

Operating instructions

SIGURA 9 Break Tank

- Operating instructions for the SIGURA 9 break tank
- Please read through these instructions carefully before you attempt to install and use the break tank!
- 4-stage non-self-priming centrifugal pump in wall unit
- Operates fully automatically to supply appliances with process water on demand
- Automatic process water supply with integral 9-litre top-up tank
- Energy-efficient technology, standby consumption less than 0.2 W



SIGURA 9

WISY
Building Services Systems

Potential applications for the new SIGURA 9 break tank:



**... and
many
others!**

SIGURA 9 break tank

Please read through these instructions carefully before you attempt to install and use the break tank!

Contents



Read the operating instructions carefully before commencing assembly and installation work and store them in a safe place for later reference. Follow the safety instructions on page 7!

Proper use

Improper use



Wall unit

These installation instructions include information relating to the following:

- Applications
- Scope of delivery
- Components diagram
- Preparations for installation, assembly
- Commissioning
- Design and operating principle
- Maintenance, safety instructions, repairs
- Troubleshooting guide
- Technical data and materials
- Environmental guidance
- Guarantee conditions, device number
- Declaration of conformity

| | | |
|--|---|---|
|  <p>Failure to heed the information indicated by this symbol could result in serious or fatal injury.</p> |  <p>Failure to heed the information indicated by this symbol could result in death by electric shock.</p> |  <p>Failure to heed the information indicated by this symbol could result in damage to the equipment, or damage caused by the equipment.</p> |
|--|---|---|

Applications

The SIGURA 9 break tank separates the process water circuit from the mains water supply. It is designed to protect the public supply of potable water against contamination.

The SIGURA 9 break tank is installed in a frost-free utility room, draws mains water out of the mains water circuit and feeds it under pressure into the process water circuit.

The break tank maintains a water pressure of up to 4.5 bar in the process water circuit and is suitable for boosting the pressure in detached/semi-detached houses with up to three storeys. It is also designed for use in irrigation systems or for other processes that may not be directly connected to the mains water supply system.

SIGURA 9 cannot be installed outdoors or in any area that is not protected against frost. SIGURA 9 is not suitable for appliances with a flow rate of less than 1 litre/minute. The process water circuit must be leak-tight.

Delivery / shipment of the unit

The SIGURA 9 break tank is normally shipped as a parcel. As soon as the package is received, it must be checked for any signs of damage.

The package or its unpacked contents must be stored in a safe, dry, and frost-free location.

