Smart Temp Australia P/L

Smt-400 Modbus objects list

Ver 1.5

Notes

The SMT-400 has several duplicated points as well as many points that seem to do nothing. These points are in the SMT-400 so worldwide customers that use ModBus in their equipment to communicate with existing Smart Temp products can easily port to the SMT-400 and still maintain compatibility. Many duplicated points show the same data while with some there is light variations in the way the data is presented.

Version history

Ver 1.0	23/04/17	Original release
Ver 1.1	9/11/17	Added OEM functions for Temperzone. Fixed some errors
Ver 1.2	3/03/18	Added Functions for Unity
Ver 1.3	21/09/18	Amended Unity Functions. Spelling errors corrected
Ver 1.4	23/04/18	Added Support for Superior AC systems
Ver 1.5	16/12/18	Corrected Fan bug for Superior. Updated Boot sequence.

Media	RS-485
Baud	4,800 – 19,200 BPS
Byte	1 Start, 8 Data, 1 stop
Parity	None, even, odd
Address	1-255
Date	Modbus RTU

Type	Address	Function	Comments
Read (Write)	0001	G1	0=Off 1=On
Read (Write)	0002	G2 / Y2	0=Off 1=On
Read (Write)	0003	G3 / w2	0=Off 1=On
Read (Write)	0004	Y1	0=Off 1=On
Read (Write)	0005	W1 / OB	0=Off 1=On

Note – Coils can be written to if enable by register 40017

Type	Address	Function	Comments
Read / Write	40**002**	Equipment Mode	0=Off 1=Reserved 2 = Heat 3 = Cool 4 = Auto 5 = E-Heat 6 = Cool & Dry 7 = Auto & Dry
Read / Write	40**003**	Fan Mode	0=Auto 1=On
Read / Write	40**005**	Room Temperature	Deg C = (Raw – 20)/2 F = 1:1
Read / Write	40**010**	Fan Speed Selection (sw1 = on only)	1=Low 2 = Medium 3 = High 4 = Auto
Read Only	40**016**	DIP switches	Sw 1 = 1 Sw 2 = 2 Sw3 = 64 Sw4 =4 Sw5 = 8

Read / Write	40**017**	Relay Override	0=Off 1=On (Can write to coils) Note, you must ping this register with “1” at least every 10 minutes to keep this function enabled.
	40**018**	Legacy item for compatibility with existing Smart Temp customers	0
Read Only	40**020**	Sentential point	100
Read Only	40**021**	Sentential point	100
	40**032**	Legacy item for compatibility with existing Smart Temp customers	1
	40**040**	Legacy item for compatibility with existing Smart Temp customers	1
Read / Write	40**041**	Dry Mode	1 = Off 2 = On
	40**051**	Legacy item for compatibility with existing Smart Temp customers	1
Read Only	40**055**	Current firmware version	XXX
	40**066**	Legacy item for compatibility with existing Smart Temp customers	1
Read only	40**101**	Device ID	400
Read Only	40**102**	Current firmware version	XXXX

Read Only	40**003**	DIP switches	Sw 1 = 1 Sw 2 = 2 Sw3 = 4 Sw4 =8 Sw5 = 16 Sw6 = 32 Sw7 =64 8= 128
Read / Write	40**104**	Mode	0 = Off 1 = Auto 2 = E.Heat 3= Heat 4 = Cool 5 = Cool & Dry 6 =- Auto & Dry
Read / Write	40**104**	Fan Mode & Speed	0 = Low (Auto) 1 = Medium (Auto) 2 = High (Auto) 3= Auto Speed (Auto) 4 = Low (Fan ON) 5 = Medium (Fan On) 6 = High (Fan ON) 7 = Auto (Fan On)
Read / Write	40**106**	Heat Setpoint	0.5c or 1.0F Steps 0 = Off Setpoint x 10

Read / Write	40**107**	Cool Setpoint	0.5c or 1.0F Steps 2000 = Off Setpoint x 10
Read Only	40**108**	Status	0 = Off 1 = Cool 2 = Heat 3 = E Heat
Read Only	40**109**	Room Temperature	Raw x 10
Read Only	40**110**	Internal Sensor Temperature	Raw x 10
Read Only	40**111**	Remote Sensor Temperature	Raw x 10
Read Only	40**112**	Outside Sensor Temperature	Raw x 10
Read Only	40**113**	Duct Sensor Temperature	Raw x 10
Read Only	40**114**	Window Input	0 = Off 1 = On
Read Only	40**115**	Door Input	0 = Off 1 = On
Read Only	40**116**	PIR Input	0 = Off 1 = On
Read Only	40**117**	Fault Input	0 = Off 1 = On
Read Only	40**118**	Occupancy Input	0 = Unoccupied 1 = Occupied
Read Only	40**119**	Universal Input 1 Status	0 = Open 1 = Closed
Read Only	40**120**	Universal Input 2 Status	0 = Open 1 = Closed

