Manual Digisol Art. N° F 700351

Function:

A solar collector should only be switched on, if the sun shines strong enough. The collectors can cool, if they are activated at the wrong time. – The differential-controller (DIF) in the DIGISOL activates the solar heating only, if they are activated at the wrong time. – The differential-controller (DIF) in the DIGISOL activates the solar heating only, if there is enough solar energy for economical heating available. – The maximum-limiter (MAX) prevents overheating in the midsummer. – The LCD shows you optionally the collector temperature, the pool temperature and the maximum temperature.

I: more details about the adjustement of DIFF and MAX you find in "adjustment"

The mounting:

The DIGISOL is self-sufficient with the assembly base (SOCK12). The wiring occurs at the screw terminal in the base. The base can be napped on a distribution rail with the optinal SOCKSCHN clips.

If you need a filter control with time switch, motor protection, terminals for automatic backwashing and level control, the PSM02 is a good choice! Simply plug the DIGISOL into the module slot. The connection with the PSM02 is easy, and the unit is waterproofed.

If you need protection against water, because you need to install the DIGISOL in humid surroundings, we recommend the MODGEH with clear view cover, installed base and cable grommet.

The assembly place must be –dry – clean –between –10°C and +30°C – unreachable for children. – fire-proof (e.g., not on a wooden wall) – beyond the protective area of the bath. At a humid assembly place, use in addition the MODGEH or PSM02!

Important Notes:

This device works with mains voltage! The electric installation may only be carried out exclusively considering all responsible regulations and norms by a licensed electric expert. The electricity supply must occur over all lines by a switch with at least 3mm contact width (GFCI ground fault circuit interrupter & circuit breaker). Never pull/plug the device off/into base under power. The device must always be secured with screws in the base. All conducting touchable parts (pump, valve, temperature sensor) must be earthed. A short circuit can damage the device. We reserve ourselves the right on technical amendments without previous announcement. We guarantee the first buyer for the period of ½ year from purchase date, that this products is free from production mistakes and material defects. As far as the applicable laws admit, we take over no further guarantee, neither expressly nor tacitly, including the guarantee of the quality, marketability or farther guarantee, neither expressly nor tacitly, including the guarantee of the quality, marketability or
suitability for a certain purpose, with regard to the use of this product. We are indirect in no case responsible for any, accidental, special or secondary damages or for lost profit, lost credit, loss of data which originate

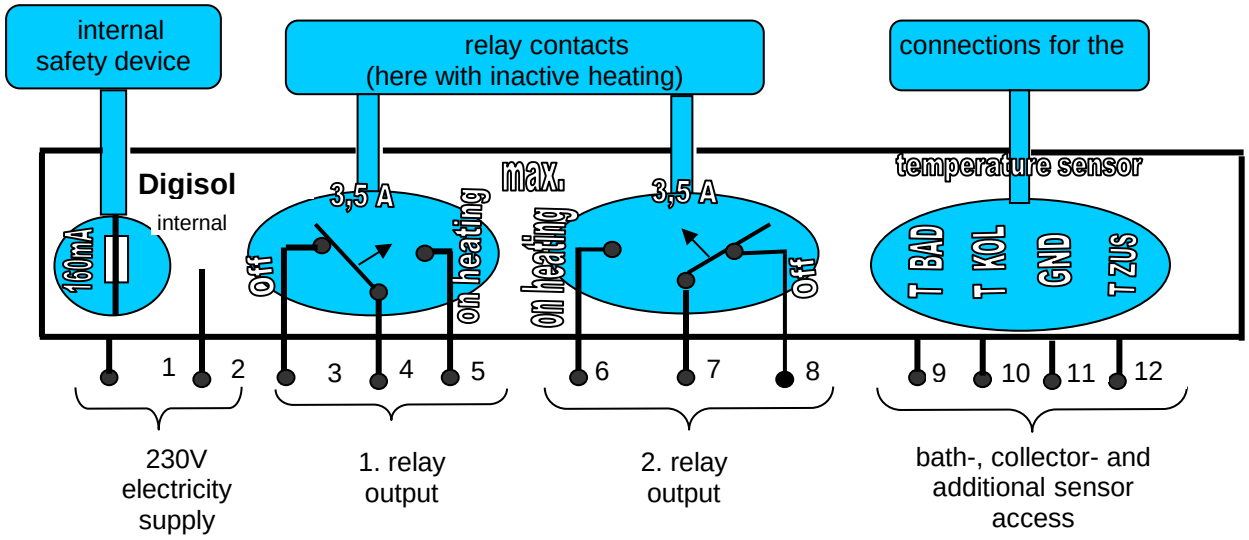
from the use of this product or stand with it in connection, also not even when we were informed about the possibility of such harms. This guarantee expressly covers no product mistakes which originate by chance, in observance of the manual, abuse, wrong use, changes (by other persons than our employees), humidity, the corrosive surroundings, transport, overvoltage or unusual operating conditions. This guarantee does not cover the wear and tear by using the product. No claim to completeness. Provisory sentence mistake and misprint. This device fulfils the requirements of the EU guidelines 73/23/EEC, 89/336/EEC, confirmed CE sign.

