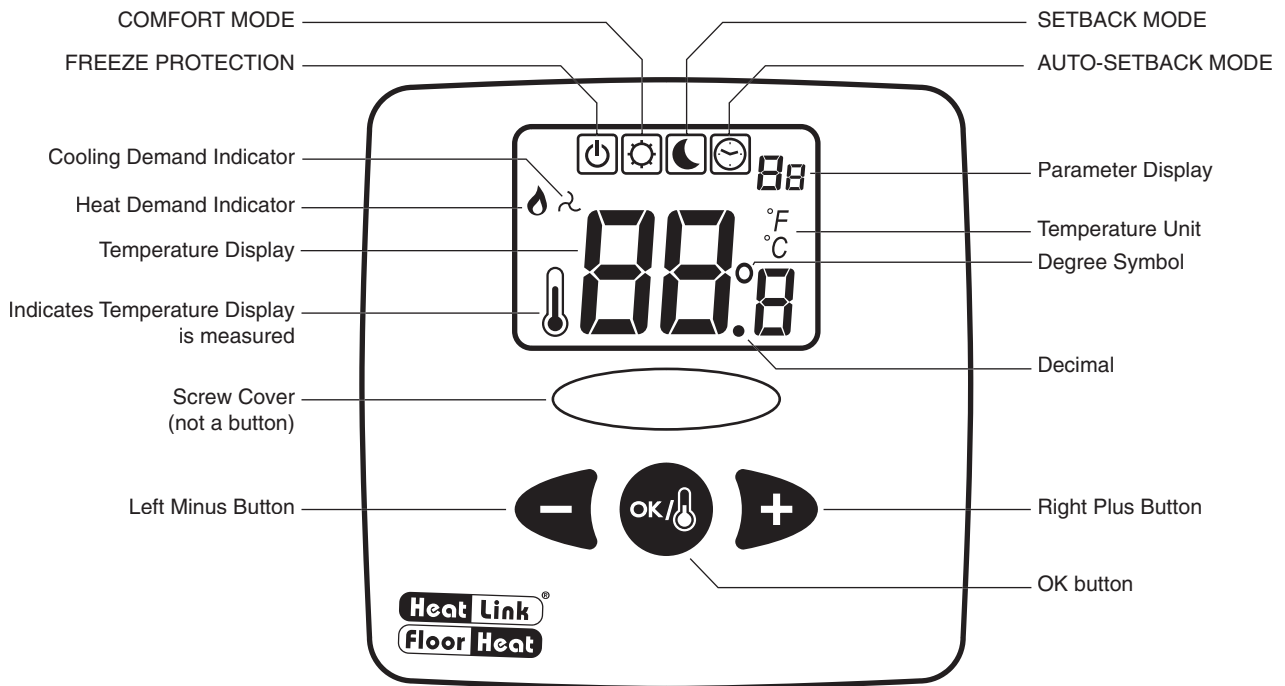


# #46543 User Guide

## HeatLink Digital Thermostat



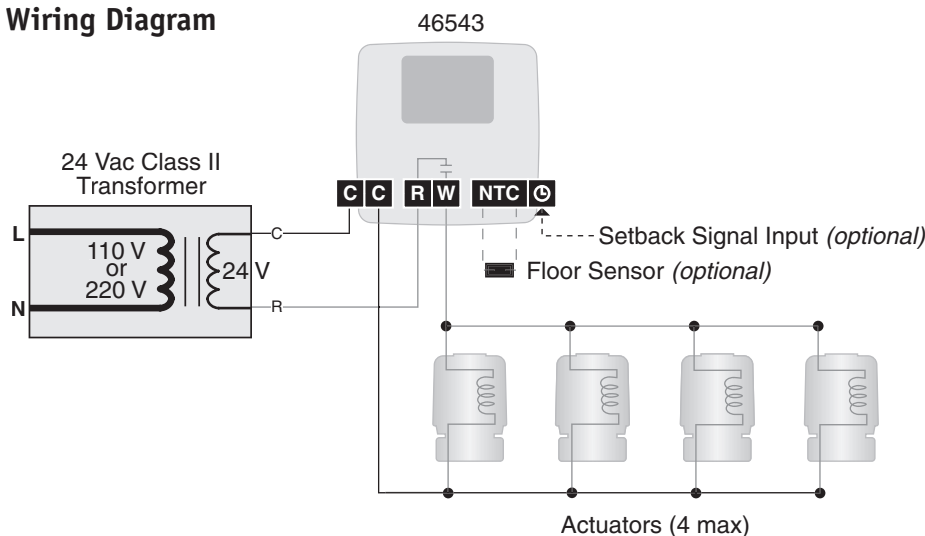
### Technical Information

<b>Measured temperature precision</b>	0.1°C (or 0.2°F)
<b>Operating temperature</b>	0°C - 50°C (or 32°F - 122°F)
<b>Setting temperature range</b>	5°C - 37°C by 0.5°C step (or 41°F - 99°F by 0.5°F step)
<b>Regulation characteristics</b>	Proportional Integral regulation (adjustable, see installation menu) or Static differential 0.3°K
<b>Electrical protection</b>	Class II - IP30
<b>Power supply</b>	24 Vac +/- 10%
<b>Output</b>	TRIAC output 24 VAC, 15 W max. (4 actuators)
<b>External floor sensor (sold separately)</b>	NTC (10K Ohms)

