



Rainwater harvesting
The complete system

Operating instructions

ZETA 02 pump controller

- Suitable for use with all standard pumps
- Reduces CO₂ emissions by up to 97%
- Reduces energy consumption by up to 128 kWh per year
- Cuts energy costs by up to 32.00 euros per year
- ZETA 02 switches the pump on and off as required and protects it against running dry
- German utility model DGM 2020 13011 190.9
- Energy-efficient technology, stand-by usage < 0.2 W



WISY Rainwater Harvesting

ZETA 02 pump controller

Please read through these operating instructions carefully before you attempt to install and use the pump controller!

Installation instructions and technical advice for WISY's highly efficient ZETA 02 and ZETA 02/V pump controllers (original)

Contents

These installation instructions include the following information relating to:

- Applications and proper use
- Safety instructions
- Delivery and pump controller versions
- Recommended accessories
- Operating principle
- Installation requirements
- Installation
- Commissioning
- Programming
- Maintenance, repairs
- Troubleshooting guide
- Technical data
- Environmental guidance, guarantee
- Company name and address
- Declaration of conformity

**Highly efficient control unit
(standby usage < 0.2 W) for pumps**

- **Protects the pump against running dry**
- **Pressure gauge**
- **Operating state indicated by LEDs**



Description and applications

The highly efficient ZETA 02 (ZETA 02/V) pump controller developed by WISY is suitable for controlling multi-stage centrifugal suction pumps and multi-stage submersible pressure pumps. They are ideal for controlling pumps used in rainwater harvesting systems. The ZETA 02 must be installed in a vertical position. It may be used to control pumps which pump filtered rainwater or mains water at a maximum water temperature of 35°C.

Two different versions of the ZETA 02 are available. The standard version starts the pump when the system pressure reaches 1.5 bar. With the ZETA 02/V version, it is possible to adjust the cut-in pressure to between 1.5 and 2.8 bar. The specifications for the ZETA 02 controller contained in these instructions apply equally to the ZETA 02/V controller.

The ZETA 02 controller starts the pump when an outlet is opened and the cut-in pressure is reached. The pump remains in operation as long as the outlet is open. The pump is shut down when the outlet is closed and the pump-specific system pressure is reached.

The ZETA 02 controller protects the pump against running dry by shutting it down when there is no water in the circuit.

The ZETA 02 controller must be installed in a dry, dust-free and frost-free area. The operating state of the pump and the system pressure are indicated directly on the pump controller.

Improper use

The ZETA 02 controller cannot be used to control pumps with a power consumption of > 16 A. The ZETA 02 controller cannot be installed in shafts, storage tanks or outdoors. The ZETA 02 controller must not be connected to any device other than the types of pump described above.

Additional measures must be taken if the ZETA 02 controller is deployed in systems with a water extraction rate of less than 1 litre per minute (e.g. drip irrigation systems). The ZETA 02 controller is not suitable for use in pumping systems for contaminated water (i.e. which contains sand, dirt or abrasive substances, for example), or for pumping fluids other than clean water.

! Safety instructions

Please read through these operating instructions carefully and store them in a safe place for future reference. The ZETA 02 controller may be connected to a supply voltage of between 100 V and 240 V (50 Hz / 60 Hz). Please check whether the pump connected to the ZETA 02 controller is designed to operate on the available supply voltage! Never lift or pull the ZETA 02 controller by its electric cable. Do not pinch or crush the electric cable, or route or pull it across sharp edges. Check the mains plug and electric cable for any damage before you switch on the power supply. If you find any signs of damage, contact an authorized customer service agent (qualified electrician) and have the damage repaired.

The ZETA 02 / ZETA 02/V controller may not be used or operated by persons who suffer from any kind of mental, physical or sensory disability unless they are under the supervision of someone who is responsible for their safety, or have received instruction in safe use and operation of the pump controller from someone who is responsible for their safety. They must have been made aware of all potential hazards.

Children must not be allowed to operate or play with the ZETA 02 / ZETA 02/V controller.

Do not open the storage tank and never climb inside the storage tank while the ZETA 02 controller is connected to the mains power supply. Never leave the storage tank unsupervised when it is open! No one is allowed to climb inside the storage tank except properly qualified specialist personnel who must be supervised and wearing protective gear (e.g. safety harness) whilst inside the tank. The mains plug must be pulled from the socket before any maintenance work is carried out on the ZETA 02 controller or the connected pump.

