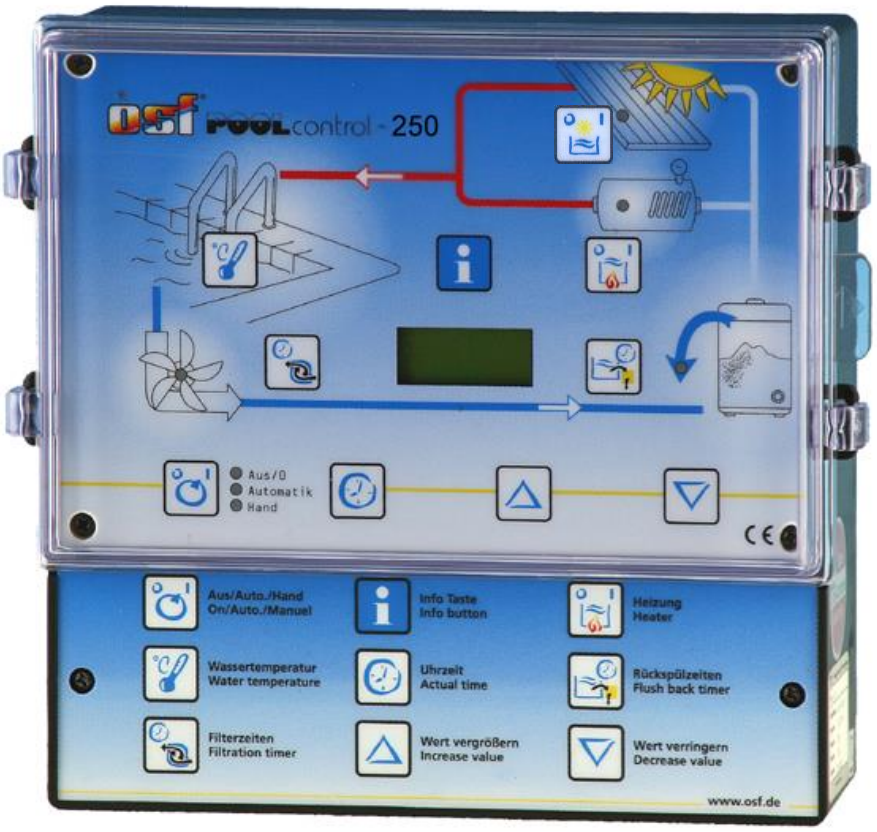
Installation and operating manual

POOLcontrol®-250

400V filter control unit

Item No.: 3100000440

Not suitable for filter pumps with speed control



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Specifications:

Dimensions:		220mm x 220mm x 100mm
Operational voltage:		400V/50Hz
Control system power consumption:		ca. 10VA
Not suitable for filter pumps with speed control		
Switching capacity:	Pump:	max. 3.0 kW (AC3)
	Heater:	max. 2A
	Dosing system:	max. 8A
Protection class:		IP 40
Surrounding temperature		0-40°C
Humidity:		max. 80% rel. F., non-condensing!

Contents

Function:

The OSF PC-250 filter control unit enables time-dependent switching on and off of a 400 V three-phase current pump or a 230 V alternating current filter pump in accordance with a freely programmable switching program.

Backflushing can be carried out both with bar valves and with the OSF EUROTRONIK-10 backflushing control system and 6-way valves.

heater of the swimming pool is controlled by the electronic temperature regulation system while the filter pump is running. The heater is automatically switched off by the internal interlock during filter pauses. The required swimming pool water temperature can be selected on the front panel, or the heater can be switched off. A floating contact (terminals 22 + 23) and a voltage-carrying output (terminal U2) are available for connecting the heater.

The microprocessor automatically activates the solar temperature regulation through the connection of a solar temperature sensor (Art. No. 3100000030). Free solar energy will therefore be given priority in heater the swimming pool. The additional heater (terminals U2 and N) will only be switched on automatically if the solar unit is not supplying any energy. The solar heater and, simultaneously, the filter pump will also start if solar energy is available outside filter running times (timer off). The solar temperature sensor is suitable for operating solar absorbers through which the swimming pool water flows directly. This controller is not usable for other types of solar collector.

Terminals for electronic level regulation NR-12-TRS-2 (Art. No. 3030075020) enable convenient automatic regulation of the swimming pool water level. The filter pump is also additionally protected against damage which could be caused by filter unit operation without water.

The INFO key on the front panel enables reading out of various operating parameters in addition to language changeover.

