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Autonics
Sensors & Controllers

Multi panel meter

MT Series

USER MANUAL
For COMMUNICATION

Thank you very much for selecting Autonics products.
For your safety, please read the following before using.

Preface

Thank you very much for selecting Autonics products.

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

This user manual for communication 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 for Communication Guide

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

- 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 home-page (www.autonics.co.kr) 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.
- 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.

User Manual for Communication 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 Precautions

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

Warning	**Warning**	Cases that may cause serious injury or fatal accident if instructions are not followed.
Caution	**Caution**	Cases that may cause minor injury or product damage if instructions are not followed.

Warning

- In case of using this unit with machinery (Ex: nuclear power control, medical equipment, ship, vehicle, train, airplane, combustion apparatus, safety device, crime/disaster prevention equipment, etc) which may cause damages to human life or property, it is required to install fail-safe device.
  It may cause a fire, human injury or property loss.
- It must be mounted on panel.
  It may cause electric shock.
- Do not connect, inspect or repair this unit when power is ON.
  It may cause electric shock.
- Do not disassemble or modify this unit. Please contact us if it is required.
  It may cause electric shock or a fire.
- Check input power specification and check power terminal number when wiring power cable.
  It may cause a fire.

Caution

- This unit shall not be used outdoors.
  It may shorten the life cycle of the product or cause electric shock. Use this product indoors only. Do not use the product outdoors or at locations subject to the temperatures or humidity outside.
  Example) rain, dirty, frost, sunlight, condensation, etc
- When wiring power input terminal and measuring input terminal, power line should be over AWG 20(0.50mm^2). Terminal screw should be tightened with 0.74 N•m to 0.90 N•m torque.
  It may cause a fire due to connect failure.
- Please observe the rated specifications.
  It may cause shorten the life cycle of the product and cause a fire.
- Do not use the load over the rated switch capacity value of relay contact part.
  It may cause insulation failure, contact melt, contact failure, relay broken, fire etc.
- In cleaning the unit, do not use water or organic solvent. And use dry cloth.
  It may cause electric shock or a fire.

- Do not use this unit in place where there is flammable, explosive gas, humidity, direct light, radiant heat, vibration, or impact.
  It may cause a fire or explosion.
- Do not inflow dust or wire dregs into the unit.
  It may cause a fire or malfunction.
- Wire properly after checking the terminal polarity.
  It may cause a fire or explosion.

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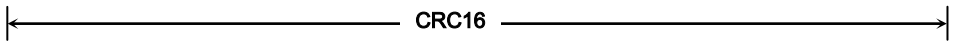
1 Modbus RTU protocol

1.1 Read Coil Status(Func01–01H)

Reads the output (OX reference, Coil) ON/OFF status in the Slave device.

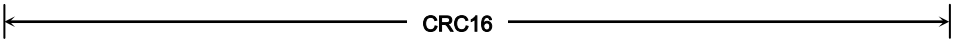
(1) Query(Master)

Slave Address	Function (Command)	Starting Address		No. of Points(Number of data)		Error Check(CRC16)	
		High	Low	High	Low	Low	High
1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte



(2) Response(Slave)

Slave Address	Function (Command)	Byte Count (Number of data byte)	Data	Data	Data	Error Check(CRC16)	
						Low	High
1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte



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

- Query(Master)

Slave Address	Function (Command)	Starting Address		No. of Points(Number of data)		Error Check(CRC16)	
		High	Low	High	Low	Low	High
11 H	01 H	00 H	00 H	00 H	0A H	## H	## H

The below example is when coil 000008(0007 H) to 000001(0000 H) value on the Slave is “ON-ON-OFF-OFF-ON-ON-OFF-ON” and 000010(0009 H) to 000009(0008 H) value is “OFF-ON”.

- Response(Slave)

Slave Address	Function (Command)	Byte Count (Number of data byte)	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(Func02–02H)

Reads the input (1X reference) ON/OFF status in the Slave device.

