

# IZAR PULSE i

User guide



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## 1 PRODUCT DESCRIPTION

### 1.1 BRIEF DESCRIPTION

IZAR PULSE i is a pulse emitter that takes into account the flow direction and enables fraud detection through alarms (cable cut-off and unclipping).

### 1.2 COMPATIBILITY WITH DIEHL METERING METERS

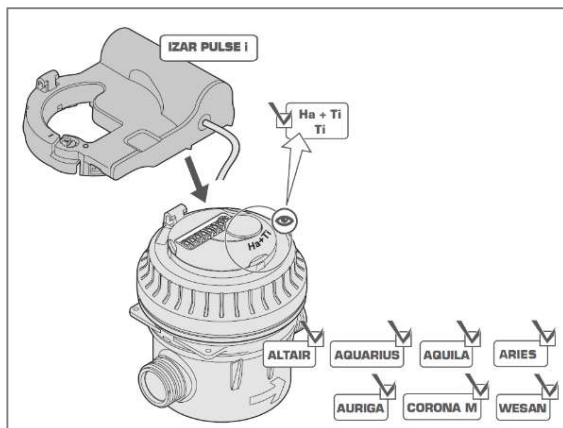


fig.1

IZAR PULSE i is compatible with all the water meters of the Diehl Metering inductive modular range “Ha+Ti” or “Ti” with a grey or red ring.

IZAR PULSE i features a clamping ring for totally secured mounting (sealable cam) and easy reinstallation on another meter.

## 2 OPERATION

### 2.1 OPERATING PRINCIPLE

IZAR PULSE i is a ring equipped with a sensor based on the inductive principle and with a specific electronic system that exploits the information to be transmitted in the form of an open-collector signal (polarised).

The inductive system featured in IZAR PULSE i is actuated using a metal  $\frac{1}{2}$  disc located in the Diehl Metering modular register of the water meter.

### 2.2 TECHNICAL SPECIFICATIONS

#### 2.2.1 MECHANICAL SPECIFICATIONS

<b>Storage temperature</b>	-20°C to +70°C								
<b>Operating temperature</b>	-15°C to +55°C <b>Caution:</b> respect the operating temperatures of the meter on which the module is mounted.								
<b>Degree of protection</b>	IP 68								
<b>Battery lifetime</b>	Up to 15 years when the temperatures are distributed evenly within the ranges given below: <table border="1" data-bbox="703 1760 1329 1901"> <thead> <tr> <th>Temperature range</th> <th>% of operating time</th> </tr> </thead> <tbody> <tr> <td>-15°C to 0°C</td> <td>10% of the time</td> </tr> <tr> <td>0°C to +30°C</td> <td>80% of the time</td> </tr> <tr> <td>30°C to +55°C</td> <td>10% of the time</td> </tr> </tbody> </table> <p><b>NB:</b> an extended use at high temperatures will cause a loss of battery autonomy. If, for example, the module is permanently at +55°C, the life expectancy is reduced to less than 10 years</p>	Temperature range	% of operating time	-15°C to 0°C	10% of the time	0°C to +30°C	80% of the time	30°C to +55°C	10% of the time
Temperature range	% of operating time								
-15°C to 0°C	10% of the time								
0°C to +30°C	80% of the time								
30°C to +55°C	10% of the time								

### 2.2.2 CHARACTERISTICS OF THE PULSE OUTPUT

- NPN open-collector transistor output.
- Closed status in presence of a pulse.
- Change of status without bouncing (no interference on the signal).
- Maximum frequency: 8 Hz.

#### Reminder about the risks of counting errors:

There is a risk of counting errors if either one of the following 2 conditions is not fulfilled:

- The rotation speed of the  $\frac{1}{2}$  disc is greater than 8 Hz (i.e. 8 revolutions/second).
- The output frequency is greater than 8 Hz (i.e. 8 pulses/second).

### 2.2.3 PULSE DURATION

The pulse length depends on the configured pulse weight.

The default pulse weight is 1 pulse/revolution. An additional label will be specified if a different pulse weight is used.

Examples of recommended typical values:

- 3.3 kOhm - 3V
- 4.7 kOhm - 5V
- 10 kOhm - 12V
- 22 kOhm - 24V
- 33 kOhm - 30V

These values may differ depending on the impedance of the connected master device.

- Up to 1 pulse/second = 1 pulse of 500 ms

Beyond this speed, the pulse time is adjusted by keeping a cyclic ratio of 50% until reaching 50 ms (for a DN15 to DN40, with a pulse weight of 1 l/pulse, the generated pulse is 500 ms up to a flowrate of 1l/second).

### 2.2.4 CHARACTERISTICS OF THE « TAMPERING » OUTPUT

- NPN open-collector transistor output.
- Open status in case of tampering.
- Maximum value: 30 Volts / 50 mA.

