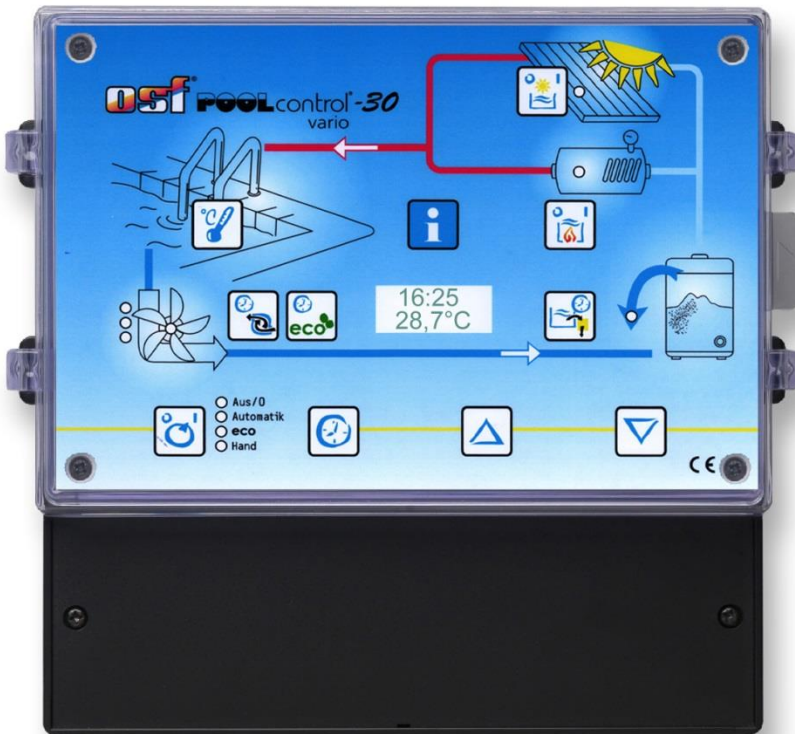


Installation and Operating Instructions

POOLcontrol[®] -30 -Vario

Filter control unit for speed-controlled pumps

Part no. 310.000.0535



Connectable pumps

230V alternating-pump (rated current max. 8A)

Speck ECO-Touch pump

Speck ECO-Touch-Pro pump

Speck Badu-90-ECO-VS pump

Speck Badu-90-ECO-Motion pump

Pentair IntelliFlo pump

Pentair SuperFlo pump

Zodiac FloPro VS pump

UWE PMM pump

CE

Technical data:

Dimensions:	220mm x 220mm x 100mm
Operating voltage	230V/50Hz
Power consumption of control unit:	approx. 5VA (depends on operating mode)
Switching capacity:	Pump: max. 8A / 1.0 kW (AC3)
	Heater: max. 3A / 0.4 kW (AC3)
	Dosing system: max. 3A / 0.4 kW (AC3)
Degree of protection:	IP 40
Level sensors:	Safety Extra Low Voltage (SELV)
Ambient temperature:	0-40°C
Air humidity	0-80% non-condensing

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Operation:

The **ISI** PC-30-Vario filter control unit is designed for timed on/off control of a 230V AC filter pump or speed-controlled filter pump (see wiring diagrams) according to a user-programmable control program.

Backwashing can be performed using a 6-way multiport valve and installed EUROTRONIK-10 controller or using slide valves and launched either manually or at a specific time or pressure.

While the filter pump is running, the swimming pool heater is controlled by the electronic temperature controller. During breaks in filter operation, the heater is automatically switched off by the internal interlock. The required water temperature for the swimming pool can be set on the front panel. The heater can also be switched off from here. A floating contact

(terminals 26+27) and live contact (terminal U2) are provided for the heater connection.

The microprocessor automatically enables the solar temperature controller when a solar temperature sensor is connected (part no. 3100000030). The free solar energy is then used as the preferred source for heating the swimming pool. The auxiliary heating is switched on automatically only when there is no energy being supplied by the solar heating system. If solar energy is available outside the filter operating periods (timer off), the solar heater will still start up along with the filter pump. The solar temperature sensor is suitable for use with direct flow solar collectors in which the swimming pool water flows directly through the absorbers. This control unit is not intended for use with other types of solar collectors. The

absorber temperature must not exceed 80°C at the temperature sensor.

Connecting terminals are provided for an NR-12-TRS-2 electronic water level control unit (part no. 3030075020) for convenient automatic control of the water level in the swimming pool. This also protects the filter pump from any damage which might arise from running the filter installation without water.

The INFO button on the front panel can be used to change the user language and to retrieve various operating parameters.

Spare terminals are available for connecting additional devices such as chemical dosing equipment. Terminals 24+25 are floating contacts for custom use. The relay contact between terminals 24 and 25 is closed during the filter operating times and open outside the filter operating times. This contact is rated for a maximum voltage of 230V and a maximum current of 3A.

The connecting terminals for the winding protection switch are designed for connecting a thermal winding protection switch built into the filter-pump motor winding. If this switch opens, e.g. as a result of the motor winding getting too hot, the filter pump is switched off automatically along with the heater and dosing equipment. Once the winding protection switch closes after the motor winding has cooled down, the units are automatically switched back on. There is no need for a manual reset. The connecting terminals for the winding protection switch carry 230V.

Indicator lights in the front panel show when the filterpump and heater are running, allowing easy checking of the status.

ECO mode can be started automatically on closure of the swimming pool cover (limit-switch terminals 28 + 29).

Installation

The swimming pool must be designed to prevent consequential damage resulting from a potential technical fault, power failure or faulty controller.

Electrical connection

The control unit must be mounted such that it is protected from moisture in accordance with its degree of protection. The power supply for the unit must be provided via an all-pole disconnection switch with minimum contact gap of 3mm and via a residual-current circuit breaker with a fault current IFN of $\leq 30\text{mA}$. When using variable-frequency drives and speed-controlled pumps, the residual-current circuit breakers stipulated for these devices must be used and the relevant regulations observed.

Always disconnect the unit from the power supply before opening the case. All electrical wiring and calibration and servicing work must be performed solely by an approved electrician. The attached wiring diagrams and all applicable safety regulations must be observed.

The switching outputs of the PC-30-Vario are not intended as a voltage supply for variable frequency drives. Please refer to the relevant wiring diagrams in these operating instructions.

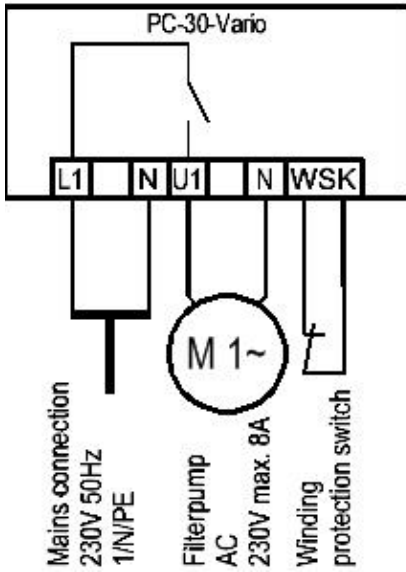
Low-voltage lines

Low-voltage lines must not be laid along with three-phase or AC power cables in the same cable conduit. In general, always avoid routing low-voltage lines close to three-phase or AC power cables.

