

Multi-Channel Modular Type High Performance Temperature Controller **TMH Series**

USER MANUAL ***For COMMUNICATION***



TMH Series

Preface

Thank you for purchasing an Autonics product.

Please familiarize yourself with the information contained in the Safety Precautions section before using this product.

This user manual contains information about the product and its proper use, and should be kept in a place where it will be easy to access.

User Manual Guide

- Please familiarize yourself with the information in this manual before using the product.
- This manual provides detailed information on the product's features. It does not offer any guarantee concerning matters beyond the scope of this manual.
- This manual may not be edited or reproduced in either part or whole without permission.
- A user manual is not provided as part of the product package.
Visit our web site (www.autonics.com) to download a copy.
- The manual's content may vary depending on changes to the product's software and other unforeseen developments within Autonics, and is subject to change without prior notice.
Upgrade notice is provided through out homepage.
- We contrived to describe this manual more easily and correctly. However, if there are any corrections or questions, please notify us these on our homepage.

Communication Protocol

TMH Series is accepted to Modbus RTU Protocol.

Users should be aware that it does not support a broadcast command.

User Manual Symbols

Symbol	Description
 Note	Supplementary information for a particular feature.
 Warning	Failure to follow instructions can result in serious injury or death.
 Caution	Failure to follow instructions can lead to a minor injury or product damage.
 Ex.	An example of the concerned feature's use.
※1	Annotation mark.

Safety Considerations

- Following these safety precautions will ensure the safe and proper use of the product and help prevent accidents, as well as minimizing possible hazards.
- Safety precautions are categorized as Warnings and Cautions, as defined below:

 Warning	Warning	Failure to follow the instructions may lead to a serious injury or accident.
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 Caution	Caution	Failure to follow the instructions may lead to a minor injury or accident.
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Warning

- Fail-safe device must be installed when using the unit with machinery that may cause serious injury or substantial economic loss. (e.g. nuclear power control, medical equipment, ships, vehicles, railways, aircraft, combustion apparatus, safety equipment, crime/disaster prevention devices, etc.)
Failure to follow this instruction may result in fire, personal injury, or economic loss.
- Install on a device panel to use.
Failure to follow this instruction may result in fire.
- Do not connect, repair, or inspect the unit while connected to a power source.
Failure to follow this instruction may result in fire.
- Check 'Connections' before wiring.
Failure to follow this instruction may result in fire.
- Do not disassemble or modify the unit.
Failure to follow this instruction may result in fire.



Caution

When connecting the power input and relay output, use AWG 20 (0.50mm²) cable or over and tighten the terminal screw with a tightening torque of 0.74 to 0.90N·m.

When connecting the sensor input and communication cable without dedicated cable, use AWG 28 to 16 cable and tighten the terminal screw with a tightening torque of 0.74 to 0.90 N·m.

Failure to follow this instruction may result in fire or malfunction due to contact failure.

- Use the unit within the rated specifications.
Failure to follow this instruction may result in fire or product damage.
- Use dry cloth to clean the unit, and do not use water or organic solvent.
Failure to follow this instruction may result in fire.
- Do not use the unit in the place where flammable/explosive/corrosive gas, humidity, direct sunlight, radiant heat, vibration, impact, or salinity may be present.
Failure to follow this instruction may result in fire or explosion.
- Keep metal chip, dust, and wire residue from flowing into the unit.
Failure to follow this instruction may result in fire or product damage.

Caution during Use

- Follow instructions in 'Cautions during Use'. Otherwise, it may cause unexpected accidents.
- Check the polarity of the terminals before wiring the temperature sensor. For RTD temperature sensor, wire it as 3-wire type, using cables in same thickness and length. For thermocouple (CT) temperature sensor, use the designated compensation wire for extending wire.
- Keep away from high voltage lines or power lines to prevent inductive noise. In case installing power line and input signal line closely, use line filter or varistor at power line and shielded wire at input signal line. Do not use near the equipment which generates strong magnetic force or high frequency noise.
- Do not apply excessive power when connecting or disconnecting the connectors of the product.
- Install a power switch or circuit breaker in the easily accessible place for supplying or disconnecting the power.
- Do not use the unit for other purpose (e.g. voltmeter, ammeter), but temperature controller.
- When changing the input sensor, turn off the power first before changing. After changing the input sensor, modify the value of the corresponding parameter.
- Power supply should be insulated and limited voltage/current or Class 2, SELV power supply device.
- Do not overlapping communication line and power line. Use twisted pair wire for communication line and connect ferrite bead at each end of line to reduce the effect of external noise.
- Make a required space around the unit for radiation of heat. For accurate temperature measurement, warm up the unit over 20 min after turning on the power.
- Make sure that power supply voltage reaches to the rated voltage within 2 sec after supplying power.
- Do not wire to terminals which are not used.
- Install DIN rail vertically from the ground.
- This unit may be used in the following environments.
 - ① Indoors (in the environment condition rated in 'Specifications')
 - ② Altitude max. 2,000m
 - ③ Pollution degree 2
 - ④ Installation category II

The above specifications are subject to change and some models may be discontinued without notice.

Be sure to follow cautions written in the instruction manual, user manual and the technical descriptions (catalog, homepage).

Table of Contents

Preface	iii
User Manual Guide	iv
Communication Protocol	v
User Manual Symbols	vi
Safety Considerations	vii
Caution during Use	viii
Table of Contents	x
 1 Modbus RTU Protocol.....	13
1.1 Read coil status(Func 01–01H)	13
1.2 Read input status(Func 02–02H)	14
1.3 Read holding registers(Func 03–03H)	15
1.4 Read input registers(Func 04–04H)	16
1.5 Force single coil (Func 05–05H)	17
1.6 Preset single registers(Func 06–06H)	18
1.7 Preset multiple registers(Func 16–10H)	19
1.8 Exception response-error code	20
 2 Modbus Mapping Table.....	21
2.1 TMH2/4 Series [control module]	21
2.1.1 Read coil status (Func 01) / Force single coil (Func 05)	21
2.1.2 Read input status (Func 02)	22
2.1.3 Read input register (Func 04)	23
2.1.4 Read holding register (Func 03) / Preset single register (Func 06) / Preset multiple registers (Func 16)	26
2.1.5 User parameter group	34
2.2 TMHA [Option: Analog input/output module]	37
2.2.1 Read input status (Func 02)	37
2.2.2 Read input register (Func 04)	37
2.2.3 Read holding register (Func 03) / Preset single register (Func 06) / Preset multiple registers (Func 16)	39
2.2.4 User parameter group	41
2.3 TMHE [Option: Digital input, Alarm output module]	44
2.3.1 Read input status (Func 02)	44
2.3.2 Read input register (Func 04)	45
2.3.3 Read holding register (Func 03) / Preset single register (Func 06) / Preset multiple registers (Func 16)	47

2.3.4	User parameter group	48
2.4	TMHCT [Option: CT input module]	51
2.4.1	Read input register (Func 04)	51
2.4.2	Read holding register (Func 03) / Preset single register (Func 06) / Preset multiple registers (Func 16)	52
2.4.3	User parameter group	53
2.5	TMHC [Option: RS422/RS485 communication output]	56
2.5.1	TMHC + expansion (control/option) modules connecting, address mapping table by module	56
2.5.2	Read input register (Func 04)	58
2.5.3	Read input register (Func 04)	61
2.5.4	Read holding register (Func 03) / Preset single register (Func 06) / Preset multiple registers (Func 16)	62
2.5.5	TMH4/2.....	63
2.5.6	TMHA	80
2.5.7	TMHE	87
2.5.8	TMHCT	93
2.5.9	User parameter group	97

1 Modbus RTU Protocol

1.1 Read coil status(Func 01-01H)

Read output(OX reference, Coil) ON/OFF status in the slave device.

(1) Query (Master)

Slave address	Function	Starting address		No. of points		Error check(CRC16)	
		High	Low	High	Low	Low	High
1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte
CRC16							

(2) Response (Slave)

Slave address	Function	Byte count	Data	Data	Data	Error check(CRC16)	
						Low	High
1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte
CRC16							

If read the 10 output status(ON: 1, OFF: 0) within coil 000001(0000 H) to 000010(0009 H) on Slave(Address 17) from Master.

▪ Query (Master)

Slave address	Function	Starting address		No. of points		Error check(CRC16)	
		High	Low	High	Low	Low	High
11 H	01 H	00 H	00 H	00 H	0A H	## H	## H

If the values range from coil 000008(0007 H) to 000001(0000 H) on the Slave are "ON-ON-OFF-OFF-ON-ON-OFF-ON", and the values from 000010(0009 H) to 000009(0008 H) are respectively "OFF-ON".

▪ Response (Slave)

Slave address	Function	Byte count	Data (000008 to 000001)	Data (000010 to 000009)	Error check(CRC16)	
					Low	High
11 H	01 H	02 H	CD H	01 H	## H	## H

1.2 Read input status(Func 02-02H)

Read Input ON/OFF status(1X reference) in Slave device.

(1) Query (Master)

Slave address	Function	Starting address		No. of points		Error check(CRC16)	
		High	Low	High	Low	Low	High
1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte

← CRC16 →

(2) Response (Slave)

Slave address	Function	Byte count	Data	Data	Data	Error check(CRC16)	
						Low	High
1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte

← CRC16 →

If read the 10 input status(ON: 1, OFF: 0) within range 100001(0000 H) to 100010(0009 H) in the Slave from the Master.

▪ Query (Master)

Slave address	Function	Starting address		No. of points		Error check(CRC16)	
		High	Low	High	Low	Low	High
11 H	02 H	00 H	00 H	00 H	0A H	## H	## H

If the values range 100008(0007 H) to 100001(0000 H) on Slave are “ON-ON-OFF-OFF-ON-ON-OFF-ON”, and the values of 100010(0009 H) and 100009(0008 H) are respectively “OFF-ON”.

▪ Response (Slave)

Slave address	Function	Byte count	Data (100008 to 00001)	Data (100010 to 100009)	Error check(CRC16)	
					Low	High
11 H	02 H	02 H	CD H	01 H	## H	## H

1.3 Read holding registers(Func 03-03H)

Read the Binary data of Holding Registers(4X reference) in Slave device.

(1) Query (Master)

Slave address	Function	Starting address		No. of points		Error check(CRC16)	
		High	Low	High	Low	Low	High
1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte

← CRC16 →

(2) Response (Slave)

Slave address	Function	Byte count	Data		Data		Data		Error check(CRC16)	
			High	Low	High	Low	High	Low	Low	High
1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte

← CRC16 →

If read the 2 values from Holding Register 400001(0000 H) to 400002(0001 H), in Slave(Address 17) from the Master.

▪ Query (Master)

Slave address	Function	Starting address		No. of points		Error check(CRC16)	
		High	Low	High	Low	Low	High
11 H	03 H	00 H	00 H	00 H	02 H	## H	## H

If the value of 400001(0000 H) on Slave is "555(22B H)" and the value of 400002(0001 H) is "100(64 H)".

▪ Response (Slave)

Slave address	Function	Byte count	Data		Data		Error check(CRC16)	
			High	Low	High	Low	Low	High
11 H	03 H	04 H	02 H	2B H	00 H	64 H	## H	## H

1.4 Read input registers(Func 04-04H)

Read the Binary data of Input Registers(3X reference) in Slave device.

(1) Query (Master)

Slave address	Function	Starting address		No. of points		Error check(CRC16)	
		High	Low	High	Low	Low	High
1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte

(2) Response (Slave)

Slave address	Function	Byte count	Data	Data	Data	Error check(CRC16)	
						Low	High
1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte

If read the 2 values within the range from Input Register 300001(0000 H) to 300002(0001 H) on Slave(Address 17) from Master.

▪ Query (Master)

Slave address	Function	Starting address		No. of points		Error check(CRC16)	
		High	Low	High	Low	Low	High
11 H	04 H	00 H	00 H	00 H	02 H	## H	## H

If the values of 300001(0000 H) and 300002(0001 H) on Slave are respectively “10(A H)” and “20(14 H)”.

▪ Response (Slave)

Slave address	Function	Byte count	Data		Data		Error check(CRC16)	
			High	Low	High	Low	Low	High
11 H	04 H	04 H	00 H	0A H	00 H	14 H	## H	## H

1.5 Force single coil (Func 05–05H)

Turns ON (FF00 H) or OFF (0000 H) of single coil (0X reference) status within slave device.

(1) Query (Master)

Slave address	Function	Starting address		Preset data		Error check (CRC16)	
		High	Low	High	Low	Low	High
1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte
← CRC16 →							

(2) Response (Slave)

Slave address	Function	Starting address		Preset data		Error check (CRC16)	
		High	Low	High	Low	Low	High
1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte
← CRC16 →							

If Coil 000001 (0000 H) turns ON of Slave (Address 17) from Master.

▪ Query (Master)

Slave address	Function	Starting address		Preset data		Error check (CRC16)	
		High	Low	High	Low	Low	High
11 H	05 H	00 H	00 H	FF H	00 H	## H	## H

▪ Response (Slave)

Slave address	Function	Starting address		Preset data		Error check (CRC16)	
		High	Low	High	Low	Low	High
11 H	05 H	00 H	00 H	FF H	00 H	## H	## H

1.6 Preset single registers(Func 06–06H)

Read the Binary data of single Holding Registers (4X reference) in Slave device.

(1) Query (Master)

Slave address	Function	Register address		Preset data		Error check(CRC16)	
		High	Low	High	Low	Low	High
1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte

← CRC16 →

(2) Response (Slave)

Slave address	Function	Register address		Preset data		Error check(CRC16)	
		High	Low	High	Low	Low	High
1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte

← CRC16 →

If write “10(A H)” to Holding Register 400001(0000 H) on Slave(Address 17) from Master.

▪ Query (Master)

Slave address	Function	Starting address		Preset data		Error check(CRC16)	
		High	Low	High	Low	Low	High
11 H	06 H	00 H	00 H	00 H	0A H	## H	## H

▪ Response (Slave)

Slave address	Function	Starting address		Preset data		Error check(CRC16)	
		High	Low	High	Low	Low	High
11 H	06 H	00 H	00 H	00 H	0A H	## H	## H

1.7 Preset multiple registers(Func 16-10H)

Write the Binary data of Holding Registers (4X reference) consecutively in Slave device.

(1) Query (Master)

Slave Address	Function	Starting Address		No. of register		Byte count	Data		Data		Error check (CRC16)	
		High	Low	High	Low		High	Low	High	Low	Low	High
1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte
CRC16												

(2) Response (Slave)

Slave address	Function	Starting address		No. of register		Error check(CRC16)	
		High	Low	High	Low	Low	High
1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte
CRC16							

If write "10(A H)" in common to the range of Holding Register 400001(0000 H) to 400002(0001 H) on Slave from Master.

▪ Query (Master)

Slave address	Function	Starting Address		No. of register		Byte count	Data		Data		Error check (CRC16)	
		High	Low	High	Low		High	Low	High	Low	Low	High
11 H	10 H	00 H	00 H	00 H	02 H	04 H	00 H	0A H	00 H	0A H	## H	## H

▪ Response (Slave)

Slave address	Function	Starting address		No. of register		Error check(CRC16)	
		High	Low	High	Low	Low	High
11 H	10 H	00 H	00 H	00 H	02 H	## H	## H

Please use the Single Register Write function rather than Multi Register Write function if you use the slave(device) connecting with external devices such as PLC, Graphic Panel, except in the case of download that presets the minimum/maximum or basic value of parameter by Input specifications in PC Loader Program

1.8 Exception response-error code

If occurs an error, send a response command and transmit each Exception Code after set(1) the highest-level bit of received command(Function).

Slave address	Function +80 H	Exception code	Error check(CRC16)	
			Low	High
1Byte	1Byte	1Byte	1Byte	1Byte

← CRC16 →

- ILLEGAL FUNCTION (Exception Code: 01 H): A command that is not supported
- ILLEGAL DATA ADDRESS (Exception Code: 02 H): Starting address of queried data is inconsistent with transmittable address from the device.
- ILLRGAL DATA VALUE (Exception Code: 03 H): Numbers of queried data are inconsistent with the numbers of transmittable (transferable) data from the device.
- SLAVE DEVICE FAILURE (Exception Code: 04 H): Not properly completed the queried command (order).

Read the output status of non-existing coil 001001(03E8 H) [ON: 1, OFF: 0] on Slave(Address 17) from Master.

- Query (Master)

Slave address	Function	Starting address		No. of points		Error check(CRC16)	
		High	Low	High	Low	Low	High
11 H	01 H	03 H	E8 H	00 H	01 H	## H	## H

- Response (Slave)

Slave address	Function +80 H	Exception Code	Error check(CRC16)	
			Low	High
11 H	81 H	02 H	## H	## H

2 Modbus Mapping Table

2.1 TMH2/4 Series [control module]

Parameter address for TMH2 and TMH4 is different.

2.1.1 Read coil status (Func 01) / Force single coil (Func 05)

No(Address)		Func	R/W	Parameter	Description	Set range	Unit	Default	Note
TMH2	TMH4								
000001(0000)	000001(0000)	01/05	R/W	CH1 RUN/STOP	CH1 control output RUN/STOP	0: RUN, 1: STOP	-	0: RUN	
000002(0001)	000002(0001)	01/05	R/W	CH2 RUN/STOP	CH2 control output RUN/STOP				
000003(0002)	000003(0002)	01/05	R/W	CH3 RUN/STOP	CH3 control output RUN/STOP				
000004(0003)	000004(0003)	01/05	R/W	CH4 RUN/STOP	CH4 control output RUN/STOP				
-	000005(0004)	01/05	R/W	CH1 Auto-Tuning Execute	CH1 auto-tuning ON/OFF	0: OFF, 1: ON	-	0: OFF	
-	000006(0005)	01/05	R/W	CH2 Auto-Tuning Execute	CH2 auto-tuning ON/OFF				
-	000007(0006)	01/05	R/W	CH3 Auto-Tuning Execute	CH3 auto-tuning ON/OFF				
-	000008(0007)	01/05	R/W	CH4 Auto-Tuning Execute	CH4 auto-tuning ON/OFF				
000009(0008) to 000050(0031)		01/05	R/W	Reserved					

2.1.2 Read input status (Func 02)

No(Address)		Func	R/W	Parameter	Description	Set range	Unit	Default	Note
TMH2	TMH4								
100001(0000)	100001(0000)	02	R	-	CH1 LED(OUT)	0: OFF, 1: ON	-	-	
100002(0001)	100002(0001)	02	R	-	CH2 LED(OUT)		-	-	
-	100003(0002)	02	R	-	CH3 LED (OUT)		-	-	
-	100004(0003)	02	R	-	CH4 LED (OUT)		-	-	
100005(0004)	-	02	R	-	AL1 LED	0: OFF, 1: ON	-	-	
100006(0005)	-	02	R	-	AL2 LED		-	-	
100007(0006)	-	02	R	-	AL3 LED		-	-	
100008(0007)	-	02	R	-	AL4 LED		-	-	
100009(0008)	-	02	R	-	DI-1 input	0: OFF, 1: ON	-	-	
100010(0009)	-	02	R	-	DI-2 input		-	-	
100011(000A)	100011(000A)	02	R	-	CH1 EVENT 1 status	0: OFF, 1: ON	-	-	
100012(000B)	100012(000B)	02	R	-	CH1 EVENT 2 status		-	-	
100013(000C)	100013(000C)	02	R	-	CH1 EVENT 3 status		-	-	
100014(000D)	100014(000D)	02	R	-	CH1 EVENT 4 status		-	-	
100015(000E)	100015(000E)	02	R	-	CH2 EVENT 1 status	0: OFF, 1: ON	-	-	
100016(000F)	100016(000F)	02	R	-	CH2 EVENT 2 status		-	-	
100017(0010)	100017(0010)	02	R	-	CH2 EVENT 3 status		-	-	
100018(0011)	100018(0011)	02	R	-	CH2 EVENT 4 status		-	-	
-	100019(0012)	02	R	-	CH3 EVENT 1 status	0: OFF, 1: ON	-	-	
-	100020(0013)	02	R	-	CH3 EVENT 2 status		-	-	
-	100021(0014)	02	R	-	CH3 EVENT 3 status		-	-	
-	100022(0015)	02	R	-	CH3 EVENT 4 status		-	-	
-	100023(0016)	02	R	-	CH4 EVENT 1 status	0: OFF, 1: ON	-	-	
-	100024(0017)	02	R	-	CH4 EVENT 2 status		-	-	
-	100025(0018)	02	R	-	CH4 EVENT 3 status		-	-	
-	100026(0019)	02	R	-	CH4 EVENT 4 status		-	-	
100009(0008) to 100050(0031)		02	R	Reserved					

2.1.3 Read input register (Func 04)

No(Address)		Func	R/W	Parameter	Description	Set range	Unit	Default	Note
TMH2	TMH4								
300001(0000) to 300100(0063)		04	R	Reserved					
300101(0064)		04	R	-	Product number H	-	-	0	
300102(0065)		04	R	-	Product number L	-	-	0	
300103(0066)		04	R	-	Hardware version	-	-	100	
300104(0067)		04	R	-	Software version	-	-	100	
300105(0068)		04	R	-	Model name 1	-	-	“TM”	Product name
300106(0069)		04	R	-	Model name 2	-	-	“H□”	Channel
300107(006A)		04	R	-	Model name 3	-	-	“-□”	Option
300108(006B)		04	R	-	Model name 4	-	-	“□□”	Power voltage/ Control output
300109(006C)		04	R	-	Model name 5	-	-	“□ ”	Structure
300110(006D)		04	R	-	Model name 6	-	-	“ ”	
300111(006E)		04	R	-	Model name 7	-	-	“ ”	
300112(006F)		04	R	-	Model name 8	-	-	“ ”	
300113(0070)		04	R	-	Model name 9	-	-	“ ”	
300114(0071)		04	R	-	Model name 10	-	-	“ ”	
300115(0072)		04	R	Reserved					
300116(0073)		04	R	Reserved					
300117(0074)		04	R	Reserved					
300118(0075)		04	R	-	Coil status Start Address	-	-	0	
300119(0076)		04	R	-	Coil status Quantity	-	-	0	
300120(0077)		04	R	-	Input status Start Address	-	-	0	
300121(0078)		04	R	-	Input status Quantity	-	-	0	
300122(0079)		04	R	-	Holding Register Start Address	-	-	0	
300123(007A)		04	R	-	Holding Register Quantity	-	-	0	
300124(007B)		04	R	-	Input Register Start Address	-	-	0	
300125(007C)		04	R	-	Input Register Quantity	-	-	0	
300126(007D)		04	R	-	Channel Quantity	-	-	0	
300127(007E) to 300200(0027)		04	R	Reserved					
301001(03E8)	301001(03E8)	04	R	CH1 Present Value	CH1 present value	Sensor input range, 31000: OPEN, 30000: HHHH, -30000: LLLL	°C/°F, Digit	-	
301002(03E9)	301002(03E9)	04	R	CH2 Present Value	CH2 present value				
-	301003(03EA)	04	R	CH3 Present Value	CH3 present value				
-	301004(03EB)	04	R	CH4 Present Value	CH4 present value				
301005(03EC)	301005(03EC)	04	R	CH1 Dot	CH1 sensor decimal point	0: 0, 1: 0.0	-	0: 0	
301006(03ED)	301006(03ED)	04	R	CH2 Dot	CH2 sensor decimal point				
-	301007(03EE)	04	R	CH3 Dot	CH3 sensor decimal point				

No(Address)		Func	R/W	Parameter	Description	Set range	Unit	Default	Note
TMH2	TMH4								
-	301008(03EF)	04	R	CH4 Dot	CH4 sensor decimal point				
301009(03F0)	301009(03F0)	04	R	CH1 Unit	CH1 sensor temp. unit	0: °C, 1: °F	-	0: °C	
301010(03F1)	301010(03F1)	04	R	CH2 Unit	CH2 sensor temp. unit				
-	301011(03F2)	04	R	CH3 Unit	CH3 sensor temp. unit				
-	301012(03F3)	04	R	CH4 Unit	CH4 sensor temp. unit				
301013(03F4)	301013(03F4)	04	R	CH1 Set Value	CH1 set value	SV Low Limit to SV High Limit	°C/°F, Digit	0	
301014(03F5)	301014(03F5)	04	R	CH2 Set Value	CH2 set value				
-	301015(03F6)	04	R	CH3 Set Value	CH3 set value				
-	301016(03F7)	04	R	CH4 Set Value	CH4 set value				
301017(03F8)	301017(03F8)	04	R	CH1 Heating_MV	CH1 heating MV	0 to 1000 (0.0 to 100.0)	%	-	
301018(03F9)	301018(03F9)	04	R	CH2 Heating_MV	CH2 heating MV				
-	301019(03FA)	04	R	CH3 Heating_MV	CH3 heating MV				
-	301020(03FB)	04	R	CH4 Heating_MV	CH4 heating MV				
301021(03FC)	301021(03FC)	04	R	CH1 Cooling_MV	CH1 cooling MV	0 to 1000 (0.0 to 100.0)	%	-	
301022(03FD)	301022(03FD)	04	R	CH2 Cooling_MV	CH2 cooling MV				
-	301023(03FE)	04	R	CH3 Cooling_MV	CH3 cooling MV				
-	301024(03FF)	04	R	CH4 Cooling_MV	CH4 cooling MV				
-	301025(0400)	04	R	-	CH1 LED(OUT1)	0: OFF, 1: ON	-	-	Bit 0
				-	CH2 LED(OUT2)				Bit 1
				-	CH3 LED(OUT3)				Bit 2
				-	CH4 LED(OUT4)				Bit 3
				-	-	0 fixed	-	-	Bit 4
				-	-				Bit 5
				-	-				Bit 6
				-	-				Bit 7
				-	-				Bit 8
				-	-				Bit 9
				-	-				Bit 4
				-	-				Bit 5
				-	-				Bit 6
				-	-				Bit 7
				-	-				Bit 8
				-	-				Bit 9
301025(0400)	-	04	R	-	CH1 LED(OUT1)	0: OFF, 1: ON	-	-	Bit 0
				-	CH2 LED(OUT2)				Bit 1
				-	CH3 LED(OUT3), H&C control				Bit 2
				-	CH4 LED(OUT4), H&C control				Bit 3
				-	AL1 LED	0: OFF, 1: ON	-	-	Bit 4
				-	AL2 LED				Bit 5
				-	AL3 LED				Bit 6
				-	AL4 LED				Bit 7
301026(0401)	301026(0401)	04	R	-	DI-1 input	0: OFF, 1: ON	-	-	Bit 8
				-	DI-2 input				Bit 9
				-	CH1 EVENT1 status	0: OFF, 1: ON	-	-	
				-	CH1 EVENT2 status				
				-	CH1 EVENT3 status				
				-	CH1 EVENT4 status				
				-	CH2 EVENT1 status	0: OFF, 1: ON	-	-	

No(Address)		Func	R/W	Parameter	Description	Set range	Unit	Default	Note
TMH2	TMH4								
				-	CH2 EVENT2 status				
				-	CH2 EVENT3 status				
				-	CH2 EVENT4 status				
				-	CH3 EVENT1 status				
				-	CH3 EVENT2 status	0: OFF, 1: ON	-	-	
				-	CH3 EVENT3 status				
				-	CH3 EVENT4 status				
				-	CH4 EVENT1 status				
				-	CH4 EVENT2 status	0: OFF, 1: ON	-	-	
				-	CH4 EVENT3 status				
				-	CH4 EVENT4 status				
				-					
301027(0402)	301027(0402)	04	R	Unit Address	Comm. address	1 to 32	-	1	
301028(0403)	301028(0403)	04	R	CT1_Heater Current	CT1 heater current value monitoring	0 to 500 (0.0 to 50.0)	A	-	
301029(0404)	301029(0404)	04	R	CT2_Heater Current	CT2 heater current value monitoring				
301030(0405)	301030(0405)	04	R	CT3_Heater Current	CT3 heater current value monitoring				
301031(0406)	301031(0406)	04	R	CT4_Heater Current	CT4 heater current value monitoring				
301032(0407) to 301050(0419)	301032(0407) to 301050(0419)	04	R	Reserved					