Technical data:

Supply: 230V ± 10% 50Hz +20%. Power consumption: <3VA. Switching capacity: 2 x 800 VA. Protection class: IP50. Adjustment range for MAX-temperature: 20°C…40°C(20°C…90°C), Dimensions: l=112, h=52, d=111mm (incl. instruction socket).

Connection:

If the DIGISOL is inserted in the socket, it contacts to the screw terminals. This picture shows stylised the KOMBISOL insides with the function of the 12 screw terminals:



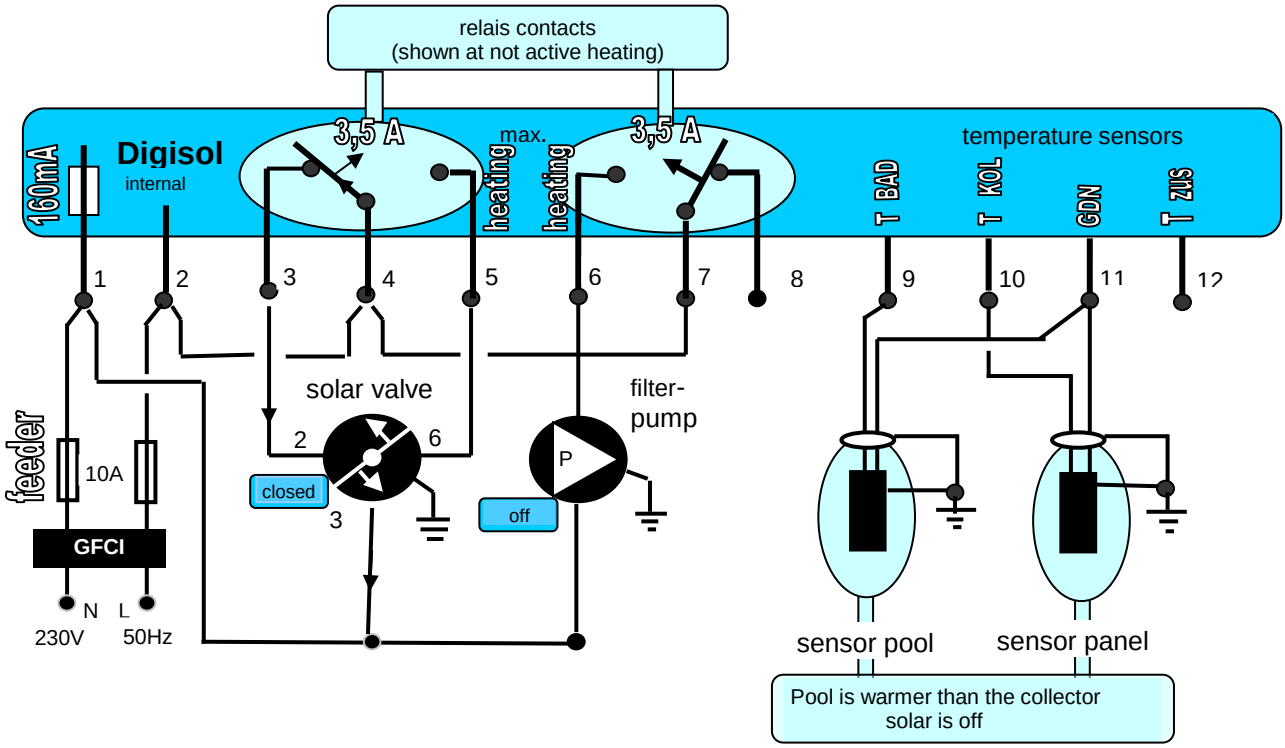
Explanation: A relay is a kind of switch. This “switch” in the DIGISOL is not manually operated like a light switch, but from the DIGISOL itself. In the upper picture you see the relay contacts position with switched off solar heating. Contacts are shown in the neutral position.

