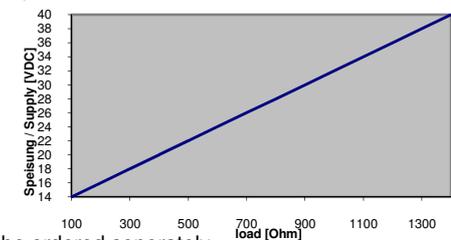
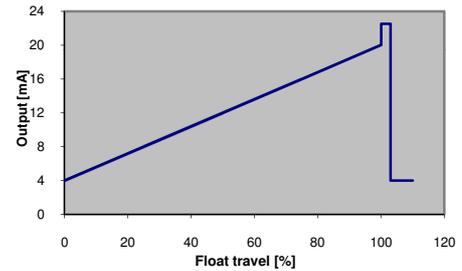
Polyester: silver, black printing

Type label

Output load (including cables)

max. 100Ω at 14VDC

max. 1.4kΩ at 40VDC



Fixation

When ordering level indicators with transmitters, hose clamps are included.

When ordering transmitters as spare parts, hose clamps are never included and must be ordered separately.

In case of ordering hose clamps pipe size must be indicated:

For pipe diameter 30...40mm Part no. 80648

For pipe diameter 40...57mm and 57...80mm Part no. 84043

Note

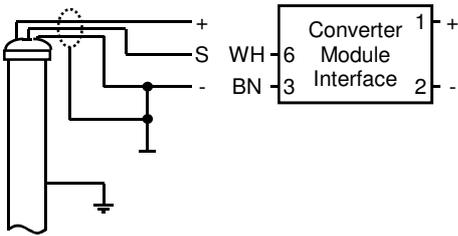
Please read the instructions in our datasheet 20010501 before performing installation.

The cable shielding is not connected with the transmitter housing. This connection should be effected by the user.

The cable must be durably installed. This device is maintenancefree and repair work is prohibited.

The relevant certificates are available at [www.weka-ag.ch](http://www.weka-ag.ch)

External electrical connections



**Description:** Transmitter for use with HART®, PA® or Foundation Fieldbus™ converter module interface, 4...20mA current output and with WEKA Visual Level Indicators media temperature ≤ 150 °C

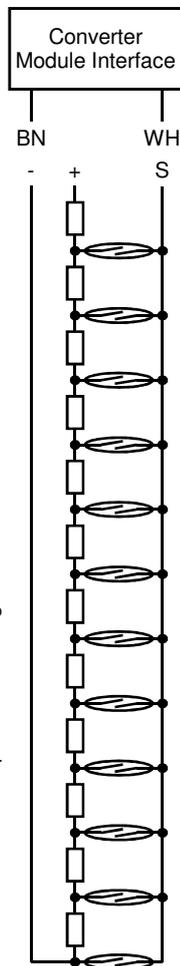
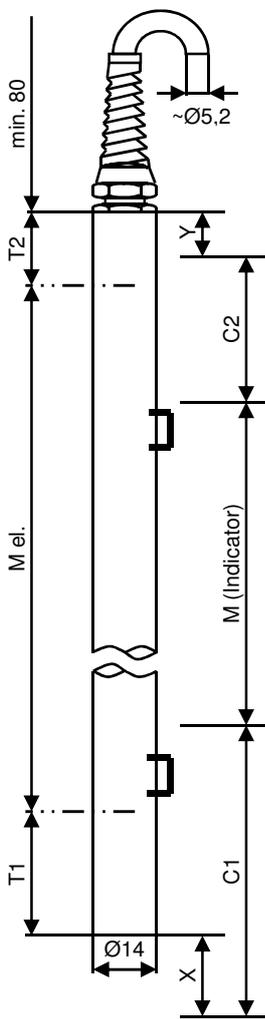
The transmitter is mounted outside of the float chamber opposite to the indication rail (see datasheet 20010501). The magnet inside the float activates the reed switches in the transmitter, depending on the level of liquid in the float chamber, thereby changing the effective value of a resistance network. The resulting voltage output is converted into a 2-wire 4...20mA current output with superimposed HART®, PA® or FF™ digital communication. The measuring length of transmitter (M el.) must be larger than the measuring length of the indicator (M). Refer to the table below. Transmitter settings are selected through the Converter Module Interface.

**Product code:** 29710-R-010-10 10mm Resolution  
 29710-R-010-05 5mm Resolution  
 M el. = (see below)

Dimensions

Internal circuit

**Measuring length "M el."** 250mm (min.) to 4000mm (max.)



Level Indicator	Media Density	x	y	Measuring Length (M el.)
Type	[g/cm <sup>3</sup> ]	[mm]	[mm]	[mm]
23614-A /-K	≥ 0,6	25	5	= M + 195
34300-A /-K	≥ 0,6	40	5	= M + 190
32755-A /-K	≥ 0,6	55	5	= M + 180
34000-A /-K u. 34110-K	≥ 0,6	20	10	= M + 330
34000-A /-K u. 34110-K	≥ 0,7	20	10	= M + 230
34000-A /-K u. 34110-K	≥ 0,8	20	10	= M + 160
34000-A /-K u. 34110-K	≥ 1,0	20	10	= M + 120

Valid for standard level indicators. For others, calculate M el. as follows:  
 M el. [mm] = M + C1 - X - 65 + C2 + Y - 30 (M = measuring length of indicator)

<b>HART®, PA® or FF™ Converter</b>	<a href="#">HART 37383</a> <a href="#">HART 40038</a>	<a href="#">HART 37384</a> <a href="#">PA + FF 40268</a>
<b>Transmitter housing tube dia.</b>	Ø 14 / 10	Ø 17 / 14
<b>Resolution</b>	10mm	5mm
<b>Power supply</b>	Refer to HART®, PA® or FF™ Converter Module Interface data sheet	
<b>Operating temperature</b>	Media temperature -50 °C ... +150 °C Ambient temperature (Ta) -20 °C ... +50 °C	
<b>Enclosure</b>	IP68 - 10bar (EN60529)	
<b>Materials</b>	Housing tube: Stainless steel 316 / 316L Cable gland: PA: with cable bend protection, grey - Seal: Perbunan (NBR) Cable (Standard 5m): PVC: grey, 2 x 0.34mm <sup>2</sup> , Ø ~ 5,2mm, shielded, largely resistant to oils/petroleum products Polyester: silver, black printing	
<b>Type label</b>		

Fixation

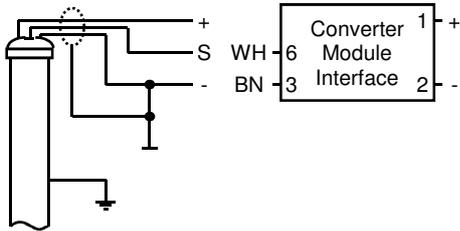
When ordering level indicators with transmitters, hose clamps are included.  
 When ordering transmitters as spare parts, hose clamps are never included and must be ordered separately.  
 In case of ordering hose clamps pipe size must be indicated:

For pipe diameter 30...40mm	Part no.	80648
For pipe diameter 40...57mm and 57...80mm	Part no.	84043

Note

Please read the instructions in our datasheet 20010501 before performing installation.  
 The cable shielding is not connected with the transmitter housing. This connection should be effected by the user.  
 The transmitter can be connected as resistor network only when leads WH and BN are connected.  
 The transmitter can be inverted with the cable entry at the bottom. Setting of the converter module interface must then be changed.

External electrical connections



Description:

Intrinsically safe transmitter with HART® converter module interface and 4...20 mA current output for use with WEKA Visual Level Indicators media temperature ≤ 150 °C

The transmitter is mounted outside of the float chamber opposite to the indication rail (see datasheet 20010501). The magnet inside the float activates the reed switches in the transmitter, depending on the level of liquid in the float chamber, thereby changing the effective value of a resistance network. The resulting voltage output is converted into a 2-wire 4...20mA current output with superimposed HART® digital communication.

The measuring length of transmitter (M el.) must be larger than the measuring length of the indicator (M). Refer to the table below. Transmitter settings are selected through the Converter Module Interface.