※ Bit data for 301025(0400) address

Bit F	Bit E	Bit D	Bit C	Bit B	Bit A	Bit 9	Bit 8	Bit 9	Bit 8	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
-	-	-	-	-	-	DI-2 input	DI-1 input	AL4 LED	AL3 LED	AL2 LED	AL1 LED	CH4 LED	CH3 LED	CH2 LED	CH1 LED
0	0	0	0	0	0	0 or 1	0 or 1	0 or 1	0 or 1	0 or 1	0 or 1	0 or 1	0 or 1	0 or 1	0 or 1
1 byte								1 byte							

2.1.4 Read holding register (Func 03) / Preset single register (Func 06) / Preset multiple registers (Func 16)

2.1.4.1 Monitoring group

No(Address) TMH2	TMH4	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
400001(0000)		03/06/16	R/W	CH1 SV	Temp. set value	SV Low Limit to SV High Limit	°C/°F, Digit	0	
400002(0001)		03/06/16	R/W	CH1 Heating_MV	Heating MV	0 to 1000 (0.0 to 100.0)	%	-	
400003(0002)		03/06/16	R/W	CH1 Cooling_MV	Cooling MV	0 to 1000 (0.0 to 100.0)	%	-	
400004(0003)		03/06/16	R/W	CH1 Auto-Manual Control	Auto/Manual control	0: AUTO, 1: MANUAL	-	0: AUTO	
400005(0004) to 400050(0031)		03/06/16	R/W	CH1 Reserved					
401001(03E8) to 401050(0419)		03/06/16	R/W	CH2 Parameter - Same as above CH1					
402001(07D0) to 402050(0801)		03/06/16	R/W	CH3 Parameter - Same as above CH1					
403001(0BB8) to 403050(0BE9)		03/06/16	R/W	CH4 Parameter - Same as above CH1					

2.1.4.2 Operating (control operation) group

No(Address)		Func	R/W	Parameter	Description	Set range	Unit	Default	Note
TMH2	TMH4								
400051(0032)		03/06/16	R/W	CH1 RUN_STOP	control output RUN/STOP	0: RUN, 1: STOP	-	0: RUN	
400052(0033)		03/06/16	R/W	CH1 Multi SV No	Multi SV No.	0: SV-0, 1: SV-1, 2: SV-2, 3: SV-3	-	0: SV-0	
400053(0034)		03/06/16	R/W	CH1 SV-0 Setting Value	SV-0 set value	SV Low Limit to SV High Limit	°C/°F, Digit	0	
400054(0035)		03/06/16	R/W	CH1 SV-1 Setting Value	SV-1 set value				
400055(0036)		03/06/16	R/W	CH1 SV-2 Setting Value	SV-2 set value				
400056(0037)		03/06/16	R/W	CH1 SV-3 Setting Value	SV-3 set value				
400057(0038) to 400100(0063)		03/06/16	R/W	CH1 Reserved					
401051(041A) to 401100(044B)		03/06/16	R/W	CH2 Parameter - Same as above CH1					
402051(0802) to 402100(0833)		03/06/16	R/W	CH3 Parameter - Same as above CH1					
403051(0BEA) to 403100(0C1B)		03/06/16	R/W	CH4 Parameter - Same as above CH1					

2.1.4.3 Control operation group

No(Address)		Func	R/W	Parameter	Description	Set range	Unit	Default	Note
TMH2	TMH4								
400101(0064)		03/06/16	R/W	CH1 Auto-Tuning Execute	Auto-tuning ON/OFF	0: OFF, 1: ON	-	0: OFF	
400102(0065)		03/06/16	R/W	CH1 Heating_Proportional Band	Heating, proportional band	Temp. H, Analog: 1 to 999 Temp. L: 1 to 9999 (0.1 to 999.9)	°C/°F, %F.S	10	
400103(0066)		03/06/16	R/W	CH1 Cooling_Proportional Band	Cooling, proportional band				
400104(0067)		03/06/16	R/W	CH1 Heating_Integral Time	Heating, integral time	0 to 9999	Sec	0	
400105(0068)		03/06/16	R/W	CH1 Cooling_Integral Time	Cooling, integral time				
400106(0069)		03/06/16	R/W	CH1 Heating_Derivation Time	Heating, derivation time	0 to 9999	Sec	0	
400107(006A)		03/06/16	R/W	CH1 Cooling_Derivation Time	Cooling, derivation time				
400108(006B)		03/06/16	R/W	CH1 Dead_Overlap band	Heating&Cooling control, dead band	Temp. H, Analog: -999 to 999 Temp. L: -9999 to 9999 (-999.9 to 999.9)	°C/°F, %F.S	0	
400109(006C)		03/06/16	R/W	CH1 Manual Reset	P/PD control, manual reset	0 to 1000 (0.0 to 100.0)	%	500(50.0)	
400110(006D)		03/06/16	R/W	CH1 Heating_ON Hysteresis	Heating, hysteresis	Temp. H, Analog: 1 to 100 Temp. L: 1 to 1000 (0.1 to 100.0)	°C/°F, Digit	2	
400111(006E)		03/06/16	R/W	CH1 Heating_OFF Offset	Heating, OFF offset	Temp. H, Analog: 0 to 100 Temp. L: 0 to 1000 (0 to 100.0)	°C/°F, Digit	0	
400112(006F)		03/06/16	R/W	CH1 Cooling_ON Hysteresis	Cooling, hysteresis	Temp. H, Analog: 1 to 100 Temp. L: 1 to 1000 (0.1 to 100.0)	°C/°F, Digit	2	
400113(0070)		03/06/16	R/W	CH1 Cooling_OFF Offset	Cooling, OFF offset	Temp. H, Analog: 0 to 100 Temp. L: 0 to 1000 (0 to 100.0)	°C/°F, Digit	0	
400114(0071)		03/06/16	R/W	CH1 MV Low Limit	MV low-limit set value	Heating, Cooling control 0.0 to MV High Limit - 0.1	%	0 (0.0)	
						H&C control -100.0 to 0.0		-100(-100.0)	
400115(0072)		03/06/16	R/W	CH1 MV High Limit	MV high-limit set value	Heating, Cooling control MV Low Limit + 0.1 to 100.0	%	1000(100.0)	
						H&C control 0 to 100.0		1000(100.0)	
400116(0073)		03/06/16	R/W	CH1 MV rate limit	MV change rate limit	0: OFF, 1 to 1000 (0.1 to 100.0)	%/SEC	0: OFF	
400117(0074)		03/06/16	R/W	CH1 Ramp_Up Rate	Ramp up rate	0 to 9999	°C/°F, Digit	0	
400118(0075)		03/06/16	R/W	CH1 Ramp_Down Rate	Ramp down rate	0 to 9999	°C/°F, Digit	0	
400119(0076)		03/06/16	R/W	CH1 Ramp Time Unit	Ramp time unit	0: SEC, 1: MIN, 2: HOUR	-	1: MIN	
400120(0077)		03/06/16	R/W	CH1 PV transfer	Auto control, SV selection	0: OFF, 1: ON	-	0: OFF	
400121(0078)		03/06/16	R/W	CH1 Soft start time	Soft start time	0: OFF, 1 to 9999	SEC	0: OFF	

No(Address)		Func	R/W	Parameter	Description	Set range	Unit	Default	Note
TMH2	TMH4								
400122(0079)		03/06/16	R/W	CH1 Soft start time unit	Soft start time unit	0:SEC, 1:MIN, 2:HOURL	-	0: SEC	
400123(007A)		03/06/16	R/W	CH1 Soft start MV	Soft start MV	1 to 1000 (0.1 to 100.0)	%	1000(100.0)	
400124(007B)		03/06/16	R/W	CH1 Operating Type	Control output operation mode	0: HEATING, 1: COOLING, 2: H&C	-	0: HEATING	
400125(007C)		03/06/16	R/W	CH1 Control Method	Temperature control method	Heating, Cooling control 0: PID, 1: ON/OFF	-	0: PID	
						H&C control 0: PID-PID, 1: PID-ON/OFF, 2: ON/OFF-PID, 3: ON/OFF-ON/OFF	-	0: PID-PID	
400126(007D)		03/06/16	R/W	CH1 Auto-Tuning Type	Auto-tuning mode	0: TUNE1, 1: TUNE2	-	0: TUNE1	
400127(007E)		03/06/16	R/W	CH1 Heating_Control Time	Heating, control cycle	1 to 1200(0.1 to 120.0) 10 to 1200(1.0 to 120.0)	Sec	RY: 200(20.0), SSR: 20(2.0)	
400128(007F)		03/06/16	R/W	CH1 Cooling_Control Time	Cooling, control cycle	1 to 1200(0.1 to 120.0) 10 to 1200(1.0 to 120.0)	Sec	RY: 200(20.0), SSR: 20(2.0)	
400129(0080)		03/06/16	R/W	CH1 Heating_OUTPUT(SSR_CURRTYPE)	Heating, control output type	0: SSR, 1: CURRENT	-	1: CURRENT	
400130(0081)		03/06/16	R/W	CH1 Heating_CURRENT OUTPUT RANGE	Heating, current output range	0: 4-20, 1: 0-20	mA	0: 4-20	
400131(0082)		03/06/16	R/W	CH1 Cooling_OUTPUT(SSR_CURRTYPE)	Cooling, control output type	0: SSR, 1: CURRENT	-	1: CURRENT	
400132(0083)		03/06/16	R/W	CH1 Cooling_CURRENT OUTPUT RANGE	Cooling, current output range	0: 4-20, 1: 0-20	mA	0: 4-20	
400133(0084) to 400150(0095)		03/06/16	R/W	CH1 Reserved					
401101(044C) to 401150(047D)		03/06/16	R/W	CH2 Parameter - Same as above CH1					
402101(0834) to 402150(0865)		03/06/16	R/W	CH3 Parameter - Same as above CH1					
403101(0C1C) to 403150(0C4D)		03/06/16	R/W	CH4 Parameter - Same as above CH1					

2.1.4.4 Initial setting group

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
TMH2	TMH4							
400151(0096)	03/06/16	R/W	CH1 Input Type	Input type	0: K(CA).H to 32: 4 to 20mA	-	0: K(CA).H	
400152(0097)	03/06/16	R/W	CH1 Unit	Sensor temp. unit	0: °C, 1: °F	-	°C	
400153(0098)	03/06/16	R/W	CH1 Low-limit Input Value	Analog low-limit input value	Min. operational value to High-limit Input Value Settings – F.S. 10%	Digit	0000	
400154(0099)	03/06/16	R/W	CH1 High-limit Input Value	Analog high-limit input value	Low-limit Input Value Settings + F.S. 10% to Max. operational value	Digit	1000	
400155(009A)	03/06/16	R/W	CH1 Decimal Point	Scale decimal point	0: 0, 1: 0.0, 2: 0.00, 3: 0.000	-	1: 0.0	
400156(009B)	03/06/16	R/W	CH1 Low-limit Scale Value	Scale low-limit display value	-9999 to 9999	Digit	0	
400157(009C)	03/06/16	R/W	CH1 High-limit Scale Value	Scale high-limit display value	-9999 to 9999	Digit	1000	
400158(009D)	03/06/16	R/W	CH1 Analog Input Unit	Analog input type unit	0: °C, 1: °F, 2: %	-	0: °C	
400159(009E)	03/06/16	R/W	CH1 Input Func	Analog input special function	0: LINEAR, 1: ROOT, 2: SQUARE	-	0: LINEAR	
400160(009F)	03/06/16	R/W	CH1 Root Low Cut	Root function low cut point	-9999 to 9999	Digit	0	
400161(00A0)	03/06/16	R/W	CH1 Input Bias	Input correction	Temp. H, Analog: -999 to 999, Temp. L: -9999 to 9999 (-999.9 to 999.9)	°C/°F, Digit	0	
400162(00A1)	03/06/16	R/W	CH1 Input Digital Filter	Input digital filter	1 to 1200 (0.1 to 120.0)	Sec	1(0.1)	
400163(00A2)	03/06/16	R/W	CH1 SV Low Limit	SV Low Limit set value	Temp.: Sensor input low-limit value to SV High Limit – 1Digit Analog: Low-limit scale value to SV High Limit – 1Digit	°C/°F, %F.S.	-200	
400164(00A3)	03/06/16	R/W	CH1 SV High Limit	SV High Limit set value	Temp.: SV Low Limit + 1Digit to Sensor input high-limit Analog: SV Low Limit + 1Digit to High-limit scale value	°C/°F, %F.S.	1350	
400165(00A4)	03/06/16	R/W	CH1 RSV Target Address	RSV Master address	0, 1 to 48	-	0	
400166(00A5)	03/06/16	R/W	CH1 RSV Target CH	RSV Master channel	0: CH1, 1: CH2, 2: CH3, 3: CH4	-	CH□:CH□	
400167(00A6)	03/06/16	R/W	CH1 RSV Target	RSV Master channel target	0: OFF, 1: PV, 2: SV	-	0: OFF	
400168(00A7)	03/06/16	R/W	CH1 SV Tracking	SV tracking	0: OFF, 1: ON	-	0: OFF	
400169(00A8)	03/06/16	R/W	CH1 TUNE2 DV	TUNE2 mode deviation	Temp. H, Analog: -999 to 999, Temp. L: -9999 to 9999 (-999.9 to 999.9)	Digit	0	
400170(00A9) to 400200(00C7)	03/06/16	R/W	CH1 Reserved					
401151(047E) to 401200(04AF)	03/06/16	R/W	CH2 Parameter - Same as above CH1					
402151(0866) to 402200(0897)	03/06/16	R/W	CH3 Parameter - Same as above CH1					
403151(0C4E) to 403200(0C7F)	03/06/16	R/W	CH4 Parameter - Same as above CH1					

2.1.4.5 Control setting group

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
TMH2	TMH4							
400201(00C8)	03/06/16	R/W	CH1 Multi SV	Multi SV No.	0: 1EA, 1: 2EA, 2: 4EA	-	0: 1EA	
400202(00C9)	03/06/16	R/W	CH1 Initial Manual MV	Baseline MV for manual control	0: AUTO-MV, 1: PRESET-MV	-	0: AUTO-MV	
400203(00CA)	03/06/16	R/W	CH1 Preset Manual MV	Manual control, initial MV	Heating, Cooling control: 0 to 1000 (0.0 to 100.0), Heating&Cooling control: -1000 (-100.0) to 1000 (100.0)	%	0	
400204(00CB)	03/06/16	R/W	CH1 Sensor Error MV	Sensor error, MV	Heating, Cooling control, PID: 0 to 1000 (0.0 to 100.0), ON/OFF: 0(OFF), 1000(ON), Heating&Cooling control, PID: -1000 to 1000(-100.0 to 100.0), ON/OFF: -1000(cooling ON), 0(OFF), 1000(heating ON)	%	0	
400205(00CC)	03/06/16	R/W	CH1 Stop MV	STOP, control output	Heating, Cooling control, PID: 0 to 1000 (0.0 to 100.0), ON/OFF: 0(OFF), 1000(ON) Heating&Cooling control, PID: -1000 to 1000 (-100.0 to 100.0), ON/OFF: -1000(cooling ON), 0(OFF), 1000(heating ON)	%	0	
400206(00CD)	03/06/16	R/W	CH1 Stop Alarm Out	Stop, alarm output	0: Continue, 1: OFF	-	0: Continue	
400207(00CE) to 400250(00F9)	03/06/16	R/W	CH1 Reserved					
401201(04B0) to 401250(04E1)	03/06/16	R/W	CH2 Parameter - Same as above CH1					
402201(0898) to 402250(08C9)	03/06/16	R/W	CH3 Parameter - Same as above CH1					
403201(0C80) to 403250(0CB1)	03/06/16	R/W	CH4 Parameter - Same as above CH1					

2.1.4.6 Event setting group

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
TMH2	TMH4							
400251(00FA)	03/06/16	R/W	CH1 Event Mode 1	CH1 alarm operation mode 1	0: OFF, 1: AL-1, 2: AL-2, 3: AL-3, 4: AL-4, 5: AL-5, 6: AL-6, 7: LBA, 8: SBA, 9: HBA		1: AL-1	
400252(00FB)	03/06/16	R/W	CH1 Event Mode 2	CH1 alarm operation mode 2				
400253(00FC)	03/06/16	R/W	CH1 Event Mode 3	CH1 alarm operation mode 3				
400254(00FD)	03/06/16	R/W	CH1 Event Mode 4	CH1 alarm operation mode 4				
400255(00FE)	03/06/16	R/W	CH1 Event Type 1	CH1 alarm option 1	0: AL-A, 1: AL-B, 2: AL-C, 3: AL-D, 4: AL-E, 5: AL-F		0: AL-A	
400256(00FF)	03/06/16	R/W	CH1 Event Type 2	CH1 alarm option 2				
400257(0100)	03/06/16	R/W	CH1 Event Type 3	CH1 alarm option 3				
400258(0101)	03/06/16	R/W	CH1 Event Type 4	CH1 alarm option 4				
400259(0102)	03/06/16	R/W	CH1 Event Low 1	CH1 alarm low-limit set value 1	Deviation alarm: -F.S to F.S, Absoulte alarm: Within the dedicated input type		1550	
400260(0103)	03/06/16	R/W	CH1 Event High 1	CH1 alarm high-limit set value 1				
400261(0104)	03/06/16	R/W	CH1 Event Low 2	CH1 alarm low-limit set value 2				

No(Address)		Func	R/W	Parameter	Description	Set range	Unit	Default	Note
TMH2	TMH4								
400262(0105)		03/06/16	R/W	CH1 Event High 2	CH1 alarm high-limit set value 2				
400263(0106)		03/06/16	R/W	CH1 Event Low 3	CH1 alarm low-limit set value 3				
400264(0107)		03/06/16	R/W	CH1 Event High 3	CH1 alarm high-limit set value 3				
400265(0108)		03/06/16	R/W	CH1 Event Low 4	CH1 alarm low-limit set value 4				
400266(0109)		03/06/16	R/W	CH1 Event High 4	CH1 alarm high-limit set value 4				
400267(010A)		03/06/16	R/W	CH1 Event Hysteresis 1	CH1 alarm hysteresis 1	Temp. H, Analog: 1 to 100, Temp. L: 1 to 1000 (0.1 to 100.0)	°C/°F, Digit	1	
400268(010B)		03/06/16	R/W	CH1 Event Hysteresis 2	CH1 alarm hysteresis 2				
400269(010C)		03/06/16	R/W	CH1 Event Hysteresis 3	CH1 alarm hysteresis 3				
400270(010D)		03/06/16	R/W	CH1 Event Hysteresis 4	CH1 alarm hysteresis 4				
400271(010E)		03/06/16	R/W	CH1 Alarm NO/NC	CH1 alarm output contact type	0: NO, 1: NC	-	0: NO	
400272(010F)		03/06/16	R/W	CH1 Event ON Delay Time 1	CH1 alarm ON delay time 1	0 to 3600	Sec	0	
400273(0110)		03/06/16	R/W	CH1 Event OFF Delay Time 1	CH1 alarm OFF delay time 1				
400274(0111)		03/06/16	R/W	CH1 Event ON Delay Time 2	CH1 alarm ON delay time 2				
400275(0112)		03/06/16	R/W	CH1 Event OFF Delay Time 2	CH1 alarm OFF delay time 2				
400276(0113)		03/06/16	R/W	CH1 Event ON Delay Time 3	CH1 alarm ON delay time 3				
400277(0114)		03/06/16	R/W	CH1 Event OFF Delay Time 3	CH1 alarm OFF delay time 3				
400278(0115)		03/06/16	R/W	CH1 Event ON Delay Time 4	CH1 alarm ON delay time 4				
400279(0116)		03/06/16	R/W	CH1 Event OFF Delay Time 4	CH1 alarm OFF delay time 4				
400280(0117)		03/06/16	R/W	CH1 Alarm Output Target1	CH1 alarm output target address 1	0, 1: 49 to 16: 64	-	0	
400281(0118)		03/06/16	R/W	CH1 Alarm Output Target2	CH1 alarm output target address 2				
400282(0119)		03/06/16	R/W	CH1 Alarm Output Target3	CH1 alarm output target address 3				
400283(011A)		03/06/16	R/W	CH1 Alarm Output Target4	CH1 alarm output target address 4				
400284(011B)		03/06/16	R/W	CH1 Alarm Output Target1 CH	CH1 alarm output target channel 1	0: Alarm1 to 7: Alarm8	-	0: Alarm1	
400285(011C)		03/06/16	R/W	CH1 Alarm Output Target2 CH	CH1 alarm output target channel 2				
400286(011D)		03/06/16	R/W	CH1 Alarm Output Target3 CH	CH1 alarm output target channel 3				
400287(011E)		03/06/16	R/W	CH1 Alarm Output Target4 CH	CH1 alarm output target channel 4				
400288(011F)		03/06/16	R/W	CH1 LBA Time 1	CH1 LBA monitoring time 1	0 to 9999	Sec	0	
400289(0120)		03/06/16	R/W	CH1 LBA Band 1	CH1 LBA detection band 1	Temp. H: 0 to 999, Temp. L: 0 to 9999 (0.0 to	°C/°F,	2 20(2.0)	

No(Address)		Func	R/W	Parameter	Description	Set range	Unit	Default	Note
TMH2	TMH4								
						999.9), Analog: 0 to 1000 (0.0 to 100.0)	%F.S	2(0.2)	
400290(0121)		03/06/16	R/W	CH1 LBA Time 2	CH1 LBA monitoring time 2	0 to 9999	Sec	0	
400291(0122)		03/06/16	R/W	CH1 LBA Band 2	CH1 LBA detection band 2	Temp. H: 0 to 999, Temp. L: 0 to 9999 (0.0 to 999.9), Analog: 0 to 1000 (0.0 to 100.0)	°C/°F, %F.S	2 20(2.0) 2(0.2)	
400292(0123)		03/06/16	R/W	CH1 LBA Time 3	CH1 LBA monitoring time 3	0 to 9999	Sec	0	
400293(0124)		03/06/16	R/W	CH1 LBA Band 3	CH1 LBA detection band 3	Temp. H: 0 to 999, Temp. L: 0 to 9999 (0.0 to 999.9), Analog: 0 to 1000 (0.0 to 100.0)	°C/°F, %F.S	2 20(2.0) 2(0.2)	
400294(0125)		03/06/16	R/W	CH1 LBA Time 4	CH1 LBA monitoring time 4	0 to 9999	Sec	0	
400295(0126)		03/06/16	R/W	CH1 LBA Band 4	CH1 LBA detection band 4	Temp. H: 0 to 999, Temp. L: 0 to 9999 (0.0 to 999.9), Analog: 0 to 1000 (0.0 to 100.0)	°C/°F, %F.S	2 20(2.0) 2(0.2)	
400296(0127)		03/06/16	R/W	CH1 CT Target 1	CH1 CT address 1	0, 1: 65 to 16: 80		0	
400297(0128)		03/06/16	R/W	CH1 CT Target 2	CH1 CT address 2				
400298(0129)		03/06/16	R/W	CH1 CT Target 3	CH1 CT address 3				
400299(012A)		03/06/16	R/W	CH1 CT Target 4	CH1 CT address 4				
400300(012B)		03/06/16	R/W	CH1 CT Input 1	CH1 CT input 1	0: CT1 to 7: CT8		CH□:CT□	
400301(012C)		03/06/16	R/W	CH1 CT Input 2	CH1 CT input 2				
400302(012D)		03/06/16	R/W	CH1 CT Input 3	CH1 CT input 3				
400303(012E)		03/06/16	R/W	CH1 CT Input 4	CH1 CT input 4				
400304(012F) to 400350(015D)		03/06/16	R/W	CH1 Reserved					
401251(04E2) to 401350(0545)		03/06/16	R/W	CH2 Parameter - Same as above CH1					
402251(08CA) to 402350(092D)		03/06/16	R/W	CH3 Parameter - Same as above CH1					
403251(0CB2) to 403350(0D15)		03/06/16	R/W	CH4 Parameter - Same as above CH1					

2.1.4.7 Option(digital input setting) group

No(Address)		Func	R/W	Parameter	Description	Set range	Unit	Default	Note
TMH2	TMH4								
400351(015E)		03/06/16	R/W	CH1 DI Target	CH1 DI target address	0, 1: 49 to 16: 64	-	0	
400352(015F)		03/06/16	R/W	CH1 Digital Input 1 Func	CH1 DI-1 input terminal	0: OFF, 1: STOP, 2: AL-RESET, 3: Manual, 4: Multi-SV, 5: Remote SV	-	0: OFF	
400353(0160)		03/06/16	R/W	CH1 Digital Input 2 Func	CH1 DI-2 input terminal				
400354(0161)		03/06/16	R/W	CH1 Digital Input 3 Func	CH1 DI-3 input terminal				
400355(0162)		03/06/16	R/W	CH1 Digital Input 4 Func	CH1 DI-4 input terminal				
400356(0163)		03/06/16	R/W	CH1 Digital Input 5 Func	CH1 DI-5 input terminal				
400357(0164)		03/06/16	R/W	CH1 Digital Input 6 Func	CH1 DI-6 input terminal				
400358(0165)		03/06/16	R/W	CH1 Digital Input 7 Func	CH1 DI-7 input terminal				
400359(0166)		03/06/16	R/W	CH1 Digital Input 8 Func	CH1 DI-8 input terminal				
400360(0167) to 400400(018F)		03/06/16	R/W	CH1 Reserved					
401351(0546) to 401400(0577)		03/06/16	R/W	CH2 Parameter - Same as above CH1					
402351(092E) to 402400(0959)		03/06/16	R/W	CH3 Parameter - Same as above CH1					
403351(0D16) to 403400(0D47)		03/06/16	R/W	CH4 Parameter - Same as above CH1					

2.1.4.8 Common(common parameter setting) group

No(Address)		Func	R/W	Parameter	Description	Set range	Unit	Default	Note
TMH2	TMH4								
400401(0190)		03/06/16	R/W	Bit Per Second	Communication speed	0: 4800, 1: 9600, 2: 19200, 3: 38400, 4: 115200	bps	1: 9600	
400402(0191)		03/06/16	R/W	Parity Bit	Communication parity bit	0: NONE, 1: EVEN, 2: ODD	-	0: NONE	
400403(0192)		03/06/16	R/W	Stop Bit	Communication stop bit	0: 1, 1: 2	bit	1: 2	
400404(0193)		03/06/16	R/W	Response Waiting Time	Communication response wait time	5 to 99	ms	20	
400405(0194)		03/06/16	R/W	Communication Write	Communication writing enable/disable	0: ENABLE, 1: DISABLE	-	0: ENABLE	
400406(0195)		03/06/16	R/W	Parameter Initialize	Parameter reset	0: NO, 1: YES	-	0: NO	
400407(0196)		03/06/16	R/W	Alarm1 Logic	Alarm1 alarm output logic operation	0: OR, 1: AND	-	0: OR	
400408(0197)		03/06/16	R/W	Alarm2 Logic	Alarm2 alarm output logic operation				
400409(0198)		03/06/16	R/W	Alarm3 Logic	Alarm3 alarm output logic operation				
400410(0199)		03/06/16	R/W	Alarm4 Logic	Alarm4 alarm output logic operation				
400411(019A) to 400450(01C1)		03/06/16	R/W	Reserved					

