




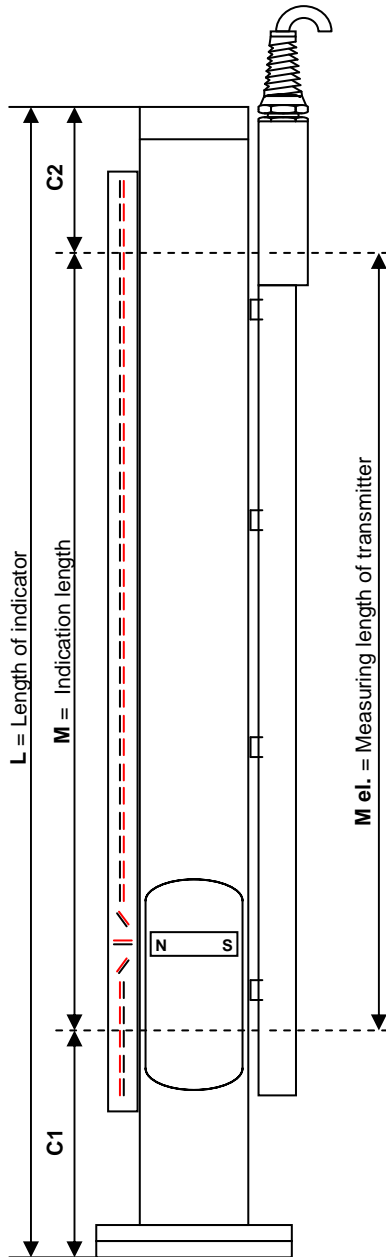
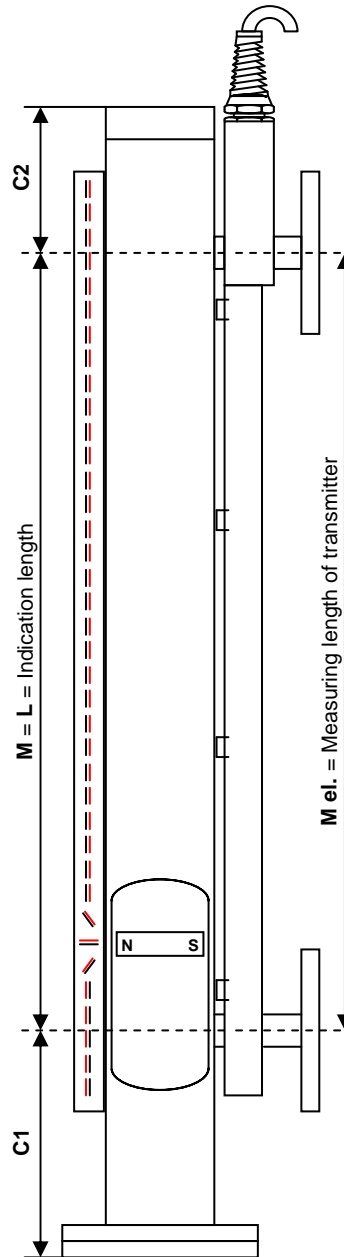


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<b>Voltage output (3-wire) or current output 4...20mA (2-wire)</b>					
Media temperature	Connection	Approval	Temp. Class	Transmitter	
-50°C ... +150°C	Cable / voltage	II 2GD T85°C EEx ia IIC T6 ZELM 03 ATEX 0179		<a href="#">29710-NI</a>	10
-50°C ... +150°C	Cable / current	II 2GD T135°C EEx ia IIC T4 ZELM 03 ATEX 0168		<a href="#">32607-NI</a>	11
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<b>Voltage output (3-wire) or current output 4...20mA (2-wire)</b>					
Media temperature	Connection	Approval	Temp. Class	Transmitter	
-50°C ... +150°C	Cable / voltage	II 2GD T85°C EEx d IIC T6 ZELM 03 ATEX 0191X		<a href="#">29710-ND</a>	12
-50°C ... +150°C	Cable / current	II 2GD T85°C EEx d IIC T6 ZELM 03 ATEX 0191X		<a href="#">32608-ND</a>	13
<b>WEKA transmitter in combination with HART® transmitter modules</b>					
<b>4...20mA current output plus HART® digital communication (2-wire)</b>					
<b>Weka transmitters with resistance output</b>					
Media temperature	Connection	Protection class	Zone	Transmitter	
-50°C ... +150°C	Cable	Non-hazardous	-	<a href="#">29710-R</a>	14
-50°C ... +150°C	Cable	EEx i	Zone 1 and 2	<a href="#">29710-R-NI</a>	15
-50°C ... +350°C	Cable	Non-hazardous or EEx i *	Zone 1 and 2	<a href="#">29710-R-W</a>	16
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* The transmitter can be used as a simple electrical device as defined by EN50020					
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Description	Compatible transmitters			Converter	
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HART® transmitter - flame proof	32608-R-ND			<a href="#">HART 38021</a>	20
<b>Profibus PA® and Foundation Fieldbus™ converter, ready to connect, mounted in junction box</b>					
Description	Compatible transmitters			Converter	
Profibus® and FF™ converter in IP65 metal enclosure	29710-R and 29710-R-W			<a href="#">PA+FF 40268</a>	21
<b>Magnetostrictive transmitters</b>					
<b>with 4- 20 mA current output (2-wire)</b>		<b>with HART®-Protokol</b>			
					
Installation of magnetostrictive transmitters for Weka Visual Level Indicators				<a href="#">Installation</a>	22
Media Temperatures:	Output	Comments / Approvals	Zone	Transmitter	
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-50°C ... +250°C	4...20mA	For high media temp.	-	<a href="#">38614-W</a>	24
-50°C ... +250°C	4...20mA	Eex i	Zone 1 and 2	<a href="#">38614-NI</a>	25
<b>Classification of hazardous zones and marking of equipment</b>				<a href="#">Ex-Info</a>	 26

Level Indicator Version -A



Level Indicator Version -K



**Terminology:**

- L = Length between process connections
- M = Measuring length (indication length) of level indicator
- M el. = Measuring length of transmitter
- C1 = Lower float extension
- C2 = Upper float extension

Visual level indicators type -A and -K are recommended for applications where there are space constraints. In some cases visual level indicators type -B and -O require special dimensions.

**Transmitter length:**

M el. = M = L      or      M el. = per customer order

Type -A and -B magnetic flag level indicators:  
M el. = M      or      M el. = per customer order

**Note:**      A transmitter with bi-stable reed is necessary where M el. < M .  
For using HART transmitters M el. must be > M .

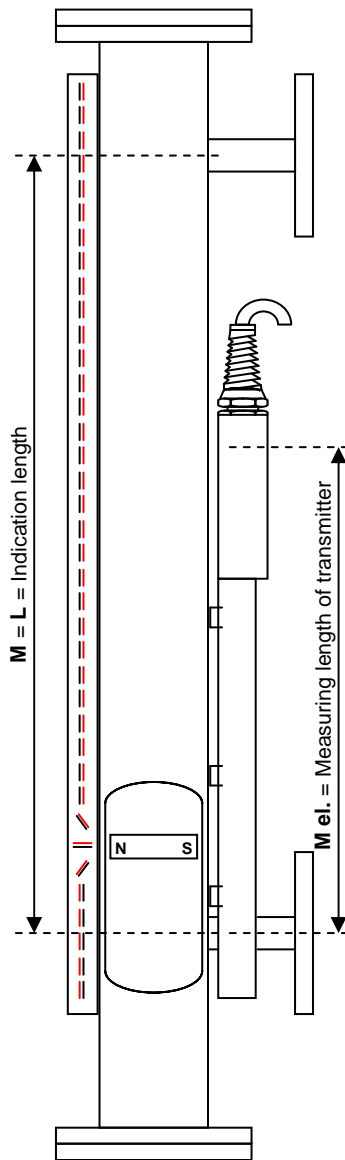


Figure 1

Identification

Type XXXXX-Bi

Example

31967-Bi

### Principles of operation:

A permanent magnet inside the float activates the transmitter's reed switches, depending on the vertical position of its 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.), for any reason, the value of the transmitter's electrical signal output will jump to 115% of its measuring range. This over-limit value of the signal will be constant for any level of the float above the upper end of the transmitter's measuring range (M el.). See Figure 2.

Since the over-limit output signal represents an indefinable level, a second high-limit bi-stable reed-switch can be fitted to overcome this.

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

### Possible error condition:

If the bi-stable reed switch is closed due to other reasons (during transport, or due to an external magnetic field), the output signal will be incorrect (see Fig. 3).

### Corrective action:

- Install the transmitter module 180° opposite the visual level indicator (see Installation Instructions, document # 20010501)
- Fill the vessel on which the level indicator is installed so that the float rises above the bi-stable reed-switch; then empty the vessel, so that the bi-stable reed-switch is operated through one complete close-open cycle.
- Pass a permanent bar magnet with its south pole near the transmitter module, downwards from above to below the bi-stable reed-switch, so that the switch opens.

This should result in the level transmitter giving the correct output signal, as shown in Figure 2.

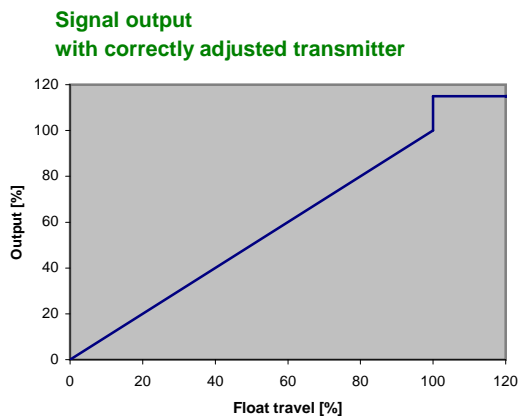


Figure 2

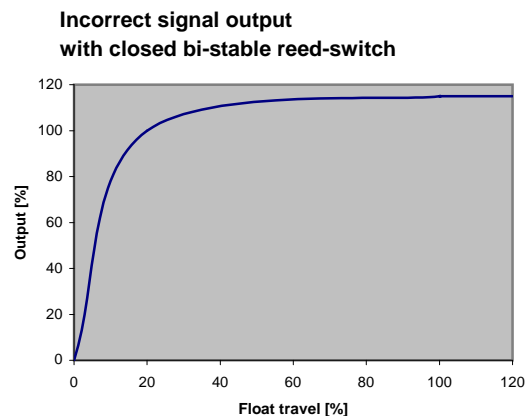
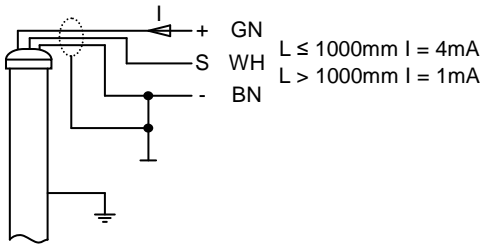


Figure 3

**External electrical connections**

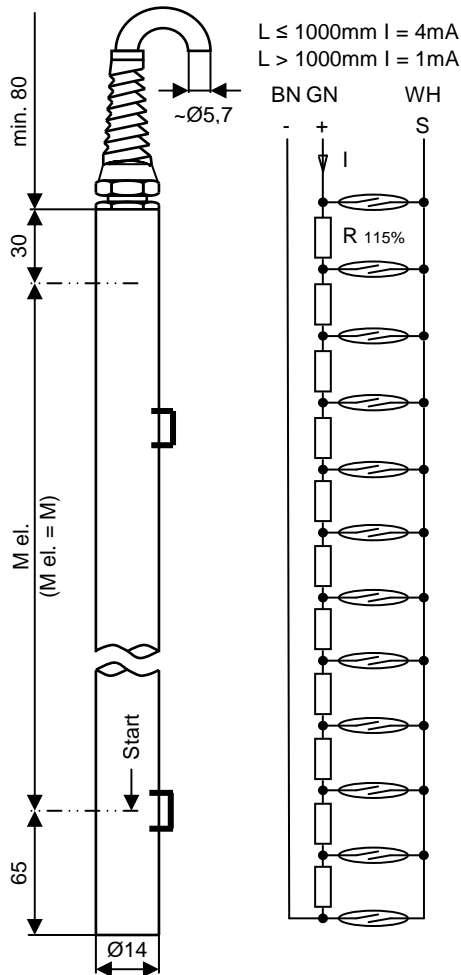


**Description: Transmitter for use with Weka Visual Level Indicators**

The transmitter module is mounted to the outside of the float chamber, opposite the magnetic flag indicator module (see data sheet 20010501). The magnet in 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 an excitation current input into a variable voltage output signal that can be fed directly to a remote indicating or recording instrument. If the liquid level rises above the measuring range of the transmitter (30 mm) the output signal jumps to 115%.