## 2.3 PRECAUTIONS OF USE

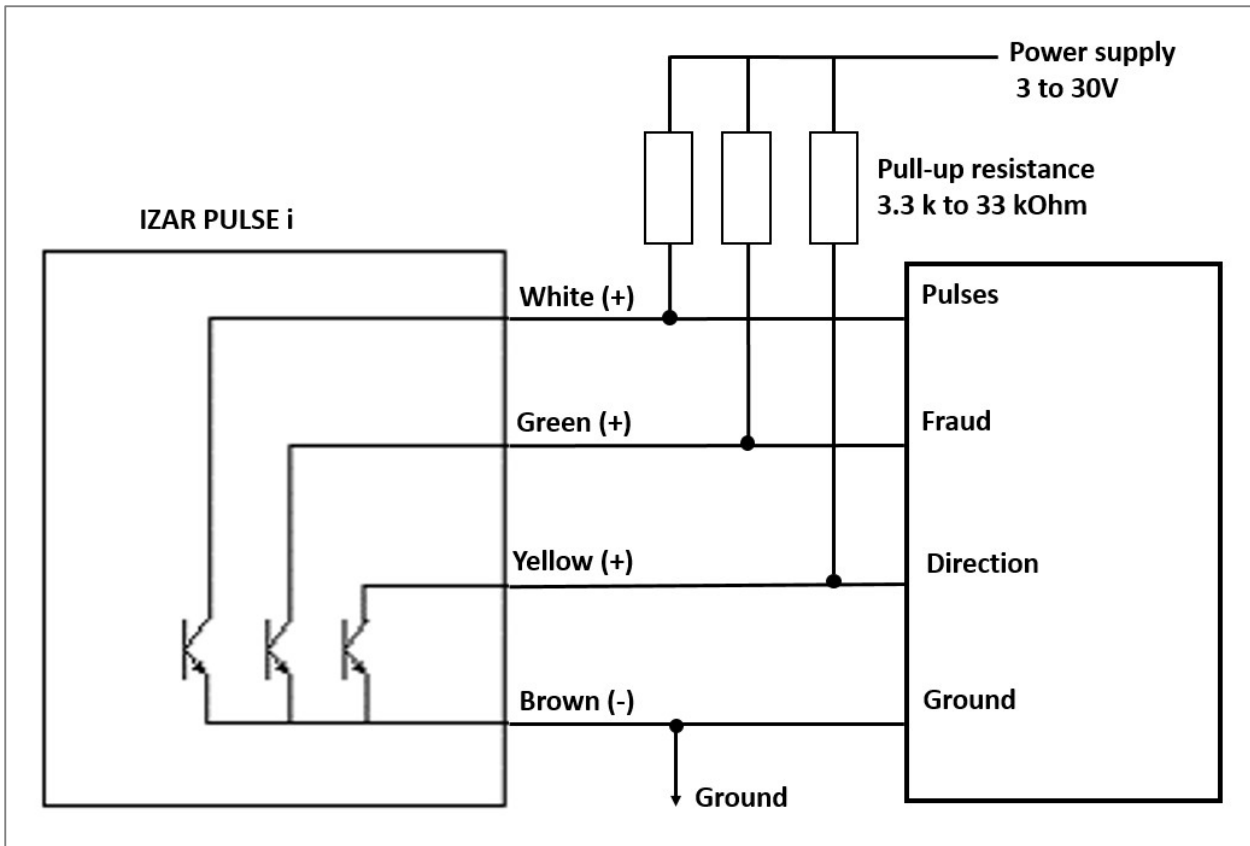
**It is essential to observe the polarity and supply voltage in order to generate proper usable signals and protect IZAR PULSE i from any damage (if supply exceeds 30V/50mA). Refer to the label on the product.**

**Diehl Metering declines any liability in the event of non-observance of the installation instructions.**

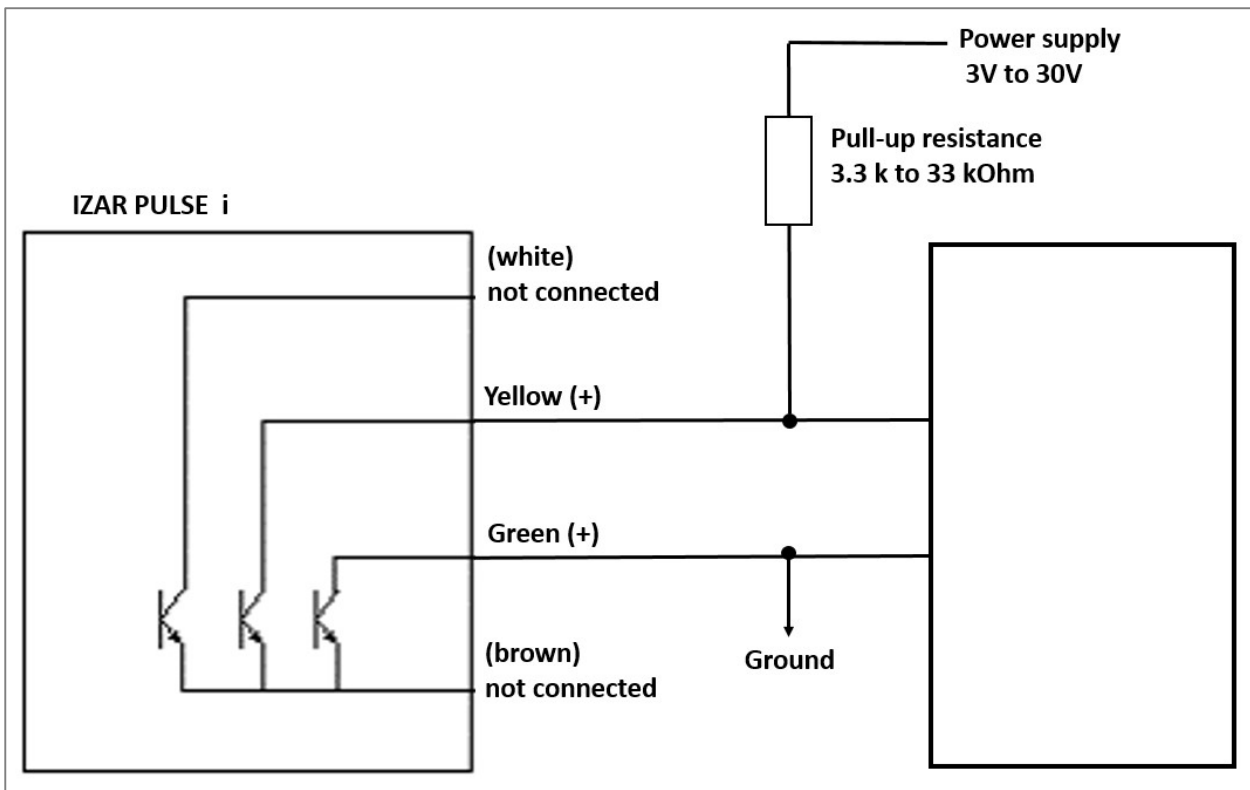
## 2.4 CONNECTING IZAR PULSE I

The cable has 3 or 4 conductors insulated in a protective sheath. Make sure that the connected device is compatible with IZAR PULSE i main characteristics.