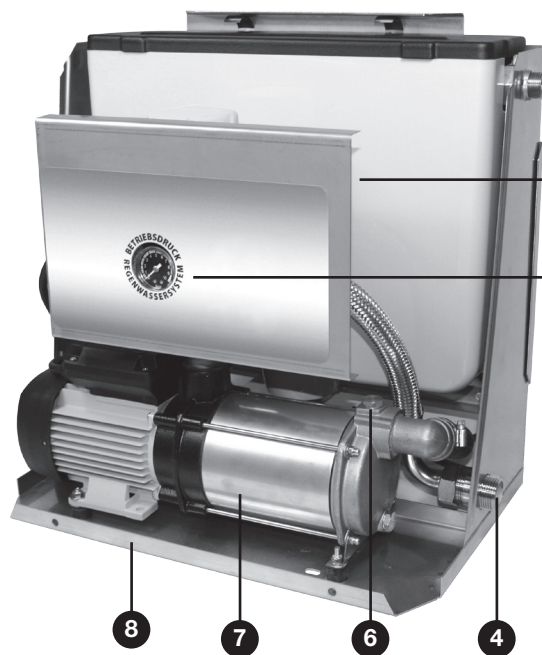
Scope of delivery

Wall unit equipped with

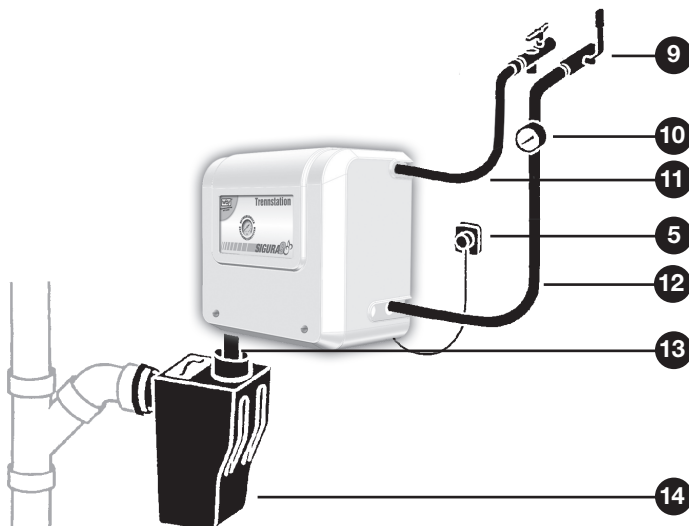
Wandgerät ausgestattet mit

- Open mains water outlet with float valve to EN 1717
- 9-litre top-up tank with emergency overflow DN 70
- Prisma non-self-priming, multi-stage centrifugal pump
- Zeta 02 pump controller
- Protective cover for the wall unit
- Wall mounting kit

Guide to components



- 1 Mains water connection
- 2 ZETA 02 pump controller (covered, with display and operator panel)
- 3 Operating pressure indicator (pressure gauge)
- 4 Domestic water supply outlet
- 5 Mains plug for complete system
- 6 Screw plug for venting/filling
- 7 Non-self-priming centrifugal pump
- 8 Base frame



Accessories not included in the scope of supply:

- 9 Isolating valves for mains water pipe and process water pipe
- 10 Water meter for process water
- 11 Flexible connecting hoses
- 12 Connecting hose for domestic water supply
- 13 Emergency overflow drain connection (DN 70)
- 14 Multisiphon (odour seal and backflow prevention device)

Note backflow level requirements and other installation conditions



Preparations for installation

The SIGURA 9 break tank 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.

Please note: The SIGURA 9 must be installed above the backflow level. Special protective measures must be implemented if the unit is installed and operated below the backflow level of the drain system!

The emergency overflow of the mains water top-up tank must be permanently and securely connected to a drain (DN 70). The room in which the unit is installed must have a floor drain.

The water column between the bottom edge of the wall unit and the highest operating point (valve at appliance) must not exceed 15.0 m.

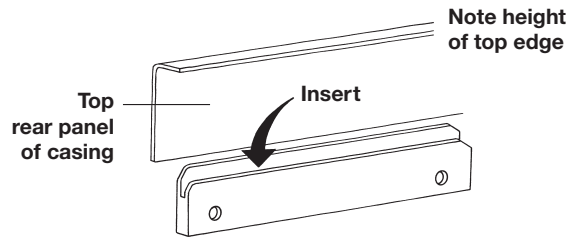
Piping or hoses must be cleaned or flushed through before they are used to remove any deposits of dirt/dust caused by building work!

Important: The protective plugs fitted over the connectors on the wall unit must be removed before hoses or pipes are connected to the unit!

Assembling the wall-mounting bracket

Installation

- Attach the wall mounting kit horizontally according to the dimensions given. The wall-mounting bracket can be used as a drilling template. The distance between the two holes is 280 mm. The break tank can then simply be inserted in the groove of the bracket.



Installing the wall unit

Important: The mains water flow rate into the unit must be equal to or greater than the flow rate of the pumped output so as to ensure that Sigura 9 can operate properly!



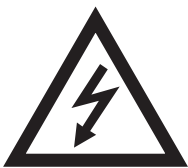
- We recommend that you use our hose connection kit (Item No.: RW 7800) to connect the wall unit. All connections at the wall unit must be acoustically isolated and flat-sealing.
- Connect the incoming mains water pipe to the mains inlet connector on the SIGURA 9 unit.

