

# SMT- 150

Addendum for addition of ModBus

19 / 08 / 2020

This document applies to SMT-150 with firmware 5.8 or newer

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A recent hardware and firmware update to been performed to enable the Smart Temp SMT-150 has have Modbus RTU. This will permit the SMT-150 to be controller by BMS systems as part of an integrated Hi-Level management system

The Modbus function in the SMT-150 has been structured in such a way to permit the SMT-150 to be wired to a temperzone heat pump fitted with a UC6 or later UCC (unit control card) using Modbus RTU communications. This permits the SMT-150 to have hi-level control of all temperzone heat pumps including systems with a variable capacity system as well as control variable fan speeds.

Additional Installer options have been added to the SMT-150 with a firmware of 5.8 or newer/

## **Option 20**

Sets Modbus register 40009 to control Low, Medium, High or Auto Evap fan speed when connected to temperzone via modbus. Default is 1

## **Option 21**

Sets the Modbus Address (range 1 to 64) Default is 7

## **Option 22**

Communications Speed

1 = 2400bps    2 = 4800bps    3 = 9600bps    4=19200bps. Default is 4. 19200bps

## **Option 23**

Communications Parity

Even. None. Odd    Default Even

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## **Temperzone Heat pumps**

If using the SMT-150 via modbus with temperzone heat pumps ensure the network address is 7, the communications speed is 19.2k bps and with even parity. All these settings are default.

The SMT-150 Modbus Objects list draft is provided below. A comprehensive ModBus manual will be provided in time. Points relevant to temperzone are indicated.

*Some temperzone data not relevant to the SMT-150 is "fudged" to ensure compliance with the temperzone UCC requirements.*

Coils	Address	Notes
TZT100 COILS	0	bit 0 = low, bit 1 = medium, bit 2 = high, bit 3 = comp, bit 4 = heat

Registers	Address	Notes
TZT100 MODE	1	Always 4
TZT100 FANMODE	2	0=auto, 1=on
TZT100 FANSELECTION	9	1=low, 2=medium, 3=high, 4=auto
TZT100 SWITCHES	15	DIP switches always 63
TZT100 OVERRIDE	17	Always 0 (Override Off)
TZT100 IDREG	19	device ID register always 78
TZT100 SPAN	31	1 to 3 = 0.5 to 1.5 degrees C (units of 0.5 degrees C)
TZT100 DEADBAND	39	0 to 9 = 0 to 4.5 degrees C (units of 0.5 degrees C)
TZT100 DRYMODEENABLE	40	Not applicable
TZT100 COMMISSIONING	50	Always 0
TZT100 VERSION	54	software version always 236
TZT100 OVERSHOOT	65	Always 0
	70	High Temp Limit (value*2+20)
	71	Low Temp Limit (value*2+20)
	72	Heat Setback TEMP (value*2+20) 0-off
	73	Cool Setback Temp (value*2+20) 200-off
	74	Fan Mode 0 = Heat Electric 1 = Heat Gas
	75	After Hours Period
	76	Heat 1 Relay Function (same as install menu)
	77	Sensor Response Speed (same as install menu)
	78	Calibrate Room Sensor (value*10)
	79	Calibrate Return Air Sensor (value*10)
	80	Calibrate Outside Air Sensor (value*10)
	81	C/F Display (0-F 1-C)
	82	Return Air Sensor Function (same as install menu)
	83	0-10V Output Span (value*10)
	84	Digital Input Options (same as install menu)
	85	Auxiliary Relay Options (same as install menu)
	86	0-10V Output (same as install menu)
	87	Alarm Threshold(VALUE*2+40)
	88	
	89	DB (value*10)
	90	NETWORK ADDRESS (1-64)
	91	Baud 1-2400 2-4800 3-9600 4-19200
	92	Parity 0-no parity 1-ODD 2-EVEN
TZT100 DAY	304	Day always 1
TZT100 HOUR	305	hour always 1
TZT100 MINUTE	306	minute always 1
TZT100 SETPOINT	317	units of 0.5 degrees C, offset -10 degrees C
TZT100 ICONS	339	0 = off, 2 = fault
TZT100 ROOMTEMP	353	units of 0.1 degrees C, offset -40 degrees C
TZT100 AUX	356	Always 0

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