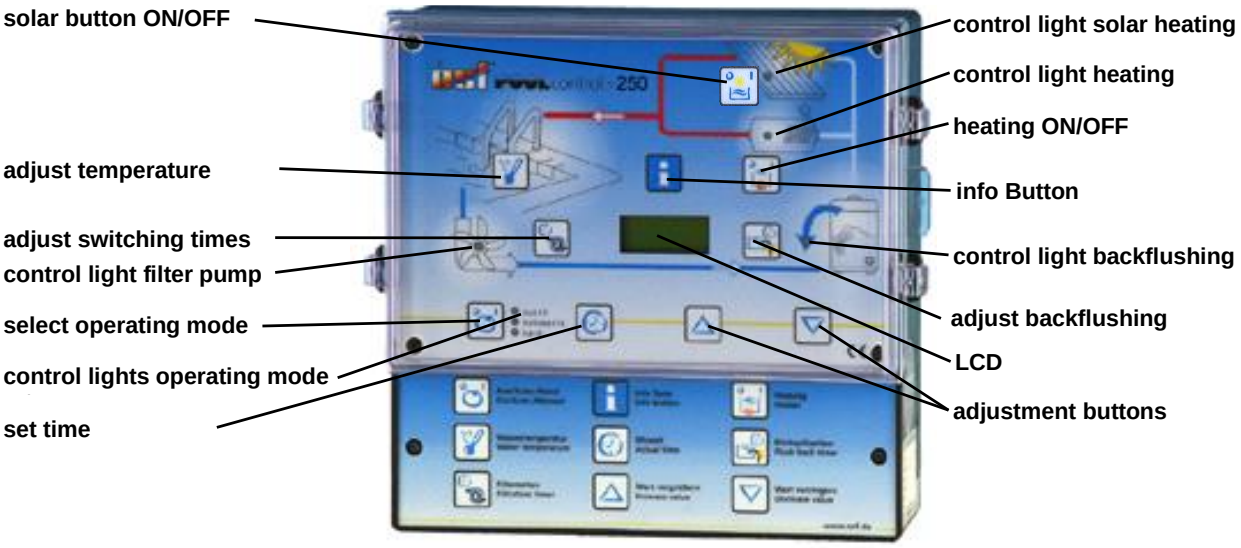
Extra terminals enable the connection of additional devices such as a dosing system. Terminals 20 + 21 are floating, and can therefore be used individually. The relay contact between terminals 20 and 21 remains closed during the filter periods, the relay contact is opened outside these periods. This contact can be loaded with a voltage of maximum 230 V and a current of maximum 8 A.

The terminals for the coil earthing contact enable the connection of a coil earthing contact switch which is integrated in the filter pump motor windings. If this contact opens, for example due to excessive motor winding warming, the filter pump will be switched off automatically, and with it the heater and dosing system. As soon as the coil earthing contact closes once the motor windings have cooled down, the units will be started up again automatically. Manual resetting is not necessary. The terminals for the coil earthing contact are provided with 230 V.

Operation of filter pump and heater is displayed by indicator lamps in the front panel, which means that checks can be made at any time.

The filter pump is protected by an electronic motor protection system (current range infinitely variable up to 8A) against overloading.

Front panel displays and controls:

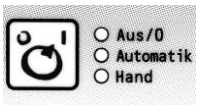


LCD display

LCD display

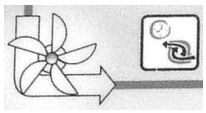
14:46 23,4°C	Normal operating display with current water temperature and time.
Level-control	The filter pump is switched on by the NR-12-TRS-2 level regulation system.
6-way backwash	The filter pump is switched on by the EUROTRONIK-10 backflushing control system.
Pump locked	The filter pump is switched off by the EUROTRONIK-10 or the NR-12-TRS-2 level regulation system.
Back-washing	The filter pump is switched on because backflushing is taking place using the bar valve connected.
Clear-washing	The filter pump is switched on because rinsing is taking place using the bar valve connected.
motor-protect	The filter pump has been switched off by the electronic motor protection system. Once the pump has cooled down and the cause of overloading has been rectified, it can be switched on again using the ⍥ key.
phase fault	The filter pump is switched off because current is not flowing in all 3 phases of the 3-phase current network. It can be switched on again using the ⍥ key once the error has been rectified.

Selecting operating mode



The control system can be switched off or you can select between manual and automatic operating mode using the ⍥ key. **Caution!** This does not mean that the control system has been switched to voltage-free! The operating mode selected is displayed using the indicator lamps next to the ⍥ key.

Pump indicator lamp



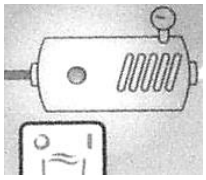
This indicator lamp displays filter pump operation. You can see the pump operating mode from the lamp colour:

Off: the filter pump is switched off

Green: the filter pump is in operation

Red: the pump has been temporarily switched off by the NR-12-TRS-2 level regulation system or the EUROTRONIK-10 backflushing system, the motor protection has triggered or it was switched off by phase fields.

Heater indicator lamp



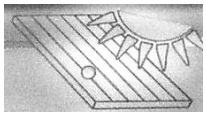
This indicator lamp displays heater operation. You can see the heater operating mode from the lamp colour:

Off: the heater is off

Green: the heater is in operation

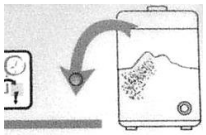
Red: the additional heater is blocked.
Use the key to block or release the heater. The solar heater is not switched using this key.

Solar heater



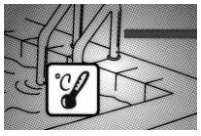
If a solar sensor has been connected to the control system, this indicator lamp is used to show the current operating status of the solar heater.

Backflushing process indicator lamp

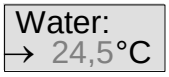


This indicator lamp always illuminates if backflushing or rinsing using the bar valve is taking place.

Selecting the temperature



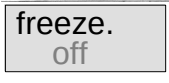
Use the key to select the swimming pool water temperature.

1. Press the key ⇒ the display shows 

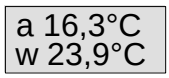
2. Use the and keys to set the required temperature between 0 °C and 40 °C.
3. Press the key again to save the required temperature. If no key is pressed for more than 30 seconds during temperature setting, the last temperature selected is saved automatically and the normal operating display will be shown again.

Switching on frost protection mode

If you press the , and keys simultaneously, frost protection mode is selected and the display shows



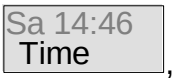
1. Use the and keys to switch frost protection mode on or off.