Use a $\frac{3}{4}$ " connecting hose with stainless steel sheath (accessory) to connect the mains water pipe to the mains inlet connector on the SIGURA 9 wall unit. The top-up flow rate is approximately 95 l/min with a mains pressure rating of 3 bar (= 300 kPa).

Important: If the mains pressure rating at the installation site is less than 3 bar (= 300 kPa), it may be necessary to increase the cross section of the mains pipe (e.g. to "1"). If the mains pressure rating is higher than 5 bar (500 kPa), it must be reduced to 4 - 5 bar (400 - 500 kPa) by means of a pressure reducing valve. A ball valve with dirt trap must be installed between the mains water supply and the connecting hose to the wall unit.

- Connect the emergency overflow (DN 70) of the mains water top-up tank via an odour seal (siphon) to a domestic drainage.
- If the unit is installed below the backflow level, an additional backflow prevention device (multisiphon) must be provided.
- Connect the SIGURA 9 unit to the indoor process water circuit using a flexible connecting hose and an isolating ball valve with drain valve (accessory). In order to record water consumption, it is advisable to fit a water meter in the process water circuit.
- The mains electrical connection of the SIGURA 9 unit (alternating current, single-phase, 50 Hz, 230 V) must be protected by an earth-leakage circuit-breaker (0.03 A) and a 16 A fuse. It is essential that all electrical installation work is carried out in compliance with the relevant safety regulations!
- If the mains cable or an electrical connecting cable of the wall unit becomes damaged, it must be replaced by the manufacturer, a service partner or an authorized specialist. In the event of cable damage, disconnect the SIGURA 9 from the mains supply immediately!

Electrical connection



Important: The pump must not be put into operation, or even tested, unless the system is filled with water. Make sure that the 9-litre top-up tank is full of water and that the mains water pipe is connected.

Important:

It is essential that you observe the specifications delivery head H / flow rate Q and the performance chart / operating characteristic of the SIGURA 9 (for further information, see Technical data and Materials).

Drip irrigation



Protection of mains water by open outlet

Operating pressure indicator

Integrated dry run protection

Flexible programming options

For higher elevations / longer cable lengths or applications which require a greater volumetric flow rate, we recommend use of the WISY Sigura 100 or Sigura 500 break tank

Commissioning

1. Open the isolating valve of the mains water connection. The 9-litre top-up tank is then filled with water via the float valve.
2. Open the screw plug for venting/filling the pump in the wall unit and fill the pump with clear, clean water. Close the screw plug again making sure that you don't damage the O-ring.
3. Open the valves at the appliances.
4. Connect the SIGURA 9 to the electricity supply.
5. As soon as the system has been bled, close the valves at the appliances. The SIGURA 9 unit is ready to operate as soon as the maximum system pressure is reached.

Design and operating principle

The SIGURA 9 system uses tried-and-tested, reliable components. Its Zeta02 pump controller is especially energy efficient, consuming less than 0.2 watts in standby mode. The operating principle of the system is extremely simple:

If a valve at one appliance (e.g. irrigation system) is opened, the pressure in the supply circuit drops. When the factory-set pump cut-in pressure (1.5 bar) on the pump controller is reached, the pump in the break tank starts up and supplies the connected appliances with water. When all valves at the appliances are closed again, the pump controller shuts down the pump when operating pressure is reached.

Note: If a „drip irrigation“ system (often computer-controlled) is to be connected as an appliance to the SIGURA 9, a small expansion vessel (at least 15 l capacity) must be installed downstream of the wall unit in the process water pipe. The expansion vessel must be dimensioned appropriately to prevent the pump from exceeding its maximum starting frequency (20 starts per hour).

The mains water top-up system is implemented as an open outlet in accordance with EN 1717 (formerly DIN 1988/4).

The tank can be topped up with approximately 95 litres of mains water per minute if required. The mains water top-up tank has a storage capacity of 9 litres and is also fitted with an emergency overflow (DN 70) as an additional precaution.

