

T7600 Thermostat

Modbus Data Table

REV. 2.2 APR 2018

Revision History

<i>Name</i>	<i>Revision</i>	<i>Date</i>	<i>Description</i>
Johnny Zhou	1.0	2017/4/25	Initial version
Johnny Zhou	2.0	2018/1/25	Add parameter description and range defintion
Johnny Zhou	2.1	2018/2/9	Revise address 6,8,16&s37 value definition at function code 3/6/16
Johnny Zhou	2.2	2018/4/10	<ol style="list-style-type: none"> 1. Delete 03/06/16 Function address 27 definition 2. Add application model for every address

MODBUS Interface Definition

Item	Description	Specification
1	Protocol	MODBUS
2	Communication Port	RS485 / half-duplex
3	Baud	9600/4800
4	Device Type	RTU
5	Address	01 - 64
6	Function Code	1 , 3 , 4 , 6, 16
7	Data Format	10 bit: 1 Start, 8 Data, 1 Stop, no parity
8	Interface Connection	A (+) , B (-)
9	CRC check	CRC-16

Application Product List

T7601-TF20-9JSO	2 or 4 pipes ON/OFF with Proportional Fan (ECM) and Fan cut-off. Input for remote sensor or Seasonal Auto-Changeover. Configurable input for Occupancy, SP reduction, Dew point alarm, Shut off or Filter alarm. Line voltage Relay Outputs 2 x SPST 2.2A @ 240 VAC. One of the applications supports 2 pipe proportional with EC Motor. Power 230 VAC 5VA Modbus RTU.
T7600-TF21-9JSO	2 or 4 pipes Proportional with 3 speeds Fan. Input for remote sensor or Seasonal Auto-Changeover. Configurable input for Occupancy, SP reduction, Dew point alarm, Shut off or Filter alarm. Line voltage Relay Outputs 3 x SPST 2.2A @ 240 VAC 5VA. Power 230 VAC. Modbus RTU.
T7600-TF20-9JSO	2 or 4 pipes ON/OFF with 3 speeds Fan. Input for remote sensor or Seasonal Auto-Changeover. Configurable input for Occupancy, SP reduction, Dew point alarm, Shut off or Filter alarm. Line voltage Relay Outputs 3 x SPST 2.2A @ 240 VAC. Power 230 VAC 5VA. Modbus RTU.
T7600-TB21-9JA0	2 pipes Proportional with valve motor feedback and 3 speeds Fan. Input for remote sensor or Seasonal Auto-Changeover. Configurable input for Occupancy, SP reduction, Dew point alarm, Shut off or Filter alarm. Line voltage Relay Outputs 3 x SPST 2.2A @ 240 VAC. Power 230 VAC 5VA. Modbus RTU.
T7603-T000-9JF0	2 pipes ON/OFF. Input for remote sensor. Configurable input for Occupancy, SP reduction or Shut off. Line voltage Relay Output 1 x SPST 2.2A @ 240 VAC. Power 230 VAC 5VA. Modbus RTU.

01 Function Information

Function code	Address	Point Description	value
01	1	Relay 4	0: off 1:on
01	2	Relay 5	0: off 1:on
01	3	Relay 1	0: off 1:on
01	4	Relay 2	0: off 1:on
01	5	Relay 3	0: off 1:on

04 Function Information

Function code	Address	Point Description	value
04	1	Model	Model number + Application ¹⁾
04	2	Room temperature	Room temperature (0~+99°C) ²⁾
04	3	Occupancy status	00: unoccupied, 01: Occupied
04	4	Error	01: Internal sensor shorted warning. 02: Internal sensor opened warning. 03: High temperature warning. Room Temperature > 55°C. 04: Low temperature warning. Room Temperature < 0°C. 05: Remote sensor shorted. 06: Remote sensor opened. 07: Dew risk warning

03/06/16 Function Information

Function code	Address	Point Description	value
03	1	Model	Model number + Application ¹⁾
03	2	Room temperature	Room temperature * 10 (0~ +99°C) ²⁾
03	3	Occupancy status	00: unoccupied, 01: Occupied
03	4	Error	01: Internal sensor shorted warning. 02: Internal sensor opened warning. 03: High temperature warning. Room Temperature > 55°C. 04: Low temperature warning. Room Temperature < 0°C. 05: Remote sensor shorted. 06: Remote sensor opened. 07: Dew risk warning
03/06/16	5	Power	00: Off 01: On
03/06/16	6	Mode	0: Cooling 1: heating 2: ventilation
03/06/16	7	Set point	Setting Range (0~40°C) ²⁾
03/06/16	8	Fan speed (except T7600-TB21- ...JA0)	00: Low 01: Medium 02: High 03: Auto
03/06/16	9	Upper setpoint limit	Setting Range 2~40°C ²⁾
03/06/16	10	Lower setpoint limit	Setting Range 0~38°C ²⁾
03/06/16	11	Unoccupied cooling setpoint (except T7603-T000-...JF0)	Setting Range 22~32°C ²⁾
03/06/16	12	Unoccupied heating setpoint	Setting Range 10~21°C ²⁾