Read Only	40**121**	Universal Input 3 Status	0 = Open 1 = Closed
Read Only	40**122**	G1 Relay Override	1 = Disable Write and relay is ON 2 = Disable Write and relay OFF 1001 Enable Write and relay ON 1002 Enable Write and relay OFF
Read Only	40**123**	Y1 Relay Override	1 = Disable Write and relay is ON 2 = Disable Write and relay OFF 1001 Enable Write and relay ON 1002 Enable Write and relay OFF
Read Only	40**124**	W O/B Relay Override	1 = Disable Write and relay is ON 2 = Disable Write and relay OFF 1001 Enable Write and relay ON 1002 Enable Write and relay OFF
Read Only	40**125**	G2 Y2 Relay Override	1 = Disable Write and relay is ON 2 = Disable Write and relay OFF 1001 Enable Write and relay ON 1002 Enable Write and relay OFF
Read Only	40**126**	G3 W2 Relay Override	1 = Disable Write and relay is ON 2 = Disable Write and relay OFF 1001 Enable Write and relay ON 1002 Enable Write and relay OFF
Read Only	40**127**	Assignable Relay Override	1 = Disable Write and relay is ON 2 = Disable Write and relay OFF 1001 Enable Write and relay ON 1002 Enable Write and relay OFF

Read / Write	40**128**	Analogue Output 1 (0-10V)	0-100
Read / Write	40**129**	Analogue Output 2 (0-10V)	0-100
Read / Write	40**130**	Analogue Output 3 (0-10V)	0-100
Read Only	40**131**	RH value	0-100
Read / Write	40**132**	Analogue Input 1 (0-10V)	0-100
Read / Write	40**133**	Analogue Input 2 (0-10V)	0-100
Read / Write	40**134**	Analogue Input 3 (0-10V)	0-100
Read / Write	40**135**	Analogue Input 3 (0-10V)	0-100
Read / Write	40**200**	Keyboard Lock PIN	0-99 (Default 21)
Read / Write	40**201**	Beeper	0 = Off 1 = ON (Default)
Read / Write	40**202**	Backlight Brightness in Standby Mode	0 = 20 10 (Default)
Read / Write	40**203**	Backlight Use Internet time	0 = Off (Default) 1 = On
	40**204**	Legacy item for compatibility with existing Smart Temp customers	7
	40**205**	Legacy item for compatibility with existing Smart Temp customers	19
Read / Write	40**206**	Buttons shown on LCD	0 = All Buttons Shown (Default) 1 = Mode Shown, Fan Hidden 2 = Fan is shown, Mode is Hidden 3 = Mode and Fan Hidden

Read / Write	40**207**	Permitted User Modes	0 = Off & Auto (Will not display current mode) 1 = Off, Auto (Heat & Cool), Heat, Cool. (Default) 2 = Off, Heat, Cool. 3 = Off, Heat. 4= Off, Cool. 5 = Off, Auto (will display current mode)
Read / Write	40**208**	Temperature Display	0 = Display Room & set Temp . (Default) 1 = Display Set Temp only.
Read / Write	40**209**	Temperature Display Format	0 = C . (Default) 1 = F.
Read / Write	40**210**	Setpoint Maximum	5 – 45C 41 – 113F Default 30c / 86F
Read / Write	40**211**	Setpoint Minimum	5 – 45C 41 – 113F Default 5c / 41F
Read / Write	40**212**	Deadband Protection	0-5C / 0-10F (1C / 2 F Default)
Read / Write	40**213**	Heat Span (Relay)	0.5-3C / 1-6F in 0.1 steps(1C / 2 F Default)
Read / Write	40**214**	Cool Span (Relay)	0.5-3C / 1-6F in 0.1 steps(1C / 2 F Default)

Read / Write	40**215**	Indoor Fan Reset This functions defines how the Fan Mode will change when the thermostat mode changes between OFF or ON (Heat, cool)	0 = Off 1 = If Fan is Fan ON when the thermostat is turned OFF the fan will change to Auto Mode (Default) 2 = If Fan is Fan ON when the thermostat is turned OFF the fan will change to Auto Mode and the Fan Button will be hidden. 3 = If Fan is Fan ON when the thermostat is turned OFF the fan will change to Auto Mode. Fan On mode will be resumed when the thermostat it turned back ON. 4 = If Fan is Fan ON when the thermostat is turned OFF the fan will change to Auto Mode. Fan On mode will be resumed when the thermostat it turned back ON, fan button is hidden. 5 = If Fan is Fan ON when the thermostat is turned OFF the fan will change to Auto Mode, and if the thermostat is left Off for 1 hour or longer it will remain in Auto mode when the thermostat is turned back on.