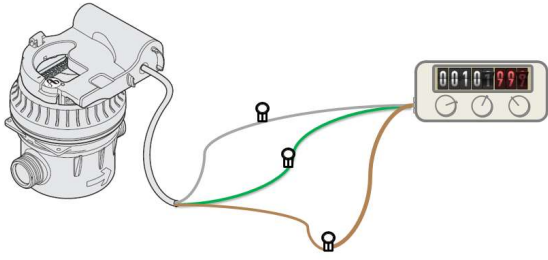
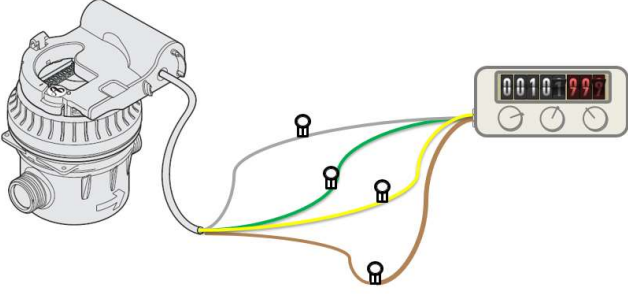
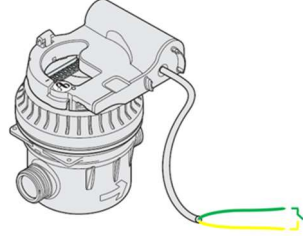
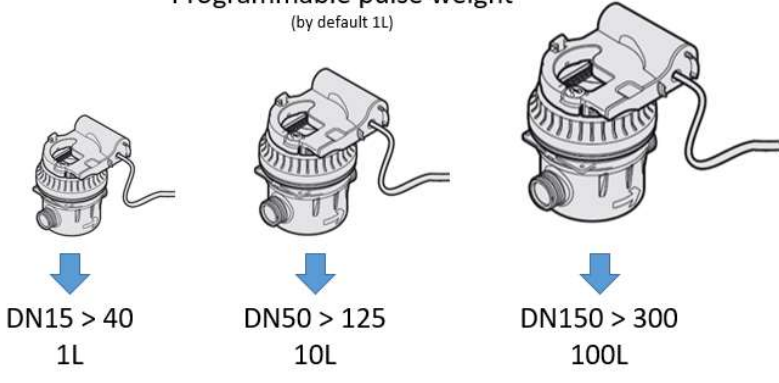
### Connecting IZAR PULSE i – 3 or 4-wire version :



### Connecting IZAR PULSE i – dry contact version :



IZAR PULSE i is available in standard and specific versions:

Standard version						
<table border="1"> <tr><td>Pulse</td></tr> <tr><td>Fraud</td></tr> <tr><td>Ground</td></tr> </table>	Pulse	Fraud	Ground	IZAR PULSE i 3 wires	 <p>Internal algorithm taking account of backflow</p>	
Pulse						
Fraud						
Ground						
<table border="1"> <tr><td>Pulse 1</td></tr> <tr><td>Direction</td></tr> <tr><td>Fraud</td></tr> <tr><td>Ground</td></tr> </table>	Pulse 1	Direction	Fraud	Ground	IZAR PULSE i 4 wires	 <p>Instant display of the current index</p>
Pulse 1						
Direction						
Fraud						
Ground						
Specific version (examples of application)						
<table border="1"> <tr><td>N/A</td></tr> <tr><td>DRY CONTACT</td></tr> <tr><td>DRY CONTACT</td></tr> <tr><td>N/A</td></tr> </table>	N/A	DRY CONTACT	DRY CONTACT	N/A	Dry contact	 <p>Connection to "dry-contact" inputs</p>
N/A						
DRY CONTACT						
DRY CONTACT						
N/A						
<table border="1"> <tr><td>Pulse 1</td></tr> <tr><td>Direction</td></tr> <tr><td>Fraud</td></tr> <tr><td>Ground</td></tr> </table>	Pulse 1	Direction	Fraud	Ground	1 output	<p>Programmable pulse weight (by default 1L)</p>  <p>                         DN15 &gt; 40 1L                     </p> <p>                         DN50 &gt; 125 10L                     </p> <p>                         DN150 &gt; 300 100L                     </p>
Pulse 1						
Direction						
Fraud						
Ground						

<table border="1"> <tr><td>Pulse 1</td></tr> <tr><td>Pulse 2</td></tr> <tr><td>Fraud</td></tr> <tr><td>Ground</td></tr> </table>	Pulse 1	Pulse 2	Fraud	Ground	<p>2 outputs</p>	
Pulse 1						
Pulse 2						
Fraud						
Ground						
<table border="1"> <tr><td>Pulse 1</td></tr> <tr><td>Direction</td></tr> <tr><td>Fraud</td></tr> <tr><td>Ground</td></tr> </table>	Pulse 1	Direction	Fraud	Ground	<p>2 outputs</p>	
Pulse 1						
Direction						
Fraud						
Ground						
<table border="1"> <tr><td>Pulse (+)</td></tr> <tr><td>Pulse (-)</td></tr> <tr><td>Fraud</td></tr> <tr><td>Ground</td></tr> </table>	Pulse (+)	Pulse (-)	Fraud	Ground	<p>2 outputs</p>	
Pulse (+)						
Pulse (-)						
Fraud						
Ground						
<table border="1"> <tr><td>Pulse (+)</td></tr> <tr><td>Pulse (-)</td></tr> <tr><td>Pulse 2</td></tr> <tr><td>Ground</td></tr> </table>	Pulse (+)	Pulse (-)	Pulse 2	Ground	<p>2 outputs + 1-output</p>	
Pulse (+)						
Pulse (-)						
Pulse 2						
Ground						
<table border="1"> <tr><td>Pulse 1</td></tr> <tr><td>Pulse 2</td></tr> <tr><td>Pulse 3</td></tr> <tr><td>Ground</td></tr> </table>	Pulse 1	Pulse 2	Pulse 3	Ground	<p>3 outputs</p>	
Pulse 1						
Pulse 2						
Pulse 3						
Ground						



### 3 STANDARD VERSION

#### 3.1 IZAR PULSE i 3-WIRE - STANDARD VERSION

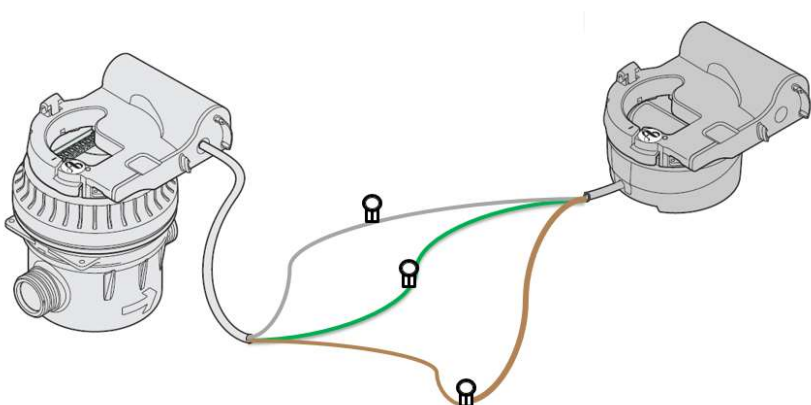
IZAR PULSE i 3-wire takes into account the flow direction by compensating negative pulses. In case of a backflow, IZAR PULSE i 3-wire will emit no pulse. When the flow goes back to normal, IZAR PULSE i 3-wire starts emitting pulses again only once the volume of backflow has been compensated for (up to the limit of 65,535 pulses).