Product code:

29710-R-NI-10 10mm Resolution

[For details see page 2](#)

29710-R-NI-05 5mm Resolution

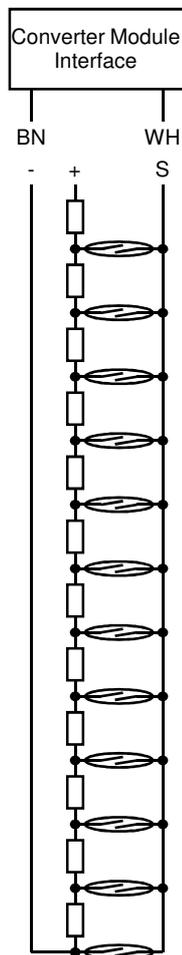
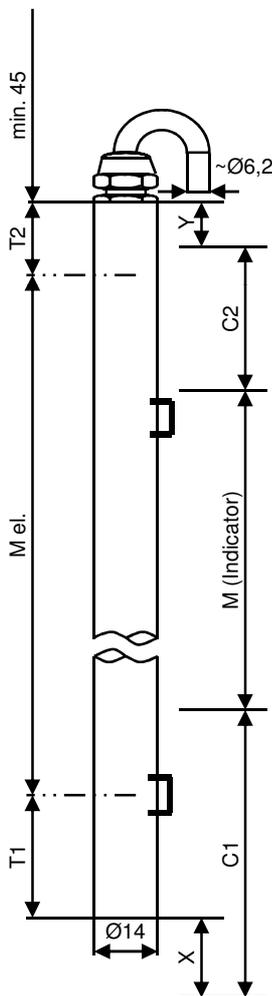
M el. = (see below)

Dimensions

Internal circuit

Measuring length "M el."

250mm (min.) to 4000mm (max.)



Level Indicator	Media Density	x	y	Measuring Length (M el.)
Type	[g/cm <sup>3</sup> ]	[mm]	[mm]	[mm]
23614-A /-K	≥ 0,6	25	5	= M + 195
34300-A /-K	≥ 0,6	40	5	= M + 190
32755-A /-K	≥ 0,6	55	5	= M + 180
34000-A /-K u. 34110-K	≥ 0,6	20	10	= M + 330
34000-A /-K u. 34110-K	≥ 0,7	20	10	= M + 230
34000-A /-K u. 34110-K	≥ 0,8	20	10	= M + 160
34000-A /-K u. 34110-K	≥ 1,0	20	10	= M + 120

Valid for standard level indicators. For others, calculate M el. as follows:  
M el. [mm] = M + C1 - X - 65 + C2 + Y - 30 (M = measuring length of indicator)

HART® Converter

[HART 37384](#)

Transmitter housing tube dia.

Ø 14 / 10                      Ø 17 / 14

Resolution

10mm                              5mm

Power supply

Refer to HART® Converter data sheet

Operating temperature

Media temperature            -50 °C ... +150 °C  
Ambient temperature (Ta)    -20 °C ... +50 °C  
Surface temperature            T6 (max. 85 °C)

Enclosure

IP68 - 10bar (EN60529)

Materials

Housing tube                      Stainless steel 316 / 316L  
Cable gland                        PA: blue  
- Seal                                Perbunan (NBR)  
Cable (Standard 5m)              PVC: blue, 2 x 0.75mm<sup>2</sup>, Ø ~ 6.2mm, shielded, largely resistant to oils/petroleum products  
Type label                         Polyester: silver, black printing

Fixation

When ordering level indicators with transmitters, hose clamps are included.

When ordering transmitters as spare parts, hose clamps are never included and must be ordered separately.

In case of ordering hose clamps pipe size must be indicated:

For pipe diameter	30...40mm	Part no.	80648
For pipe diameter	40...57mm and 57...80mm	Part no.	84043

Note

Please read the instructions in our datasheet 20010501 before performing installation.

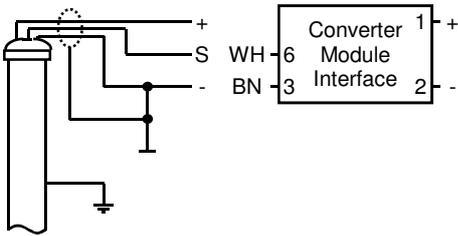
The cable shielding is not connected with the transmitter housing. This connection should be effected by the user.

The cable must be durably installed. This device is maintenancefree and repair work is prohibited.

The transmitter can be used as a resistor network only when leads WH and BN are connected.

The transmitter can be inverted with the cable entry at the bottom. Setting of the converter module interface must then be changed.

**External electrical connections**



**Description:** Transmitter for use with HART®, PA® or Foundation Fieldbus™ converter module interface, 4...20mA current output and with WEKA Visual Level Indicators media temperature ≤ 350°C

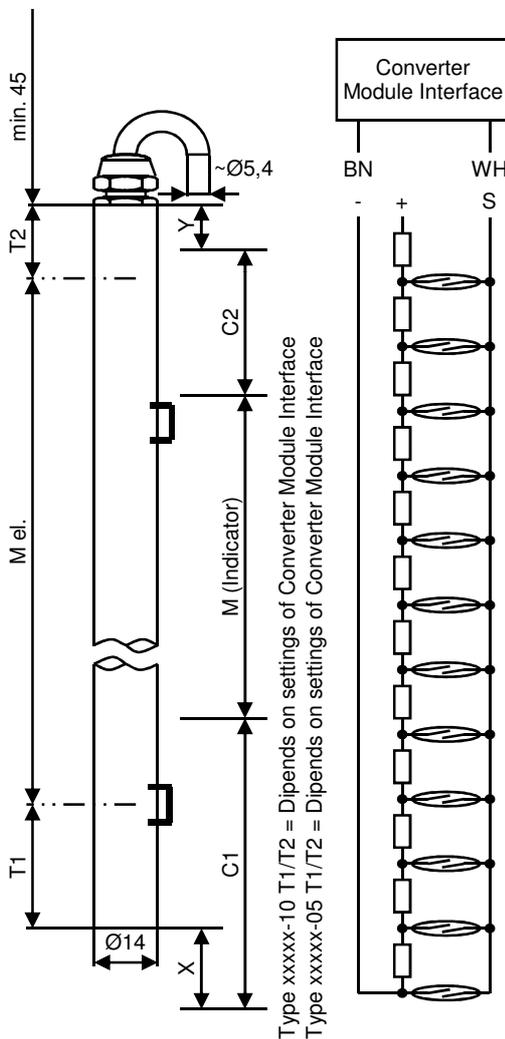
The transmitter is mounted outside of the float chamber opposite to the indication rail (see datasheet 20010501). The magnet inside the float activates the reed switches in the transmitter, depending on the level of liquid in the float chamber, thereby changing the effective value of a resistance network. The resulting voltage output is converted into a 2-wire 4...20mA current output with superimposed HART®, PA® or FF™ digital communication. The measuring length of transmitter (M el.) must be larger than the measuring length of the indicator (M). Refer to the table below. Transmitter settings are selected through the Converter Module Interface.

**Product code:** 29710-R-W-010-10 10mm Resolution  
29710-R-W-010-05 5mm Resolution  
M el. = (see below)

**Dimensions**

**Internal circuit**

**Measuring length "M el."** 250mm (min.) to 4000mm (max.)



Level Indicator	Media Density	x	y	Measuring Length (M el.)
Type	[g/cm <sup>3</sup> ]	[mm]	[mm]	[mm]
23614-A /-K	≥ 0,6	25	5	= M + 195
34300-A /-K	≥ 0,6	40	5	= M + 190
32755-A /-K	≥ 0,6	55	5	= M + 180
34000-A /-K u. 34110-K	≥ 0,6	20	10	= M + 330
34000-A /-K u. 34110-K	≥ 0,7	20	10	= M + 230
34000-A /-K u. 34110-K	≥ 0,8	20	10	= M + 160
34000-A /-K u. 34110-K	≥ 1,0	20	10	= M + 120

Valid for standard level indicators. For others, calculate M el. as follows:  
M el. [mm] = M + C1 - X - 65 + C2 + Y - 30 (M = measuring length of indicator)

<b>HART®, PA® or FF™ Converter</b>	<a href="#">HART 37383</a> <a href="#">HART 40038</a>	<a href="#">HART 37384</a> <a href="#">PA + FF 40268</a>
<b>Transmitter housing tube dia.</b>	Ø 14 / 10	Ø 17 / 14
<b>Resolution</b>	10mm	5mm
<b>Power supply</b>	Refer to HART®, PA® or FF™ Converter Module Interface data sheet	
<b>Operating temperature</b>	Media temperature -50°C ... +350°C Ambient temperature (Ta) -20°C ... +50°C	
<b>Enclosure</b>	IP68 - 10bar (EN60529)	
<b>Materials</b>	Housing tube Stainless steel 316 / 316L Cable gland Brass: nickel plated - Seal FKM / Fluoroelastomere Cable (Standard 5m) Silicone: red, 2 x 0.5mm <sup>2</sup> , Ø ~ 5,4mm, shielded, largely resistant to oils/petroleum products Type label Polyester: silver, black printing	