Connecting the filter pump

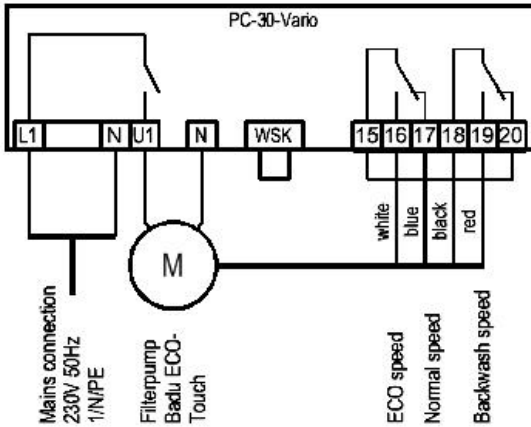
Note that it is permitted to connect only one pump. Connections must be made in accordance with the following wiring diagrams.

Connecting a 230V AC filter pump without speed control



The factory-inserted link between the two WPS terminals must be removed when connecting a pump fitted with a winding protection switch. If the pump does not have a winding protection switch, the link must remain screwed in place. These terminals are live and carry a mains voltage!

Connecting a Speck ECO-Touch pump

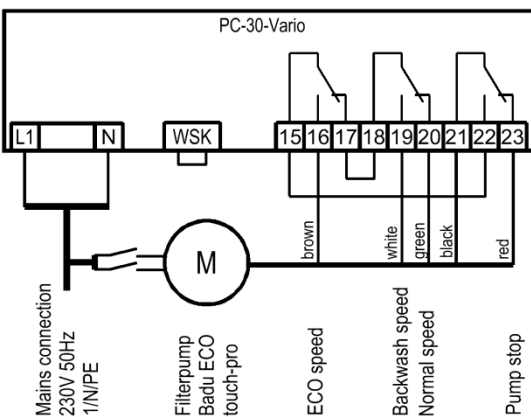


A Speck ECO-Touch pump can be connected directly to the PC-30-Vario unit. Connect the speed controller to terminals 15-20.

There must be a link inserted between the two WSK terminals (winding protection switch).

Always refer to the operating instructions for the pump.

Connecting a Speck ECO-Touch-Pro pump



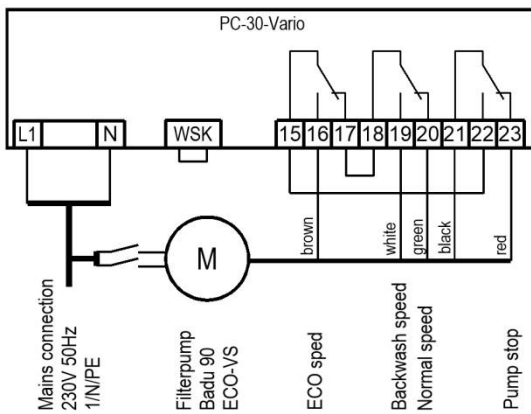
A Speck ECO-Touch-Pro pump can be connected directly to the PC-30-Vario unit. Connect the speed controller to terminals 15-23.

A separate mains power supply must be provided for the pump. The power supply cannot be provided by the PC-30-Vario.

There must be a link inserted between the two WSK terminals (winding protection switch).

Always refer to the operating instructions for the pump.

Connecting a Speck ECO-VS pump



A Speck ECO-VS pump can be connected directly to the PC-30-Vario unit. Connect the speed controller to terminals 15-23.

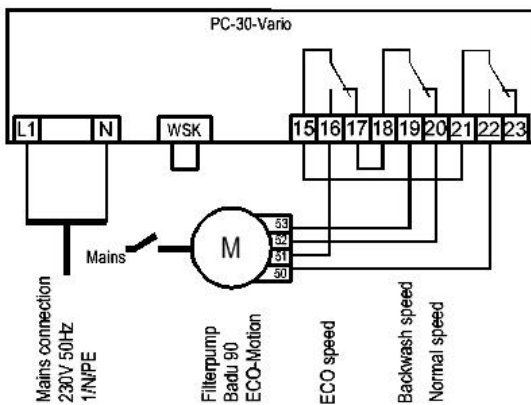
A separate mains power supply must be provided for the pump. The power supply cannot be provided by the PC-30-Vario.

There must be a link inserted between the two WPS terminals (winding protection switch).

Always refer to the operating instructions for the pump.

In the Setup menu on the pump, the digital inputs must be set to "dI" and the switching behaviour for the Stop function must be set to Stop when contact open ("oP").

Connecting a Speck Badu-90-ECO-Motion pump



A Speck Badu-90-ECO-Motion pump can be connected directly to the PC-30-Vario unit. Connect the speed controller to terminals 15-23.

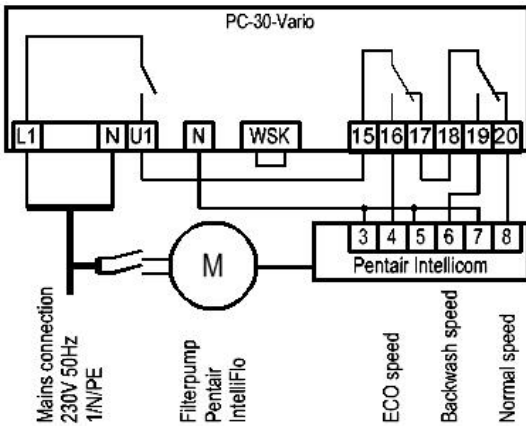
A separate mains power supply must be provided for the pump. The power supply cannot be provided by the PC-30-Vario.

There must be a link inserted between the two WSK terminals (winding protection switch).

Always refer to the operating instructions for the pump.

In the Setup menu on the pump, the external control must be enabled for "digital fixed speeds" with the signal type "continuous signal". The speeds required for ECO mode, normal mode and backwash mode must be set for the speeds N1, N2 and N3.

Connecting a Pentair IntelliFlo pump



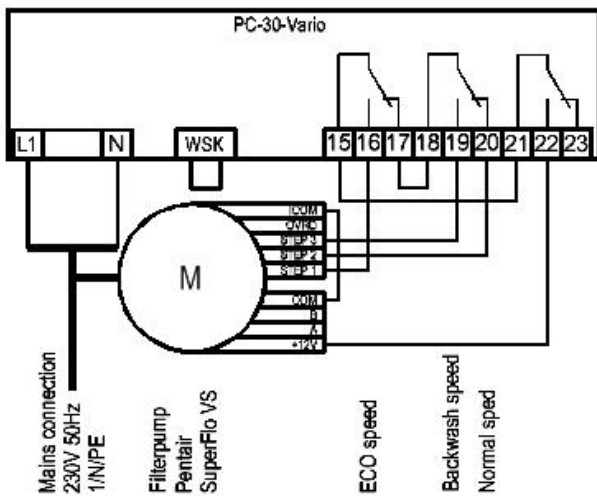
An IntelliFlo pump can be controlled by the PC-30-Vario using the Pentair Intellicom controller. Connect the speed controller to terminals 15-20.

A separate mains power supply must be provided for the pump. The power supply cannot be provided by the PC-30-Vario.

