



The Right Temperature, Always THS Series Modular Thermostats

Optimizing Control

From ABB, a solution for precise and effective heat regulation



The THS series modular thermostats manufactured by ABB meet a wide range of needs in the field of temperature control for cooling and heating. The shape and size of the devices ensure they fit in perfectly with the System pro *M* compact® range. The THS-C and THS-W models, both equipped with a potential-free switching contact, represent the optimum solution for regulating the temperature in heating systems and industrial applications and for controlling the temperature in refrigerated counters, greenhouses, dryers or tilting isothermal portals.

The THS-1 and THS-4 sensors, which may be coupled with the THS-C and THS-W thermostats, operate in a temperature range of -30°C to +130°C. The THS-S model, with two potential-free independent contacts and equipped with a remote sensor, included in the package, is indicated for controlling the temperature of switchboards, providing a cooling adjustment in the range +20°C to +60°C and anti-condensation function in the range 0°C to +10°C.

Guaranteeing the results you want

The safe temperature control solution



Measuring the advantages. Why to choose the THS series modular thermostats

Ease of use

The possibility of setting one or two temperature setpoints on the front of the device and adjusting them without having to use any tools simplifies the configuration procedure. The instructions and diagrams are shown on the side of the product to ensure that the necessary information is always readily available when needed.

Safety

The lead-sealable and undetachable glass cover ensures maximum protection against tampering by unauthorized staff.

Visibility

Two indicator LEDs enable you to check the operation of the device at a glance: the yellow LED signals a sensor short-circuit and the green LED indicates the state of the contact.

Accuracy

The tiny temperature difference ensures the temperature set is maintained with great accuracy.

Compact size

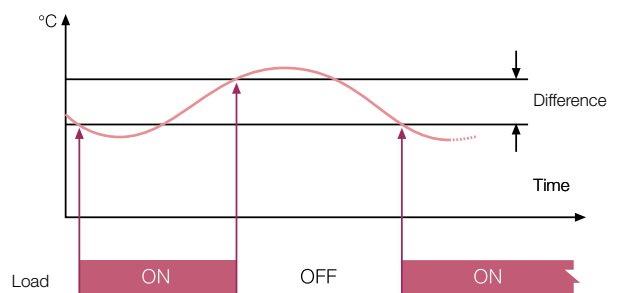
The fact that it occupies just 2 DIN modules broadens its range of applications, even in situations in which space is a critical factor.

Precision mechanisms

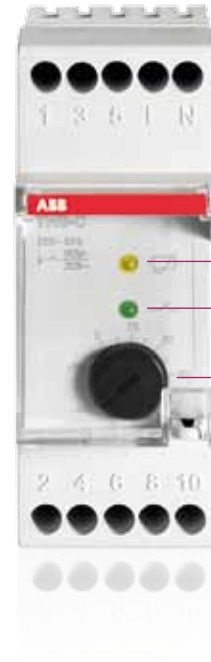
How the THS-C and THS-W modular thermostats work

The THS-C and THS-W modular thermostats regulate the temperature differentially, as indicated in the figure below. When the THS-C thermostat detects a temperature below the setpoint, it closes contact 1 until the temperature returns above the setpoint. It then reopens the contact and, when the temperature drops below the differential again, the cycle is repeated.

The THS-W thermostat works in the same way but the relay closes contact 5 when the temperature exceeds the maximum setpoint.