(1) Query(Master)

Slave Address	Function (Command)	Starting Address		No. of Points(Number of 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 (Command)	Byte Count (Number of data byte)	Data	Data	Data	Error Check(CRC16)	
						Low	High
1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte

CRC16

The below example is to read the input status (ON: 1, OFF: 0) of 10EA within 100001(0000 H) to 100010(0009 H) on the Slave(Address 17) from the Master.

- Query(Master)

Slave Address	Function (Command)	Starting Address		No. of Points(Number of data)		Error Check(CRC16)	
		High	Low	High	Low	Low	High
11 H	02 H	00 H	00 H	00 H	0A H	## H	## H

The below example is when 100008(0007 H) to 100001(0000 H) value on the Slave is “ON-ON-OFF-OFF-ON-ON-OFF-ON” and 100010(0009 H) to 100009(0008 H) value is “OFF-ON”.

- Response(Slave)

Slave Address	Function (Command)	Byte Count (Number of data byte)	Data (000008 to 000001)	Data (000010 to 000009)	Error Check(CRC16)	
					Low	High
11 H	02 H	02 H	CD H	01 H	## H	## H

1.3 Read Holding Registers(Func03–03H)

Reads the binary data of Holding Registers(4X reference) in the Slave device.

(1) Query(Master)

Slave Address	Function (Command)	Starting Address		No. of Points(Number of 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 (Command)	Byte Count (Number of data byte)	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

The below example is to read 2EA value within Holding Register 400001(0000 H) to 400002(0001 H) on the Slave(Address 17) from the Master.

- Query(Master)

Slave Address	Function (Command)	Starting Address		No. of Points(Number of data)		Error Check(CRC16)	
		High	Low	High	Low	Low	High
11 H	03 H	00 H	00 H	00 H	02 H	## H	## H

The below example is when 400001(0000 H) value on the Slave is “555(22B H)” and 400002(0001 H) value is “100 (64 H)”.

- Response(Slave)

Slave Address	Function (Command)	Byte Count (Number of data byte)	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(Func04–04H)

Reads the binary data of Input Registers(3X reference) in the Slave device.

(1) Query(Master)

Slave Address	Function (Command)	Starting Address		No. of Points(Number of 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 (Command)	Byte Count (Number of data byte)	Data	Data	Data	Error Check(CRC16)	
						Low	High
1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte

CRC16

The below is to read 2EA value within Input Register 300001(0000 H) to 300002(0001 H) on the Slave(Address 17) from the Master.

- Query(Master)

Slave Address	Function (Command)	Starting Address		No. of Points(Number of data)		Error Check(CRC16)	
		High	Low	High	Low	Low	High
11 H	04 H	00 H	00 H	00 H	02 H	## H	## H

The below example is when 300001(0000 H) value on the Slave is “10(A H)” and 300002(0001 H) value is “20(14 H)”.

- Response(Slave)

Slave Address	Function (Command)	Byte Count (Number of data byte)	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 Preset Single Registers(Func06–06H)

Writes the binary data of single Holding Registers (4X reference) in the Slave device.

(1) Query(Master)

Slave Address	Function (Command)	Register Address		Preset Data(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 (Command)	Register Address		Preset Data(Data)		Error Check(CRC16)	
		High	Low	High	Low	Low	High
1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte

CRC16

The below example is to write “10(A H)” at Holding Register 400001(0000 H) of Slave(Address 17) from the Master.

- Query(Master)

Slave Address	Function (Command)	Starting Address		Preset Data(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 (Command)	Starting Address		Preset Data(Data)		Error Check(CRC16)	
		High	Low	High	Low	Low	High
11 H	06 H	00 H	00 H	00 H	0A H	## H	## H

1.6 Preset Multiple Registers(Func16–10H)

Writes the binary data of Holding Registers (4X reference) continuously in the Slave device.

(1) Query(Master)

Slave Address	Function (Command)	Starting Address		No. of Register		Byte Count (Number of data byte)	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 (Command)	Starting Address		No. of Register		Error Check(CRC16)	
		High	Low	High	Low	Low	High
1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte

CRC16

The below example is to write all “10(A H)” at Holding Register 400001(0000 H) to 400002(0001 H) of the Slave(Address 17) from the Master.