**Dimensions**

**Internal circuit**



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

29710-010-10      29710-010-05

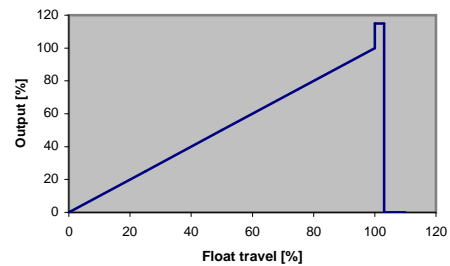
**Resolution**      10mm      5mm

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

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

**Supply current**  
 L ≤ 1000mm I = 4mA  
 L > 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      NBR  
 Cable (Standard 5m)      PVC; grey; 3 x 0.34mm<sup>2</sup>; approx. 5.7mm dia.; shielded  
 Resistant to most oils/petroleum products  
 Polyester; silver; black printing

Name plate

**Installation**

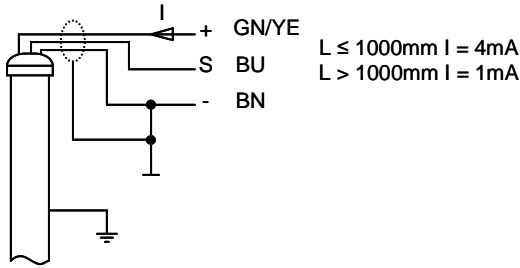
(When ordering level indicators with transmitters mounting clips are included, when ordering transmitters as spare parts please indicate pipe size)

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

**Note**

Please read the instructions in our document # 20010501 before attempting installation.  
 The cable shielding is not connected with the transmitter housing; this should preferably be done 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  
for media temperature up to +350°C**

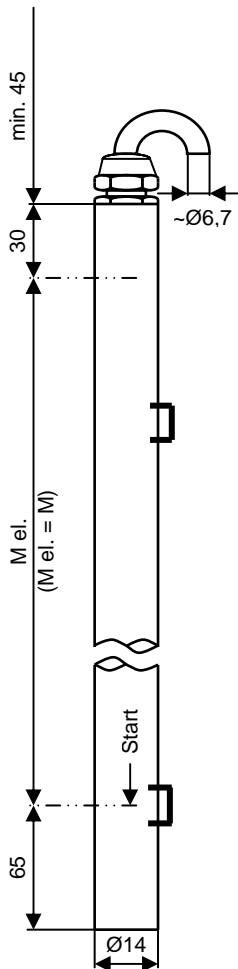
The transmitter module is mounted to the outside of the float chamber, opposite the magnetic flag indicator module (see data sheet 20010501). The magnet in the float activates the reed-switches in the transmitter, depending on the level of liquid in the float chamber, thereby changing the effective value of a resistance network. This converts an excitation current input into a variable voltage output signal that can be fed directly to a remote indicating or recording instrument.  
If the liquid level rises above the measuring range of the transmitter (30 mm) the output signal jumps to 115%.

**Product code:**  
[For details see page 1](#)

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

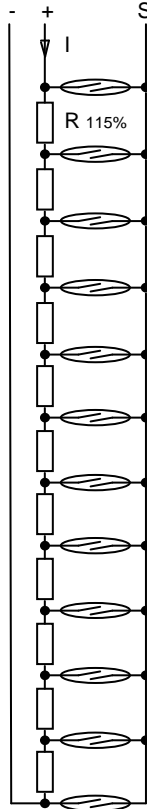
**Dimensions**

**Internal circuit**



$L \leq 1000\text{mm } I = 4\text{mA}$   
 $L > 1000\text{mm } I = 1\text{mA}$

BN GN/YE BU



**Resolution**

10mm      5mm

**Transmitter housing tube dia.**

Ø 14 / 10      Ø 17 / 14

**Measuring length "M el."**

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

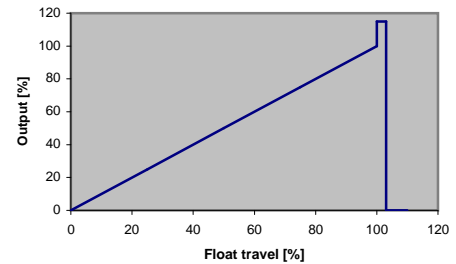
Longer measuring lengths available with types 34067, 34167, and 34267

**Supply current**

$L \leq 1000\text{mm } I = 4\text{mA}$   
 $L > 1000\text{mm } I = 1\text{mA}$

**Signal output**

- With  $R = 10\Omega$  and  $I = 1\text{mA}$   
10mV per step (1cm)
- With  $R = 10\Omega$  and  $I = 4\text{mA}$   
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 / Fluoroelastomer  
Cable (Standard 5m)      Silicone; red; 3 x 0.75mm<sup>2</sup>;  
approx. 6.7mm dia.  
Resistant to oils/petroleum products  
Name plate      Polyester; silver; black printing

**Installation**

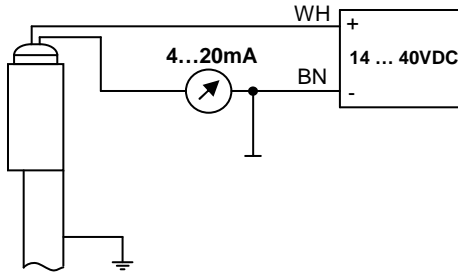
(When ordering level indicators with transmitters mounting clips are included, when ordering transmitters as spare parts please indicate pipe size)

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

**Note**

Please read the instructions in our document # 20010501 before attempting installation.  
The cable shielding is not connected with the transmitter housing: this should preferably be done by the user.  
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**

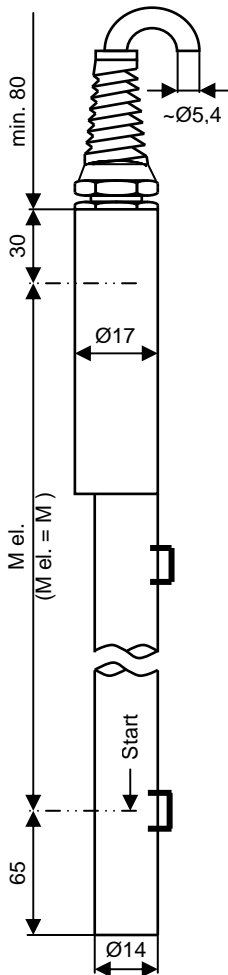


**Description**

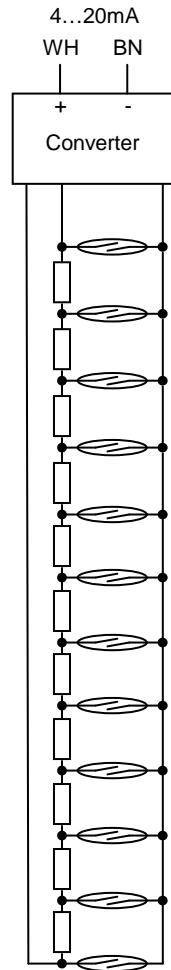
**Transmitter, 2-wire,  
4...20 mA current output, for use with  
Weka Visual Level Indicators**

The transmitter module is mounted to the outside of the float chamber, opposite the magnetic flag indicator module (see data sheet 20010501). The magnet in the float activates the reed-switches in the transmitter, depending on the level of liquid in the float chamber, changing the effective value of a resistance network. The resulting voltage output is converted by an internal electronic circuit to a 4...20 mA signal. If the liquid level rises above the measuring range of the transmitter (30 mm) the output signal jumps to 115% (ca. 22,5mA).

**Dimensions**



**Internal circuit**



**Product code:**  
[For details see page 1](#)

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

31967-010-10      31967-010-05

**Resolution**

10mm      5mm

**Transmitter housing tube dia.**

Ø 14 / 10      Ø 17 / 14

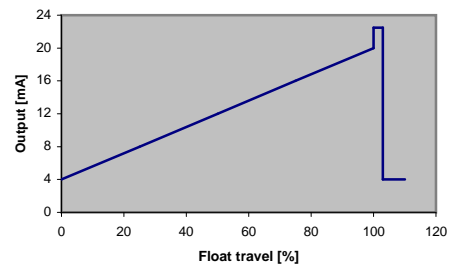
**Measuring length "M el."**

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

Longer measuring lengths available with types 34067, 34167, and 34267

**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**

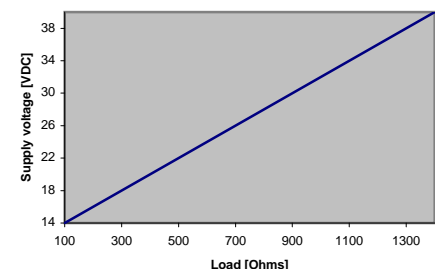
Housing tube  
Cable gland  
- Seal  
Cable (Standard 5m)

Stainless steel 316 / 316L  
PA with bend protection; grey  
NBR  
PVC; grey; 3 x 0.75mm<sup>2</sup>;  
approx. 5.4mm dia.  
Resistant to most oils/petroleum products  
Polyester; silver; black printing

**Name plate**

**Output load**

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



**Installation**

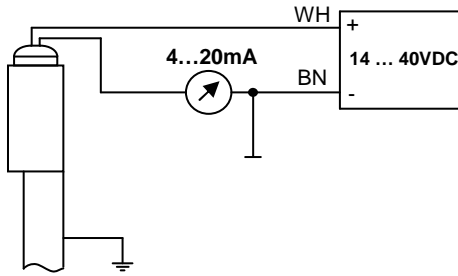
(When ordering level indicators with transmitters mounting clips are included, when ordering transmitters as spare parts please indicate pipe size)

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

**Note**

Please read the instructions in our document # 20010501 before attempting installation.  
The cable shielding is not connected with the transmitter housing; this should preferably be done by the user.

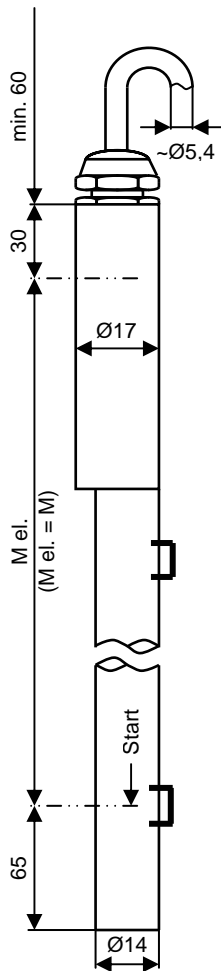
**External electrical connections**



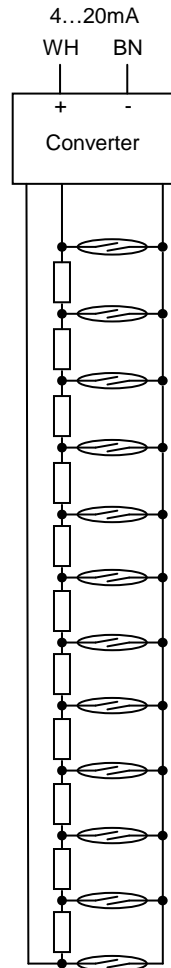
**Description:** Transmitter with 4...20 mA output, for use with Weka Visual Level Indicators for media temperature up to +250°C

The transmitter module is mounted to the outside of the float chamber, opposite the magnetic flag indicator module (see data sheet 20010501). The magnet in the float activates the reed-switches in the transmitter, depending on the level of liquid in the float chamber, changing the effective value of a resistance network. The resulting voltage output is converted by an internal electronic circuit to a 4...20 mA signal. If the liquid level rises above the measuring range of the transmitter (30 mm) the output signal jumps to 115% (ca. 22,5mA).

