

# VIKING<sup>TM</sup> SMT-920

DIN Mounted Multistage Commercial HVAC Controller

*Making Life Comfortable*

## General Description

### Advanced Commercial HVAC control.

Smart Temp is please to announce the SMT-920 "Viking" Commercial HVAC controller. Built using the very powerful and reliable "Chameleon" engine, the Viking is the culmination of many years of experience in designing and building advanced control solutions for the commercial HVAC industry.

In keeping with the Smart Temp tradition, the Viking has been built to be a powerful, feature rich commercial HVAC controller with industry leading functions which is simple to install, commission and use.

### Installer Friendly

Gone are the days of strange function codes with "look up tables", 7 segment displays showing strange hieroglyphic symbols or LEDs flashing some cryptic code to inform you of setup menu options or errors. The Viking simply displays information in clear precise English that anybody could understand on its bright backlit graphical display.

Great emphasis has been given to making the Viking an installer friendly device. To this end, the Viking features "Smart Tags; button labels that change to guide you through the various menus reducing the needs for complicated manuals and the risk of making setup errors.

### Feature Rich Performance.

Smart Temp believe that its much simpler and more cost effective to manufacture a single device with all the bells and whistles included as standard rather than building a range of very similar devices each with separate functions or an additional output. Building and stocking multiple devices costs more time and money and makes product selection complicated and prone to error for the installer.

At Smart Temp build the best we can, providing all the options in a single product that can be turned on or off as needed to suit the project at the time. We then pass the savings of a simpler manufacturing and inventorying process on to our customers. The net result is a better product at a lower cost.

Consider the Viking for your next commercial project and see for yourself the exceptional value offered in this product.



## Features

**Up to 4 stage compressor control.**

**Compressor Lead Lag function.**

**Integrated communications (Modbus & BACnet).**

**Integrated 0-10v Economy function.**

**365 day, 7 day or manual operation.**

**Integrated after hours timer.**

**Security PIN protected menus.**

**Smart 2 wire sensors with multiple functions.**

- Averaging
- After Hours run function .
- Force system Off.
- Force ventilation (fan only) mode.

**Optional RF & communicating sensors available.**

**2 programmable auxiliary inputs.**

**0-10V heating & cooling valve control.**

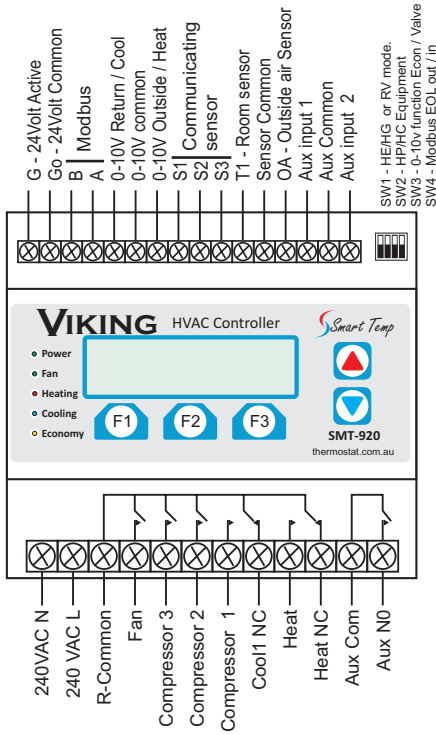
**Occupancy Inputs with individual set point control.**

