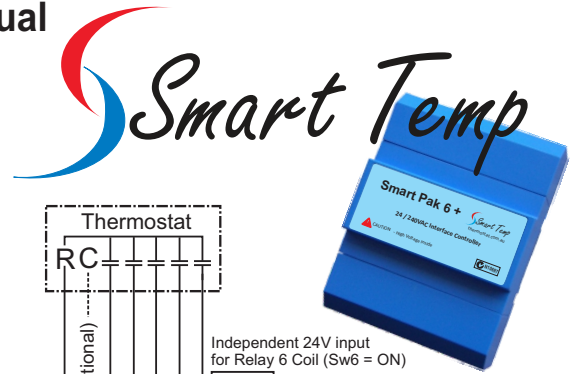


Smart Pak 6+



The Smart Pak 6+ Interface Module has been designed where a 24V thermostat or other low voltage devices need to switch equipment with 240V control circuitry or for circumstances where there is insufficient wiring between the wall controller and the Smart Pak itself. The Smart Pak has a number of innovative and time saving features that will assist in your setting up and commissioning of the interface.

LEDS

The Smart Pak 6+ is fitted with an array of LEDs that will show if power is available, if relays are energised, whether a fault input is received or when data is being received from the optional Smart Pack Sender Module (SPSM).

Independent 6th Relay

The 6th relay in the Smart Pak 6+ is separate from the other 5 relays to provide an isolated input and output where needed. The relay 6 input / coil will require 24VAC to operate. If necessary, this voltage can be taken from the Smart Pak 6+ 24 & 24C output terminals. (See wiring diagrams over - Fig 4)

Relay 6 can also activate with relay 5 input by turning on Switch 5.

Fault Input

The Smart Pak 6+ has a volt free fault input that when active (input is closed) it will disable the output of relays 1 to 5 regardless of the status of input 1 to 5. Relay 6 is not affected by the fault input and will operate regardless of the fault input status.

Magic Wire Function (Optional Magic Wire interface required, P/NSP-MW)

Magic Wire permits 2 signals such as heat & cool to share a single wire from the thermostat. The Smart Pak 6+ then separate these two signals and sends the output to the appropriate relay for connection to the equipment. (Relay 4 and 5 only) (Fig 2)

24V and 24C Output

To provide power to operate a thermostat, the Smart Pak 6+ has a 7VA transformer. The SP6+ 24V & 24C output of this transformer has a very low current capability and should only be used to power a typical thermostat such as the SMT-400 or Halo thermostat. You **SHOULD NOT** use this output to drive 24V valve coils, damper motors, indicator lamps or any other device as this will cause the transformer’s internal (non replaceable) thermal fuse to blow.

Excessive load on the transformer will not be covered by warranty.

Smart Pak Sender Module (Optional Smart Pak Sender Module interface required, P/N SPSM)

The optional SPSM is installed inside the thermostat and will permit the thermostat to switch all 5 Smart Pak 6+ relays (and relay 6 by interlock) using a single pair of wires between the thermostat and the Smart Pak 6+ location.

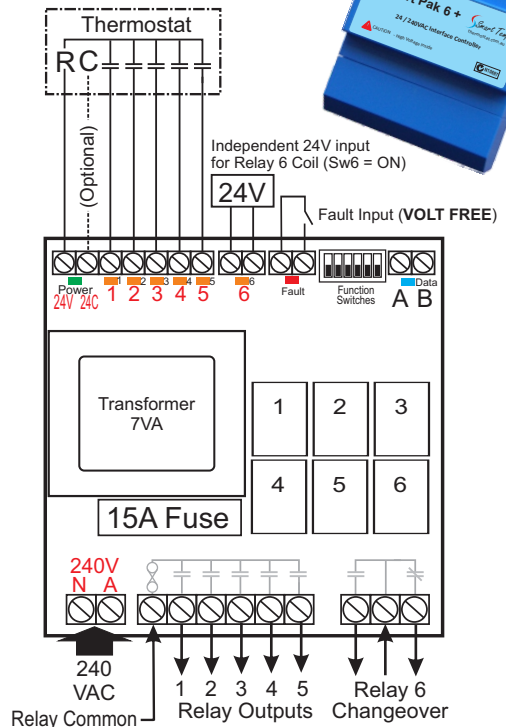
Function Switches

There are 6 DIP switches to provide additional control capability. These switch functions include the ability to “interlock” inputs, to control multiple outputs or to protect volt free inputs from accidental wiring damage etc.