Example for a DN15 meter with 1 litre = 1 pulse	
100 litres flow	100 pulses
50 litres backflow	No pulse
100 litres flow	50 pulses (100 - 50)
100-50+100 = 150 litres	100+50 = 150 pulses

IZAR PULSE i is able to take into account backflow up to 65,535 pulses:

65,535 litres	Meter DN15 to 40
655,350 litres	Meter DN50 to 125
6,553,500 litres	Meter DN150 to 300

If the backflow can be higher than 65,535 pulses, a non-return valve must be installed.

Connection IZAR PULSE i 3-wire standard version	
<b>It is essential to observe the polarity and supply voltage in order to generate proper usable signals and protect IZAR PULSE i from any damage.</b>	
Flexible, unshielded cable (1.5 m), LiYY type, comprising 3 wires with a 0.25 mm <sup>2</sup> diameter	
NPN open-collector transistor output	
Maximum frequency: 8 Hz	Maximum value: 30 Volts / 50 mA
	
White	Pulses
Green	Fraud (unclipping or cable cut detection). <b>Caution:</b> the fraud cable has to be connected to the ground if not used.
Brown	Ground
Characteristics	No pulse in case of backflow. Internal backflow management.
Label	No specific label
<b>For any specific value, contact your Diehl Metering agency.</b>	

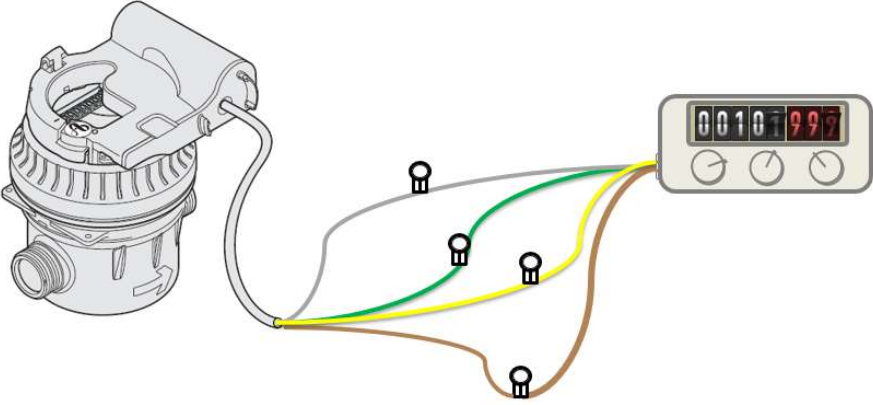


### 3.2 IZAR PULSE i 4-WIRE - STANDARD VERSION

IZAR PULSE i 4-wire provides information on the volumes of water transiting in both flow directions (subject to the use of suitable electronic processing). The exploitable electric information is transmitted via a cable with 4 insulated conductors.

IZAR PULSE i 4-wire emits pulses as well as the additional “direction” information.

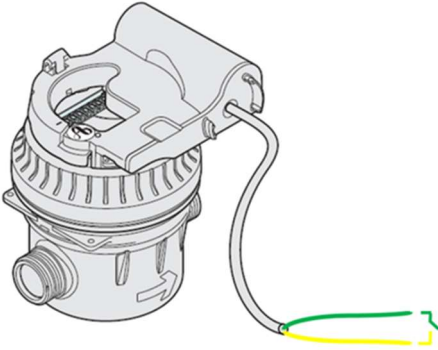



NB: IZAR PULSE i 4-wire version functions only when combined with an electronic device able to manage the 2 “pulses” and “direction” signals.

Connection IZAR PULSE i 4-wire - standard version	
<b>It is essential to observe the polarity and supply voltage in order to generate proper usable signals and protect IZAR PULSE i from any damage.</b>	
Flexible, unshielded cable (5 m), LiYY type comprising 4 wires with a 0.25 mm <sup>2</sup> diameter.	
NPN open-collector transistor output	
Maximum frequency: 8 Hz	Maximum value: 30 Volts / 50 mA
	
White	Pulses Either flow direction.
Yellow	Flow direction. Enable to assign the flow direction to each pulse (if the « direction » information is not used, all pulses will be considered as being positive). <b>Caution:</b> do not connect when not used.
Green	Fraud (unclipping or cable cut detection).
Brown	Ground
Characteristics	Closed status if the flow is reversed. Change of status with no bouncing. The “direction” signal does not change status during a pulse.
Label	No specific label
<b>For any specific value, contact your Diehl Metering agency.</b>	

## 4 SPECIFIC VERSIONS

### 4.1 IZAR PULSE I - DRY CONTACT

IZAR PULSE i dry contact version can be connected to most standard equipment on the market (CTM...).

Connection IZAR PULSE I - DRY CONTACT	
<b>IZAR PULSE i Dry contact features 2 non-polarized output wires. Therefore, it may be connected in any direction (yellow and green wires).</b>	
Unshielded flexible cable (5 m), LiYY type, comprising 2 wires with a 0.25 mm <sup>2</sup> diameter.	
NPN open-collector transistor output	
Maximum frequency: 8 Hz	Maximum value : 30 Volts / 50 mA
	
Green (non-polarised)	Ground or pulse 
Yellow (non-polarised)	Ground or pulse 
Specific label	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> <p><b>WHITE / BLANC:</b> N/A  <b>YELLOW / JAUNE:</b> 1 tr/pulse  <b>GREEN / VERT:</b> DRY CONTACT  <b>BROWN / BRUN:</b> N/A</p>   <b>5mm</b> </div>
Pulse weight (to be specified upon ordering)	0.1 / 0.5 / 2.5 / 5 / 10 / 25 / 50 / 100 / 250 / 500 / 1,000 / 10,000
<b>For any other specific value, check with your Diehl Metering agency.</b>	

## 4.2 IZAR PULSE i - 1 OUTPUT WITH CONFIGURABLE PULSE WEIGHT

The basic IZAR PULSE i version has a pulse weight of 1 revolution/pulse.

It is possible, for this version, to define a different pulse weight, for instance a ratio of 10L/pulse for a DN50 water meter.

This version is available in 3 or 4 wires.