If the RCD / fuse trips, the cause of tripping must be identified and rectified by the manufacturer / by a contractor appointed by the manufacturer. If the power cable to the ZETA 02 controller is found to be damaged, it must be replaced by the manufacturer / by a contractor appointed by the manufacturer.

Delivery and storage

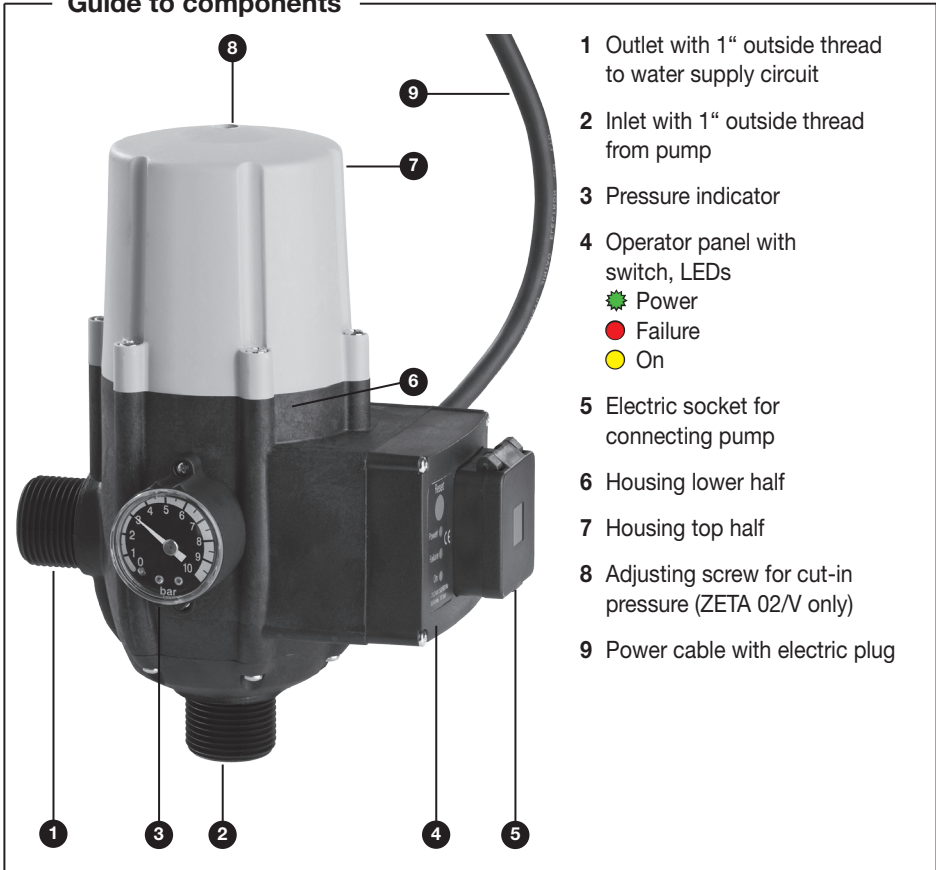
The WISY ZETA 02 pump controller is shipped in a cardboard box. The cardboard box must not be dropped, crushed or handled with force. The product must be immediately inspected for damage on receipt. The cardboard box or its unpacked contents must be stored in a safe, dry, dust-free and frost-free location and protected against the ingress of dirt or contaminants.

Scope of delivery

The WISY ZETA 02 pump controller is equipped with:

- An integral electric socket
- A 1.5 m long power cable with electric plug
- ZETA 02/V only: Adjusting screw for cut-in pressure (at top) and with the connections, indicators and switches listed below:
- Inlet with outside thread: 1" (at bottom)
- Outlet with outside thread: 1" (at side)
- Pressure gauge to indicate system pressure (can be mounted on either side)
- Switch for manual RESET
- POWER (ready) LED
- FAILURE (fault) LED
- ON (pump in operation) LED

Guide to components



Versions

- ZETA 02, cut-in pressure 1.5 bar, 2 x 1" outside thread (Item No. ZT 02 00)
- ZETA 02/V, cut-in pressure adjustable from 1.5 to 2.8 bar, 2 x 1" outside thread (Item No. ZT 02 10)
- ZETA 02/A with sealed 1 1/4" screw connection at bottom, for AspriPlus (Item No. ZT 02 50)
- ZETA 02/A/V with sealed 1 1/4" screw connection at bottom and cut-in pressure adjustable from 1.5 to 2.8 bar, for AspriPlus (Item No. ZT 02 60)
- ZETA 02 with stainless-steel wall-mounting bracket, connections 2 x 1" outside thread (Item No. ZT 02 06)
- ZETA 02/V, cut-in pressure adjustable from 1.5 to 2.8 bar, with stainless-steel wall-mounting bracket, connections 2 x 1" outside thread (Item No. ZT 02 07)