2.1.5 User parameter group

(1) User parameter group order assignment

No(Address)		Func	R/W	Parameter	Set range	Unit	Default	Note
TMH2	TMH4							
450001(C350)		03/06/16	R/W	User parameter group > No. 1 parameter assignment	The dedicated parameter address	-	0	
450002(C351)		03/06/16	R/W	User parameter group > No. 2 parameter assignment				
450003(C352)		03/06/16	R/W	User parameter group > No. 3 parameter assignment				
450004(C353)		03/06/16	R/W	User parameter group > No. 4 parameter assignment				
450005(C354)		03/06/16	R/W	User parameter group > No. 5 parameter assignment				
450006(C355)		03/06/16	R/W	User parameter group > No. 6 parameter assignment				
450007(C356)		03/06/16	R/W	User parameter group > No. 7 parameter assignment				
450008(C357)		03/06/16	R/W	User parameter group > No. 8 parameter assignment				
450009(C358)		03/06/16	R/W	User parameter group > No. 9 parameter assignment				
450010(C359)		03/06/16	R/W	User parameter group > No. 10 parameter assignment				
450011(C35A)		03/06/16	R/W	User parameter group > No. 11 parameter assignment				
450012(C35B)		03/06/16	R/W	User parameter group > No. 12 parameter assignment				
450013(C35C)		03/06/16	R/W	User parameter group > No. 13 parameter assignment				
450014(C35D)		03/06/16	R/W	User parameter group > No. 14 parameter assignment				
450015(C35E)		03/06/16	R/W	User parameter group > No. 15 parameter assignment				
450016(C35F)		03/06/16	R/W	User parameter group > No. 16 parameter assignment				
450017(C360)		03/06/16	R/W	User parameter group > No. 17 parameter assignment				
450018(C361)		03/06/16	R/W	User parameter group > No. 18 parameter assignment				
450019(C362)		03/06/16	R/W	User parameter group > No. 19 parameter assignment				
450020(C363)		03/06/16	R/W	User parameter group > No. 20 parameter assignment				
450021(C364)		03/06/16	R/W	User parameter group > No. 21 parameter assignment				
450022(C365)		03/06/16	R/W	User parameter group > No. 22 parameter assignment				
450023(C366)		03/06/16	R/W	User parameter group > No. 23 parameter assignment				
450024(C367)		03/06/16	R/W	User parameter group > No. 24 parameter assignment				

No(Address)		Func	R/W	Parameter	Set range	Unit	Default	Note
TMH2	TMH4							
450025(C368)		03/06/16	R/W	User parameter group > No. 25 parameter assignment				
450026(C369)		03/06/16	R/W	User parameter group > No. 26 parameter assignment				
450027(C36A)		03/06/16	R/W	User parameter group > No. 27 parameter assignment				
450028(C36B)		03/06/16	R/W	User parameter group > No. 28 parameter assignment				
450029(C36C)		03/06/16	R/W	User parameter group > No. 29 parameter assignment				
450030(C36D)		03/06/16	R/W	User parameter group > No. 30 parameter assignment				

(2) User parameter group assignment

No(Address)		Func	R/W	Parameter	Set range	Unit	Default	Note
TMH2	TMH4							
450031(C36E)		03/06/16	R/W	User parameter group > No. 1 parameter	The dedicated parameter set range	-	0	
450032(C36F)		03/06/16	R/W	User parameter group > No. 2 parameter				
450033(C370)		03/06/16	R/W	User parameter group > No. 3 parameter				
450034(C371)		03/06/16	R/W	User parameter group > No. 4 parameter				
450035(C372)		03/06/16	R/W	User parameter group > No. 5 parameter				
450036(C373)		03/06/16	R/W	User parameter group > No. 6 parameter				
450037(C374)		03/06/16	R/W	User parameter group > No. 7 parameter				
450038(C375)		03/06/16	R/W	User parameter group > No. 8 parameter				
450039(C376)		03/06/16	R/W	User parameter group > No. 9 parameter				
450040(C377)		03/06/16	R/W	User parameter group > No. 10 parameter				
450041(C378)		03/06/16	R/W	User parameter group > No. 11 parameter				
450042(C379)		03/06/16	R/W	User parameter group > No. 12 parameter				
450043(C37A)		03/06/16	R/W	User parameter group > No. 13 parameter				
450044(C37B)		03/06/16	R/W	User parameter group > No. 14 parameter				
450045(C37C)		03/06/16	R/W	User parameter group > No. 15 parameter				
450046(C37D)		03/06/16	R/W	User parameter group > No. 16 parameter				
450047(C37E)		03/06/16	R/W	User parameter group > No. 17 parameter				
450048(C37F)		03/06/16	R/W	User parameter group > No. 18 parameter				
450049(C380)		03/06/16	R/W	User parameter group > No. 19 parameter				
450050(C381)		03/06/16	R/W	User parameter group > No. 20 parameter				

No(Address)		Func	R/W	Parameter	Set range	Unit	Default	Note
TMH2	TMH4							
450051(C382)		03/06/16	R/W	User parameter group > No. 21 parameter				
450052(C383)		03/06/16	R/W	User parameter group > No. 22 parameter				
450053(C384)		03/06/16	R/W	User parameter group > No. 23 parameter				
450054(C385)		03/06/16	R/W	User parameter group > No. 24 parameter				
450055(C386)		03/06/16	R/W	User parameter group > No. 25 parameter				
450056(C387)		03/06/16	R/W	User parameter group > No. 26 parameter				
450057(C388)		03/06/16	R/W	User parameter group > No. 27 parameter				
450058(C389)		03/06/16	R/W	User parameter group > No. 28 parameter				
450059(C38A)		03/06/16	R/W	User parameter group > No. 29 parameter				
450060(C38B)		03/06/16	R/W	User parameter group > No. 30 parameter				

2.2 TMHA [Option: Analog input/output module]

2.2.1 Read input status (Func 02)

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
100001(0000)	02	R	-	CH1 LED (transmission output 1)	0: OFF, 1: ON			
100002(0001)	02	R	-	CH2 LED (transmission output 2)				
100003(0002)	02	R	-	CH3 LED (transmission output 3)				
100004(0003)	02	R	-	CH4 LED (transmission output 4)				
100005(0004) to 100050(0031)	02	R	Reserved					

2.2.2 Read input register (Func 04)

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
300001(0000) to 300100(0063)	04	R	Reserved					
300101(0064)	04	R	-	Product number H	-	-	0	
300102(0065)	04	R	-	Product number L	-	-	0	
300103(0066)	04	R	-	Hardware version	-	-	100	
300104(0067)	04	R	-	Software version	-	-	100	
300105(0068)	04	R	-	Model name 1	-	-	"TM"	Product name
300106(0069)	04	R	-	Model name 2	-	-	"HA"	Option
300107(006A)	04	R	-	Model name 3	-	-	"-4"	transmission output
300108(006B)	04	R	-	Model name 4	-	-	"2A"	Power voltage/output
300109(006C)	04	R	-	Model name 5	-	-	"E"	Structure
300110(006D)	04	R	-	Model name 6	-	-	" "	
300111(006E)	04	R	-	Model name 7	-	-	" "	
300112(006F)	04	R	-	Model name 8	-	-	" "	
300113(0070)	04	R	-	Model name 9	-	-	" "	
300114(0071)	04	R	-	Model name 10	-	-	" "	
300115(0072)	04	R	Reserved					
300116(0073)	04	R	Reserved					
300117(0074)	04	R	Reserved					
300118(0075)	04	R	-	Coil status Start Address	-	-	0	
300119(0076)	04	R	-	Coil status Quantity	-	-	0	
300120(0077)	04	R	-	Input status Start Address	-	-	0	

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
300121(0078)	04	R	-	Input status Quantity	-	-	0	
300122(0079)	04	R	-	Holding Register Start Address	-	-	0	
300123(007A)	04	R	-	Holding Register Quantity	-	-	0	
300124(007B)	04	R	-	Input Register Start Address	-	-	0	
300125(007C)	04	R	-	Input Register Quantity	-	-	0	
300126(007D)	04	R	-	Channel Quantity	-	-	0	
300127(007E) to 300200(00C7)	04	R	Reserved					
301001(03E8)	04	R	CH1 Present Value	CH1 present value	Sensor input range, 31000: OPEN, 30000: HHHH, -30000: LLLL	°C/°F, Digit		
301002(03E9)	04	R	CH2 Present Value	CH2 present value				
301003(03EA)	04	R	CH3 Present Value	CH3 present value				
301004(03EB)	04	R	CH4 Present Value	CH4 present value				
301005(03EC)	04	R	CH1 Dot	CH1 sensor decimal point	0: 0, 1: 0.0		0: 0	
301006(03ED)	04	R	CH2 Dot	CH2 sensor decimal point				
301007(03EE)	04	R	CH3 Dot	CH3 sensor decimal point				
301008(03EF)	04	R	CH4 Dot	CH4 sensor decimal point				
301009(03F0)	04	R	CH1 Unit	CH1 sensor temp. unit	0: °C, 1: °F		0: °C	
301010(03F1)	04	R	CH2 Unit	CH2 sensor temp. unit				
301011(03F2)	04	R	CH3 Unit	CH3 sensor temp. unit				
301012(03F3)	04	R	CH4 Unit	CH4 sensor temp. unit				
301013(03F4)	04	R	CH1 Analog Output Value	CH1 transmission output value	40 to 200(4.0 to 20.0), 0 to 200 (0.0 to 20.0)	mA		
301014(03F5)	04	R	CH2 Analog Output Value	CH2 transmission output value				
301015(03F6)	04	R	CH3 Analog Output Value	CH3 transmission output value				
301016(03F7)	04	R	CH4 Analog Output Value	CH4 transmission output value				
301017(03F8)	04	R	-	CH1 LED (OUT1)	0: OFF, 1: ON			Bit 0
			-	CH2 LED (OUT2)				Bit 1
			-	CH3 LED (OUT3)				Bit 2
			-	CH4 LED (OUT4)				Bit 3
301018(03F9)	04	R	Unit Address	Comm. address	33 to 48	-	1	
301019(03FA) to 301050(0419)	04	R	Reserved					

2.2.3 Read holding register (Func 03) / Preset single register (Func 06) / Preset multiple registers (Func 16)

2.2.3.1 Initial setting group

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
400001(0000)	03/06/16	R/W	CH1 Input Type	Input type	0: K(CA).H to 32: 4 to 20mA	-	0: K(CA).H	
400002(0001)	03/06/16	R/W	CH1 Unit	Sensor temp. unit	0: °C, 1: °F	-	°C	
400003(0002)	03/06/16	R/W	CH1 Low-limit Input Value	Analog low-limit input value	Min. operational value to High-limit Input Value Settings – F.S. 10%	-	0000	
400004(0003)	03/06/16	R/W	CH1 High-limit Input Value	Analog high-limit input value	Low-limit Input Value Settings + F.S. 10% to Max. operational value	-	1000	
400005(0004)	03/06/16	R/W	CH1 Decimal Point	Scale decimal point	0: 0, 1: 0.0, 2: 0.00, 3: 0.000	-	1: 0.0	
400006(0005)	03/06/16	R/W	CH1 Low-limit Scale Value	Scale low-limit display value	-9999 to 9999	Digit	0	
400007(0006)	03/06/16	R/W	CH1 High-limit Scale Value	Scale high-limit display value	-9999 to 9999	Digit	1000	
400008(0007)	03/06/16	R/W	CH1 Analog Input Unit	Analog input type unit	0: °C, 1: °F, 2: %	-	0: °C	
400009(0008)	03/06/16	R/W	CH1 Input Func	Analog input special function	0: LINEAR, 1: ROOT, 2: SQUARE	-	0: LINEAR	
400010(0009)	03/06/16	R/W	CH1 Root Low Cut	Root function low cut point	-9999 to 9999	Digit	0	
400011(000A)	03/06/16	R/W	CH1 Input Bias	Input correction	-9999 to 9999	Digit	0	
400012(000B)	03/06/16	R/W	CH1 Input Digital Filter	Input digital filter	1 to 1200 (0.1 to 120.0)	Sec	1(0.1)	
400013(000C) to 400050(0031)	03/06/16	R/W	CH1 Reserved					
401001(03E8) to 401050(0419)	03/06/16	R/W	CH2 Parameter - Same as above CH1					
402001(07D0) to 402050(0801)	03/06/16	R/W	CH3 Parameter - Same as above CH1					
403001(0BB8) to 403050(0BE9)	03/06/16	R/W	CH4 Parameter - Same as above CH1					

2.2.3.2 Control setting group

No(Address)	Func	R/W	Parameter	Description	Set range		Unit	Default	Note
400051(0032)	03/06/16	R/W	CH1 Analog Output Mode	Analog transmission output	0: PV, 1: SV, 2: H-MV, 3: C-MV		-	0: PV	
400052(0033)	03/06/16	R/W	CH1 Analog Output Target	Transmission output target address	0 to 48		-	0	
400053(0034)	03/06/16	R/W	CH1 Analog Output Target CH	Transmission output target channel	0: CH1, 1: CH2, 2: CH3, 3: CH4		-	CH□:CH□	
400054(0035)	03/06/16	R/W	CH1 Analog Output Range	Current output range	0: 4-20, 1: 0-20		-	0: 4-20	
400055(0036)	03/06/16	R/W	CH1 Full Scale Low	Transmission output low-limit value	PV	Temp.: Operational range Analog: High/Low-scale range	-	-200	
					SV	SV Low Limit to SV High Limit			
					H-MV, C-MV	0 to 1000 (0.0 to 100.0)			
400056(0037)	03/06/16	R/W	CH1 Full Scale High	Transmission output high-limit value	PV	Temp.: Operational range Analog: High/Low-scale range	-	1350	
					SV	SV Low Limit to SV High Limit			
					H-MV, C-MV	0 to 1000 (0.0 to 100.0)			
400057(0038) to 400100(0063)	03/06/16	R/W	CH1 Reserved						
401051(041A) to 401100(044B)	03/06/16	R/W	CH2 Parameter - Same as above CH1						
402051(0802) to 402100(0833)	03/06/16	R/W	CH3 Parameter - Same as above CH1						
403051(0BEA) to 403100(0C1B)	03/06/16	R/W	CH4 Parameter - Same as above CH1						

2.2.3.3 Common(common parameter setting) group

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
400101(0064)	03/06/16	R/W	Bit Per Second	Communication speed	0: 4800, 1: 9600, 2: 19200, 3: 38400, 4: 115200	bps	1: 9600	
400102(0065)	03/06/16	R/W	Parity Bit	Communication parity bit	0: NONE, 1: EVEN, 2: ODD	-	0: NONE	
400103(0066)	03/06/16	R/W	Stop Bit	Communication stop bit	0: 1, 1: 2	bit	1: 2	
400104(0067)	03/06/16	R/W	Response Waiting Time	Communication response wait time	5 to 99	ms	20	
400105(0068)	03/06/16	R/W	Communication Write	Communication writing enable/disable	0: ENABLE, 1: DISABLE	-	0: ENABLE	
400106(0069)	03/06/16	R/W	Parameter Initialize	Parameter reset	0: NO, 1: YES	-	0: NO	
400107(006A) to 400150(0095)	03/06/16	R/W	Reserved					

2.2.4 User parameter group

(1) User parameter group order assignment

No(Address)		Func	R/W	Parameter	Set range	Unit	Default	Note
TMH2	TMH4							
450001(C350)		03/06/16	R/W	User parameter group > No. 1 parameter assignment	The dedicated parameter address	-	0	
450002(C351)		03/06/16	R/W	User parameter group > No. 2 parameter assignment				
450003(C352)		03/06/16	R/W	User parameter group > No. 3 parameter assignment				
450004(C353)		03/06/16	R/W	User parameter group > No. 4 parameter assignment				
450005(C354)		03/06/16	R/W	User parameter group > No. 5 parameter assignment				
450006(C355)		03/06/16	R/W	User parameter group > No. 6 parameter assignment				
450007(C356)		03/06/16	R/W	User parameter group > No. 7 parameter assignment				
450008(C357)		03/06/16	R/W	User parameter group > No. 8 parameter assignment				
450009(C358)		03/06/16	R/W	User parameter group > No. 9 parameter assignment				
450010(C359)		03/06/16	R/W	User parameter group > No. 10 parameter assignment				
450011(C35A)		03/06/16	R/W	User parameter group > No. 11 parameter assignment				
450012(C35B)		03/06/16	R/W	User parameter group > No. 12 parameter assignment				
450013(C35C)		03/06/16	R/W	User parameter group > No. 13 parameter assignment				
450014(C35D)		03/06/16	R/W	User parameter group > No. 14 parameter assignment				
450015(C35E)		03/06/16	R/W	User parameter group > No. 15 parameter assignment				
450016(C35F)		03/06/16	R/W	User parameter group > No. 16 parameter assignment				
450017(C360)		03/06/16	R/W	User parameter group > No. 17 parameter assignment				
450018(C361)		03/06/16	R/W	User parameter group > No. 18 parameter assignment				
450019(C362)		03/06/16	R/W	User parameter group > No. 19 parameter assignment				
450020(C363)		03/06/16	R/W	User parameter group > No. 20 parameter assignment				
450021(C364)		03/06/16	R/W	User parameter group > No. 21 parameter assignment				
450022(C365)		03/06/16	R/W	User parameter group > No. 22 parameter assignment				
450023(C366)		03/06/16	R/W	User parameter group > No. 23 parameter assignment				
450024(C367)		03/06/16	R/W	User parameter group > No. 24 parameter assignment				

No(Address)		Func	R/W	Parameter	Set range	Unit	Default	Note
TMH2	TMH4							
450025	C368	03/06/16	R/W	User parameter group > No. 25 parameter assignment				
450026	C369	03/06/16	R/W	User parameter group > No. 26 parameter assignment				
450027	C36A	03/06/16	R/W	User parameter group > No. 27 parameter assignment				
450028	C36B	03/06/16	R/W	User parameter group > No. 28 parameter assignment				
450029	C36C	03/06/16	R/W	User parameter group > No. 29 parameter assignment				
450030	C36D	03/06/16	R/W	User parameter group > No. 30 parameter assignment				

(2) User parameter group assignment

No(Address)		Func	R/W	Parameter	Set range	Unit	Default	Note
TMH2	TMH4							
450031(C36E)		03/06/16	R/W	User parameter group > No. 1 parameter	The dedicated parameter set range	-	0	
450032(C36F)		03/06/16	R/W	User parameter group > No. 2 parameter				
450033(C370)		03/06/16	R/W	User parameter group > No. 3 parameter				
450034(C371)		03/06/16	R/W	User parameter group > No. 4 parameter				
450035(C372)		03/06/16	R/W	User parameter group > No. 5 parameter				
450036(C373)		03/06/16	R/W	User parameter group > No. 6 parameter				
450037(C374)		03/06/16	R/W	User parameter group > No. 7 parameter				
450038(C375)		03/06/16	R/W	User parameter group > No. 8 parameter				
450039(C376)		03/06/16	R/W	User parameter group > No. 9 parameter				
450040(C377)		03/06/16	R/W	User parameter group > No. 10 parameter				
450041(C378)		03/06/16	R/W	User parameter group > No. 11 parameter				
450042(C379)		03/06/16	R/W	User parameter group > No. 12 parameter				
450043(C37A)		03/06/16	R/W	User parameter group > No. 13 parameter				
450044(C37B)		03/06/16	R/W	User parameter group > No. 14 parameter				
450045(C37C)		03/06/16	R/W	User parameter group > No. 15 parameter				
450046(C37D)		03/06/16	R/W	User parameter group > No. 16 parameter				
450047(C37E)		03/06/16	R/W	User parameter group > No. 17 parameter				
450048(C37F)		03/06/16	R/W	User parameter group > No. 18 parameter				
450049(C380)		03/06/16	R/W	User parameter group > No. 19 parameter				
450050(C381)		03/06/16	R/W	User parameter group > No. 20 parameter				
450051(C382)		03/06/16	R/W	User parameter group > No. 21 parameter				
450052(C383)		03/06/16	R/W	User parameter group > No. 22 parameter				
450053(C384)		03/06/16	R/W	User parameter group > No. 23 parameter				
450054(C385)		03/06/16	R/W	User parameter group > No. 24 parameter				
450055(C386)		03/06/16	R/W	User parameter group > No. 25 parameter				
450056(C387)		03/06/16	R/W	User parameter group > No. 26 parameter				
450057(C388)		03/06/16	R/W	User parameter group > No. 27 parameter				
450058(C389)		03/06/16	R/W	User parameter group > No. 28 parameter				
450059(C38A)		03/06/16	R/W	User parameter group > No. 29 parameter				
450060(C38B)		03/06/16	R/W	User parameter group > No. 30 parameter				

2.3 **TMHE [Option: Digital input, Alarm output module]**

2.3.1 **Read input status (Func 02)**

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
100001(0000)	02	R	-	AL1 LED	0: OFF, 1: ON	-	-	
100002(0001)	02	R	-	AL2 LED				
100003(0002)	02	R	-	AL3 LED				
100004(0003)	02	R	-	AL4 LED				
100005(0004)	02	R	-	AL5 LED				
100006(0005)	02	R	-	AL6 LED				
100007(0006)	02	R	-	AL7 LED				
100008(0007)	02	R	-	AL8 LED				
100009(0008)	02	R	-	DI-1 input	0: OFF, 1: ON	-	-	
100010(0009)	02	R	-	DI-2 input				
100011(000A)	02	R	-	DI-3 input				
100012(000B)	02	R	-	DI-4 input				
100013(000C)	02	R	-	DI-5 input				
100014(000D)	02	R	-	DI-6 input				
100015(000E)	02	R	-	DI-7 input				
100016(000F)	02	R	-	DI-8 input				
100017(0010) to 100050(0031)	02	R	Reserved					

2.3.2 Read input register (Func 04)

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
300001(0000) to 300100(0063)	04	R	Reserved					
300101(0064)	04	R	-	Product number H	-	-	0	
300102(0065)	04	R	-	Product number L	-	-	0	
300103(0066)	04	R	-	Hardware version	-	-	100	
300104(0067)	04	R	-	Software version	-	-	100	
300105(0068)	04	R	-	Model name 1	-	-	"TM"	Product name
300106(0069)	04	R	-	Model name 2	-	-	"HE"	Option
300107(006A)	04	R	-	Model name 3	-	-	"-8"	Input/Output
300108(006B)	04	R	-	Model name 4	-	-	"2R"	Power voltage/output
300109(006C)	04	R	-	Model name 5	-	-	"E"	Structure
300110(006D)	04	R	-	Model name 6	-	-	" "	
300111(006E)	04	R	-	Model name 7	-	-	" "	
300112(006F)	04	R	-	Model name 8	-	-	" "	
300113(0070)	04	R	-	Model name 9	-	-	" "	
300114(0071)	04	R	-	Model name 10	-	-	" "	
300115(0072)	04	R	Reserved					
300116(0073)	04	R	Reserved					
300117(0074)	04	R	Reserved					
300118(0075)	04	R	-	Coil status Start Address	-	-	0	
300119(0076)	04	R	-	Coil status Quantity	-	-	0	
300120(0077)	04	R	-	Input status Start Address	-	-	0	
300121(0078)	04	R	-	Input status Quantity	-	-	0	
300122(0079)	04	R	-	Holding Register Start Address	-	-	0	
300123(007A)	04	R	-	Holding Register Quantity	-	-	0	
300124(007B)	04	R	-	Input Register Start Address	-	-	0	
300125(007C)	04	R	-	Input Register Quantity	-	-	0	
300126(007D)	04	R	-	Channel Quantity	-	-	0	
300127(007E) to 300200(00C7)	04	R	Reserved					
301001(03E8)	04	R	-	AL1 LED	0: OFF, 1: ON	-	-	Bit0
			-	AL2 LED				Bit1
			-	AL3 LED				Bit2
			-	AL4 LED				Bit3
			-	AL5 LED				Bit4
			-	AL6 LED				Bit5
			-	AL7 LED				Bit6

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
			-	AL8 LED	0: OFF, 1: ON			Bit7
			-	DI-1 input				Bit8
			-	DI-2 input				Bit9
			-	DI-3 input				Bit10
			-	DI-4 input				Bit11
			-	DI-5 input				Bit12
			-	DI-6 input				Bit13
			-	DI-7 input				Bit14
			-	DI-8 input				Bit15
301002(03E9)	04	R	Unit Address	Comm. address	49 to 64	-	49	-
301003(03EA) to 301050(0419)	04	R	Reserved					

2.3.3 Read holding register (Func 03) / Preset single register (Func 06) / Preset multiple registers (Func 16)

2.3.3.1 Operating(output operation) group

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
400001(0000)	03/06/16	R/W	CH1 Alarm Logic	CH1 alarm output logic operation	0: OR, 1: AND	-	0: OR	
400002(0001)	03/06/16	R/W	CH2 Alarm Logic	CH2 alarm output logic operation				
400003(0002)	03/06/16	R/W	CH3 Alarm Logic	CH3 alarm output logic operation				
400004(0003)	03/06/16	R/W	CH4 Alarm Logic	CH4 alarm output logic operation				
400005(0004)	03/06/16	R/W	CH5 Alarm Logic	CH5 alarm output logic operation				
400006(0005)	03/06/16	R/W	CH6 Alarm Logic	CH6 alarm output logic operation				
400007(0006)	03/06/16	R/W	CH7 Alarm Logic	CH7 alarm output logic operation				
400008(0007)	03/06/16	R/W	CH8 Alarm Logic	CH8 alarm output logic operation				
400009(0008)	03/06/16	R/W	CH1 Alarm NO/NC	CH1 alarm output contact type	0: NO, 1: NC	-	0: NO	
400010(0009)	03/06/16	R/W	CH2 Alarm NO/NC	CH2 alarm output contact type				
400011(000A)	03/06/16	R/W	CH3 Alarm NO/NC	CH3 alarm output contact type				
400012(000B)	03/06/16	R/W	CH4 Alarm NO/NC	CH4 alarm output contact type				
400013(000C)	03/06/16	R/W	CH5 Alarm NO/NC	CH5 alarm output contact type				
400014(000D)	03/06/16	R/W	CH6 Alarm NO/NC	CH6 alarm output contact type				
400015(000E)	03/06/16	R/W	CH7 Alarm NO/NC	CH7 alarm output contact type				
400016(000F)	03/06/16	R/W	CH8 Alarm NO/NC	CH8 alarm output contact type				
400017(0010) to 400050(0031)	03/06/16	R/W	Reserved					

2.3.3.2 Common(common parameter setting) group

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
400051(0032)	03/06/16	R/W	Bit Per Second	Communication speed	0: 4800, 1: 9600, 2: 19200, 3: 38400, 4: 115200	bps	1: 9600	
400052(0033)	03/06/16	R/W	Parity Bit	Communication parity bit	0: NONE, 1: EVEN, 2: ODD	-	0: NONE	
400053(0034)	03/06/16	R/W	Stop Bit	Communication stop bit	0: 1, 1: 2	bit	1: 2	
400054(0035)	03/06/16	R/W	Response Waiting Time	Communication response wait time	5 to 99	ms	20	
400055(0036)	03/06/16	R/W	Communication Write	Communication writing enable/disable	0: ENABLE, 1: DISABLE	-	0: ENABLE	
400056(0037)	03/06/16	R/W	Parameter Initialize	Parameter reset	0: NO, 1: YES	-	0: NO	
400057(0038) to 400100(0063)	03/06/16	R/W	Reserved					

2.3.4 User parameter group

(1) User parameter group order assignment

No(Address)		Func	R/W	Parameter	Set range	Unit	Default	Note
TMH2	TMH4							
450001(C350)		03/06/16	R/W	User parameter group > No. 1 parameter assignment	The dedicated parameter address	-	0	
450002(C351)		03/06/16	R/W	User parameter group > No. 2 parameter assignment				
450003(C352)		03/06/16	R/W	User parameter group > No. 3 parameter assignment				
450004(C353)		03/06/16	R/W	User parameter group > No. 4 parameter assignment				
450005(C354)		03/06/16	R/W	User parameter group > No. 5 parameter assignment				
450006(C355)		03/06/16	R/W	User parameter group > No. 6 parameter assignment				
450007(C356)		03/06/16	R/W	User parameter group > No. 7 parameter assignment				
450008(C357)		03/06/16	R/W	User parameter group > No. 8 parameter assignment				
450009(C358)		03/06/16	R/W	User parameter group > No. 9 parameter assignment				
450010(C359)		03/06/16	R/W	User parameter group > No. 10 parameter assignment				
450011(C35A)		03/06/16	R/W	User parameter group > No. 11 parameter assignment				
450012(C35B)		03/06/16	R/W	User parameter group > No. 12 parameter assignment				
450013(C35C)		03/06/16	R/W	User parameter group > No. 13 parameter assignment				
450014(C35D)		03/06/16	R/W	User parameter group > No. 14 parameter assignment				
450015(C35E)		03/06/16	R/W	User parameter group > No. 15 parameter assignment				
450016(C35F)		03/06/16	R/W	User parameter group > No. 16 parameter assignment				
450017(C360)		03/06/16	R/W	User parameter group > No. 17 parameter assignment				
450018(C361)		03/06/16	R/W	User parameter group > No. 18 parameter assignment				
450019(C362)		03/06/16	R/W	User parameter group > No. 19 parameter assignment				
450020(C363)		03/06/16	R/W	User parameter group > No. 20 parameter assignment				
450021(C364)		03/06/16	R/W	User parameter group > No. 21 parameter assignment				
450022(C365)		03/06/16	R/W	User parameter group > No. 22 parameter assignment				
450023(C366)		03/06/16	R/W	User parameter group > No. 23 parameter assignment				
450024(C367)		03/06/16	R/W	User parameter group > No. 24 parameter assignment				
450025(C368)		03/06/16	R/W	User parameter group > No. 25 parameter assignment				
450026(C369)		03/06/16	R/W	User parameter group > No. 26 parameter assignment				
450027(C36A)		03/06/16	R/W	User parameter group > No. 27 parameter assignment				
450028(C36B)		03/06/16	R/W	User parameter group > No. 28 parameter assignment				

