

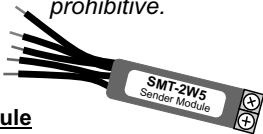
Smart Wire Module

Installer Manual Version 1.3



The Smart Wire Module from Smart Temp is a innovative and low cost solution for any application where you need to control up to five (voltage free) digital outputs and only have a single pair of wires between the two locations.

The Smart Wire is ideal for applications where you need to upgrade an existing battery thermostat to add Wi-Fi or cooling when you don't have enough wires for the task, and running additional wires is too cost prohibitive.



Sender Module

The Sender Module has been designed to be as small as possible. It is covered in a protective wrap to protect its electronics. It is supplied with seven coloured input wires at one end and two terminals at the other.

Of the seven wires, two are 24VAC Active and Common that are used to power the thermostat and the other five are then switched by the thermostat and that information is recorded by the Sender Module. The two output terminals carry the status of the thermostat relays (on or off) to the Receiver / Relay Module which duplicates the thermostat's relay calls.

The Sender Module is ideally installed in the wall cavity behind the thermostat where possible, to prevent any heat generated by the Sender Module affecting the thermostat's temperature accuracy.

NOTE - This module has been made as physically small as possible to ensure that it fits through the hole in the wall behind the thermostat which makes it extremely easy to bend and break. Great care should be used when handling this module.



Receiver / Relay Module

The Receiver / Relay module is a DIN mounted module that is powered by an external 24VAC source* that holds five relays rated to 1 Amp switching current each maximum. The relays in this module will mimic the switched inputs of the Sender Module.

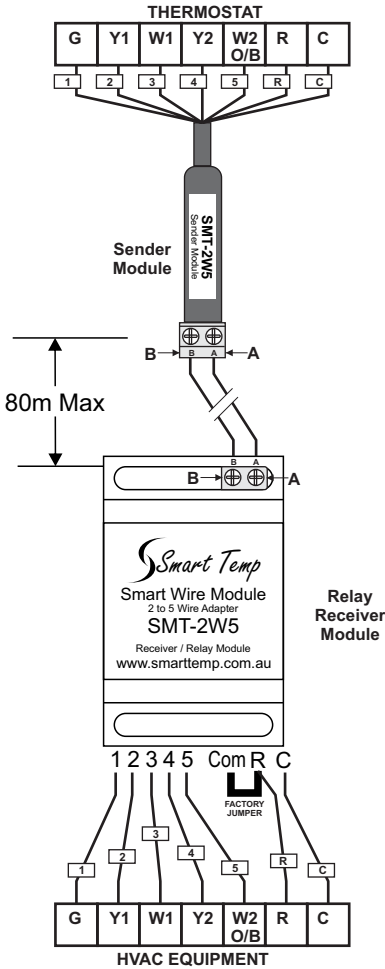
The 24VAC used to power the Receiver / Relay Module is also transmitted down the two wires and then used to power the device attached to the Sender Module if necessary.

DO NOT power high current draw devices such as actuators and valves from this device as it has been designed to provide a maximum of 0.5A to power field devices, that is 500mA max.

The Receiver / Relay Module should be installed in a cool, dry environment wherever possible. The electronics are coated to protect it against moisture and dust, however it is not water resistant and should be protected from a harsh environment.

(*The Smart Temp SZ-PS 24VAC power supply can be used if no other 24VAC source is available.)

Typical Wiring



Sender module Typical Colour Codes

Mark	Colour	Typical Function
1	Green	G - Fan
2	Yellow	Y1 - 1st Stage Cool
3	White	W1 - 1st Stage Heat or Reversing Valve
4	Purple	Y2 - 2nd Stage Cool
5	Brown	W2 - 2nd Stage Heat or Aux / Emergency Heat
24R	Red	24 VOLT (HOT)
24C	Black	24 VOLT (COMMON)

Logic

The Smart Temp Smart Wire Module, two to five wire adaptor, uses two advanced microprocessors. One in the Sender and the other in the Receiver / Relay Module.

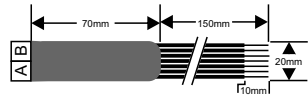
Based on input signals from the device connected to the Sender Module, a binary signal is encoded (along with checksum data to ensure accuracy), then superimposed onto the 24VAC signal wires that is then transmitted to the Receiver / Relay Module.

The Receiver / Relay Module then decodes and verifies the binary data and turns relays on or off to match the Sender Module information. This verification process introduces a small delay in time between the thermostat relays changing and the Receiver/ Relay Module responding.

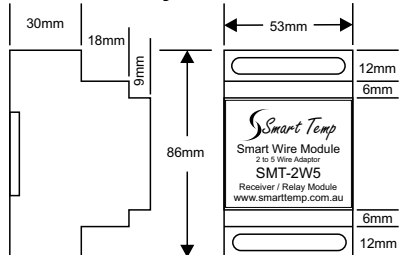
Specifications

Power Supply	24VAC +/- 20%
Power Consumption	0.15mA (No Relays) 0.45mA (All Relays On)
Maximum Load Current	0.5 Amp @24VAC
Relays Switching Current	5 x 1 Amp (Volt Free)
Maximum Range	80 Metres
Transmission Lag	Up to 5 Seconds
Temperature	50°C (65°C Storage)
RH	95% (Non Condensing)
Recommended Cable	2 Wire Screened 0.5mm ²
LED display (Relay Module)	Green - Power On Yellow - Data (Blinking)
Warranty	5 Years RTB

Sender



Receiver / Relay Module



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