**Dimensions**



**Internal circuit**



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

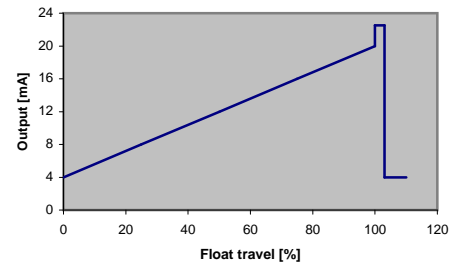
31967-W-010-10 31967-W-010-05

**Resolution** 10mm 5mm

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

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

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



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

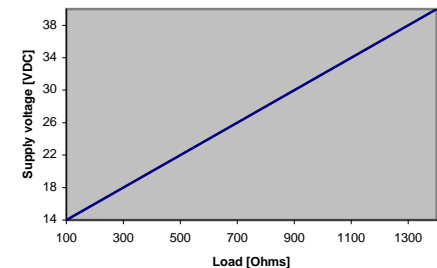
**Operating temperature**  
Media temperature -50°C ... +250°C  
Ambient temperature (Ta) -20°C ... +50°C

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

**Materials**  
Housing tube Stainless steel 316 / 316L  
Cable gland Brass, nickel plated  
- Seal FKM / Fluoroelastomer  
Cable (Standard 5m) Silicone; red; 3 x 0.5mm<sup>2</sup>; approx. 6.2mm dia.  
Resistant to oils/petroleum products  
Polyester; silver; black printing

Name plate

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



**Installation**

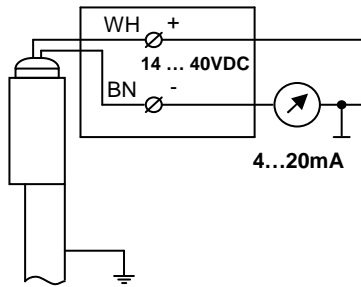
(When ordering level indicators with transmitters mounting clips are included, when ordering transmitters as spare parts please indicate pipe size)

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

**Note**

Please read the instructions in our document # 20010501 before attempting installation.  
The cable shielding is not connected with the transmitter housing; this should preferably be done by the user.

### External electrical connections



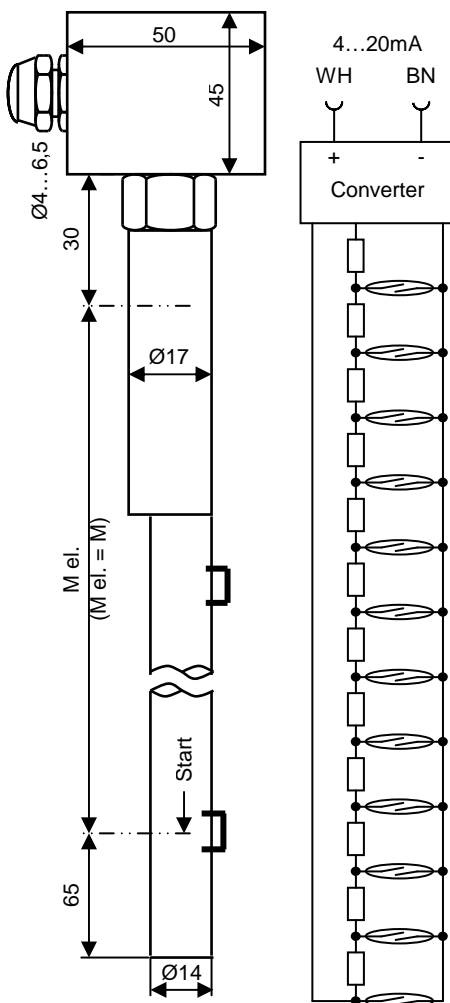
**Description:** Transmitter with 4...20 mA output and terminal box connections for use with Weka Visual Level Indicators

The transmitter module is mounted to the outside of the float chamber, opposite the magnetic flag indicator module (see data sheet 20010501). The magnet in the float activates the reed-switches in the transmitter, depending on the level of liquid in the float chamber, changing the effective value of a resistance network. The resulting voltage output is converted by an internal electronic circuit to a 4...20 mA signal. If the liquid level rises above the measuring range of the transmitter (30 mm) the output signal jumps to 115% (ca. 22,5mA).

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

### Dimensions

### Internal circuit



31967-K-010-10 31967-K-010-05

**Resolution** 10mm 5mm  
**Transmitter housing tube dia.** Ø 14 / 10 Ø 17 / 14

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

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

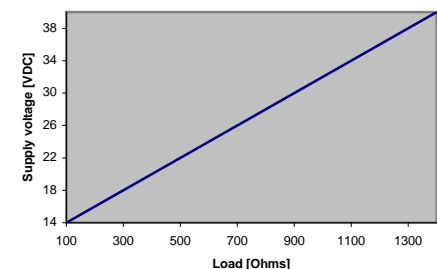
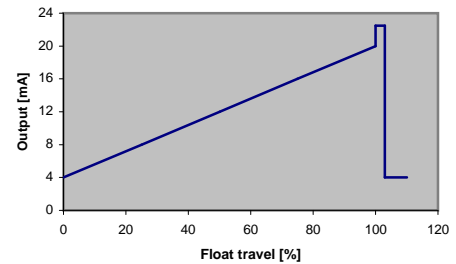
**Loop supply voltage** 14 ... 40VDC

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

**Enclosure** 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 4...6.5mm dia.; max. 2 x 0.5mm<sup>2</sup>  
- Seal NBR  
Name plate Polyester; silver; black printing

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



### Installation

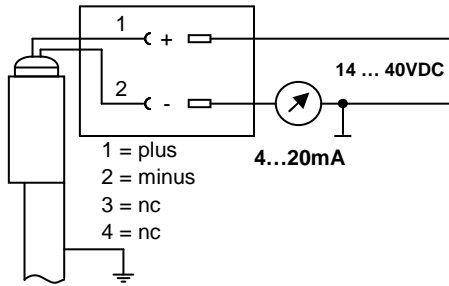
(When ordering level indicators with transmitters mounting clips are included, when ordering transmitters as spare parts please indicate pipe size)

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

### Note

Please read the instructions in our document # 20010501 before attempting installation.  
The cable shielding is not connected with the transmitter housing; this should preferably be done by the user.

### External electrical connections



### Description:

**Transmitter with 4...20 mA output and plug-in connector for use with Weka Visual Level Indicators**

The transmitter module is mounted to the outside of the float chamber, opposite the magnetic flag indicator module (see data sheet 20010501). The magnet in the float activates the reed-switches in the transmitter, depending on the level of liquid in the float chamber, changing the effective value of a resistance network. The resulting voltage output is converted by an internal electronic circuit to a 4...20 mA signal.

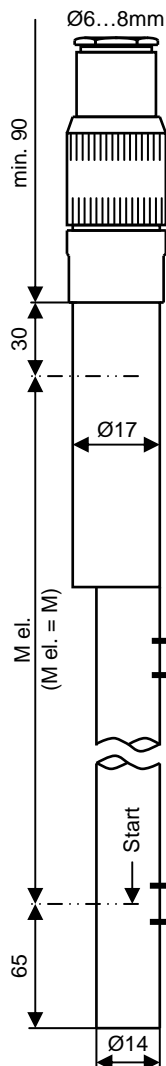
If the liquid level rises above the measuring range of the transmitter (30 mm) the output signal jumps to 115% (ca. 22,5mA).

### Product code:

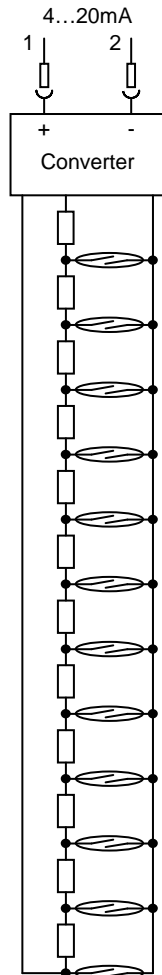
[For details see page 1](#)

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

### Dimensions



### Internal circuit



31967-KST-010-10 31967-KST-010-05

### Resolution

10mm 5mm

### Transmitter housing tube dia.

Ø 14 / 10 Ø 17 / 14

### Measuring length "M el."

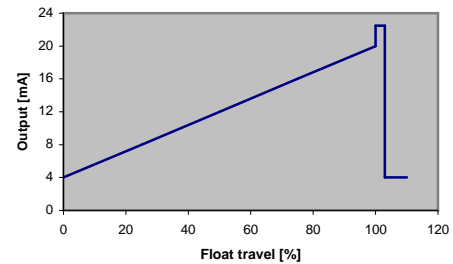
200mm (min.) to 4000mm (max.)  
Longer measuring lengths available with types 34067, 34167, and 34267

### 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) im gesteckten Zustand

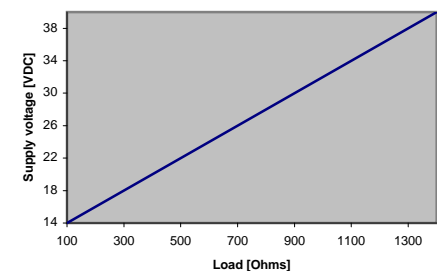
### Materials

Housing tube  
Connector body  
- Contacts  
- Cable compatibility  
- Seal  
Name plate

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

### Output load

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



### Installation

(When ordering level indicators with transmitters mounting clips are included, when ordering transmitters as spare parts please indicate pipe size)

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

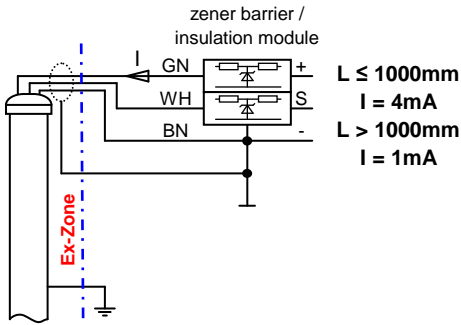
### Note

Please read the instructions in our document # 20010501 before attempting installation.

The cable shielding is not connected with the transmitter housing; this should preferably be done by the user.

The connector plug is included with this transmitter.

### External electrical connections



### Description

#### Intrinsically safe transmitter

EEx ia IIC T6 rated, with ATEX certificate, for use with Weka Visual Level Indicators

The transmitter module is mounted to the outside of the float chamber, opposite the magnetic flag indicator module (see data sheet 20010501). It is functionally similar to the model 29710...

This transmitter is compatible with Zones 1 and 2, gas groups IIA, IIB, and IIC, and temperature classes T1 to T6.

It must be connected through a certified energy limiting device (e.g. Zener barrier) that is installed in a safe area, and guarantees the electrical limit values specified below, including cable.

The metal housing of the transmitter must be connected to protection ground.

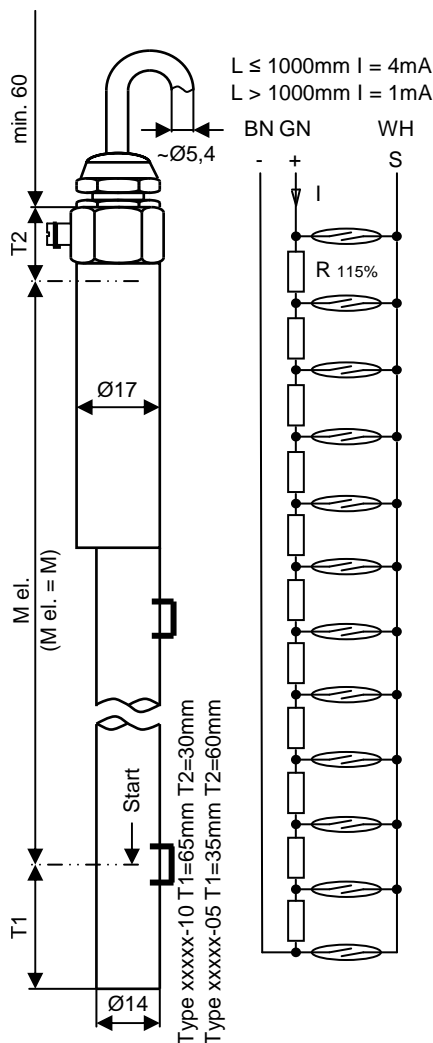
#### Product code:

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

[For details see page 1](#)

### Dimensions

### Internal circuit



### Fixation

(When ordering level indicators with transmitters mounting clips are included, when ordering transmitters as spare parts please indicate pipe size)

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

### Note

Please read the instructions in our document # 20010501 before attempting installation.

The cable shielding is not connected with the transmitter housing; this should preferably be done by the user.

The cable must be durable installed. This device is maintenance-free. Repair work is not allowed.

The relevant certificates are available in the Weka Products CD or at [www.weka-ag.ch](http://www.weka-ag.ch). Pay additional attention to them.

29710-NI-10      29710-NI-05

#### Resolution

10mm      5mm

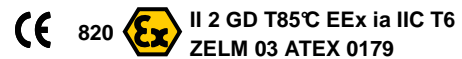
#### Transmitter tube dia.