There must be a link inserted between the two WSK terminals (winding protection switch).

Always refer to the operating instructions for the pump.

Connecting a Pentair SuperFlo VS pump



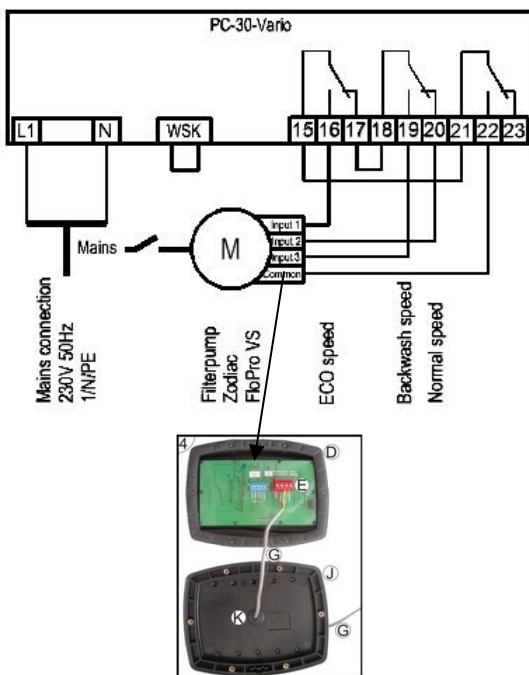
A SuperFlo VS pump can be controlled by the PC-30-Vario. Connect the speed controller to terminals 15-23.

A separate mains power supply must be provided for the pump. The power supply cannot be provided by the PC-30-Vario.

There must be a link inserted between the two WSK terminals (winding protection switch).

Always refer to the operating instructions for the pump.

Connecting a Zodiac FloPro VS pump



A Zodiac FloPro VS pump can be connected directly to the PC-30-Vario unit. Connect the speed controller to terminals 15-23.

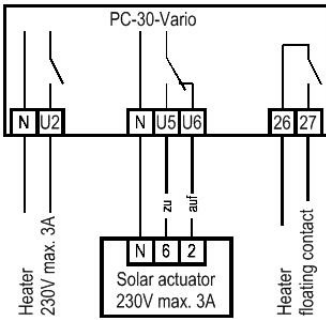
A separate mains power supply must be provided for the pump. The power supply cannot be provided by the PC-30-Vario.

There must be a link inserted between the two WSK terminals (winding protection switch).

Always refer to the operating instructions for the pump.

On the pump, the speed controller must be connected to the designated terminals on the back of the user interface. The speeds required for ECO mode (level 1), normal mode (level 2) and backwash mode (level 3) must be assigned to speed levels 1 to 3.

Connecting the heater

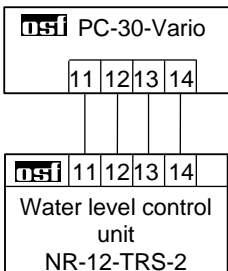


The terminal U2 is provided for the swimming pool heater. This output supplies 230V and is rated for a maximum load of 3A.

In addition, a floating contact is provided at terminals 26+27 (e.g. for controlling the boiler). This contact is rated for a maximum load of 230V, 3A.

An **nsi** 230V solar actuator can be connected to terminals U5 and U6 for operating the solar heater. When solar heating is operating, the mains voltage is applied to terminal U5 and no voltage is applied to terminal U6.

Connecting the NR-12-TRS-2 water level controller

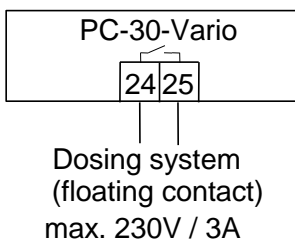


A 4-wire connection is required for connecting the NR-12-TRS-2 water level controller. The wires must not be swapped over, i.e. they must be connected to the same terminal at each end. The NR-12-TRS-2 additionally requires a separate power supply.

Operating the PC-30-Vario without a NR-12-TRS-2 unit

If the PC-30-Vario is intended to be operated without an NR-12-TRS-2 unit, terminals 13 and 14 must be connected together (with a link). Disconnect the connecting cable before doing so. The four terminals are live and carry a mains voltage.

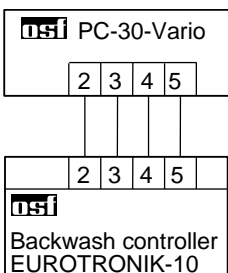
Connecting the dosing equipment



A floating output is provided at terminals 24+25 for connecting the dosing equipment.

The contacts are rated for a maximum load of 230V, 3A.

Connecting the EUROTRONIK-10 for backwashing using a 6-way multiport valve

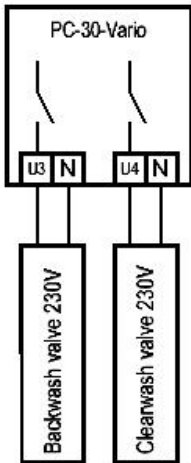


A 4-wire connection is required for connecting the EUROTRONIK-10 backwash controller. The wires must not be swapped over, i.e. they must be connected to the same terminal at each end. The EUROTRONIK-10 additionally requires a separate power supply.

Operating the PC-30-Vario without a EUROTRONIK-10 unit

If the PC-30-Vario is intended to be operated without an EUROTRONIK-10 unit, terminals 3 and 5 must be connected together (with a link). Disconnect the connecting cable before doing so. The four terminals are live and carry a mains voltage.

Connecting the sliding valves for backwashing



A 230V sliding valve for the backwash function can be connected to the terminals U3 and N.

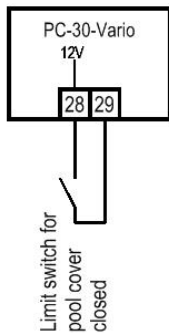
A 230V sliding valve for the rinsing function can be connected to the terminals U4 and N.

The contacts are rated for a maximum load of 230V, 3A.

Both valves are controlled by the internal backwash controller.

The heating and dosing systems are disabled during the backwash and rinsing operation.

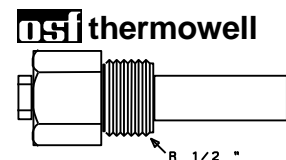
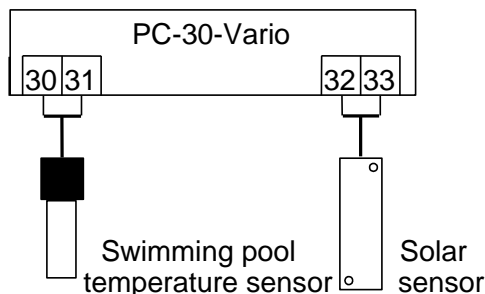
Connecting a swimming pool cover limit-switch



A limit switch for the swimming-pool cover can be connected to terminals 28 and 29. This switch automatically starts ECO mode when the cover is closed.

The terminals carry a safety extra low voltage.

Temperature sensor



Connect the swimming-pool temperature sensor to terminals 30 and 31. The temperature sensor is supplied as standard with a cable length of 1.5m. If required, this can be extended to a maximum length of 20m using a twin-core cable (min. cross-section 0.5mm²). Avoid running the sensor lead close to mains cables to prevent potential interference. The sensors can be connected either way round (polarity not important).