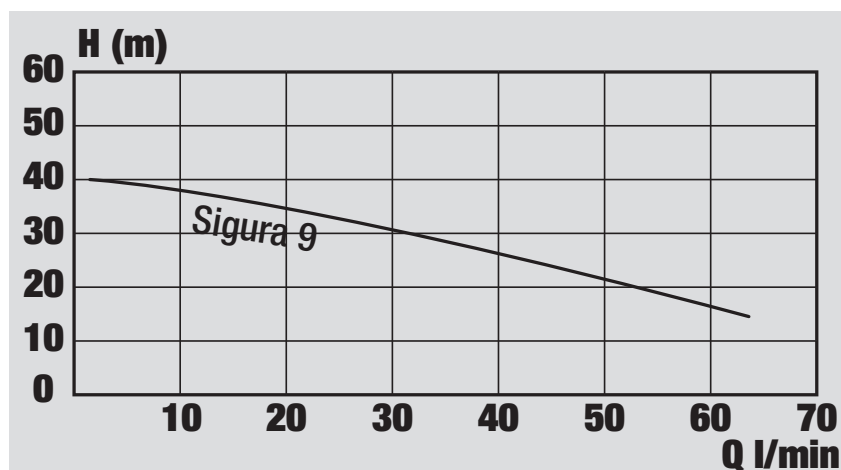
A pressure gauge in the sight glass of the SIGURA 9 indicates the current system pressure in the process water circuit.

When the system is completely empty of water, the dry run protection system integrated in the pump controller shuts down the pump in the SIGURA 9 tank.

The SIGURA 9 can be programmed to meet individual requirements, i.e. the pump run-on time, the number of pump starts per hour and the period of continuous pump operation can all be set directly on the pump controller.

For more information, please refer to the enclosed operating instructions for the Zeta pump controller.

Operating characteristic at 2850 rpm





Please observe all the information contained in sections „General safety instructions“ and „Repairs“.



Disposal / recycling of transport packaging

Disposal / recycling of old units

Maintenance and servicing

As a general rule, the following inspections/tests must be carried out at 6-monthly intervals

- Inspect the water circuit connections for leaks
- Perform a function test on the pump and check the system pressure indicator
- Test the pump cut-in and cut-out points set on the pump controller
- Perform function test on mains water top-up system
- Inspect the mains water inlet; if necessary, clean the dirt trap at the float valve inlet and the dirt trap at the isolating valve;

Ten years after the system has been commissioned, the float valve of the mains water top-up system and the diaphragms of the pump controller must be replaced (specialist installation company).

General safety instructions

This equipment must not be used or operated by anyone who suffers from any kind of physical, mental or sensory disability unless they are under the supervision of a competent person who is responsible for their safety, or unless they have received instructions from the supervising person on safe use of the equipment. They must be aware of and understand the potential hazards. Children must not be allowed to play with or operate the equipment, nor to carry out any maintenance on it.

The electric plug of the SIGURA 9 must be removed from the socket to disconnect the unit from the mains supply before any inspection, repair or maintenance work is carried out. If the earth-leakage circuit-breaker or fuse trips, the trip cause must be identified and rectified by the manufacturer / by a contractor appointed by the manufacturer. If the power cable to the SIGURA 9 unit is found to be damaged, it must be replaced by the manufacturer / by a contractor appointed by the manufacturer.

Installation work which involves particular hazards (e.g. risk to mains water supply or the electrical installation) must always be carried out by a properly qualified, approved plumber or electrician who has expert knowledge in the following areas:

- Selection of appropriate tools and suitable electrical and installation materials
 - IP degrees of protection
 - Correct methods of installing electrical and other materials
 - TN-C system, TN-S system and appropriate additional measures where necessary
 - Potable water protection in accordance with EN 1717, DIN 1989
- Failure to install the equipment properly can endanger your own life and the life of anyone who uses the equipment.

