NextGen GreenTech


**IPS2**

# Intelligent Pump Switch – Thermostat

# Instruction Manual

Thank you for purchasing the *Intelligent Pump Switch – Thermostat*. Designed to save you energy and costs while also increasing your in-home comfort, the device is manufactured with a holistic view of materials and waste management, minimizing its environmental impact.

# Contents



*Version 2017-4*


**Before the installation and use of the appliance, read the supplied instructions carefully. The manufacturer is not responsible for incorrect installations or inexpert use causing damage or injuries.**

**Risk of electrical shock and fire.**
Never install a damaged appliance.
Respect the electrical specifications.
Do not open the enclosure.

# 1. Application

The *Intelligent Pump Switch – Thermostat* is an automatic switch designed specifically for circulation pumps of low-temperature floor heating systems (based on hot water). By switching the pump on only when circulation is required, its energy consumption is reduced dramatically. The Intelligent Pump Switch is compatible with all conventional circulation pumps.[1]

Alternatively, the device can be used as a thermostat in other warming or cooling applications.

# 2. Installation

Instruction for installation of the Intelligent Pump Switch in floor heating systems:

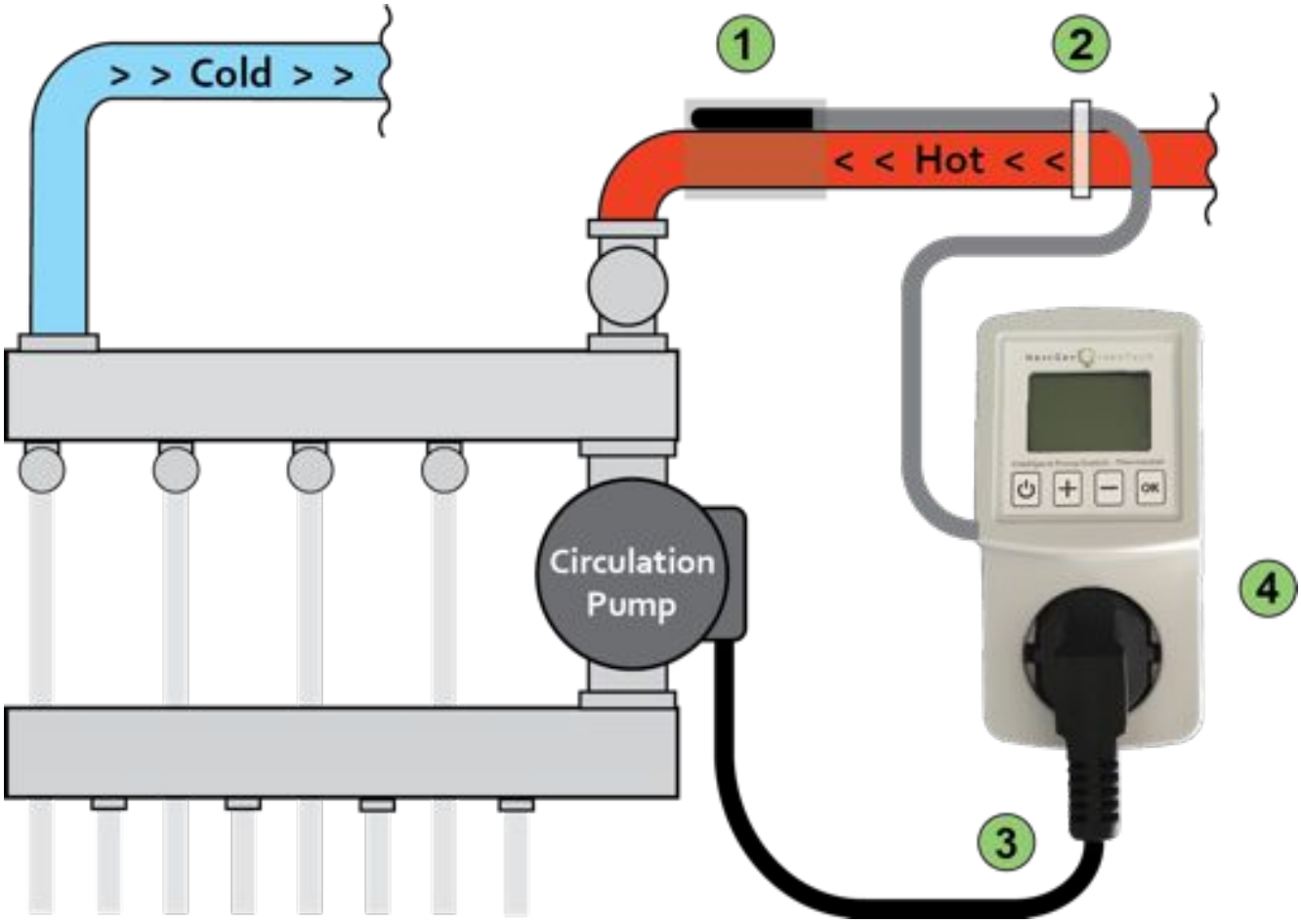