Since precise temperature control can only be achieved with good heat transfer between the temperature sensor and swimming pool water, an **nsf** R 1/2" thermowell (part no. 3200200003) must be fitted in the piping system.

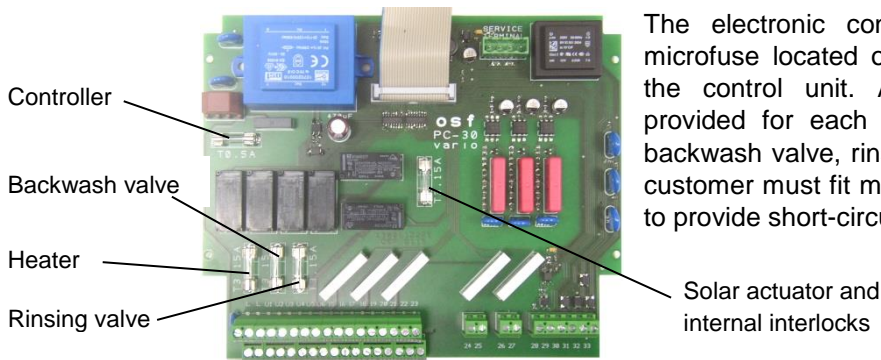
In addition, a solar temperature sensor (part no. 3100000033) can be connected to terminals 32 and 33 (option). The temperature sensor is supplied as standard with a cable length of 20m. If required, this can be extended to a maximum length of 50m using a twin-core cable (min. cross-section 0.5mm²). Avoid running the sensor lead close to mains cables to prevent potential interference. The solar temperature sensor should be fitted at the solar collector output in good thermal contact with the returning water flow. The temperature at the installation position for the temperature sensor must not exceed 80°C.

Frost protection

When the frost protection function is enabled, the temperature sensor connected to terminals 32 and 33 is used as the air temperature sensor for frost protection. Solar temperature control is disabled when frost protection is in use. In installations without solar heating, the frost-protection sensor should be installed in a

suitable position outdoors. Once the temperature at the temperature sensor drops below 0°C (factory setting), the filter system is activated. In this case, the temperature controller regulates the heater to a target temperature of 3°C.

Fuses



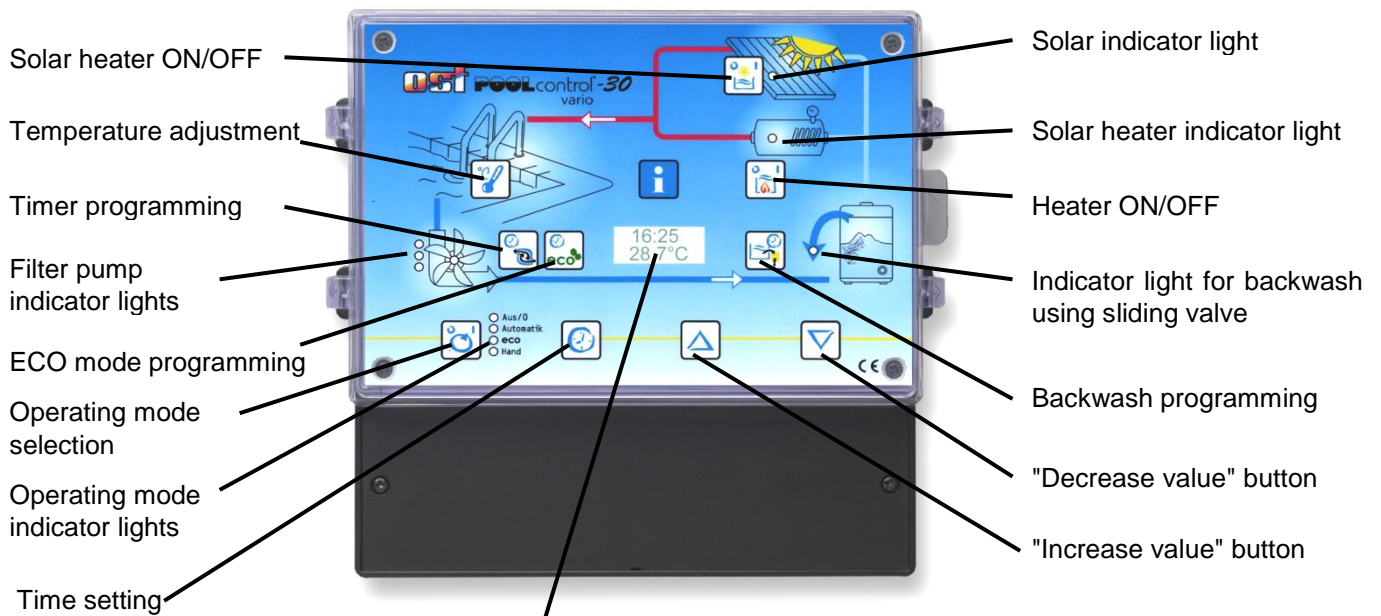
The electronic controller is protected by a 0.5A microfuse located on the printed circuit board inside the control unit. A separate 3.15A microfuse is provided for each of the following devices: heater, backwash valve, rinsing valve and solar actuator. The customer must fit mains fuses of maximum rating 16A to provide short-circuit protection for the filter pump.

ECO mode (energy saving mode)

In this operating mode, the filter pump runs at minimum speed. ECO mode can only be used during the programmed filter operating periods. It is activated by the ECO timer (during the

filter operating period), by the operating-mode selector switch or by the cover limit-switch (with the cover closed the pump runs at ECO speed during the filter operating period).

Controls on the front panel



LCD display

Fr 14:46
23.4°C

Standard operating display showing current time and water temperature.

level
control

The filter pump has been switched on by the NR-12-TRS-2 water level controller.

6-way
backwash

The filter pump has been switched on by the EUROTRONIK-10 backwash controller. (Heater is disabled.)

Pump
locked

The filter pump has been switched off by the EUROTRONIK-10 controller or the NR-12-TRS-2 water level controller.

Back-
washing

The filter pump is on because backwashing is in progress using the connected sliding valve. (Heater is disabled.)

Clear-
washing

The filter pump is on because rinsing is in progress using the connected sliding valve. (Heater is disabled.)

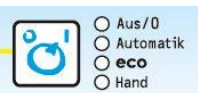
PUMP
locked

The filter pump is off because the winding protection switch has tripped.

Fr 14:46
____0

The temperature sensor for the water temperature appears to be faulty.

Operating mode selection



Press the  button (several times if necessary) to select the operating mode.

Off/0

The control unit is off.

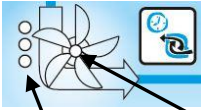
Caution! This does not disconnect the control unit from the power supply

Automatic The filter system is switched on and off by the timer.

Eco When the timer is on, the filter pump runs at low speed.

Manual The filter system is running continuously.

Pump indicator light



These indicator lights indicate which mode the filter pump is running in.

Pump is disabled. It may have been switched off by the winding protection switch, by the water level controller or by the EUROTRONIK-10 controller.

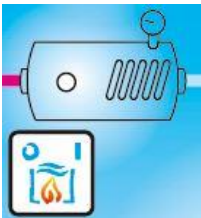
All lights OFF: the filter pump is off.