Repairs

All repair work must be carried out by the manufacturer or by expressly authorized companies.

Repairs, modifications to components or modifications to the installation in the SIGURA 9 unit carried out by unauthorized persons shall invalidate the guarantee!

Environmental guidance

The SIGURA 9 is shipped in recyclable cardboard packaging. Please recycle it as waste paper! Please also take the Styropor cushioning pieces to your local recycling centre for recycling.

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 risk 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 / facilities provided in your area to return defective electrical or electronic equipment so that it can be recycled!



Troubleshooting guide

| Type of fault | Cause | Remedy |
|--|---|---|
| SIGURA 9 is not supplying water to appliances | <p>a) Isolating valve at mains water connection is closed (air suction, dry run protection system active)</p> <p>b) Pump controller is not switching the pump on.</p> <p>c) Pump is blocked.</p> <p>d) Power supply to SIGURA 9 is interrupted.</p> | <p>a) Open the isolating valve at the mains water connection to the SIGURA 9. Remove the cover and refill the integral pump by opening the screw plug. Close the screw plug. Press the RESET button on the pump controller. Pump starts up and switches off again when max. pressure is reached. SIGURA 9 is ready to operate</p> <p>b) Pull out the mains plug of the SIGURA 9 and push it back in again. If this does not rectify the fault, please contact customer service.</p> <p>c) Contact customer service.</p> <p>d) Check the electrical connection (the earth-leakage circuit-breaker might have tripped)!</p> |
| SIGURA 9 is not producing enough pressure | SIGURA 9 pump has not been fully vented. | Vent the pump again. |
| Pump is running continuously | <p>a) Water loss of more than 0.7 l/min from the circuit.</p> <p>b) Printed circuit board in the pump controller is defective.</p> | <p>a) Check the entire installation and valves at the appliances, and seal or repair as required.</p> <p>b) Contact the installation specialist or customer service.</p> |
| The pump integrated in the tank is switching on and off continuously | Leak in the system. | Inspect the process water circuit for minor leaks and repair as necessary. |
| Mains water is continuously running out through the emergency overflow of the mains water top-up tank (audible!) | Float valve in the mains water top-up tank is not closing, valve is clogged | Close the isolating valve to the mains water connection. Clean or replace the valve, contact the installation specialist. |
| Dry run protection system is active even though the top-up tank is full of water | <p>1. Mains water connection is not supplying enough water, pump is emptying the top-up tank</p> <p>2. Top-up system float valve is dirty</p> | <p>1. Make sure that the supply of mains water is sufficient; open the isolating valve wide; it might be necessary to increase the pipe cross section (installation specialist!)</p> <p>2. Clean the dirt trap at the float valve of the top-up system (contact installation specialist if necessary)</p> |
| The pressure gauge (pressure indicator) is displaying excess pressure. | An external heat source (e.g. radiator) is causing pressure increase in the SIGURA 9 circuit. | Contact customer service of your installation company (it might be necessary to install a pressure relief valve) |

The SIGURA 9 complies with the following technical standards: EN 1717 (formerly DIN 1988/4 Mains water top-up via an „open outlet“).

Technical data

| SIGURA 9 | |
|--|--|
| Power consumption - Horizontal centrifugal pump - Standby (W) | 800 W Prisma 15/4 < 0,2 |
| Mains connection 1-phase alternating current | 230 V, 50 Hz |
| Max. power consumption | 10 A |
| Degree of protection - Horizontal centrifugal pump - ZETA 02 pump controller | IP 55 IP 44 |
| SIGURA 9 water connections: - Mains water connection - Outlet connection to appliances | ¾" outside thread 1" outside thread |
| Sound pressure level dB (A) (in decibels) - In mains water operation | 63 |
| Pump in wall unit: Delivery head H / flow rate Q Mains water operation: H_{\max} / Q_{\min} H_{\min} / Q_{\max} | 39 m / 20 l/min 21 m / 50 l/min |
| Cut-in pressure of pump controller | 1,5 bar |
| Max. operating pressure | 4,4 bar |
| Max. permissible operating pressure | 8 bar |
| max. Wassertemperatur | 35° C |
| Capacity of mains water top-up tank | 9 litres |
| Mains water connection: - Min. inlet water pressure - Max. inlet water pressure | 1 bar (= 100 kPa) 6 bar (= 600 kPa) |
| Top-up flow rate (mains pressure rating 3 bar (300 kPa) , pipe cross section ¾") | Approx. 95 l/min |
| Dimensions of SIGURA 9 Depth x width x height (in mm) | 315 x 500 x 510 |
| Electr. connecting cable wall unit | 1,5 m (3x 1,0 mm²) |