No(Address)		Func	R/W	Parameter	Set range	Unit	Default	Note
TMH2	TMH4							
450029(C36C)		03/06/16	R/W	User parameter group > No. 29 parameter assignment				
450030(C36D)		03/06/16	R/W	User parameter group > No. 30 parameter assignment				

(2) User parameter group assignment

No(Address)		Func	R/W	Parameter	Set range	Unit	Default	Note
TMH2	TMH4							
450031(C36E)		03/06/16	R/W	User parameter group > No. 1 parameter	The dedicated parameter set range	-	0	
450032(C36F)		03/06/16	R/W	User parameter group > No. 2 parameter				
450033(C370)		03/06/16	R/W	User parameter group > No. 3 parameter				
450034(C371)		03/06/16	R/W	User parameter group > No. 4 parameter				
450035(C372)		03/06/16	R/W	User parameter group > No. 5 parameter				
450036(C373)		03/06/16	R/W	User parameter group > No. 6 parameter				
450037(C374)		03/06/16	R/W	User parameter group > No. 7 parameter				
450038(C375)		03/06/16	R/W	User parameter group > No. 8 parameter				
450039(C376)		03/06/16	R/W	User parameter group > No. 9 parameter				
450040(C377)		03/06/16	R/W	User parameter group > No. 10 parameter				
450041(C378)		03/06/16	R/W	User parameter group > No. 11 parameter				
450042(C379)		03/06/16	R/W	User parameter group > No. 12 parameter				
450043(C37A)		03/06/16	R/W	User parameter group > No. 13 parameter				
450044(C37B)		03/06/16	R/W	User parameter group > No. 14 parameter				
450045(C37C)		03/06/16	R/W	User parameter group > No. 15 parameter				
450046(C37D)		03/06/16	R/W	User parameter group > No. 16 parameter				
450047(C37E)		03/06/16	R/W	User parameter group > No. 17 parameter				
450048(C37F)		03/06/16	R/W	User parameter group > No. 18 parameter				
450049(C380)		03/06/16	R/W	User parameter group > No. 19 parameter				
450050(C381)		03/06/16	R/W	User parameter group > No. 20 parameter				
450051(C382)		03/06/16	R/W	User parameter group > No. 21 parameter				
450052(C383)		03/06/16	R/W	User parameter group > No. 22 parameter				
450053(C384)		03/06/16	R/W	User parameter group > No. 23 parameter				
450054(C385)		03/06/16	R/W	User parameter group > No. 24 parameter				
450055(C386)		03/06/16	R/W	User parameter group > No. 25 parameter				

No(Address)		Func	R/W	Parameter	Set range	Unit	Default	Note
TMH2	TMH4							
450056(C387)		03/06/16	R/W	User parameter group > No. 26 parameter				
450057(C388)		03/06/16	R/W	User parameter group > No. 27 parameter				
450058(C389)		03/06/16	R/W	User parameter group > No. 28 parameter				
450059(C38A)		03/06/16	R/W	User parameter group > No. 29 parameter				
450060(C38B)		03/06/16	R/W	User parameter group > No. 30 parameter				

2.4 TMHCT [Option: CT input module]

2.4.1 Read input register (Func 04)

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
300001(0000) to 300100(0063)	04	R	Reserved					
300101(0064)	04	R	-	Product number H	-	-	0	
300102(0065)	04	R	-	Product number L	-	-	0	
300103(0066)	04	R	-	Hardware version	-	-	100	
300104(0067)	04	R	-	Software version	-	-	100	
300105(0068)	04	R	-	Model name 1	-	-	"TM"	Product name
300106(0069)	04	R	-	Model name 2	-	-	"HC"	Option
300107(006A)	04	R	-	Model name 3	-	-	"T-"	Option
300108(006B)	04	R	-	Model name 4	-	-	"82"	Input/Power voltage
300109(006C)	04	R	-	Model name 5	-	-	"NE "	Output/Structure
300110(006D)	04	R	-	Model name 6	-	-	" "	
300111(006E)	04	R	-	Model name 7	-	-	" "	
300112(006F)	04	R	-	Model name 8	-	-	" "	
300113(0070)	04	R	-	Model name 9	-	-	" "	
300114(0071)	04	R	-	Model name 10	-	-	" "	
300115(0072)	04	R	Reserved					
300116(0073)	04	R	Reserved					
300117(0074)	04	R	Reserved					
300118(0075)	04	R	-	Coil status Start Address	-	-	0	
300119(0076)	04	R	-	Coil status Quantity	-	-	0	
300120(0077)	04	R	-	Input status Start Address	-	-	0	
300121(0078)	04	R	-	Input status Quantity	-	-	0	
300122(0079)	04	R	-	Holding Register Start Address	-	-	0	
300123(007A)	04	R	-	Holding Register Quantity	-	-	0	
300124(007B)	04	R	-	Input Register Start Address	-	-	0	
300125(007C)	04	R	-	Input Register Quantity	-	-	0	
300126(007D)	04	R	-	Channel Quantity	-	-	0	
300127(007E) to 300200(00C7)	04	R	Reserved					
301001(03E8)	04	R	CT1 Heater Current	CT1 input value monitoring	0.0 to 50.0	A		
301002(03E9)	04	R	CT2 Heater Current	CT2 input value monitoring				
301003(03EA)	04	R	CT3 Heater Current	CT3 input value monitoring				
301004(03EB)	04	R	CT4 Heater Current	CT4 input value monitoring				

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
301005(03EC)	04	R	CT5 Heater Current	CT5 input value monitoring				
301006(03ED)	04	R	CT6 Heater Current	CT6 input value monitoring				
301007(03EE)	04	R	CT7 Heater Current	CT7 input value monitoring				
301008(03EF)	04	R	CT8 Heater Current	CT8 input value monitoring				
301009(03F0)	04	R	Unit Address	Comm. address	65 to 80	-	65	
301009(03F0) to 301050(0419)	04	R	Reserved					

2.4.2 Read holding register (Func 03) / Preset single register (Func 06) / Preset multiple registers (Func 16)

2.4.2.1 Common(common parameter setting) group

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
400001(0000)	03/06/16	R/W	Bit Per Second	Communication speed	0: 4800, 1: 9600, 2: 19200, 3: 38400, 4: 115200	bps	1: 9600	
400002(0001)	03/06/16	R/W	Parity Bit	Communication parity bit	0: NONE, 1: EVEN, 2: ODD	-	0: NONE	
400003(0002)	03/06/16	R/W	Stop Bit	Communication stop bit	0: 1, 1: 2	bit	1: 2	
400004(0003)	03/06/16	R/W	Response Waiting Time	Communication response wait time	5 to 99	ms	20	
400005(0004)	03/06/16	R/W	Communication Write	Communication writing enable/disable	0: ENABLE, 1: DISABLE	-	0: ENABLE	
400006(0005)	03/06/16	R/W	Parameter Initialize	Parameter reset	0: NO, 1: YES	-	0: NO	
400007(0006)	03/06/16	R/W	CT Input Value Indication Lamp1	CT input value indicator 1	0: CT1, 1: CT2, 2: CT3, 3: CT4,	-	0: CT1	
400008(0007)	03/06/16	R/W	CT Input Value Indication Lamp2	CT input value indicator 2	4: CT5, 5: CT6, 6: CT7, 7: CT8	-	1: CT2	
400009(0008) to 400050(0031)	03/06/16	R/W	Reserved					

2.4.3 User parameter group

(1) User parameter group order assignment

No(Address)		Func	R/W	Parameter	Set range	Unit	Default	Note
TMH2	TMH4							
450001(C350)		03/06/16	R/W	User parameter group > No. 1 parameter assignment	The dedicated parameter address	-	0	
450002(C351)		03/06/16	R/W	User parameter group > No. 2 parameter assignment				
450003(C352)		03/06/16	R/W	User parameter group > No. 3 parameter assignment				
450004(C353)		03/06/16	R/W	User parameter group > No. 4 parameter assignment				
450005(C354)		03/06/16	R/W	User parameter group > No. 5 parameter assignment				
450006(C355)		03/06/16	R/W	User parameter group > No. 6 parameter assignment				
450007(C356)		03/06/16	R/W	User parameter group > No. 7 parameter assignment				
450008(C357)		03/06/16	R/W	User parameter group > No. 8 parameter assignment				
450009(C358)		03/06/16	R/W	User parameter group > No. 9 parameter assignment				
450010(C359)		03/06/16	R/W	User parameter group > No. 10 parameter assignment				
450011(C35A)		03/06/16	R/W	User parameter group > No. 11 parameter assignment				
450012(C35B)		03/06/16	R/W	User parameter group > No. 12 parameter assignment				
450013(C35C)		03/06/16	R/W	User parameter group > No. 13 parameter assignment				
450014(C35D)		03/06/16	R/W	User parameter group > No. 14 parameter assignment				
450015(C35E)		03/06/16	R/W	User parameter group > No. 15 parameter assignment				
450016(C35F)		03/06/16	R/W	User parameter group > No. 16 parameter assignment				
450017(C360)		03/06/16	R/W	User parameter group > No. 17 parameter assignment				
450018(C361)		03/06/16	R/W	User parameter group > No. 18 parameter assignment				
450019(C362)		03/06/16	R/W	User parameter group > No. 19 parameter assignment				
450020(C363)		03/06/16	R/W	User parameter group > No. 20 parameter assignment				
450021(C364)		03/06/16	R/W	User parameter group > No. 21 parameter assignment				
450022(C365)		03/06/16	R/W	User parameter group > No. 22 parameter assignment				
450023(C366)		03/06/16	R/W	User parameter group > No. 23 parameter assignment				
450024(C367)		03/06/16	R/W	User parameter group > No. 24 parameter assignment				

No(Address)		Func	R/W	Parameter	Set range	Unit	Default	Note
TMH2	TMH4							
450025(C368)		03/06/16	R/W	User parameter group > No. 25 parameter assignment				
450026(C369)		03/06/16	R/W	User parameter group > No. 26 parameter assignment				
450027(C36A)		03/06/16	R/W	User parameter group > No. 27 parameter assignment				
450028(C36B)		03/06/16	R/W	User parameter group > No. 28 parameter assignment				
450029(C36C)		03/06/16	R/W	User parameter group > No. 29 parameter assignment				
450030(C36D)		03/06/16	R/W	User parameter group > No. 30 parameter assignment				

(2) User parameter group assignment

No(Address)		Func	R/W	Parameter	Set range	Unit	Default	Note
TMH2	TMH4							
450031(C36E)		03/06/16	R/W	User parameter group > No. 1 parameter	The dedicated parameter set range	-	0	
450032(C36F)		03/06/16	R/W	User parameter group > No. 2 parameter				
450033(C370)		03/06/16	R/W	User parameter group > No. 3 parameter				
450034(C371)		03/06/16	R/W	User parameter group > No. 4 parameter				
450035(C372)		03/06/16	R/W	User parameter group > No. 5 parameter				
450036(C373)		03/06/16	R/W	User parameter group > No. 6 parameter				
450037(C374)		03/06/16	R/W	User parameter group > No. 7 parameter				
450038(C375)		03/06/16	R/W	User parameter group > No. 8 parameter				
450039(C376)		03/06/16	R/W	User parameter group > No. 9 parameter				
450040(C377)		03/06/16	R/W	User parameter group > No. 10 parameter				
450041(C378)		03/06/16	R/W	User parameter group > No. 11 parameter				
450042(C379)		03/06/16	R/W	User parameter group > No. 12 parameter				
450043(C37A)		03/06/16	R/W	User parameter group > No. 13 parameter				
450044(C37B)		03/06/16	R/W	User parameter group > No. 14 parameter				
450045(C37C)		03/06/16	R/W	User parameter group > No. 15 parameter				
450046(C37D)		03/06/16	R/W	User parameter group > No. 16 parameter				
450047(C37E)		03/06/16	R/W	User parameter group > No. 17 parameter				
450048(C37F)		03/06/16	R/W	User parameter group > No. 18 parameter				
450049(C380)		03/06/16	R/W	User parameter group > No. 19 parameter				
450050(C381)		03/06/16	R/W	User parameter group > No. 20 parameter				

No(Address)		Func	R/W	Parameter	Set range	Unit	Default	Note
TMH2	TMH4							
450051	(C382)	03/06/16	R/W	User parameter group > No. 21 parameter				
450052	(C383)	03/06/16	R/W	User parameter group > No. 22 parameter				
450053	(C384)	03/06/16	R/W	User parameter group > No. 23 parameter				
450054	(C385)	03/06/16	R/W	User parameter group > No. 24 parameter				
450055	(C386)	03/06/16	R/W	User parameter group > No. 25 parameter				
450056	(C387)	03/06/16	R/W	User parameter group > No. 26 parameter				
450057	(C388)	03/06/16	R/W	User parameter group > No. 27 parameter				
450058	(C389)	03/06/16	R/W	User parameter group > No. 28 parameter				
450059	(C38A)	03/06/16	R/W	User parameter group > No. 29 parameter				
450060	(C38B)	03/06/16	R/W	User parameter group > No. 30 parameter				

2.5 TMHC [Option: RS422/RS485 communication output]

2.5.1 TMHC + expansion (control option) modules connecting, address mapping table by module

Type	Func01/Func05 (000000)		Func02 (100000)		Func04 (300000)		Func03/Func06/Func16 (400000)		
TMH4/2	Start address	000001	Start address	100001	Start address	300201(by model)	Start address		401001
	Address assignment	150	Address assignment	450	Address assignment	450	Channel assignment		30(group assignment)* 10+200(channel reserve)=500
					Start address	310001(check value)	Module assignment		500*4CH=2000
					Address assignment	500	Total assignment		2000*16 = 32,000
							User group	Start address	450001
								Module assignment	60
								Total assignment	60*16=960
TMHA			Start address	100451	Start address	300651(by model)	Start address		433001
			Address assignment	100	Address assignment	450	Channel assignment		30(group assignment)* +60(channel Reserve)=150
					Start address	310501(check value)	Module assignment		150*4CH=600
					Address assignment	300	Total assignment		600*16=9,600
							User group	Start address	450961
								Module assignment	60
								Total assignment	60*16=960
TMHE			Start address	100551	Start address	301101(by model)	Start address		442601
			Address assignment	300	Address assignment	450	Module assignment		30(group assignment)*2 =60
					Start address	310801(check value)	Total assignment		60*16=960
					Address assignment	50	User group	Start address	451921
								Module assignment	60
								Total assignment	60*16=960
					TMHCT				
Address assignment	450	Module assignment		30					

Type	Func01/Func05 (000000)	Func02 (100000)	Func04 (300000)		Func03/Func06/Func16 (400000)		
			Start address	310851(check value)	Total assignment		30*16=480
			Address assignment	150	User group	Start address	452881
						Module assignment	60
						Total assignment	60*16=960
TMHC	-	-	Start address	300001(check value)	Start address		400101(set communication 1)
			Address assignment	100	Address assignment		100
			Start address	300101(by model)	Start address		400201(set communication 2)
			Address assignment	100	Address assignment		100
					User group	TMH4/2	450001 to 450960
						TMHA	450961 to 451920
						TMHE	451921 to 452880
						TMHCT	452881 to 453840

2.5.2 Read input register (Func 04)

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
300001(0000)	04	R	TMH4/2 Connected confirmation	TMH4/2 address 01 connection check	Not connect: 0, Connect: 1	-	0	
300002(0001)	04	R	TMH4/2 Connected confirmation	TMH4/2 address 02 connection check				
300003(0002)	04	R	TMH4/2 Connected confirmation	TMH4/2 address 03 connection check				
300004(0003)	04	R	TMH4/2 Connected confirmation	TMH4/2 address 04 connection check				
300005(0004)	04	R	TMH4/2 Connected confirmation	TMH4/2 address 05 connection check				
300006(0005)	04	R	TMH4/2 Connected confirmation	TMH4/2 address 06 connection check				
300007(0006)	04	R	TMH4/2 Connected confirmation	TMH4/2 address 07 connection check				
300008(0007)	04	R	TMH4/2 Connected confirmation	TMH4/2 address 08 connection check				
300009(0008)	04	R	TMH4/2 Connected confirmation	TMH4/2 address 09 connection check				
300010(0009)	04	R	TMH4/2 Connected confirmation	TMH4/2 address 10 connection check				
300011(000A)	04	R	TMH4/2 Connected confirmation	TMH4/2 address 11 connection check				
300012(000B)	04	R	TMH4/2 Connected confirmation	TMH4/2 address 12 connection check				
300013(000C)	04	R	TMH4/2 Connected confirmation	TMH4/2 address 13 connection check				
300014(000D)	04	R	TMH4/2 Connected confirmation	TMH4/2 address 14 connection check				
300015(000E)	04	R	TMH4/2 Connected confirmation	TMH4/2 address 15 connection check				
300016(000F)	04	R	TMH4/2 Connected confirmation	TMH4/2 address 16 connection check				
300017(0010)	04	R	TMH4/2 Connected confirmation	TMH4/2 address 17 connection check				
300018(0011)	04	R	TMH4/2 Connected confirmation	TMH4/2 address 18 connection check				
300019(0012)	04	R	TMH4/2 Connected confirmation	TMH4/2 address 19 connection check				
300020(0013)	04	R	TMH4/2 Connected confirmation	TMH4/2 address 20 connection check				
300021(0014)	04	R	TMH4/2 Connected confirmation	TMH4/2 address 21 connection check				
300022(0015)	04	R	TMH4/2 Connected confirmation	TMH4/2 address 22 connection check				
300023(0016)	04	R	TMH4/2 Connected confirmation	TMH4/2 address 23 connection check				
300024(0017)	04	R	TMH4/2 Connected confirmation	TMH4/2 address 24 connection check				
300025(0018)	04	R	TMH4/2 Connected confirmation	TMH4/2 address 25 connection check				
300026(0019)	04	R	TMH4/2 Connected confirmation	TMH4/2 address 26 connection check				
300027(001A)	04	R	TMH4/2 Connected confirmation	TMH4/2 address 27 connection check				

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
300028(001B)	04	R	TMH4/2 Connected confirmation	TMH4/2 address 28 connection check				
300029(001C)	04	R	TMH4/2 Connected confirmation	TMH4/2 address 29 connection check				
300030(001D)	04	R	TMH4/2 Connected confirmation	TMH4/2 address 30 connection check				
300031(001E)	04	R	TMH4/2 Connected confirmation	TMH4/2 address 31 connection check				
300032(001F)	04	R	TMH4/2 Connected confirmation	TMH4/2 address 32 connection check				
300033(0020)	04	R	TMHA Connected confirmation	TMHA address 33 connection check	Not connect: 0, Connect: 1	0		
300034(0021)	04	R	TMHA Connected confirmation	TMHA address 34 connection check				
300035(0022)	04	R	TMHA Connected confirmation	TMHA address 35 connection check				
300036(0023)	04	R	TMHA Connected confirmation	TMHA address 36 connection check				
300037(0024)	04	R	TMHA Connected confirmation	TMHA address 37 connection check				
300038(0025)	04	R	TMHA Connected confirmation	TMHA address 38 connection check				
300039(0026)	04	R	TMHA Connected confirmation	TMHA address 39 connection check				
300040(0027)	04	R	TMHA Connected confirmation	TMHA address 40 connection check				
300041(0028)	04	R	TMHA Connected confirmation	TMHA address 41 connection check				
300042(0029)	04	R	TMHA Connected confirmation	TMHA address 42 connection check				
300043(002A)	04	R	TMHA Connected confirmation	TMHA address 43 connection check				
300044(002B)	04	R	TMHA Connected confirmation	TMHA address 44 connection check				
300045(002C)	04	R	TMHA Connected confirmation	TMHA address 45 connection check				
300046(002D)	04	R	TMHA Connected confirmation	TMHA address 46 connection check				
300047(002E)	04	R	TMHA Connected confirmation	TMHA address 47 connection check				
300048(002F)	04	R	TMHA Connected confirmation	TMHA address 48 connection check				
300049(0030)	04	R	TMHE Connected confirmation	TMHE address 49 connection check	Not connect: 0, Connect: 1	0		
300050(0031)	04	R	TMHE Connected confirmation	TMHE address 50 connection check				
300051(0032)	04	R	TMHE Connected confirmation	TMHE address 51 connection check				
300052(0033)	04	R	TMHE Connected confirmation	TMHE address 52 connection check				
300053(0034)	04	R	TMHE Connected confirmation	TMHE address 53 connection check				
300054(0035)	04	R	TMHE Connected confirmation	TMHE address 54 connection check				
300055(0036)	04	R	TMHE Connected confirmation	TMHE address 55 connection check				

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
300056(0037)	04	R	TMHE Connected confirmation	TMHE address 56 connection check				
300057(0038)	04	R	TMHE Connected confirmation	TMHE address 57 connection check				
300058(0039)	04	R	TMHE Connected confirmation	TMHE address 58 connection check				
300059(003A)	04	R	TMHE Connected confirmation	TMHE address 59 connection check				
300060(003B)	04	R	TMHE Connected confirmation	TMHE address 60 connection check				
300061(003C)	04	R	TMHE Connected confirmation	TMHE address 61 connection check				
300062(003D)	04	R	TMHE Connected confirmation	TMHE address 62 connection check				
300063(003E)	04	R	TMHE Connected confirmation	TMHE address 63 connection check				
300064(003F)	04	R	TMHE Connected confirmation	TMHE address 64 connection check				
300065(0040)	04	R	TMHCT Connected confirmation	TMHCT address 65 connection check	Not connect: 0, Connect: 1		0	
300066(0041)	04	R	TMHCT Connected confirmation	TMHCT address 66 connection check				
300067(0042)	04	R	TMHCT Connected confirmation	TMHCT address 67 connection check				
300068(0043)	04	R	TMHCT Connected confirmation	TMHCT address 68 connection check				
300069(0044)	04	R	TMHCT Connected confirmation	TMHCT address 69 connection check				
300070(0045)	04	R	TMHCT Connected confirmation	TMHCT address 70 connection check				
300071(0046)	04	R	TMHCT Connected confirmation	TMHCT address 71 connection check				
300072(0047)	04	R	TMHCT Connected confirmation	TMHCT address 72 connection check				
300073(0048)	04	R	TMHCT Connected confirmation	TMHCT address 73 connection check				
300074(0049)	04	R	TMHCT Connected confirmation	TMHCT address 74 connection check				
300075(004A)	04	R	TMHCT Connected confirmation	TMHCT address 75 connection check				
300076(004B)	04	R	TMHCT Connected confirmation	TMHCT address 76 connection check				
300077(004C)	04	R	TMHCT Connected confirmation	TMHCT address 77 connection check				
300078(004D)	04	R	TMHCT Connected confirmation	TMHCT address 78 connection check				
300079(004E)	04	R	TMHCT Connected confirmation	TMHCT address 79 connection check				
300080(0050)	04	R	TMHCT Connected confirmation	TMHCT address 80 connection check				
300081(0051)	04	R	Connected Modules Number	Number of connected modules check	0 to 31	-	0	
300082(0052)	04	R	Unit Address	Comm. address	01 to 31	-	01	
300089(0053) to 300100(0063)	04	R	Reserved					

2.5.3 Read input register (Func 04)

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
300101(0064)	04	R	-	Product number H	-	-	0	
300102(0065)	04	R	-	Product number L	-	-	0	
300103(0066)	04	R	-	Hardware version	-	-	100	
300104(0067)	04	R	-	Software version	-	-	100	
300105(0068)	04	R	-	Model name 1	-	-	"TM"	Product name
300106(0069)	04	R	-	Model name 2	-	-	"HC"	Option
300107(006A)	04	R	-	Model name 3	-	-	"-2"	Comm. output
300108(006B)	04	R	-	Model name 4	-	-	"2S"	Power voltage/ Comm. method
300109(006C)	04	R	-	Model name 5	-	-	"E "	Structure
300110(006D)	04	R	-	Model name 6	-	-	" "	
300111(006E)	04	R	-	Model name 7	-	-	" "	
300112(006F)	04	R	-	Model name 8	-	-	" "	
300113(0070)	04	R	-	Model name 9	-	-	" "	
300114(0071)	04	R	-	Model name 10	-	-	" "	
300115(0072)	04	R	Reserved					
300116(0073)	04	R	Reserved					
300117(0074)	04	R	Reserved					
300118(0075)	04	R	-	Coil status Start Address	-	-	0	
300119(0076)	04	R	-	Coil status Quantity	-	-	0	
300120(0077)	04	R	-	Input status Start Address	-	-	0	
300121(0078)	04	R	-	Input status Quantity	-	-	0	
300122(0079)	04	R	-	Holding Register Start Address	-	-	0	
300123(007A)	04	R	-	Holding Register Quantity	-	-	0	
300124(007B)	04	R	-	Input Register Start Address	-	-	0	
300125(007C)	04	R	-	Input Register Quantity	-	-	0	
300126(007D)	04	R	-	Channel Quantity	-	-	0	
300127(007E) to 300200(00C7)	04	R	Reserved					

2.5.4 Read holding register (Func 03) / Preset single register (Func 06) / Preset multiple registers (Func 16)

2.5.4.1 Communication setting group 1

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
400101(0064)	03/06/16	R/W	Bit Per Second	Communication speed	0: 4800, 1: 9600, 2: 19200, 3: 38400, 4: 115200	bps	1: 9600	
400102(0065)	03/06/16	R/W	Parity Bit	Communication parity bit	0: NONE, 1: EVEN, 2: ODD	-	0: NONE	
400103(0066)	03/06/16	R/W	Stop Bit	Communication stop bit	0: 1, 1: 2	bit	1: 2	
400104(0067)	03/06/16	R/W	Response Waiting Time1	Communication response wait time	5 to 99	ms	20	
400105(0068)	03/06/16	R/W	Communication Write2	Communication writing enable/disable	0: ENABLE, 1: DISABLE	-	0: ENABLE	
400106(0069)	03/06/16	R/W	Parameter Initialize	Parameter reset	0: NO, 1: YES	-	0: NO	
400107(006A) to 400200(00C7)	03/06/16	R/W	Reserved					

2.5.4.2 Communication setting group 2

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
400201(00C8)	03/06/16	R/W	Bit Per Second	Communication speed	0: 4800, 1: 9600, 2: 19200, 3: 38400, 4: 115200	bps	1: 9600	
400202(00C9)	03/06/16	R/W	Parity Bit	Communication parity bit	0: NONE, 1: EVEN, 2: ODD	-	0: NONE	
400203(00CA)	03/06/16	R/W	Stop Bit	Communication stop bit	0: 1, 1: 2	bit	1: 2	
400204(00CB)	03/06/16	R/W	Response Waiting Time2	Communication response wait time	5 to 99	ms	20	
400205(00CC)	03/06/16	R/W	Communication Write2	Communication writing enable/disable	0: ENABLE, 1: DISABLE	-	0: ENABLE	
400206(00CD)	03/06/16	R/W	Parameter Initialize	Parameter reset	0: NO, 1: YES	-	0: NO	
400207(00CE) to 400300(012B)	03/06/16	R/W	Reserved					

