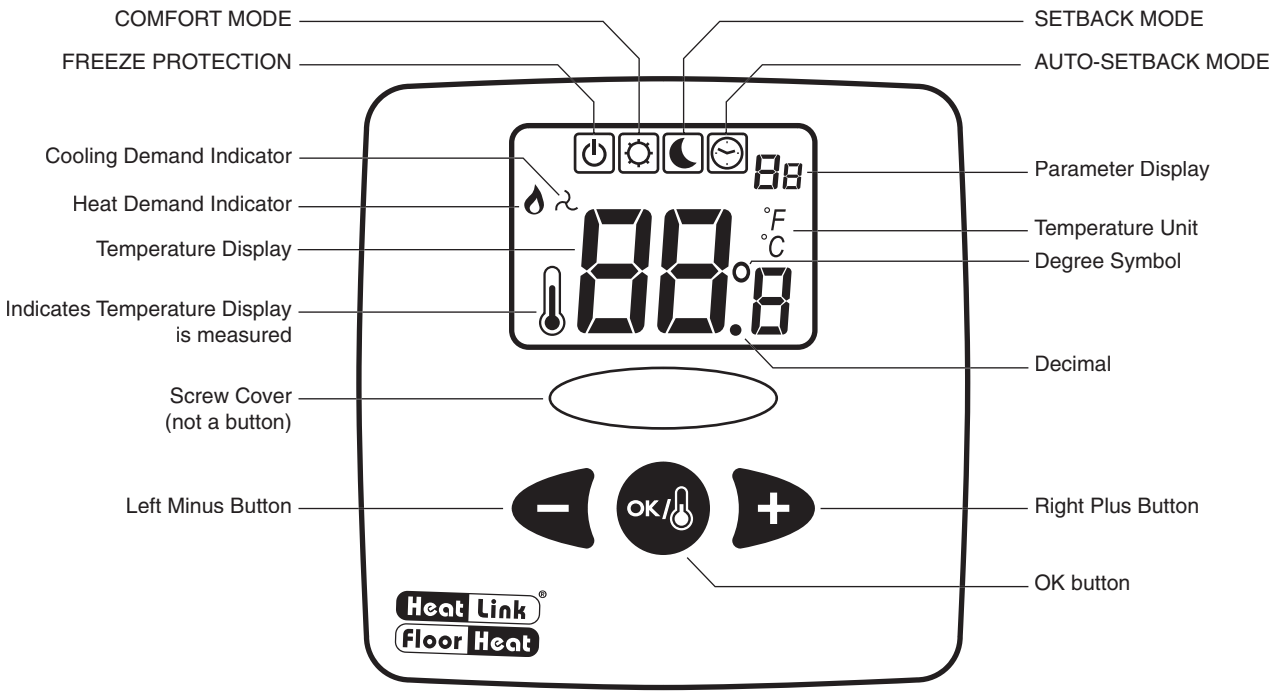
#46543 User Guide
HeatLink Digital Thermostat