Ø 14 / 10      Ø 17 / 14

#### Measuring length "M el."

min. 200mm ... max. 4000mm

#### Certificate

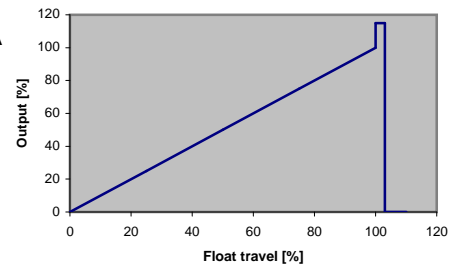


#### Supply current

$L \leq 1\text{m} \rightarrow 4\text{mA}$  /  $> 1\text{m} \rightarrow 1\text{mA}$

#### Signal output

- with  $R = 10\Omega$  und  $I = 1\text{mA}$   
10mV per step (1cm)
- with  $R = 10\Omega$  und  $I = 4\text{mA}$   
40mV per step (1cm)



#### 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

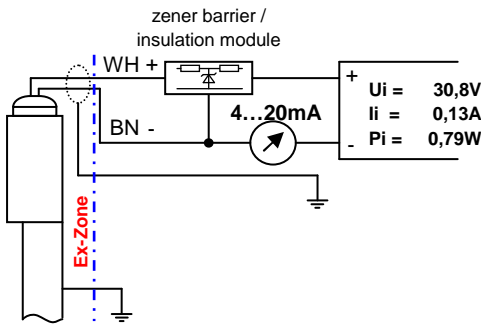
Housing tube      316 / 316L  
Cable gland      PA, blue  
- Seal      NBR  
Cable (Standard 5m)      PVC, blue 3 x 0.75mm<sup>2</sup>, Ø ~6,2mm shielded, resistant to some oil products  
Name plate      Polyester; silver; black printing

#### Electrical limit values

$U_{\text{max}} = 15\text{VDC}$   
 $I_{\text{max}} = 4\text{mA}$

$U_i = \text{max. } 22,6\text{V}$   
 $I_i = \text{max. } 160\text{mA}$   
 $P_i = \text{max. } 900\text{mW}$   
 $C_i \approx 0$   
 $L_i \approx 0$

External electrical connections



Description

**Intrinsically safe transmitter with 4...20 mA output  
EEx ia IIC T4 rated, with ATEX certificate, for use  
with Weka Visual Level Indicators**

The transmitter module is mounted to the outside of the float chamber, opposite the magnetic flag indicator module (see data sheet 20010501). It is functionally similar to the model 31967-.

This transmitter is compatible with Zones 1 and 2, gas groups IIA, IIB, and IIC, and temperature classes T1, T2, T3 and T4.

It must be connected through a certified energy limiting device (e.g. Zener barrier) that is installed in a safe area, and guarantees the electrical limit values specified below, including cable.

The metal housing of the transmitter must be connected to protection ground.

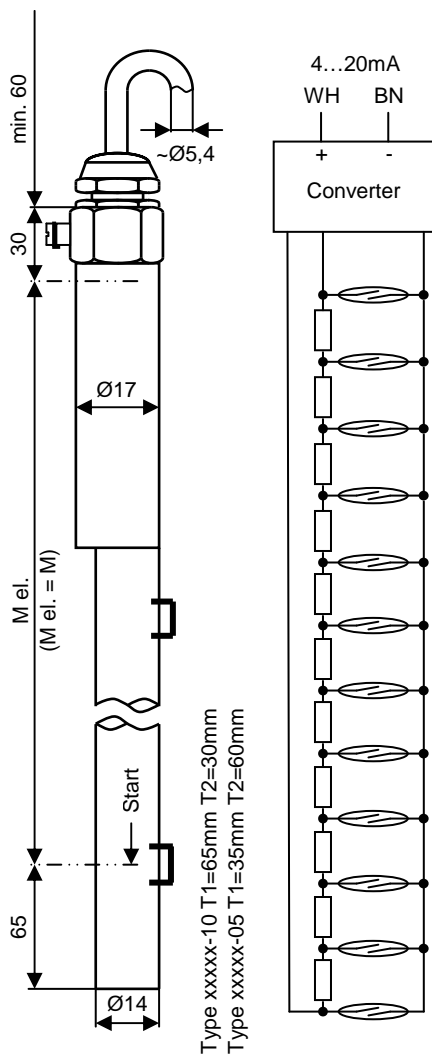
Product code:

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

[For details see page 1](#)

Dimensions

Internal circuit



Fixation

(When ordering level indicators with transmitters mounting clips are included, when ordering transmitters as spare parts please indicate pipe size)

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

Note

Please read the instructions in our document # 20010501 before attempting installation.

The cable shielding is not connected with the transmitter housing: this should preferably be done by the user.

The cable must be durable installed. This device is maintenance-free. Repair work is not allowed.

The relevant certificates are available in the Weka Products CD or at [www.weka-ag.ch](http://www.weka-ag.ch). Pay additional attention to them.

32607-NI-10      32607-NI-05

Resolution

10mm      5mm



Transmitter tube dia.

Ø 14 / 10      Ø 17 / 14

Measuring length "M el."

min. 200mm ... max. 4000mm

Certificate

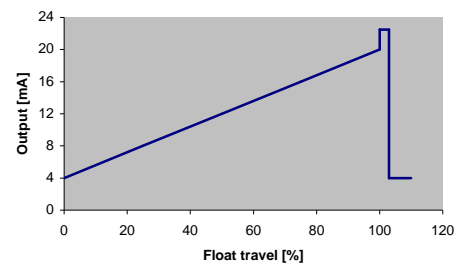
 **820**  **II 2 GD T135°C EEx ia IIC T4  
ZELM 03 ATEX 0168**

Signal output

4...20mA current loop

Electrical limit values

Ui = max. 30,8V  
li = max. 130mA  
Pi = max. 790mW  
Ci = max. 48nF  
Li ~ 0mH



Operating temperature

Media temperature -50°C ... +150°C (f. T<sub>M</sub>>135°C gilt T3)  
Ambient temperature (Ta) -20°C ... +50°C  
Surface temperature T4 (max. 135°C)

Enclosure

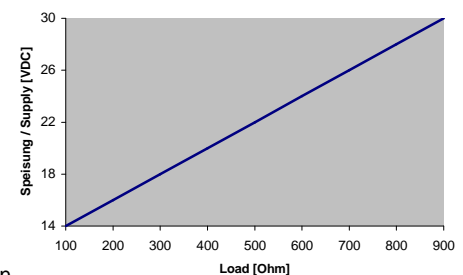
IP68 - 10bar (EN60529)

Materials

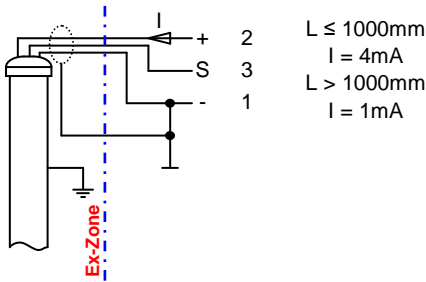
Housing tube 316 / 316L  
Cable gland PA, blue  
- Seal NBR  
Cable (Standard 5m) PVC, blue, 2 x 0.75mm<sup>2</sup>, Ø ~5,4mm, shielded, resistant to some oil products  
Name plate Polyester; silver; black printing

Output load (including energy limiting device and cables)

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



External electrical connections



Description

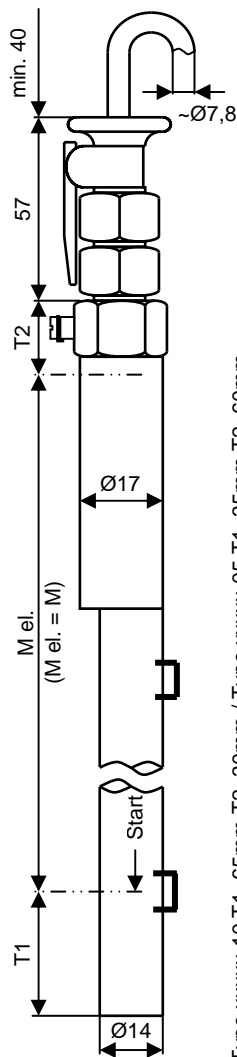
Transmitter in flameproof enclosures  
 EEx d IIC T6 rated, with ATEX certificate, for use  
 with Weka Visual Level Indicators

The transmitter module is mounted to the outside of the float chamber, opposite the magnetic flag indicator module (see data sheet 20010501). This transmitter is compatible with Zones 1 and 2, gas groups IIA, IIB, and IIC, and temperature classes T1 to T6. It is functionally similar to the model 29710... The metal housing of the transmitter must be connected to protection ground. (X) = special conditions:  
 Ambient temperature must be limited to maximum +50°C.

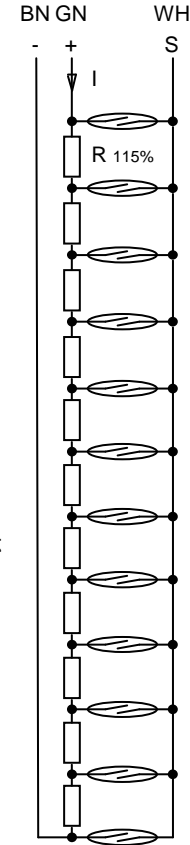
Product code: **29710-ND-10** 10mm resolution  
**29710-ND-05** 5mm resolution  
 M el. = Measuring length in mm

Dimensions

Internal circuit



$L \leq 1000\text{mm}$  I = 4mA  
 $L > 1000\text{mm}$  I = 1mA



Type xxxxx-10 T1=65mm T2=30mm / Type xxxxx-05 T1=35mm T2=60mm

Resolution

29710-010-10 29710-010-05

10mm 5mm

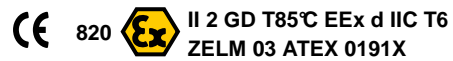
Transmitter tube dia.

Ø 14 / 10 Ø 17 / 14

Measuring length "M el."

min. 200mm ... max. 4000mm

Certificate

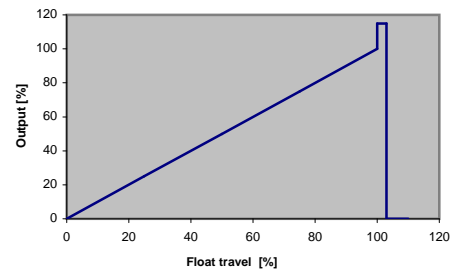


Supply (Current)

$M \leq 1000\text{mm}$  I = 4mA  
 $M > 1000\text{mm}$  I = 1mA

Signal output

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



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 316 / 316L  
 Cable gland Brass, nickel plated, PTB 00 ATEX 1059  
 - Seal NBR  
 Cable (Standard 5m) PVC, grey, 3 x 1.0mm<sup>2</sup>, Ø ~7,8mm, shielded, resistant to some oil products  
 Name plate Polyester; silver; black printing

Electrical limit values

$U_{\text{max}} = 15\text{VDC}$   
 $I_{\text{max}} = 4\text{mA}$

Fixation

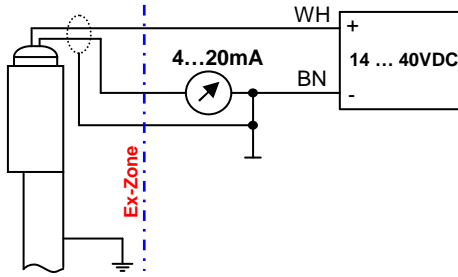
(When ordering level indicators with transmitters mounting clips are included, when ordering transmitters as spare parts please indicate pipe size)

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

Note

Please read the instructions in our document # 20010501 before attempting installation.  
 The cable shielding is not connected with the transmitter housing: this should preferably be done by the user.  
 The cable must be durable installed. This device is maintenance-free. Repair work is not allowed.  
 The relevant certificates are available in the Weka Products CD or at www.weka-ag.ch. Pay additional attention to them.