2.5.5 TMH4/2

2.5.5.1 Read coil status (Func 01) / Force single coil (Func 05)

No(Address)		Func	R/W	Parameter	Description	Set range	Unit	Default	Note
TMH2	TMH4								
000001(0000)	000001(0000)	01/05	R/W	CH1 RUN/STOP	CH1 control output RUN/STOP	0: RUN, 1: STOP		0: RUN	
000002(0001)	000002(0001)	01/05	R/W	CH2 RUN/STOP	CH2 control output RUN/STOP				
-	000003(0002)	01/05	R/W	CH3 RUN/STOP	CH3 control output RUN/STOP				
-	000004(0003)	01/05	R/W	CH4 RUN/STOP	CH4 control output RUN/STOP				
000005(0004) to 000008(0007)		01/05	R/W	02 address parameter – Same as above 01 address					
000009(0008) to 000012(000B)		01/05	R/W	03 address parameter – Same as above 01 address					
000013(000C) to 000016(000F)		01/05	R/W	04 address parameter – Same as above 01 address					
000017(0010) to 000020(0013)		01/05	R/W	05 address parameter – Same as above 01 address					
000021(0014) to 000024(0017)		01/05	R/W	06 address parameter – Same as above 01 address					
000025(0018) to 000028(001B)		01/05	R/W	07 address parameter – Same as above 01 address					
000029(001C) to 000032(001F)		01/05	R/W	08 address parameter – Same as above 01 address					
000033(0020) to 000036(0023)		01/05	R/W	09 address parameter – Same as above 01 address					
000037(0024) to 000040(0027)		01/05	R/W	10 address parameter – Same as above 01 address					
000041(0028) to 000044(002B)		01/05	R/W	11 address parameter – Same as above 01 address					
000045(002C) to 000048(002F)		01/05	R/W	12 address parameter – Same as above 01 address					
000049(0030) to 000052(0033)		01/05	R/W	13 address parameter – Same as above 01 address					
000053(0034) to 000056(0037)		01/05	R/W	14 address parameter – Same as above 01 address					
000057(0038) to 000060(003B)		01/05	R/W	15 address parameter – Same as above 01 address					
000061(003C) to 000064(003F)		01/05	R/W	16 address parameter – Same as above 01 address					
000065(0040)	000065(0040)	01/05	R/W	CH1 Auto-Tuning Execute	CH1 auto-tuning ON/OFF	0: OFF, 1: ON		0: OFF	
000066(0041)	000066(0041)	01/05	R/W	CH2 Auto-Tuning Execute	CH2 auto-tuning ON/OFF				
-	000067(0042)	01/05	R/W	CH3 Auto-Tuning Execute	CH3 auto-tuning ON/OFF				
-	000068(0043)	01/05	R/W	CH4 Auto-Tuning Execute	CH4 auto-tuning ON/OFF				
000069(0044) to 000072(0047)		01/05	R/W	02 address parameter – Same as above 01 address					
000073(0048) to 000076(004B)		01/05	R/W	03 address parameter – Same as above 01 address					
000077(004C) to 000080(004F)		01/05	R/W	04 address parameter – Same as above 01 address					
000081(0050) to 000084(0053)		01/05	R/W	05 address parameter – Same as above 01 address					
000085(0054) to 000088(0057)		01/05	R/W	06 address parameter – Same as above 01 address					
000089(0058) to 000092(005B)		01/05	R/W	07 address parameter – Same as above 01 address					
000093(005C) to 000096(005F)		01/05	R/W	08 address parameter – Same as above 01 address					
000097(0060) to 000100(0063)		01/05	R/W	09 address parameter – Same as above 01 address					
000101(0064) to 000104(0067)		01/05	R/W	10 address parameter – Same as above 01 address					
000105(0068) to 000108(006B)		01/05	R/W	11 address parameter – Same as above 01 address					
000109(006C) to 000112(006F)		01/05	R/W	12 address parameter – Same as above 01 address					
000113(0070) to 000116(0073)		01/05	R/W	13 address parameter – Same as above 01 address					

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
TMH2	TMH4							
000117(0074) to 000120(0077)	01/05	R/W	14 address parameter	– Same as above 01 address				
000121(0078) to 000124(007B)	02	R	15 address parameter	– Same as above 01 address				
000125(007C) to 000128(007F)	02	R	16 address parameter	– Same as above 01 address				
000129(0080) to 000150(0095)	02	R	Reserved					

2.5.5.2 Read input status (Func 02)

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
TMH2	TMH4							
100001(0000)	100001(0000)	02	R	-	CH1 LED(OUT)	0: OFF, 1: ON	-	-
100002(0001)	100002(0001)	02	R	-	CH2 LED(OUT)		-	-
-	100003(0002)	02	R	-	CH3 LED (OUT)		-	-
-	100004(0003)	02	R	-	CH4 LED (OUT)		-	-
100005(0004)	-	02	R	-	AL1 LED	0: OFF, 1: ON	-	-
100006(0005)	-	02	R	-	AL2 LED		-	-
100007(0006)	-	02	R	-	AL3 LED		-	-
100008(0007)	-	02	R	-	AL4 LED		-	-
100009(0008)	-	02	R	-	DI-1 input	0: OFF, 1: ON	-	-
100010(0009)	-	02	R	-	DI-2 input		-	-
100011(000A)	100011(000A)	02	R	-	CH1 EVENT 1 status	0: OFF, 1: ON	-	-
100012(000B)	100012(000B)	02	R	-	CH1 EVENT 2 status		-	-
100013(000C)	100013(000C)	02	R	-	CH1 EVENT 3 status		-	-
100014(000D)	100014(000D)	02	R	-	CH1 EVENT 4 status		-	-
100015(000E)	100015(000E)	02	R	-	CH2 EVENT 1 status	0: OFF, 1: ON	-	-
100016(000F)	100016(000F)	02	R	-	CH2 EVENT 2 status		-	-
100017(0010)	100017(0010)	02	R	-	CH2 EVENT 3 status		-	-
100018(0011)	100018(0011)	02	R	-	CH2 EVENT 4 status		-	-
-	100019(0012)	02	R	-	CH3 EVENT 1 status	0: OFF, 1: ON	-	-
-	100020(0013)	02	R	-	CH3 EVENT 2 status		-	-
-	100021(0014)	02	R	-	CH3 EVENT 3 status		-	-
-	100022(0015)	02	R	-	CH3 EVENT 4 status		-	-
-	100023(0016)	02	R	-	CH4 EVENT 1 status	0: OFF, 1: ON	-	-
-	100024(0017)	02	R	-	CH4 EVENT 2 status		-	-
-	100025(0018)	02	R	-	CH4 EVENT 3 status		-	-
-	100026(0019)	02	R	-	CH4 EVENT 4 status		-	-
100027(001A) to 100052(0033)	02	R	02 address parameter	– Same as above 01 address				
100053(0034) to 100078(004D)	02	R	03 address parameter	– Same as above 01 address				
100079(004E) to 100104 (0067)	02	R	04 address parameter	– Same as above 01 address				
100105(0068) to 100130(0081)	02	R	05 address parameter	– Same as above 01 address				
100131(0082) to 100156(009B)	02	R	06 address parameter	– Same as above 01 address				
100157(009C) to 100182(00B5)	02	R	07 address parameter	– Same as above 01 address				
100183(00B6) to 100208(00CF)	02	R	08 address parameter	– Same as above 01 address				
100209(00D0) to 100234(00E9)	02	R	09 address parameter	– Same as above 01 address				

No(Address)		Func	R/W	Parameter	Description	Set range	Unit	Default	Note
TMH2	TMH4								
100235(00EA) to 100260(0103)		02	R	10 address parameter – Same as above 01 address					
100261(0104) to 100286(011D)		02	R	11 address parameter – Same as above 01 address					
100287(011E) to 100312(0137)		02	R	12 address parameter – Same as above 01 address					
100313(0138) to 100338(0151)		02	R	13 address parameter – Same as above 01 address					
100339(0152) to 100364(016B)		02	R	14 address parameter – Same as above 01 address					
100365(016C) to 100390(0185)		02	R	15 address parameter – Same as above 01 address					
100391(0186) to 100416(019F)		02	R	16 address parameter – Same as above 01 address					
100417(01A0) to 100450(01C1)		02	R	Reserved					

2.5.5.3 Read input register (Func 04)

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
TMH2	TMH4							
300201(00C8)		04	R	-	Product number H	-	0	
300202(00C9)		04	R	-	Product number L	-	0	
300203(00CA)		04	R	-	Hardware version	-	100	
300204(00CB)		04	R	-	Software version	-	100	
300205(00CC)		04	R	-	Model name 1	-	"TM"	Product name
300206(00CD)		04	R	-	Model name 2	-	"H□"	Channel
300207(00CE)		04	R	-	Model name 3	-	"-□"	Option
300208(00CF)		04	R	-	Model name 4	-	"□□"	Power voltage/Control output
300209(00D0)		04	R	-	Model name 5	-	"□ "	Structure
300210(00D1)		04	R	-	Model name 6	-	" "	
300211(00D2)		04	R	-	Model name 7	-	" "	
300212(00D3)		04	R	-	Model name 8	-	" "	
300213(00D4)		04	R	-	Model name 9	-	" "	
300214(00D5)		04	R	-	Model name 10	-	" "	
300215(00D6)		04	R	Reserved				
300216(00D7)		04	R	Reserved				
300217(00D8)		04	R	Reserved				
300218(00D9)		04	R	-	Coil status Start Address	-	0	
300219(00DA)		04	R	-	Coil status Quantity	-	0	
300220(00DB)		04	R	-	Input status Start Address	-	0	
300221(00DC)		04	R	-	Input status Quantity	-	0	
300222(00DD)		04	R	-	Holding Register Start Address	-	0	
300223(00DE)		04	R	-	Holding Register Quantity	-	0	
300224(00DF)		04	R	-	Input Register Start Address	-	0	
300225(00E0)		04	R	-	Input Register Quantity	-	0	
300226(00E1)		04	R	-	Channel Quantity	-	0	
300227(00E2) to 300252(00FB)		04	R	02 address parameter – Same as above 01 address				
300253(00FC) to 300278(0115)		04	R	03 address parameter – Same as above 01 address				
300279(0116) to 300304(012F)		04	R	04 address parameter – Same as above 01 address				
300305(0130) to 300330(0149)		04	R	05 address parameter – Same as above 01 address				
300331(014A) to 300356(0163)		04	R	06 address parameter – Same as above 01 address				
300357(0164) to 300382(017D)		04	R	07 address parameter – Same as above 01 address				
300383(017E) to 300408(0197)		04	R	08 address parameter – Same as above 01 address				
300409(0198) to 300434(01B1)		04	R	09 address parameter – Same as above 01 address				
300435(01B2) to 300460(01CB)		04	R	10 address parameter – Same as above 01 address				
300461(01CC) to 300486(01E5)		04	R	11 address parameter – Same as above 01 address				
300487(01E6) to 300512(01FF)		04	R	12 address parameter – Same as above 01 address				
300513(0200) to 300538(0219)		04	R	13 address parameter – Same as above 01 address				

No(Address)		Func	R/W	Parameter	Description	Set range	Unit	Default	Note
TMH2	TMH4								
300539(021A) to 300564(0233)		04	R	14 address parameter – Same as above 01 address					
300565(0234) to 300590(024D)		04	R	15 address parameter – Same as above 01 address					
300591(024E) to 300616(0267)		04	R	16 address parameter – Same as above 01 address					
300617(0268) to 300650(0289)		04	R	Reserved					
310001(2710)	310001(2710)	04	R	CH1 Present Value	CH1 present value	Sensor input range, 31000: OPEN, 30000: HHHH, -30000: LLLL	°C/°F, Digit		
310002(2711)	310002(2711)	04	R	CH2 Present Value	CH2 present value				
-	310003(2712)	04	R	CH3 Present Value	CH3 present value				
-	310004(2713)	04	R	CH4 Present Value	CH4 present value				
310005(2714) to 310008(2717)		04	R	02 address parameter – Same as above 01 address					
310009(2718) to 310012(271B)		04	R	03 address parameter – Same as above 01 address					
310013(271C) to 310016(271F)		04	R	04 address parameter – Same as above 01 address					
310017(2720) to 310020(2723)		04	R	05 address parameter – Same as above 01 address					
310021(2724) to 310024(2727)		04	R	06 address parameter – Same as above 01 address					
310025(2728) to 310028(272B)		04	R	07 address parameter – Same as above 01 address					
310029(272C) to 310032(272F)		04	R	08 address parameter – Same as above 01 address					
310033(2730) to 310036(2733)		04	R	09 address parameter – Same as above 01 address					
310037(2734) to 310040(2737)		04	R	10 address parameter – Same as above 01 address					
310041(2738) to 310044(273B)		04	R	11 address parameter – Same as above 01 address					
310045(273C) to 310048(273F)		04	R	12 address parameter – Same as above 01 address					
310049(2740) to 310052(2743)		04	R	13 address parameter – Same as above 01 address					
310053(2744) to 310056(2747)		04	R	14 address parameter – Same as above 01 address					
310057(2748) to 310060(274B)		04	R	15 address parameter – Same as above 01 address					
310061(274C) to 310064(274F)		04	R	16 address parameter – Same as above 01 address					
310065(2750)	310065(2750)	04	R	CH1 Dot	CH1 sensor decimal point	0: 0, 1: 0.0		0: 0	
310066(2751)	310066(2751)	04	R	CH2 Dot	CH2 sensor decimal point				
-	310067(2752)	04	R	CH3 Dot	CH3 sensor decimal point				
-	310068(2753)	04	R	CH4 Dot	CH4 sensor decimal point				
310069(2754) to 310072(2757)		04	R	02 address parameter – Same as above 01 address					
310073(2758) to 310076(275B)		04	R	03 address parameter – Same as above 01 address					
310077(275C) to 310080(275F)		04	R	04 address parameter – Same as above 01 address					
310081(2760) to 310084(2763)		04	R	05 address parameter – Same as above 01 address					
310085(2764) to 310088(2767)		04	R	06 address parameter – Same as above 01 address					
310089(2768) to 310092(276B)		04	R	07 address parameter – Same as above 01 address					
310093(276C) to 310096(276F)		04	R	08 address parameter – Same as above 01 address					
310097(2770) to 310100(2773)		04	R	09 address parameter – Same as above 01 address					
310101(2774) to 310104(2777)		04	R	10 address parameter – Same as above 01 address					
310105(2778) to 310108(277B)		04	R	11 address parameter – Same as above 01 address					
310109(277C) to 310112(277F)		04	R	12 address parameter – Same as above 01 address					
310113(2780) to 310116(2783)		04	R	13 address parameter – Same as above 01 address					
310117(2784) to 310120(2787)		04	R	14 address parameter – Same as above 01 address					
310121(2788) to 310124(278B)		04	R	15 address parameter – Same as above 01 address					

No(Address)		Func	R/W	Parameter	Description	Set range	Unit	Default	Note
TMH2	TMH4								
310125(278C) to 310128(278F)		04	R	16 address parameter – Same as above 01 address					
310129(2790)	310129(2790)	04	R	CH1 Unit	CH1 sensor temp. unit	0: °C, 1: °F	-	0: °C	
310130(2791)	310130(2791)	04	R	CH2 Unit	CH2 sensor temp. unit				
-	310131(2792)	04	R	CH3 Unit	CH3 sensor temp. unit				
-	310132(2793)	04	R	CH4 Unit	CH4 sensor temp. unit				
310133(2794) to 310136(2797)		04	R	02 address parameter – Same as above 01 address					
310137(2798) to 310140(279B)		04	R	03 address parameter – Same as above 01 address					
310141(279C) to 310144(279F)		04	R	04 address parameter – Same as above 01 address					
310145(27A0) to 310148(27A3)		04	R	05 address parameter – Same as above 01 address					
310149(27A4) to 310152(27A7)		04	R	06 address parameter – Same as above 01 address					
310153(27A8) to 310156(27AB)		04	R	07 address parameter – Same as above 01 address					
310157(27AC) to 310160(27AF)		04	R	08 address parameter – Same as above 01 address					
310161(27B0) to 310164(27B3)		04	R	09 address parameter – Same as above 01 address					
310165(27B4) to 310168(27B7)		04	R	10 address parameter – Same as above 01 address					
310169(27B8) to 310172(27BB)		04	R	11 address parameter – Same as above 01 address					
310173(27BC) to 310176(27BF)		04	R	12 address parameter – Same as above 01 address					
310177(27C0) to 310180(27C3)		04	R	13 address parameter – Same as above 01 address					
310181(27C4) to 310184(27C7)		04	R	14 address parameter – Same as above 01 address					
310185(27C8) to 310188(27CB)		04	R	15 address parameter – Same as above 01 address					
310189(27CC) to 310192(27CF)		04	R	16 address parameter – Same as above 01 address					
310193(27D0)	310193(27D0)	04	R	CH1 Set Value	CH1 set value	SV Low Limit to SV High Limit	°C/°F, Digit	0	
310194(27D1)	310194(27D1)	04	R	CH2 Set Value	CH2 set value				
-	310195(27D2)	04	R	CH3 Set Value	CH3 set value				
-	310196(27D3)	04	R	CH4 Set Value	CH4 set value				
310197(27D4) to 310200(27D7)		04	R	02 address parameter – Same as above 01 address					
310201(27D8) to 310204(27DB)		04	R	03 address parameter – Same as above 01 address					
310205(27DC) to 310208(27DF)		04	R	04 address parameter – Same as above 01 address					
310209(27E0) to 310212(27E3)		04	R	05 address parameter – Same as above 01 address					
310213(27E4) to 310216(27E7)		04	R	06 address parameter – Same as above 01 address					
310217(27E8) to 310220(27EB)		04	R	07 address parameter – Same as above 01 address					
310221(27EC) to 310224(27EF)		04	R	08 address parameter – Same as above 01 address					
310225(27F0) to 310228(27F3)		04	R	09 address parameter – Same as above 01 address					
310229(27F4) to 310232(27F7)		04	R	10 address parameter – Same as above 01 address					
310233(27F8) to 310236(27FB)		04	R	11 address parameter – Same as above 01 address					
310237(27FC) to 310240(27FF)		04	R	12 address parameter – Same as above 01 address					
310241(2800) to 310244(2803)		04	R	13 address parameter – Same as above 01 address					
310245(2804) to 310248(2807)		04	R	14 address parameter – Same as above 01 address					
310249(2808) to 310252(280B)		04	R	15 address parameter – Same as above 01 address					
310253(280C) to 310256(280F)		04	R	16 address parameter – Same as above 01 address					
310257(2810)	310257(2810)	04	R	CH1 Heating_MV	CH1 heating MV	0 to 1000 (0.0 to 100.0)	%	-	
310258(2811)	310258(2811)	04	R	CH2 Heating_MV	CH2 heating MV				
-	310259(2812)	04	R	CH3 Heating_MV	CH3 heating MV				
-	310260(2813)	04	R	CH4 Heating_MV	CH4 heating MV				
310261(2814) to 310264(2817)		04	R	02 address parameter – Same as above 01 address					

No(Address)		Func	R/W	Parameter	Description	Set range	Unit	Default	Note
TMH2	TMH4								
310265(2818) to 310268(281B)		04	R	03 address parameter – Same as above 01 address					
310269(281C) to 310272(281F)		04	R	04 address parameter – Same as above 01 address					
310273(2820) to 310276(2823)		04	R	05 address parameter – Same as above 01 address					
310277(2824) to 310280(2827)		04	R	06 address parameter – Same as above 01 address					
310281(2828) to 310284(282B)		04	R	07 address parameter – Same as above 01 address					
310285(282C) to 310288(282F)		04	R	08 address parameter – Same as above 01 address					
310289(2830) to 310292(2833)		04	R	09 address parameter – Same as above 01 address					
310293(2834) to 310296(2837)		04	R	10 address parameter – Same as above 01 address					
310297(2838) to 310300(283B)		04	R	11 address parameter – Same as above 01 address					
310301(283C) to 310304(283F)		04	R	12 address parameter – Same as above 01 address					
310305(2840) to 310308(2843)		04	R	13 address parameter – Same as above 01 address					
310309(2844) to 310312(2847)		04	R	14 address parameter – Same as above 01 address					
310313(2848) to 310316(284B)		04	R	15 address parameter – Same as above 01 address					
310317(284C) to 310320(284F)		04	R	16 address parameter – Same as above 01 address					
310321(2850)	310321(2850)	04	R	CH1 Cooling_MV	CH1 cooling MV	0 to 1000 (0.0 to 100.0)	%	-	
310322(2851)	310322(2851)	04	R	CH1 Cooling_MV	CH2 cooling MV				
-	310323(2852)	04	R	CH1 Cooling_MV	CH3 cooling MV				
-	310324(2853)	04	R	CH1 Cooling_MV	CH4 cooling MV				
310325(2854) to 310328(2857)		04	R	02 address parameter – Same as above 01 address					
310329(2858) to 310332(285B)		04	R	03 address parameter – Same as above 01 address					
310333(285C) to 310336(285F)		04	R	04 address parameter – Same as above 01 address					
310337(2860) to 310340(2863)		04	R	05 address parameter – Same as above 01 address					
310341(2864) to 310344(2867)		04	R	06 address parameter – Same as above 01 address					
310345(2868) to 310348(286B)		04	R	07 address parameter – Same as above 01 address					
310349(286C) to 310352(286F)		04	R	08 address parameter – Same as above 01 address					
310353(2870) to 310356(2873)		04	R	09 address parameter – Same as above 01 address					
310357(2874) to 310360(2877)		04	R	10 address parameter – Same as above 01 address					
310361(2878) to 310364(287B)		04	R	11 address parameter – Same as above 01 address					
310365(287C) to 310368(287F)		04	R	12 address parameter – Same as above 01 address					
310369(2880) to 310372(2883)		04	R	13 address parameter – Same as above 01 address					
310373(2884) to 310376(2887)		04	R	14 address parameter – Same as above 01 address					
310377(2888) to 310380(288B)		04	R	15 address parameter – Same as above 01 address					
310381(288C) to 310384(288F)		04	R	16 address parameter – Same as above 01 address					
-	310385(2890)	04	R	-	CH1 LED(OUT1)	0: OFF, 1: ON	-	-	Bit 0
				-	CH2 LED(OUT2)				Bit 1
				-	CH3 LED(OUT3)				Bit 2
				-	CH4 LED(OUT4)				Bit 3
				-	-	0 fixed	-	-	Bit 4
				-	-				Bit 5
				-	-				Bit 6
				-	-				Bit 7
				-	-				Bit 8
				-	-				Bit 9
310385(2890)	-	04	R	-	CH1 LED(OUT1)	0: OFF, 1: ON	-	-	Bit 0

No(Address)		Func	R/W	Parameter	Description	Set range	Unit	Default	Note
TMH2	TMH4								
				-	CH2 LED(OUT2)				Bit 1
				-	CH3 LED(OUT3), H&C control				Bit 2
				-	CH4 LED(OUT4), H&C control				Bit 3
				-	AL1 LED	0: OFF, 1: ON			Bit 4
				-	AL2 LED				Bit 5
				-	AL3 LED				Bit 6
				-	AL4 LED				Bit 7
				-	DI-1 input	0: OFF, 1: ON			Bit 8
				-	DI-2 input				Bit 9
310386(2891)	310386(2891)	04	R	-	CH1 EVENT1 status	0: OFF, 1: ON			
				-	CH1 EVENT2 status				
				-	CH1 EVENT3 status				
				-	CH1 EVENT4 status				
				-	CH2 EVENT1 status	0: OFF, 1: ON			
				-	CH2 EVENT2 status				
				-	CH2 EVENT3 status				
				-	CH2 EVENT4 status				
				-	CH3 EVENT1 status	0: OFF, 1: ON			
				-	CH3 EVENT2 status				
				-	CH3 EVENT3 status				
				-	CH3 EVENT4 status				
				-	CH4 EVENT1 status	0: OFF, 1: ON			
				-	CH4 EVENT2 status				
				-	CH4 EVENT3 status				
				-	CH4 EVENT4 status				
310387(2892)		04	R	Unit Address	Comm. address	1 to 16	-	1	
310388(2893) to 310390(2895)		02	R	02 address parameter – Same as above 01 address					
310391(2896) to 310393(2898)		02	R	03 address parameter – Same as above 01 address					
310394(2899) to 310396(289B)		02	R	04 address parameter – Same as above 01 address					
310397(289C) to 310399(289E)		02	R	05 address parameter – Same as above 01 address					
310400(289F) to 310402(28A1)		02	R	06 address parameter – Same as above 01 address					
310403(28A2) to 310405(28A4)		02	R	07 address parameter – Same as above 01 address					
310406(28A5) to 310408(28A7)		04	R	08 address parameter – Same as above 01 address					
310409(28A8) to 310411(28AA)		04	R	09 address parameter – Same as above 01 address					
310412(28AB) to 310414(28AD)		04	R	10 address parameter – Same as above 01 address					
310415(28AE) to 310417(28B0)		04	R	11 address parameter – Same as above 01 address					
310418(28B1) to 310420(28B3)		04	R	12 address parameter – Same as above 01 address					
310421(28B4) to 310423(28B6)		04	R	13 address parameter – Same as above 01 address					
310424(28B7) to 310426(28B9)		04	R	14 address parameter – Same as above 01 address					
310427(28BA) to 310429(28BC)		04	R	15 address parameter – Same as above 01 address					
310430(28BD) to 310432(28BF)		04	R	16 address parameter – Same as above 01 address					
310433(28C0)	310433(28C0)	04	R	CT1_Heater Current	CT1 heater current value monitoring	0 to 500 (0.0 to 50.0)	A	-	

No(Address)		Func	R/W	Parameter	Description	Set range	Unit	Default	Note
TMH2	TMH4								
310434(28C1)	310434(28C1)	04	R	CT2_Heater Current	CT2 heater current value monitoring				
310435(28C2)	310435(28C2)	04	R	CT3_Heater Current	CT3 heater current value monitoring				
310436(28C3)	310436(28C3)	04	R	CT4_Heater Current	CT4 heater current value monitoring				
310437(28C4) to 310440(28C7)		04	R	02 address parameter – Same as above 01 address					
310441(28C8) to 310444(28CB)		04	R	03 address parameter – Same as above 01 address					
310445(28CC) to 310448(28CF)		04	R	04 address parameter – Same as above 01 address					
310449(28D0) to 310452(28D3)		04	R	05 address parameter – Same as above 01 address					
310453(28D4) to 310456(28D7)		04	R	06 address parameter – Same as above 01 address					
310457(28D8) to 310460(28DB)		04	R	07 address parameter – Same as above 01 address					
310461(28DC) to 310464(28DF)		04	R	08 address parameter – Same as above 01 address					
310465(28E0) to 310468(28E3)		04	R	09 address parameter – Same as above 01 address					
310469(28E4) to 310472(28E7)		04	R	10 address parameter – Same as above 01 address					
310473(28E8) to 310476(28EB)		04	R	11 address parameter – Same as above 01 address					
310477(28EC) to 310480(28EF)		04	R	12 address parameter – Same as above 01 address					
310481(28F0) to 310484(28F3)		04	R	13 address parameter – Same as above 01 address					
310485(28F4) to 310488(28F7)		04	R	14 address parameter – Same as above 01 address					
310489(28F8) to 310492(28FB)		04	R	15 address parameter – Same as above 01 address					
310493(28FC) to 310496(28FF)		04	R	16 address parameter – Same as above 01 address					
310497(2900) to 310500(2903)		04	R	Reserved					