Recommended accessories

- 1" connecting hose, with stainless-steel sheath, with 1" union nut and 1" nipple, for flexible, low-noise connection (available in lengths up to 2 m:
Length 0.5 m = Item No. VD 9928; length 0.75 m = Item No. VD 9929;
length 1 m = Item No. VD 9930; length 1.5 m = Item No. VD 9931;
length 2 m = Item No. VD 9932)
- 3/4" connecting hose with 1" union nut and 3/4" nipple, with stainless-steel sheath, with 3/4" ball valve, for flexible, low-noise connection to the distribution pipework (Item No. VS 9953)

Operating principle

The ZETA 02 pump controller starts up the connected pump fully automatically from standby mode (LED "POWER" (ready)) when the cut-in pressure in the water supply circuit is reached. While an outlet is open, ZETA 02 measures the flow rate and the pump remains in operation (LED "ON" (pump in operation)). When the outlet is closed, the pump is shut down (LED "POWER" (ready)).

If the water flow rate to the pump drops below a minimum limit during operation, ZETA 02 registers that the flow rate is insufficient and shuts the pump down (dry run protection, LED "FAILURE" (fault)).

Installation requirements

The ZETA 02 controller must be installed by a specialist installation company, i.e. by properly qualified, approved installation specialists and electricians. This is a basic requirement for maintaining the validity of the manufacturer's guarantee.

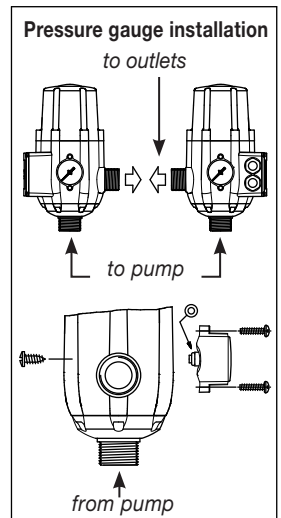
The pump controller must be installed in a frost-free room with a floor drain. Piping or hoses must be cleaned or flushed through before use to remove any deposits of dirt/dust caused by building work. Protective plugs must be removed from the ZETA 02 controller before pipes or hoses are connected. Water pipes/hoses must not be installed in areas in which they might be exposed to heat sources. A heat source can cause the system pressure to increase and result in component damage.

Installation

The ZETA 02 pump controller must always be installed in a vertical position with the yellow top half pointing upwards. The (water) inlet at the bottom is connected to the pump by means of a suitable pumped rising main / screw connection with a cross section of at least 1". The (water) outlet at the side is flexibly connected to the water supply circuit. All (water) inlets and outlets must be flat-sealing and not subjected to mechanical stress.

If the ZETA 02 controller is used to control a submersible pressure pump, it must be fixed securely in position on a WISY stainless-steel wall-mounting bracket.

The pressure gauge is attached by two fastening screws. Use lubricant for the O-ring. The pressure gauge must be clearly visible on the front face of the unit. The connection on the opposite side must be closed by means of the stainless-steel screw without sealant.



Commissioning

- Vent the pump and the line from the pump to the ZETA 02 pump controller.
- Open the valves at the appliances.
- Insert the mains plug of the pump into the socket on the ZETA 02 pump controller.
- Connect the ZETA 02 pump controller to the mains supply, the pump starts up, LED “POWER” lights up.
- As soon as the system has been bled, close the valves at the appliances.
The pump must shut down after approximately 5 to 10 seconds, LED “ON” lights up.
- The system is ready when the maximum operating pressure (max. delivery head of pump) is reached.
- When you have finished commissioning the system, check the cut-in pressure at the pressure gauge, inspect the water inlets/outlets for leaks and check that the pressure gauge indicates a constant pressure after the pump has shut down.

ZETA 02 Programming










Note:

The “Reset” button on the Zeta 02 serves two functions, if pressed for less than 1 sec. it will go into reset mode, pump starts running. If pressed for longer it will go into one of the programming modes below

Programming Run-on-time.

Mode 1 – Fast Flash

To **Enter** – Press and hold reset button (**3 secs**). Then briefly press reset button to toggle between settings.

