

# MULTIMAT Rainwater plant

Please read these instruction carefully before installing the rainwater plant Multimatt

## Instructions for the installation of the rainwater plant and information on use

### Content

This installation instruction contains the following information:

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### Area of application

The WISY MULTIMAT rainwater plant includes the complete supply technique of a rainwater installation with pressure pump, control unit and potable water feed as required.

The Multimatt consists of a stainless-steel wall bracket/console with the control unit and potable water feed, which is installed in the building, and a submersible pressure pump with float switch and floating fine suction filter set as equipment to be located in the storage.

The Multimatt is suitable for supplying rainwater for flushing toilets, washing machines and garden irrigation for one and two family homes, especially with longer extraction lines (no suction pipe problems!).

Important! The pipe or hose for the potable water feed must be installed so that it slopes downward from the open outlet to the storage.

### Scope of delivery and model

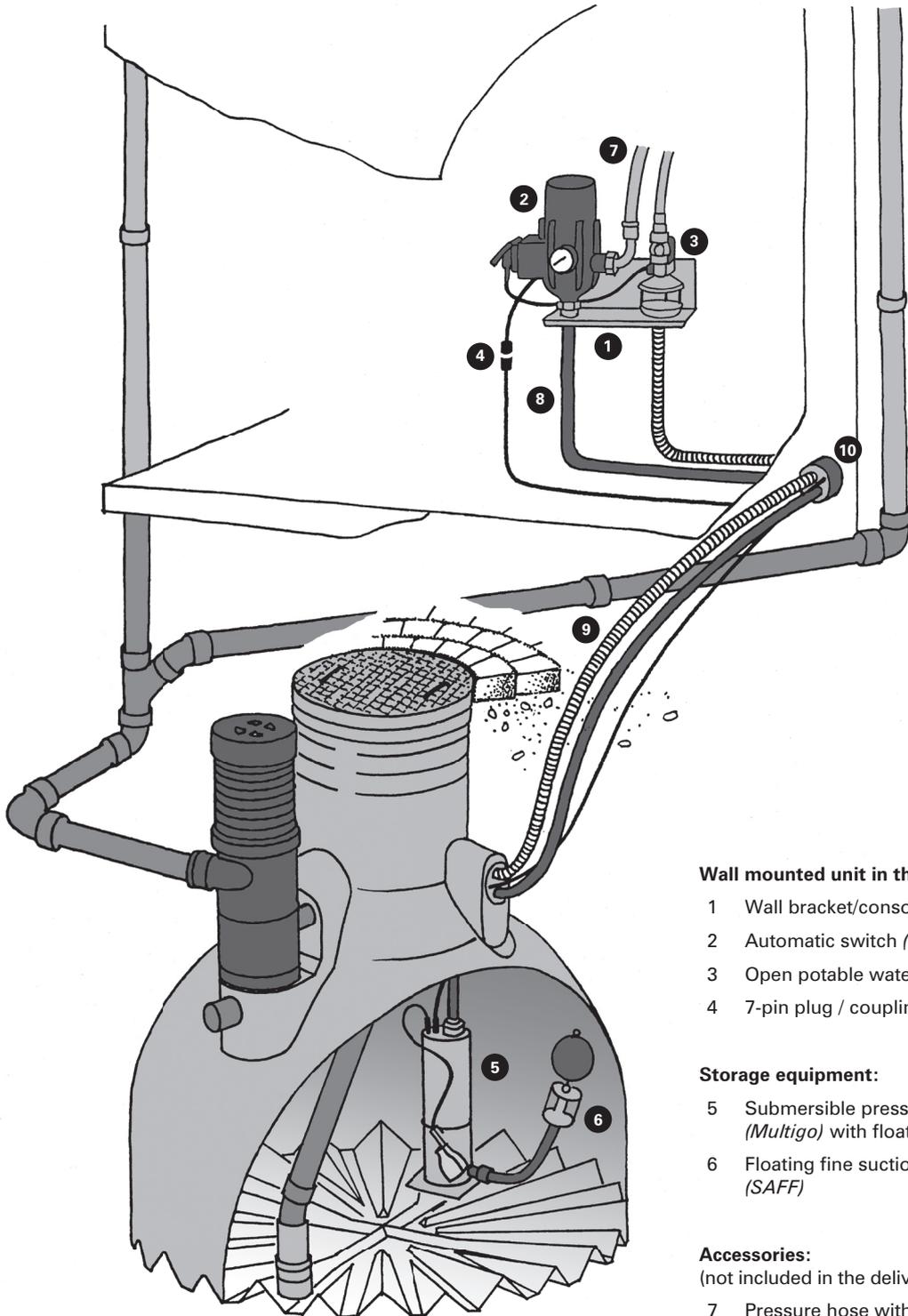
#### Wall mounted unit

- Stainless-steel wall bracket/console with mounting elements/fixings
- Automatic switch SA 06 with manometer, operating status indicator and integrated socket (power outlet), starting pressure 1,5 bar/21.7psi, connecting outlet each 1" external/outside thread (AG), mounted on the wall bracket/console, with 1,4 m/4.5 ft. power cable and 0,25 m/9 in. connecting cable (5 wire) with 7 pin plug for connection to the electric cable of the submersible pump. Operating status indicator of the automatic switch SA 06: Pressure switch for manual switching on (RESET), ready indicator (POWER), pump in operating indicator (ON), fault indicator (FAILURE).
- Open potable water outlet with 1/2" connection (Multimatt 205) or 3/4" connection (Multimatt 407) and stainless steel funnel/tundish DN 50 (according to DIN EN 1717) with laminar flow device for non-splashing irradiation, magnetic/solenoid valve with 0,3 m/1 ft. connecting cable and plug, 0,5 m/1.6 ft. stainless-steel encased 1/2" or 3/4" connecting hose with brass ball valve and stainless-steel dirt trap.