### 4.2.1 3-WIRE VERSION – 1 OUTPUT WITH CONFIGURABLE PULSE WEIGHT

#### Connection IZAR PULSE i 3-wire - 1 output with configurable pulse weight

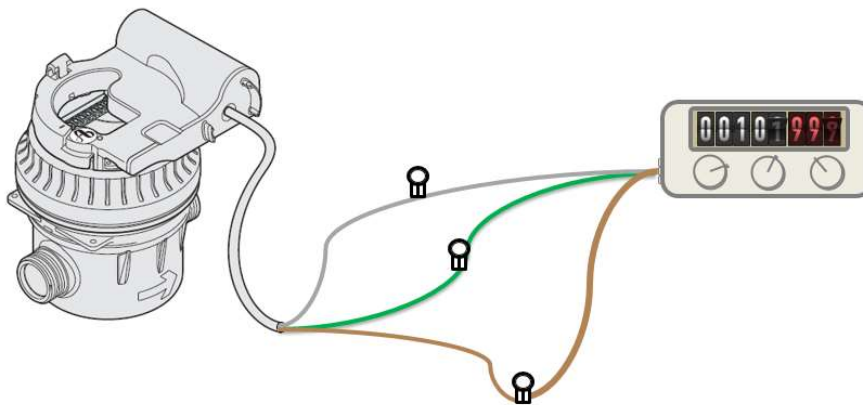
**It is essential to observe the polarity and supply voltage in order to generate proper usable signals and protect IZAR PULSE i from any damage.**

Unshielded flexible cable (1.5 m), LiYY type, comprising 3 wires with a 0.25 mm<sup>2</sup> diameter.

NPN open-collector transistor output.

Maximum frequency: 8 Hz

Maximum value: 30 Volts / 50 mA



White

Pulses (n revolution/pulse)

Green

Fraud (unclipping or cable cut detection)

Brown

Ground

Characteristics

No pulse in case of backflow  
Internal backflow management

Specific label

**WHITE / BLANC:** PULSE 10 tr/pulse  
**GREEN / VERT:** FRAUD / FRAUDE  
**BROWN / BRUN:** GROUND / MASSE



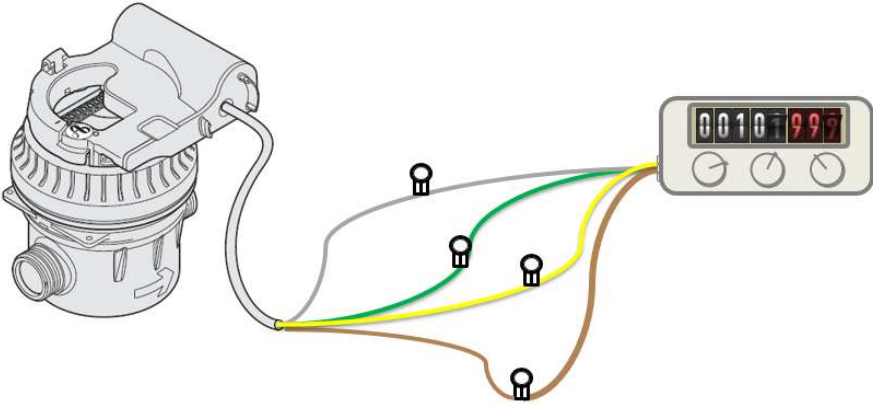

**5mm**

Pulse weight  
(to be specified upon ordering)

0.1 / 0.5 / 2.5 / 5 / 10 / 25 / 50 / 100 / 250 / 500 / 1,000 / 10,000

**For any other specific value, check with your Diehl Metering agency.**

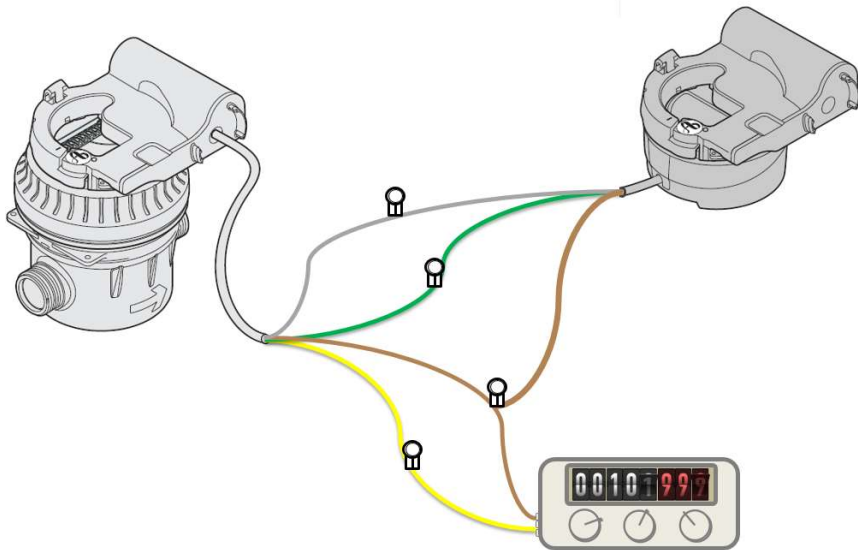



#### 4.2.2 4-WIRE VERSION – 1 OUTPUT WITH CONFIGURABLE PULSE WEIGHT

Connection IZAR PULSE i 4-wire - 1 output with configurable pulse weight	
<p><b>It is essential to observe the polarity and supply voltage in order to generate proper usable signals and protect IZAR PULSE i from any damage.</b></p>	
Unshielded flexible cable (5 m) LiYY type, comprising 4 wires with a 0.25 mm <sup>2</sup> diameter.	
NPN open-collector transistor output.	
Maximum frequency: 8 Hz	Maximum value: 30 Volts / 50 mA
	
White	Pulses (n revolution/pulse)
Yellow	Flow direction
Green	Fraud (unclipping or cable cut detection)
Brown	Ground
Characteristics	<p>Close status if the flow is reversed.</p> <p>Change of status with no bouncing.</p> <p>No change of the « direction » signal status during the pulse duration.</p>
Specific label	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> <p>WHITE / BLANC: PULSE 10 tr/pulse            YELLOW / JAUNE: DIRECTION / SENS            GREEN / VERT: FRAUD / FRAUDE            BROWN / BRUN: GROUND / MASSE</p>  <p style="text-align: center; font-weight: bold;">5mm</p> </div>
Pulse weight (to be specified upon ordering)	0.1 / 0.5 / 2.5 / 5 / 10 / 25 / 50 / 100 / 250 / 500 / 1,000 / 10,000
<p><b>For any other specific value, check with your Diehl Metering agency.</b></p>	

### 4.3 IZAR PULSE i - 2 OUTPUTS WITH CONFIGURABLE PULSE WEIGHT + FRAUD

IZAR PULSE i « 2 outputs + fraud » enables to generate pulses on 2 different wires and to use the 3rd wire for “fraud” detection.

Information can be sent simultaneously on 2 different devices while maintaining a monitoring on tampering (unclipping or cable cut).