Note - Sw1 and Sw2 should be OFF when using a Smart Temp supplied thermostat as Smart Temp thermostats have the logic built into them.

As the SPSM is able to control relays 1 through 5, turning Sw5 on will interlock relay 6 with relay 5.

Switch	Function when ON
Sw1	Input 3 also turns on input 1.
Sw2	Input 3 also turns on input 2.
Sw3 & 4	Must be on to use the Fault Input.
Sw5	Input 5 also turns on input 6.
Sw6	Enables relay 6 using independent 24V input.



Fuse Protection

The Smart Pak 6+ has a replaceable 15 Amp 3AG Fuse installed to protect relays 1 to 5. This fuse can be replaced by un-clipping the blue cover from the base of the Smart Pak6+ and replacing the fuse.

The transformer has an internal thermal fuse. This is not replaceable and will require a new transformer to be fitted or the Sp6+ to be replaced if the transformer fuse fails.

A small non replaceable auto reset fuse protects the electronics. The green power LED will not illuminate if the fuse is in protection mode or the transformer fails.

Specifications

Size	145 x 112 x 66 108 x 112 x 66 (With Terminal Covers Off)
Relays	10A @ 240V
Transformer	240 ~ 24 7VA Unregulated (Thermally Fused) (30mA output maximum)
Fuse	Equipment - 3AG 15Amp Internal 0.75 Amp Self Resetting PTAC
LEDS	Power (Green) Relay 1 to 6 (Amber) Fault active (Red) SPSM Data Received (Blue)
Power	Input 220 ~ 240V @ 50/60 Hz Output to Thermostat 24 ~30VAC
Approvals	C-Tick N10697

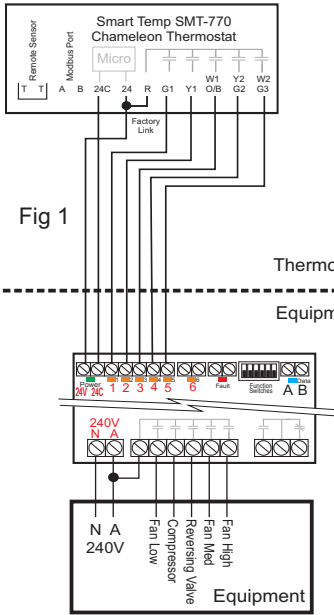
Manufactured by Smart Temp Australia using local and imported components.

Smart Temp Australia P/L
U20/1488 Ferntree Gully Road Knoxfield VIC 3180
Phone (03) 9763 0094

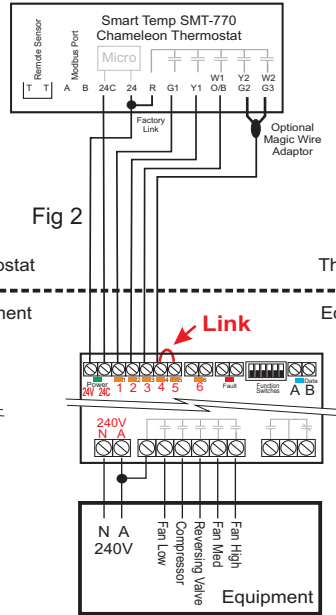
www.thermostat.com.au www.smarttemp.com.au

Three examples below highlighting the different methods of using the SP6+

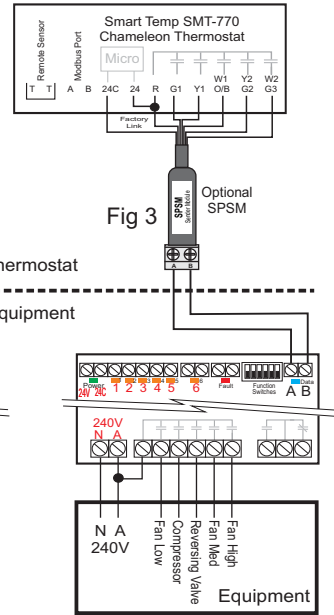
7 Wires
Typical Heat Pump - 3 Speed Fan
Conventional Wiring