Example of THS-C operation



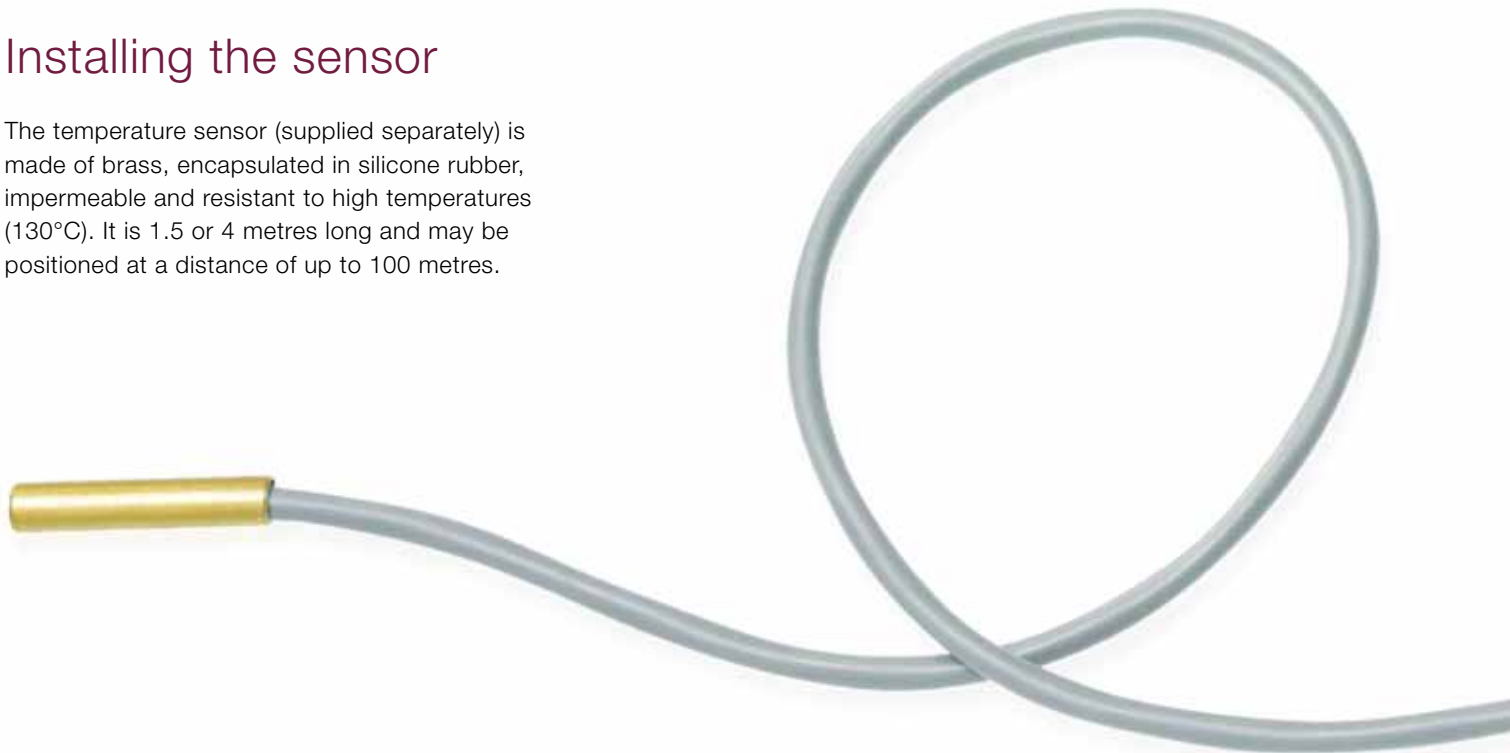
Yellow LED:
sensor short-circuit
indication
On = sensor short-circuit

Green LED:
Load state
indication

**Temperature
regulation knob**

Installing the sensor

The temperature sensor (supplied separately) is made of brass, encapsulated in silicone rubber, impermeable and resistant to high temperatures (130°C). It is 1.5 or 4 metres long and may be positioned at a distance of up to 100 metres.



Experiencing Versatility

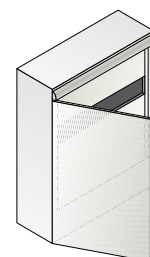
Examples of application on a food farm

This application example demonstrates the versatility of the THS range, which ensures an ideal environment in every situation, by regulating the temperature inside switchboards to ensure they function reliably; inside cold storage rooms and refrigerated counters to preserve the food perfectly; inside the greenhouses to increase production and inside the dryers to optimize the processing cycles.