Connection IZAR PULSE i - 2 outputs with configurable pulse weight + fraud										
<b>It is essential to observe the polarity and supply voltage in order to generate proper usable signals and protect IZAR PULSE i from any damage.</b>										
Unshielded flexible cable (5 m) LiYY type, comprising 4 wires with a 0.25 mm <sup>2</sup> diameter										
NPN open-collector transistor output.										
Maximum frequency: 8 Hz	Maximum value: 30 Volts / 50 mA									
										
White	Pulses - output 1 (n revolution/pulse)									
Yellow	Pulses - output 2 (n revolution/pulse)									
Green	Fraud (unclipping or cable cut detection)									
Brown	Ground									
Characteristics	Internal backflow management No change of status in case of bouncing									
Specific label	<table border="1"> <tr> <td>WHITE / BLANC :</td> <td>PULSE 1 tr/pulse</td> <td rowspan="4" style="text-align: center;">   <b>5mm</b> </td> </tr> <tr> <td>YELLOW / JAUNE :</td> <td>PULSE 1 tr/pulse</td> </tr> <tr> <td>GREEN / VERT :</td> <td>FRAUD / FRAUDE</td> </tr> <tr> <td>BROWN / BRUN :</td> <td>GROUND / MASSE</td> </tr> </table>	WHITE / BLANC :	PULSE 1 tr/pulse	 <b>5mm</b>	YELLOW / JAUNE :	PULSE 1 tr/pulse	GREEN / VERT :	FRAUD / FRAUDE	BROWN / BRUN :	GROUND / MASSE
WHITE / BLANC :	PULSE 1 tr/pulse	 <b>5mm</b>								
YELLOW / JAUNE :	PULSE 1 tr/pulse									
GREEN / VERT :	FRAUD / FRAUDE									
BROWN / BRUN :	GROUND / MASSE									
Pulse weight (to be specified upon ordering)	0.1 / 0.5 / 2.5 / 5 / 10 / 25 / 50 / 100 / 250 / 500 / 1,000 / 10,000									
<b>For any other specific value, check with your Diehl Metering agency.</b>										

#### 4.4 IZAR PULSE i - 2 OUTPUTS WITH CONFIGURABLE PULSE WEIGHT + FLOW DIRECTION

IZAR PULSE i « 2 outputs + flow direction » enables to generate pulses on 2 different wires and to use the 3rd wire to determine the direction of the water flow.

The direction wire is linked to the output 1. The output 2 compensates for negative pulses and only sends positive pulses.

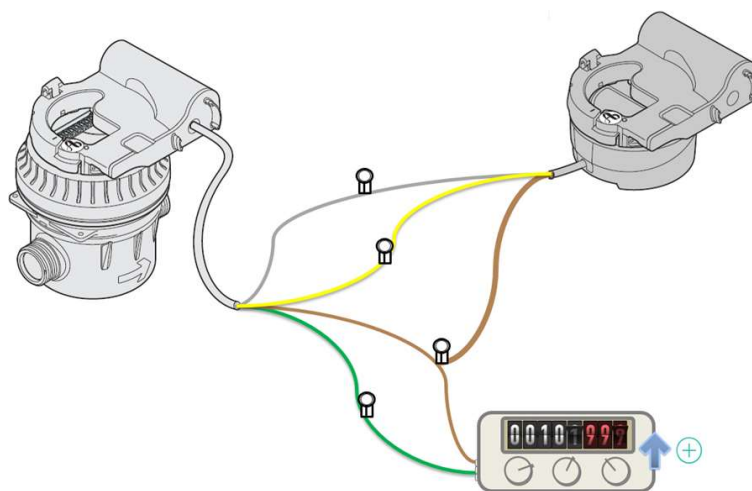
##### Connection IZAR PULSE i - 2 outputs with configurable pulse weight + flow direction


**It is essential to observe the polarity and supply voltage in order to generate proper usable signals and protect IZAR PULSE i from any damage.**

Unshielded flexible cable (5 m) LiYY type, comprising 4 wires with a 0.25 mm<sup>2</sup> diameter  
NPN open-collector transistor output.

Maximum frequency: 8 Hz

Maximum value: 30 Volts / 50 mA



White	Pulses - output 1 (n revolution/pulse)
Yellow	Flow direction - output 1
Green	Pulses - output 2 (n revolution/pulse)
Brown	Ground
Characteristics	<p>Status yellow wire closed if flow is reversed.</p> <p>Change of status with no bouncing.</p> <p>No change of status of the "direction" signal during the duration of a pulse.</p>
Specific label	<p>WHITE / BLANC : PULSE 1 tr/pulse</p> <p>YELLOW / JAUNE : DIRECTION / SENS</p> <p>GREEN / VERT : PULSE 1 tr/pulse</p> <p>BROWN / BRUN : GROUND / MASSE</p>  <p><b>5mm</b></p>
Pulse weight (to be specified upon ordering)	0.1 / 0.5 / 2.5 / 5 / 10 / 25 / 50 / 100 / 250 / 500 / 1,000 / 10,000
<b>For any other specific value, check with your Diehl Metering agency.</b>	

#### 4.5 IZAR PULSE I - 2 OUTPUTS WITH FORWARD AND REVERSE FLOW DIRECTION + FRAUD

IZAR PULSE i « +/- » enables to generate pulses on 2 outputs: 1 positive output and 1 negative output and to use the 3rd output for the “fraud”. It is therefore possible to send information on the volume of incoming and outgoing water on the same device while keeping information on tampering (unclipping, cable cut...).

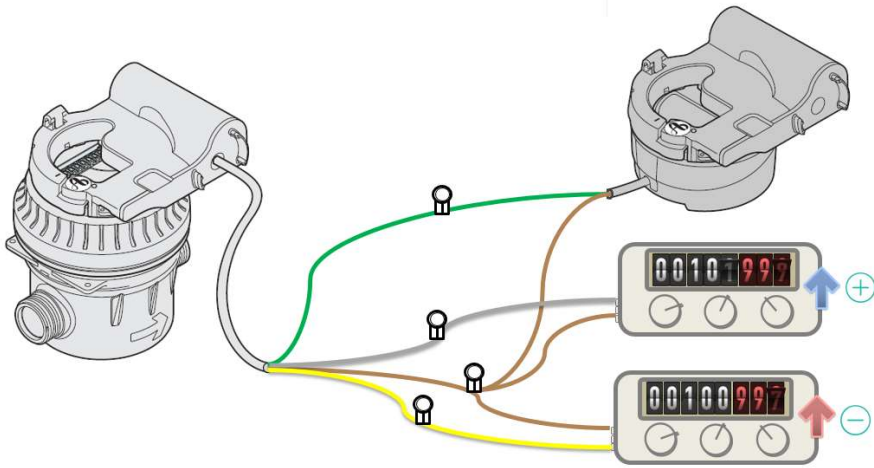



Application example: tank input/output meters to know exactly the volume of the water coming in and out of the tank.