#### Storage equipment

- Submersible pressure pump Multigo 205 (RW 9008) or Multigo 407 (RW 9012) with float switch (with lever and clamp) for potable water feed and base plate, pump connections: 1" nozzle on suction side, 1 1/4" inside thread on pressure side, 15 m/49.2 ft. electric cable (5 wire) with 7-pin coupling for connection to the cable of the automatic switch SA 06, 3 m/9.8 ft. lifting cord and hook bolt.
- Floating fine suction filter (SAFF) with 1" nozzle: filter housing with stainless-steel filter mesh, mesh size 0,3 mm/0,012 in., floating ball (diameter 15 cm/6 in.) made of PE, 0,75 m/2.5 ft. high flexible polyurethane (PU) suction hose (1") with integrated steel spiral.

## General drawing (Installation example)



### Wall mounted unit in the house:

- 1 Wall bracket/console
- 2 Automatic switch (SA 06)
- 3 Open potable water outlet
- 4 7-pin plug / coupling

### Storage equipment:

- 5 Submersible pressure pump (*Multigo*) with float switch
- 6 Floating fine suction filter (*SAFF*)

### Accessories:

(not included in the delivery)

- 7 Pressure hose with 90° elbow
- 8 Pressure hose
- 9 Flexible tube
- 10 Wall bushing

## Recommended accessories:

*(not included in the delivery)*

- Stainless-steel encased ¾" pressure hose with 90° elbow, 0,5m/1.5 ft., for the rainwater supply in the house (output side of SA 06), with 1" connecting nut, flat sealing and ¾" ball valve with ¾" internal thread (IG) (item number RW 7001).
- Hose nozzle with backflow prevention valve, stainless-steel, 1¼" external/outside thread (AG) and 1" nozzle, flow direction from thread to nozzle, for the pressure side connection of the Multigo pump (item number ST 1010)
- Pressure hose of EPDM, 1", max. operating pressure 20 bar/290 psi (item number DS 2003)
- Flexible tube DN 50 (PE), smooth inside, 25m/82 ft. per roll, for potable water feed (item number WD 2000)
- Transitional flexible tube – HT (PE), to connect the DN 50 flexible tube to the DN 50 inlet funnel/tundish of the open potable water outlet (item number WD 2021)
- Electric cable (5 wire, 5 x 1,0 mm<sup>2</sup>) for Multimat cable extension (item number KM 1000)
- 7-pin plug (item number RW 9821)
- 7-pin coupling (item number RW 9822)
- Wall bushing WD 110/2 with six borings (1 x 50 mm/1.97 in.) diameter for potable water feed flexible tube, 1 x 36 mm/1.42 in.) diameter for pressure line 1", 3 x 10 mm/0.39 in.) diameter for electric cable, 1 x 6 mm (0.24 in.) diameter for power cable; item number WD 2110)