External electrical connections



Description

Transmitter (4...20mA) in flameproof enclosures EEx d IIC T6 rated, with ATEX certificate, for use with Weka Visual Level Indicators

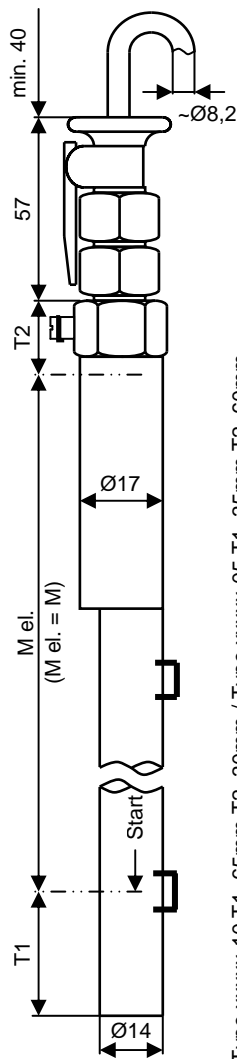
The transmitter module is mounted to the outside of the float chamber, opposite the magnetic flag indicator module (see data sheet 20010501). This transmitter is compatible with Zones 1 and 2, gas groups IIA, IIB, and IIC, and temperature classes T1 to T6. It is functionally similar to the model 29710... The metal housing of the transmitter must be connected to protection ground. (X) = special conditions: Ambient temperature must be limited to maximum +50°C.

Product code:  
For details see page 1

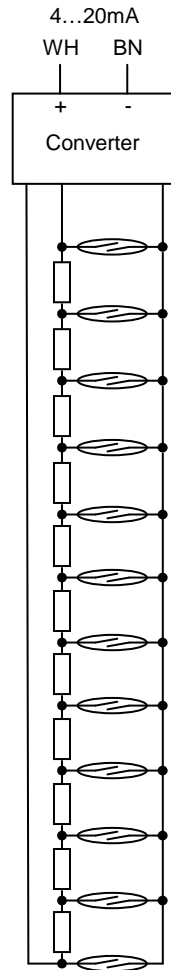
32608-ND-10 10mm resolution  
32608-ND-05 5mm resolution  
M el. = Measuring length in mm

Dimensions

Internal circuit



Type xxxxx-10 T1=65mm T2=30mm / Type xxxxx-05 T1=35mm T2=60mm



Resolution

32608-ND-10 10mm  
32608-ND-05 5mm

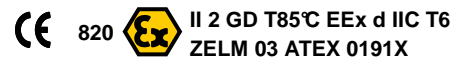
Transmitter tube dia.

Ø 14 / 10      Ø 17 / 14

Measuring length "M el."

min. 200mm ... max. 4000mm

Certificate

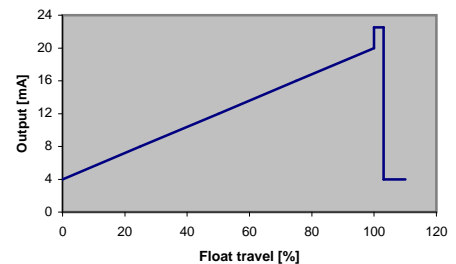


Signal output

4...20mA current loop

Electrical limit values

U nominal = 24VDC  
U maximal = 40VDC  
I nominal = 4...20mA  
I maximal = 23mA



Operating temperature

Media temperature  
Ambient temperature (Ta)  
Surface temperature

-50°C ... +150°C  
-20°C ... +50°C  
T6 (max. 85°C)

Enclosure

IP68 - 10bar (EN60529)

Materials

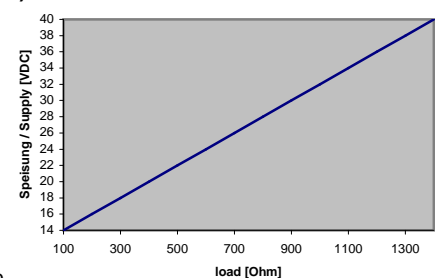
Housing tube  
Cable gland  
- Seal  
Cable (Standard 5m)

316 / 316L  
Brass, nickel plated, PTB 00 ATEX 1059  
NBR  
PVC, grey, 3 x 1.0mm<sup>2</sup>, Ø ~7,8mm, shielded, resistant to some oil products  
Polyester; silver; black printing

Name plate

Output load (including cables)

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



Fixation

(When ordering level indicators with transmitters mounting clips are included, when ordering transmitters as spare parts please indicate pipe size)

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

Note

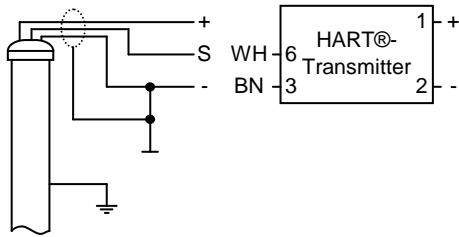
Please read the instructions in our document # 20010501 before attempting installation.

The cable shielding is not connected with the transmitter housing: this should preferably be done by the user.

The cable must be durable installed. This device is maintenance-free. Repair work is not allowed.

The relevant certificates are available in the Weka Products CD or at www.weka-ag.ch. Pay additional attention to them.

**External electrical connections**

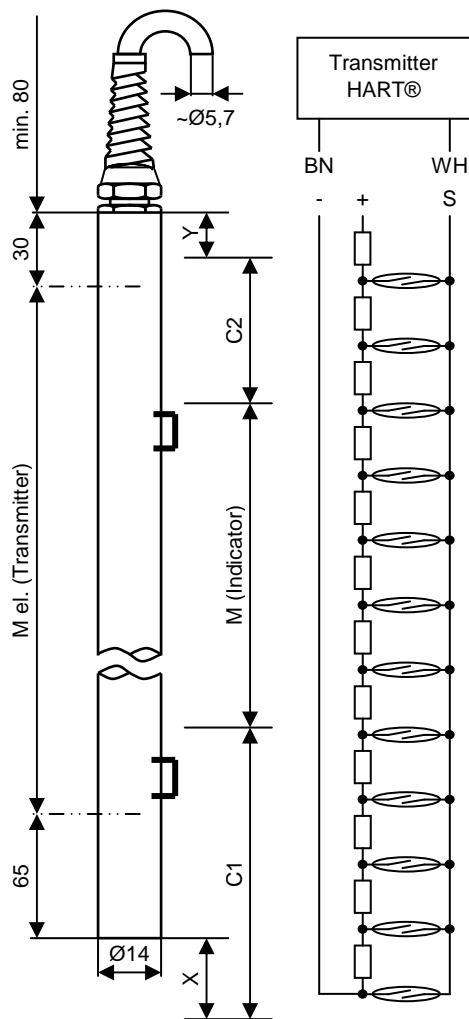


**Description:** Transmitter with HART® interface and 4...20 mA current output, for use with Weka Visual Level Indicators

The transmitter module is mounted to the outside of the float chamber, opposite the magnetic flag indicator module (see data sheet 20010501). The float magnet activates the reed-switches in the transmitter, depending on the liquid level in the float chamber, consequently varying the effective value of a resistance network. This is converted into a 2-wire 4-20 mA current output with superimposed HART digital communication. The transmitter's measuring length (M el) must be selected so that it is greater than the level indication range (see table below). Transmitter settings are selected through the HART communication channel.

**Dimensions**

**Internal circuit**



**Product code:** 29710-R  
**M el. = (see below)**

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

Level Indicator	Media Density	x	y	Measuring Length (M el.)
	[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
34000-A /-K u. 34110-K	1,2	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- Transmitter** [HART 37383](#)
- Transmitter housing tube dia.** Ø 14 / 10
- Resolution** 10mm
- Power supply** See HART Transmitter data sheet
- 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 cable bend protection; grey  
- Seal NBR  
Cable (Standard 5m, shielded) PVC; grey; 2 x 0.34mm<sup>2</sup>; approx. 5.7 dia.; shielded  
Resistant to most oils/petroleum products  
Name plate Polyester; silver; black printing

**Installation**

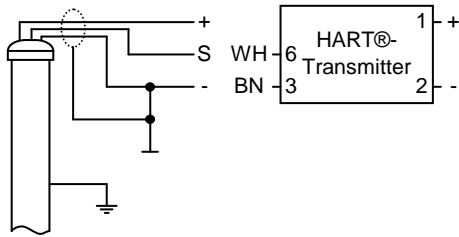
(When ordering level indicators with transmitters mounting clips are included, when ordering transmitters as spare parts please indicate pipe size)

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

**Note**

Please read the instructions in our document # 20010501 before attempting installation.  
The cable shielding is not connected with the transmitter housing; this should preferably be done 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 below. For this, the appropriate HART transmitter setting must be changed.

**External electrical connections**



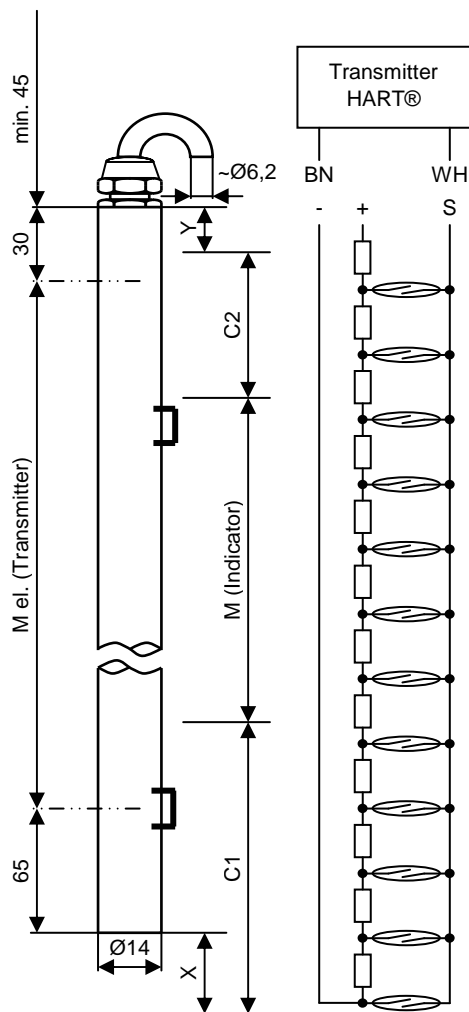
**Description:** Intrinsically safe transmitter with HART® interface and 4...20 mA current output, for use with Weka Visual Level Indicators

The transmitter module is mounted to the outside of the float chamber, opposite the magnetic flag indicator module (see data sheet 20010501). The float magnet activates the reed-switches in the transmitter, depending on the liquid level in the float chamber, consequently varying the effective value of a resistance network. This is converted into a 2-wire 4-20 mA current output with superimposed HART digital communication. The transmitter's measuring length (M el) must be selected so that it is greater than the level indication range (see table below). Transmitter settings are selected through the HART communication channel.

**Product code:** 29710-R-NI  
**M el. = (see below)**  
[For details see page 1](#)

**Dimensions**

**Internal circuit**



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

Level Indicator	Media Density	x	y	Measuring Length (M el.)
	[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
34000-A /-K u. 34110-K	1,2	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- Transmitter** [HART EEx i 37384](#)
- Transmitter housing tube dia.** Ø 14 / 10
- Resolution** 10mm
- Power supply** See HART Transmitter data sheet
- Operating temperature**
  - Media temperature -50°C ... +150°C
  - Ambient temperature (Ta) -20°C ... +40°C
  - Surface temperature T6 (max. 85°C)
- Enclosure** IP68 - 10bar (EN60529)
- Materials**
  - Housing tube Stainless steel 316 / 316L
  - Cable gland PA; blue
  - Seal NBR
  - Cable (Standard 5m, shielded) PVC; blue; 2 x 0.75mm<sup>2</sup>; dia. ~6.2mm approx. 6.2 mm dia.; shielded
  - Resistant to most oils/petroleum products
  - Polyester; silver; black printing

**Installation**

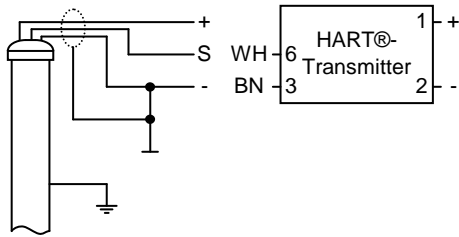
(When ordering level indicators with transmitters mounting clips are included, when ordering transmitters as spare parts please indicate pipe size)

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

**Note**

- Please read the instructions in our document # 20010501 before attempting installation.
- The cable shielding is not connected with the transmitter housing; this should preferably be done by the user.
- 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 below. For this, the appropriate HART transmitter setting must be changed.