Read / Write	40**216**	Fan Purge	0 = Off (Default) 1 = Fan purge 1min 2 = Fan purge 3 min 3 = Fan purge 5 min 4 = Fan purge 10 min 5 = Heat only fan purge 1 min 6 = Heat only fan purge 3 min 7 = Heat only fan purge 5 min 8 = Heat only fan purge 10 min 9 = Cool only fan purge 1 min 10 = Cool only fan purge 3 min 11 = Cool only fan purge 5 min 12 = Cool only fan purge 10 min
Read / Write	40**217**	Fan Span (3 Fan speed Mode)	0.5-3C / 1-6F in 0.1 steps(1C / 2 F Default)
Read / Write	40**218**	W2 Relay Function	0 = W2 is 2nd (or 3rd) Stage Aux Heat (Default) 1 = W2 is used for Emergency heat system 2 = W2 is both E.Heat and Aux Heat In Fossil Fuel Mode W2 Relay function = 2 E. Heat Comp = 0 E Heat Fan = 0
Read / Write	40**219**	Emergency Heat Compressor	0 = Compressor Stops in E.Heat mode (Default) 1 = Compressor runs in E.Heat Mode.
Read / Write	40**220**	Emergency Heat Fan	0 = Fan Stops in E.Heat mode (Default) 1 = Fan runs in E.Heat Mode.

Read / Write	40**221**	Assignable relay Functions	0 = Relay not used (Default) 1 = Humidity Alarm 2 = Temperature Alarm 3 = Occupancy Status 4 = Relay Heat Output 5 = 0-10VHeat Output 6 = Relay Cool Output 7 = 0-10VCool Output 8 = Relay Heat & Cool Output 9 = 0-10VHeat & Cool Output 10 = Relay Fan output 11 = 0-10VFan output 12 = Next Stage compressor 13 = Next Stage Heating. (HC mode). 14 = Next Stage cooling (HC mode). 15 = Fault 16 = Relay under direct App control
Read / Write	40**222**	Assignable relay threshold	0 – 100 (100% RH deg C/F etc)
Read / Write	40**223** 40**224** 40**225**	0-10V output 1 Functions 0-10V output 2 Functions 0-10V output 3 Functions	0 = Network control (Default) 1 = Heat Output 2 = Cool Output 3 = Heat & Cool Output (Digital Capacity Control) 4 = DC Fan Output 5 = Fresh Air Econ Damper 6 = Return Air Econ Damper 7 = Follow RH 8 = Belimo ™ 6 way valve logic
Read / Write	40**226**	0-10V Heat Span	0.5-3C / 1-6F in 0.1 steps(1C / 2 F Default)
Read / Write	40**227**	0-10V Heat PI Interval	10 – 300 seconds. 10 sec steps (60 Sec Default)
Read / Write	40**228**	0-10V Heat Direction	0 = 10V is 100% Open - forward (Default) 1 = 10V is 100% Closed - reverse
Read / Write	40**229**	0-10V Heat Minimum Voltage	0 -10V. 0.1v steps (default 0v)

Read / Write	40**230**	0-10V Cool Span	0.5-3C / 1-6F in 0.1 steps (1C / 2 F Default)
Read / Write	40**231**	0-10V Cool PI Interval	10 – 300 seconds. 10 sec steps (60 Sec Default)
Read / Write	40**232**	0-10V Cool Direction	0 = 10V is 100% Open - forward (Default) 1 = 10V is 100% Closed - reverse
Read / Write	40**233**	0-10V Cool Minimum Voltage	0 -10V. 0.1v steps (default 0v)
Read / Write	40**234**	0-10V Fan Span	0.5-3C / 1-6F in 0.1 steps(1C / 2 F Default)
Read / Write	40**235**	0-10V Fan PI Interval	10 – 300 seconds. 10 sec steps (60 Sec Default)
Read / Write	40**236**	0-10V Fan Direction	0 = 10V is full speed - forward (Default) 1 = 10V is minimum speed - reverse
Read / Write	40**237**	0-10V Fan Minimum Voltage	0 -10V. 0.1v steps (default 0v)
Read / Write	40**238**	0-10V Fan Maximum Voltage	0 -10V. 0.1v steps (default 10v)
Read / Write	40**239** 40**240** 40**241**	Universal Input 1 Functions Universal Input 2 Functions Universal Input 3 Functions	0 = Used for 0-10Vinput (Default) 1 = Remote Sensor 2 = Averaging sensor (SMT-400 and Remote sensor) 3 = Data only (Report to Modbus only) 4 = Duct Sensor 5 = Outside Air Sensor 6 = Window Switch 7 = Door Switch 8 = PIR Sensor input 9 = Fault Input 10 = Fault input (Hide “Fault” from LCD) 11 = Warm Start Sensor 12 = De-ice sensor
Read / Write	40**242**	Calibrate Fitted Sensor	-9.9 to 10c (default 0.0c)
Read / Write	40**243**	Calibrate Remote Sensor	-9.9 to 10c (default 0.0c)
Read / Write	40**244**	Heat Off Temperature	Deg C is Off, then 4 to 45c Deg F is Off, then 41 to113