The DIGISOL has 2 separate relay outputs for the solar heating. Because there are 2 outputs, a filter pump and a valve (or pump) can be simply driven. The connection must take place in such a way, that the filter pump runs and the valve opens, if the DIGISOL switches on for heating. ⇒ Please look at the next picture to see, like it is done:

Here you find the switched off DIGISOL with filter pump and motorized valve:

If the valve opens and the filter pump is active, a part of the water flows through the collector. If there is no solar-pump, the filter pump must also be switched on. Because of the water quality, the filter pump must run daily also on sunless days. Therefore use a time switch in parallel (not shown here). However the easiest way to do this is to put the DIGISOL without the SOCK 12 base into our modular filter control PSM02!

I: You can clip a magnetic valve on the DIGISOL-clips. I: If you use a new PRAHER 3-way valve please use the bold clip numbers. For the tecnique with less clips description.



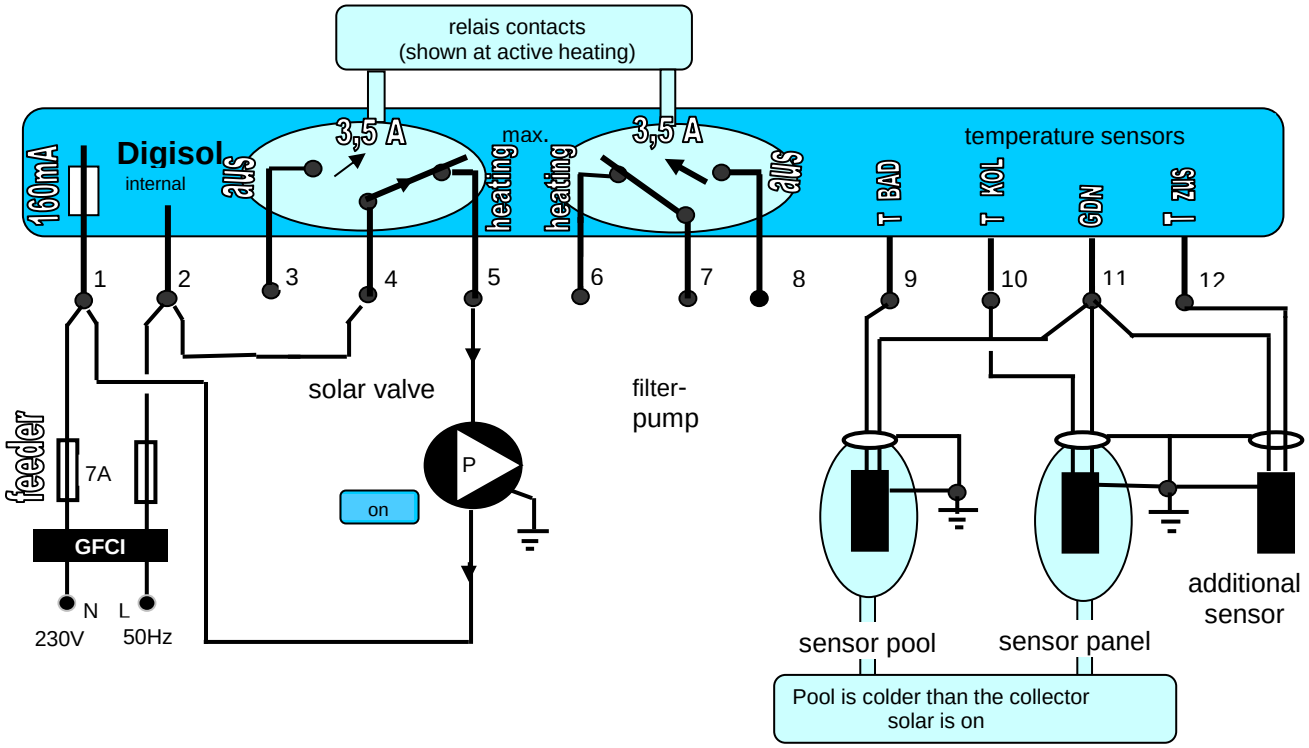
The bolts show how the electricity flows over the motor valve to close it. The pump does not receive any electricity. When the DIGISOL switches on the relay contacts move to the other side. ÞThe pump runs and the motor valve opens.