## Design and operation

The rainwater plant MULTIMAT includes the complete supply technique of a rainwater installation except the rainwater storage tank and the filtering. The Multimat combines two „supply principles“:

- A submersible pressure pump takes the harvested rainwater from the storage tank and transports it reliable under pressure to the points of consumption. This eliminates any potential suction line problems.
- A potable water feed which feeds water into the storage tank via an open outlet (according to DIN EN 1717) when a magnetic/solenoid valve opens in case of lack of rainwater (into a WISY storage tanks of 1.000 – 1.500 gallons approximately a day's supply for a family of four of 50 Gallons is refilled).

The water feed (magnetic/solenoid valve) is controlled by a float switch with a lever that is fastened by means of a clamp to the submersible pump. The lever defines the switching points (cut-in and cut-out point) of the float switch and permits a limited amount of potable water to flow into the storage tank, giving an increase in level of only 4 cm (4 cm/1.57 in. switching cycle).

The pump is controlled by an automatic switch:

When a consumer valve (e.g. for flushing the toilet) opens, the pressure in the rainwater supply pipe drops. When the starting/cut-in pressure of 1,5 bar/21.7 psi (factory set) is reached, the automatic switch activates the pump. When all consumer valves are closed again, the automatic switch deactivates the pump after the operating pressure in the pressure line is reached. The automatic switch also provides run-dry protection for the pump if there is a shortage of water. Only one cable is needed between the pump and the automatic switch to power the pump and the control unit for the water feed.

## Preparing for installation

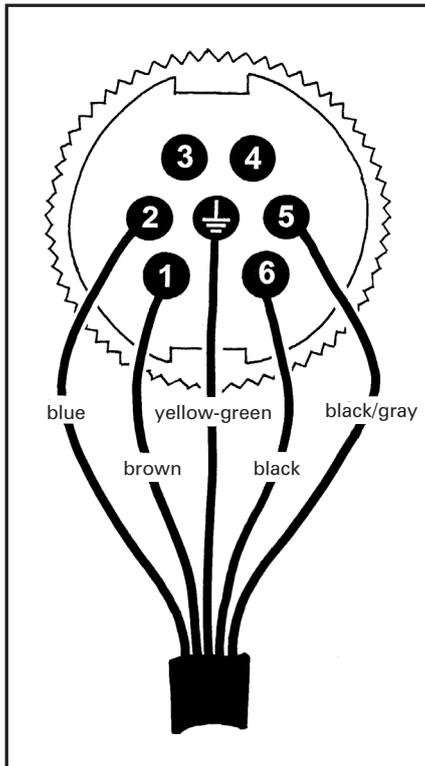
- The MULTIMAT should be installed by a specialized company. This is the condition for the manufacturer's guarantee.
- Please note: The wall bracket/console of the MULTIMAT with the open potable water outlet must to be mounted above the backflow level in a frost-free location with a ground drain.
- It must be ensured that the pipe or the tube for the potable water feed is installed at a slope (at least 1%) from the wall bracket/console to the rainwater storage tank. Also, the vertical section beneath the outlet funnel/tundish must be at least 300 mm/1 ft.

**Pay attention to the backflow level and required installation conditions**

- The water column between the automatic switch on the wall bracket/console and the highest operating point (consumer valve) must not exceed 15 m/50 ft.
- During installation of the wall bracket/console and the supply lines, make sure that these components are not exposed to a source of high heat. Sources of high heat can cause unintentional pressure increases in the automatic switch or in the lines.
- Pipes or hoses that are dirty from construction or installation work have to be cleaned and rinsed before they are connected to the system!