**Fig. 1**

1. Attach the temperature sensor of the Intelligent Pump Switch to the hot supply tube of the floor heating distributor, using the provided sheet of aluminum tape. ⓘ Turn the heating off during installation to avoid skin burns. Make sure the contact between the temperature sensor and the hot supply tube is tight, to ensure optimal thermal conduction.
2. Secure the cable of the temperature sensor on the hot supply tube using the provided tie-wrap, approximately 10 cm away from the sensor.
3. Insert the mains plug of the circulation pump into the socket of the Intelligent Pump Switch.
4. Insert the Intelligent Pump Switch in your wall socket.

After connecting the device to power, the display shows an initialization message with the current 'mode' setting (see § 4.1) for 6 s. Make sure to configure the device correctly as described further in § 4.

*Alternative installations of the device as a thermostat or other applications are not covered by this manual.*

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*1) All conventional circulation pumps with or without manual speed control are compatible. For energy A-label pumps, refer to the manual.*

# 3. Control and display

The control panel exists of four different touch buttons and a display, depicted in the figure below.

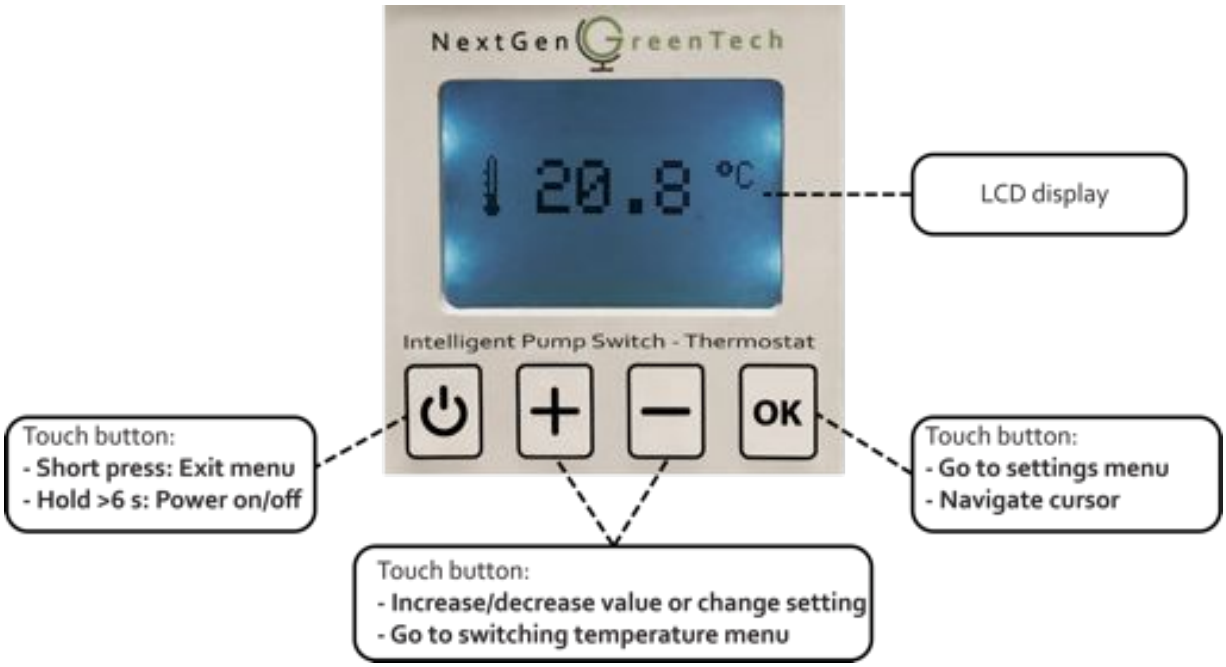



**Fig. 2**

**Power:**
The device automatically powers on when plugged into a wall socket connected to power.
To switch the device to standby, or power on again, hold the ⏻ button for longer than 6 s.
ⓘIn standby (display reading 'Standby'), all functions and the relay are switched off.