BOTTOM light ON: the filter pump is running in ECO mode.

BOTTOM and CENTRE light ON: the filter pump is running at normal speed.

All 3 lights ON: the pump is running at maximum speed.

Heater indicator light Heater switch



This indicator light shows the heater operating mode. The colour of the light indicates the heater operating mode:

off: the heater is off.

green: the heater is running.

red: the heater is disabled.

You can use the  button to switch the heater on or off.

Solar heater indicator light Solar heater switch



If a solar sensor is connected to the controller, this indicator light shows the current operating state of the solar heater.

off: the solar heater is off (temperature controller).

green: the solar heater is running.

red: the solar heater is off (switch).

You can use the  button to switch the solar heater on or off.


Backwash using sliding valve




This indicator light shows whether a backwash operation using sliding valves is currently in progress.



Temperature selection



Use the  button to select the water temperature for the swimming pool:

1. Press the  button ⇒ the display shows

water:
→ 24.5°C

2. You can now use the  and  buttons to set the temperature you require in a range of 0°C to 40°C.






3. To save the required temperature, press the  button again. If no button is

pressed during an interval of more than 30 seconds when setting the temperature, the last temperature selected is saved automatically and the standard operating display reappears.

ECO temperature selection














Use the  button to select the reduction in temperature for ECO mode:


1. Press the  button twice ⇒ the display shows  (*scrolling text*)
2. You can now use the  and  buttons to set the temperature reduction you require in a range of 0°C to 15°C.
3. To save the required temperature, press the  button again. If no button is pressed during an interval of more than 30 seconds when setting the temperature, the last temperature selected is saved automatically and the standard operating display reappears.

Time setting




Use the  button to set the current time:


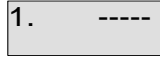


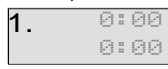
1. Press the  button ⇒ the display shows  and the minute display flashes.
2. You can now use the  and  buttons to set the minutes.
3. Press the  button ⇒ the hour display flashes.
4. You can now use the  and  buttons to set the hour.
5. Press the  button ⇒ the day of the week flashes.
6. You can now use the  and  buttons to set the day of the week.

To save the set time, press the  button again. If no button is pressed during an interval of more than 30 seconds when setting the time, the last time displayed is saved automatically and the standard operating display reappears.










Timer programming









Use the  button to program the built-in timer. Note that the switch-on time and the associated switch-off time must always be entered as a pair:


1. Press the  button ⇒ the display shows  if a switching time has not been programmed yet.
2. After pressing either button  or , or if a switching time has been pre-programmed, the display shows  and the minutes in the top time display flash (switch-on time).


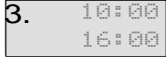


Note: you can press the  button to adopt the current time.

3. You can now use the  and  buttons to set the minutes for the switch-on time you require.
4. Press the  button again ⇒ the hour for the switch-on time flashes
5. You can now use the  and  buttons to set the hour for the switch-on time you require.
6. Press the  button again ⇒ the minutes for the switch-off time flash
7. You can now use the  and  buttons to set the minutes for the switch-off time you require. Note: you can press the  button to adopt the current time;

pressing both  and  buttons at once adopts the previously set switch-on time.


8. Press the  button again ⇒ the hour for the switch-off time flashes
9. You can now use the  and  buttons to set the hour for the switch-off time you require.
10. Repeat steps 1-9 if you wish to program further switching times.
11. To save the switching times, press the  button again. If no button is pressed during an interval of more than 30 seconds when setting the time, the last switching time displayed is saved automatically and the standard operating display reappears.


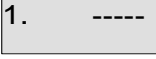



If switching times have been pre-programmed, they can be deleted using the  button:

1. Press the  button repeatedly until the switching time you wish to delete appears in the display and the switch-on time is flashing .
2. Press both  and  buttons at once to delete the switching time.
















ECO-timer programming








Use the  button to program the built-in timer. Note that the switch-on time and the associated switch-off time must always be entered as a pair:

1. Press the  button ⇒ the display shows  if a switching time has not been programmed yet.
2. After pressing either button  or , or if a switching time has already been programmed, the display shows  and the minutes in the top time display flash (switch-on time).

Note: you can press the  button to adopt the current time.


3. You can now use the  and  buttons to set the minutes for the switch-on time you require.
4. Press the  button again ⇒ the hour for the switch-on time flashes
5. You can now use the  and  buttons to set the hour for the switch-on time you require.
6. Press the  button again ⇒ the minutes for the switch-off time flash
7. You can now use the  and  buttons to set the minutes for the switch-off time you require. Note: you can press the  button to adopt the current time; pressing both  and  buttons at once adopts the previously set switch-on time.
8. Press the  button again ⇒ the hour for the switch-off time flashes
9. You can now use the  and  buttons to set the hour for the switch-off time you require.
10. Repeat steps 1-9 if you wish to program further switching times.
11. To save the switching times, press the  button again. If no button is pressed during an interval of more than 30 seconds when setting the time, the last switching time displayed is saved automatically and the standard operating display reappears.




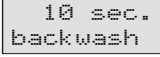



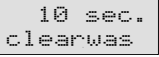




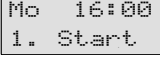
If switching times have been pre-programmed, they can be deleted using the  button:




1. Press the  button repeatedly until the switching time you wish to delete appears in the display and the switch-on time is flashing .
2. Press both  and  buttons at once to delete the switching time.


Backwash programming



Use the  button to program backwashing using sliding valves.



1. After pressing the  button once, you can use the  and  buttons to set the length of the backwash operation .
2. After pressing the  button again, you can use the  and  buttons to set the length of the rinsing operation .
3. After pressing the  button again, you can use the  and  buttons and the  button to set the start time for the combined backwash/rinse cycle .




Note: you can press the  button to adopt the current time; pressing both  and  buttons at once deletes the cycle start time.

Pressing and holding the  button for longer than 5 seconds will launch a backwash/rinse cycle.

Changing the language








Press the  button several times until the display shows .

1. You can now use the  and  buttons to set the language.
2. To save the language you require, press the  button again.

Enabling frost protection mode



Press the  button several times until the display shows .

1. You can now use the  and  buttons to enable/disable frost protection mode.
2. To save the operating mode you require, press the  button again. When frost protection mode is on, a snowflake icon appears in the display.