2.5.5.4 Read holding register (Func 03) / Preset single register (Func 06) / Preset multiple registers (Func 16)

No(Address)		Func	R/W	Parameter	Description	Set range	Unit	Default	Note
TMH2	TMH4								
401001(03E8)		03/06/16	R/W	CH1 SV	Temp. set value	SV Low Limit to SV High Limit	℃/°F, Digit	0	Monitoring group
401002(03E9)		03/06/16	R/W	CH1 Heating_MV	Heating MV	0 to 1000 (0.0 to 100.0)	%	-	
401003(03EA)		03/06/16	R/W	CH1 Cooling_MV	Cooling MV	0 to 1000 (0.0 to 100.0)	%	-	
401004(03EB)		03/06/16	R/W	CH1 Auto-Manual Control	Auto/Manual control	0: AUTO, 1: MANUAL	-	0: AUTO	
401005(03EC) to 401030(0405)		03/06/16	R/W	Reserved					
401031(0406)		03/06/16	R/W	CH1 RUN_STOP	Control output RUN/STOP	0: RUN, 1: STOP	-	0:RUN	Operating (Control Operation) group
401032(0407)		03/06/16	R/W	CH1 Multi SV No	Multi SV No.	0: SV-0, 1: SV-1 2: SV-2, 3: SV-3	-	0:SV-0	
401033(0408)		03/06/16	R/W	CH1 SV-0 Setting Value	SV-0 set value	SV Low Limit to SV High Limit	℃/°F, Digit	0	
401034(0409)		03/06/16	R/W	CH1 SV-1 Setting Value	SV-1 set value				
401035(040A)		03/06/16	R/W	CH1 SV-2 Setting Value	SV-2 set value				
401036(040B)		03/06/16	R/W	CH1 SV-3 Setting Value	SV-3 set value				
401037(040C) to 401060(0423)		03/06/16	R/W	Reserved					
401061(0424)		03/06/16	R/W	CH1 Auto-Tuning Execute	Auto-tuning ON/OFF	0: OFF, 1: ON	-	0: OFF	Control Operation group
401062(0425)		03/06/16	R/W	CH1 Heating_Proportional Band	Heating, proportional band	Temp. H, Analog: 1 to 999 Temp. L: 1 to 9999 (0.1 to 999.9)	℃/°F, %F.S	10	
401063(0426)		03/06/16	R/W	CH1 Cooling_Proportional Band	Cooling, proportional band				
401064(0427)		03/06/16	R/W	CH1 Heating_Integral Time	Heating, integral time	0 to 9999	Sec	0	
401065(0428)		03/06/16	R/W	CH1 Cooling_Integral Time	Cooling, integral time				
401066(0429)		03/06/16	R/W	CH1 Heating_Derivation Time	Heating, derivation time	0 to 9999	Sec	0	
401067(042A)		03/06/16	R/W	CH1 Cooling_Derivation Time	Cooling, derivation time				
401068(042B)		03/06/16	R/W	CH1 Dead_Overlap band	Heating&Cooling control, dead band	Temp. H, Analog: -999 to 999 Temp. L: -9999 to 9999 (-999.9 to 999.9)	℃/°F, %F.S	0	

No(Address)		Func	R/W	Parameter	Description	Set range		Unit	Default	Note
TMH2	TMH4									
401069(042C)		03/06/16	R/W	CH1 Manual Reset	P/PD control, manual reset	0 to 1000 (0.0 to 100.0)		%	500(50.0)	
401070(042D)		03/06/16	R/W	CH1 Heating_ON Hysteresis	Heating, hysteresis	Temp. H, Analog: 1 to 100 Temp. L: 1 to 1000 (0.1 to 100.0)		°C/°F, Digit	2	
401071(042E)		03/06/16	R/W	CH1 Heating_OFF Offset	Heating, OFF offset	Temp. H, Analog: 0 to 100 Temp. L: 0 to 1000 (0 to 100.0)		°C/°F, Digit	0	
401072(042F)		03/06/16	R/W	CH1 Cooling_ON Hysteresis	Cooling, hysteresis	Temp. H, Analog: 1 to 100 Temp. L: 1 to 1000 (0.1 to 100.0)		°C/°F, Digit	2	
401073(0430)		03/06/16	R/W	CH1 Cooling_OFF Offset	Cooling, OFF offset	Temp. H, Analog: 0 to 100 Temp. L: 0 to 1000 (0 to 100.0)		°C/°F, Digit	0	
401074(0431)		03/06/16	R/W	CH1 MV Low Limit	MV low-limit set value	Heating , Cooling control	0.0 to MV High Limit - 0.1	%	0 (0.0)	Control Operation group
						H&C control	-100.0 to 0.0		-100(-100.0)	
400475(01DA)		03/06/16	R/W	CH1 MV High Limit	MV high-limit set value	Heating , Cooling control	MV Low Limit + 0.1 to 100.0	%	1000(100.0)	
						H&C control	0 to 100.0		1000(100.0)	
401076(0433)		03/06/16	R/W	CH1 MV rate limit	MV change rate limit	0: OFF, 1 to 1000 (0.1 to 100.0)		%/SEC	0: OFF	
401077(0434)		03/06/16	R/W	CH1 Ramp_Up Rate	Ramp up rate	0 to 9999		°C/°F, Digit	0	
401078(0435)		03/06/16	R/W	CH1 Ramp_Down Rate	Ramp down rate	0 to 9999		°C/°F, Digit	0	
401079(0436)		03/06/16	R/W	CH1 Ramp Time Unit	Ramp time unit	0: SEC, 1: MIN, 2: HOUR		-	1: MIN	
401080(0437)		03/06/16	R/W	CH1 PV transfer	Auto control, SV selection	0: OFF, 1: ON		-	0: OFF	
401081(0438)		03/06/16	R/W	CH1 Soft start time	Soft start time	0: OFF, 1 to 9999		SEC	0: OFF	
401082(0439)		03/06/16	R/W	CH1 Soft start time unit	Soft start time unit	0:SEC, 1:MIN, 2:HOUR		-	0: SEC	
401083(043A)		03/06/16	R/W	CH1 Soft start MV	Soft start MV	1 to 1000 (0.1 to 100.0)		%	1000(100.0)	
401084(043B)		03/06/16	R/W	CH1 Operating Type	Control output operation mode	0: HEATING, 1: COOLING, 2: H&C		-	0: HEATING	
401085(043C)		03/06/16	R/W	CH1 Control Method	Temperature control method	Heating , Cooling control	0: PID, 1: ON/OFF	-	0: PID	
						H&C control	0: PID-PID, 1: PID-ON/OFF, 2: ON/OFF-PID.	-	0: PID-PID	

No(Address)		Func	R/W	Parameter	Description	Set range		Unit	Default	Note
TMH2	TMH4									
							3: ON/OFF-ON/OFF			
401086(043D)		03/06/16	R/W	CH1 Auto-Tuning Type	Auto-tuning mode	0: TUNE1, 1: TUNE2		-	0: TUNE1	
401087(043E)		03/06/16	R/W	CH1 Heating_Control Time	Heating, control cycle	1 to 1200(0.1 to 120.0) 10 to 1200(1.0 to 120.0)		Sec	RY: 200(20.0), SSR: 20(2.0)	
401088(043F)		03/06/16	R/W	CH1 Cooling_Control Time	Cooling, control cycle					
401089(0440)		03/06/16	R/W	CH1 Heating_OUTPUT(SSR_CURRENT) TYPE	Heating, control output type	0: SSR, 1: CURRENT		-	1: CURRENT	
401090(0441)		03/06/16	R/W	CH1 Heating_CURRENT OUTPUT RANGE	Heating, current output range	0: 4-20, 1: 0-20		mA	0: 4-20	
401091(0442)		03/06/16	R/W	CH1 Cooling_OUTPUT(SSR_CURRENT) TYPE	Cooling, control output type	0: SSR, 1: CURRENT		-	1: CURRENT	
401092(0443)		03/06/16	R/W	CH1 Cooling_CURRENT OUTPUT RANGE	Cooling, current output range	0: 4-20, 1: 0-20		mA	0: 4-20	
401093(0444) to 401120(045F)		03/06/16	R/W	Reserved						
401121(0460)		03/06/16	R/W	CH1 Input Type	Input type	0: K(CA).H to 32: 4 to 20mA		-	0: K(CA).H	Initial Setting group
401122(0461)		03/06/16	R/W	CH1 Unit	Sensor temp. unit	0: °C, 1: °F		-	°C	
401123(0462)		03/06/16	R/W	CH1 Low-limit Input Value	Analog low-limit input value	Min. operational value to High-limit Input Value Settings – F.S. 10%		-	0	
401124(0463)		03/06/16	R/W	CH1 High-limit Input Value	Analog high-limit input value	Low-limit Input Value Settings + F.S. 10% to Max. operational value		-	1000	
401125(0464)		03/06/16	R/W	CH1 Decimal Point	Scale decimal point	0: 0, 1: 0.0, 2: 0.00, 3: 0.000		-	1:00.0	
401126(0465)		03/06/16	R/W	CH1 Low-limit Scale Value	Scale low-limit display value	-9999 to 9999		Digit	0	
401127(0466)		03/06/16	R/W	CH1 High-limit Scale Value	Scale high-limit display value	-9999 to 9999		Digit	1000	
401128(0467)		03/06/16	R/W	CH1 Analog Input Unit	Analog input type unit	0: °C, 1: °F, 2: %		-	0: °C	
401129(0468)		03/06/16	R/W	CH1 Input Func	Analog input special function	0: LINEAR, 1: ROOT, 2: SQUARE		-	0: LINEAR	
401130(0469)		03/06/16	R/W	CH1 Root Low Cut	Root function low cut point	-9999 to 9999		Digit	0	
401131(046A)		03/06/16	R/W	CH1 Input Bias	Input correction	-9999 to 9999		Digit	0	

No(Address)		Func	R/W	Parameter	Description	Set range	Unit	Default	Note	
TMH2	TMH4									
401132(046B)		03/06/16	R/W	CH1 Input Digital Filter	Input digital filter	1 to 1200 (0.1 to 120.0)	Sec	1(0.1)		
401133(046C)		03/06/16	R/W	CH1 SV Low Limit	SV Low Limit set value	Temp.: Sensor input low-limit value to SV High Limit – 1Digit Analog: Low-limit scale to SV High Limit – 1Digit	℃/°F, % F.S	-200		
401134(046D)		03/06/16	R/W	CH1 SV High Limit	SV High Limit set value	Temp.: SV Low Limit + 1Digit to Sensor input high-limit Analog: SV Low Limit + 1Digit to High-limit scale value	℃/°F, % F.S	1350		
401135(046E)		03/06/16	R/W	CH1 RSV Target Address	RSV Master address	0, 1 to 48	-	0		
401136(046F)		03/06/16	R/W	CH1 RSV Target CH	RSV Master channel	0: CH1, 1: CH2, 2: CH3, 3: CH4	-	CH□:CH□		
401137(0470)		03/06/16	R/W	CH1 RSV Target	RSV Master channel target	0: OFF, 1: PV, 2: SV	-	0: OFF		
401138(0471)		03/06/16	R/W	CH1 SV Tracking	SV tracking	0: OFF, 1: ON	-	0: OFF		
401139(0472)		03/06/16	R/W	CH1 TUNE2 DV	TUNE2 mode deviation	-9999 to 9999	Digit	0		
401140(0473) to 401150(047D)		03/06/16	R/W	Reserved						
401151(047E)		03/06/16	R/W	CH1 Multi SV	Multi SV No.	0: 1EA, 1: 2EA, 2: 4EA	-	0: 1EA		
401152(047F)		03/06/16	R/W	CH1 Initial Manual MV	Baseline MV for manual control	0: AUTO-MV, 1: PRESET-MV	-	0: AUTO-MV		
401153(0480)		03/06/16	R/W	CH1 Preset Manual MV	Manual control, initial MV	Heating, Cooling control: 0 to 1000 (0.0 to 100.0), Heating&Cooling control: -1000(-100.0) to 1000(100.0)	%	0		
401154(0481)		03/06/16	R/W	CH1 Sensor Error MV	Sensor error, MV	Heating, Cooling control, PID: 0 to 1000 (0.0 to 100.0), ON/OFF: 0(OFF), 1000(ON), Heating&Cooling control, PID: -1000 to 1000(-100.0 to 100.0), ON/OFF: -1000(cooling ON), 0(OFF), 1000(heating ON)	%	0		
401155(0482)		03/06/16	R/W	CH1 Stop MV	STOP, control output	Heating, Cooling control, PID: 0 to 1000 (0.0 to 100.0), ON/OFF: 0(OFF), 1000(ON) Heating&Cooling control, PID: -1000 to 1000(-100.0 to 100.0), ON/OFF: -1000(cooling ON), 0(OFF), 1000(heating ON)	%	0		
401156(0483)		03/06/16	R/W	CH1 Stop Alarm Out	Stop, alarm output	0: Continue, 1: OFF	-	0: Continue		

No(Address)		Func	R/W	Parameter	Description	Set range	Unit	Default	Note
TMH2	TMH4								
401156(0483) to 401180(049B)		03/06/16	R/W	Reserved					
401181(049C)		03/06/16	R/W	CH1 Event Mode 1	CH1 alarm operation mode 1	0: OFF, 1: AL-1, 2: AL-2, 3: AL-3, 4: AL-4, 5: AL-5, 6: AL-6, 7: LBA, 8: SBA, 9: HBA	-	0: AL-1	Alarm Setting group
401182(049D)		03/06/16	R/W	CH1 Event Mode 2	CH1 alarm operation mode 2				
401183(049E)		03/06/16	R/W	CH1 Event Mode 3	CH1 alarm operation mode 3				
401184(049F)		03/06/16	R/W	CH1 Event Mode 4	CH1 alarm operation mode 4				
401185(04A0)		03/06/16	R/W	CH1 Event Type 1	CH1 alarm option 1	0: AL-A, 1: AL-B, 2: AL-C, 3: AL-D, 4: AL-E, 5: AL-F	-	0: AL-A	
401186(04A1)		03/06/16	R/W	CH1 Event Type 2	CH1 alarm option 2				
401187(04A2)		03/06/16	R/W	CH1 Event Type 3	CH1 alarm option 3				
401188(04A3)		03/06/16	R/W	CH1 Event Type 4	CH1 alarm option 4				
401189(04A4)		03/06/16	R/W	CH1 Event Low 1	CH1 alarm low-limit set value 1	Deviation alarm: -F.S to F.S, Absoulte alarm: Within the dedicated input type	-	1550	
401190(04A5)		03/06/16	R/W	CH1 Event High 1	CH1 alarm high-limit set value 1				
401191(04A6)		03/06/16	R/W	CH1 Event Low 2	CH1 alarm low-limit set value 2				
401192(04A7)		03/06/16	R/W	CH1 Event High 2	CH1 alarm high-limit set value 2				
401193(04A8)		03/06/16	R/W	CH1 Event Low 3	CH1 alarm low-limit set value 3				
401194(04A9)		03/06/16	R/W	CH1 Event High 3	CH1 alarm high-limit set value 3				
401195(04AA)		03/06/16	R/W	CH1 Event Low 4	CH1 alarm low-limit set value 4				
401196(04AB)		03/06/16	R/W	CH1 Event High 4	CH1 alarm high-limit set value 4				
401197(04AC)		03/06/16	R/W	CH1 Event Hysteresis 1	CH1 alarm hysteresis 1	Temp. H, Analog: 1 to 100, Temp. L: 1 to 1000 (0.1 to 100.0)	°C/°F, Digit	1	
401198(04AD)		03/06/16	R/W	CH1 Event Hysteresis 2	CH1 alarm hysteresis 2				
401199(04AE)		03/06/16	R/W	CH1 Event Hysteresis 3	CH1 alarm hysteresis 3				
401200(04AF)		03/06/16	R/W	CH1 Event Hysteresis 4	CH1 alarm hysteresis 4				
401201(04B0)		03/06/16	R/W	CH1 Alarm NO/NC	CH1 alarm output contact type	0: NO, 1: NC	-	0: NO	

No(Address)		Func	R/W	Parameter	Description	Set range	Unit	Default	Note
TMH2	TMH4								
401202(04B1)		03/06/16	R/W	CH1 Event ON Delay Time 1	CH1 alarm ON delay time 1	0 to 3600	Sec	0	
401203(04B2)		03/06/16	R/W	CH1 Event OFF Delay Time 1	CH1 alarm OFF delay time 1				
401204(04B3)		03/06/16	R/W	CH1 Event ON Delay Time 2	CH1 alarm ON delay time 2				
401205(04B4)		03/06/16	R/W	CH1 Event OFF Delay Time 2	CH1 alarm OFF delay time 2				
401206(04B5)		03/06/16	R/W	CH1 Event ON Delay Time 3	CH1 alarm ON delay time 3				
401207(04B6)		03/06/16	R/W	CH1 Event OFF Delay Time 3	CH1 alarm OFF delay time 3				
401208(04B7)		03/06/16	R/W	CH1 Event ON Delay Time 4	CH1 alarm ON delay time 4				
401209(04B8)		03/06/16	R/W	CH1 Event OFF Delay Time 4	CH1 alarm OFF delay time 4				
401210(04B9)		03/06/16	R/W	CH1 Alarm Output Taget1	CH1 alarm output target address1	0, 1: 49 to 16: 64	-	0	
401211(04BA)		03/06/16	R/W	CH1 Alarm Output Taget2	CH1 alarm output target address2				
401212(04BB)		03/06/16	R/W	CH1 Alarm Output Taget3	CH1 alarm output target address3				
401213(04BC)		03/06/16	R/W	CH1 Alarm Output Taget4	CH1 alarm output target address4				
401214(04BD)		03/06/16	R/W	CH1 Alarm Output Taget1 CH	CH1 alarm output target channel1	0: Alarm1 to 7: Alarm8	-	0: Alarm1	
401215(04BE)		03/06/16	R/W	CH1 Alarm Output Taget2 CH	CH1 alarm output target channel2				
401216(04BF)		03/06/16	R/W	CH1 Alarm Output Taget3 CH	CH1 alarm output target channel3				
401217(04C0)		03/06/16	R/W	CH1 Alarm Output Taget4 CH	CH1 alarm output target channel4				
401218(04C1)		03/06/16	R/W	CH1 LBA Time 1	CH1 LBA monitoring time 1	0 to 9999	Sec	0	
401219(04C2)		03/06/16	R/W	CH1 LBA Band 1	CH1 LBA detection band 1	Temp. H: 0 to 999, Temp. L: 0 to 9999 (0.0 to 999.9), Analog: 0 to 1000 (0.0 to 100.0)	°C/°F, %F.S	2	
401220(04C3)		03/06/16	R/W	CH1 LBA Time 2	CH1 LBA monitoring time 2	0 to 9999	Sec	0	
401221(04C4)		03/06/16	R/W	CH1 LBA Band 2	CH1 LBA detection band 2	Temp. H: 0 to 999, Temp. L: 0 to 9999 (0.0 to 999.9), Analog: 0 to 1000 (0.0 to 100.0)	°C/°F, %F.S	2	

No(Address)		Func	R/W	Parameter	Description	Set range	Unit	Default	Note
TMH2	TMH4								
401222(04C5)		03/06/16	R/W	CH1 LBA Time 3	CH1 LBA monitoring time 3	0 to 9999	Sec	0	
401223(04C6)		03/06/16	R/W	CH1 LBA Band 3	CH1 LBA detection band 3	Temp. H: 0 to 999, Temp. L: 0 to 9999 (0.0 to 999.9), Analog: 0 to 1000 (0.0 to 100.0)	°C/°F, %F.S	2	
401224(04C7)		03/06/16	R/W	CH1 LBA Time 4	CH1 LBA monitoring time 4	0 to 9999	Sec	0	
401225(04C8)		03/06/16	R/W	CH1 LBA Band 4	CH1 LBA 1 detection band 4	Temp. H: 0 to 999, Temp. L: 0 to 9999 (0.0 to 999.9), Analog: 0 to 1000 (0.0 to 100.0)	°C/°F, %F.S	2	
401226(04C9)		03/06/16	R/W	CH1 CT Target 1	CH1 CT address 1	0, 1: 65 to 16: 80	-	0	
401227(04CA)		03/06/16	R/W	CH1 CT Target 2	CH1 CT address 2				
401228(04CB)		03/06/16	R/W	CH1 CT Target 3	CH1 CT address 3				
401229(04CC)		03/06/16	R/W	CH1 CT Target 4	CH1 CT address 4				
401230(04CD)		03/06/16	R/W	CH1 CT Input 1	CH1 CT input 1	0: CT1 to 7: CT8	-	CH□:CT □	
401231(04CE)		03/06/16	R/W	CH1 CT Input 2	CH1 CT input 2				
401232(04CF)		03/06/16	R/W	CH1 CT Input 3	CH1 CT input 3				
401233(04D0)		03/06/16	R/W	CH1 CT Input 4	CH1 CT input 4				
401234(04D1) to 401240(04D7)		03/06/16	R/W	Reserved					
401241(04D8)		03/06/16	R/W	CH1 DI Target	CH1 DI target address	0, 1: 49 to 16: 60	-	0	Option (Digital Input Setting) group
401242(04D9)		03/06/16	R/W	CH1 Digital Input 1 Func	CH1 DI-1 input terminal	0: OFF, 1: STOP, 2: AL-RESET, 3: Manual, 4: Multi-SV, 5: Remote SV	-	0: OFF	
401243(04DA)		03/06/16	R/W	CH1 Digital Input 2 Func	CH1 DI-2 input terminal				
401244(04DB)		03/06/16	R/W	CH1 Digital Input 3 Func	CH1 DI-3 input terminal				
401245(04DC)		03/06/16	R/W	CH1 Digital Input 4 Func	CH1 DI-4 input terminal				
401246(04DD)		03/06/16	R/W	CH1 Digital Input 5 Func	CH1 DI-5 input terminal				
401247(04DE)		03/06/16	R/W	CH1 Digital Input 6 Func	CH1 DI-6 input terminal				
401248(04DF)		03/06/16	R/W	CH1 Digital Input 7 Func	CH1 DI-7 input terminal				
401249(04E0)		03/06/16	R/W	CH1 Digital Input 8 Func	CH1 DI-8 input terminal				
401250(04E0) to 401270(04F5)		03/06/16	R/W	Reserved					

No(Address)		Func	R/W	Parameter	Description	Set range	Unit	Default	Note
TMH2	TMH4								
401271(04F6)		03/06/16	R/W	Bit Per Second	Communication speed	0: 4800, 1: 9600, 2: 19200, 3: 38400, 4: 115200	bps	1: 9600	Common (common parameter setting) group
401272(04F7)		03/06/16	R/W	Parity Bit	Communication parity bit	0: NONE, 1: EVEN, 2: ODD	-	0: NONE	
401273(04F8)		03/06/16	R/W	Stop Bit	Communication stop bit	0: 1, 1: 2	bit	1:02	
401274(04F9)		03/06/16	R/W	Response Waiting Time	Communication response wait time	5 to 99	ms	20	
401275(04FA)		03/06/16	R/W	Communication Write	Communication writing enable/disable	0: ENABLE, 1: DISABLE	-	0: ENABLE	
401276(04FB)		03/06/16	R/W	Parameter Initialize	Parameter reset	0: NO, 1: YES	-	0: NO	
401277(04FC)		03/06/16	R/W	Alarm1 Logic	Alarm1 alarm output logic operation	0: OR, 1: AND	-	0: OR	
401278(04FD)		03/06/16	R/W	Alarm2 Logic	Alarm2 alarm output logic operation				
401279(04FE)		03/06/16	R/W	Alarm3 Logic	Alarm3 alarm output logic operation				
401280(04FF)		03/06/16	R/W	Alarm4 Logic	Alarm4 alarm output logic operation				
401281(0500) to 401500(05DB)		03/06/16	R/W	Reserved					
401501(05DC) to 402000(07CF)		03/06/16	R/W	CH2 Parameter – Same as above CH1					
402001(07D0) to 402500(09C3)		03/06/16	R/W	CH3 Parameter – Same as above CH1					
402501(09C4) to 403000(0BB7)		03/06/16	R/W	CH4 Parameter – Same as above CH1					

※ When address 02 to 16 setting, parameter address assignment

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
403001(0BB8) to 405000(1387)	03/06/16	R/W	02 address parameter – Same as above 01 address					
405001(1388) to 407000(1B57)	03/06/16	R/W	03 address parameter – Same as above 01 address					
407001(1B58) to 409000(2327)	03/06/16	R/W	04 address parameter – Same as above 01 address					
409001(2328) to 411000(2AF7)	03/06/16	R/W	05 address parameter – Same as above 01 address					
411001(2AF8) to 413000(32C7)	03/06/16	R/W	06 address parameter – Same as above 01 address					
413001(32C8) to 415000(3A97)	03/06/16	R/W	07 address parameter – Same as above 01 address					
415001(3A98) to 417000(4267)	03/06/16	R/W	08 address parameter – Same as above 01 address					
417001(4268) to 419000(4A37)	03/06/16	R/W	09 address parameter – Same as above 01 address					
419001(4A38) to 421000(5207)	03/06/16	R/W	10 address parameter – Same as above 01 address					
421001(5208) to 423000(59D7)	03/06/16	R/W	11 address parameter – Same as above 01 address					

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
423001(59D8) to 425000(61A7)	03/06/16	R/W	12	address parameter – Same as above 01 address				
425001(61A8) to 427000(6977)	03/06/16	R/W	13	address parameter – Same as above 01 address				
427001(6978) to 429000(7147)	03/06/16	R/W	14	address parameter – Same as above 01 address				
429001(7148) to 431000(7917)	03/06/16	R/W	15	address parameter – Same as above 01 address				
431001(7918) to 433000(80E7)	03/06/16	R/W	16	address parameter – Same as above 01 address				

2.5.6 TMHA

2.5.6.1 Read input status (Func 02)

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
100451(01C2)	02	R	-	CH1 LED(transmission output1)	0: OFF, 1: ON	-	-	
100452(01C3)	02	R	-	CH2 LED(transmission output2)				
100453(01C4)	02	R	-	CH3 LED(transmission output3)				
100454(01C5)	02	R	-	CH4 LED(transmission output4)				
100455(01C6) to 100458(01C9)	02	R	34	address parameter – Same as above 33 address				
100459(01CA) to 100462(01CD)	02	R	35	address parameter – Same as above 33 address				
100463(01CE) to 100466(01D1)	02	R	36	address parameter – Same as above 33 address				
100467(01D2) to 100470(01D5)	02	R	37	address parameter – Same as above 33 address				
100471(01D6) to 100474(01D9)	02	R	38	address parameter – Same as above 33 address				
100475(01DA) to 100478(01DD)	02	R	39	address parameter – Same as above 33 address				
100479(01DE) to 100482(01E1)	02	R	40	address parameter – Same as above 33 address				
100483(01E2) to 100486(01E5)	02	R	41	address parameter – Same as above 33 address				
100487(01E6) to 100490(01E9)	02	R	42	address parameter – Same as above 33 address				
100491(01EA) to 100494(01ED)	02	R	43	address parameter – Same as above 33 address				
100495(01EE) to 100498(01F1)	02	R	44	address parameter – Same as above 33 address				
100499(01F2) to 100502(01F5)	02	R	45	address parameter – Same as above 33 address				
100503(01F6) to 100506(01F9)	02	R	46	address parameter – Same as above 33 address				
100507(01FA) to 100510(01FD)	02	R	47	address parameter – Same as above 33 address				
100511(01FE) to 100514(0201)	02	R	48	address parameter – Same as above 33 address				
100515(0202) to 100550(0225)	02	R		Reserved				

2.5.6.2 Read input register (Func 04)

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
300651(028A)	04	R	-	Product number H	-	-	0	
300652(028B)	04	R	-	Product number L	-	-	0	
300653(028C)	04	R	-	Hardware version	-	-	100	
300654(028D)	04	R	-	Software version	-	-	100	
300655(028E)	04	R	-	Model name 1	-	-	"TM"	Product name
300656(028F)	04	R	-	Model name 2	-	-	"HA"	Option
300657(0290)	04	R	-	Model name 3	-	-	"-4"	transmission output
300658(0291)	04	R	-	Model name 4	-	-	"2A"	Power voltage/output
300659(0292)	04	R	-	Model name 5	-	-	"E"	Structure
300660(0293)	04	R	-	Model name 6	-	-	" "	
300661(0294)	04	R	-	Model name 7	-	-	" "	
300662(0295)	04	R	-	Model name 8	-	-	" "	
300663(0296)	04	R	-	Model name 9	-	-	" "	
300664(0297)	04	R	-	Model name 10	-	-	" "	
300665(0298)	04	R	Reserved					
300666(0299)	04	R	Reserved					
300667(029A)	04	R	Reserved					
300668(029B)	04	R	-	Coil status Start Address	-	-	0	
300669(029C)	04	R	-	Coil status Quantity	-	-	0	
300670(029D)	04	R	-	Input status Start Address	-	-	0	
300671(029E)	04	R	-	Input status Quantity	-	-	0	
300672(029F)	04	R	-	Holding Register Start Address	-	-	0	
300673(02A0)	04	R	-	Holding Register Quantity	-	-	0	
300674(02A1)	04	R	-	Input Register Start Address	-	-	0	
300675(02A2)	04	R	-	Input Register Quantity	-	-	0	
300676(02A3)	04	R	-	Channel Quantity	-	-	0	
300677(02A4) to 300702(02BD)	04	R	34 address parameter – Same as above 33 address					
300703(02BE) to 300728(02D7)	04	R	35 address parameter – Same as above 33 address					
300729(02D8) to 300754(02F1)	04	R	36 address parameter – Same as above 33 address					
300755(02F2) to 300780(030B)	04	R	37 address parameter – Same as above 33 address					
300781(030C) to 300806(0325)	04	R	38 address parameter – Same as above 33 address					
300807(0326) to 300832(033F)	04	R	39 address parameter – Same as above 33 address					
300833(0340) to 300858(0359)	04	R	40 address parameter – Same as above 33 address					
300859(035A) to 300884(0373)	04	R	41 address parameter – Same as above 33 address					
300885(0374) to 300910(038D)	04	R	42 address parameter – Same as above 33 address					
300911(038E) to 300936(03A7)	04	R	43 address parameter – Same as above 33 address					
300937(03A8) to 300962(03C1)	04	R	44 address parameter – Same as above 33 address					