**External electrical connections**



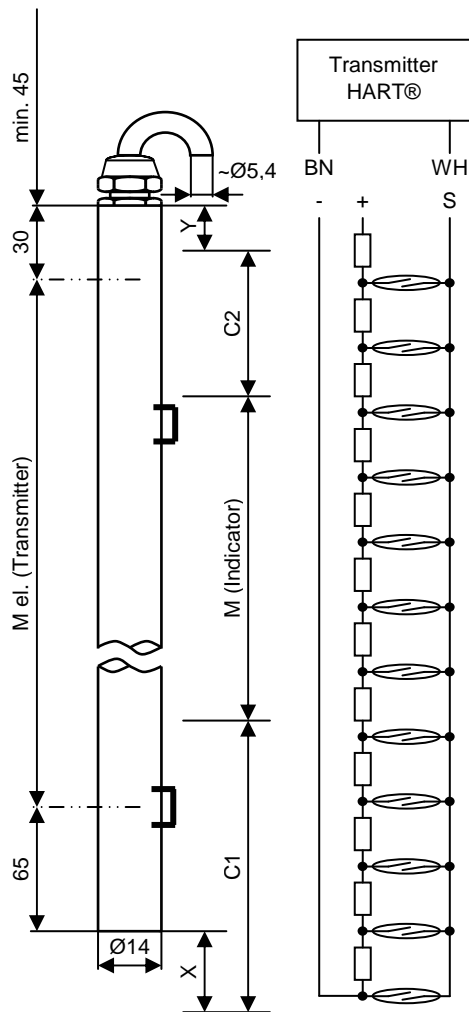
**Description:** Transmitter with 4...20 mA output and HART® interface for media temperature up to +350°C, for use with Weka Visual Level Indicators

The transmitter module is mounted to the outside of the float chamber, opposite the magnetic flag indicator module (see data sheet 20010501). The float magnet activates the reed-switches in the transmitter, depending on the liquid level in the float chamber, consequently varying the effective value of a resistance network. This is converted into a 2-wire 4-20 mA current output with superimposed HART digital communication. The transmitter's measuring length (M el) must be selected so that it is greater than the level indication range (see table below). Transmitter settings are selected through the HART communication channel.

**Product code:** 29710-R-W  
**M el. = (see below)**  
[For details see page 1](#)

**Dimensions**

**Internal circuit**



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

Level Indicator	Media Density	x	y	Measuring Length (M el.)
	[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
34000-A /-K u. 34110-K	1,2	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- Transmitter** [HART 37383](#) [HART EEx i 37384](#)

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

**Resolution** 10mm

**Power supply** See HART transmitter data sheet

**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 / Fluoroelastomer  
Cable (Standard 5m) Silicone; red; 2 x 0.5mm<sup>2</sup>; dia. ~5,4mm  
Shielded  
Resistant to oils/petroleum products  
Name plate Polyester, silber, black printing

**Installation**

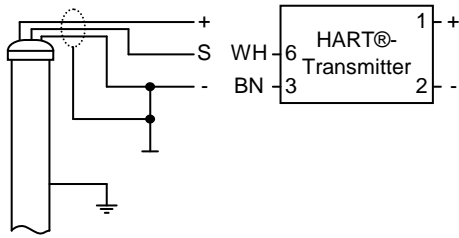
(When ordering level indicators with transmitters mounting clips are included, when ordering transmitters as spare parts please indicate pipe size)

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

**Note**

Please read the instructions in our document # 20010501 before attempting installation.  
The cable shielding is not connected with the transmitter housing: this should preferably be done by the user.  
The transmitter can be inverted, with the cable entry below. For this, the appropriate HART transmitter setting must be changed.

**External electrical connections**



**Description:**

**Explosion-proof transmitter with HART transmitter, EEx d IIC T6 rated, with CENELEC certificate, for use with Weka Visual Level Indicators**

The transmitter module is mounted to the outside of the float chamber, opposite the visual level indicator (see data sheet 20010501). The float magnet activates the reed-switches in the transmitter, depending on the liquid level in the float chamber, consequently varying the effective value of a resistance network. This is converted into a 2-wire 4-20 mA current output with superimposed HART digital communication. The transmitter's measuring length (M el) must be selected so that it is greater than the level indication range (see table below). Transmitter settings are selected through the HART communication channel.

**Product code:**

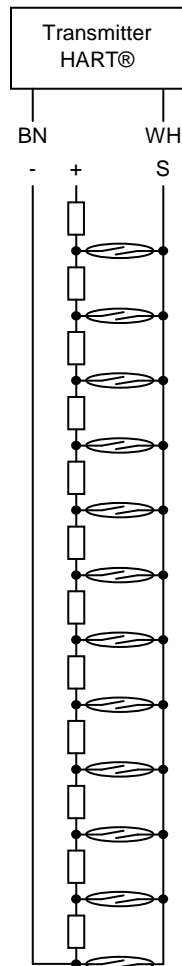
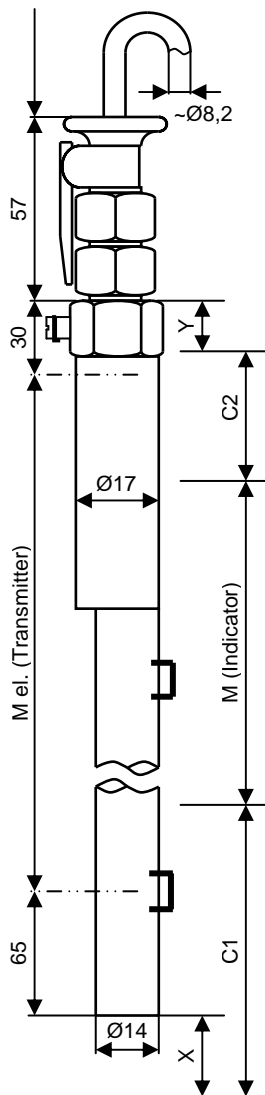
**32608-R-ND**

[For details see page 1](#)

**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.)
	[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
34000-A /-K u. 34110-K	1,2	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- Transmitter**

[HART EEx d 38021](#)

**Transmitter housing tube dia.**

Ø 14 / 10

**Resolution**

10mm

**Power supply**

See HART transmitter data sheet

**Operating temperature**

Media temperature -50°C ... +150°C  
Ambient temperature (Ta) -20°C ... +40°C  
Surface temperature T6 (max. 85°C)

**Enclosure**

IP68 - 10bar (EN60529)

**Materials**

Housing tube Stainless steel 316 / 316L  
Cable gland Brass, nickel plated  
- Seal NBR  
Cable (Standard 5m) PVC; grey; 2 x 0.75mm<sup>2</sup> ; approx. 8.2mm dia.; shielded  
Resistant to most oils/petroleum products  
Polyester, silver, black printing

**Installation**

(When ordering level indicators with transmitters mounting clips are included, when ordering transmitters as spare parts please indicate pipe size)

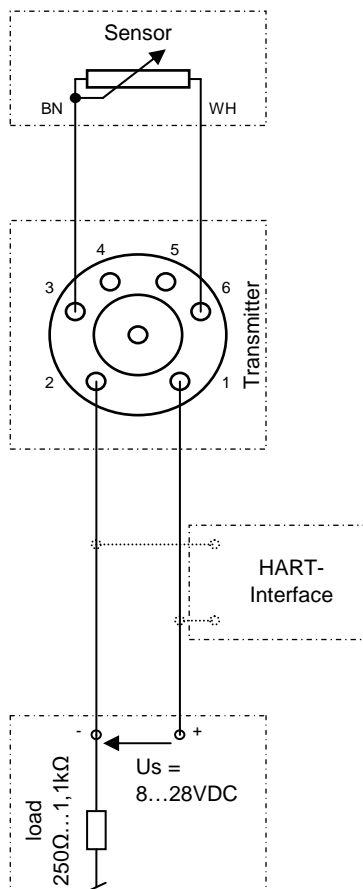
For pipe diameter 30...40mm and 40...57mm Part no. 80648  
For pipe diameter 57...80mm Part no. 84043

**Name plate**

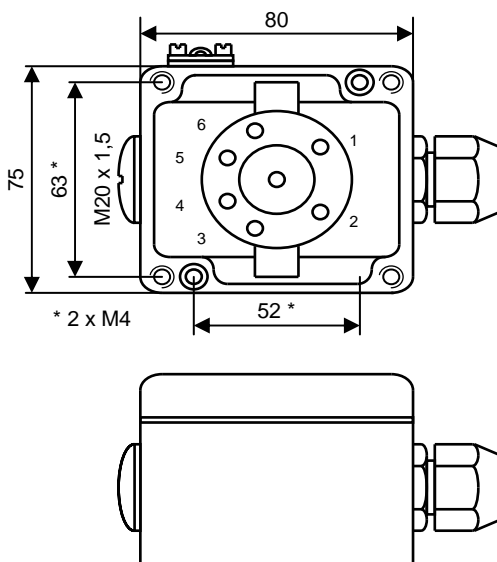
**Note**

Please read the instructions in our document # 20010501 before attempting installation.  
The cable shielding is not connected with the transmitter housing: this should preferably be done by the user.  
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 below. For this, the appropriate HART transmitter setting must be changed.

### External electrical connections



### Dimensions



### Description:

**Transmitter module with HART® interface  
and 4-20 mA current loop output, for use with  
Weka Level Transmitter 29710-R and 29710-R-W**

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

### Product code

**37383**

### Resolution

[see 29710-R](#) or [29710-R-W](#)

### Housing dimensions

80 x 75 x 57mm

### Cable entry

Threaded socket, M20 x 1.5

### Installation

On mounting plate (38148) or at other suitably prepared location; using 2 x M4 screws at 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	-50°C ... +150°C
Operating temperature		-40°C ... +85°C
Ambient temperature (Ta)		-20°C ... +50°C

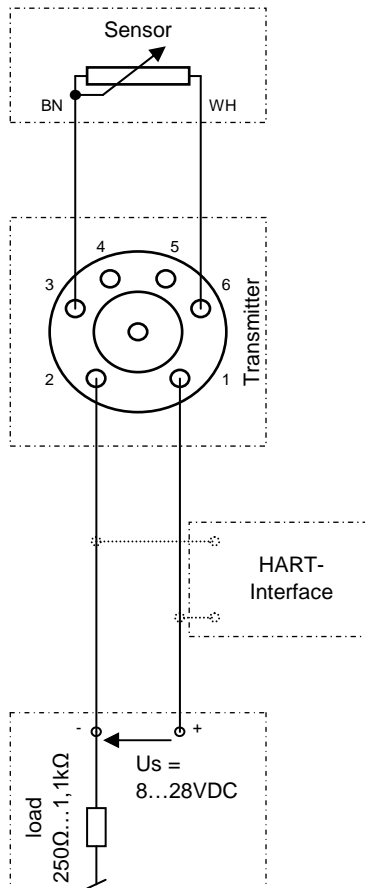
### Enclosure

IP65 (EN60529)

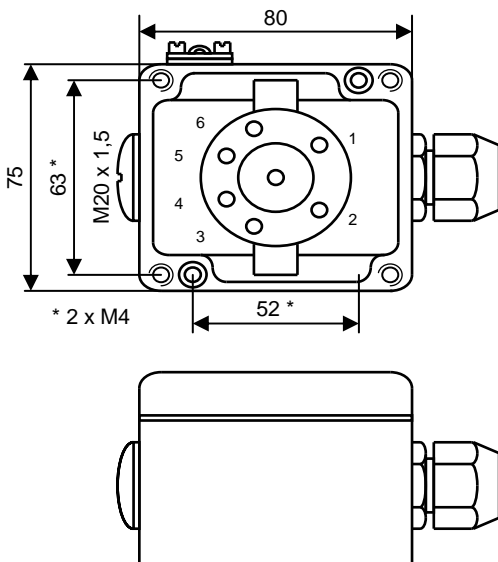
### Materials

Housing	Aluminium.; blue; with grounding terminal
Cable gland	PA; grey; M20x1.5
- Seal	NBR
- Cable compatibility	Dia. 3 ... 7mm; max. 2 x 1mm <sup>2</sup>

**External electrical connections**



**Dimensions**



**Description:**

**Intrinsically safe transmitter with HART® transmitter, for use in zone 1 and 2, in conjunction with Weka transmitter 29710-R or 29710-W-R**

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

**Product code**

**37384**

**Resolution**

[see 29710-R-](#) [or 29710-R-W](#)

**Housing dimensions**

80 x 75 x 57mm

**Cable entry**

Threaded socket, M20 x 1.5

**Installation**

On mounting plate (38148) or at other suitably prepared location; using 2 x M4 screws at 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	-50°C ... +150°C
	29710-R-W	-50°C ... +350°C
Transmitter operating temp.		-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**