The **46543 HeatLink Digital Thermostat** is a 24Vac electronic thermostat designed to provide accurate temperature control of hydronic floor heating systems. Features include:

- Large 2" (50 mm) LCD display, with a large temperature display.
- Proportional plus Integral (PI) controlled temperature regulation. Proportional moves quickly to the desired setpoint and slows down when the desired setpoint is near. Integral compensates the proportional offset (overshoot) and stays close to the setpoint.
- Fast switching between modes; temperature setpoint is adjustable at the press of a button.
- Accepts timer signal for automated setback operation (requires 46643 Timer Thermostat or 46673 Heat/Cool Thermostat).
- Floor warming functionality is available through NTC terminal by adding an optional 10K floor sensor; the sensor acts as a floor temperature limiter (min / max floor temperatures are adjustable in the Parameter Menu).

### Wiring Diagram



### Color-coded Wiring Scheme

Wire	FAS105 (red jacket) StatLink® default
C	green
R	blue
W	red
Ⓛ	black

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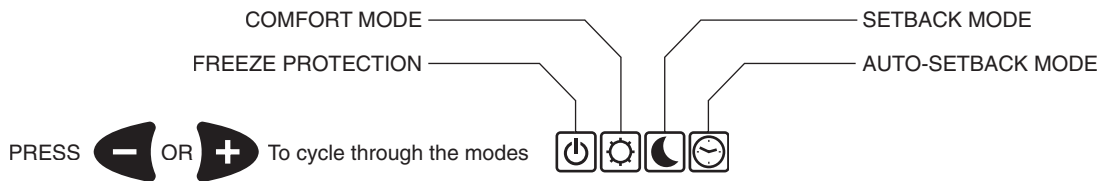
### Mounting Location

- Mount the thermostat at 5' (1.5 m) from the floor
- Mount on inner walls only, and at least 2' (0.6 m) away from any outer wall. Avoid entrances.
- Mount away from any direct heat sources like: air vents, radiators, and lights.
- Avoid Moisture, it is damaging to electronics, so avoid installing in areas that would contain high humidity or condensation (e.g. bathrooms or greenhouses).
- Do not cover or enclose, allow for proper air circulation, to get a good measurement of the current air temperature.

### Installation

- ① Remove the Screw Cover.
- ② Remove the Center Screw to separate the Front Control Panel and Back Terminal Plate.
- ③ Mount the Back Terminal Plate using the supplied screws.
- ④ Pull the Wiring through the Wiring Holes.
- ⑤ Loosen the Wiring Terminals screws, connect the wires to each of the terminals as per the wiring diagram, and tighten the screws.
- ⑥ Finish the install by placing the Front Control Panel on to the Back Terminal Plate, fasten the Center Screw, and replace the Screw Cover.

### User Operation



#### Comfort mode

In comfort setpoint mode, the temperature is set to a comfortable level, the default is **21°C (70°F)**. This mode is ideal for occupied areas. To change the comfort setpoint temperature (while in comfort mode):

PRESS The Current Setpoint Temperature will blink indicating that it can be changed

PRESS OR to change the setpoint to a lower (-) or higher (+) temperature

PRESS to confirm the desired setpoint

The Measured Temperature will return after 5 seconds



#### Auto-setback mode

*(Requires a timer setback signal)*

In auto-setback mode, the 46543 operates automatically between comfort mode (gear blinking) and setback mode (moon blinking) according to the schedule of a timer thermostat (46643 or 46673).



#### Setback mode

In setback mode, the temperature is set lower to conserve energy, the default is **17°C (63°F)**. This mode is ideal for areas that are unoccupied. To change the setback temperature (while in setback mode):

PRESS The Current Setpoint Temperature will blink indicating that it can be changed

PRESS OR to change the setpoint to a lower (-) or higher (+) temperature

PRESS to confirm the desired setpoint

The Measured Temperature will return after 5 seconds



#### Freeze Protection mode

In Freeze Protection mode: instead of simply turning the system off, this thermostat prevents freezing by maintaining a **6°C (43°F)** minimal temperature. This mode is ideal for unoccupied buildings.


In all modes, if a floor sensor is installed, blinking indicates that the floor temperature is outside the limits set by the **FL** and **FH** parameters.

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## HeatLink Digital Thermostat

### Configuration

This thermostat comes pre-configured for a radiant floor heating system with a separate boiler control and should normally not need further adjustment. The parameters can be adjusted for fine tuning the system or adapting to other applications.


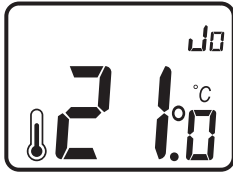


To access the Parameter Menu PRESS  & HOLD For 5 seconds



















PRESS  OR  to cycle through parameters

PRESS  &  to reset a parameter to its factory default

After 30 seconds of non use the thermostat will automatically exit the Parameter Menu.