6 Wires
Typical Heat Pump - 3 Speed Fan
Using Magic Wire



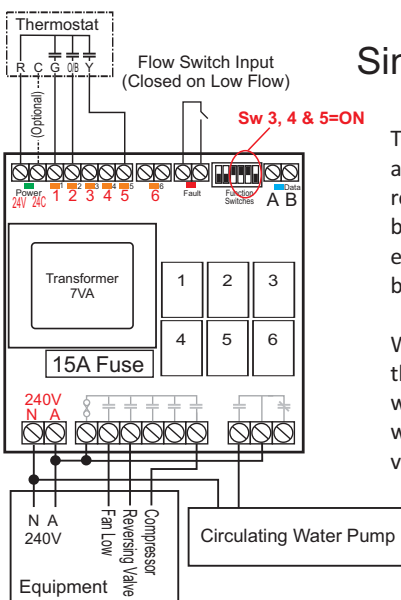
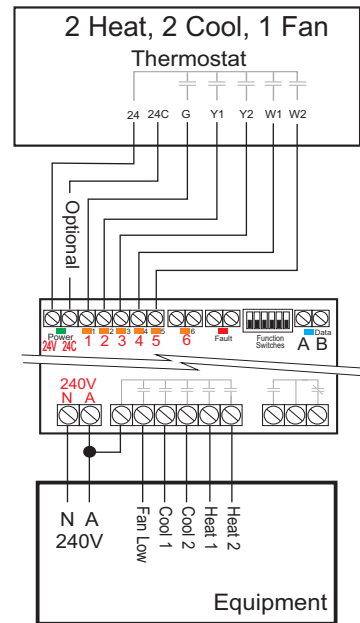
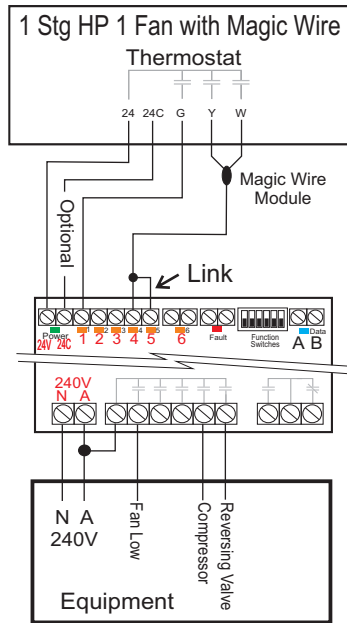
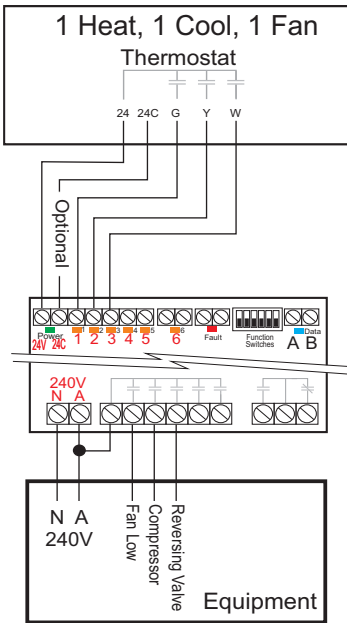
2 Wires
Typical Heat Pump - 3 Speed Fan
Using SPSM



The three wiring diagrams on the left show the same thermostat wired to the same Heat Pump with three fan speeds. The only difference in these diagrams are the number of wires available between the SP6+ and the Thermostat.

The wiring diagrams shown could easily be modified to apply to a 2 Heat 2 Cool 1 Fan Speed system, a 1 Heat 1 Cool 1 Fan Speed system or any application where you need to switch up to 6 relays.

If wiring to a Heat Pump with 1 fan speed it is not necessary to wire Medium and High Fan speeds.



Single Stage Water Sourced

The Smart Pak 6+ has a fault input, that when active will block relay 1 to 5 outputs regardless of the input call. This function can be useful for water sourced HP systems for example where water flow must be verified before the compressor is permitted to start.

When the thermostat calls for heat or cool the Smart Pak 6+ will call the circulating water pump, however the compressor call will only be permitted once water flow is verified.

The optional SPSM has colour coded and labelled input wires. These numbers and colours indicate which SP6+ relay it will control.

The Smart Pak 6+ relays can be used for any function you desire and in any combination. The table below suggests some possible uses for the outputs, however you are free to use any wiring combination you require.

Rly	Colour	Typical Function
24V	Red	24 VOLT (HOT)
24C	Black	24 VOLT (COMMON)
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

SPSM Supplemental Data Sheet

This data sheet should be used in conjunction with the Smart Pak 6+ manual.

The Smart Pak Sender Module will permit you to switch the main five Smart Pak 6+ relays independently using a standard 24V thermostat with a single pair (2 wires) between the thermostat location and the Smart Pak 6+ location.