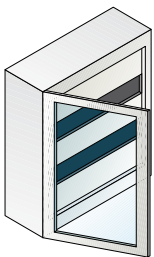
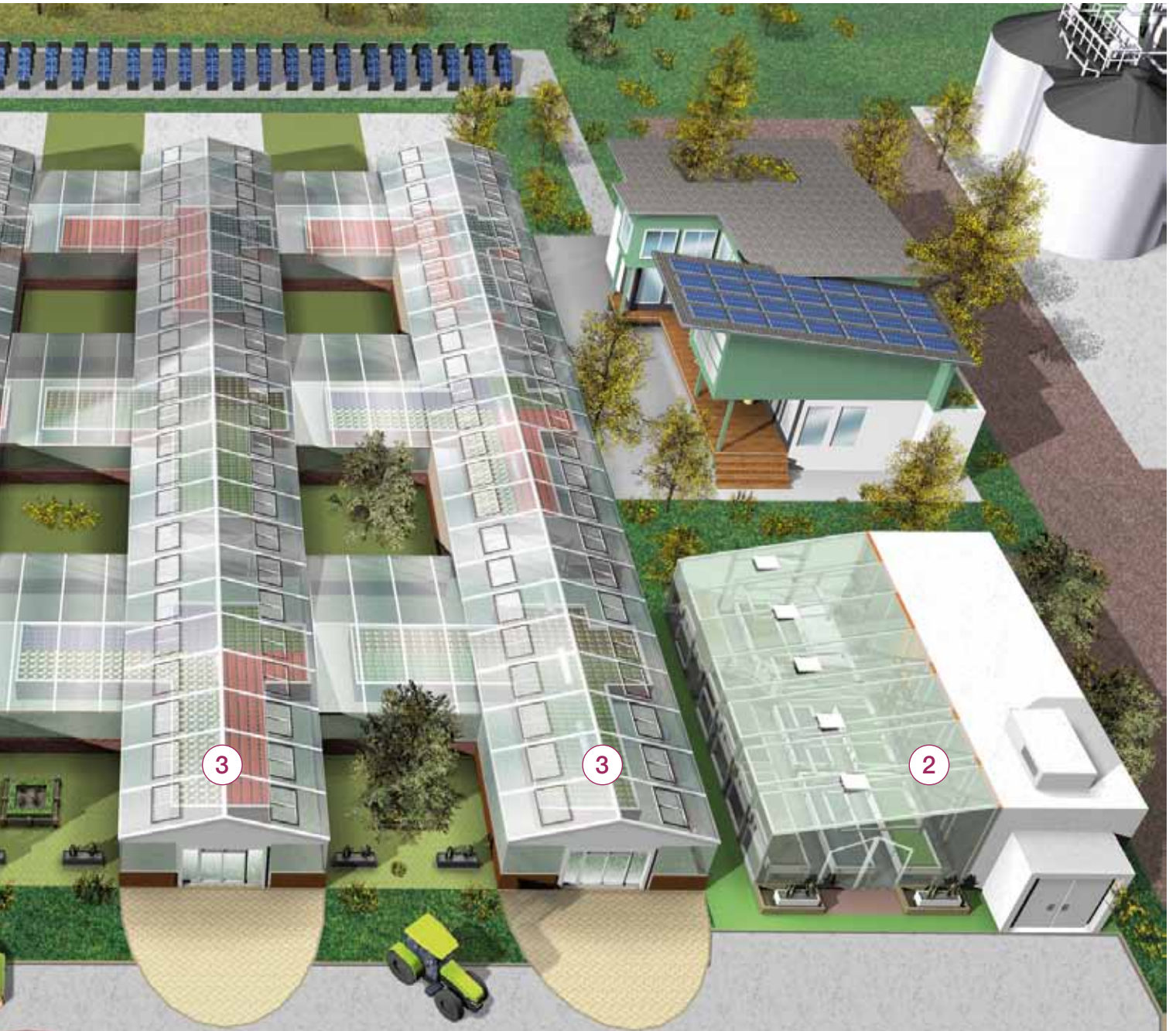
THS-S

Distribution panel with cooling fan and heating element controlled by the THS-S model.