**24V or 240V AC powered.**

**Volt free relay outputs - 240V 10A max(fan) .**

**3 Year piece of mind warranty.**

# Board Layout

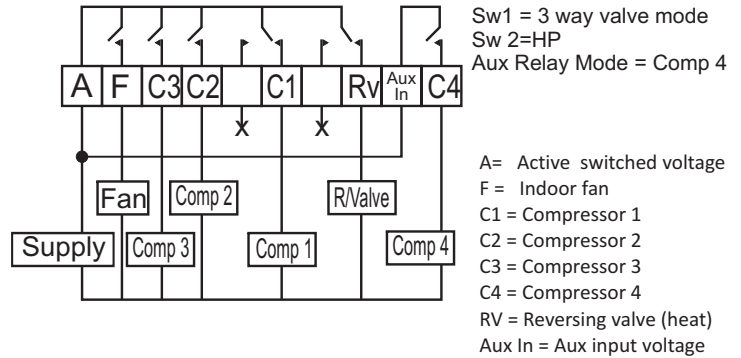


# Installer Options

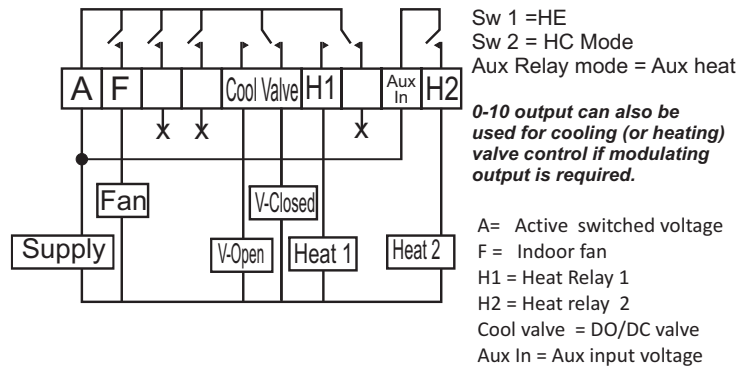
- Set / change system PIN - 3 digit.
- Set key lock - 4 levels.
- Select program type - manual, 7 day or 365 day (1 or 2 events per day).
- Optimised Start & Stop function (Set by installer)
- “RUN” Heat and cool temperature control limits (If set by the installer).
- Set back temperature - installer adjustable only.
- After hours run timer - (0 to 12 hours).
- Adjustable sensor performance - (speed & calibration).
- Individual compressor staging offsets - (0.5 to 5c with smart upstage).
- Compressor timing (Minimum run time and anti cycle protection).
- Compressor Lead Lag function (Installer set).
- Set Sensor open circuit options - (Ventilation mode or force off).
- Set Auxiliary relay function as -
  - Stage 4 compressor.
  - Auxiliary Heating .
  - Time clock hand over.
  - After hours handover.
  - Time & after hours hand over.
  - Modbus controlled slave relay.
- Set indoor fan options - (Purge period, mode and lock).
- Set Un-occupied fan mode, heat & cool temperatures
- Set Economy mode parameters - (Limits and mode).
- Set Auxiliary input functions as-
  - Fire - (Instantaneous shutdown - all outputs)
  - Fault input - NO
  - Fault input - NC
  - Delay Start (0-60 seconds random)
  - Force ON
  - Initiate / cancel after hours timer.
  - Set Occupancy mode.
  - Report input status (Feedback for Modbus or BMS)
  - Force Ventilation (If economy mode active)
- Display settings (clock type / C~F display).
- 0-10v valve range and type. (0.5 ~5c 0-10 or 2-10).
- Modbus settings override.
- Modbus parameters (Address & baud rate).
- Commissioning Mode & Diagnostics
- Plus much more.

# Wiring Examples

## Typical 4 Stage Heat Pump



## Typical chilled water with electric heat



# Specifications

Input Voltage	24 / 240 VAC+/- 15%. 50/60 Htz
Operating Temperature	0-50C (32 to 122F).
Operating RH	0-95% (non condensing).
Storage Temperature	0-65C (32 to 150F).
Size	110 x 110 x 65mm.
	110 x 180 x 65mm with terminal covers fitted.
Control range	0-50c
Maximum Equipment Stages	4 compressors ( HC mode =2 heat 3 cool)
Anti-cycle timer	Off, 2, 3, 4 or 5 minutes (installer adjustable)
After hours timer	Off to 12 hours (installer adjustable)
Memory type	Non volatile 128K
Clock	12/24 hour 7 day with calendar Backup battery for clock. (CR1220)
Backup battery life	5 to 8 years
Holiday events	10 - (Perpetual and /or self expiring)
LCD	32 x 132 graphical - LED back light.
Relays	Fan 10A 240v Max - volt free. All others 5A 240vac Max - Volt free.
0-10V output.	10mA max each
Room & outside air sensor	10K NTC type II. (2 wire screened)
Communicating sensor	3 wire - 400m maximum with control function . 10K NTC type II / RH 10~98% RH 2%.
Optional RF sensor	2xAAA batteries 18mth life 10K NTC Type II Range- 150m open air (40M indoors typical). Frequency 433Mhz - 2 way with error checking.
Communications	Modbus RTU Baud rate 4.8 / 9.6 / 19.2K BACnet MS-TP Baud rate 4.8 / 9.6 / 19.2K Address range 1 ~ 255
Warranty	36 months RTB.