**Fixation**

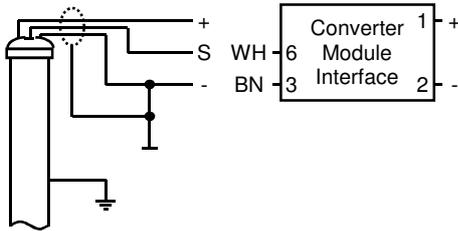
When ordering level indicators with transmitters, hose clamps are included.  
When ordering transmitters as spare parts, hose clamps are never included and must be ordered separately.  
In case of ordering hose clamps pipe size must be indicated:

For pipe diameter 30...40mm	Part no. 80648
For pipe diameter 40...57mm and 57...80mm	Part no. 84043

**Note**

Please read the instructions in our datasheet 20010501 before performing installation.  
The cable shielding is not connected with the transmitter housing. This connection should be effected by the user.  
In case of Ex, the cable must be durably installed. This device is maintenancefree and repair work is prohibited.  
The transmitter can be inverted with the cable entry at the bottom. Setting of the converter module interface must then be changed.

External electrical connections



Description:

Flameproof enclosures transmitter for use with HART® converter module interface and 4...20mA current output for use with WEKA Level Indicators media temperature ≤ 150 °C

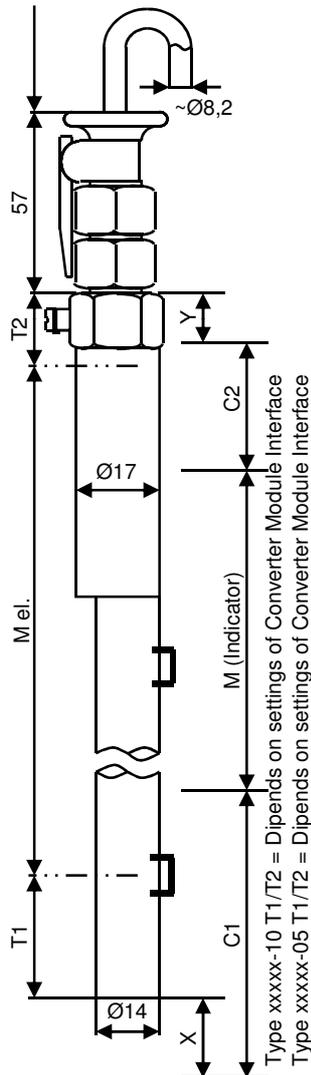
The transmitter is mounted outside of the float chamber opposite to the indication rail (see datasheet 20010501). The magnet inside the float activates the reed switches in the transmitter, depending on the level of liquid in the float chamber, thereby changing the effective value of a resistance network. The resulting voltage output is converted into a 2-wire 4...20mA current output with superimposed HART® digital communication. The measuring length of transmitter (M el.) must be larger than the measuring length of the indicator (M). Refer to the table below. Transmitter settings are selected through the Converter Module Interface.

**Product code:** 29710-R-ND-10 10mm Resolution  
29710-R-ND-05 5mm Resolution  
M el. = (see below)

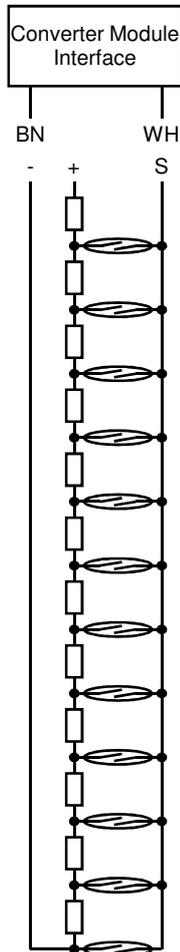
Measuring length "M el."

250mm (min.) to 4000mm (max.)

Dimensions



Internal circuit



Level Indicator	Media Density	x	y	Measuring Length (M el.)
Type	[g/cm3]	[mm]	[mm]	[mm]
23614-A /-K	≥ 0,6	25	5	= M + 195
34300-A /-K	≥ 0,6	40	5	= M + 190
32755-A /-K	≥ 0,6	55	5	= M + 180
34000-A /-K u. 34110-K	≥ 0,6	20	10	= M + 330
34000-A /-K u. 34110-K	≥ 0,7	20	10	= M + 230
34000-A /-K u. 34110-K	≥ 0,8	20	10	= M + 160
34000-A /-K u. 34110-K	≥ 1,0	20	10	= M + 120

Valid for standard level indicators. For others, calculate M el. as follows:  
M el. [mm] = M + C1 - X - 65 + C2 + Y - 30 (M = measuring length of indicator)

HART® Converter

[HART 38021](#)

Transmitter housing tube dia.

Ø 14 / 10                      Ø 17 / 14

Resolution

10mm                              5mm

Power supply

Refer to HART® Converter data sheet

Operating temperature

Media temperature            -50 °C ... +150 °C  
Ambient temperature (Ta)    -20 °C ... +50 °C  
Surface temperature            T6 (max. 85 °C)

Enclosure

IP68 - 10bar (EN60529)

Materials

Housing tube                      Stainless steel 316 / 316L  
Cable gland                        Brass: nickel plated, PTB 00 ATEX 1059  
- Seal                                Perbunan (NBR)  
Cable (Standard 5m)              PVC: grey, 2 x 0.75mm<sup>2</sup>, Ø ~ 8.2mm, shielded, largely resistant to oils/petroleum products  
Polyester: silver, black printing

Type label

Fixation

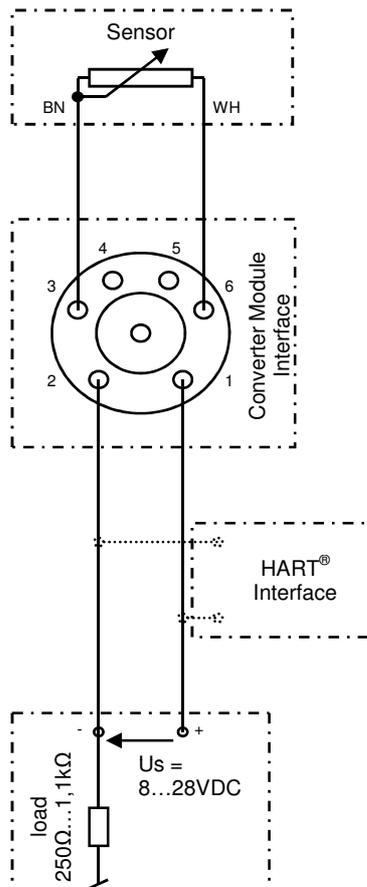
When ordering level indicators with transmitters, hose clamps are included.  
When ordering transmitters as spare parts, hose clamps are never included and must be ordered separately.  
In case of ordering hose clamps pipe size must be indicated:

For pipe diameter	30...40mm	Part no.	80648
For pipe diameter	40...57mm and 57...80mm	Part no.	84043

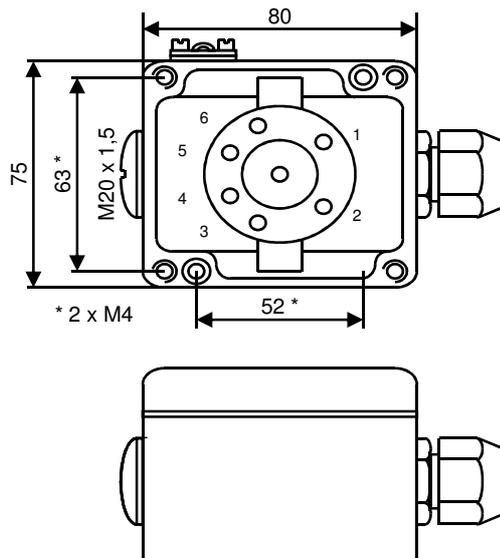
Note

Please read the instructions in our datasheet 20010501 before performing installation.  
The cable shielding is not connected with the transmitter housing. This connection should be effected by the user.  
The cable must be durably installed. This device is maintenancefree and repair work is prohibited.  
The transmitter can be used as a resistor network only when leads WH and BN are connected.  
The transmitter can be inverted with the cable entry at the bottom. Setting of the converter module interface must then be changed.