Fr 14:46
* 23.4°C







INFO button

After pressing the INFO button, the display first shows the solar sensor temperature (if a solar sensor is connected):

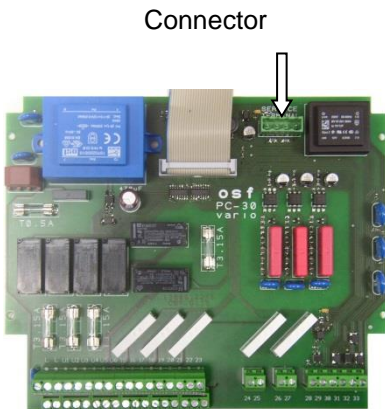
Air
37.6°C



Pressing the INFO button successively will retrieve the following information:




1. Solar temperature
2. Language setting (you can switch language by pressing the  or  button)
3. Frost protection (you can enable/disable frost protection by pressing the  or  button)
4. Filter pump operating-hours counter
5. ECO operating-hours counter
6. Heater operating-hours counter
7. Solar heater operating-hours counter
8. Software version
9. Sensor calibration

Service Terminal



An osf Service Terminal (part no. 3010000900) can be connected to the control unit. This terminal can be used to set the optimum control unit configuration for a particular swimming pool installation, for commissioning the control unit and for fault diagnosis. The connector for the Service Terminal is located on the printed circuit board inside the control unit. **Always disconnect the control unit from the power supply before opening the case and plugging in the Service Terminal.** After switching on the control unit, the display on the Service Terminal shows the first 4 lines of the diagnostic text, e.g.:



Filtersystem off	Filter system operating mode
Temp. reached	Heater operating mode
Water: 23.0°	measured water temperature
Solar: 38.4°	measured collector temperature

Use the  and  buttons on the terminal to display other lines. If required, you can make changes to the values in the **top** line after pressing the  button on the terminal.

Filter system operating mode

This line shows the current operating mode of the filter system.


The following texts may be displayed:

<i>Control unit off</i>	The control unit has been switched off using the  button.
<i>Filter system off</i>	The filter system is off.
<i>Filter running</i>	The filter system has been switched on by the timer or the  button on the front panel.
<i>Run-on time</i>	The filter pump is still running after switching off the heater.
<i>Forced switch-on</i>	The filter pump has been switched on by the EUROTRONIK-10 backwash controller or the NR-12-TRS-2 water level controller.
<i>Priority mode</i>	The temperature controller has switched on the filter pump outside the set filter operating times because the temperature controller is operating in priority mode.
<i>Pump disabled</i>	The filter pump has been temporarily switched off by the EUROTRONIK-10 controller or the NR-12-TRS-2 water level controller.

- Backwashing* The filter pump is on because backwashing is in progress using the sliding valve.
- Rinsing* The filter pump is on because rinsing is in progress using the sliding valve.
- Frost protection mode* The filter pump is operating in frost protection mode.

Heater operating mode

This line shows the current operating mode of the temperature controller.

- Controller off* The heater has been switched off using the  button.
- Aux. heating off* The heater is off outside the filter operating times.
- Heater disabled* The heater is off because the EUROTRONIK-10 controller has caused a forced switch-on.
- Temp. reached* The heater is off because the set target temperature has been reached.
- Aux. heating on* The heater is on because the water temperature is below the set target temperature.
- Solar heater on* The solar heater is on because the water temperature is below the set target temperature and the collector is warmer than the swimming-pool water.
- Frost risk* The heater is on in frost protection mode.

Temperature at the solar sensor


Display text: Solar:

Temperature at the water sensor

Display text: Water:


Set water temperature (target temperature)

Display text: Set temp.

This line displays the target temperature that was set using the  button on the front panel.

Temperature reduction in Eco mode

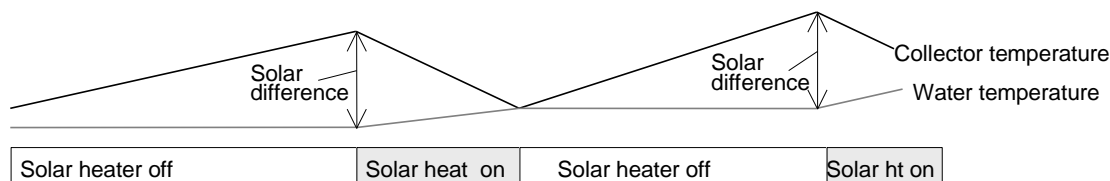
Display text: Eco temp. drop

This line displays the reduction in temperature for ECO mode that was set using the  button on the front panel.


Switch-on temperature for solar heater

Display text: Solar dif.on




This line displays how much warmer the solar collector must be than the swimming-pool water before the solar heater is switched on.



To adjust this value to suit the requirements of the particular solar installation, make sure it is displayed in the **top** line of the Service Terminal:

1. After pressing the  button on the terminal, the filter system is switched off and the display shows:

```
Solar dif.on: 5 °
Difference temp.
between water
and collector:
```

2. You can now use the  and  buttons on the terminal to change the temperature difference. The lowest value you can set is 0.5°, the highest value is 20°.
3. If you press the  button again, the standard diagnostics display reappears and the filter system resumes operation. The set value is saved automatically.


The factory setting for the temperature difference is 5°.

Switch-off temperature for solar heater




Display text: Solar dif.off

This line displays how much warmer the solar collector must be than the swimming-pool water when the solar heater is switched off.

To adjust this value to suit the requirements of the particular solar installation, make sure it is displayed in the **top** line of the Service Terminal:

4. After pressing the  button on the terminal, the filter system is switched off and the display shows:

```
Solar dif.off: 0 °
difference temp.
between water
and collector:
```


5. You can now use the  and  buttons on the terminal to change the temperature difference. The lowest value you can set is 0°, the highest value is 15°.
6. If you press the  button again, the standard diagnostics display reappears and the filter system resumes operation. The set value is saved automatically.

The factory setting for the temperature difference is 0°.




Temperature boost for swimming-pool water in solar mode

Display text: Solar boost

This line shows how much warmer than the set target temperature the swimming pool is allowed to be during solar heating to make optimum use of the sunshine during the day. To adjust this value to suit the requirements of the particular swimming pool installation, make sure it is displayed in the **top** line of the Service Terminal:

1. After pressing the  button on the terminal, the filter system is switched off and the display shows:

```
Solar add: 5.0 °
Overheating of
the water with
solar operation
```


2. You can now use the  and  buttons on the terminal to change the temperature difference. The lowest value you can set is 0°, the highest value is 15°.
3. If you press the  button again, the standard diagnostics display reappears and the filter system resumes operation. The set value is saved automatically.

The factory setting for the temperature difference is 5°.




Maximum temperature

Display text: limit temp.

This line displays the maximum temperature at which the solar heater is switched off automatically for safety reasons irrespective of the set target value. To adjust this value to suit the requirements of the particular swimming pool installation, make sure it is displayed in the **top** line of the Service Terminal:

1. After pressing the  button on the terminal, the filter system is switched off and the display shows:

```
Temp limit: 40.0 °
Maximum possible
water temp. with
solar operation
```


2. You can now use the  and  buttons on the terminal to change the temperature limit. The lowest value you can set is 30°, the highest value is 50°.
3. If you press the  button again, the standard diagnostics display reappears and the filter system resumes operation. The set value is saved automatically.

The factory setting for the maximum temperature is 40°. This temperature limit **only** affects the solar heater.




Heater hysteresis

Display text: Min. heating:

This line shows the minimum length of time that the heater remains on or off under temperature control to avoid excessively short switching intervals. To adjust this value to suit the requirements of the particular heating system, make sure it is displayed in the **top** line:

1. After pressing the  button on the terminal, the filter system is switched off and the display shows:

```
Min. heating: 120
Min. switching
time of the
heater:
```


2. You can now use the  and  buttons on the terminal to change the minimum time in 10 second increments. The smallest value you can set is 10s, the largest value is 1800s.
3. If you press the  button again, the standard diagnostics display reappears and the filter system resumes operation. The set value is saved automatically.