**LED backlight:**
The automatic LED backlight of the display switches off after 30 s of inactivity.
Pressing any button turns the backlight on again.

**Display:**
The LCD display can show different menus, described further in § 4.
For visual reference of the menus, see figures 3-6. To return to the main screen, tap the ⏻ button or wait 15 s for this to occur automatically.

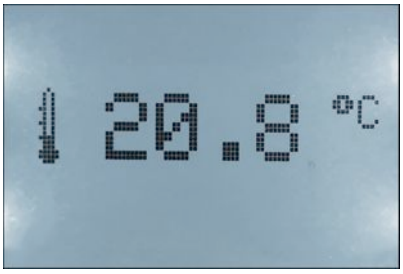



**Fig. 3:** Measured temperature (Main screen)

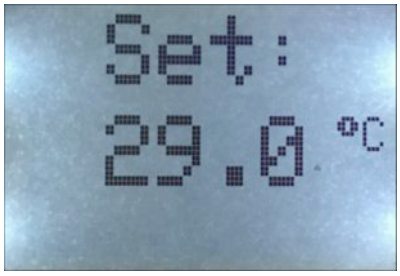



**Fig. 4:** Switching temperature menu

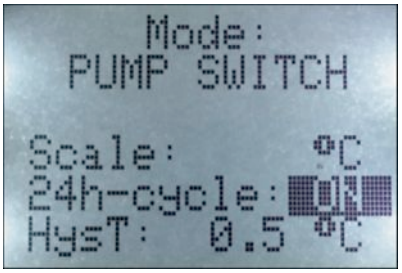



**Fig. 5:** Settings menu

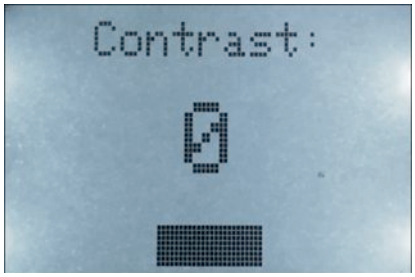



**Fig. 6:** Contrast adjustment menu

# 4. Configuration

Configure the device for its application by following § 4.1-4.6 step-by-step.
ⓘ The configuration is saved in flash memory, therefore it is unaffected by power interruptions or outages.

## § 4.1 **Mode**

There are three different modes available, namely:

- Pump Switch
  For application as pump switch in floor heating systems, with manual control of the switching temperature. The pump is switched *on* when the temperature reading from the sensor is *higher* than the switching temperature setting (see § 4.2), and switched *off* when it is *lower*.

- Intelligent Pump Switch
  For application as pump switch in floor heating systems, with automatic setting of the switching temperature. This means that the switching temperature (see § 4.2) cannot be altered manually in this mode, but is determined automatically instead. The pump is switched on when a steep increase in temperature is sensed, while the optimal switching off temperature is determined automatically when the system cools down.

  ⓘ This mode is recommended when the hot supply tube of the floor heating system warms up and stabilizes above 40 °C, while your room temperature does not exceed 30 °C. Verify correct functioning after configuration.

- Thermostat
  For usage as a thermostat in various cooling/heating applications, with manual control of the switching temperature. The relay is switched *on* when the temperature reading from the sensor is *lower* than the switch temperature setting (see § 3.2), and *off* when it is *higher*.

**Set mode**:

➔ Go to the settings menu (see fig. 5 in § 3) by tapping the 'OK' button once, continue tapping to move the cursor to the 'Mode' setting.
➔ Use the '**+**' or '**–**' buttons to alter and select the correct mode.