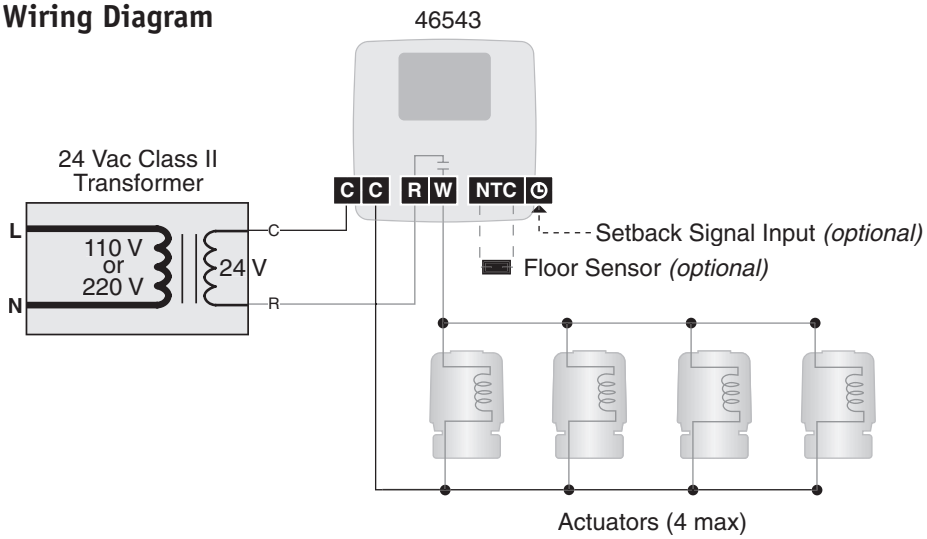
Technical Information

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

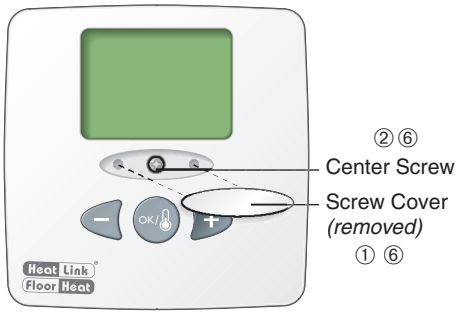


Color-coded Wiring Scheme

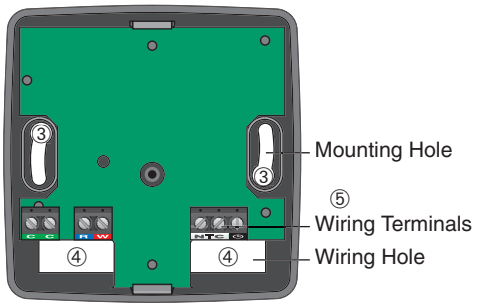
Wire	FAS105 (red jacket) StatLink® default
C	green
R	blue
W	red
⏲	black

#46543 User Guide
HeatLink Digital Thermostat

Front Control Panel



Back Terminal Plate



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.

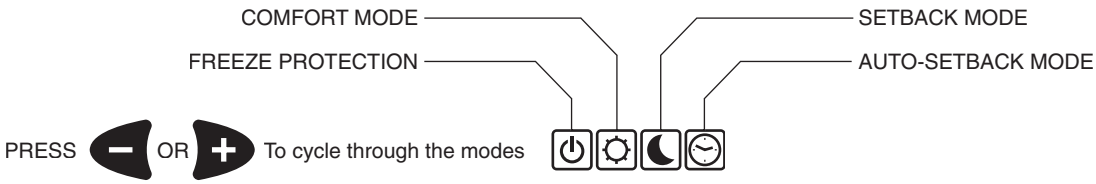
③ Mount the Back Terminal Plate using the supplied screws.

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 OK/ 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 OK/ to confirm the desired setpoint

The Measured Temperature will return after 5 seconds

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 OK/ 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 OK/ 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 (☼ blinking) and setback mode (☾ blinking) according to the schedule of a timer thermostat (46643 or 46673).

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.

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.

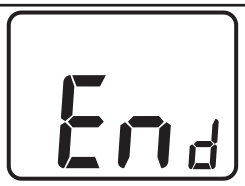
To access the Parameter Menu PRESS & HOLD OK For 5 seconds

PRESS − OR + to cycle though parameters

PRESS − & + to reset a parameter to its factory default

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

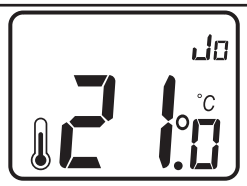
Grey shaded parameters should only be adjusted by a heating professional.



End: exits the Parameter Menu

OK

PRESS OK Button to exit the parameter menu



J0: adjusts the temperature scale (default: "**°C**")

OK

PRESS OK Button to switch between **°C** and **°F**



J1: adjusts the type of system (default: **"Hot"**) the thermostat can be used for heating OR cooling

OK

PRESS OK Button to switch between **"Hot"** (Heating) and "**CLd**" (Cooling)



Cy: 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.

OK

PRESS OK Button screen starts to blink indicating adjustment

− +

PRESS "**-**" or "**+**" To change value

OK

PRESS OK to validate



On: Minimum call for heat in minutes (default: 0 minutes) Range: 0 - half the PI time cycle (Cy)

OK

PRESS OK Button screen starts to blink indicating adjustment

− +

PRESS "**-**" or "**+**" To change value

OK

PRESS OK to validate



OF: Minimum interval between on cycles in minutes (default: 0 minutes) Range: 0 - half the PI time cycle (Cy)

OK

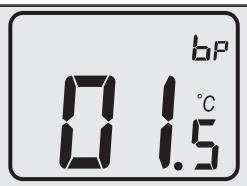
PRESS OK Button screen starts to blink indicating adjustment