### External electrical connections



### Dimensions



### Description:

**HART® converter module interface with 4...20mA current loop output for use with WEKA Transmitter 29710-R-010-xx and 29710-R-W-010-xx**

The converter module interface attached to the float chamber generates a resistance output proportional to the liquid level inside the chamber. The interface converts this variable resistance into a 2-wire 4...20mA current output with superimposed HART® digital communication. Zero and range setting is done through the HART® communication channel. For high temperature applications, the converter module interface can be installed at a distance (up to 10m) away from the level indicator and transmitter.

### Product code

**37383**

### Resolution

refer to [29710-R-010-xx](#) [29710-R-W-010-xx](#)

### Housing dimensions

80 x 75 x 57mm

### Cable entry

Threaded socket, M20 x 1.5

### Installation

On mounting plate (860528) or at other suitably prepared location using 2 x M4 screws 52 x 63 mm diagonal spacing

### Specifications

Loop supply voltage	8 to 28VDC
Voltage drop	8VDC
Isolation voltage	Test = 1.5kVAC; operation = 50VAC
Communication	Loop Link 5905 & HART®
Current loop output	4...20mA
Response time	440ms
Transmitter fault output	3.5mA or 23mA (programmable)
Input	0Ω (min.) to 7000Ω (max.)
Minimum span	25Ω
Lead wire resistance	Max. 5Ω
Transmitter current	0.2mA, nominal
Basic accuracy	≤ +/- 0.1Ω
Temperature coefficient	≤ +/- 5mΩ / °C
Zero offset	Max. 50% of selected span

### Operating temperature

Media temperature	29710-R-010-xx	-50 °C ... +150 °C
	29710-R-W-010-xx	-50 °C ... +350 °C
Operating temperature		-40 °C ... +85 °C
Ambient temperature (Ta)		-20 °C ... +50 °C

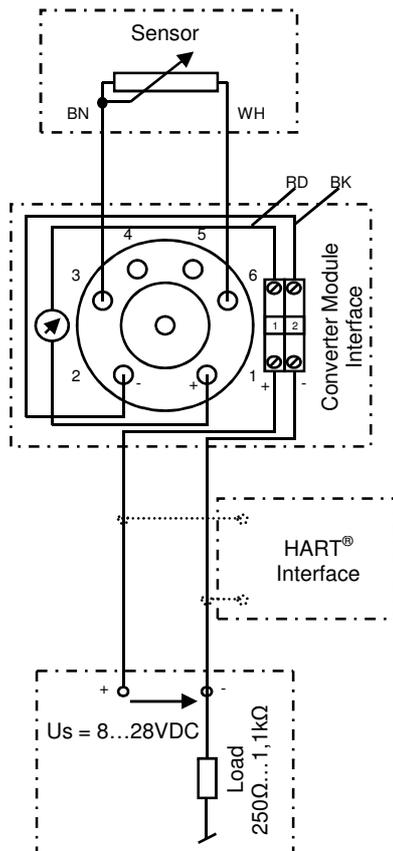
### Enclosure

IP65 (EN60529)

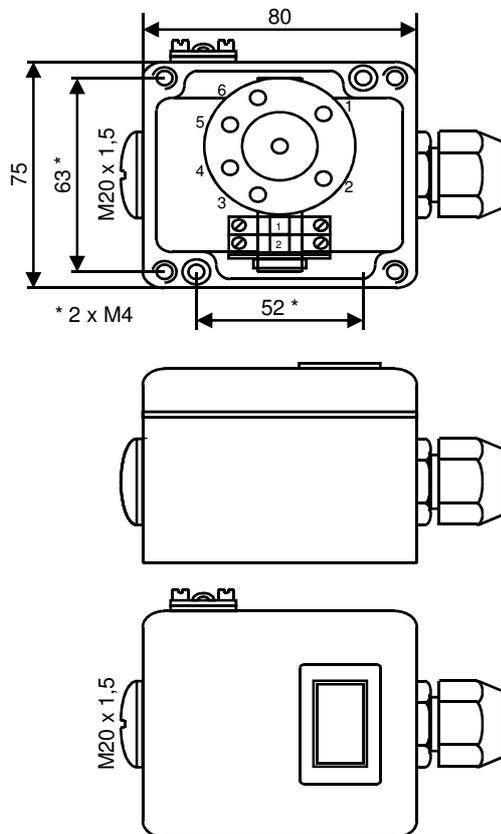
### Materials

Housing	Aluminium: blue, with grounding terminal
Cable gland	PA: grey, M20x1.5
- Seal	Perbunan (NBR)
- Cable compatibility	Ø 3 ... 7mm; max. 2 x 1mm <sup>2</sup>
Type label	Polyester: silver, black printing

#### External electrical connections



#### Dimensions



#### Function

**HART® converter module interface with 4...20mA current loop output and digital display for use with WEKA Transmitter 29710-R-010-xx and 29710-R-W-010-xx**

The converter module interface attached to the float chamber generates a resistance output proportional to the liquid level inside the chamber. The interface converts this variable resistance into a 2-wire 4...20mA current output with superimposed HART® digital communication. Zero and range setting is done through the HART® communication channel. For high temperature applications, the converter module interface can be installed at a distance (up to 10m) away from the level indicator and transmitter.

Additionally there is a digital display built in to the terminal box

#### Product code

**40038**

#### Resolution

refer to [29710-R-010-xx](#) [29710-R-W-010-xx](#)

#### Housing dimensions

80 x 75 x 57mm

#### Cable entry

threaded socket M20 x 1,5

#### Installation

On mounting plate (860528) or at other suitably prepared location using 2 x M4 screws 52 x 63 mm diagonal spacing

#### Specifications

Loop supply voltage	15 ... 35VDC
Voltage drop	14VDC
Isolation voltage / operation	1,5kVAC / 50VAC
Communication	Loop Link 5905 & HART®
Current loop output	4 ... 20mA
Digital display	4 digit LCD, display value in % $\pm$ 4...20mA
Response time	440ms
Transmitter fault output	3.5mA or 23mA (programmable)
Input	0Ω (min.) to 7000Ω (max.)
Minimum span	min. 25Ω
Lead wire resistance	max. 5Ω
Transmitter current	0.2mA, nominal
Basic accuracy	$\leq$ +/- 0,1Ω
Temperature coefficient	$\leq$ +/- 5mΩ / °C
Zero offset	max. 50% of selected span

#### Operating temperature

Media temperature	29710-R-010-xx	-50 °C ... +150 °C
	29710-R-W-010-xx	-50 °C ... +350 °C
Operation temperature		0 °C ... +50 °C
Ambient temperature (Ta)		0 °C ... +50 °C

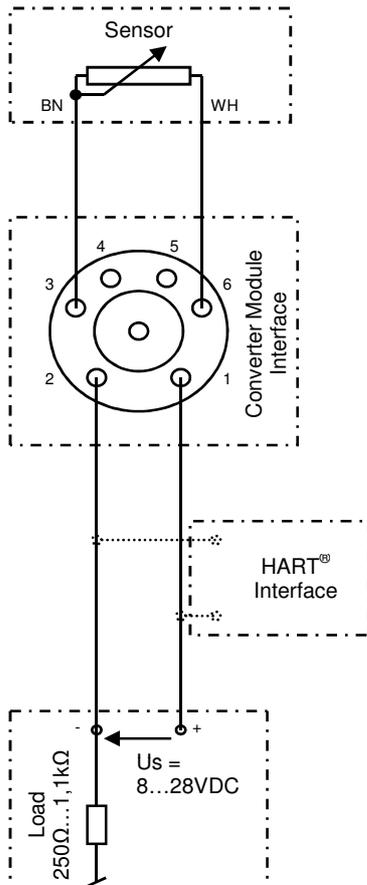
#### Enclosure

IP65 (EN60529)