<ul style="list-style-type: none">  FAST FLASHING  ON  OFF 	<p>5 sec Run-on-time (Default and recommended setting for normal use)</p>
<ul style="list-style-type: none">  FAST FLASHING  OFF  ON 	<p>3 sec Run-on-time</p>
<ul style="list-style-type: none">  FAST FLASHING  ON  ON 	<p>1 sec Run-on-time</p>

To save the setting press and hold the reset button until the power light stops flashing (approx. 3 secs.)

Programming excess pump run and starts functions

Mode 2 – Slow Flash





To **Enter** – Press and hold reset button (**6 secs**). **Then** briefly press reset button to toggle between settings.

D = Excess pump run function

D on – Pump stops after 10 minutes continuous run.
(May need to leave this off for some irrigation applications).

T = Excess pump starts function.

T on – Pump stops after 25 starts per hour. (Where multiple starts are occurring, we would recommend installing a pressure vessel).

<ul style="list-style-type: none">  SLOW FLASHING <input type="radio"/> OFF <input type="radio"/> OFF 	D off	T off
<ul style="list-style-type: none">  SLOW FLASHING <input checked="" type="radio"/> ON <input type="radio"/> OFF 	D off (Default)	T on (Default)
<ul style="list-style-type: none">  SLOW FLASHING <input type="radio"/> OFF <input checked="" type="radio"/> ON 	D on	T off
<ul style="list-style-type: none">  SLOW FLASHING <input checked="" type="radio"/> ON <input checked="" type="radio"/> ON 	D on	T on

Save the setting by pressing and holding the reset button until the power light stops flashing (approx. 3 secs.)

IF either of these functions has switched the pump off, THEN the fault light (only) will show.
IF the fault light AND the power light show then this indicates that a “Dry Run” type fault has occurred. (i.e. No flow arrived at the zeta 02 when the pump power was on)

ZETA 02/V version with adjustable cut-in pressure

The cut-in pressure for the ZETA 02/V controller must be adjusted while the system is depressurized.

The cut-in pressure is adjusted by means of the adjusting screw on top of the pump controller while the system is depressurized. To adjust the pressure, read the pressure indicated by the gauge at the moment the pump cuts in. After the pump has stopped, disconnect the ZETA 02/V controller from the power supply and open an outlet until the pressure gauge indicates 0 bar. To increase the cut-in pressure, turn the adjusting screw clockwise. Connect the ZETA 02/V controller to the power supply again and wait for the pump to start up. When the pump starts up again, check the cut-in pressure. If it is not correct, follow the procedure described above again until you obtain the required cut-in pressure.

To ensure proper functioning of the ZETA 02/V controller, the pump must have a delivery head which is 8 m (0.8 bar) higher than the set cut-in pressure.

Example:

Height of outlet	Cut-in pressure	Minimum delivery head of pump
20 m	2.2 bar	30 m
25 m	2.7 bar	35 m

The ZETA 02 and ZETA 02/V controllers regulate only the cut-in pressure but have no influence on the operating pressure of the system. The system operating pressure is determined solely by the performance parameters of the pump.

Maintenance, servicing

When servicing needs to be carried out with the storage tank open, the ZETA 02 controller, the connected pump and all other electrical systems must be disconnected from the mains supply. The safety instructions contained in this document must be strictly observed!

Inspections/tests at 6-monthly intervals:

- Inspect the ZETA system and water pipes/hoses for leaks
- Check the system pressure indication
- Test the pump start and stop points set on the ZETA 02 pump controller

Repairs

All repair work must be carried out by the manufacturer or by contractors expressly appointed by the manufacturer. The guarantee will become void if any unauthorized repair work or modifications to components or to the factory-assembled condition of the ZETA 02 pump controller are carried out.

Technical data

ZETA 02	
Supply voltage	100 V to 240 V
Maximum power consumption of the connected pump	8 A (up to max. 20 A briefly during starting)
Alternating voltage frequency	50 to 60 Hz
Degree of protection	IP 44
Maximum water temperature	35°C
Maximum flow rate	10.000 l/h
Cut-in pressure ZETA 02	1.5 bar
Cut-in pressure ZETA 02/V	From 1.5 to 2.8 bar
Maximum permissible operating pressure	10 bar