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
300963(03C2) to 300988(03DB)	04	R	45 address parameter – Same as above 33 address					
300989(03DC) to 301014(03F5)	04	R	46 address parameter – Same as above 33 address					
301015(03F6) to 301040(040F)	04	R	47 address parameter – Same as above 33 address					
301041(0410) to 301066(0429)	04	R	48 address parameter – Same as above 33 address					
301067(042A) to 301100(044B)	04	R	Reserved					
310501(2904)	04	R	CH1 Present Value	CH1 present value	Sensor input range, 31000: OPEN, 30000: HHHH, -30000: LLLL	°C/°F, Digit	-	
310502(2905)	04	R	CH2 Present Value	CH2 present value				
310503(2906)	04	R	CH3 Present Value	CH3 present value				
310504(2907)	04	R	CH4 Present Value	CH4 present value				
310505(2908) to 310508(290B)	04	R	34 address parameter – Same as above 33 address					
310509(290C) to 310512(290F)	04	R	35 address parameter – Same as above 33 address					
310513(2910) to 310516(2913)	04	R	36 address parameter – Same as above 33 address					
310517(2914) to 310520(2917)	04	R	37 address parameter – Same as above 33 address					
310521(2918) to 310524(291B)	04	R	38 address parameter – Same as above 33 address					
310525(291C) to 310528(291F)	04	R	39 address parameter – Same as above 33 address					
310529(2920) to 310532(2923)	04	R	40 address parameter – Same as above 33 address					
310533(2924) to 310536(2927)	04	R	41 address parameter – Same as above 33 address					
310537(2928) to 310540(292B)	04	R	42 address parameter – Same as above 33 address					
310541(292C) to 310544(292F)	04	R	43 address parameter – Same as above 33 address					
310545(2930) to 310548(2933)	04	R	44 address parameter – Same as above 33 address					
310549(2934) to 310552(2937)	04	R	45 address parameter – Same as above 33 address					
310553(2938) to 310556(293B)	04	R	46 address parameter – Same as above 33 address					
310557(293C) to 310560(293F)	04	R	47 address parameter – Same as above 33 address					
310561(2940) to 310564(2943)	04	R	48 address parameter – Same as above 33 address					
310565(2944)	04	R	CH1 Dot	CH1 sensor decimal point	0: 0, 1: 0.0	-	0: 0	
310566(2945)	04	R	CH2 Dot	CH2 sensor decimal point				
310567(2946)	04	R	CH3 Dot	CH3 sensor decimal point				
310568(2947)	04	R	CH4 Dot	CH4 sensor decimal point				
310569(2948) to 310572(294B)	04	R	34 address parameter – Same as above 33 address					
310573(294C) to 310576(294F)	04	R	35 address parameter – Same as above 33 address					
310577(2950) to 310580(2953)	04	R	36 address parameter – Same as above 33 address					
310581(2954) to 310584(2957)	04	R	37 address parameter – Same as above 33 address					
310585(2958) to 310588(295B)	04	R	38 address parameter – Same as above 33 address					
310589(295C) to 310592(295F)	04	R	39 address parameter – Same as above 33 address					
310593(2960) to 310596(2963)	04	R	40 address parameter – Same as above 33 address					
310597(2964) to 310600(2967)	04	R	41 address parameter – Same as above 33 address					
310601(2968) to 310604(296B)	04	R	42 address parameter – Same as above 33 address					
310605(296C) to 310608(296F)	04	R	43 address parameter – Same as above 33 address					
310609(2970) to 310612(2973)	04	R	44 address parameter – Same as above 33 address					
310613(2974) to 310616(2977)	04	R	45 address parameter – Same as above 33 address					

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
310617(2978) to 310620(297B)	04	R	46 address parameter – Same as above 33 address					
310621(297C) to 310624(297F)	04	R	47 address parameter – Same as above 33 address					
310625(2980) to 310628(2983)	04	R	48 address parameter – Same as above 33 address					
310629(2984)	04	R	CH1 Unit	Sensor temp. unit	0: °C, 1: °F	-	0: °C	
310630(2985)	04	R	CH2 Unit	Sensor temp. unit				
310631(2986)	04	R	CH3 Unit	Sensor temp. unit				
310632(2987)	04	R	CH4 Unit	Sensor temp. unit				
310633(2988) to 310636(298B)	04	R	34 address parameter – Same as above 33 address					
310637(298C) to 310640(298F)	04	R	35 address parameter – Same as above 33 address					
310641(2990) to 310644(2993)	04	R	36 address parameter – Same as above 33 address					
310645(2994) to 310648(2997)	04	R	37 address parameter – Same as above 33 address					
310649(2998) to 310652(299B)	04	R	38 address parameter – Same as above 33 address					
310653(299C) to 310656(299F)	04	R	39 address parameter – Same as above 33 address					
310657(29A0) to 310660(29A3)	04	R	40 address parameter – Same as above 33 address					
310661(29A4) to 310664(29A7)	04	R	41 address parameter – Same as above 33 address					
310665(29A8) to 310668(29AB)	04	R	42 address parameter – Same as above 33 address					
310669(29AC) to 310672(29AF)	04	R	43 address parameter – Same as above 33 address					
310673(29B0) to 310676(29B3)	04	R	44 address parameter – Same as above 33 address					
310677(29B4) to 310680(29B7)	04	R	45 address parameter – Same as above 33 address					
310681(29B8) to 310684(29BB)	04	R	46 address parameter – Same as above 33 address					
310685(29BC) to 310688(29BF)	04	R	47 address parameter – Same as above 33 address					
310689(29C0) to 310692(29C3)	04	R	48 address parameter – Same as above 33 address					
310693(29C4)	04	R	CH1 Analog Output Value	CH1 transmission output value	40 to 200(4.0 to 20.0)	mA	-	
310694(29C5)	04	R	CH2 Analog Output Value	CH2 transmission output value				
310695(29C6)	04	R	CH3 Analog Output Value	CH3 transmission output value				
310696(29C7)	04	R	CH4 Analog Output Value	CH4 transmission output value				
310697(29C8) to 310700(29CB)	04	R	34 address parameter – Same as above 33 address					
310701(29CC) to 310704(29CF)	04	R	35 address parameter – Same as above 33 address					
310705(29D0) to 310708(29D3)	04	R	36 address parameter – Same as above 33 address					
310709(29D4) to 310712(29D7)	04	R	37 address parameter – Same as above 33 address					
310713(29D8) to 310716(29DB)	04	R	38 address parameter – Same as above 33 address					
310717(29DC) to 310720(29DF)	04	R	39 address parameter – Same as above 33 address					
310721(29E0) to 310724(29E3)	04	R	40 address parameter – Same as above 33 address					
310725(29E4) to 310728(29E7)	04	R	41 address parameter – Same as above 33 address					
310729(29E8) to 310732(29EB)	04	R	42 address parameter – Same as above 33 address					
310733(29EC) to 310736(29EF)	04	R	43 address parameter – Same as above 33 address					
310737(29F0) to 310740(29F3)	04	R	44 address parameter – Same as above 33 address					
310741(29F4) to 310744(29F7)	04	R	45 address parameter – Same as above 33 address					
310745(29F8) to 310748(29FB)	04	R	46 address parameter – Same as above 33 address					
310749(29FC) to 310752(29FF)	04	R	47 address parameter – Same as above 33 address					

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
310753(2A00) to 310756(2A03)	04	R	48 address parameter – Same as above 33 address					
310757(2A04)	04	R	-	CH1 LED(OUT1)	0: OFF, 1: ON	-	-	Bit 0
	04	R	-	CH2 LED(OUT2)				Bit 1
	04	R	-	CH3 LED(OUT3)				Bit 2
	04	R	-	CH4 LED(OUT4)				Bit 3
310758(2A05)	04	R	34 address parameter – Same as above 33 address					
310759(2A06)	04	R	35 address parameter – Same as above 33 address					
310760(2A07)	04	R	36 address parameter – Same as above 33 address					
310761(2A08)	04	R	37 address parameter – Same as above 33 address					
310762(2A09)	04	R	38 address parameter – Same as above 33 address					
310763(2A0A)	04	R	39 address parameter – Same as above 33 address					
310764(2A0B)	04	R	40 address parameter – Same as above 33 address					
310765(2A0C)	04	R	41 address parameter – Same as above 33 address					
310766(2A0D)	04	R	42 address parameter – Same as above 33 address					
310767(2A0E)	04	R	43 address parameter – Same as above 33 address					
310768(2A0F)	04	R	44 address parameter – Same as above 33 address					
310769(2A10)	04	R	45 address parameter – Same as above 33 address					
310770(2A11)	04	R	46 address parameter – Same as above 33 address					
310771(2A12)	04	R	47 address parameter – Same as above 33 address					
310772(2A13)	04	R	48 address parameter – Same as above 33 address					
310773(2A14)	04	R	Unit Address	Comm. address	33 to 48	-	1	
310774(2A15)	04	R	34 address parameter – Same as above 33 address					
310775(2A15)	04	R	35 address parameter – Same as above 33 address					
310776(2A17)	04	R	36 address parameter – Same as above 33 address					
310777(2A18)	04	R	37 address parameter – Same as above 33 address					
310778(2A19)	04	R	38 address parameter – Same as above 33 address					
310779(2A1A)	04	R	39 address parameter – Same as above 33 address					
310780(2A1B)	04	R	40 address parameter – Same as above 33 address					
310781(2A1C)	04	R	41 address parameter – Same as above 33 address					
310782(2A1D)	04	R	42 address parameter – Same as above 33 address					
310783(2A1E)	04	R	43 address parameter – Same as above 33 address					
310784(2A1F)	04	R	44 address parameter – Same as above 33 address					
310785(2A20)	04	R	45 address parameter – Same as above 33 address					
310786(2A21)	04	R	46 address parameter – Same as above 33 address					
310787(2A22)	04	R	47 address parameter – Same as above 33 address					
310788(2A23)	04	R	48 address parameter – Same as above 33 address					
310789(2A24) to 310800(2A2F)	04	R	Reserved					

2.5.6.3 Read holding register (Func 03) / Preset single register (Func 06) / Preset multiple registers (Func 16)

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note	
433001(80E8)	03/06/16	R/W	CH1 Input Type	Input type	0: K(CA).H to 32: 4 to 20mA	-	0: K(CA).H	Initial Setting group	
433002(80E9)	03/06/16	R/W	CH1 Unit	sensor temp. unit	0: °C, 1: °F	-	°C		
433003(80EA)	03/06/16	R/W	CH1 Low-limit Input Value	Analog low-limit input value	Min. operational value to High-limit Input Value Settings – F.S. 10%	-	0000		
433004(80EB)	03/06/16	R/W	CH1 High-limit Input Value	Analog high-limit input value	Low-limit Input Value Settings + F.S. 10% to Max. operational value	-	1000		
433005(80EC)	03/06/16	R/W	CH1 Decimal Point	Scale decimal point	0: 0, 1: 0.0, 2: 0.00, 3: 0.000	-	1: 0.0		
433006(80ED)	03/06/16	R/W	CH1 Low-limit Scale Value	Scale low-limit display value	-9999 to 9999	Digit	0		
433007(80EE)	03/06/16	R/W	CH1 High-limit Scale Value	Scale high-limit display value	-9999 to 9999	Digit	1000		
433008(80EF)	03/06/16	R/W	CH1 Analog Input Unit	Analog input type unit	0: °C, 1: °F, 2: %	-	0: °C		
433009(80F0)	03/06/16	R/W	CH1 Input Func	Analog input special function	0: LINEAR, 1: ROOT, 2: SQUARE	-	0: LINEAR		
433010(80F1)	03/06/16	R/W	CH1 Root Low Cut	Root function low cut point	-9999 to 9999	Digit	0		
433011(80F2)	03/06/16	R/W	CH1 Input Bias	Input correction	-9999 to 9999	Digit	0		
433012(80F3)	03/06/16	R/W	CH1 Input Digital Filter	Input digital filter	1 to 1200 (0.1 to 120.0)	Sec	1(0.1)		
433013(80F4) to 433030(8105)	03/06/16	R/W	Reserved						
433031(8106)	03/06/16	R/W	CH1 Analog Output Mode	Analog transmission output	0: PV, 1: SV, 2: H-MV, 3: C-MV	-	0: PV	Control Setting group	
433032(8107)	03/06/16	R/W	CH1 Analog Output Target	Transmission output target address	0 to 48	-	0		
433033(8108)	03/06/16	R/W	CH1 Analog Output Target CH	Transmission output target channel	0: CH1, 1: CH2, 2: CH3, 3: CH4	-	CH□:CH□		
433034(8109)	03/06/16	R/W	CH1 Analog Output Range	Current output range	0: 4-20, 1: 0-20	-	0: 4-20		
433035(810A)	03/06/16	R/W	CH1 Full Scale Low	Transmission output low-limit value	PV	-	-200		1350
					SV	SV Low Limit to SV High Limit			
					H-MV, C-MV	0 to 1000 (0.0 to 100.0)			
433036(810B)	03/06/16	R/W	CH1 Full Scale High	Transmission output high-limit value	PV	-	1350		-200
					SV	SV Low Limit to SV High Limit			
					H-MV, C-MV	0 to 1000 (0.0 to 100.0)			
433037(810C) to 433060(8123)	03/06/16	R/W	Reserved						
433061(8124)	03/06/16	R/W	Bit Per Second	Communication speed	0: 4800, 1: 9600, 2: 19200, 3: 38400, 4: 115200	bps	1: 9600	Option Setting(Co	

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
433062(8125)	03/06/16	R/W	Parity Bit	Communication parity bit	0: NONE, 1: EVEN, 2: ODD	-	0: NONE	mmunication on Setting) group
433063(8126)	03/06/16	R/W	Stop Bit	Communication stop bit	0: 1, 1: 2	bit	1: 2	
433064(8127)	03/06/16	R/W	Response Waiting Time	Communication response wait time	5 to 99	ms	20	
433065(8128)	03/06/16	R/W	Communication Write	Communication writing enable/disable	0: ENABLE, 1: DISABLE	-	0: ENABLE	
433066(8129)	03/06/16	R/W	Parameter Initialize	Parameter reset	0: NO, 1: YES	-	0: NO	
433067(812A) to 433150(817D)	03/06/16	R/W	Reserved					
433151(817E) to 433300(8213)	03/06/16	R/W	CH2 Parameter – Same as above CH1					
433301(8214) to 433450(82A9)	03/06/16	R/W	CH3 Parameter – Same as above CH1					
433451(82AA) to 433600(833F)	03/06/16	R/W	CH4 Parameter – Same as above CH1					

※ When address 34 to 48 setting, parameter address assignment

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
433601(8240) to 434200(8597)	03/06/16	R/W	34 address parameter – Same as above 33 address					
434201(8598) to 434800(87EF)	03/06/16	R/W	35 address parameter – Same as above 33 address					
434801(87F0) to 435400(8A47)	03/06/16	R/W	36 address parameter – Same as above 33 address					
435401(8A48) to 436000(8C9F)	03/06/16	R/W	37 address parameter – Same as above 33 address					
436001(8CA0) to 436600(8EF7)	03/06/16	R/W	38 address parameter – Same as above 33 address					
436601(8EF8) to 437200(914F)	03/06/16	R/W	39 address parameter – Same as above 33 address					
437201(9150) to 437800(93A7)	03/06/16	R/W	40 address parameter – Same as above 33 address					
437801(93A8) to 438400(95FF)	03/06/16	R/W	41 address parameter – Same as above 33 address					
438401(9600) to 439000(9857)	03/06/16	R/W	42 address parameter – Same as above 33 address					
439001(9858) to 439600(9AAF)	03/06/16	R/W	43 address parameter – Same as above 33 address					
439601(9AB0) to 440200(9D07)	03/06/16	R/W	44 address parameter – Same as above 33 address					
440201(9D08) to 440800(9F5F)	03/06/16	R/W	45 address parameter – Same as above 33 address					
440801(9F60) to 441400(A1B7)	03/06/16	R/W	46 address parameter – Same as above 33 address					
441401(A1B8) to 442000(A40F)	03/06/16	R/W	47 address parameter – Same as above 33 address					
442001(A410) to 442600(A667)	03/06/16	R/W	48 address parameter – Same as above 33 address					

2.5.7 TMHE

2.5.7.1 Read input status (Func 02)

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
100551(0226)	02	R	-	AL1 LED	0: OFF, 1: ON	-	-	
100552(0227)	02	R	-	AL2 LED				
100553(0228)	02	R	-	AL3 LED				
100554(0229)	02	R	-	AL4 LED				
100555(022A)	02	R	-	AL5 LED				
100556(022B)	02	R	-	AL6 LED				
100557(022C)	02	R	-	AL7 LED				
100558(022D)	02	R	-	AL8 LED				
100559(022E)	02	R	-	DI-1 input	0: OFF, 1: ON	-	-	
100560(022F)	02	R	-	DI-2 input				
100561(0230)	02	R	-	DI-3 input				
100562(0231)	02	R	-	DI-4 input				
100563(0232)	02	R	-	DI-5 input				
100564(0233)	02	R	-	DI-6 input				
100565(0234)	02	R	-	DI-7 input				
100566(0235)	02	R	-	DI-8 input				
100567(0236) to 100582(0245)	02	R	50 address parameter – Same as above 49 address					
100583(0246) to 100598(0255)	02	R	51 address parameter – Same as above 49 address					
100599(0256) to 100614(0265)	02	R	52 address parameter – Same as above 49 address					
100615(0266) to 100630(0275)	02	R	53 address parameter – Same as above 49 address					
100631(0276) to 100646(0285)	02	R	54 address parameter – Same as above 49 address					
100647(0286) to 100662(0295)	02	R	55 address parameter – Same as above 49 address					
100663(0296) to 100678(02A5)	02	R	56 address parameter – Same as above 49 address					
100679(02A6) to 100694(02B5)	02	R	57 address parameter – Same as above 49 address					
100695(02B6) to 100710(02C5)	02	R	58 address parameter – Same as above 49 address					
100711(02C6) to 100726(02D5)	02	R	59 address parameter – Same as above 49 address					
100727(02D6) to 100742(02E5)	02	R	60 address parameter – Same as above 49 address					
100743(02E6) to 100758(02F5)	02	R	61 address parameter – Same as above 49 address					
100759(02F6) to 100774(0305)	02	R	62 address parameter – Same as above 49 address					
100775(0306) to 100790(0315)	02	R	63 address parameter – Same as above 49 address					
100791(0316) to 100806(0325)	02	R	64 address parameter – Same as above 49 address					
100807(0326) to 100850(0351)	02	R	Reserved					

2.5.7.2 Read input register (Func 04)

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
301101(044C)	04	R	-	Product number H	-	-	0	
301102(044D)	04	R	-	Product number L	-	-	0	
301103(044E)	04	R	-	Hardware version	-	-	100	
301104(044F)	04	R	-	Software version	-	-	100	
301105(0450)	04	R	-	Model name 1	-	-	"TM"	Product name
301106(0451)	04	R	-	Model name 2	-	-	"HE"	Option
301107(0452)	04	R	-	Model name 3	-	-	"-8"	Input/Output
301108(0453)	04	R	-	Model name 4	-	-	"2R"	Power voltage/Output
301109(0454)	04	R	-	Model name 5	-	-	"E"	Structure
301110(0455)	04	R	-	Model name 6	-	-	" "	
301111(0456)	04	R	-	Model name 7	-	-	" "	
301112(0457)	04	R	-	Model name 8	-	-	" "	
301113(0458)	04	R	-	Model name 9	-	-	" "	
301114(0459)	04	R	-	Model name 10	-	-	" "	
301115(045A)	04	R	Reserved					
301116(045B)	04	R	Reserved					
301117(045C)	04	R	Reserved					
301118(045D)	04	R	-	Coil status Start Address	-	-	0	
301119(045E)	04	R	-	Coil status Quantity	-	-	0	
301120(045F)	04	R	-	Input status Start Address	-	-	0	
301121(0460)	04	R	-	Input status Quantity	-	-	0	
301122(0461)	04	R	-	Holding Register Start Address	-	-	0	
301123(0462)	04	R	-	Holding Register Quantity	-	-	0	
301124(0463)	04	R	-	Input Register Start Address	-	-	0	
301125(0464)	04	R	-	Input Register Quantity	-	-	0	
301126(0465)	04	R	-	Channel Quantity	-	-	0	
301127(0466) to 301152(047F)	04	R	50 address parameter – Same as above 49 address					
301153(0480) to 301178(0499)	04	R	51 address parameter – Same as above 49 address					
301179(049A) to 301204(04B3)	04	R	52 address parameter – Same as above 49 address					
301205(04B4) to 301230(04CD)	04	R	53 address parameter – Same as above 49 address					
301231(04CE) to 301256(04E7)	04	R	54 address parameter – Same as above 49 address					
301257(04E8) to 301282(0501)	04	R	55 address parameter – Same as above 49 address					
301283(0502) to 301308(051B)	04	R	56 address parameter – Same as above 49 address					
301309(051C) to 301334(0535)	04	R	57 address parameter – Same as above 49 address					
301335(0536) to 301360(054F)	04	R	58 address parameter – Same as above 49 address					
301361(0550) to 301386(0569)	04	R	59 address parameter – Same as above 49 address					
301387(056A) to 301412(0583)	04	R	60 address parameter – Same as above 49 address					

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
301413(0584) to 301438(059D)	04	R	61 address parameter – Same as above 49 address					
301439(059E) to 301464(05B7)	04	R	62 address parameter – Same as above 49 address					
301465(05B8) to 301490(05D1)	04	R	63 address parameter – Same as above 49 address					
301491(05D2) to 301516(05EB)	04	R	64 address parameter – Same as above 49 address					
301517(05EC) to 301550(060D)	04	R	Reserved					
310801(2A30)	04	R	-	AL1 LED	0: OFF, 1: ON	-	-	Bit0
			-	AL2 LED				Bit1
			-	AL3 LED				Bit2
			-	AL4 LED				Bit3
			-	AL5 LED				Bit4
			-	AL6 LED				Bit5
			-	AL7 LED				Bit6
			-	AL8 LED				Bit7
			-	DI-1 input	0: OFF, 1: ON	-	-	Bit8
			-	DI-2 input	0: OFF, 1: ON			Bit9
			-	DI-3 input	0: OFF, 1: ON			Bit10
			-	DI-4 input	0: OFF, 1: ON			Bit11
			-	DI-5 input	0: OFF, 1: ON			Bit12
			-	DI-6 input	0: OFF, 1: ON			Bit13
			-	DI-7 input	0: OFF, 1: ON			Bit14
			-	DI-8 input	0: OFF, 1: ON			Bit15
310802(2A31)	04	R	50 address parameter – Same as above 49 address					
310803(2A32)	04	R	51 address parameter – Same as above 49 address					
310804(2A33)	04	R	52 address parameter – Same as above 49 address					
310805(2A34)	04	R	53 address parameter – Same as above 49 address					
310806(2A35)	04	R	54 address parameter – Same as above 49 address					
310807(2A36)	04	R	55 address parameter – Same as above 49 address					
310808(2A37)	04	R	56 address parameter – Same as above 49 address					
310809(2A38)	04	R	57 address parameter – Same as above 49 address					
310810(2A39)	04	R	58 address parameter – Same as above 49 address					
310811(2A3A)	04	R	59 address parameter – Same as above 49 address					
310812(2A3B)	04	R	60 address parameter – Same as above 49 address					
310813(2A3C)	04	R	61 address parameter – Same as above 49 address					
310814(2A3D)	04	R	62 address parameter – Same as above 49 address					
310815(2A3E)	04	R	63 address parameter – Same as above 49 address					
310816(2A3F)	04	R	64 address parameter – Same as above 49 address					
310817(2A40)	04	R	Unit Address	Comm. address	49 to 64	-	49	-
310818(2A41)	04	R	50 address parameter – Same as above 49 address					
310819(2A42)	04	R	51 address parameter – Same as above 49 address					
310820(2A43)	04	R	52 address parameter – Same as above 49 address					
310821(2A44)	04	R	53 address parameter – Same as above 49 address					
310822(2A45)	04	R	54 address parameter – Same as above 49 address					
310823(2A46)	04	R	55 address parameter – Same as above 49 address					
310824(2A47)	04	R	56 address parameter – Same as above 49 address					

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
310825(2A48)	04	R		57 address parameter – Same as above 49 address				
310826(2A49)	04	R		58 address parameter – Same as above 49 address				
310827(2A4A)	04	R		59 address parameter – Same as above 49 address				
310828(2A4B)	04	R		60 address parameter – Same as above 49 address				
310829(2A4C)	04	R		61 address parameter – Same as above 49 address				
310830(2A4D)	04	R		62 address parameter – Same as above 49 address				
310831(2A4E)	04	R		63 address parameter – Same as above 49 address				
310832(2A4F)	04	R		64 address parameter – Same as above 49 address				
310833(2A50) to 310850(2A61)	04	R		Reserved				

2.5.7.3 Read holding register (Func 03) / Preset single register (Func 06) / Preset multiple registers (Func 16)

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
442601(A668)	03/06/16	R/W	CH1 Alarm Logic	CH1 alarm output logic operation	0: OR, 1: AND		0: OR	
442602(A669)	03/06/16	R/W	CH2 Alarm Logic	CH2 alarm output logic operation				
442603(A66A)	03/06/16	R/W	CH3 Alarm Logic	CH3 alarm output logic operation				
442604(A66B)	03/06/16	R/W	CH4 Alarm Logic	CH4 alarm output logic operation				
442605(A66C)	03/06/16	R/W	CH5 Alarm Logic	CH5 alarm output logic operation				
442606(A66D)	03/06/16	R/W	CH6 Alarm Logic	CH6 alarm output logic operation				
442607(A66E)	03/06/16	R/W	CH7 Alarm Logic	CH7 alarm output logic operation				
442608(A66F)	03/06/16	R/W	CH8 Alarm Logic	CH8 alarm output logic operation				
442609(A670)	03/06/16	R/W	CH1 Alarm NO/NC	CH1 alarm output contact type	0: NO, 1: NC	-	0: NO	Operating (Output Operation) group
442610(A671)	03/06/16	R/W	CH2 Alarm NO/NC	CH2 alarm output contact type				
442611(A672)	03/06/16	R/W	CH3 Alarm NO/NC	CH3 alarm output contact type				
442612(A673)	03/06/16	R/W	CH4 Alarm NO/NC	CH4 alarm output contact type				
442613(A674)	03/06/16	R/W	CH5 Alarm NO/NC	CH5 alarm output contact type				
442614(A675)	03/06/16	R/W	CH6 Alarm NO/NC	CH6 alarm output contact type				
442615(A676)	03/06/16	R/W	CH7 Alarm NO/NC	CH7 alarm output contact type				
442616(A677)	03/06/16	R/W	CH8 Alarm NO/NC	CH8 alarm output contact type				
442617(A678) to 442630(A685)	03/06/16	R/W	Reserved					
442631(A686)	03/06/16	R/W	Bit Per Second	Communication speed	0: 4800, 1: 9600, 2: 19200, 3: 38400, 4: 115200	bps	1: 9600	Option Setting (Communication Setting) group
442632(A687)	03/06/16	R/W	Parity Bit	Communication parity bit	0: NONE, 1: EVEN, 2: ODD	-	0: NONE	
442633(A688)	03/06/16	R/W	Stop Bit	Communication stop bit	0: 1, 1: 2	bit	1: 2	