## § 4.2 **Switching temperature**

The switching temperature determines when the circulation pump (or other appliance connected to the relay) is switched on/off.
It can be adjusted from 3 °C to 80 °C by steps of 0,5 °C. (From 37 °F to 176 °F by steps of 1 °F).
*Switching temperature is unavailable in 'Intelligent Pump Switch' mode as it is determined automatically.*

**Set switching temperature:**

➔ From the main screen, tap the '**+**' or '**–**' button once to go to the switching temperature menu (see fig. 4 in § 3).
➔ Tap or hold the '**+**' or '**–**' buttons to increase or decrease the switching temperature to the desired value.

ⓘ For most floor heating systems, the factory default switching temperature of 29 °C (85 °F) is appropriate in Pump Switch mode.
ⓘ In 'Intelligent Pump Switch' mode the switching temperature setting reads 'AUTO' and cannot be altered, as it is determined automatically.
ⓘ When the relay is switched on, '>> ON >>' will appear on bottom of the main screen.
ⓘ When the measured temperature drops below 3 °C (37 °F), **frost protection** switches the relay on, indicated by the message '> Anti-Frost >' appearing on bottom of the main screen.

## § 4.3 **Temperature scale**

Temperatures can be displayed in °C (factory default) or in °F.

**Set temperature scale:**

➔ Go to the settings menu (see fig. 5 in § 3) by tapping the 'OK' button once, continue tapping until the cursor is on the 'Scale' setting.

➔ Use the ' **+** ' or ' **–** ' buttons to change the scale to °C or °F.

## § 4.4 **24-h cycle protection**

Protects the circulation pump from jamming when your floor heating system is inactive for longer than 24 hours (e.g. during summer), by switching on the circulation pump and allowing circulation for 1 min every 24 hours. This function can be enabled (factory default and recommended) or disabled.
*24-h cycle protection is unavailable in 'Thermostat' mode.*

**Set protective 24-h cycle:**

➔ Go to the settings menu (see fig. 5 in § 3) by tapping the 'OK' button once, continue tapping until the cursor is on the '24-h cycle' setting.

➔ Use the ' **+** ' or ' **–** ' buttons to set the 24-h cycle to 'OFF' or 'ON' as desired.

ⓘ When the pump is switched on due to an active 24-h cycle protection, the message ' > 24-h cycle > ' appears at the bottom of the main screen.

## § 4.5 **Hysteresis**

The hysteresis determines the temperature difference between switching on and off. It can be adjusted from 0,5 °C to 5 °C by steps of 0,5 °C. (From 1 °F to 10 °F by steps of 1 °F).
An appropriate hysteresis is required to prevent undesired switching caused by small temperature fluctuations around the switching temperature.
*Hysteresis is unavailable in 'Intelligent Pump Switch' mode, as it is determined automatic.*

**Set hysteresis:**

➔ Go to the settings menu (see fig. 5 in § 3) by tapping the 'OK' button once, continue tapping until the cursor is on the 'HysT' setting.

➔ Use the ' **+** ' or ' **–** ' buttons to increase or decrease the hysteresis to a desired value.

ⓘ For most floor heating systems, the factory default hysteresis of 0,5 °C (1 °F) is sufficient in 'Pump Switch' mode.

ⓘ The actual switching on/off temperature is increased or decreased by half of the hysteresis.
For instance a hysteresis of 1 °C and switching temperature of 30 °C, leads in 'Pump Switch' mode to switching on the pump at 30,5 °C and switching off at 29,5 °C.

ⓘ In addition to hysteresis, a **timer** prevents the relay from switching off within 1 min after switching on, that helps to prevent undesired switching. However, there is **no delay** after this first minute.

## § 4.6 **Display contrast**

The contrast of the LCD display has been calibrated in factory.
However, in the event the display seems unclear (too dark or dim) you can adjust the contrast easily.

**Adjust display contrast**:

➔ Put the device on standby by holding the ⏻ button for more than 6 s until the display reads 'standby'.

➔ Hold the 'OK' button for more than 3 s until the contrast adjustment menu is entered (see fig. 6 in § 3).
The backlight of the LCD starts blinking now.

➔ Using the ' **+** ' and ' **–**' buttons you can increase or decrease the display contrast as desired.
The contrast adjustment is represented on the display by a value from -8 to +8.