### Installation of the wall bracket/console

### Installation of the submersible pump



Connection diagram for multi-pin plug

### Electric connection

## Installation

- Use the mounting elements/fixings to mount the wall bracket/console horizontally on the wall
- Place the Multigo pump with the float switch and floating fine suction filter (SAFF) set vertically on the bottom of the rainwater storage tank. Important: Never use the cable to lower or raise the submersible pump. Always use the lifting cord. Fasten the lifting cord in the dome shaft area so it is under tension. Make sure that the pump cannot fall over.
- Screw the 1" hose nozzle with integrated backflow prevention valve and 1¼" external/outside thread (AG) into the pressure side connection of the pump head (not included in the delivery, but recommended – see accessories item number ST 1010).
- Pull the pump cable (maybe an extension cable is necessary - see accessories), PE tube or pressure hose (1", see accessories item number DS2003) and flexible tube (DN 50, see accessories item number WD2000) for the potable water feed through the empty conduit between the rainwater storage tank and building. If a 32 mm/0.1 ft. (1") PE tube is used for the extraction line, the pump should be connected with a more flexible section approx. 2 m/6.56 ft.) of pressure hose (1").
- Important: If the plug or a coupling on the pump cable or an extension cable have to be removed to pull the cable through a wall bushing, make sure to use correct cabling when reconnecting the plug or coupling (see connection diagram for multi-pin plug at left)
- Connect the flexible tube for the potable water feed at the inlet pipe in the storage tank (via the Y element).
- Place the pressure hose on the nozzle on the pump and fix it with a hose clamp.
- Fasten pressure hose in the building with a hose screw connection (brass screw connection, flat-sealing, 1" nozzle, 1" – connecting nut) and hose clamp to the input connection of the SA 06. Important: Do not install any flow resistance devices (for example water meter, backwash-filter, intake water tap) in the pressure line between the pump and the SA 06.
- Connect the ¾" connecting hose (not included in the delivery, see accessories item number RW 7001) with ball valve at the outlet connection of the SA 06 with the non potable water mains to the consumers.
- Fasten the flexible tube with the transitional tube (see accessories item number WD 2021) on the 50 connecting of the potable water outlet funnel/tundish on the wall bracket/console. Make sure that the vertical section beneath the DN 50 connection is sufficiently long before the flexible tube continues if necessary in an elbow.
- Connect the ½" or ¾" connecting hose with the ball valve for the potable water feed with the potable water line.
- Connect the electric cable of the submersible pressure pump with the connecting cable of the automatic switch (see connection wiring diagram of the multi-pin plug at left).
- The mains connection of the MULTIMAT (AC, single-phase, 230 V, 50 Hz) must be equipped with a FI protect switch (0.03 A) and a 16 A fuse. Comply with all safety regulations for electrical components and installations.

## Commissioning

### Evacuating air from the Multigo and the complete installation:

Important: Never operate the pumps without water, not even temporarily or for a test! Make sure that there is enough water in the storage tank. The submersible pump should be completely covered with water and the float switch (for controlling the potable water feed) should float in "OFF/AUS" position.

1. Check all hose connections for leaks and check all electrical connectors to make sure that they are seated properly!
2. Open consumer valves
3. Connect the MULTIMAT, i.e. the automatic switch with the electric mains
4. As soon as the air has been evacuated from the system, close the consumer valves. After the maximum pressure has been reached, the MULTIMAT is ready for operation.

## Maintenance, safety and maintenance

To be followed on a semi-annually or annually schedule

- Check water line connections for leaks (every six months)
- Check pump function with float switch and switching cycle (visual inspection every six months, test run annually)
- Check display of line pressure (every six months)
- Check pump cut-in and cut-out/switching points of automatic switch (every six months)
- Check function of potable/mains water feed and that water is completely drained without backflow when the magnetic valve is fully opened (every 12 months)
- Check dirt trap on stop cock of the potable/mains water connections (every 12 month), and clean, if necessary
- Check floating fine suction filter SAFF, clean if necessary (every 12 month)
- Check points of consumption for changes in the water, such as odor/odour, color and debris (every 12 months). It may be necessary to check the complete rainwater installation and to consult experts.