The time set here only affects the behaviour of the temperature controller. The auxiliary heating is switched off immediately, regardless of the set delay, when the filter pump is switched off. The factory setting for the minimum time is 2 minutes.




Solar heater hysteresis

Display text: Min. solar:

This line shows the minimum length of time that the solar heater remains on or off under temperature control to avoid excessively short switching intervals. To adjust this value to suit the requirements of the particular solar installation, make sure it is displayed in the **top** line:

1. After pressing the  button on the terminal, the filter system is switched off and the display shows:

```
Min. solar: 120 s
Min. switching
time of the
Solar heating
```


2. You can now use the  and  buttons on the terminal to change the minimum time in 10 second increments. The smallest value you can set is 10s, the largest value is 1800s.
3. If you press the  button again, the standard diagnostics display reappears and the filter system resumes operation. The set value is saved automatically.

The time set here only affects the behaviour of the temperature controller. The heater is switched off immediately, regardless of the set delay, when the filter pump is switched off. The factory setting for the minimum time is 2 minutes.




Filter pump run-on after timed switch-off

Display text: subs. time:

This line displays how long the filter pump continues to run after the heater is switched off. To adjust this value to suit the requirements of the particular filter system, make sure it is displayed in the **top** line:

1. After pressing the  button on the terminal, the filter system is switched off and the display shows:

```
Subs. time: 0 s
subsequent
running time of
the filter pump
```

2. You can now use the  and  buttons on the terminal to change the run-on time. The smallest value you can set is 0s, the largest value is 1800s.
3. If you press the  button again, the standard diagnostics display reappears and the filter system resumes operation. The set value is saved automatically.

The filter pump run-on is factory-set to off (run-on time = 0).

Priority of temperature controller over timer


Display text: Heat. priori.

This line displays whether the temperature controller has priority over the settings for the filter operating times. In priority mode, the filter pump can be switched on by the temperature controller even outside the set filter operating times. Without priority, temperature control only operates during the filter operating times.




The following texts may be displayed:

<i>Priority OFF</i>	Auxiliary heating only operates during the filter operating times.
<i>Priority ON</i>	Temperature control also operates outside the filter operating times. If the water temperature drops below the set target temperature, the filter pump and auxiliary heating are switched on automatically

To enable/disable priority mode, make sure it is displayed in the **top** line of the Service Terminal:

1. After pressing the  button on the terminal, the filter system is switched off and the display shows:

```
Heat. priori: OFF
Priority circuit
of caloric
heater:
```

2. You can now use the  button on the terminal to enable priority mode, and the  button to disable it again.
3. If you press the  button again, the standard diagnostics display reappears and the filter system resumes operation.

The priority mode for auxiliary heating is factory-set to off.

Priority for solar heater

Display text: Solar priori.


This line displays whether the solar heater has priority over the settings for the filter operating times. In priority mode, the filter pump can be switched on by the temperature controller even outside the set filter operating times. Without priority, temperature control only operates during the filter operating times.

The following texts may be displayed:




<i>Solar priority OFF</i>	The solar heater only operates during the filter operating times.
---------------------------	---

Solar priority ON The solar heater also operates outside the filter operating times. When the sun is shining on the solar installation, the filter pump and solar heater are switched on automatically.

To enable/disable priority mode, make sure it is displayed in the **top** line of the Service Terminal:

1. After pressing the  button on the terminal, the filter system is switched off and the display shows:

```
Heat. priori: OFF
Priority circuit
of solar heating
```

2. You can now use the  button on the terminal to enable priority mode, and the  button to disable it again.
3. If you press the  button again, the standard diagnostics display reappears and the filter system resumes operation.

The priority mode for the solar heater is factory-set to on.

Pump speed during solar operation

Display text: Speed f. sol.

This line displays the speed the filter pump is meant to run at during solar operation.


The following texts may be displayed:

Speed for solar HIGH The pump runs at high speed.




Speed for solar NORM The pump runs at moderate speed (filter speed)

Speed for solar AUTO The speed of the pump follows the switching times set for the timer (filter speed for filter mode or Eco speed in Eco mode).

To set the pump speed you require, make sure the Service Terminal display shows *Speed for solar:* in the **top** line:

1. After pressing the  button on the terminal, the filter system is switched off and the display shows:

```
Speed f. sol. NORM
PUMP speed for:
solar heating
```


2. You can now use the  and  buttons on the terminal to select the pump speed.
3. If you press the  button again, the standard diagnostics display reappears and the filter system resumes operation.

The factory setting for the pump speed is "NORM".



Frost protection temperature (air temperature)


Display text: Frost prot.

This line displays the temperature at which the frost protection function automatically starts up. To adjust this value to suit the requirements of the particular swimming pool installation, make sure it is displayed in the **top** line of the Service Terminal:

1. After pressing the  button on the terminal, the filter system is switched off and the display shows:

```
Frost prot. 0.0 °
Temperature of
the freeze
protection
```

2. You can now use the  and  buttons on the terminal to change the frost protection temperature. The lowest value you can set is -3°C, the highest value is 5°C.


- If you press the  button again, the standard diagnostics display reappears and the filter system resumes operation. The set value is saved automatically.

The factory setting for the frost protection temperature is 0°C.




Frost protection temperature (water temperature)

Display text: water frost.:

This line displays the temperature to which the water is heated during frost protection mode. To adjust this value to suit the requirements of the particular swimming pool installation, make sure it is displayed in the **top** line of the Service Terminal:

- After pressing the  button on the terminal, the filter system is switched off and the display shows:

```
water frost.: 3.0 °
Water: temperature
with freeze
protection
```


- You can now use the  and  buttons on the terminal to change the frost protection water temperature. The lowest value you can set is 1°C, the highest value is 5°C.
- If you press the  button again, the standard diagnostics display reappears and the filter system resumes operation. The set value is saved automatically.

The factory setting for the frost protection temperature is 3°C.




Switch off pump during backwashing

Display text: Valve pause:

This line displays the length of time that the filter pump is switched off, if at all, during operation of the sliding valve. To adjust this value to suit the requirements of the particular swimming pool installation, make sure it is displayed in the **top** line of the Service Terminal:

- After pressing the  button on the terminal, the filter system is switched off and the display shows:

```
Valve pause 10
actuating time
hydraulic valves
```

- You can now use the  and  buttons to change the period of time (in seconds) that the pump is off. The smallest value you can set is 0, the largest value is 120.
- If you press the  button again, the standard diagnostics display reappears and the filter system resumes operation. The set value is saved automatically.

The factory setting for the off period is 0.

Pump operating time

Display text: Pump time:

This line shows the total number of operating hours for the filter pump.

ECO operating time

Display text: Eco time:

This line shows the total number of operating hours for Eco mode.

Heater operating time

Display text: Heat. time:

This line shows the total number of operating hours for the heater.

Solar operating time

Display text: Solar time:

This line shows the total number of operating hours for the solar heater.

Backwash counter (internal)

Display text: In.backwash:

This line displays how often a backwash operation using sliding valves has been launched.

Backwash counter (external)

Display text: Ex.backwash:

This line displays how often a backwash operation has been started by the EUROTRONIK-10 controller.