2. Press the key again to save the required operating mode . If frost protection mode has been switched on, the display will show:

Setting the time

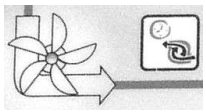
Use the ⏲ key to set the current time:

1. Press the ⏲ key ⇒ the display shows 

, the minute display blinks.
2. You can now use the △ and ▽ keys to set the minutes.
3. Press the ⏲ key ⇒ the hour display blinks.
4. You can now use the △ and ▽ keys to set the hours.
5. Press the ⏲ key ⇒ the weekday display blinks.
6. You can now use the △ and ▽ keys to set the weekday.

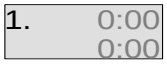
Press the ⏲ key again to save the time. If no key is pressed for more than 30 seconds during setting, the last time displayed is saved automatically and the normal operating display will be shown again.

Programming the timer



Use the ⏲ key to program the built-in timer, whereby the switch-on time and the associated switch-off time must always be entered as pairs.

1. Press the ⏲ key ⇒ the display shows 

if no switching time has yet been programmed.
2. If you press one of the △ or ▽ keys, or if a switching time has already been programmed, the display shows 

, the minute display of the top time (switch-on time) blinks. Note: if you press the ⏲ key, the current time will be taken over.
3. You can now use the △ and ▽ keys to set the required switch-on time minutes.
4. Press the ⏲ key again ⇒ the hours in the switch-on time blink
5. You can now use the △ and ▽ keys to set the required switch-on time hours.
6. Press the ⏲ key again ⇒ the minutes in the switch-off time blink
7. You can now use the △ and ▽ keys to set the required switch-off time minutes. Note: if you press the ⏲ key, the current time can be taken over, if you press the △ and ▽ keys simultaneously the switch-on time set previously will be taken over.
8. Press the ⏲ key again ⇒ the hours in the switch-off time blink
9. You can now use the △ and ▽ keys to set the required switch-off time hours.
10. Further switching times can now be programmed as in points 1-9.
11. Press the ⏲ key again to save the switching time. If no key is pressed for more than 30 seconds during setting, the last switching time displayed is saved automatically and the normal operating display will be shown again.

Delete rinsing time:

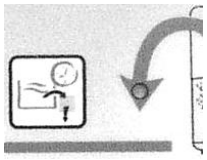
If switching times have already been programmed, you can use the ⏲ key

to delete them.

1. Press the key as often as required until the switching time to be deleted is displayed 3. 10:00 16:00
2. The switching time is deleted if you press the and keys simultaneously.

Note:
If you press the key, the current time is taken over.

Programming backflushing



Use the key to control backflushing using the bar valve.

1. Once the key has been pressed the first time, you can use the and keys to set the backflushing duration 10 Sec. Backwash.
2. Once the key has been pressed the next time, you can use the and keys to set the rinsing duration 10 Sec. Clearwash.
3. Once the key has been pressed again, you can set the time of the rinsing process Mo 16:00 1. Start.
   In the first stage, the and keys are used to set the minutes.
   If you press the key, the current time is taken over.
4. Press the key again ⇒ the hours in the switch-on time blink
   You can now use the and keys to set the hours.
5. Press the key again ⇒ the switch-on time weekday blinks.
   You can now use the and keys to set the weekday.
6. Further start times can be programmed in the same manner as described in points 1 to 5.

Deleting switching times:

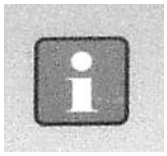
If you press the and keys simultaneously, the rinsing time shown in the display will be deleted.

Note:
If you press the key, the current time is taken over.

Start backflushing process manually

If the backflushing key is pressed for 3 seconds without interruption, the backflushing process will start. Backflushing will not start unless a backflushing duration has been entered.

Info key



If you press the INFO key, the program version number will be displayed : PC250 ver.1.xx

If the info key is pressed several times successively, the following information can be called up.

1) Language

The current language is displayed. If you press the ⍓ and ⍗ keys, you can switch between the German and English languages. The language displayed will be saved automatically.

2) Solar temperature
3) Water temperature
4) Filter pump operating status
5) Additional heater operating status
6) Solar heater operating status
7) Filter pump operating hours counter
8) Additional heater operating hours counter
9) Solar heater operating hours counter
10) Motor protection

The trigger current set for the motor protection system is visible in the display.

2 facilities are available for setting the motor protection system.

a) The current motor current is accepted and saved if the filter pump is running and the ⍓ and ⍗ keys are pressed simultaneously. (The starting current delay factor is automatically declared.)

b) If you press the ⍓ or ⍗ keys, the filter pump current consumption can be set manually. The current displayed will be saved automatically.

11) Quit info mode

To quit the information mode, press the Info key for 3 seconds without interruption.

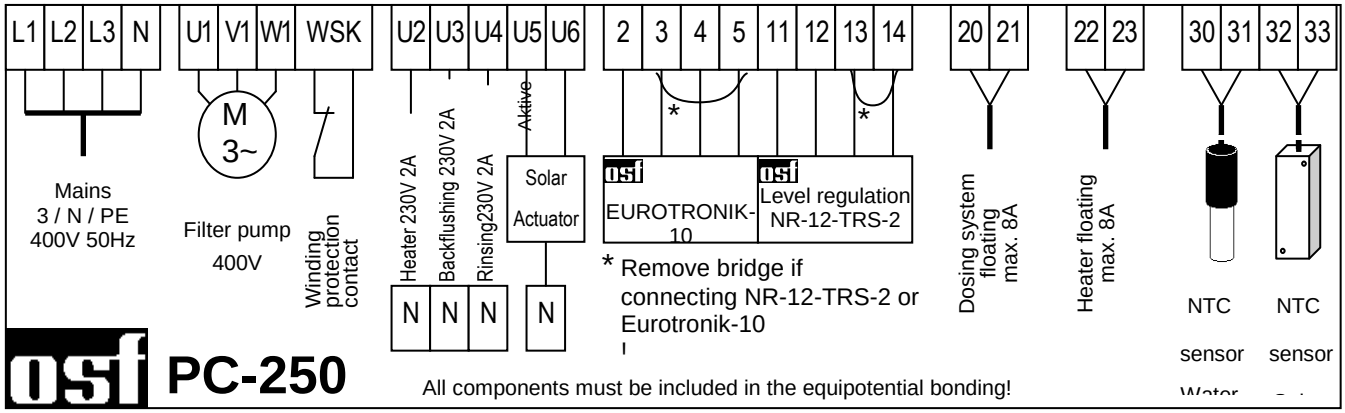
If the Info key is not pressed for a longer period, the device switches back to the normal operating display automatically.