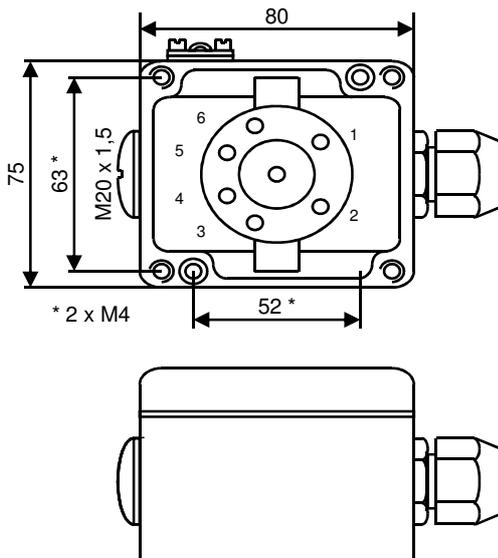
#### Materials

Housing	Alu: blue, with grounding terminal
Digital display	Plastic: black
	Display black & green
Cable gland	PA: grey, M20x1,5
- Seal	Perbunan (NBR)
- Cable compatibility	Ø 3 ... 7mm, max. 2 x 1mm <sup>2</sup>
Type label	Polyester: silver, black printing

**External electrical connections**



**Dimensions**



**Description:**

**HART® converter module interface with 4...20mA current loop output, Intrinsically safe for use in zone 1 and 2 and with WEKA Transmitter 29710-R-NI-xx and 29710-R-W-010-xx**

The converter module interface attached to the float chamber generates a resistance output proportional to the liquid level inside the chamber. The interface converts this variable resistance into a 2-wire 4...20mA current output with superimposed HART® digital communication. Zero and range setting is done through the HART® communication channel. For high temperature applications, the converter module interface can be installed at a distance (up to 10m) away from the level indicator and transmitter.

**Product code**

**37384**

**Resolution**

refer to [29710-R-NI-xx](#) [29710-R-W-010-xx](#)

**Housing dimensions**

80 x 75 x 57mm

**Cable entry**

Threaded socket, M20 x 1.5

**Installation**

On mounting plate (860528) or at other suitably prepared location using 2 x M4 screws 52 x 63 mm diagonal spacing

**Specifications**

Loop supply voltage	8 to 28VDC
Voltage drop	8VDC
Isolation voltage	Test = 1.5kVAC; operation = 50VAC
Communication	Loop Link 5905 & HART®
Current loop output	4 - 20mA
Response time	440ms
Transmitter fault output	3.5mA or 23mA (programmable)
Input	0Ω (min.) to 7000Ω (max.)
Minimum span	25Ω
Lead wire resistance	Max. 5Ω
Transmitter current	0.2mA, nominal
Basic accuracy	≤ +/- 0,1Ω
Temperature coefficient	≤ +/- 5mΩ / °C
Zero offset	Max. 50% of selected span

**Operating temperature**

Media temperature	29710-R-NI-xx	-50°C ... +150°C
	29710-R-W-010-xx	-50°C ... +350°C
Operating temperature		-40°C ... +85°C
Ambient temperature (Ta)	for T1, T2, T3, T4	-20°C ... +85°C
	for T5, T6	-20°C ... +60°C

**Enclosure**

IP65 (EN60529)

**Materials**

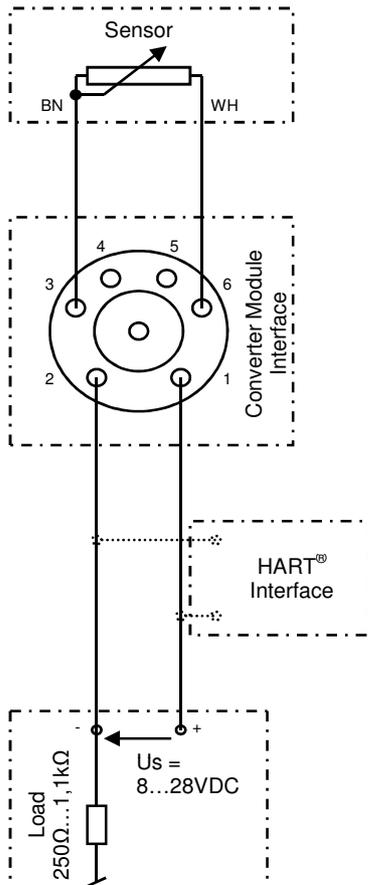
Housing	Alu: blue, with grounding terminal
Cable gland	PA: grey; M20x1.5
- Seal	Perbunan (NBR)
- Cable compatibility	Ø 3 ... 7mm; max. 2 x 1mm <sup>2</sup>
Type label	Polyester: silver, black printing

**CE 0344 Ex ia IIC T6 KEMA 03 ATEX 1537X**

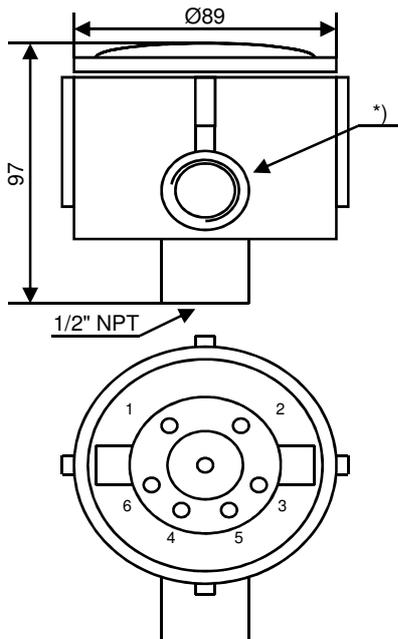
**Electrical limit values**

Ui =	max. 28VDC
Ii =	max. 120mA
Pi =	max. 840mW
Ci =	≤ 1nF
Li =	≤ 10μH

**External electrical connections**



**Dimensions**



**Description:**

**HART® converter module interface with 4...20mA current loop output, Flameproof enclosures for use in zone 1 and 2 and with WEKA Transmitter 29710-R-ND-xx**

The converter module interface attached to the float chamber generates a resistance output proportional to the liquid level inside the chamber. The interface converts this variable resistance into a 2-wire 4...20mA current output with superimposed HART® digital communication. Zero and range setting is done through the HART® communication channel. For high temperature applications, the converter module interface can be installed at a distance (up to 10m) away from the level indicator and transmitter.

**Product code** 38021

**Resolution** refer to [29710-R-ND-xx](#)

**Housing dimensions** Ø ~ 130mm x 97mm (height)

**Cable entry \*)** Threaded socket, M20 x 1.5 or 1/2"NPT

**Installation** Mounted on the level indicator (or at other suitably prepared location) using a hose clamp (84242) and coupling (20000710).

**Specifications**

Loop supply voltage	8 to 28VDC
Voltage drop	8VDC
Isolation voltage	Test = 1.5kVAC; operation = 50VAC
Communication	Loop Link 5905 & HART®
Current loop output	4 - 20mA
Response time	440ms
Transmitter fault output	3.5mA or 23mA (programmable)
Input	0Ω (min.) to 7000Ω (max.)
Minimum span	25Ω
Lead wire resistance	Max. 5Ω
Transmitter current	0.2mA, nominal
Basic accuracy	≤ +/- 0,1Ω
Temperature coefficient	≤ +/- 5mΩ / °C
Zero offset	Max. 50% of selected span

**Operating temperature**

Media temperature	29710-R-ND-xx	-50 °C ... +150 °C
Operating temperature		-40 °C ... +85 °C
Ambient temperature (Ta)		-20 °C ... +50 °C

**Enclosure** IP68 - 10bar (EN60529)

**Materials**

Housing	Alu: grey, Ex d
Cable gland	Brass: nickel plated, PTB 00 ATEX 1059
- Seal	Perbunan (NBR)
- Cable compatibility	Ø ~ 7 ... 9mm; max. 2 x 1mm <sup>2</sup>
Type label	Polyester: silver, black printing

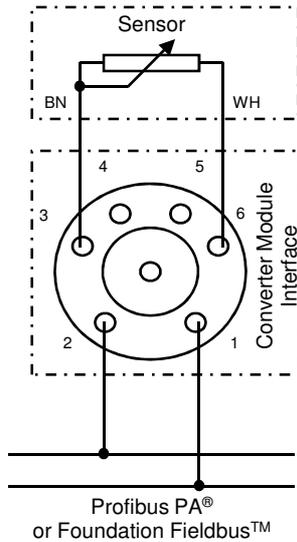
**Housing:**

 0722  II 2GD Ex d IIC CESI 03 ATEX 059U

**Converter:**

 0344  II 3GD Ex nA[nL] IIC T6 KEMA 03 ATEX 1508X

**External electrical connections**



**Description:**

**Profibus PA® or Foundation Fieldbus™ converter module Interface for use with WEKA Transmitter 29710-R-010-xx and 29710-R-W-010-xx**

The converter module interface attached to the float chamber generates a resistance output proportional to the liquid level inside the chamber. The interface converts this variable resistance into a 2-wire digital current output with Profibus PA® or Foundation Fieldbus™ communication. The converter switches automatically between the 2 protocols. Zero and range setting is done through the digital communication channel. For high temperature applications, the converter module interface can be installed at a distance (up to 10m) away from the level indicator and transmitter.