− +

PRESS "**-**" or "**+**" To change value

OK

PRESS OK to validate



bp: 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

OK

PRESS OK Button screen starts to blink indicating adjustment

− +

PRESS "**-**" or "**+**" To change value

OK

PRESS OK to validate

#46543 User Guide
HeatLink Digital Thermostat



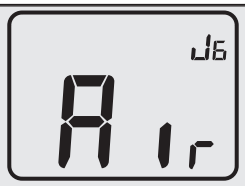
J4: actuator type selection (default: **"NC"** or normally closed)

PRESS OK Button to switch between **"NC"** (normally closed) & **"NO"** (normally open)



J5: perform a 1 minute pump exercise each day if system inactive (default: **"Pnp"**)

PRESS OK Button to switch between **"Pnp"** (exercise) and **"no"** (no)



J6: temperature sensor (default: **"Air"**)

PRESS OK Button to switch between **"Air"** (air sensor) and **"FLr"** (floor sensor)
For combined operation select "Air" and connect floor sensor.



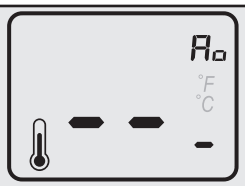
J7: adjusts the type of system regulation (default: **"rEG"**)

PRESS OK Button to switch between **"rEG"** (proportional integral) & **"HYs"** on/off (parameters Cy, On, Of, bp & cp don't apply)



Cp: compensation value (default: **2.0°C/3.6°F**)
Range: 0.00-12.7

DO NOT ADJUST

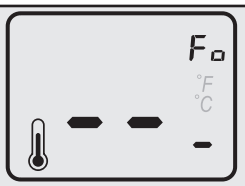


Ao: Air sensor calibration; displays measured air temperature
(default: no offset)
Range: ±10°
adjust to show actual room temperature

PRESS OK Button screen starts to blink indicating adjustment

PRESS "**-**" or "**+**" To change value

PRESS OK to validate
can only be reset by using the 'Clr' function

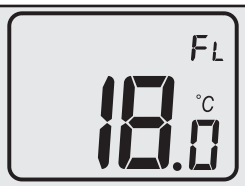


Fo: Floor sensor calibration; displays measured floor temperature
(default: no offset)
Range: ±10°
adjust to show actual floor temperature

PRESS OK Button screen starts to blink indicating adjustment

PRESS "**-**" or "**+**" To change value

PRESS OK to validate
can only be reset by using the 'Clr' function



FL: floor temp. LOW limit (default: **18.0°C/64.0°F**)
Range:
5°C - 0.5° below **FH**
(41° - 0.5° below **FH**)

PRESS OK Button screen starts to blink indicating adjustment

PRESS "**-**" or "**+**" To change value

PRESS OK to validate



FH: floor temp. HIGH limit (default: **28.0°C/82.0°F**)
Range:
0.5° above **FL** - 37°C
(0.5° above **FL** - 99°F)

PRESS OK Button screen starts to blink indicating adjustment

PRESS "**-**" or "**+**" To change value

PRESS OK to validate



CLr: resets all parameters to factory defaults

PRESS & HOLD OK Button for 5 seconds to reset all parameters

HeatLink® Canada
Manufactured & Distributed by HeatLink Group Inc.
Head Office:
4603E - 13th Street NE
Calgary, AB, T2E 6M3
Toll Free: 1-800-661-5332 Phone: (403) 250-3432
Fax: 1-866-450-1155
Mississauga Office:
1555 Bonhill Road, Unit #7
Mississauga, ON, L5T 1Y5
Toll Free: 1-800-661-5332 Phone: (905) 795-8289
Fax: 1-866-450-1155

HeatLink® China
Distributed by Cathy-Links International
Phone: 852-25693213
Fax: 852-25359271

HeatLink® Ireland
Distributed by Jamoni Ltd.
Phone: 057 - 932 4062
Fax: 057 - 932 4063
Free Phone: 1800-311338

HeatLink® Mexico
Distributed by Distributora Caisa S.A. de C.V.
Phone: (52) 3300-4400
Fax: (52) 3300-4406

HeatLink® USA
Distributed by HeatLink Group Inc.
Toll Free: 1-800-661-5332
Fax: 1-800-869-6098

www.heatlinkgroup.com