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Function code	Address	Point Description	value
03/06/16	13	Frost protection	00: On 01: Off
03/06/16	14	Frost protection setpoint	Setting Range 0.0~20.0°C ²)
03/06/16	15	Fan in deadband (except T7603-T000-...JF0)	00: Off 01: Low
03/06/16	16	Unoccupied fan speed (except T7603-T000-...JF0)	00: low 01: set speed
03/06/16	17	Power recovery after restart	00: keep last status 01: on 02: off
03/06/16	18	Key lock	00: No lock 01: Lock all keys 02: Lock the keys except Fan Speed and SP Adjustment keys 03: Lock the ON/OFF and Clock keys 04 : Lock the keys except ON/OFF key
03/06/16	19	Screen display	00: Display room temp 01: Display setpoint
03/06/16	20	BI function	00: Contact Open Occupied 01: Contact Closed Occupied 02: Contact Closed indicates dew point risk, 03: Contact open indicates dew point risk 04: Contact Close indicates i.e. Windows open then shut off fan and valve 05: Contact closed indicates filter alarm 06: Contact open indicates filter alarm
03/06/16	21	Temperature unit	00: Celsius Degree (°C) 01: Fahrenheit Degree (°F)
03/06/16	22	Sensor offset	Setting Range -5~5°C ²)
03/06/16	23	Fan speed limit (except T7603-T000-...JF0)	00: 3 speed 01: 2 speed 02: 1 speed 03: no fan
03/06/16	24	Language	00: Chinese 01: English

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Function code	Address	Point Description	value
03/06/16	25	Mode selection (except T7603-T000-...JF0)	00: Cooling/Heating/Ventilation 01: Cooling only 02: Heating only
03/06/16	26	LCD backlight	05~60 Backlight OFF after xx seconds
03/06/16	28	Remote sensor type	00: China market 10KNTC 01: JCI type II 10KNTC
03/06/16	29	Deadband	Setting Range 0.0~10.0℃ ²⁾
03/06/16	30	Auto Changeover (except T7603-T000-...JF0)	00: Disabled 01: Enabled
03/06/16	31	ECM min voltage (only T7601-TF20-...JS0)	Min voltage below which the fan output is 0%. Range 0-10V (0.5V step) ³⁾
03/06/16	32	ECM max voltage (only T7601-TF20-...JS0)	Max voltage above which the fan output is 100%. Range 0- 10V ³⁾
03/06/16	33	ECM relay (only T7601-TF20-...JS0)	00: Disabled 01: Enabled
03/06/16	34	Sample time (only T7600-TF21-...JS0 T7601-TF20-...JS0 T7600-TB21-...JA0)	Setting Range 1~99s ³⁾
03/06/16	35	P (only T7600-TF21-...JS0 T7601-TF20-...JS0 T7600-TB21-...JA0)	Setting Range 1~99 ³⁾
03/06/16	36	I (only T7600-TF21-...JS0 T7601-TF20-...JS0 T7600-TB21-...JA0)	Setting Range 0~99 ³⁾
03/06/16	37	Inter stage difference for floor heater (only T7601-TF20-...JS0 T7600- TF20- ...JS0)	Setting Range 0.0~10 ℃ ²⁾

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Function code	Address	Point Description	value
03/06/16	38	Heating stage for floor heater (only T7601-TF20-...JS0 T7600- TF20- ...JS0)	00: two stage 01: one stage
03/06/16	39	TIO2/ESP control (only T7601-TF20-...JS0 T7600- TF20- ...JS0)	00: could be controlled separately 01: work with FCU simultaneously.
03/06/16	43	TIO2/ESP relay * TIO2/ESP 1	00 : Off 01 : On
03	44	AO1 (only T7600-TF21-...JS0 T7601-TF20-...JS0 T7600-TB21-...JA0)	PWM DUTY(0-100)
03	45	AO2/AI (AO only for T7600TF21- ...JS0&T7601TF20-...JS0 AI for T7600-TB21-9JA0)	PWM DUTY(0-100) AI 0.0-10.0V(0-100) ³⁾

Note:

- 1) Higher 8 bits save model and Low bits for application parameter
- 2) All temperature expand 10 times. Such as 26.5°C, $26.5 \times 10 = 265$ Register data 01 0A
- 3) Float number expand 10 times. Such as 9.5, $9.5 \times 10 = 95$ Register data 00 5F