

# PSW Basic

## Pump signal converter

Mounting  
Electrical connection  
Adjustment



### Description of symbols

**WARNING!** 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.

- **WARNING** means that injury, possibly life-threatening injury, can occur.
- **ATTENTION** means that damage to the appliance can occur.
- Arrows indicate instruction steps that should be carried out.

**i Note**  
Notes are indicated with an information symbol.

### Information about the product

#### Proper usage

The device is designed for use in solar thermal systems and heating systems 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 upon request, please contact RESOL.



**i Note**  
Strong electromagnetic fields can impair the function of the device.  
→ Make sure the device as well as the system are not exposed to strong electromagnetic fields.

### Disposal

- Dispose of the packaging in an environmentally sound manner.
- Dispose of old appliances in an environmentally sound manner. Upon request we will take back your old appliances bought from us and guarantee an environmentally sound disposal of the devices.

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

## 1 Overview

The PSW Basic signal converter is used for connecting speed-controlled high-efficiency pumps with a PWM or 0-10 V control input to a controller without a corresponding output,

- For solar and heating pumps
- PWM or 0-10 V output signal
- Inversion of the output signal possible
- Robust and dripping water protected housing

The PSW Basic pump signal converter is used for HE pump speed control, without having to replace the controller when replacing the pump.

The following signal conversions are possible:

Input signal \ Output signal	PWM	PWM neg.	0-10 V	0-10 V neg.
Burst	x	x	x	x
Leading-edge phase control	x	x	x	x
Trailing-edge phase control	x	x	x	x

### Technical data

**Inputs:** bursts, phase cutting

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

**PWM frequency:** 625 Hz  $\pm$ 15 %

**PWM voltage:** 11 V

**Power supply:** 220... 240 V~ (50... 60 Hz)

**Supply connection:** type Y attachment

**Power consumption** max. 1.5 VA

**Mode of operation:** 1.Y

**Rated impulse voltage:** 2,5kV

**Functions:** signal converter, converting a speed-controlled 230 V signal into a PWM or 0-10 V signal.

**Housing:** plastic

**Mounting:** Wall mounting

**Protection type:** IP65/EN60529

**Protection class:** II

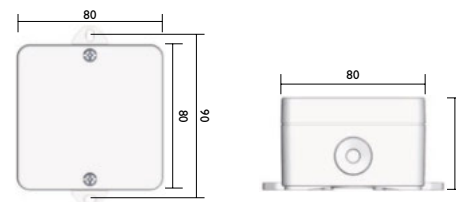
**Ambient temperature:** 0... 50 °C

**Degree of pollution:** 2

**Dimensions:** 80 x 80 x 53 mm

## 2 Installation

### 2.1 Mounting



**WARNING! Electric shock!**  
Upon opening the housing, live parts are exposed!  
→ Always disconnect the device from power supply before opening the housing!

**i Note**  
→ The device is suited for stationary mounting only. Pay attention to strain relief when routing the cables.

Thank you for buying this product.

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

### Safety advice

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

### Instructions

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

### Target group

These instructions are exclusively addressed to authorised skilled personnel.

Only qualified electricians should carry out electrical works.

Initial installation must be effected by the system owner or qualified personnel named by the system owner.


The unit must only be located in dry interior rooms. It is not suitable for installation in hazardous locations and should be protected against electromagnetic fields.

The device must additionally be supplied from a double pole switch with contact gap of at least 3 mm.

Please pay attention to separate routing of sensor cables and mains cables.

- ➔ Determine the mounting site and mark the holes through the fastening points.
- ➔ Drill holes and insert the wall plugs.
- ➔ Fasten the housing.
- ➔ Unscrew both screws.
- ➔ Remove the upper part of the housing.
- ➔ Carry out the electrical connection.
- ➔ Attach the upper part to the housing and tighten both screws.

2.2 Electrical connection



**ATTENTION! ESD damage!**

Electrostatic discharge can lead to damage to electronic components!


➔ Take care to discharge properly before touching the inside of the device!

Connecting the device to the power supply must always be the last step of the installation!  
The device is supplied with power via a mains cable. The supply voltage must be 220 ... 240 V~ (50 ... 60 Hz).  
Connect the input signal cable to the low voltage input:

**R In N max. 240 V** = neutral conductor N low voltage input

**R In L max. 240 V** = conductor L low voltage input

Depending on the desired signal type, connect the output cable to GND and one of the following outputs:



**ATTENTION! Malfunction!**

Pumps with line break detection run with minimum speed if the control signal is 0 V.

➔ Do not operate pumps with line break detection by a 0-10 V signal!

**0-10V Out** = 0-10 V control signal

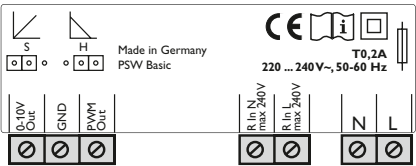
**PWM Out** = PWM control signal

Connect the mains cable to the following terminals:

**N** = neutral conductor N

**L** = conductor L

The power supply of the pump must be carried out externally.

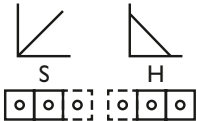
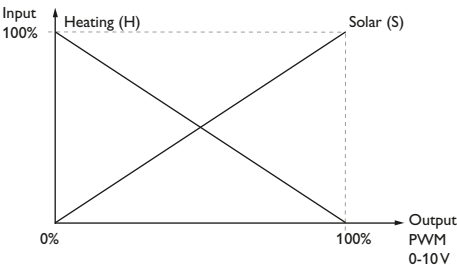


2.3 Inverting the output signal

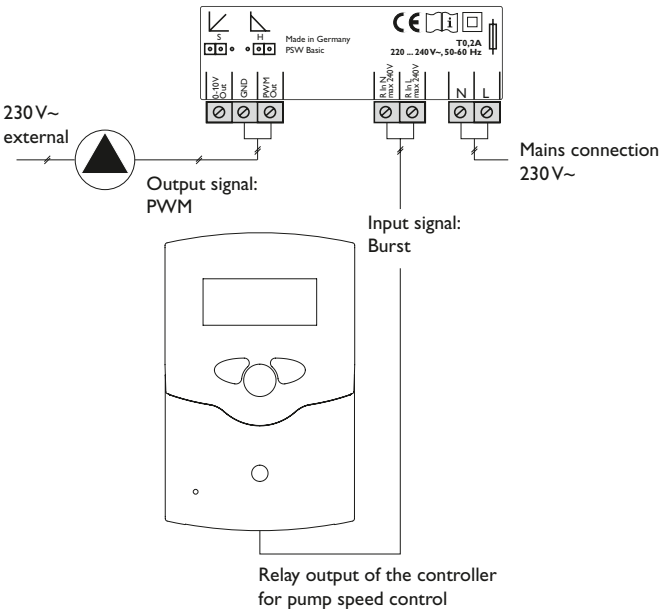
By means of the three-pole jumper on the left-hand side above the output terminals the output signal can be issued inverted or not inverted.

Jumper position left: not inverted (solar pump)

Jumper position right: inverted (heating pump)



2.4 Application examples (pump with PWM control)



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.