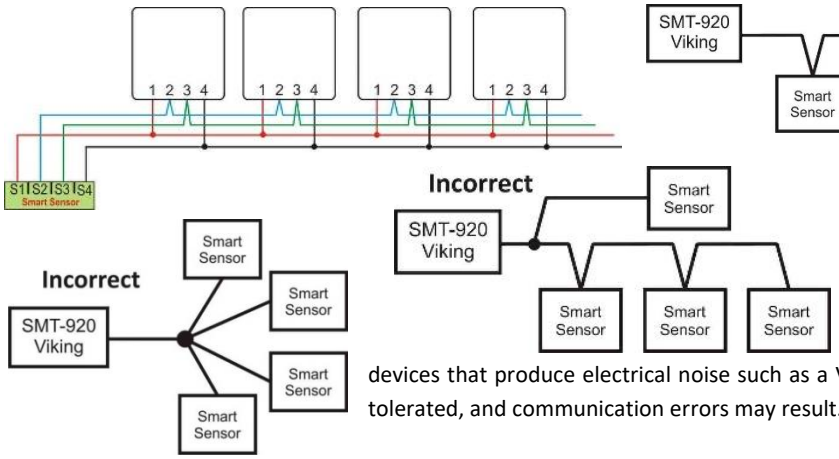
Viking Smart Sensor Manual

RS-SB

The “Smart Sensor” has been designed by Smart Temp Australia to be used exclusively with the SMT-920 “Viking” HVAC commercial controller with version 2.51 firmware or greater.

The Smart Sensor provides the SMT-920 Viking with humidity and temperature data that permits the Viking to measure room temperature and humidity and if required, to control the fresh air economy cycle based on the enthalpy of the air – this is by far the most energy efficient way to run a economy cooling system. It further provides the Viking with more accurate room temperature data as there are no analogue line losses associated with traditional 2 wire temperature sensors.

Wiring



The Smart Sensor wires into the Viking’s 4 Smart Sensor terminals located under the slide off cover at the top of the Viking controller. These terminals are labelled “Smart Sensor S1, S2, S3 & S4.”

All sensors are to be wired in series using screened cable and grounded in one location only, particularly when used on long cable runs or when cabling may be close devices that produce electrical noise such as a VSD for example. Star wiring or “T” branches will not be tolerated, and communication errors may result.

Defining the Smart Sensor Address on the Viking Network

Within each Smart Sensor there is a switch block that defines the address of the sensor on the Viking sensor network. The RS-SB (non-touch screen version) has a 4-way switch block with switches labelled 1 to 4. These switches are used exclusively to set the address of the RS-SS thermostat on the network.

If **ANY** of the 4 address switches in the Smart Sensor(s) are in the OFF position, then the sensor values are used by the Viking for **inside** temperature and humidity measurement. If multiple sensors are used as inside sensors, then the Viking will use the average value of these sensors and use this average value as for control.

If **ALL** of the 4 address switches in the Smart Sensor are in the ON position the sensor value are used by the Viking for **outside** air temperature and humidity measurement.

Note - You may have multiple Smart Sensors connected to any Viking up to a maximum 16 sensors, however you can have only 1 sensor defined as an outside Smart Sensor and no 2 Smart Sensors on the same Viking network can share the same DIP switch combination. Having multiple sensors with the same DIP switch combination will cause communication errors and erratic behaviour.

Enthalphy vs RH Limiting Economy Control”

If only an outside Smart Sensor is installed with a standard 2 wire (non-communicating sensor) inside, the Viking will permit you to set a HIGH outside RH limit. If the outside RH exceeds this threshold, then economy cycle functions will be suspended.

If the Viking has both the inside and outside Smart Sensors, then the Viking will automatically switch to “Enthalpy Mode” and calculate the suitability of outside air for economy cooling based on the measured inside and outside enthalphy.
See **Setting the Economy Control** options in the Viking manual for more information on this feature.

TT Terminals - Remote Temperature sensor.

The Smart Sensor has a set of terminals marked “TT”. If you wire a standard Smart Temp 2 wire sensor to these terminals, then the DRY BULB sensor within the Smart Sensor is disabled and the dry bulb temperature is measured by the remotely connected temperature sensor. The humidity sensor fitted to the Smart Sensor is still used for RH measurement.

This external sensor is automatically detected by the Smart Sensor when connected, no other installer input is required. Placing a momentary dead short on the Smart Sensors “TT” terminals will initiate or cancel the afterhours run feature built into the sensor.

For further information please contact Smart Temp or an authored Smart Temp Distributor.
Specifications are subject to change without notice.
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