Read / Write	40**245**	Cool Off Temperature	Deg C is Off, then 4 to 45c Deg F is Off, then 41 to113
Read / Write	40**246**	High Ballance point	Deg C is Off, then 4 to 45c Deg F is Off, then 41 to113
Read / Write	40**247**	Low Ballance point	Deg C is Off, then 4 to 45c Deg F is Off, then 41 to113
Read / Write	40**248**	Window Switch logic	0 = Normally open (Default) 1 = Normally Closed
Read / Write	40**249**	Window Input Delay	0 -300 seconds in 30 second steps (default 30 sec) 1 = Normally Closed
Read / Write	40**250**	Door Switch logic	0 = Normally open (Default) 1 = Normally Closed
Read / Write	40**251**	Window Input Delay	0 -300 seconds in 30 second steps (default 180 sec)
Read / Write	40**252**	PIR Input Delay	0 -60 Minutes 1Minute steps (default 3 min)
Read / Write	40**253**	Auto off Timer	0 -10 Hours on 0.5hr steps (default Off)
Read / Write	40**254**	Un-Occupied Heat Setpoint	0 = Off (default) 5c – 30c / 41 – 86F
Read / Write	40**255**	Un-Occupied Cool Setpoint	0 = Off (default) 5c – 30c / 41 – 86F
Read / Write	40**256**	Un-Occupied Fan Mode	0 = Low (Auto) 1 = Medium (Auto) 2 = High (Auto) 3= Auto Speed (Auto) 4 = Low (Fan ON) 5 = Medium (Fan On) 6 = High (Fan ON)

Read / Write	40**257**	De-Ice Fan	0 = Evap Fan stops in De-Ice 1 = Evap Fan runs in De-Ice
Read / Write	40**258**	Modbus Address	1-255 (Default 7)
Read / Write	40**259**	Modbus Speed	1 = 4800 BPS 2 = 9600 BPS 3 = 19200 BPS
Read / Write	40**260**	Modbus Parity	0 = None 1 = Odd 2 = Even
Read / Write	40**261**	Heat Setpoint Limit	5-45C / 41-113F (30C / 86 F Default)
Read / Write	40**262**	Cool Setpoint Limit	5-45C / 41-113F (5C / 41 F Default)
Read / Write	40**263**	Hide RH and outside Temperature Display in OFF mode	0 = Off (Default) 1 = On
Read / Write	40**264**	Turn SMT mode to OFF if Wi-Fi lost	0 = Off (Default) 1 = On
Read / Write	40**265**	Dry Mode	0 = Off (Default) 1 = On
Read / Write	40**266**	Intensys (Inverter module) mode	0 = Off (Default) 1 = On
Read / Write	40**267**	Sensor speed of response	0 = Fast 4 = Slow (Default)
	40**305**	Legacy item for compatibility with existing Smart Temp customers	12
	40**306**	Legacy item for compatibility with existing Smart Temp customers	30
	40**307**	Legacy item for compatibility with existing Smart Temp customers	30

Read / Write	40**318**	Current Setpoint Value	Shows current active setpoint If Heating – Shows heating setpoint If Cooling – Shows cooling setpoint If in Deadband shows last setpoint Deg c (Raw-20)/2 Deg F 1:1
Read / Write	40**340**	Display Icons	0 = No icons (Default) 1 = Fresh Air in use 2 = Fault 3 = fresh Air in use & Fault
Read Only	40**347**	Delta Setpoint	100 = Room Temp = Set Temp +1 for every 0.1C room is greater than set temp - 1 for every 0.1c room is cooler than set temp
Read Only	40**354**	Room Temp	Raw value – not necessarily same as shown on LCD (LCD may have some dampening and offsets applied) (Raw x 10)+400
	40**357**	Legacy item for compatibility with existing Smart Temp customers	30

End of Doccument…….