THS-C

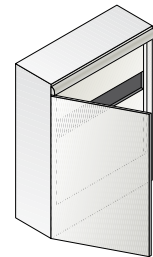
In the cold storage room, the refrigeration process is controlled by the THS-C model.



THS-W TW2/10K AT2-7R

Inside the greenhouse, the heating is regulated by the THS-W model installed in the switchboard together with an AT clock, which controls the irrigation times, and a TW twilight switch, which automatically turns on the lighting.

3



THS-W

The correct temperature of the dryer is ensured by the THS-W model.

4

Perfect automation

How the THS-S modular thermostats work

As shown in the figure, the THS-S modular thermostat activates:

- the fan or air conditioner, when the temperature in the switchboard exceeds the maximum setpoint set using the knob at the top;
- the heating device connected, when the temperature in the switchboard drops below the minimum setpoint set using the knob at the bottom.

**Green LED on:
Cooling activated**

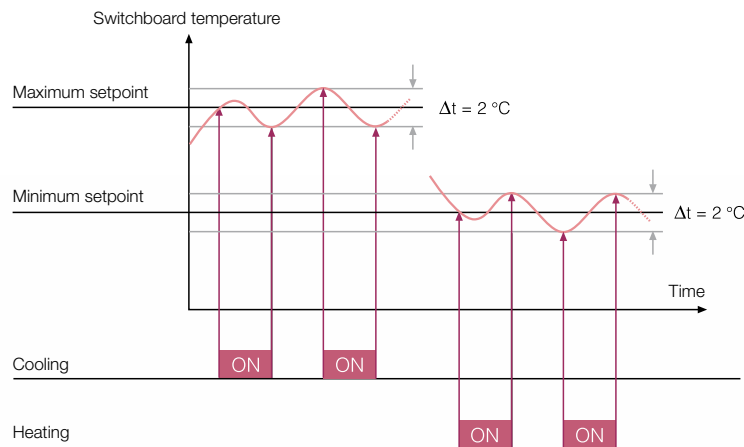
**Green LED on:
Heating activated**

**Cooling
temperature
setpoint knob**

Adjustment range:
+20°C to +60°C

**Heating
temperature
setpoint knob**

Adjustment range:
0°C to +10°C



Example of how the THS-S thermostat works

Installing the sensor

The temperature measuring sensor, which is included in the package, has an operating range of -30°C to +85°C and can be set at a distance of up to 100 m.



Technical Features

		THS-C	THS-W	THS-S
Rated voltage	[V]	230 AC	230 AC	230 AC
Type of contact		1 change-over	1 change-over	2NO
Contact capacity				
Ohmic load	[A]	16	16	16
Inductive load $\cos\varphi$ 0.6	[A]	3	3	3
Frequency	[Hz]	50-60	50-60	50-60
Number of temperature setpoints		1 continuously adjustable	1 continuously adjustable	2 continuously adjustable
Adjustment range	[°C]	-20...+40	0...+60	+0...+10 / +20...+60
Maximum switching power	[W]	3500	3500	3500
Differential	[°C]	Fixed $\Delta t = 1$	Fixed $\Delta t = 1$	Fixed $\Delta t = 2$
Thermal gradient		1 °K / 15 minutes	1 °K / 15 minutes	1 °K / 15 minutes
Type of operation		Fixed differential ON/OFF	Fixed differential ON/OFF	Fixed differential ON/OFF
Max. cable cross section at terminals	[mm ²]	2.5	2.5	2.5
Degree of protection (IP)		IP20	IP20	IP20
Relay ON/OFF indication		Indicator LED	Indicator LED	Indicator LED
Temperature tolerance limits	[°C]	± 1	± 1	± 1
Operating temperature	[°C]	0 ÷ + 50	0 ÷ + 50	0 ÷ + 70
Storage temperature	[°C]	-10 ÷ +65	-10 ÷ +65	-10 ÷ +70
Type of installation		On DIN rail	On DIN rail	On DIN rail
Case / colour		Thermoplastic / RAL 7035 grey	Thermoplastic / RAL 7035 grey	Thermoplastic / RAL 7035 grey
Power consumption	[VA]	3	3	3
Programming		Graduated scales with mechanical pointer	Graduated scales with mechanical pointer	Graduated scales with mechanical pointer