Connection IZAR PULSE I - 2 outputs with forward and reverse flow direction + fraud	
<b>It is essential to observe the polarity and supply voltage in order to generate proper usable signals and protect IZAR PULSE i from any damage.</b>	
Unshielded flexible cable (5 m) LiYY type, comprising 4 wires with a 0.25 mm <sup>2</sup> diameter.	
NPN open-collector transistor output.	
Maximum frequency: 8 Hz	Maximum value: 30 Volts / 50 mA
White	Pulses <b>forward flow direction</b> (n revolution/pulse)
Yellow	Pulses <b>reverse flow direction</b> (n revolution/pulse)
Green	Fraud (only works together with a fraud management device -> not used in this example).
Brown	Ground
Characteristics	Change of status with no bouncing
Specific label	<div style="border: 1px solid black; padding: 5px;"> <p> <b>WHITE / BLANC (+)</b> : PULSE 1 tr/pulse  <b>YELLOW / JAUNE (-)</b> : PULSE 1 tr/pulse  <b>GREEN / VERT</b> : FRAUD / FRAUDE  <b>BROWN / BRUN</b> : GROUND / MASSE </p> <p style="text-align: right; font-weight: bold; font-size: 1.2em;">5mm</p> </div>
Pulse weight (to be specified upon ordering)	0.1 / 0.5 / 2.5 / 5 / 10 / 25 / 50 / 100 / 250 / 500 / 1,000 / 10,000 → same for both outputs.
<b>For any other specific value, check with your Diehl Metering agency.</b>	



#### 4.6 IZAR PULSE i - 2 OUTPUTS - FORWARD AND REVERSE FLOW DIRECTION + 1 SPECIFIC

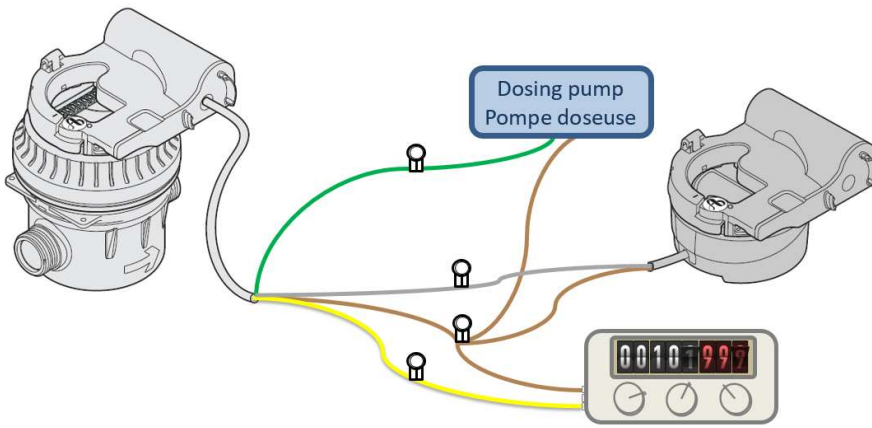

IZAR PULSE i « +/- » enables to generate pulses on 2 outputs: 1 positive output and 1 negative output and to use the 3rd output for an additional pulse. It is therefore possible to send information on the volume of incoming and outgoing water on the same device while keeping an output for billing.

Connection IZAR PULSE i - 2 outputs forward and reverse flow direction + 1 specific										
It is essential to observe the polarity and supply voltage in order to generate proper usable signals and protect IZAR PULSE i from any damage.										
Unshielded flexible cable (5 m) LiYY type, comprising 4 wires with a 0.25 mm <sup>2</sup> diameter.										
NPN open-collector transistor output.										
Maximum frequency: 8 Hz	Maximum value: 30 Volts / 50 mA									
										
White	Pulses - output 1 : <b>forward</b> flow direction (n rev/pulse)									
Yellow	Pulses - output 2 : <b>reverse</b> flow direction (n rev/pulse)									
Green	Pulses - output 3 (n revolution/pulse)									
Brown	Ground									
Characteristics	Change of status with no bouncing.									
Specific label	<table border="1"> <tr> <td>WHITE / BLANC (+) :</td> <td>PULSE 1 tr/pulse</td> <td rowspan="4">   <b>5mm</b> </td> </tr> <tr> <td>YELLOW / JAUNE (-) :</td> <td>PULSE 1 tr/pulse</td> </tr> <tr> <td>GREEN / VERT :</td> <td>PULSE 1 tr/pulse</td> </tr> <tr> <td>BROWN / BRUN :</td> <td>GROUND / MASSE</td> </tr> </table>	WHITE / BLANC (+) :	PULSE 1 tr/pulse	 <b>5mm</b>	YELLOW / JAUNE (-) :	PULSE 1 tr/pulse	GREEN / VERT :	PULSE 1 tr/pulse	BROWN / BRUN :	GROUND / MASSE
WHITE / BLANC (+) :	PULSE 1 tr/pulse	 <b>5mm</b>								
YELLOW / JAUNE (-) :	PULSE 1 tr/pulse									
GREEN / VERT :	PULSE 1 tr/pulse									
BROWN / BRUN :	GROUND / MASSE									
Pulse weight (to be specified upon ordering)	0.1 / 0.5 / 2.5 / 5 / 10 / 25 / 50 / 100 / 250 / 500 / 1,000 / 10,000 → same for output 1 and output 2.									
<b>For any other specific value, check with your Diehl Metering agency.</b>										

## 4.7 IZAR PULSE I - 3 OUTPUTS WITH CONFIGURABLE PULSE WEIGHT

IZAR PULSE i 3 outputs version enables to generate pulses on 3 different wires.

Information can therefore be sent to 3 devices simultaneously, such as an external radio, a dosing pump and a display unit.

