

# HE-Check

Testing device for PWM and 0-10V signals

Function  
Operation



en  
Manual

## Contents

1	Safety advice.....	12
2	Technical data .....	12
3	Connecting the measuring cables.....	13
4	Operation and function .....	13
5	Battery .....	16

## Safety advice

Please pay attention to the following safety advice in order to avoid danger and damage to people and property.

## Description of symbols

**ATTENTION!** Warnings are indicated with a warning triangle!



→ They contain information on how to avoid the danger described.

Signal words describe the danger that may occur, when it is not avoided.

- **ATTENTION** means that damage to the appliance can occur.

→ Arrows indicate instruction steps that should be carried out.



### Note

Notes are indicated with an information symbol.

Thank you for buying this product.

Please read this manual carefully to get the best performance from this unit.

**Subject to technical change. Errors excepted.**

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### Target group

Only qualified electricians should carry out electrical works.

### Instructions

Attention must be paid to the valid local standards, regulations and directives!

### Information about the product

#### Proper usage

With the HE-Check, the function of the pump and the signals of the controller can be checked quickly and easily in compliance with the technical data specified in this manual. Improper use excludes all liability claims.

#### CE Declaration of conformity

The product complies with the relevant directives and is therefore labelled with the CE mark. The Declaration of Conformity is available on request, please contact the manufacturer.



### Disposal

- Dispose of the packaging in an environmentally sound manner.
- Batteries and rechargeable batteries contain toxic substances and must not be disposed of in regular household waste.
- Dispose of old appliances in an environmentally sound manner. On request we will take back your old appliances bought from us and guarantee an environmentally sound disposal of the devices.

### Overview

The HE-Check testing device is used for generating and measuring PWM or 0-10 V signals. This way, high-efficiency pump functions as well as the controller signals can be tested quickly and easily. For testing bidirectional pumps, PWM signals can also be generated and measured simultaneously.

- Intuitive operating concept
- Ergonomic design
- Easy fault diagnostics
- Including different measuring cables

## 1 Safety advice

**Do not use the device if it is visibly damaged!**

### **ATTENTION! Damage by high voltage!**



Measuring voltages higher than 18 V can lead to damage to the device.

→ Do not measure voltages higher than 18V!



The device must only be used in dry interior locations.



Use original accessories (measurement cables, adapters, etc.) only.

## 2 Technical data

**Inputs:** PWM/0-10V

**Outputs:** PWM/0-10V

**PWM frequency:** 290 ... 2000 Hz

**Measuring range:** 0 ... 15 V

**Power supply:** 3 AAA batteries, included with the device, typical battery life: 2 years

**Functions:** measuring and generating a PWM and 0-10V signal

**Housing:** plastic, ABS and TPE

**Indication / Display:** full graphic display

**Operation:** 6 push buttons at the front of the housing

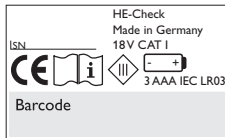
**Protection type:** IP 54/DIN EN 60529

**Safety:** 18V class I/EN 61010

**Ambient temperature:** 0 ... 40 °C

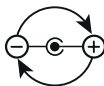
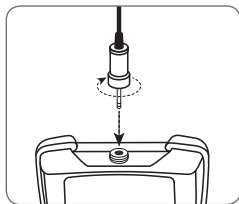
**Degree of pollution:** 2

**Dimensions:** 120 x 65 x 27 mm



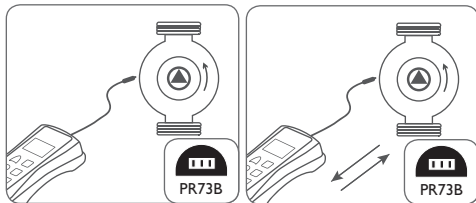
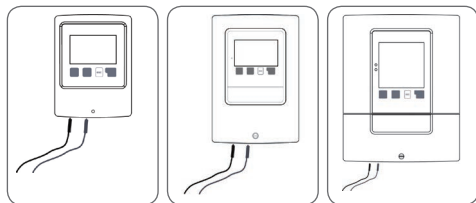
### 3 Connecting the measuring cables

 max. 18V









 POLARITY


If the measuring cable is connected to the controller with wrong polarity, an error message will be indicated.



### 4 Operation and function

The device is operated via the 6 push buttons below the display.