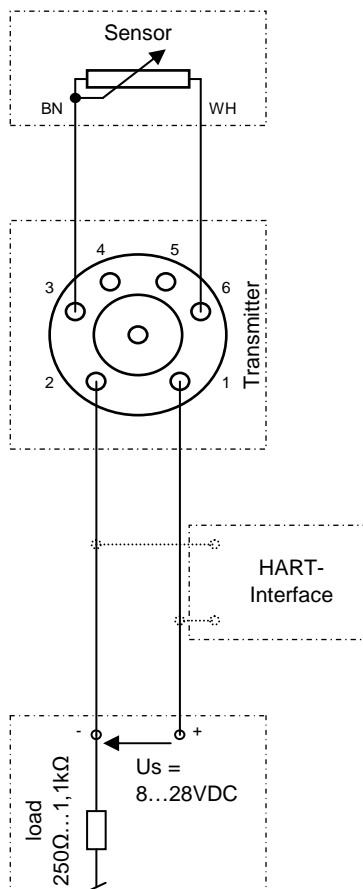
Housing	Aluminium.; blue; with grounding terminal
Cable gland	PA; grey; M20x1.5
- Seal	NBR
- Cable compatibility	Dia. 3 ... 7mm; max. 2 x 1mm <sup>2</sup>

**II 1G EEx ia IIC T6 DEMKO 99 ATEX 126963**

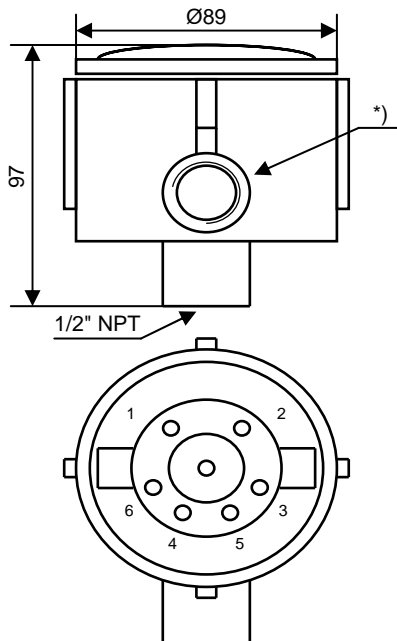
**Electrical limit values**

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

### External electrical connections



### Dimensions



### Description:

**Explosion-proof transmitter with HART® and 4-20 mA current outputs, for use with Weka transmitter 32608-R**

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

### Product code

**38021**

### Resolution

[see 32608-R-ND](#)

### Housing dimensions

Dia. 130mm (approx) 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 clip (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	32608-R-ND	-50°C ... +150°C
Transmitter operating temp.		-40°C ... +85°C
Ambient temperature Ta		-20°C ... +50°C

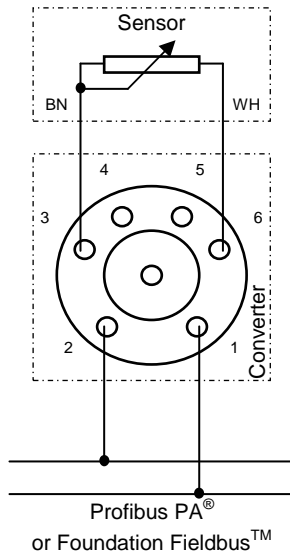
### Enclosure

IP68 - 10bar (EN60529)

### Materials

Housing	Aluminium; grey; EEx d
Cable gland	Brass; nickel plated; PTB 00 ATEX 1059
- Seal	NBR
- Cable compatibility	Dia. 7 ... 9mm; max. 2 x 1mm <sup>2</sup>

**External electrical connections**



**Description:**

**Converter for Profibus<sup>SM</sup> PA  
or Foundation Fieldbus<sup>SM</sup> communication, for use  
with Weka transmitter 29710-R or 29710-R-W**

The transmitter (sensor) fastened to the float chamber generates a resistance output proportional to the liquid level in the chamber. The converter transforms this variable resistance into a 2-wire digital output with PROFIBUS<sup>SM</sup> PA or FOUNDATION<sup>SM</sup> Fieldbus communication. The converter is switching automatically between the two protocols. Zero and range setting of the sensor is done through the digital communication channel. For high temperature applications, the converter can be installed at a distance (up to 10m) from the level indicator and sensor.

**Product code**

**40268**

**Resolution**

[see 29710-R](#) or [29710-R-W](#)

**Housing dimensions**

80 x 75 x 57mm

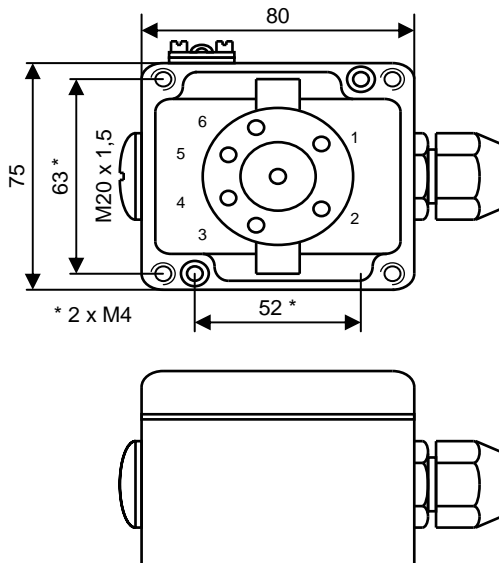
**Cable entry \*)**

Threaded socket, M20 x 1.5

**Installation**

On mounting plate (38148) or at other suitably prepared location; using 2 x M4 screws at 52 x 63 mm diagonal spacing

**Dimensions**



**Operating temperature**

Media temperature	29710-R	-50°C ... +150°C
	29710-R-W	-50°C ... +350°C
Transmitter operating temp.		-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	NBR
- Cable compatibility	Dia. 3 ... 7mm; max. 2 x 1mm <sup>2</sup>

**Specifications**

Loop supply voltage	9 to 32VDC
Consumption	< 11mA
Isolation voltage	test = 1.5kVAC; operation = 50VAC
Communication	PROFIBUS <sup>SM</sup> PA / FOUNDATION <sup>SM</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

**Remarks**

- A unique switch function ensures automatic shift between the PROFIBUS<sup>SM</sup> PA and the FOUNDATION<sup>SM</sup> Fieldbus protocol.
- PROFIBUS<sup>SM</sup> PA ver. 3.0 or FOUNDATION<sup>SM</sup> Fieldbus ver. ITK 4.51
- Set-up for PROFIBUS<sup>SM</sup> PA can be done via Siemens Simatic<sup>SM</sup> PDM<sup>SM</sup>, ABB Melody / Harmony, Honeywell Ax and Metso DNA software
- Set-up for FOUNDATION<sup>SM</sup> 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<sup>SM</sup> PA function blocks: 2 analogue
- FOUNDATION<sup>SM</sup> Fieldbus function blocks: 2 analogue and 1 PID
- FOUNDATION<sup>SM</sup> Fieldbus capability: BASIC or LAS

## Installation:

1. Connect the signal wires to the transmitter after switching off power to this circuit.
2. Unfasten the transmitter housing cover with a spanner (SW17).
3. Loosen the cable gland nut (5) and insert the cable. Cable outer dia. 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 bottom of the terminal head.
7. After the transmitter settings are done, replace and firmly fasten its cover.



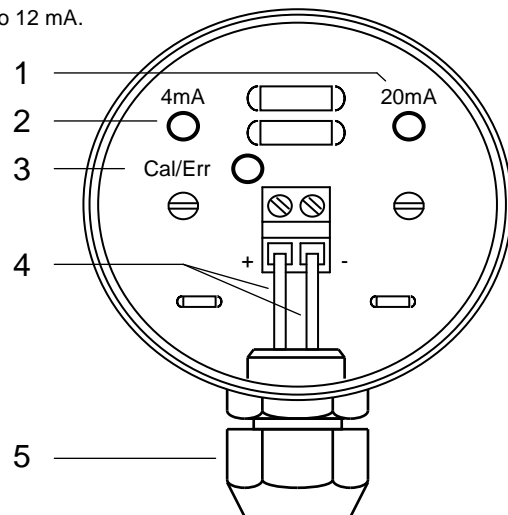
## Settings:

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

The transmitter setting is initially done at the factory, with 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 be inverted automatically.

1. Connect the signal cable: see under "Installation" above.
2. Switch on the power supply (10.... 30 VDC).
3. Press the 4 mA key-switch (2) for at least 3 seconds.
  - > The transmitter will then enter the setting mode.
  - > The green "Cal/Err" LED (3) will start blinking.
  - > The loop current will shift to a steady value of 12 mA.
  - > 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 4 mA output:  
Adjust the float level to its desired 4 mA point. Press the 4 mA key-switch (2) for 0.1 to 2 seconds.
  - > The green "Cal/Err" LED (3) will turn off for 5 seconds.
  - > The loop current value will change to 4 mA, 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 its desired 20 mA point. Press the 4 mA key-switch (2) for 0.1 to 2 seconds.
  - > The green "Cal/Err" LED (3) will turn off for 5 seconds.
  - > The loop current value will change to 20 mA, 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 set 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

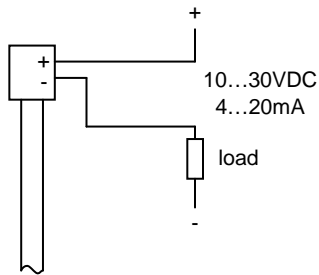
If the transmitter is unable sense the float position (i.e., measure the level of liquid) for a pre-determined period of time, it will signal a fault / error condition by shifting the output to a constant 21.5 mA (permanently set error signal value).

## Explosion-proof transmitters



- Every explosion-proof transmitter rated Eex 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 electrical characteristic values of the transmitter must be coordinated with those of the isolation amplifier and also of the cable between the two.
- The transmitter enclosure must be properly connected to ground.

#### External electrical connections



#### Description

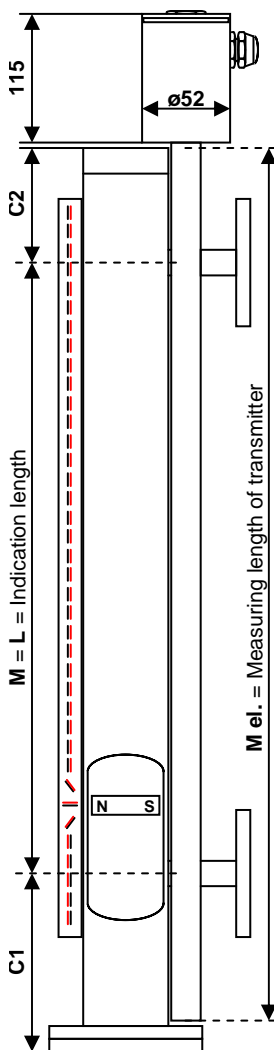


**Magnetostrictive transmitter for Weka Visual Level Indicators and media temperature up to +120°C.**

The transmitter module is mounted on the outside of the float chamber, beside or 180° opposite the indicator rail. The magnetic field of the float magnet interacts with those created by current pulses conducted through an axial magnetostrictive wire in the sensor rod, 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 - 20 mA current output signal.

**Product code** 38614 - xxxx mm  
 xxxx = M el. = Measuring length in mm (min. 200mm ... max. 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 diameter	5 ... 10mm

#### Installation / Settings (interactive or with HART®)

1. Remove the transmitter cover and the cable gland clamp nut (5).
2. Connect the signal wires (4) with power off. Observe polarity!
3. Fasten the cable gland nut (5). Switch on the power.
4. Press the 4mA key-switch (2) at least 3 secs. The green LED (3) blinks.
5. Adjust the level to the 4mA point. Press the 4mA key-switch briefly.
6. Adjust the level to the 20mA point. Press the 20mA key-switch briefly.
7. After 15 secs. the transmitter will revert to normal operating mode.
8. Replace and firmly fasten the transmitter enclosure cover.