Installation

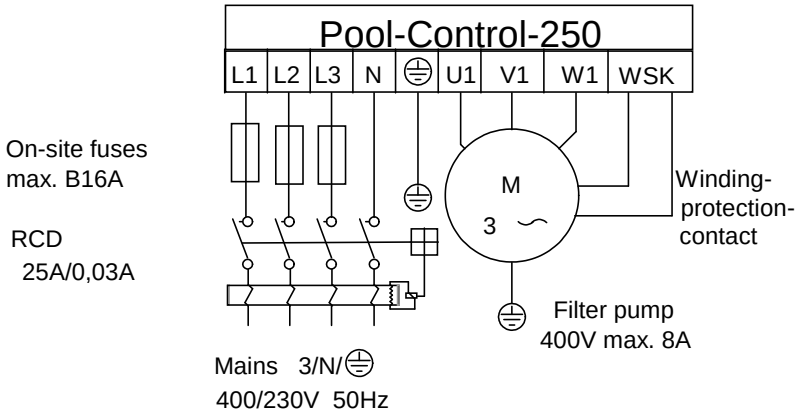
The controller must be protected against moisture in accordance with its protection class, and the fixed to a plain, fireproof support with suitable loading capacity and must be out of the reach of children. You should avoid direct sunlight, UV radiation and formation of condensate due to temperature variations. The device must be powered via a multi-pole main switch with a contact opening width of at least 3mm and a residual current circuit breaker with $I_{FN} \leq$ 30mA . The device must be isolated before opening the housing.

Electrical power supply

Electrical power supply connections, in addition to alignment and service work, may only be carried out by approved electricians. The attached circuit diagrams and all applicable safety regulations must be observed. All conductive components must be included in the equipotential bonding.

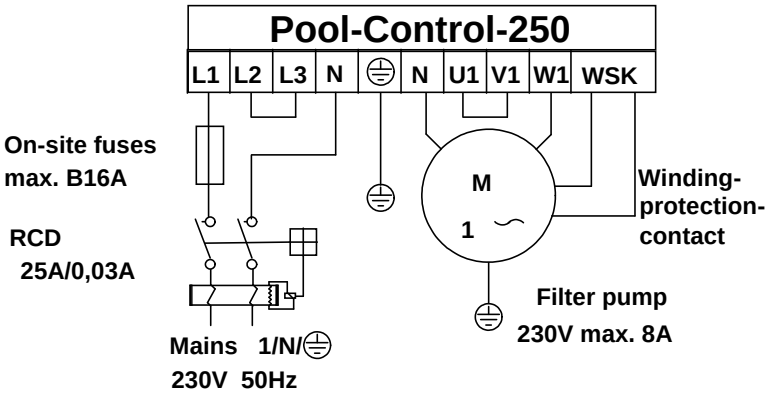


Mains connection when using 400V 3-phase pump:



The bridge fitted in the works between the terminals labelled WSK must be removed if a pump with coil earthing contact is connected. If no such connection is made, it must remain fitted. These terminals carry mains voltage!

Mains connection when using 230 V AC pump:

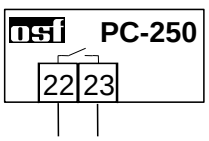


The bridge fitted in the works between the terminals labelled WSK must be removed if a pump with coil earthing contact is connected. If no such connection is made, it must remain fitted. These terminals carry mains voltage!

The motor current must be fed using all 3 switching contacts in the filter control unit so that the electronic motor protection works correctly (terminals L2 and L3 in addition to U1 and V1 bridged, pump connected to W1).

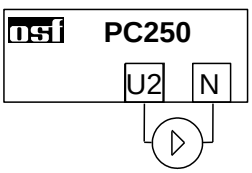
Heater connection

Floating contact (e.g. for boiler control)



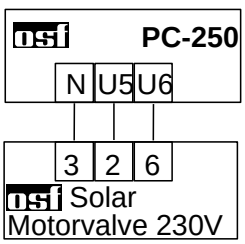
Heater
floating contact
max. 8A

230V heater (e.g. circulation pump)



Heater 230V
max. 2A

Solar heater

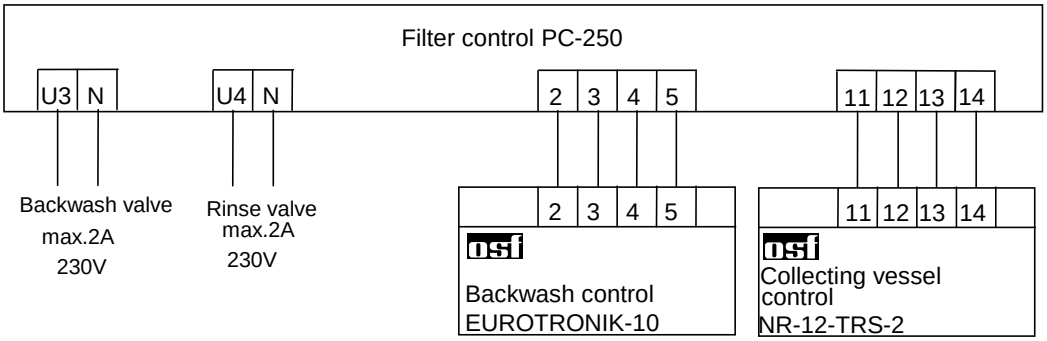


The floating relay contact between terminals 22 and 23 can be loaded with a voltage of maximum 230 V and a current of maximum 8 A.