**In case maintenance work is performed in the rainwater storage tank, the submersible pump must be disconnected from the power supply.**

## General safety information

Comply with all safety and protection regulations during installation and commissioning of the MULTIMAT. Installation work that involves special hazards (such as protection of potable water, electric installations) must always be carried out by trained specialists. The line voltage must be 230 V single-phase alternating current (50 Hz).

Failure to comply with these instructions and/or unauthorized modifications to the MULTIMAT will release WISY of all liability for any personal injuries or property damage and/or damage to individual components of the MULTIMAT. The MULTIMAT may be operated only with clarified water (rainwater or potable water) without aggressive, abrasive and solid components.

## Repairs

Repairs may be carried out only by the manufacturer or expressly authorized companies.

Unauthorized repairs, modifications to the components or the factory installation of the MULTIMAT components will void the guarantee.

## Removal of disturbances/Troubleshooting

Problem	Cause	Solution
MULTIMAT is not delivering water to the consumer	a) Storage tank is empty and stop cock to the potable water pipe is closed. Dry run protection of SA 06 is active b) SA 06 does not start the pump c) Pump is blocked d) Power supply is interrupted	a) Open stop cock and re-start pump by pressing RESET button b) Press the RESET button. Call customer service if necessary c) Remedy like under b) d) Check electrical connections, it is possible that the FI protect switch was triggered.
SA 06 constantly switching pump on and off	Leak in the system or consumer valves not completely closed.	Check all consumer valves and rainwater supply mains/pipe work for leaks
Pump runs continuously	a) Water loss (leak) of more than 0.7 l/min b) Electronic components (PCB)* of the SA 06 is defective.	a) Check all consumer valves and household mains for leaks b) Replace PCB*
Pump does not deliver sufficient pressure	a) SAFF floating filter is dirty (blocked) b) Air is entering the pump or the pressure line via the floating suction filter c) Pump is defective	a) Clean the outside of filter surface with a fine brush b) Check the position of the suction filter in the storage tank and adjust if necessary c) Call customer service
FI protect switch was triggered	a) Water or moisture on electrical parts and cables b) SA 06 does not switch c) Pump or pump cable is defective	a) Check electric plugs and cables on SA 06, magnet/solenoid valve and between pump and the SA 06. b) Check power supply and if necessary PCB of SA 06 c) Check that pump is functioning properly; call customer service if necessary
Constant feed of potable water when level in the storage tank is sufficient	a) Float switch on pump is blocked and cannot move b) Magnetic/solenoid valve to the potable water feed does not close	Close stop cock to potable water line and a) Check float switch and remove blockage b) Check function, if necessary replace or call customer service
Potable water feed is not functioning	a) Stop cock for the potable water line is closed b) Magnetic/solenoid valve does not open c) Float switch sends no signal to the magnet/solenoid valve	a) Open stop cock b) Check magnetic/solenoid valve and connecting cable as well as float switch on the pump and replace, if necessary c) Check float switch, replace if necessary

\*PCB = printed circuit board

### Materials

#### Submersible pressure pump

- Stainless-steel 1.4301 (housing, motor housing)
- Stainless-steel 1.4305 (pump shaft)
- Noryl (rotors)
- Polypropylene (float switch)

#### SAFF floating fine suction filter

- Stainless-steel 1.4301 (filter housing)
- Polyurethane (suction hose)
- Polyethylene (floating ball)

#### Wall bracket/console

- Stainless-steel 1.4301

#### Automatic switch

- Polyamide, Polypropylene (housing)

#### Open potable water outlet

- Stainless-steel (inlet funnel/tundish, nozzle)
- Brass (magnetic/solenoid valve)

#### Screw combinations, pump connections, valve, stop cock

- Brass, stainless-steel

#### Connecting hoses

- Rubber with stainless-steel braiding

## Technical data

The Multimat meets the technical regulations: DIN EN 1717 (forward DIN 1988/4 potable water feed through an "open outlet"), DIN 1989, part 1, for rainwater installations and further technical regulations (including the separation of potable and rainwater mains).