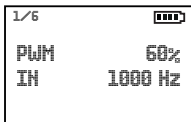
Button	Function
	Switching on/off device
	Switching on/off display illumination
	Scrolling through the menu
	Increasing adjustment values
	Switching on/off signal
	Reducing adjustment values

→ In order to switch on the device, press button . The home screen will be shown.



→ In order to access the menu, press button .

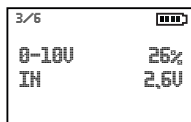
## 1/6 Measuring a PWM input signal



measured PWM signal in %  
measured PWM frequency in Hz\*

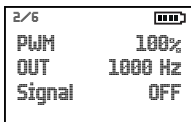
- \* If the PWM signal measured is exactly 0% or 100%, no PWM frequency can be measured. In this case, -- Hz will be indicated.

## 3/6 Measuring a 0-10V input signal



measured 0-10 V signal in %  
measured voltage in V

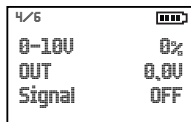
## 2/6 Generating the PWM output signal



generated PWM signal in %  
generated PWM frequency in Hz  
signal on/off

- ➔ In order to adjust the duty cycle of the PWM signal, select the desired value using buttons  $\Delta$  and  $\nabla$ . The adjusted value will be saved automatically.
- ➔ Adjust the frequency of the PWM signal with the parameter **PWM** in the **6/6** menu.
- ➔ In order to switch the signal on or off, press button  $\text{SET}$ .

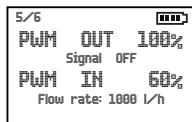
## 4/6 Generating the 0-10 V output signal



generated 0-10 V signal in %  
generated voltage in V  
signal on/off

- ➔ In order to adjust the duty cycle of the 0-10 V signal, select the desired value using buttons  $\Delta$  and  $\nabla$ . The adjusted value will be saved automatically.
- The voltage of the 0-10 V signal generated automatically adapts to the duty cycle value.
- ➔ In order to switch the signal on or off, press button  $\text{SET}$ .

## 5/6 Measuring and generating a PWM signal (for bidirectional pumps)



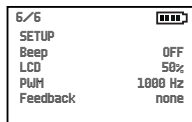
generated PWM signal in %  
signal on/off  
measured PWM signal in %  
pump feedback (if available)\*\*

→ In order to adjust the duty cycle of the PWM signal, select the desired value using buttons and . The adjusted value will be saved automatically.

→ In order to switch the pump on or off, press button .

\*\* Adjust the pump type by means of the parameter **Feedback** in the **6/6** menu, for correct pump feedback.

## 6/6 Settings



touch-tone on/off  
adjust display brightness  
adjust PWM frequency  
adjust pump type

→ In order to scroll through the menu, press button . The menu line selected is highlighted.

→ In order to carry out adjustments, select the menu line and adjust the values with the buttons and . The adjusted values will be saved automatically.

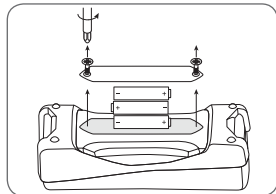
Adjustment channel/ menu	Adjustment range /selection	Factory setting
<b>2/6</b>		
PWM	0 ... 100 %	100 %
Signal	ON, OFF	OFF
<b>4/6</b>		
0-10 V	0 ... 100 %	0 %
Signal	ON, OFF	OFF
<b>5/6</b>		
PWM OUT	0 ... 100 %	100 %
Signal	ON, OFF	OFF
<b>6/6</b>		
Beep	ON, OFF	OFF
LCD	0 ... 100 %	50 %
PWM	290 ... 2000 Hz	1000 Hz
Feedback	Wilo S (solar), Wilo H (heating), Grundfos, none	none

## 5 Battery

The device is equipped with a battery indicator:



🔧 In order to replace the batteries, proceed as follows:



Batteries and rechargeable batteries contain toxic substances and must not be disposed of in regular household waste.

Remove the batteries if you do not use the device for a longer period of time.

## Important note

The texts and drawings in this manual are correct to the best of our knowledge. As faults can never be excluded, please note:

Your own calculations and plans, under consideration of the current standards and directions should only be basis for your projects. We do not offer a guarantee for the completeness of the drawings and texts of this manual - they only represent some examples. They can only be used at your own risk. No liability is assumed for incorrect, incomplete or false information and/or the resulting damages.

### Note

The design and the specifications can be changed without notice.

The illustrations may differ from the original product.

SOREL GmbH Mikroelektronik

Reme-Str. 12  
58300 Wetter

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