If the heater requires 230 V, it can be connected to terminal U2. Terminals are also available for the heater N connection.

A 230 V osi solar actuating drive can be connected to terminals U5 and U6 for operating the solar heater. When operating solar heater, terminal U5 carries the mains voltage and terminal U6 is voltage-free. If the solar heater is not being operated, terminal U5 remains voltage-free and terminal U6 carries the mains voltage. These contacts may the loaded with a maximum 230 V/1.5A.

Level regulation and backflushing control



A 230 V bar valve for backflushing can be connected to terminals U3 and N.

A 230 V bar valve for rinsing can be connected to terminals U4 and N.

Both valves will be controlled by the internal backflushing controller.

Heater and dosing systems are blocked during the backflushing and rinsing processes.

Either bar valves or a EUROTRONIK-10 can be used for backflushing or rinsing.

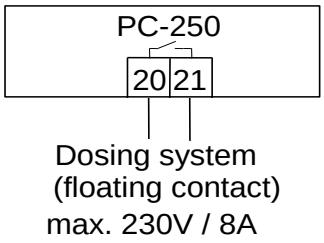
The bridge fitted in the works between terminals *13* and *14* must be removed if level regulation system NR-12-TRS-2 is connected. The bridge can remain between these terminals if no level regulation system is connected. Terminals *11* and *12* remain unused in this case. These terminals carry mains voltage!

The bridge fitted in the works between terminals *3* and *5* must be removed if a EUROTRONIK-10 system is connected. The bridge can remain between these terminals if no EUROTRONIK-10 system is connected. Terminals *2* and *4* remain unused in this case. These terminals carry mains voltage!

Opening any of the contacts between terminals *13* and *14* or *3* and *5* causes filter pump, dosing systems and heater to be turned off immediately.

Closing any of the contacts between terminals 2 and 4 or 11 and 12 causes forced switching on of the filter pump, whereas heater and dosing systems are switched off.

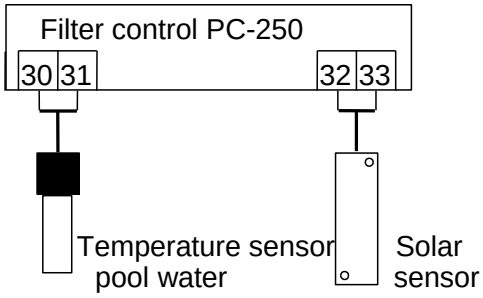
Dosing system connection

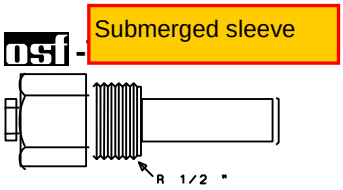


There is a floating relay contact between terminals 20 and 21. This can, for example, be used for activation of the dosing system (the contact remains closed during filter operation).

This contact can be loaded with a maximum of 230 V/8A.

Temperature sensor connection





The swimming pool temperature sensor is connected to terminals 30 and 31. The temperature sensor is supplied with a cable length of 1.5 m as standard. If required, this can be lengthened to maximum 20 m (cross-section minimum 0.5 mm²) with a 2-core cable. You should avoid routing the sensor cable near power cables to prevent possible interference.

Since precise temperature control can only be achieved with good heat transfer between temperature sensor and swimming pool water, an osi immersed sleeve R ½" (Art. No. 3200200003) should be built into the piping system. The sensor polarity is as required.

A solar temperature sensor (Art. No. 3100000030) can be additionally connected to terminals 32 and 33. The temperature sensor is supplied with a cable length of 20 m as standard. If required, this can be lengthened to maximum 50 m (cross-section minimum 0.5mm²) with a 2-core cable. You should avoid routing the sensor cable near power cables to prevent possible interference. The solar temperature sensor should be connected at the solar collector output and must have good heat contact to the returning water flow. The temperature at the temperature sensor installation site may not exceed 80 °C.

Setting motor protection

Please see the Info key information in menu command 10.

Starting the backflushing process

If the backflushing key is pressed for 3 seconds without interruption, the backflushing process will start. Backflushing will not start unless a backflushing duration has been entered.

Balancing the temperature controller

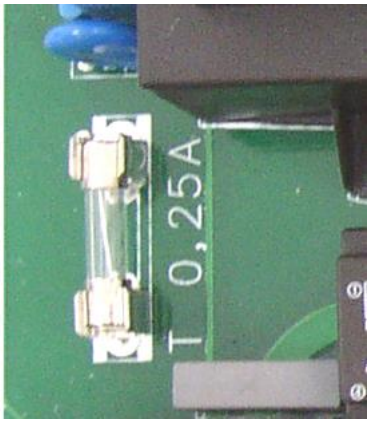
The electronic temperature regulator and the temperature centre are balanced with one another in the works. If one of the sensors is replaced, or if a sensor cable is extended, a new balance must be carried out if necessary using the potentiometers in the controller. Turning the water temperature sensor potentiometer clockwise causes an increase in the water temperature displayed. If the solar sensor potentiometer is turned clockwise, a higher collector temperature is displayed. Since the solar temperature regulation only works correctly with precisely balanced sensors, this balance should only be carried out by a trained service technician.