Detailed instructions: see "Installation and Settings"

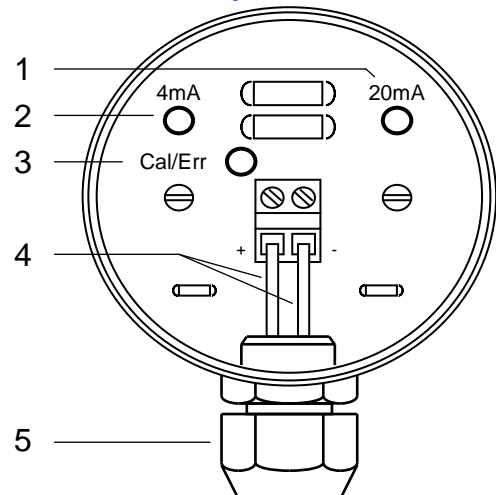
#### Installation

(Level indicators ordered with transmitters are pre-fitted with mounting clips. For transmitters ordered as spare parts, specify float chamber outer diameters.)  
 For pipe diameter 30...40mm and 40...57mm Part no. 80648  
 For pipe diameter 57...80mm Part no. 84043

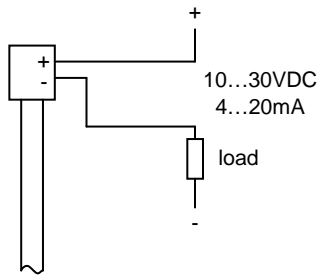
#### Note

The transmitter signal cable must be fixed firmly. These transmitters are maintenance-free. Repairs should not be attempted by users.

Additional information is available in the Weka Products CD or at our web-site: [www.weka-ag.ch](http://www.weka-ag.ch)



#### External electrical connections



#### Description

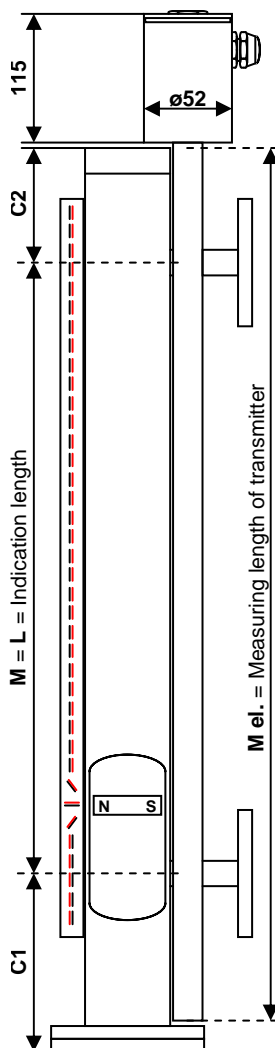


**Magnetostrictive transmitter for Weka Visual Level Indicators and media temperature up to +250°C.**

The transmitter module is mounted on the outside of the float chamber, beside or 180° opposite the indicator rail. The magnetic field of the float magnet interacts with those created by current pulses conducted through an axial magnetostrictive wire in the sensor rod, 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 - 20 mA current output signal.

**Product code** 38614-W - xxxx mm  
**xxxx = M el. = Measuring length in mm (min. 200mm ... max. 6000mm)**

#### Dimensions



**Suitable for Visual Level Indicator Types:**

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

**Other types on request**

**Linearity** < +/- 0.5mm  
**Resolution** < 0.1mm  
**Accuracy, analog circuit** +/- 0.1% + 0.01%/K

**Supply voltage** 10 ... 30VDC  
**Signal output** 4 - 20mA, current sink  
 Fault detection signal: 21.5 mA

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

**Operating temperature**  
 Media temperature: -200°C ... +250°C  
 Ambient temperature: -40°C ... +85°C

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

#### Installation / Settings (interactive or with HART®)

1. Remove the transmitter cover and the cable gland clamp nut (5).
2. Connect the signal wires (4) with power off. Observe polarity!
3. Fasten the cable gland nut (5). Switch on the power.
4. Press the 4mA key-switch (2) at least 3 secs. The green LED (3) blinks.
5. Adjust the level to the 4mA point. Press the 4mA key-switch briefly.
6. Adjust the level to the 20mA point. Press the 20mA key-switch briefly.
7. After 15 secs. the transmitter will revert to normal operating mode.
8. Replace and firmly fasten the transmitter enclosure cover.

Detailed instructions: see "Installation and Settings"

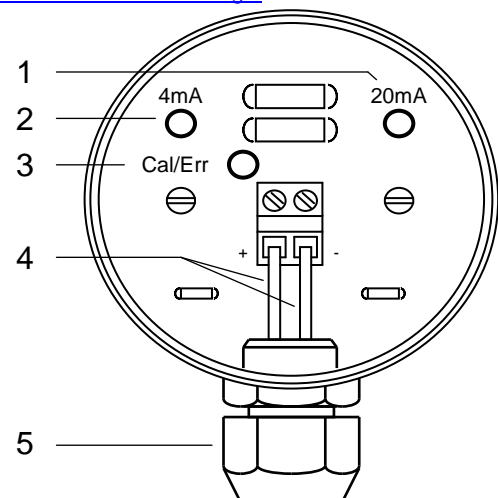
#### Installation

(Level indicators ordered with transmitters are pre-fitted with mounting clips.  
 For transmitters ordered as spare parts, specify float chamber outer diameters).  
 For pipe diameter 30...40mm and 40...57mm Part no. 80648  
 For pipe diameter 57...80mm Part no. 84043

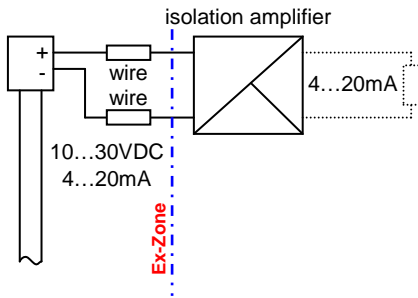
#### Note

The transmitter signal cable must be fixed firmly.  
 These transmitters are maintenance-free. Repairs should not be attempted by users.

Additional information is available in the Weka Products CD or at our web-site: [www.weka-ag.ch](http://www.weka-ag.ch)



### External electrical connections



### Description

Magnetostrictive transmitter for Weka Visual Level Indicators, intrinsic safety rated (EEx ia)



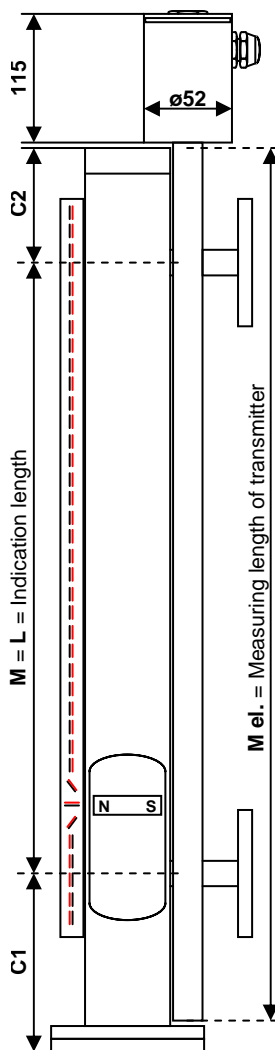
The transmitter module is mounted to the outside of the float chamber, beside or 180° opposite the magnetic flag indicator module (see data sheet 20010501). This transmitter is compatible with Zones 1 and 2, gas groups IIA, IIB, and IIC, and temperature classes T2 through T6.

It must be connected through a certified energy-limiting device (e.g. Zener barrier) that is installed in a safe area and guarantees the electrical limit values specified below.

The metal housing of the transmitter must be connected to protection ground.

**Product code** 38614-NI - xxxx mm  
 xxxx = M el. = Measuring length in mm (min. 200mm ... max. 6000mm)

### Dimensions



Suitable for Visual Level Indicator Types:

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

Other types on request

**Linearity** < +/- 0.5mm  
**Resolution** < 0.1mm  
**Accuracy, analog circuit** +/- 0.1% + 0.01%/K

**Certification** CE 0032  II 2 G EEx ia IIC T6 ... T2 TÜV 01 ATEX 1772

**Electrical limit values**  
 Ui = max. 30V  
 Ii = max. 200mA  
 Pi = max. 1W  
 Ci = max. 5nF  
 Li = max. 0,25mH

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

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

### Operating temperatures

Temperature class	Ambient temperature Ta	Media temperature Tf
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 diameter 5 ... 10mm

### Installation / Settings (interactive or with HART®)

1. Remove the transmitter cover and the cable gland clamp nut (5).
2. Connect the signal wires (4) with power switched off. Observe the polarity!
3. Fasten the cable gland nut (5). Switch on the power.
4. Press the 4mA key-switch (2) for at least 3 secs. The green LED (3) will blin
5. Adjust the liquid level to the 4 mA point, and press the 4 mA key-switch brie
6. Adjust the liquid level to the 20 mA point, and press the 20 mA key-switch b
7. Wait approx. 15 secs. until the transmitter reverts to normal operating mode
8. Replace and firmly fasten the transmitter enclosure cover.

[Detailed instructions: see "Installation and Settings"](#)

### Installation

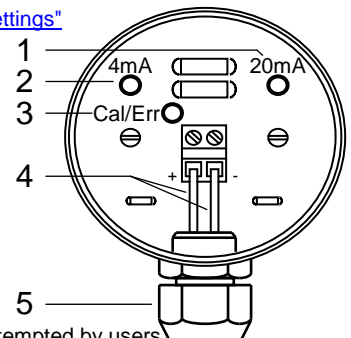
(When ordering level indicators with transmitters mounting clips are included, when ordering transmitters as spare parts please indicate pipe size)

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

### Note

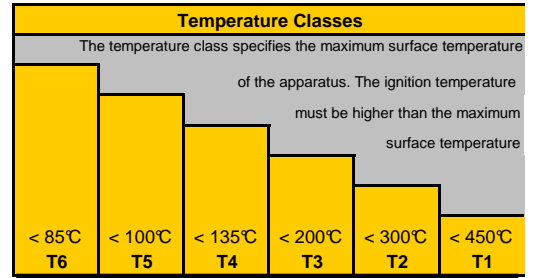
The cable must be secured firmly. These transmitters are maintenance-free. Repairs should not be attempted by users.

More details are in the Weka Products CD or at our web-site: [www.weka-ag.ch](http://www.weka-ag.ch). Instructions there must also be observed.



Classification and Marking of Explosion-proof Apparatus				
Inflammable Material	Incidence of inflammable material in Ex zone. Explosive media	Hazardous zones	Marking of explosion-proof equipment	
			Apparatus group	Apparatus category
Gases Vapor Steam	Present continuously, frequently, or over extended time	Zone 0	II	
	Present occasionally	Zone 1	II	1G 2G 3G
	Presence unlikely or rare, and only for brief periods of time	Zone 2	II	
Inflamm-able dust cloud	Present continuously, frequently, or over extended time	Zone 20	II	
	Present occasionally	Zone 21	II	1D 2D 3D
	Presence unlikely or rare, and only for brief periods of time	Zone 22	II	
Methane	-	Mines	I	M1 M2
	-	Mines	I	

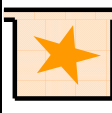
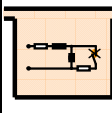
Classification of Gases, Aerosols, Vapors				
Apparatus Group	Examples of Inflammable Gases			
IIA IIB IIC	[Note: This only a partial list of inflammable gases / vapors]			
	Ammonia, methane, ethane, propane	Ethyl alcohol, cyclohexane, n-butane	Benzene, diesel, furnace oil, n-hexane	Acetaldehyde
	Town gas, acrylonitrile	Ethylene, ethylene oxide	Ethyl glycol, hydrogen sulfide	Ethyl ether
	Hydrogen	Acetylene		Carbon disulfide



Example:


**0820**

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

Authority	Methods of Protection and Apparatus Marking						Certificate	Additional information
Certificate reference number	Principle of protection [All methods of ignition protection are not indicated here, for simplification]	Means of protection	Marking [Omitted here: EEx o, EEx p, EEx q, EEx e, EEx m, EEx n]	Symbol	Zone compatibility	Standard	Traceability reference	Conditions
Marking - including the reference number of the certification authority (notified body)	An explosion inside the enclosure is prevented from spreading outside	Flame proof	EEx d		Zone 1 or 2	EN 50018	ATEX marking and certificate number	The equipment may be used without restriction
	The energy in the electrical circuit in the hazardous zone is limited by design, thus preventing dangerous sparks and/or ignition temperatures	Intrinsic safety	EEx i		Zones 0, 1 and 2; EEx ia Zones 1 and 2; EEx ib	For apparatus: EN 50018 For systems: EN 50039	Year of certification	The equipment may be used subject to specific conditions
							Abbreviated name of certification authority (notified body)	The equipment is an "Ex" component with part-certification and therefore cannot be used alone.
								Marking

**Note:**

- Per ATEX guidelines, Weka Level Indicators and accessories are components since they can function only with other equipment.
- An electrical device may 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.