- Query(Master)

Slave Address	Function (Command)	Starting Address		No. of Register		Byte Count (Number of data byte)	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 (Command)	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

Except downloading the pre-designated min/max parameter accoriding to input specification or default value from PC loader program, it is recommended to use signle register write (Single Register Write) than multi register write (Multi Regiter Write) to connect external device such as PLC, graphic panel, etc.

1.7 Exception process (Exception Response-Error Code)

If communication error occurs, it sends response command and transmits the applicable Exception Code after setting(1) the highest-level bit of received commend (Function).

Slave Address	Function (Command) +80 H	Exception Code	Error Check(CRC16)	
			Low	High
1Byte	1Byte	1Byte	1Byte	1Byte

CRC16

- ILLEGAL FUNCTION(Exception Code: 01 H): Command is not supported.
- ILLEGAL DATA ADDRESS(Exception Code: 02 H): Starting address of the queried data is inconsistent with transmittable data address.
- ILLRGAL DATA VALUE(Exception Code: 03 H): The number of the queried data is inconsistent with the number of transmittable data.
- SLAVE DEVICE FAILURE(Exception Code: 04 H): Not properly completes the queried command.

The below example is to read the output status (ON: 1, OFF: 0) of non-existing coil 001001(03E8 H) on the Slave(Address 17) from the Master.

- Query (Master)

Slave Address	Function (Command)	Starting Address		No. of Points(Number of data)		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 (Command) +80 H	Exception Code	Error Check(CRC16)	
			Low	High
11 H	81 H	02 H	## H	## H

2 Modbus Mapping Table

2.1 MT4W

2.1.1 Read Holding Register

NO.	FUNC	R/W	Item	Description
300001(0000)	04	R	Measured value StAd: Displays from -5% to 110% SCAL: Displays from -1999 to 9999	Decimal number display method. Signal input (DV/DA/AV/AA) is set by each terminal. • Standard When outputs "HHHH", displays "30000" When outputs "LLLL", displays "-30000" • Scale At H-SC, L-SC, displays the set value. When displays "d.-HH", outputs "30001" When displays "d.-LL", outputs "-30001" • Frequency When outputs "F-HH", displays "30002"
300002(0001)	04	R	Sets decimal point StAd 0.000→0003H, 0.00→0002H 0.0→0001H, 0→0000H SCAL 0.000→0103H, 0.00→0102H 0.0→0101H, 0→0100H	Outputs decimal point position's information of StAd / SCAL mode.
300003(0002)	04	R	HI Peak Value	Decimal number display method. Outputs max. value of signal input. (DV/DA/AV/AA)
300004(0003)	04	R	LO Peak Value	Decimal number display method. Outputs min. value of signal input. (DV/DA/AV/AA)
300005(0004)	04	R	OUT Status	HI, GO, LO (ON : 1, OFF : 0)
300101(0064)	04	R	Product number H	0671H
300102(0065)	04	R	Product number L	DV : F31CH/F326H, DA : F704H/F70EH AV : FAECH/FAF6H, AA : FED4H/FEDEH
300103(0066)	04	R	Hardware version	20
300104(0067)	04	R	Software version	20
300105(0068)	04	R	Model name1	"MT "
300106(0069)	04	R	Model name2	"4W "
300107(006A)	04	R	Model name3	"DV/DA/AA/AV "
300108(006B)	04	R	Model name4	"-8/-9 "
300109(006C)	04	R	Model name5	"85H "
300110(006D)	04	R	Model name6	
300111(006E)	04	R	Model name7	
300112(006F)	04	R	Model name8	
300113(0070)	04	R	Model name9	
300114(0071)	04	R	Model name10	
300118(0075)	04	R	COIL START ADDRESS	0
300119(0076)	04	R	COIL QUANTITY	3
300120(0077)	04	R	INPUT START ADDRESS	0
300121(0078)	04	R	INPUT QUANTITY	0
300122(0079)	04	R	HOLDING REG START ADDRESS	0
300123(007A)	04	R	HOLDING REG QUANTITY	0