Temperature sensor resistance

Both temperature sensors have the resistance values listed to the right.

Temperature	Resistance
20°C	5800 Ohm
25°C	4600 Ohm
30°C	3700 Ohm

Fuses



The electronic control system is protected by a 0.25A fine-wire fuse on the PCB in the inside of the device. The short-circuit protection for the filter pump must be provided by a backup fuse of maximum 16A on site.

osf Service terminal

An osf service terminal (Art. No. 3010000900) can be connected to this control system for optimum control system settings for a wide range of swimming pool equipment and for assisting in initial startup and fault diagnosis. The socket for this is located on the rear of the top PCB inside the device. **Before opening the housing and plugging in the service terminal, you must ensure that the control system has been isolated from the mains!** Once the control system has been switched on, the service terminal display shows the first 4 lines of the diagnosis text, e.g.:

Filter operation	**Filter unit operation mode**
Temp. reached	**Heater operation mode**
Water: 23,0°	**Measured water temperature**
Solar: 38,4°	**Measured collector temperature**

Further lines can be called up using the △ and ▽ keys. Values in the **top** line can be changed by pressing the ↵ key if necessary.

Filter unit operating mode

This line displays the current filter unit operating mode.

The following displays are possible:

Control system off	Use the ⏻ key to switch the control system off.
Filter unit off	The filter unit is switched off.
Filter operation	The filter unit is switched on using the timer or the ⏻ key on the front cover.
Run-on time	The filter pump continues running when the heater is switched off.
Forced switching	The filter pump is either switched on by the EUROTRONIK-10 backflushing controller or the NR-12-TRS-2 level regulation system.
Priority circuit	Outside the set filter times, the filter pump is switched on by the temperature regulation system because this works in the priority circuit.
Pump blocked	The filter pump is switched off temporarily by the EUROTRONIK-10 or the NR-12-TRS-2 level regulation system.
Backflushing	The filter pump is switched on because backflushing is taking place using the bar valve.
Rinsing	The filter pump is switched on because rinsing is taking place using the bar valve.
Frost protection mode	The filter pump is in frost protection operating mode.

Heater operating mode

This line displays the current temperature regulation operating mode.

The following displays are possible:

Controller off	Use the ⏻ key to switch the heater off.
Add. heater off	The heater is switched off outside the filter times.
Heater blocked	The heater is switched off because the EUROTRONIK forced switching has occurred.
Temp. reached	The heater is switched off because the set temperature has been reached.
Add. heater **on**	The heater is switched on because the water temperature is below the set temperature.
Solar heater on	The solar heater is switched on because the water temperature is below the set temperature and the collector is warmer than the swimming pool water.
Frost hazard	The heater is switched on in frost protection operating mode.

Water temperature

The current water temperature is displayed in this line. If the display does not agree with the actual temperature, it can be readjusted using the adjuster on the printed circuit board (see temperature regulation section). Turn the adjuster in a clockwise direction to increase the displayed value. "Sensor break" will be displayed if the temperature sensor is defective. **Caution: If both temperature sensors are at the same temperature, the solar sensor must never display a higher value than the water temperature sensor otherwise the solar heater will not switch off.**

Solar temperature

The current collector temperature is displayed in this line. If the display does not agree with the actual temperature, it can be readjusted using the adjuster on the printed circuit board (see temperature regulation section). Turn the adjuster in a clockwise direction to increase the displayed value. "-----" will be displayed if the temperature sensor is defective. **Caution: If both temperature sensors are at the same temperature, the solar sensor must never display a higher value than the water temperature sensor otherwise the solar heater will not switch off.**

Additional heater

The additional heater operating status is displayed in this line.

Solar

The solar heater temperature is displayed in this line.

Water

The temperature at the water temperature sensor is displayed in this line.

Set temperature

The set temperature is displayed in this line, and this is set using the key in the front cover.

Current

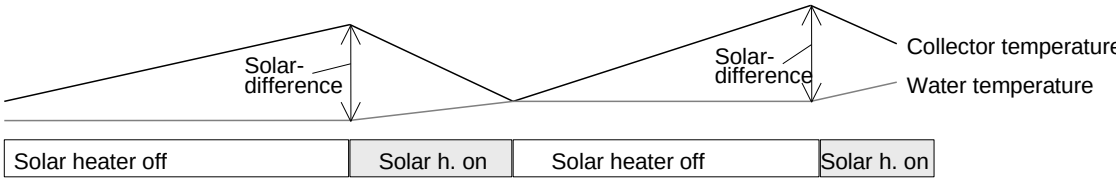
The filter pump current consumption for each phase is displayed in this line.

Motor protection

The triggering current for the motor protection is displayed in this line.

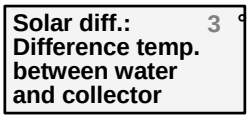
Solar difference

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



This value can be adjusted to meet the requirements of the relevant solar equipment if it is displayed in the **top** line of the service terminal.

1. Once the ↵ key has been pressed, the filter unit is switched off and the display shows the following:



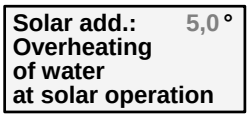
2. Now use the △ and ▽ keys to change the temperature difference. The smallest adjustable value is 0.5°, the largest 10°.
3. If you press the ↵ key again, the normal diagnosis display appears and the filter unit continues to operate. The adjusted value will be saved automatically.

A temperature difference of 3° is set at the works.