Grey shaded parameters should only be adjusted by a heating professional.

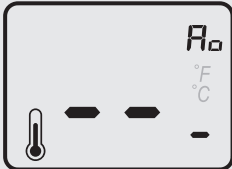



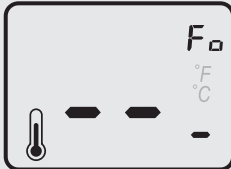













	
<p><b>End:</b> exits the Parameter Menu</p>	<p><b>JO:</b> adjusts the temperature scale (default: "°C")</p>
	
<p>PRESS OK Button to exit the parameter menu</p>	<p>PRESS OK Button to switch between °C and °F</p>

				
<p><b>J1:</b> adjusts the type of system the thermostat can be used for heating OR cooling (default: "Hot")</p>	<p><b>Cy:</b> PI regulation time cycle in minutes (default: 6 minutes) Range: 1-99, A0-A9 {100-109}, B0-B9 {110-119}, C0 {120} The constant time cycle the thermostat uses to translate the % output from the PI calculation to an on/off time of the heat demand.</p>	<p><b>On:</b> Minimum call for heat in minutes (default: 0 minutes) Range: 0 - half the PI time cycle (Cy)</p>	<p><b>OF:</b> Minimum interval between on cycles in minutes (default: 0 minutes) Range: 0 - half the PI time cycle (Cy)</p>	<p><b>bp:</b> PI regulation band amplitude value in degrees (default: 1.5°C/2.7°F) Range: 0.01-12.7 The on (100%) / off (0%) point during the PI operation</p>
				
<p>PRESS OK Button to switch between "Hot" (Heating) and "CLd" (Cooling)</p>	<p>PRESS OK Button screen starts to blink indicating adjustment</p>	<p>PRESS OK Button screen starts to blink indicating adjustment</p>	<p>PRESS OK Button screen starts to blink indicating adjustment</p>	<p>PRESS OK Button screen starts to blink indicating adjustment</p>
				
	<p>PRESS "-" or "+" To change value</p>	<p>PRESS "-" or "+" To change value</p>	<p>PRESS "-" or "+" To change value</p>	<p>PRESS "-" or "+" To change value</p>
				
	<p>PRESS OK to validate</p>	<p>PRESS OK to validate</p>	<p>PRESS OK to validate</p>	<p>PRESS OK to validate</p>

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 <p><b>J4:</b> actuator type selection (default: "NC" or normally closed)</p>  <p>PRESS OK Button to switch between "NC" (normally closed) &amp; "NO" (normally open)</p>	 <p><b>J5:</b> perform a 1 minute pump exercise each day if system inactive (default: "Pnp")</p>  <p>PRESS OK Button to switch between "Pnp" (exercise) and "no" (no)</p>	 <p><b>J6:</b> temperature sensor (default: "Air")</p>  <p>PRESS OK Button to switch between "Air" (air sensor) and "FLr" (floor sensor) For combined operation select "Air" and connect floor sensor.</p>	 <p><b>J7:</b> adjusts the type of system regulation (default: "rEG")</p>  <p>PRESS OK Button to switch between "rEG" (proportional integral) &amp; "HYs" on/off (parameters Cy, On, Of, bp &amp; cp don't apply)</p>	 <p><b>CP:</b> compensation value (default: 2.0°C/3.6°F) Range: 0.00-12.7</p> <p><b>DO NOT ADJUST</b></p>
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 <p><b>Ao:</b> Air sensor calibration; displays measured air temperature (default: no offset) Range: ±10° adjust to show actual room temperature</p>  <p>PRESS OK Button screen starts to blink indicating adjustment</p>  <p>PRESS "-" or "+" To change value</p>  <p>PRESS OK to validate can only be reset by using the 'Clr' function</p>	 <p><b>Fo:</b> Floor sensor calibration; displays measured floor temperature (default: no offset) Range: ±10° adjust to show actual floor temperature</p>  <p>PRESS OK Button screen starts to blink indicating adjustment</p>  <p>PRESS "-" or "+" To change value</p>  <p>PRESS OK to validate can only be reset by using the 'Clr' function</p>	 <p><b>FL:</b> floor temp. LOW limit (default: 18.0°C/64.0°F) Range: 5°C - 0.5° below FH (41° - 0.5° below FH)</p>  <p>PRESS OK Button screen starts to blink indicating adjustment</p>  <p>PRESS "-" or "+" To change value</p>  <p>PRESS OK to validate</p>	 <p><b>FH:</b> floor temp. HIGH limit (default: 28.0°C/82.0°F) Range: 0.5° above FL - 37°C (0.5° above FL - 99°F)</p>  <p>PRESS OK Button screen starts to blink indicating adjustment</p>  <p>PRESS "-" or "+" To change value</p>  <p>PRESS OK to validate</p>	 <p><b>CLR:</b> resets all parameters to factory defaults</p>  <p>PRESS &amp; HOLD OK Button for 5 seconds to reset all parameters</p>
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