Materials

Horizontal, multi-stage centrifugal pump

- Dezincing-resistant brass (suction and discharge casing)
- Stainless steel AISI 304 (outer casing, impellers)
- Stainless steel AISI 420 (shaft)
- Noryl® (diffuser vanes)
- Aluminium L-2521 (motor casing)

Mains water top-up tank

- Polystyrene (tank)
- KTW-approved plastic (float valve)

Pump controller

- Polyamide, polypropylene (casing)

Screw connections, pump connections, valve

- Brass, stainless steel

Connecting hoses

- Natural rubber with stainless steel braiding

SIGURA 9 housing

- Stainless steel (base frame)
- Polystyrene (cover)

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 term of the original guarantee.

WISY shall meet its guarantee obligations for the SIGURA 9 break tank 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.
2. The product has been commissioned by the WISY customer service or by a specialist company.

WISY receives notification in writing of any defect within 14 days of discovery of the defect.

Content and scope of the guarantee

WISY shall rectify any functional defects during the guarantee period by repairing or replacing defective components free of charge. Additional 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 the installation instructions.
- Failure to connect the emergency overflow of the top-up tank to a drain or failure to provide a floor drain.
- Inappropriate use or exposure to excessive mechanical strain.
- External influences, e.g. shipping damage, damage caused by shock impacts, damage caused by exposure to weather or by other natural phenomena.
- Repairs or modifications undertaken by unauthorized third parties.

Device no.

The registered manufacturer device number of your product is as follows:





Rainwater harvesting
The complete system

Declaration of Conformity

*As defined by the EU Machinery Directive 2006/42/EC,
Annex II, Part 1, Section A*

We hereby declare that the machinery specified below conforms
to all requirements of the EU Machinery Directive 2006/42/EC.

Product name

Multimat rainwater units, type 205, type 407
Optima 4, Optima 5, Optima Plus rainwater units
Maxima rainwater units, type 205, type 407
Sigma 3, Sigma 4 rainwater units
Delta rainwater unit

Applicable EU Directives

Machinery Directive 2006/42/EC of 17.05.2006
Electromagnetic Compatibility Directive 2004/108/EC of 15.12.2004.

**Angewandte harmonisierte
Normen**

EN ISO 13849-1:2008 Safety of machinery –Safety-related parts of
control systems - Part 1: General principles for design (ISO 13849-1:2006)
EN 809:1998+A1:2009 Pumps and pump units for liquids.
Common safety requirements.
EN ISO 12100:2010 Safety of machinery: General principles for
design – Risk assessment and risk reduction (ISO 12100:2010)
EN 60204-1:2006 Safety of machinery – Electrical equipment of
machines – Part 1: General requirements
EN 60529 (VDE 0470-1) Degrees of protection provided by enclosures
DIN 1989 Rainwater harvesting systems, Parts 1+4
DIN EN 1717 and DIN 1988-100 Protection against pollution of
potable water installations

**Other applied national
standards and specifications**

Manufacturer

WISY AG
Oberdorfstraße 26
D-63699 Kefenrod

**Authorised person with
responsibility for technical
documentation**

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Kefenrod, 14. Februar 2013

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WISY Rainwater Harvesting



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