Solar additional temperature

This line displays by how much the swimming pool set temperature may be exceeded during solar heating in order to make optimal use of solar energy during the day. This value can be adjusted to meet the requirements of the relevant swimming pool if it is displayed in the **top** line of the service terminal.

1. Once the ↵ key has been pressed, the filter unit is switched off and the display shows the following:



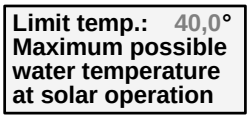
2. Now use the △ and ▽ keys to change the temperature difference. The smallest adjustable value is 0°, the largest 15°.
3. If you press the ↵ key again, the normal diagnosis display appears and the filter unit continues to operate. The adjusted value will be saved automatically.

A temperature difference of 5° is set at the works.

Limit temperature

This line displays at which maximum temperature the solar heater is to be switched off automatically for safety reasons independent of the nominal value set. This value can be adjusted to meet the requirements of the relevant swimming pool if it is displayed in the **top** line of the service terminal.

1. Once the ↵ key has been pressed, the filter unit is switched off and the display shows the following:



2. Now use the △ and ▽ keys to change the limit temperature. The smallest adjustable value is 30°, the largest 50°.
3. If you press the ↵ key again, the normal diagnosis display appears and the filter unit continues to operate. The adjusted value will be saved automatically.

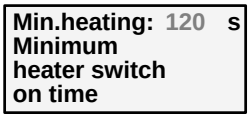
A temperature difference of 40° is set at the works. This limit temperature influences the solar heater **only**.

Additional heater minimum time (hysteresis)

This line displays the minimum switching on or off durations for the additional heater by the temperature regulation to avoid too short switching periods. This value can be

adjusted to meet the requirements of the relevant heater equipment if it is displayed in the **top** line:

1. Once the ↵ key has been pressed, the filter unit is switched off and the display shows the following:



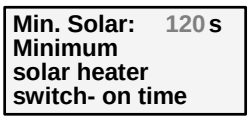
2. Use the △ and ▽ keys to change the minimum time in stages of 10s. The smallest adjustable value is 10s, the largest 1800s
3. If you press the ↵ key again, the normal diagnosis display appears and the filter unit continues to operate. The adjusted value will be saved automatically.

The time set here only influences the temperature regulator behaviour. If the filter pump is switched off, the additional heater is switched off without delays irrespective of the holding time set. A minimum duration of 2 minutes is set at the works.

Solar heater minimum time (hysteresis)

This line displays the minimum switching on or off durations for the solar heater by the temperature regulation to avoid too short switching periods. This value can be adjusted to meet the requirements of the relevant solar equipment if it is displayed in the **top** line:

1. Once the ↵ key has been pressed, the filter unit is switched off and the display shows the following:



2. Use the △ and ▽ keys to change the minimum time in stages of 10s. The smallest adjustable value is 10s, the largest 1800s
3. If you press the ↵ key again, the normal diagnosis display appears and the filter unit continues to operate. The adjusted value will be saved automatically.

The time set here only influences the temperature regulator behaviour. If the filter pump is switched off, the heater is switched off without delays irrespective of the holding time set. A minimum duration of 2 minutes is set at the works.

Filter pump run-on time

This line displays for how long the filter pump runs on after the additional heater has been switched off. This value can be adjusted to meet the requirements of the relevant filter unit if it is displayed in the **top** line:

1. Once the ↵ key has been pressed, the filter unit is switched off and the display shows the following:

2. Now use the △ and ▽ keys to change the warm-up time. The smallest adjustable value is 0s, the largest 1800s
3. If you press the ↵ key again, the normal diagnosis display appears and the filter unit continues to operate. The adjusted value will be saved automatically.

Filter pump run-on is switched off at the works (run-on time = 0).

Heater priority circuit

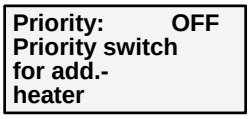
This line displays whether the temperature regulation system has priority over the filter time settings. Using the priority circuit, the filter pump can be switched on by the temperature regulation system even outside the set filter times. The temperature regulation only works during the filter times without the priority circuit.

The following displays are possible:

Priority OFF	The additional heater only works during the filter times.
Priority ON	The temperature regulation also works outside the filter times. If the water temperature falls below the set temperature, the filter pump and the additional heater are switched on automatically .

If the priority circuit is displayed in the **top** line of the service terminal it can be switched on or off.

1. Once the ↵ key has been pressed, the filter unit is switched off and the display shows the following:



2. Use the △ key to switch the priority circuit on, and the ▽ key to switch it off.
3. If you press the ↵ key again, the normal diagnosis display appears and the filter unit continues to operate.

The additional heater priority is switched off at the works.

Solar heater priority circuit

This line displays whether the solar heater has priority over the filter time settings. Using the priority circuit, the filter pump can be switched on by the temperature regulation system even outside the set filter times. The temperature regulation only works during the filter times without the priority circuit.

The following displays are possible:

Prior.Solar OFF	The solar heater only works during the filter times.
Prior. Solar ON	The solar heater also works outside the filter times. The filter pump and solar heater are switched on automatically in sunshine.

If the priority circuit is displayed in the **top** line of the service terminal it can be switched on or off.

1. Once the ↵ key has been pressed, the filter unit is switched off and the display shows the following:

2. Use the △ key to switch the priority circuit on, and the ▽ key to switch it off.
3. If you press the ↵ key again, the normal diagnosis display appears and the filter unit continues to operate.

The solar heater priority is switched on at the works.

The following lines are used for manual activation of the output relay.