# 5. Troubleshooting

| Problem | Cause and solution |
|---|---|
| The display is unclear. | The contrast of the display needs adjustment. See § 4.6 |
| The temperature setting reads 'AUTO' and cannot be altered. | The device is set in '*Intelligent* Pump Switch' mode. See § 4.1 for further information. |
| The display reads 'ERROR' and the backlight flashes. | There is a failure in the temperature sensor or its cord. Contact the manufacturer for support. |
| The touch buttons do not respond, or the content of the display changes uncontrollably or faulty. | Software error. Unplug the device from your wall socket, wait 10 s and connect it to power again to restart. If the problem persists, contact the manufacturer for support. |

# 6. Technical specifications

| Model IPS2 – Technical specifications | |
|---|---|
| Input | 110 V to 250 V AC, 50 Hz to 60 Hz |
| Max relay load | 1600 W / 7 A (resistive) |
| Power consumption | <0,35 W |
| Operating temperature | -10 °C to 60 °C (14 °F to 140 °F) |
| Operating humidity (RH) | 5 % to 95 %, non-condensating |
| Back-up | Flash memory * |
| Sensor type | Digital temperature probe |
| Sensor precision | +- 0,1 °C |
| Sensor range | -10 °C to 100 °C (14 °F to 212 °F) |
| Length of sensor cable | 2 meter |
| Switching temperature setting | 3 °C to 80 °C (37 °F to 176 °F) |

* Settings are saved in flash memory for back-up, therefore they are unaffected by power interruptions or outages.

# 7. Warranty

This appliance is manufactured with the highest quality standards and care.
That is why the product comes with a ***3-year limited warranty***.[2]

Contact information of the manufacturer:

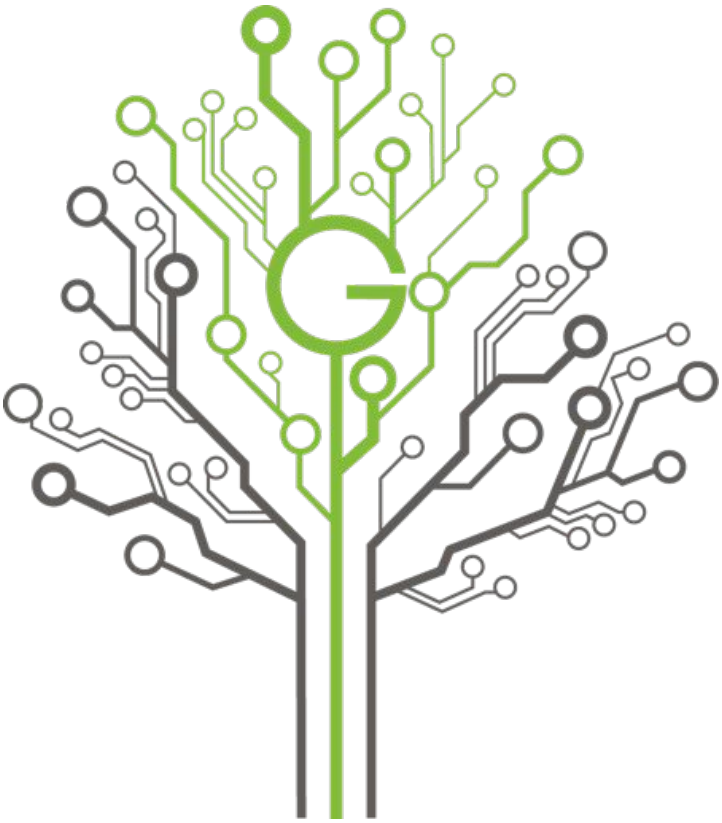
NextGen GreenTech
www.nextgengreentech.nl
info@nextgengreentech.nl

Postal address: Leusdenhof 297
1108 DP Amsterdam
The Netherlands

# 8. Recycling and environment

Never dispose of the appliance with the household waste, but return it to an official local recycling facility. By doing this, you help to preserve the environment. The packaging box and plastic bubble wrap can be recycled by disposing of them with the separate paper and plastic waste respectively.

2) In addition to the legal 2-year product warranty under EU rules, the manufacturer extends the warranty with a 1-year limited warranty to a period of 3 years, valid from the date of purchase. This additional 1-year limited warranty covers specific production and material errors exclusively and is subject to the terms and conditions of the manufacturer. A copy of the complete terms and conditions can be sent by the manufacturer on request.



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