Troubleshooting guide

Type of fault	Cause	Remedy
The pump is running continuously.	<ul style="list-style-type: none"> a) Water loss of more than 0.7 litre/minute from the circuit. b) The switch (RESET) is blocked. c) The printed circuit board is defective. 	<ul style="list-style-type: none"> a) Check the entire installation, water taps, toilets, etc. b) Press the switch a number of times. If it remains blocked, contact customer service for advice. c) Replace the printed circuit board (contact customer service).
The pump does not start.	<ul style="list-style-type: none"> a) Insufficient water, dry run protection is active, LED (FAILURE) is illuminated. b) The pump is blocked. The LED (FAILURE) is illuminated, the safety system has been activated. After the switch (RESET) is pressed, the LED (ON) lights up but the pump does not start. c) The printed circuit board is defective. d) Power supply fault. e) Insufficient pump pressure. The safety system has been activated and LED (FAILURE) is illuminated. f) Air is entering the pump suction line. The pressure gauge is indicating much lower than normal or strongly fluctuating pressure values. The safety system has been activated, the pump is stationary. The LED (FAILURE) is illuminated. 	<ul style="list-style-type: none"> a) Find and remedy the cause for the low water level; vent the pump (and pumped rising main to ZETA 02 if submersible pump is connected) before recommissioning the system (contact customer service if required). b) Contact customer service. c) Replace the printed circuit board (contact customer service). d) Check whether the electrical power supply is functioning properly. LED (POWER) must be illuminated. e) Check whether the pump is delivering the required pressure of 0.8 bar above the cut-in pressure of the ZETA 02 controller. f) Check and repair the hose and pipe connections at the suction end of the pump (contact customer service if required).
The pump is starting and stopping continuously.	<ul style="list-style-type: none"> a) Leakage from water circuit. 	<ul style="list-style-type: none"> a) Check the water supply circuit downstream of the ZETA 02 controller for water loss as a result of open or dripping outlets, open float valves in toilet cisterns or leaking garden hoses, close or repair the outlets (contact customer service if required).

Environmental guidance

Disposal / recycling of transport packaging

The ZETA 02 controller is shipped in recyclable packaging. Please recycle it as waste paper!

Disposal / recycling of old units

Waste electrical and electronic equipment often contains valuable materials which can be reused / recycled. However, they also contain harmful substances which are essential to the proper, safe operation of the equipment. These substances pose a hazard to human health and to the environment if the products are disposed of as general (non-recyclable) household waste or are incorrectly handled. For this reason, you must never dispose of an old unit as general (non-recyclable) household waste!

Use the recycling centres provided in your area to return defective electrical or electronic equipment for recycling!



Guarantee

Period and commencement of the guarantee

This guarantee is valid for a period of 24 months and becomes effective on the date of purchase by the customer. Replacement of the product under guarantee will not extend the original period of the guarantee.

WISY shall meet its guarantee obligations for the ZETA 02 pump controller if it can be demonstrated that the following conditions are fulfilled:

Terms and conditions of the guarantee

1. The product has been purchased from a specialist WISY retailer in the Federal Republic of Germany. When the product has been purchased from a specialist WISY retailer in any other EU country, other or additional conditions may apply.
2. The product has been commissioned by the WISY customer service or by a specialist installation company.

Claims can be made under the guarantee only if WISY receives notification in writing of any defect within 14 days of discovery of the defect.

Content and scope of the guarantee

During the guarantee period, WISY shall repair or replace free of charge any defective part. Any further claims for damages shall be excluded to the extent permitted by law.

Limitation of the guarantee

Faults or defects which arise as a result of the following factors are not covered by the guarantee:

- Faulty assembly or installation, e.g. failure to comply with the valid VDE regulations, or with the Installation Instructions.
- Inappropriate use or exposure to excessive mechanical strain.
- The connection of equipment to the ZETA 02 controller other than the devices specified above.
- External influences, e.g. shipping damage, damage caused by shock impacts, damage caused by exposure to weather or other natural phenomena.
- Repairs or modifications undertaken by unauthorized third parties.



Rainwater harvesting
The complete System

Declaration of Conformity

The ZETA 02 / ZETA 02/V pump controller complies with the requirements of the following EU Directives in its basic design, technology and construction:

Directive 2004/108/EC dated December 15, 2004 relating to the electromagnetic compatibility of electronic equipment

Directive 2006/95/EC dated December 12, 2006 relating to electrical equipment designed for use within certain voltage limits (Low-Voltage Directive)

Manufacturer

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Authorised person with responsibility for technical documentation

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Kefenrod, July 15, 2014

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WISY Rainwater Harvesting



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The complete system*

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**For up-to-date information
about rainwater harvesting and
all our products, please visit:
www.wisy.de**