MULTIMAT	
Performance consumption - Multigo 205: Input power / nominal power - Multigo 407: Input power / nominal power - Magnetic/solenoid valve	930 W / 550 W 1180 W / 750 W 8 W
Mains connection/power supply 1-phase change electricity	230 V, 50 Hz
Maximum permissible nominal current	10 A
Protection category - Multigo - SA 06 - plug connection	IP 68 IP 44 IP 67
Water connections - Multigo 205 or Multigo 407  - SA 06  - Open potable water outlet	1 ¼" inside thread pressure-side 1" nozzle suction-side 2 x 1" external/outside thread ½" inside thread / ¾" inside thread
Sound level dB (A) in decibel within the building during operation	Virtually 0 dB
Pumping height $H_{max}$ Multigo 205	47,7 m / 88.5 ft
Pumping height $H_{max}$ Multigo 407	49,4 / 160 ft
Pumping output/flow rate $Q_{max}$ Multigo 205	21 gal/min.
Pumping output/flow rate $Q_{max}$ Multigo 407	32 gal/min.
Maximum immersion depth for Multigo pump	20 m / 65.6 ft
Starting pressure of SA 06	1,5 bar/22 psi
Minimum switch off pressure	2,2 bar/32 psi
Max. working pressure Multigo 205, 407	68 psi – 71 psi
Maximum number of start-ups per hour: - for Multigo 205: - for Multigo 407:	25 20
Maximum water temperature	35° / 95 F
Potable water feed quantity (water pressure of potable water line: 3 bar/44 psi) - diameter ½"  - diameter ¾"	Approx. 44 l/min/12 gal/min. Approx. 108 l/min/29 gal/min.
Dimensions of the Multimat - Wall bracket/console with mounted technical components. L x W x H [mm/in] - Multigo 205 (with base plate): diam [mm/in], height [mm/in] - Multigo 407 (with base plate): diam [mm/in], height [mm/in]	180/7 x 340/13 x 300/12 diam 128/6, H 580/22 diam 128/6, H 600/24
Electric supply cables - Multigo - SA 06 (power cables) - SA 06 (cable for the connection with the Multigo) - Magnetic/solenoid valve	15 m/49 ft. (5x 1.0 mm <sup>2</sup> ) 1,4 m/4.5 ft. (3x 1.0 mm <sup>2</sup> ) 0,25 m/9 in. (5x 1.0 mm <sup>2</sup> ) 0,30m/12 in. (3x 0.75 mm <sup>2</sup> )

## Guarantee

### Warranty length and start

The unit is guaranteed for a period of 24 months. This period starts on the date of purchase. Replacements as a result of a guarantee claim will not extend the original guarantee period.

WISY guarantees the MULTIMAT rainwater plant if the following conditions are demonstrably fulfilled:

### Warranty conditions

1. The plant was purchased from an authorized WISY dealer in the Federal Republic of Germany. If the plant was purchased from a WISY dealer in another country, other or additional conditions may apply.
2. The plant was commissioned by the WISY customer service or a specialized company.

Guarantee claims will only be valid if notified in writing within 14 days of discovering of the defect.

### Warranty capacity

Manufacturing defects occurring within the guarantee period will be rectified by WISY at no charge – by repair or replacement of defective part(s). Further claims for damages are excluded unless liability is prescribed by law.

### Warranty restrictions

The guarantee does not cover faults or defects resulting from:

- Incorrect setup or installation. e.g. failure to comply with the applicable VDE regulations or the installation instructions
- Improper operation or use
- Connection of devices to the automatic switch other than a submersible pump, magnetic/solenoid valve included in delivery
- External impact, such as transport damage, damage from shocks or jolts, damage from exposure to weather or other natural phenomena.
- Repairs or modifications carried out by unauthorized third parties.