Connection IZAR PULSE I - 3 outputs with configurable pulse weight	
<b>It is essential to observe the polarity and supply voltage in order to generate proper usable signals and protect IZAR PULSE i from any damage.</b>	
Unshielded flexible cable (5 m) LIYY type, comprising 4 wires with a 0.25 mm <sup>2</sup> diameter.	
NPN open-collector transistor output.	
Maximum frequency: 8 Hz	Maximum value: 30 Volts / 50 mA
	
White	Pulses - output 1 (n revolution/pulse)
Yellow	Pulses - output 2 (n revolution/pulse)
Green	Pulses - output 3 (n revolution/pulse)
Brown	Ground
Characteristics	No pulse in case of backflow. Internal management of backflows on each output.
Specific label	<div style="border: 1px solid black; padding: 5px;"> <p> <b>WHITE / BLANC (+)</b> : PULSE 1 tr/pulse  <b>YELLOW / JAUNE (-)</b> : PULSE 1 tr/pulse  <b>GREEN / VERT</b> : PULSE 1 tr/pulse  <b>BROWN / BRUN</b> : GROUND / MASSE </p>  <p style="text-align: right;"><b>5mm</b></p> </div>
Pulse weight (to be specified upon ordering)	0.1 / 0.5 / 2.5 / 5 / 10 / 25 / 50 / 100 / 250 / 500 / 1,000 / 10,000
<b>For any other specific value, check with your Diehl Metering agency.</b>	

## 5 INSTALLATION PRECAUTIONS

### 5.1 IDENTIFICATION

Make sure that IZAR PULSE i is compatible with the meter on which it is clipped (marked "Ti" or "Ha + Ti").

### 5.2 INSTALLATION

- If there is a cover on the meter, take it off by pushing out the hinge pin. If the cover does not have a metal hinge, remove it by hand.
- Carefully clean the top of the register to remove any traces of soiling.

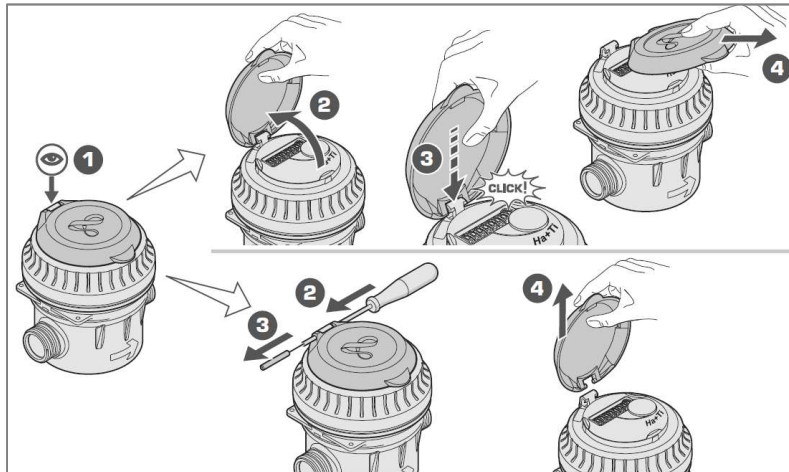


fig.2

- Position IZAR PULSE i by aligning the hinges up with each other.
- Press the ring onto the module *with your hands only* (until it clicks into place). Do not use a mallet or hammer. This is an electronic component; handle with care.

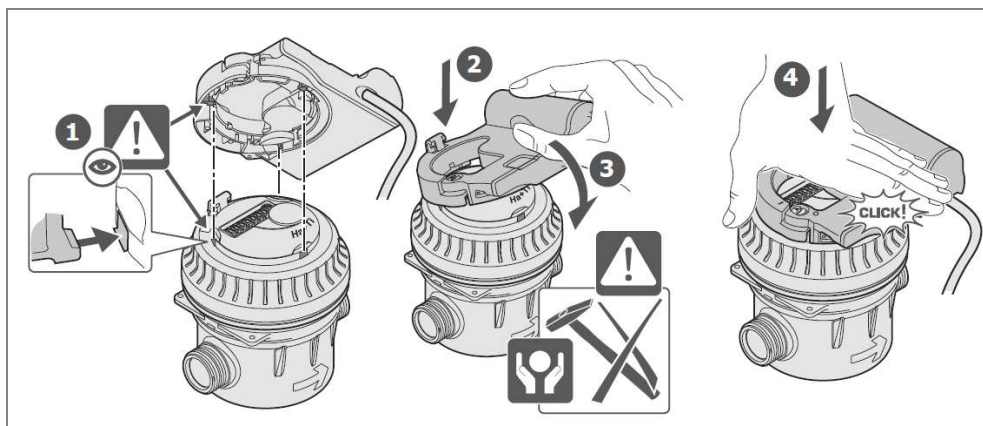


fig.3

### 5.3 SECURING SYSTEM

- A screw tightens and loosens the ring on the meter. This system secures the assembly while making it possible to remove the ring without damaging the hooks.
- Put the sealing label (delivered with the module) on the locking screw.

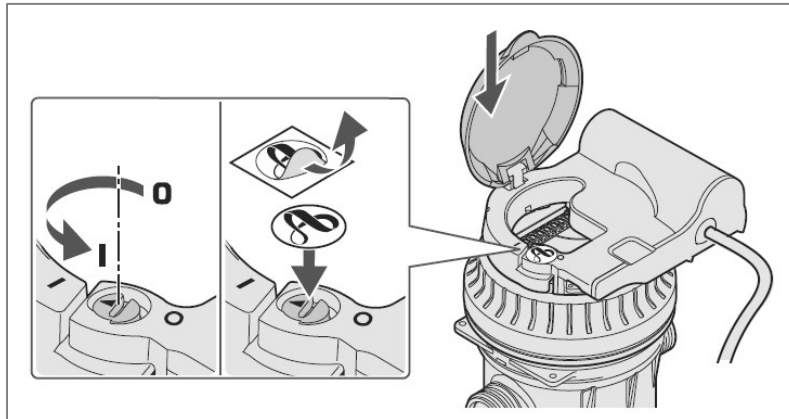


fig.4

## 6 MAINTENANCE

<b>Maintenance</b>	<p>IZAR PULSE i requires no specific maintenance.</p> <p>Do not clean it with solvents or abrasive cleaners, as these would damage the plastic shell. If necessary, use a cloth or damp sponge.</p>
<b>Storage</b>	<p>Storage: The product should be stored in a dry place at a temperature between <math>-20^{\circ}\text{C}</math> and <math>+70^{\circ}\text{C}</math>.</p> <p>Prolonged storage at high temperatures may cause a significant loss of battery life.</p>

## 7 REGULATIONS

The product complies with the current European Directives as indicated on the EU Declaration of conformity delivered with the product.

### Recycling:



The transposed European Directives supervise the actions necessary to limit the negative impact of waste batteries and Electrical and Electronic Equipment.

This product is subject to special collection and disposal. It should be deposited at an appropriate facility to enable recovery and recycling. For further details about recycling this product, please contact your Diehl Metering agency.

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