**Product code** 40268

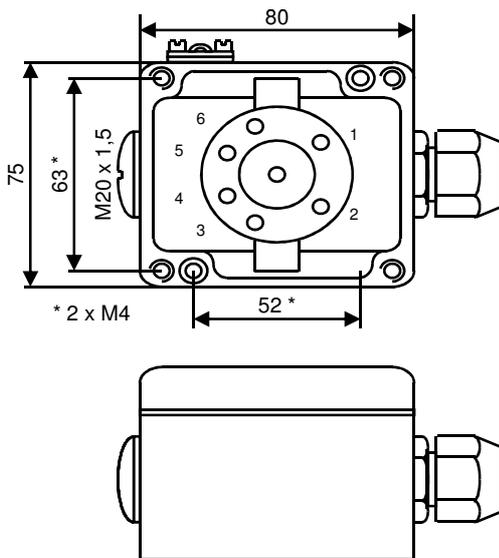
**Resolution** refer to [29710-R-010-xx](#) [29710-R-W-010-xx](#)

**Housing dimensions** 80 x 75 x 57mm

**Cable entry** Threaded socket, M20 x 1.5

**Installation** On mounting plate (860528) or at other suitably prepared location, using 2 x M4 screws 52 x 63 mm diagonal spacing

**Dimensions**



**Specifications**

Loop supply voltage	9 to 32VDC
Consumption	< 11mA
Isolation voltage	test = 1.5kVAC; operation = 50VAC
Communication	PROFIBUS <sup>®</sup> PA / FOUNDATION <sup>™</sup> Fieldbus
Response time	1 ... 60s
Sensor error detection	Yes
Short circuit detection	< 15Ω
Input	0Ω (min.) to 10'000Ω (max.)
Cable resistance per wire	50Ω
Transmitter current	0.2mA, nominal
Basic accuracy	≤ +/- 0,05Ω
Temperature coefficient	≤ +/- 2mΩ / °C

**Operating temperature**

Media temperature	29710-R-010-xx	-50 °C ... +150 °C
	29710-R-W-010-xx	-50 °C ... +350 °C
Operating temperature		-40 °C ... +85 °C
Ambient temperature (Ta)		-20 °C ... +50 °C

**Enclosure** IP65 (EN60529)

**Materials**

Housing	Alu: blue, with grounding terminal
Cable gland	PA: grey, M20x1.5
- Seal	Perbunan (NBR)
- Cable compatibility	Ø 3 ... 7mm; max. 2 x 1mm <sup>2</sup>
Type label	Polyester: silver, black printing

**Note**

- A unique switch function ensures the automatic shift between the Profibus PA® and the Foundation Fieldbus™ protocols.
- Profibus PA® Version 3.0 or Foundation Fieldbus™ Version ITK 4.51 is applied.
- Set-up for Profibus PA® can be done via Siemens Simatic® PDM®, ABB Melody/Harmony, Honeywell Ax and Metso DNA software
- Set-up for Foundation Fieldbus™ can be done via Emerson Delta V, Yokogawa CS 1000/CS 3000, ABB Melody/Harmony and Honeywell Psource software.
- Polarity-independent bus connection
- Profibus PA<sup>®</sup> function blocks: 2 analogue
- Foundation Fieldbus<sup>™</sup> function blocks: 2 analogue and 1 PID
- Foundation Fieldbus<sup>™</sup> capability: BASIC or LAS

## Installation:

1. Connect the signal wires to the transmitter after switching off power to this circuit.
2. Open the transmitter housing cover with a spanner (SW17).
3. Loosen the cable gland nut (5) and insert the cable. Cable outer  $\varnothing$  must be between 5 and 10 mm.
4. Connect the signal wires (4) to the + and - terminals tightly. Observe proper polarity.
5. Replace and tighten the cable gland nut.
6. If necessary, connect the ground wire/cable-shield to the grounding terminal at the bottom of the terminal head.
7. After the transmitter settings are effected, replace and firmly fasten the cover.



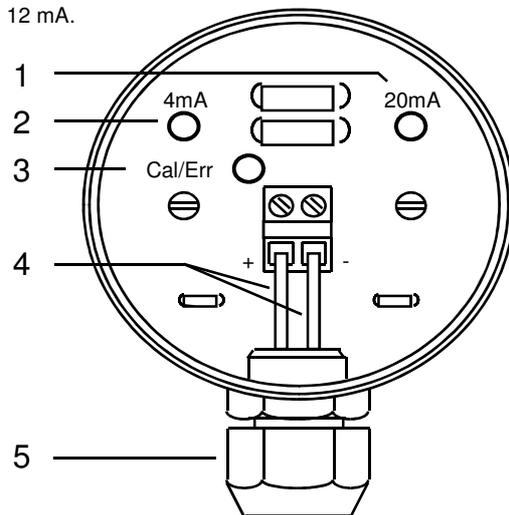
## Settings:

The 4mA and 20 mA signal output levels of the transmitter are activated using the respective key-switches (2 or 1) and the LED lamp (3).

The transmitter is initially set at the factory to 20 mA corresponding to the highest float position and 4 mA corresponding to a lower float position.

The end point settings of the transmitter can be changed by the user whenever needed. However the difference between the lowest and highest float levels must be at least 5 mm, otherwise the direction of the output signal will automatically be inverted.

1. Connect the signal cable as mentioned above under "Installation".
2. Switch on the power supply (10...30 VDC).
3. Press the 4mA key-switch (2) for at least 3 seconds.
  - > The transmitter will then enter in to the setting mode.
  - > The green "Cal/Err" LED (3) will start blinking.
  - > The loop current will shift to a steady value of 12mA.
  - > If neither key-switch is pressed for 20 seconds, the transmitter will revert by itself to normal operating mode.
4. Set the level corresponding to 4mA output:
  - > Adjust the float level to the desired 4mA point. Press the 4mA key-switch (2) for approximately 2 seconds.
  - > The green "Cal/Err" LED (3) will turn off for 5 seconds.
  - > The loop current value will change to 4mA, and then revert to 12 mA.
  - > If neither key-switch is pressed for 15 seconds, the transmitter will revert by itself to normal operating mode.
5. Set the level corresponding to 20 mA output:
  - > Adjust the float level to the desired 20mA point. Press the 4mA key-switch (2) for approximately 2 seconds.
  - > The green "Cal/Err" LED (3) will turn off for 5 seconds.
  - > The loop current value will change to 20mA, and then revert to 12 mA.
  - > If neither key-switch is pressed for 15 seconds, the transmitter will revert by itself to normal operating mode.
6. The new values are stored only when the transmitter changes by itself from setting mode to normal operating mode.
  - > The green "Cal/Err" LED lamp (3) will turn off at that point



## Fault signaling output

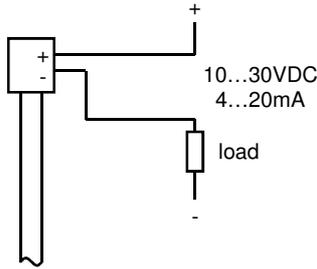
If the transmitter is unable to sense the float position (measure the level of liquid) for a pre-determined period of time, it will signal a fault/error condition by shifting the output to a constant 21.5mA (permanently set error signal value).

## Explosion-proof transmitters



- Every explosion-proof transmitter rated Ex i (Intrinsically safe) must have its signal and power supply lines connected only through a certified isolation amplifier located in a non-hazardous zone.
- The electric characteristic values of the transmitter must be coordinated with those of the isolation amplifier and also of the cable in between.
- The transmitter enclosure must be properly connected to ground.