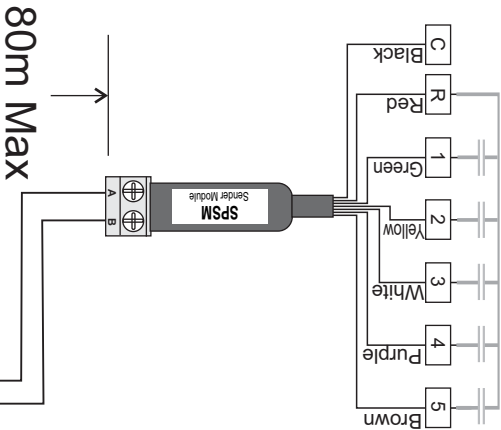
The Smart Pak Sender Module has seven colour coded (and numbered) wires that correspond to the relays fitted to the Smart Pak 6+.

When the R (24V power) wire is joined with any of the switching wires, the SP6+ will energise the corresponding relay switching the output. For example, joining the red "R" wire with the Purple "4" wire on the SPSM the SP6+ relay 4 will energise and switch the number 4 output.

The sixth SP6+ relay can be energised at the same time as relay 5 by turning on DIP switch number 5.

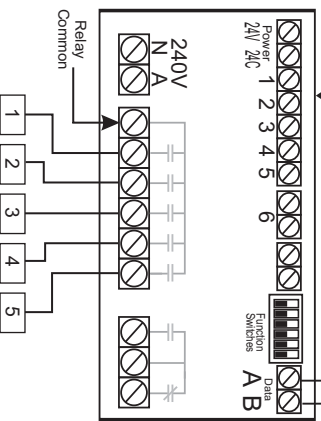
Wire Colour	Wire Label	Function
Red Wire	R	24V Power
Black Wire	C	24V Common
Green Wire	1	SP6+ Relay 1
Yellow Wire	2	SP6+ Relay 2
White Wire	3	SP6+ Relay 3
Purple Wire	4	SP6+ Relay 4
Brown Wire	5	SP6+ Relay 5

Thermostat Relays

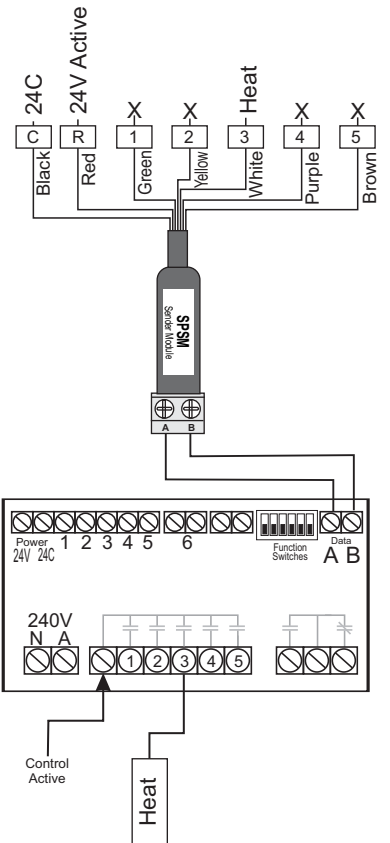


Sp6+ DIP Switch Function

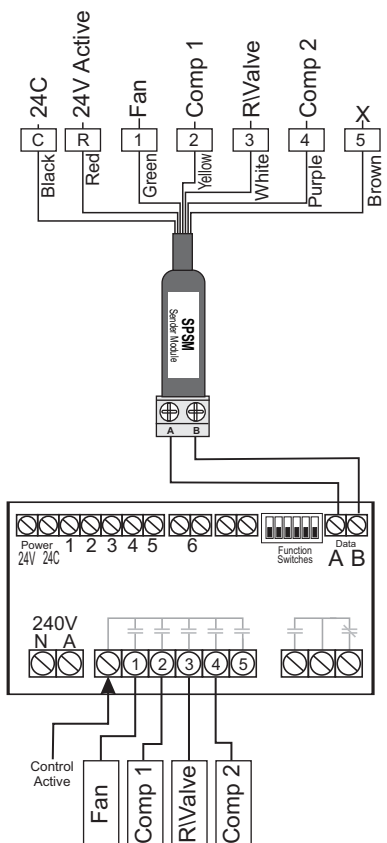
Switch	Function when ON
Sw1	Input 3 also turns on input 1
Sw2	Input 3 also turns on input 2
Sw3 & 4	Must be on to use the Fault Input
Sw5	Input 5 also turns on input 6
Sw6	Must be on to use input 6 with the 24V input



Typical Heat Only Wi-Fi Thermostat



Typical 2 Stage Heat Pump Thermostat



Typical Heat Cool Battery Thermostat