Frost protection

This line displays the current frost protection function switch-on temperature. This value can be adjusted to meet the requirements of the relevant filter unit if it is displayed in the **top** line:

1. Once the ↵ key has been pressed, the filter unit is switched off and the display shows the following:

2. Now use the △ and ▽ keys to change the temperature. The smallest adjustable value is -3°, the largest 5°.
3. If you press the ↵ key again, the normal diagnosis display appears and the filter unit continues to operate. The adjusted value will be saved automatically.
4. A switch-on temperature of 0° is set at the works.

Pump time

This line displays the total operating hours for the filter pump.

heater time

This line displays the total operating hours for the additional heater.

Solar time

This line displays the total operating hours for the solar heater.

Motor defect

This line displays the number of "motor protection" error messages.

Phase fields

This line displays the number of "phase fields" error messages.

Int. backflushing (intern)

This line displays how often a backflushing process has been started by bar valves.

Ext. Backflushing (extern)

This line displays how often a backflushing process has been started by the EUROTRONIK-10.

The following lines enable the service technician to carry out an examination of the input signals and filter control unit output relay.

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

This line displays whether the NR-12-TRS-2 level regulation system is subject to forced switch-on.

The following displays are possible:

Forced switch-onOFF	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 backflushing signal

This line displays whether the EUROTRONIK-10 switches the filter pump on during backflushing or rinsing.

The following displays are possible:

EUROTRONIK OFF no switch-on command from EUROTRONIK

EUROTRONIK ON The EUROTRONIK has switched the filter pump on

EUROTRONIK OFF The EUROTRONIK has switched the filter pump off

Interlocking

This line displays whether the filter unit has been switched off either by the EUROTRONIK, NR-12-TRS-2 or the coil earthing contact.

The following displays are possible:

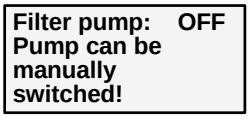
Interlock OFF The pump is switched off (one of the contacts is open).

Interlock ON Pump operation has been enabled (all interlock contacts are closed)

Filter pump

When the filter pump operating status is displayed in the **top** line of the service terminal, the pump can be switched on or off manually.

1. Once the ↵ key has been pressed, the filter unit is switched off and the the following is displayed:

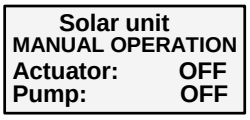


2. Use the △ key to switch the filter pump on, and the ▽ key to switch it off. **Caution! the electronic motor protection does not function in this operating mode!**
3. If you press the ↵ key again, the normal diagnosis display appears and the filter unit continues to operate.

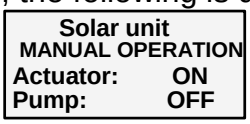
Solar operation

When the solar heater operating status is displayed in the **top** line of the service terminal, it can be switched on or off manually.

1. Once the ↵ key has been pressed, the filter unit is switched off and the the following is displayed:



2. Use the △ key to switch the solar heater on, and the ▽ key to switch it off. When the solar heater is switched on, the following is displayed:



3. Now you can use the △ key to switch the filter pump on additionally. Once the filter pump is switched on, the following is displayed:

Solar unit	
MANUAL OPERTION	
Actuator:	ON
Pump:	ON

4. If you press the ↵ key again, the normal diagnosis display appears and the filter unit continues to operate.

Heater

When the heater operating status is displayed in the **top** line of the service terminal, it can be switched on or off manually.

1. Once the ↵ key has been pressed, the filter unit is switched off and the the following is displayed:

Heater	
MANUAL OPERATION	
Heater:	OFF
Filter pump:	OFF

2. Use the △ key to switch the additional heater on, and the ▽ key to switch it off. The filter pump is automatically switched on as well.
3. If you press the ↵ key again, the normal diagnosis display appears and the filter unit continues to operate.

Dosing unit

When the dosing unit operating status is displayed in the **top** line of the service terminal, it can be switched on or off manually.

1. Once the ↵ key has been pressed, the filter unit is switched off and the display shows the following:

Dosing unit:	OFF
Filter pump:	OFF

2. Use the △ key to switch the dosing unit on, and the ▽ key to switch it off. The filter pump is automatically switched on as well.
3. If you press the ↵ key again, the normal diagnosis display appears and the filter unit continues to operate.

Backflushing valve

When the backflushing valve operating status is displayed in the **top** line of the service terminal, it can be switched manually.

1. Once the ↵ key has been pressed, the filter unit is switched off and the display shows the following:

Backf.valve:	OFF
Filter pump:	OFF

2. Use the △ key to switch the backflushing valve on, and the ▽ key to switch it off. The filter pump is automatically switched on as well.
3. If you press the ↵ key again, the normal diagnosis display appears and the filter unit continues to operate.

Rinsing valve

When the rinsing valve operating status is displayed in the **top** line of the service terminal, it can be switched on or off manually.

1. Once the ↵ key has been pressed, the filter unit is switched off and the display shows the following:

Backfl. valve:	**OFF**
Filter pump:	**OFF**

2. Use the △ key to switch the rinsing valve on, and the ▽ key to switch it off. The filter pump is automatically switched on as well.
3. If you press the ↵ key again, the normal diagnosis display appears and the filter unit continues to operate.

Diagnosis

This menu is only accessible for trained osf service technicians

Language

When the language is shown in the **top** line of the service terminal display, you can switch between languages for the service terminal: (The language used for displays or filter control unit can be selected using the Info key).

1. If you press the ↵ key, the following is displayed:

Language selection

German English

2. Now use the △ and ▽ keys to change the selected language.
3. If the ↵ key is pressed once again the normal diagnosis display is shown.

We hope you have a lot of enjoyment and relaxation in your swimming pool

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

https://osf.de/download/documents/documents.php?device=PC-250

Combination of PC-250 with NR-12-TRS-2 and Eurotronik-10