**External electrical connections**



**Description**

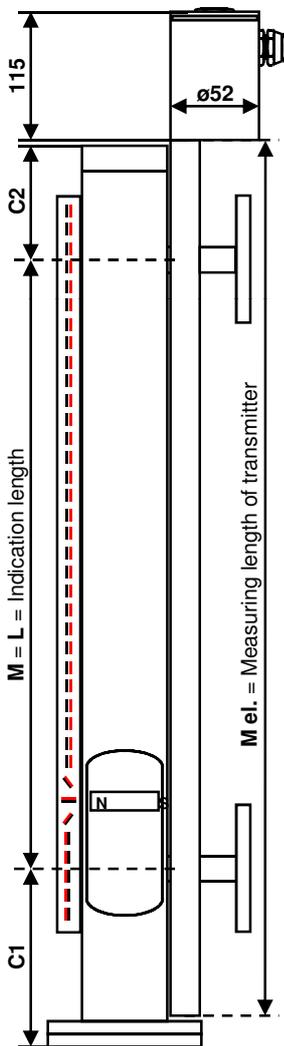


**Magnetostrictive transmitter**  
**for use with WEKA Visual Level Indicators**  
**media temperature ≤ 120°C**

The transmitter is mounted outside of the float chamber opposite to the indication rail (see datasheet 20010501). The magnetic field of the float magnet interacts with the field created by current pulses conducted through an axial magnetostrictive wire in the sensor rod thus creating mechanical strain pulses in this wire. The time difference between each current pulse and its resulting strain pulse determines the position of the float magnet and hence the liquid level. The time measurement is converted by the transmitter to a standard 4 - 20mA current output signal. All magnetostrictive transmitters include a HART® Converter Module Interface.

**Product code** **38614 - xxxx mm**  
**xxxx = M el. = M + 100** electr. Measuring length in mm (200mm ... 6000mm)

**Dimensions**



Suitable for  
**Visual Level Indicator Types:**

- 34000-A / -K**
- 23614-A / -K**
- 34300-A / -K**
- 32755-A / -K**

**Other types on request**

<b>Linearity</b>	< +/- 0.5mm
<b>Resolution</b>	< 0.1mm
<b>Accuracy, analog circuit</b>	+/- 0.1% + 0.01%/K
<b>Supply voltage</b>	10 ... 30VDC
<b>Signal output</b>	4 - 20mA, current sink Fault detection signal: 21.5 mA
<b>Enclosure</b>	IP68 - 10bar (EN60529)
<b>Operating temperature</b>	
Media temperature:	-45°C ... +120°C
Ambient temperature:	-40°C ... +85°C
<b>Materials</b>	
Housing / tube	1.4571, Ø 12mm
Cable gland	PA, grey
- for cable outer Ø	5 ... 10mm

**Installation / Settings (interactive or with HART® converter module interface)**

[Detailed instructions: see "Install Magneto"](#)

**Fixation**

When ordering level indicators with transmitters, hose clamps are included. When ordering transmitters as spare parts, hose clamps are never included and must be ordered separately. In case of ordering hose clamps pipe size must be indicated:

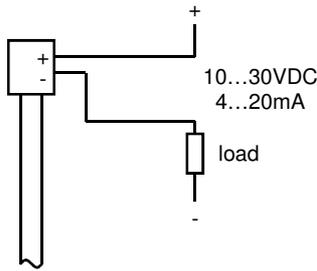
For pipe diameter	30...40mm	Part no.	80648
For pipe diameter	40...57mm and 57...80mm	Part no.	84043

**Note**

The cable must be durably installed. This device is maintenancefree and repair work is prohibited.

More relevant instructions are available at [www.weka-ag.ch](http://www.weka-ag.ch)

**External electrical connections**



**Description**

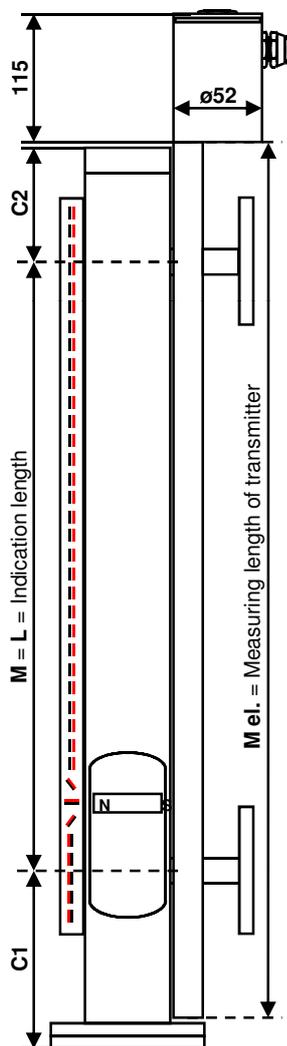


**Magnetostrictive Transmitter**  
for use with WEKA Visual Level Indicators  
media temperature  $\leq 250^{\circ}\text{C}$ .

The transmitter is mounted outside of the float chamber opposite to the indication rail (see datasheet 20010501). The magnetic field of the float magnet interacts with the field created by current pulses conducted through an axial magnetostrictive wire in the sensor rod thus creating mechanical strain pulses in this wire. The time difference between each current pulse and its resulting strain pulse determines the position of the float magnet and hence the liquid level. The time measurement is converted by the transmitter to a standard 4 - 20mA current output signal. All magnetostrictive transmitters include a HART<sup>®</sup> Converter Module Interface.

**Product code** **38614-W - xxxx mm**  
xxxx = M el. = M + 100 electr. Measuring length in mm (200mm ... 6000mm)

**Dimensions**



Suitable for  
Visual Level  
Indicator  
Types:

- 34000-A / -K
- 23614-A / -K
- 34300-A / -K
- 32755-A / -K

Other types  
on request

<b>Linearity</b>	< +/- 0.5mm
<b>Resolution</b>	< 0.1mm
<b>Accuracy, analog circuit</b>	+/- 0.1% + 0.01%/K
<b>Supply voltage</b>	10 ... 30VDC
<b>Signal output</b>	4 - 20mA, current sink Fault detection signal: 21.5 mA
<b>Enclosure</b>	IP68 - 10bar (EN60529)
<b>Operating temperature</b>	Media temperature: -200°C ... +250°C Ambient temperature: -40°C ... +85°C
<b>Materials</b>	Housing / tube 1.4571, Ø 12mm Cable gland PA, grey - for cable outer Ø 5 ... 10mm

**Installation / Settings (interactive or with HART<sup>®</sup> converter module interface)**

[Detailed instructions: see "Install Magneto"](#)

**Fixation**

When ordering level indicators with transmitters, hose clamps are included.  
When ordering transmitters as spare parts, hose clamps are never included and must be ordered separately.  
In case of ordering hose clamps pipe size must be indicated:

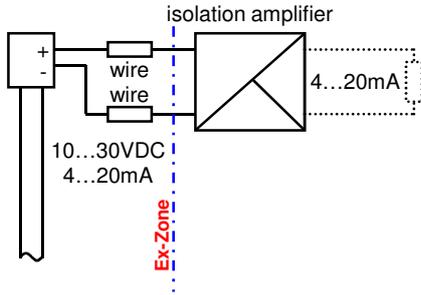
For pipe diameter	30...40mm	Part no.	80648
For pipe diameter	40...57mm and 57...80mm	Part no.	84043

**Note**

The cable must be durably installed. This device is maintenancefree and repair work is prohibited.

More relevant instructions are available at [www.weka-ag.ch](http://www.weka-ag.ch)

External electrical connections



Description

Intrinsically safe magnetostrictive transmitter with ATEX certificate for use with WEKA Visual Level Indicators media temperature  $\leq 250^\circ\text{C}$



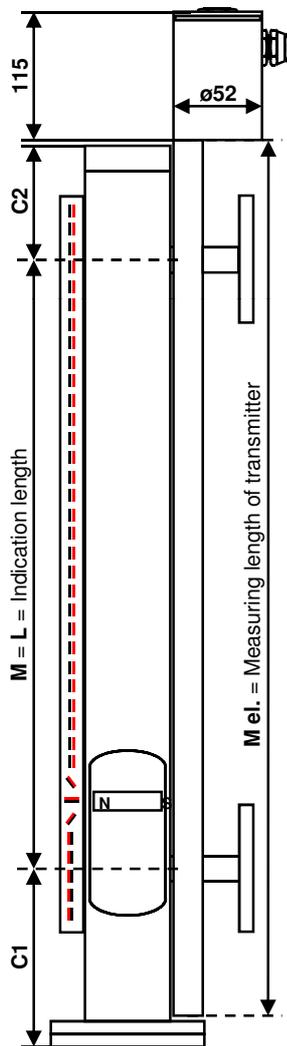
The transmitter is mounted outside of the float chamber opposite to the indication rail (see datasheet 20010501).