The following display lines help the Service Engineer to check the input signals and output relays of the filter control unit.

Forced switch-on of the NR-12-TRS-2

Display text: Forced start:

This line displays whether the NR-12-TRS-2 water level controller has requested a forced switch-on.

The following texts may be displayed:

Forced switch-on OFF No forced switch-on or terminals 11 and 12 not connected

Forced switch-on ON Forced switch-on requested or terminals 11 and 12 connected

EUROTRONIK-10

This line displays whether the EUROTRONIK-10 controller is switching on the filter pump during backwashing or rinsing.

The following texts may be displayed:

EUROTRONIK OFF No switch-on command from the EUROTRONIK-10

EUROTRONIK ON The EUROTRONIK-10 has switched on the filter pump

locking

This line displays whether the filter system has been disabled by the EUROTRONIK-10, the NR-12-TRS-2 or the winding protection switch.

The following texts may be displayed:


locking OFF The pump is off (one of the contacts is open).

locking ON Pump operation is enabled (all interlock contacts are closed)




The following lines are used for manual control of the output relays.

Filter pump

When the operating status of the filter pump is displayed in the **top** line of the Service Terminal, you can enable/disable the pump manually:


1. After pressing the  button on the terminal, the filter system is switched off and the display shows:

```
Filter pump: OFF
Pump can be
operated
manually
```



2. You can now use the  and  buttons on the terminal to switch the filter pump into the following operating modes: ON, OFF, ECO, MAX
3. If you press the  button again, the standard diagnostics display reappears and the filter system resumes operation.

Solar system


When the operating status of the solar heater is displayed in the **top** line of the Service Terminal, you can enable/disable the solar heater manually:

1. After pressing the  button on the terminal, the filter system is switched off and the display shows:


```
Solar system
MANUAL OPERATION
Actuator: OFF
Pump: OFF
```

2. You can now use the  button on the terminal to switch on the solar heater, and the  button to switch it off again. After switching on the solar heater, the display shows:

```
Solar system
MANUAL OPERATION
Actuator: ON
Pump: OFF
```


3. You can now use the  button to switch on the filter pump as well. After switching on the filter pump, the display shows:

```
Solar system
MANUAL OPERATION
Actuator: ON
Pump: ON
```




4. If you press the  button again, the standard diagnostics display reappears and the filter system resumes operation.

Heating

When the operating status of the heater is displayed in the **top** line of the Service Terminal, you can enable/disable the heater manually:


1. After pressing the  button on the terminal, the filter system is switched off and the display shows:

```
Heating
MANUAL OPERATION
Heating: OFF
Filter pump: OFF
```




2. You can now use the  button on the terminal to switch on the auxiliary heater, and the  button to switch it off again. The filter pump is automatically switched on with it.
3. If you press the  button again, the standard diagnostics display reappears and the filter system resumes operation.

Dosing equip.

When the operating status of the dosing system is displayed in the **top** line of the Service Terminal, you can enable/disable the dosing system manually:


1. After pressing the  button on the terminal, the filter system is switched off and the display shows:

```
Dosing equip: OFF
Filter pump:  OFF
manual operatins
```




2. You can now use the  button on the terminal to switch on the dosing system, and the  button to switch it off again. The filter pump is automatically switched on with it.
3. If you press the  button again, the standard diagnostics display reappears and the filter system resumes operation.

Backwash valve

When the operating status of the backwash valve is displayed in the **top** line of the Service Terminal, you can switch the backwash valve manually:


1. After pressing the  button on the terminal, the filter system is switched off and the display shows:

```
Backwashvalve: OFF
Filter pump:    OFF
Manual operation
```




2. You can now use the  button on the terminal to switch on the backwash valve, and the  button to switch it off again. The filter pump is automatically switched on with it.
3. If you press the  button again, the standard diagnostics display reappears and the filter system resumes operation.

Clearwash valve

When the operating status of the rinsing valve is displayed in the **top** line of the Service Terminal, you can enable/disable the rinsing valve manually:


1. After pressing the  button on the terminal, the filter system is switched off and the display shows:

```
Clearwashvalve: OFF
Filter pump:    OFF
Manual operation
```




2. You can now use the  button on the terminal to switch on the rinsing valve, and the  button to switch it off again. The filter pump is automatically switched on with it.
3. If you press the  button again, the standard diagnostics display reappears and the filter system resumes operation.

Language

When Language is displayed in the **top** line of the Service Terminal, you can toggle the language setting:

1. After pressing the  button, the display shows the following text:

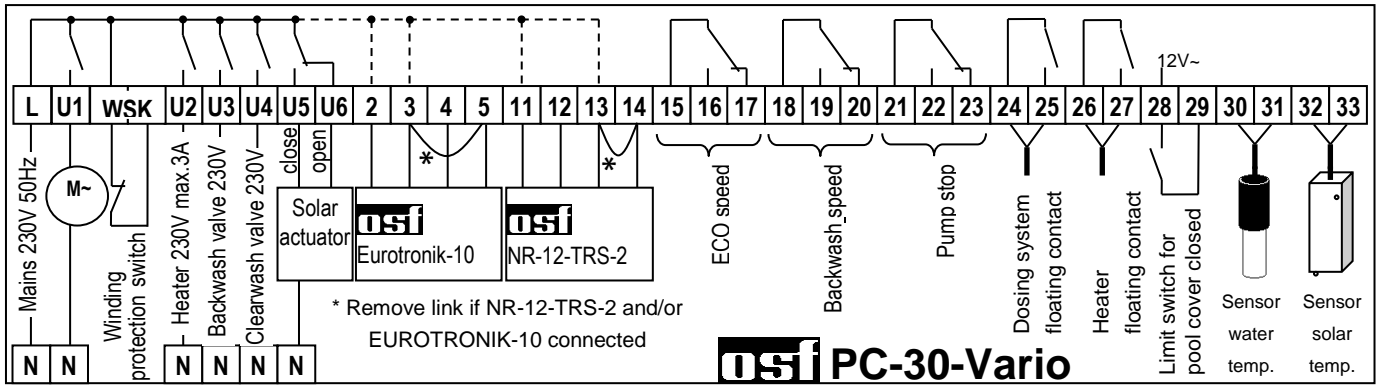
```
Language
selection
Deutsch English
```

2. You can now use the  and  buttons on the terminal to select the language.
3. If you press the  button again, the standard diagnostics display reappears.

Calibrating the temperature control system (sensor calibration)

The electronic temperature controller and the temperature sensors have been calibrated in the factory to work correctly together. If one of the sensors is replaced or a sensor lead is lengthened, the system may need to be recalibrated using the Info button on the control unit. Since the solar temperature controller only works properly when the sensors are calibrated accurately, this calibration should be performed solely by a trained Service Engineer.

Wiring diagram



Relax and enjoy your swimming pool!

Further information can be found on the Internet at the following address:

<https://osf.de/download/documents/documents.php?device=PC-30-vario>



OSF Hansjürgen Meier
 Elektrotechnik und Elektronik GmbH & Co KG
 Eichendorffstraße 6
 D-32339 Espelkamp
 Email: info@osf.de
 Internet: www.osf.de

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