THS-C



THS-W



THS-S

Order codes

THS modular thermostats

Temperature °C	Type Code	Order code	Bbn 8012542 EAN
-20...+40	THS-C	2CSM251163R1380	511632
0...+60	THS-W	2CSM207083R1380	070832
*+20...+60 / 0...+10	THS-S	2CSM236803R1380	368038

* cooling / heating

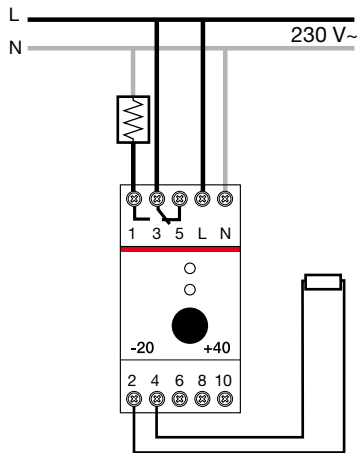
Sensors for THS-C and THS-W thermostats

Length m	Temperature °C	Type Code	Order code	Bbn 8012542 EAN
1.5	-30+130	THS-1	2CSM202033R1380	020332
4	-30+130	THS-4	2CSM277603R1380	776031

Connection Diagrams

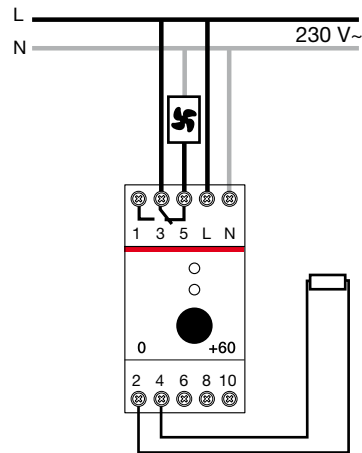
THS-C

Heating

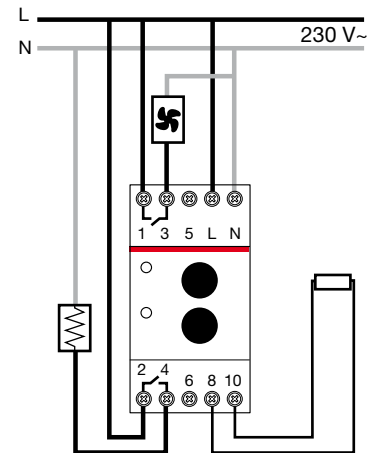


THS-W

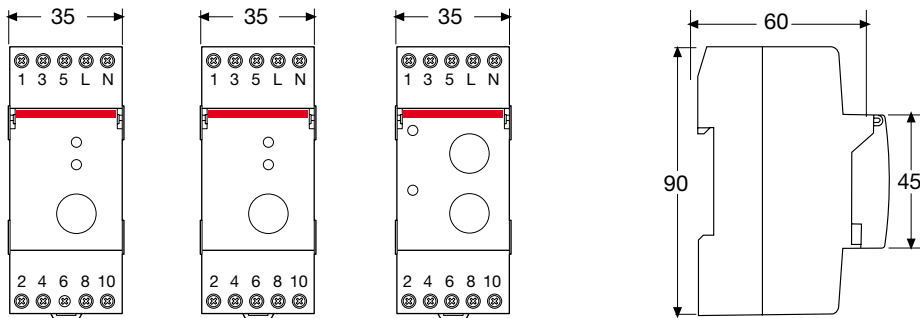
Cooling



THS-S



Overall dimensions



2 modules

Contact us

ABB SACE

A division of ABB S.p.A.

Line Protection Devices

Viale dell'Industria, 18
20010 Vittuone (MI) - Italy
Tel.: +39 02 9034 1
Fax: +39 02 9034 7609

www.abb.com

The data and illustrations are not binding. We reserve the right to modify the contents of this document on the basis of technical development of the products, without prior notice.

Copyright 2010 ABB. All rights reserved.

2CSC441017B0201 - 05/2010