The magnetic field of the float magnet interacts with the field created by current pulses conducted through an axial magnetostrictive wire in the sensor rod thus creating mechanical strain pulses in this wire. The time difference between each current pulse and its resulting strain pulse determines the position of the float magnet and hence the liquid level. The time measurement is converted by the transmitter to a standard 4 - 20mA current output signal.

All magnetostrictive transmitters include a HART® Converter Module Interface.

This transmitter is compatible with Zones 1 and 2, gas groups IIA, IIB, and IIC, and temperature classes T1 to T6. The transmitter must be connected with a certified energy limiting device (e.g. Zener barrier) installed in a safe area. This device guarantees the electrical limit values specified below, including the cable. The metal housing of the transmitter must be connected to protection ground.

Dimensions



Suitable for Visual Level Indicator Types:

- 34000-A / -K
- 23614-A / -K
- 34300-A / -K
- 32755-A / -K

Other types on request

Product code

38614-NI - xxxx mm

xxxx = M el. = M + 100 electr. Measuring length in mm (200mm ... 6000mm)

Linearity

< +/- 0.5mm

Resolution

< 0.1mm

Accuracy, analog circuit

+/- 0.1% + 0.01%/K

Certification



II 2 G Ex ia IIC T6 ... T2 TÜV 01 ATEX 1772

Electrical limit values

- U<sub>i</sub> = max. 30V
- I<sub>i</sub> = max. 200mA
- P<sub>i</sub> = max. 1W
- C<sub>i</sub> = max. 5nF
- L<sub>i</sub> = max.

Signal output

4 - 20mA, current sink  
Fault detection signal: 21.5 mA

Enclosure

IP68 - 10bar (EN60529)

Operating temperatures

Temperature class	Ambient temperature T <sub>a</sub>	Media temperature T <sub>f</sub>
T6	-20°C ... +40°C	bis 85°C
T5	-20°C ... +55°C	bis 100°C
T4	-20°C ... +85°C	bis 135°C
T3	-20°C ... +85°C	bis 200°C
T2	-20°C ... +85°C	bis 250°C

Materials

- Housing / tube 1.4571, Ø 12mm
- Cable gland PA, grey
- for cable outer Ø 5 ... 10mm

Installation / Settings (interactive or with HART® converter module interface)

Instructions: see "Install Magneto"

Fixation

When ordering level indicators with transmitters, hose clamps are included.

When ordering transmitters as spare parts, hose clamps are never included and must be ordered separately.

In case of ordering hose clamps pipe size must be indicated:

- For pipe diameter 30...40mm Part no. 80648
- For pipe diameter 40...57mm and 57...80mm Part no. 84043

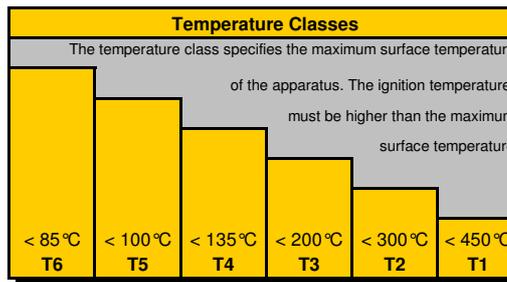
Note

The cable must be durably installed. This device is maintenancefree and repair work is prohibited.

More relevant instructions and certificates are available at [www.weka-ag.ch](http://www.weka-ag.ch)

Classification and Marking of Flameproof enclosures Apparatus				
Inflammable Material	Incidence of inflammable material in Ex zone. Explosive media	Hazardous zones	Marking of Flameproof enclosures equipment	
			Apparatus group	Apparatus category
Gases Vapor Steam	Present continuously, frequently, or over extended periods of time	Zone 0	II	
	Present occasionally	Zone 1	II	1G
	Presence unlikely or rare and only for brief periods of time	Zone 2	II	
Inflamm-able dust cloud	Present continuously, frequently, or over extended periods of time	Zone 20	II	
	Present occasionally	Zone 21	II	1D
	Presence unlikely or rare, and only for brief periods of time	Zone 22	II	
Methane	-	Mines	I	M1
	-	Mines	I	M2

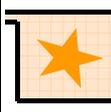
Classification of Gases, Aerosols, Vapors				
Apparatus Group	Examples of inflammable Gases			
	[Note: This is only a partial list of inflammable gases/vapors]			
IIA	IIB	IIC	Ammonia, Methane, Ethane, Propane	Ethyl alcohol, Cyclohexane, N-butane
			Town gas, Acrylonitrile	Ethylene, Ethylene oxide
			Benzene, Diesel, Furnace oil, N-hexane	Acetaldehyde
			Ethyl glycol, Hydrogen sulfide	Ethyl ether
			Hydrogen	Acetylene
				Carbon disulfide



Example:


**0820**

**II 2G Ex d IIC T6 ZELM 03 ATEX0168 -**

Marking - including the reference number of the certification authority (notified body)	An explosion inside the enclosure is prevented from spreading outside						Flameproof enclosures	Ex d		Zone 1 or 2	IEC EN 60079-1 (Gas) IEC EN 61241-1 (Dust)	ATEX marking and certificate number	The equipment may be used without restriction		
	Certificate reference number	The energy in the electrical circuit in the hazardous zone is limited by design, thus preventing dangerous sparks and/or ignition temperatures												Intrinsically safe	Ex i
Authority	Principle of protection [All methods of ignition protection are not indicated here, for simplification]						Means of protection	Marking [Omitted here: Ex o, Ex p, Ex q, Ex e, Ex m, Ex n]	Symbol	Zone compatibility	Standard	Abbreviated name of certification authority (notified body)	Traceability reference		
Methods of Protection and Apparatus Marking		Certificate		Additional information											

**Note:**

- Per ATEX guidelines, WEKA Level Indicators and accessories are **components only**, as they function only together with other equipment.
- An electrical device can be used in a temperature class lower than its certification, if operating conditions allow this.
- "Ex" components and attached metallic equipment must be connected to a common electrical ground point.

**EN 60079-11:2007**

**5.7 Simple apparatus**

The following apparatus shall be considered to be simple apparatus

- a) passive components, for example switches, junction boxes, resistors and simple semiconductor devices;
- b) sources of stored energy consisting of single components in simple circuits with well- defined parameters, for example capacitors or inductors, whose values shall be considered when determining the overall safety of the system;
- c) sources of generated energy, for example thermocouples and photocells, which do not generate more than 1,5V, 100mA and 25mW.

Simple apparatus shall conform to all relevant requirements of this standard. The manufacturer or intrinsically safe system designer shall demonstrate compliance with this clause, including material data sheets and test reports, if applicable. The apparatus need not comply with Clause 12.

The following aspects shall always be considered:

- 1) simple apparatus shall not achieve safety by the inclusion of voltage and/or current- limiting and/or suppression devices;
- 2) simple apparatus shall not contain any means of increasing the available voltage or current, for example DC-DC converters;
- 3) where it is necessary that the simple apparatus maintains the integrity of the isolation from earth of the intrinsically safe circuit, it shall be capable of withstanding the test voltage to earth in accordance with 6.3.12. Its terminals shall conform to 6.2.1;
- 4) non-metallic enclosures and enclosures containing light metals when located in the explosive gas atmosphere shall conform to 7.3 and 8.1 of IEC 60079-0;
- 5) when simple apparatus is located in the explosive gas atmosphere, it shall be temperature classified. When used in an intrinsically safe circuit within their normal rating and at a maximum ambient temperature of 40 °C, switches, plugs, sockets and terminals will have a maximum surface temperature of less than 85 °C, so they can be allocated a T6 temperature classification for Group II applications and are also suitable for Group I applications. Other types of simple apparatus shall be temperature classified in accordance with Clause 4 of this standard.

Where simple apparatus forms part of an apparatus containing other electrical circuits, the whole shall be assessed according to the requirements of this standard.

**NOTE 1**

Sensors which utilize catalytic reaction or other electro-chemical mechanisms are not normally simple apparatus. Specialist advice on their application should be sought.

**NOTE 2**

It is not a requirement of this standard that the conformity of the manufacturer's specification of the simple apparatus needs to be verified.