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
442634(A689)	03/06/16	R/W	Response Waiting Time	Communication response wait time	5 to 99	ms	20	
442635(A68A)	03/06/16	R/W	Communication Write	Communication writing enable/disable	0: ENABLE, 1: DISABLE	-	0: ENABLE	
442636(A68B)	03/06/16	R/W	Parameter Initialize	Parameter reset	0: NO, 1: YES	-	0: NO	
442637(A68C) to 442660(A6A3)	03/06/16	R/W	Reserved					

※ When address 50 to 64 setting, parameter address assignment

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
442661(A6A4) to 442720(A6DF)	03/06/16	R/W	50 address parameter – Same as above 49 address					
442721(A6E0) to 442780(A71B)	03/06/16	R/W	51 address parameter – Same as above 49 address					
442781(A71C) to 442840(A757)	03/06/16	R/W	52 address parameter – Same as above 49 address					
442841(A758) to 442900(A793)	03/06/16	R/W	53 address parameter – Same as above 49 address					
442901(A794) to 442960(A7CF)	03/06/16	R/W	54 address parameter – Same as above 49 address					
442961(A794) to 443020(A80B)	03/06/16	R/W	55 address parameter – Same as above 49 address					
443021(A80C) to 443080(A847)	03/06/16	R/W	56 address parameter – Same as above 49 address					
443081(A848) to 443140(A883)	03/06/16	R/W	57 address parameter – Same as above 49 address					
443141(A884) to 443200(A8BF)	03/06/16	R/W	58 address parameter – Same as above 49 address					
443201(A8C0) to 443260(A8FB)	03/06/16	R/W	59 address parameter – Same as above 49 address					
443261(A8FC) to 443320(A937)	03/06/16	R/W	60 address parameter – Same as above 49 address					
443321(A938) to 443380(A973)	03/06/16	R/W	61 address parameter – Same as above 49 address					
443381(A974) to 443440(A9AF)	03/06/16	R/W	62 address parameter – Same as above 49 address					
443441(A9B0) to 443500(A9EB)	03/06/16	R/W	63 address parameter – Same as above 49 address					
443501(A9EC) to 443560(AA27)	03/06/16	R/W	64 address parameter – Same as above 49 address					

2.5.8 TMHCT

2.5.8.1 Read input register (Func 04)

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
301551(060E)	04	R	-	Product number H	-	-	0	
301552(060F)	04	R	-	Product number L	-	-	0	
301553(0610)	04	R	-	Hardware version	-	-	100	
301554(0611)	04	R	-	Software version	-	-	100	
301555(0612)	04	R	-	Model name 1	-	-	"TM"	Product name
301556(0613)	04	R	-	Model name 2	-	-	"HC"	Option
301557(0614)	04	R	-	Model name 3	-	-	"T-"	Option
301558(0615)	04	R	-	Model name 4	-	-	"82"	Input/Power voltage
301559(0616)	04	R	-	Model name 5	-	-	"NE "	Output/Structure
301560(0617)	04	R	-	Model name 6	-	-	" "	
301561(0618)	04	R	-	Model name 7	-	-	" "	
301562(0619)	04	R	-	Model name 8	-	-	" "	
301563(061A)	04	R	-	Model name 9	-	-	" "	
301564(061B)	04	R	-	Model name 10	-	-	" "	
301565(061C)	04	R	Reserved					
301566(061D)	04	R	Reserved					
301567(061E)	04	R	Reserved					
301568(061F)	04	R	-	Coil status Start Address	-	-	0	
301569(0620)	04	R	-	Coil status Quantity	-	-	0	
301570(0621)	04	R	-	Input status Start Address	-	-	0	
301571(0622)	04	R	-	Input status Quantity	-	-	0	
301572(0623)	04	R	-	Holding Register Start Address	-	-	0	
301573(0624)	04	R	-	Holding Register Quantity	-	-	0	
301574(0625)	04	R	-	Input Register Start Address	-	-	0	
301575(0626)	04	R	-	Input Register Quantity	-	-	0	
301576(0627)	04	R	-	Channel Quantity	-	-	0	
301577(0628) to 301602(0641)	04	R	66 address parameter – Same as above 65 address					
301603(0642) to 301628(065B)	04	R	67 address parameter – Same as above 65 address					
301629(065C) to 301654(0675)	04	R	68 address parameter – Same as above 65 address					
301655(0676) to 301680(068F)	04	R	69 address parameter – Same as above 65 address					
301681(0690) to 301706(06A9)	04	R	70 address parameter – Same as above 65 address					
301707(06AA) to 301732(06C3)	04	R	71 address parameter – Same as above 65 address					
301733(06C4) to	04	R	72 address parameter – Same as above 65 address					

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
301758(06DD)								
301759(06DE) to 301784(06F7)	04	R	73 address parameter – Same as above 65 address					
301785(06F8) to 301810(0711)	04	R	74 address parameter – Same as above 65 address					
301811(0712) to 301836(072B)	04	R	75 address parameter – Same as above 65 address					
301837(072C) to 301862(0745)	04	R	76 address parameter – Same as above 65 address					
301863(0746) to 301888(075F)	04	R	77 address parameter – Same as above 65 address					
301889(0760) to 301914(0779)	04	R	78 address parameter – Same as above 65 address					
301915(077A) to 301940(0793)	04	R	79 address parameter – Same as above 65 address					
301941(0794) to 301966(07AD)	04	R	80 address parameter – Same as above 65 address					
301967(07AE) to 302000(07CF)	04	R	Reserved					
310851(2A62)	04	R	CT1 Heater Current	CT1 input value monitoring	0.0 to 50.0	A	-	
310852(2A63)	04	R	CT2 Heater Current	CT2 input value monitoring				
310853(2A64)	04	R	CT3 Heater Current	CT3 input value monitoring				
310854(2A65)	04	R	CT4 Heater Current	CT4 input value monitoring				
310855(2A66)	04	R	CT5 Heater Current	CT5 input value monitoring				
310856(2A67)	04	R	CT6 Heater Current	CT6 input value monitoring				
310857(2A68)	04	R	CT7 Heater Current	CT7 input value monitoring				
310858(2A69)	04	R	CT8 Heater Current	CT8 input value monitoring				
310859(2A6A) to 310866(2A71)			66 address parameter – Same as above 65 address					
310867(2A72) to 310874(2A79)			67 address parameter – Same as above 65 address					
310875(2A7A) to 310882(2A81)			68 address parameter – Same as above 65 address					
310883(2A82) to 310890(2A89)			69 address parameter – Same as above 65 address					
310891(2A8A) to 310898(2A91)			70 address parameter – Same as above 65 address					
310899(2A92) to 310906(2A99)			71 address parameter – Same as above 65 address					
310907(2A9A) to 310914(2AA1)			72 address parameter – Same as above 65 address					
310915(2AA2) to 310922(2AA9)			73 address parameter – Same as above 65 address					
310923(2AAA) to 310930(2AB1)			74 address parameter – Same as above 65 address					
310931(2AB2) to 310938(2AB9)			75 address parameter – Same as above 65 address					
310939(2ABA) to			76 address parameter – Same as above 65 address					

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
310946(2AC1)								
310947(2AC2) to 310954(2AC9)			77 address parameter – Same as above 65 address					
310955(2ACA) to 310962(2AD1)			78 address parameter – Same as above 65 address					
310963(2AD2) to 310970(2AD9)			79 address parameter – Same as above 65 address					
310971(2ADA) to 310978(2AE1)			80 address parameter – Same as above 65 address					
310979(2AE2)	04	R	Unit Address	Comm. address	65 to 80	-	65	
310980(2AE3)	04	R	66 address parameter – Same as above 65 address					
310981(2AE4)	04	R	67 address parameter – Same as above 65 address					
310982(2AE5)	04	R	68 address parameter – Same as above 65 address					
310983(2AE6)	04	R	69 address parameter – Same as above 65 address					
310984(2AE7)	04	R	70 address parameter – Same as above 65 address					
310985(2AE8)	04	R	71 address parameter – Same as above 65 address					
310986(2AE9)	04	R	72 address parameter – Same as above 65 address					
310987(2AEA)	04	R	73 address parameter – Same as above 65 address					
310988(2AEB)	04	R	74 address parameter – Same as above 65 address					
310989(2AEC)	04	R	75 address parameter – Same as above 65 address					
310990(2AED)	04	R	76 address parameter – Same as above 65 address					
310991(2AEE)	04	R	77 address parameter – Same as above 65 address					
310992(2AEF)	04	R	78 address parameter – Same as above 65 address					
310993(2AF0)	04	R	79 address parameter – Same as above 65 address					
310994(2AF1)	04	R	80 address parameter – Same as above 65 address					
310995(2AF2) to 311000(2AF7)	04	R	Reserved					

2.5.8.2 Read holding register (Func 03) / Preset single register (Func 06) / Preset multiple registers (Func 16)

(1) Common(common parameter setting) group

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
443561(AA28)	03/06/16	R/W	Bit Per Second	Communication speed	0: 4800, 1: 9600, 2: 19200, 3: 38400, 4: 115200	bps	1: 9600	
443562(AA29)	03/06/16	R/W	Parity Bit	Communication parity bit	0: NONE, 1: EVEN, 2: ODD	-	0: NONE	
443563(AA2A)	03/06/16	R/W	Stop Bit	Communication stop bit	0: 1, 1: 2	bit	1: 2	
443564(AA2B)	03/06/16	R/W	Response Waiting Time	Communication response wait time	5 to 99	ms	20	
443565(AA2C)	03/06/16	R/W	Communication Write	Communication writing enable/disable	0: ENABLE, 1: DISABLE	-	0: ENABLE	
443566(AA2D)	03/06/16	R/W	Parameter Initialize	Parameter reset	0: NO, 1: YES	-	0: NO	
443567(AA2E)	03/06/16	R/W	CT Input Value Indication Lamp1	CT input value indicator 1	0: CT1, 1: CT2, 2: CT3, 3: CT4, 4: CT5, 5: CT6, 6: CT7, 7: CT8	-	0: CT1	
443568(AA2F)	03/06/16	R/W	CT Input Value Indication Lamp2	CT input value indicator 2			1: CT2	
443569(AA30) to 443590(AA45)	03/06/16	R/W	Reserved					

※ When address 66 to 80 setting, parameter address assignment

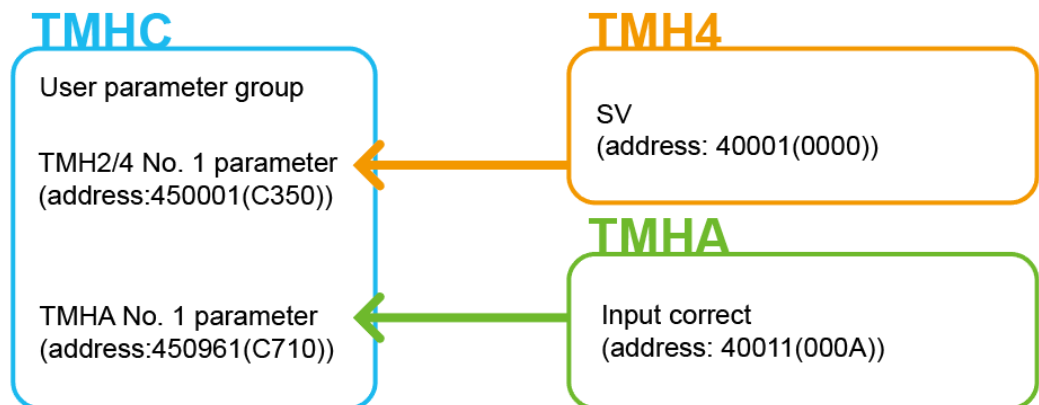
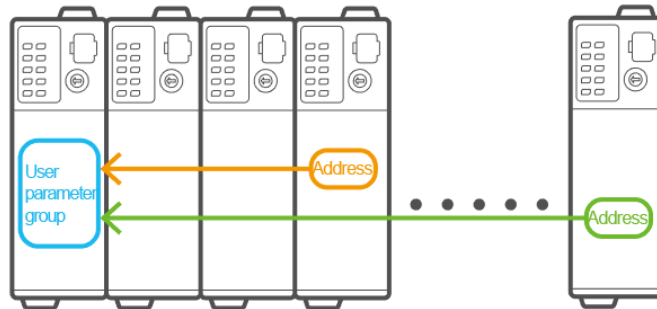
No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
443591(AA46) to 443620(AA63)	03/06/16	R/W	66 address parameter – Same as above 65 address					
443621(AA64) to 443650(AA81)	03/06/16	R/W	67 address parameter – Same as above 65 address					
443651(AA82) to 443680(AA9F)	03/06/16	R/W	68 address parameter – Same as above 65 address					
443681(AAA0) to 443710(AABD)	03/06/16	R/W	69 address parameter – Same as above 65 address					
443711(AABE) to 443740(AADB)	03/06/16	R/W	70 address parameter – Same as above 65 address					
443741(AADC) to 443770(AAF9)	03/06/16	R/W	71 address parameter – Same as above 65 address					
443771(AAFA) to 443800(AB17)	03/06/16	R/W	72 address parameter – Same as above 65 address					
443801(AB18) to 443830(AB35)	03/06/16	R/W	73 address parameter – Same as above 65 address					
443831(AB36) to 443860(AB53)	03/06/16	R/W	74 address parameter – Same as above 65 address					
443861(AB54) to 443890(AB71)	03/06/16	R/W	75 address parameter – Same as above 65 address					
443891(AB72) to 443920(AB8F)	03/06/16	R/W	76 address parameter – Same as above 65 address					
443921(AB90) to 443950(ABAD)	03/06/16	R/W	77 address parameter – Same as above 65 address					
443951(ABAE) to 443980(ABCB)	03/06/16	R/W	78 address parameter – Same as above 65 address					
443981(ABCC) to 444010(ABE9)	03/06/16	R/W	79 address parameter – Same as above 65 address					
444011(ABEA) to 444040(AC07)	03/06/16	R/W	80 address parameter – Same as above 65 address					

2.5.9 User parameter group

The parameters of TMH2/4/A/E/CT module which are connected with TMHC are settable as within user parameter group. Depending on the module type, the dedicated user parameter group address is different.

Within the assigned user parameter group by module/address, enter the desired parameter module address.

Enter the parameter address except 10^5 digit number.
(E.g.: TMH4 SV set value address is 400001. Enter as 40001.)



(1) User parameter group order assignment

No(Address)		Func	R/W	Parameter	Set range	Unit	Default	Note
TMH2	TMH4							
450001(C350)		03/06/16	R/W	User parameter group > No. 1 parameter assignment	The dedicated parameter address	-	0	
450002(C351)		03/06/16	R/W	User parameter group > No. 2 parameter assignment				
450003(C352)		03/06/16	R/W	User parameter group > No. 3 parameter assignment				
450004(C353)		03/06/16	R/W	User parameter group > No. 4 parameter assignment				
450005(C354)		03/06/16	R/W	User parameter group > No. 5 parameter assignment				
450006(C355)		03/06/16	R/W	User parameter group > No. 6 parameter assignment				
450007(C356)		03/06/16	R/W	User parameter group > No. 7 parameter assignment				
450008(C357)		03/06/16	R/W	User parameter group > No. 8 parameter assignment				
450009(C358)		03/06/16	R/W	User parameter group > No. 9 parameter assignment				
450010(C359)		03/06/16	R/W	User parameter group > No. 10 parameter assignment				
450011(C35A)		03/06/16	R/W	User parameter group > No. 11 parameter assignment				
450012(C35B)		03/06/16	R/W	User parameter group > No. 12 parameter assignment				
450013(C35C)		03/06/16	R/W	User parameter group > No. 13 parameter assignment				
450014(C35D)		03/06/16	R/W	User parameter group > No. 14 parameter assignment				
450015(C35E)		03/06/16	R/W	User parameter group > No. 15 parameter assignment				
450016(C35F)		03/06/16	R/W	User parameter group > No. 16 parameter assignment				
450017(C360)		03/06/16	R/W	User parameter group > No. 17 parameter assignment				
450018(C361)		03/06/16	R/W	User parameter group > No. 18 parameter assignment				
450019(C362)		03/06/16	R/W	User parameter group > No. 19 parameter assignment				
450020(C363)		03/06/16	R/W	User parameter group > No. 20 parameter assignment				
450021(C364)		03/06/16	R/W	User parameter group > No. 21 parameter assignment				
450022(C365)		03/06/16	R/W	User parameter group > No. 22 parameter assignment				
450023(C366)		03/06/16	R/W	User parameter group > No. 23 parameter assignment				
450024(C367)		03/06/16	R/W	User parameter group > No. 24 parameter assignment				
450025(C368)		03/06/16	R/W	User parameter group > No. 25 parameter assignment				

No(Address)		Func	R/W	Parameter	Set range	Unit	Default	Note
TMH2	TMH4							
450026	(C369)	03/06/16	R/W	User parameter group > No. 26 parameter assignment				
450027	(C36A)	03/06/16	R/W	User parameter group > No. 27 parameter assignment				
450028	(C36B)	03/06/16	R/W	User parameter group > No. 28 parameter assignment				
450029	(C36C)	03/06/16	R/W	User parameter group > No. 29 parameter assignment				
450030	(C36D)	03/06/16	R/W	User parameter group > No. 30 parameter assignment				

(2) User parameter group assignment

No(Address)		Func	R/W	Parameter	Set range	Unit	Default	Note
TMH2	TMH4							
450031	(C36E)	03/06/16	R/W	User parameter group > No. 1 parameter	The dedicated parameter set range	-	0	
450032	(C36F)	03/06/16	R/W	User parameter group > No. 2 parameter				
450033	(C370)	03/06/16	R/W	User parameter group > No. 3 parameter				
450034	(C371)	03/06/16	R/W	User parameter group > No. 4 parameter				
450035	(C372)	03/06/16	R/W	User parameter group > No. 5 parameter				
450036	(C373)	03/06/16	R/W	User parameter group > No. 6 parameter				
450037	(C374)	03/06/16	R/W	User parameter group > No. 7 parameter				
450038	(C375)	03/06/16	R/W	User parameter group > No. 8 parameter				
450039	(C376)	03/06/16	R/W	User parameter group > No. 9 parameter				
450040	(C377)	03/06/16	R/W	User parameter group > No. 10 parameter				
450041	(C378)	03/06/16	R/W	User parameter group > No. 11 parameter				
450042	(C379)	03/06/16	R/W	User parameter group > No. 12 parameter				
450043	(C37A)	03/06/16	R/W	User parameter group > No. 13 parameter				
450044	(C37B)	03/06/16	R/W	User parameter group > No. 14 parameter				
450045	(C37C)	03/06/16	R/W	User parameter group > No. 15 parameter				
450046	(C37D)	03/06/16	R/W	User parameter group > No. 16 parameter				
450047	(C37E)	03/06/16	R/W	User parameter group > No. 17 parameter				
450048	(C37F)	03/06/16	R/W	User parameter group > No. 18 parameter				
450049	(C380)	03/06/16	R/W	User parameter group > No. 19 parameter				
450050	(C381)	03/06/16	R/W	User parameter group > No. 20 parameter				

No(Address)		Func	R/W	Parameter	Set range	Unit	Default	Note
TMH2	TMH4							
450051(C382)		03/06/16	R/W	User parameter group > No. 21 parameter				
450052(C383)		03/06/16	R/W	User parameter group > No. 22 parameter				
450053(C384)		03/06/16	R/W	User parameter group > No. 23 parameter				
450054(C385)		03/06/16	R/W	User parameter group > No. 24 parameter				
450055(C386)		03/06/16	R/W	User parameter group > No. 25 parameter				
450056(C387)		03/06/16	R/W	User parameter group > No. 26 parameter				
450057(C388)		03/06/16	R/W	User parameter group > No. 27 parameter				
450058(C389)		03/06/16	R/W	User parameter group > No. 28 parameter				
450059(C38A)		03/06/16	R/W	User parameter group > No. 29 parameter				
450060(C38B)		03/06/16	R/W	User parameter group > No. 30 parameter				

※ When TMH2/4 control module address 02 to 16 setting, parameter address assignment

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
450061(C38C) to 450120(C3C7)	03/06/16	R/W	02 address parameter	Same as above 01 address				
450121(C3C8) to 450180(C403)	03/06/16	R/W	03 address parameter	Same as above 01 address				
450181(C404) to 450240(C43F)	03/06/16	R/W	04 address parameter	Same as above 01 address				
450241(C440) to 450300(C47B)	03/06/16	R/W	05 address parameter	Same as above 01 address				
450301(C47C) to 450360(C4B7)	03/06/16	R/W	06 address parameter	Same as above 01 address				
450361(C4B8) to 450420(C4F3)	03/06/16	R/W	07 address parameter	Same as above 01 address				
450421(C4F4) to 450480(C52F)	03/06/16	R/W	08 address parameter	Same as above 01 address				
450481(C530) to 450540(C56B)	03/06/16	R/W	09 address parameter	Same as above 01 address				
450541(C56C) to 450600(C5A7)	03/06/16	R/W	10 address parameter	Same as above 01 address				
450601(C5A8) to 450660(C5E3)	03/06/16	R/W	11 address parameter	Same as above 01 address				
450661(C5E4) to 450720(C61F)	03/06/16	R/W	12 address parameter	Same as above 01 address				
450721(C620) to 450780(C65B)	03/06/16	R/W	13 address parameter	Same as above 01 address				
450781(C65C) to 450840(C697)	03/06/16	R/W	14 address parameter	Same as above 01 address				
450841(C698) to 450900(C6D3)	03/06/16	R/W	15 address parameter	Same as above 01 address				
450901(C6D4) to 450960(C70F)	03/06/16	R/W	16 address parameter	Same as above 01 address				

※ When TMHA option module address 33 to 48 setting, parameter address assignment

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
450961(C710) to 451020(C74B)	03/06/16	R/W	33	address parameter – Same as above 01 address				
451021(C74C) to 451080(C787)	03/06/16	R/W	34	address parameter – Same as above 01 address				
451081(C788) to 451140(C7C3)	03/06/16	R/W	35	address parameter – Same as above 01 address				
451141(C7C4) to 451200(C7FF)	03/06/16	R/W	36	address parameter – Same as above 01 address				
451201(C800) to 451260(C83B)	03/06/16	R/W	37	address parameter – Same as above 01 address				
451261(C83C) to 451320(C877)	03/06/16	R/W	38	address parameter – Same as above 01 address				
451321(C878) to 451380(C8B3)	03/06/16	R/W	39	address parameter – Same as above 01 address				
451381(C8B4) to 451440(C8EF)	03/06/16	R/W	40	address parameter – Same as above 01 address				
451441(C8F0) to 451500(C92B)	03/06/16	R/W	41	address parameter – Same as above 01 address				
451501(C92C) to 451560(C967)	03/06/16	R/W	42	address parameter – Same as above 01 address				
451561(C968) to 451620(C9A3)	03/06/16	R/W	43	address parameter – Same as above 01 address				
451621(C9A4) to 451680(C9DF)	03/06/16	R/W	44	address parameter – Same as above 01 address				
451681(C9E0) to 451740(CA1B)	03/06/16	R/W	45	address parameter – Same as above 01 address				
451741(CA1C) to 451800(CA57)	03/06/16	R/W	46	address parameter – Same as above 01 address				
451801(CA58) to 451860(CA93)	03/06/16	R/W	47	address parameter – Same as above 01 address				
451861(CA94) to 451920(CACF)	03/06/16	R/W	48	address parameter – Same as above 01 address				

※ When TMHE option module address 49 to 64 setting, parameter address assignment

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
451921(CAD0) to 451980(CB0B)	03/06/16	R/W	49	address parameter – Same as above 01 address				
451981(CB0C) to 452040(CB47)	03/06/16	R/W	50	address parameter – Same as above 01 address				
452041(CB48) to 452100(CB83)	03/06/16	R/W	51	address parameter – Same as above 01 address				
452101(CB84) to 452160(CBBF)	03/06/16	R/W	52	address parameter – Same as above 01 address				
452161(CBC0) to 452220(CBFB)	03/06/16	R/W	53	address parameter – Same as above 01 address				
452221(CBFC) to 452280(CC37)	03/06/16	R/W	54	address parameter – Same as above 01 address				
452281(CC38) to 452340(CC73)	03/06/16	R/W	55	address parameter – Same as above 01 address				
452341(CC74) to 452400(CCAF)	03/06/16	R/W	56	address parameter – Same as above 01 address				
452401(CCB0) to 452460(CCEB)	03/06/16	R/W	57	address parameter – Same as above 01 address				
452461(CCEC) to 452520(CD27)	03/06/16	R/W	58	address parameter – Same as above 01 address				
452521(CD28) to 452580(CD63)	03/06/16	R/W	59	address parameter – Same as above 01 address				
452581(CD64) to 452640(CD9F)	03/06/16	R/W	60	address parameter – Same as above 01 address				
452641(CDA0) to 452700(CDDB)	03/06/16	R/W	61	address parameter – Same as above 01 address				
452701(CDDC) to 452760(CE17)	03/06/16	R/W	62	address parameter – Same as above 01 address				
452761(CE18) to 452820(CE53)	03/06/16	R/W	63	address parameter – Same as above 01 address				
452821(CE54) to 452880(CE8F)	03/06/16	R/W	64	address parameter – Same as above 01 address				

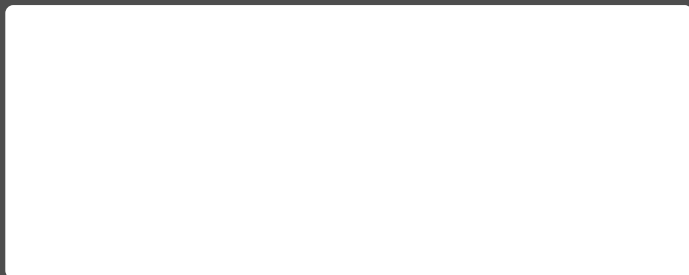
※ When TMHCT option module address 66 to 80 setting, parameter address assignment

No(Address)	Func	R/W	Parameter	Description	Set range	Unit	Default	Note
452881(CE90) to 452940(CECB)	03/06/16	R/W	65	address parameter – Same as above 01 address				
452941(CECC) to 453000(CF07)	03/06/16	R/W	66	address parameter – Same as above 01 address				
453001(CF08) to 453060(CF43)	03/06/16	R/W	67	address parameter – Same as above 01 address				
453061(CF44) to 453120(CF7F)	03/06/16	R/W	68	address parameter – Same as above 01 address				
453121(CF80) to 453180(CFBB)	03/06/16	R/W	69	address parameter – Same as above 01 address				
453181(CFBC) to 453240(CFF7)	03/06/16	R/W	70	address parameter – Same as above 01 address				
453241(CFF8) to 453300(D033)	03/06/16	R/W	71	address parameter – Same as above 01 address				
453301(D034) to 453360(D06F)	03/06/16	R/W	72	address parameter – Same as above 01 address				
453361(D070) to 453420(D0AB)	03/06/16	R/W	73	address parameter – Same as above 01 address				
453421(D0AC) to 453480(D0E7)	03/06/16	R/W	74	address parameter – Same as above 01 address				
453481(D0E8) to 453540(D123)	03/06/16	R/W	75	address parameter – Same as above 01 address				
453541(D124) to 453600(D15F)	03/06/16	R/W	76	address parameter – Same as above 01 address				
453601(D160) to 453660(D19B)	03/06/16	R/W	77	address parameter – Same as above 01 address				
453661(D19C) to 453720(D1D7)	03/06/16	R/W	78	address parameter – Same as above 01 address				
453721(D1D8) to 453780(D213)	03/06/16	R/W	79	address parameter – Same as above 01 address				
453781(D214) to 453840(D24F)	03/06/16	R/W	80	address parameter – Same as above 01 address				

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