

# Indigo plugin for Heatmiser slimline thermostats.

Version 1.0.0  
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## Introduction

This plugin enables integration of the Heatmiser slimline thermostats in your Indigo home automation system. The plugin communicates directly with the thermostats without any additional Heatmiser hub components, but you will need a USB to RS485 converter.

## Compatibility

This version of the plugin is compatible with the following models:

- Heatmiser PRT
- Heatmiser PRT-HW

## Getting your Mac to 'speak' RS485:

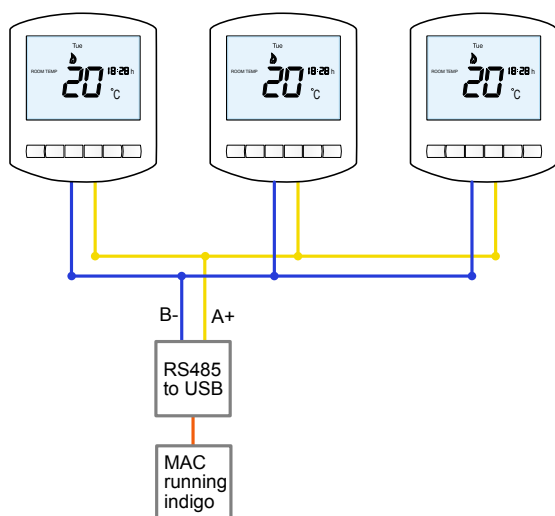
The thermostats use the RS485 standard to communicate with a master (in this case, the Indigo plugin). The RS485 protocol uses a 'bus' consisting of two wires (plus a common ground) and allows long wires and reasonable speeds.

Your Mac does not have an RS485 port, so you will need to buy a USB-to-RS485 converter that is supported by MacOS. These are widely available and not very expensive.

## Connecting your thermostats to your Mac:

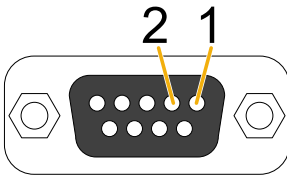
If you detach your thermostat from the wall (by inserting a small screw driver in the slots at the bottom and applying some gentle pressure) and remove the white plastic backing plate from the in-wall back box, you'll see a bunch of wires, amongst them a pair consisting of a yellow and a blue wire. This blue and yellow pair carries the RS485 data.

Connect the **yellow** wires of all thermostats together and connect these to the RS485 converter's **A+** (or **T/R+**) terminal. Likewise, connect all **blue** wires together and connect them to the **B-** (or **T/R-**) terminal.



Connecting all thermostats together works because each thermostat has its own unique address (that you have to set yourself by going into the thermostat's settings) and the plugin only 'talks' to one thermostat at a time. All communication is initiated by the plugin, so the thermostats only transmit data after being instructed to do so. The plugin sends a command to a thermostat, and then waits for a reply before moving on to the next thermostat in your system. Thus, thermostats never transmit data at the same time, and collisions on the RS485 bus are avoided.

The thermostats are slow, so each command takes about a second. If you look at your devices in Indigo, you see the state change to 'polling' before it is replaced with the temperature and the plugin moves on to the next device.

Thermostat wire color	RS485		DB9 pin (CQRobot USB -> RS485 converter)	
Yellow	A+	T/R+	1	
Blue	B-	T/R-	2	

## Installing the plugin

The plugin is installed in the usual way, by double-clicking the .indigoPlugin file on the computer that runs indigo. Indigo then moves the plugin to the correct location and enables it.

## Configuration

After installation, select “Configuration...” from the “Thermiser” plugin menu. Select “local (physical)” as the “Connection Type”, and select the “Serial Port” associated with your USB-to-RS485 converter. You can also select the clock synchronisation interval (1440 minutes, i.e. once a day, is more than enough) and the polling interval. There’s no point polling too often - the temperature does not change rapidly, so once a minute is more than enough.

Now select “Thermiser” from Indigo’s “Plugin” menu, and select “Discover Thermostats”. The plugin scans the RS485 bus for thermostats. Because the thermostats are slow, and all 32 potential addresses have to be scanned, this takes about 35 seconds (but it only has to be done once, unless you add new thermostats to your system).

## Plugin features

The plugin allows you to change the set temperature of your thermostats. The idea is that you don’t use the scheduling functions of the thermostats but use Indigo to set desired temperatures. This way you can use Indigo’s schedules, triggers and action groups to control your central heating system. For instance, you could create a trigger that fires when your home alarm system is armed, so the temperature is lowered when you leave the house.

The plugin also periodically adjusts the thermostats’ clocks so they show accurate times and adjust for daylight saving time. The clocks are synchronised with the local time on the computer running indigo.

### Actions

The plugin implements the following three actions:

Action	Description
Set Temperature	This action uses one parameter: the temperature, either in Celsius or Fahrenheit, depending on the configuration of the thermostat.
Hot Water: Override to ON.	Only applicable to PRT-HW. Overrides the programmed schedule for the hot water and turns the hot water on.
Hot Water: Run on programmed schedule	Only applicable to PRT-HW. Turns the hot water on or off according to the programmed schedule.

### States

The plugin publishes the following states:

State	Remarks	Notes
airTemp	Actual room temperature	
heatingOn	1 if the thermostat is demanding heat, 0 if not.	
hotWaterOn	1 if the thermostat is demanding hot water on, 0 if not	PRT-HW only
rateOfChange	Number of minutes to raise the room temperature by 1 degree	
setRoomTemp	Desired room temperature	
Status	Textual representation of temperature + unit, e.g. "21°C", or "Polling"	
temperatureFormat	C or F	

### Variable substitution

The plugin supports variable substitution for the set temperature, so for example you can create a variable for desired 'day' temperature and let the plugin use the variable as set temperature. To use variable substitution, enter the variable ID wrapped in double percentage signs, as follows:

`%%v:123456789%%`

Where 123456789 is the ID of the indigo variable. (You can find the ID in Indigo's "Variable List", which you can access from Indigo's "Window" menu.)