!! Do not forget the wire strap among 2-4 and 4-7 !!

Modular filter control:

With the modular filter control **PSM02, PSM03 and PSM04** you do not need these wirings. Simply plug the DIGISOL **into the module port!**

Here you see the switched on DIGISOL with a solar circulating pump: Because the solar heating has now its own pump, there is no need to switch the filter pump on.



In this example, the collector sensor is warmer than the bath sensor ⇒ the DIGISOL switches on. The bolts show how the current flows over the filter pump and solar pump.

!! Do not forget the **wire straps** among the terminals 2-4!!

Hints for both diagrammes:

⇒If a connected device consumpts more than 3.5A current (more than 800VA), a contactor (=large relay) must be inserted ⇒ the contactor's reel is connected instead of the device (for example a pump).
The device is connected with the contactor's switching contacts. Use our contactor in the waterproof case called RELPOW.

⇒All conductive touchable parts of the facility (pump, valve, temperature sensors,…) must be earthed (∀).
ÞIn the base middle there is an earth clip to connect all yellow/green PE wires.

The additional sensor is not necessary for switching the heating. If you add the additional sensor you could e.g. measure the air temperature when the switch position is on "EXT". That it will be shown the measured additional temperature instead of the MAX-Temp. You have to plug the internal jumper beside the vertical print to the right (twin function of the "EXT"-Stellung).

!By the way: This product contains valuable raw materials. Dispose it, hence, constitutionally at the end of it's life.

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Temperature sensors:

The following construction forms are electrically identical and can be used arbitrarily:

The mooring-sensor (FR) is fixed at a pipe with a bell, tape or silicone rubber. It is normally used to measure the collector temperature (TKOLL). The FA is also available with a 20m or 30m long shielded cable FKS.

The surface-sensor (FO) fits ideally for elastic mat collectors. It is stuck with silicone rubber between the mat ribs.

The immersion-sensor (FT) is put in a immersion sleeve (TH…). Usually to sense the pool temperature (TBAD). Also available with 5m long cable.
Some collectors are equipped with an immersion sleeve, with a 6mm diameter hole. The miniature immersion-sensor (FTE) fits in this sleeve.

Our chromium-plated brass immersion sleeves have ½" pipe thread and submerged depths of 30mm (TH30), 100mm (TH100), or 150mm (TH150). Use the TH25PVC sleeve for corrosive liquids (salty, acid, chemically loaded water,…).

Sensor cable lengthening:

The sensors have approx. 20cm long black connection strands. Thus connect to a cable:

1. Junction with a strand wire: 1. Strip. 2. Twine strand firmly together. 3. Put on the provided shrink tubing (SHRINKSEAL) . 4. Heat it up with a lighter, till a sealing glue oozes out at the edges. Press the still warm tube a little, to remove air inside. This durable connection is absolutely waterproof.

2. Connection with a stiff wire: Use the waterproof crimp connection (CRIMPSEAL) :
Strip. 2. Insert sensor strand and stiff wire. 3. Crimp with a crimping plier. 4. Heat with a lighter. The
1. CRIMPSEAL wrapping shrinks and seals.

Sensor cable:

In theory you can use any 2-pole cable with minimum 0,15mm² cross section. Keep in mind that small cross section and high lengths cause measurement errors
Interfering signals from near cables and induction of lightning overvoltage can jam or destroy the controller and the sensor.

Therefore use our shielded cable (FKS) at lengths of more than 5m. Connect the shielding with earth (⏚) at the Digisol: 1. Strip the sheath. 2. push the braiding shield to the back. 3. Increase the interwoven screen at the beginning of the sheath. 4. Thread by the so resulted hole both strand wires. 5. twine the now empty braiding firmly together. 6. Connect this braiding together with the yellow/green earth wire (⏚).

Measuring point:

The pool sensor should be placed in a intake line preferably in the vicinity of the pool and the collector sensor in the return line (at the highest possible point). Do not carry the sensor line with other lines in the same tube!