NO.	FUNC	R/W	Item	Description
300124(007B)	04	R	INPUT REG START ADDRESS	0
300125(007C)	04	R	INPUT REG QUANTITY	4

2.1.2 Read Coil Status

NO.	FUNC	R/W	Item	Description
100001(0000)	02	R	OUT STATUS LO	ON: 1, OFF: 0
100002(0001)	02	R	OUT STATUS GO	ON: 1, OFF: 0
100003(0002)	02	R	OUT STATUS HI	ON: 1, OFF: 0

2.1.3 Read Holding Register/Preset Single Register/Preset Multiple Register

2.1.3.1 Parameter 0 group

NO.	FUNC	R/W	Item	Description
400001(0000)	03/06/16	R/W	High Preset	HIGH set value of OUT.
400002(0001)	03/06/16	R/W	Low Preset	LOW set value of OUT.
400003(0002)	03/06/16	R/W	High Peak	Decimal number display method. Outputs max. value of signal input (DV/DA/AV/AA)., Factory default: 0
400004(0003)	03/06/16	R/W	Low Peak	Decimal number display method. Outputs min. value of signal input (DV/DA/AV/AA)., Factory default: 0

2.1.3.2 Parameter 1 group

NO.	FUNC	R/W	Item	Description
400101(0064)	03/06/16	R/W	Input Range	Selects input range. (Refer to input specification.)
400102(0065)	03/06/16	R/W	Display	Stnd: 0, SCAL: 1, FrEq: 2
400103(0066)	03/06/16	R/W	Dot	0: 3, 0.0: 2, 0.00: 1, 0.000: 0
400104(0067)	03/06/16	R/W	High Scale	-1999 to 9999 (Changes by decimal point position.)
400105(0068)	03/06/16	R/W	Low Scale	-1999 to 9999 (Changes by decimal point position.)
400106(0069)	03/06/16	R/W	Input Type	AVR: 0, RMS: 1
400107(006A)	03/06/16	R/W	Input Bias High	Corrects high-limit gradient of display value. Stnd, SCAL : 0.100 to 5.000 FrEq: 0.001 to 9.999 (mantissa)
400108(006B)	03/06/16	R/W	Input Bias Low	Corrects low-limit gradient of display value. Stnd, SCAL : -99 to +99
400109(006C)	03/06/16	R/W	Input Bias High Exponent	FrEq: Sets index. 10-2: 0, 10-1: 1, 10-0: 2, 10+1: 3

2.1.3.3 Parameter 2 group

NO.	FUNC	R/W	Item	Description
400201(00C8)	03/06/16	R/W	Out Type	OFF: 0, L: 1, H: 2, LH: 3, HH: 4, LL: 5, LD: 6
400202(00C9)	03/06/16	R/W	Hysteresis	Within 1 to 10% F.S range.
400203(00CA)	03/06/16	R/W	Startup Compensation Time	Output delay time. 0.0 to 99.9 sec
400204(00CB)	03/06/16	R/W	Peak Time	PEAK monitoring delay time. 00 to 30 sec
400205(00CC)	03/06/16	R/W	Display Time	Display cycle time. 0.1 to 5.0 sec
400206(00CD)	03/06/16	R/W	Zero Key	Uses front zero key. NO: 0, YES: 1
400207(00CE)	03/06/16	R/W	Event Input	Sets external terminal. HOLD: 0, ZERO: 1
400208(00CF)	03/06/16	R/W	Full Scale High	Unable to set.
400209(00D0)	03/06/16	R/W	Full Scale Low	Unable to set.
400210(00D1)	03/06/16	R/W	Address	Sets communication address. 01 to 99
400211(00D2)	03/06/16	R/W	Bit Per Second	Sets communication speed. 9600: 3, 4800: 2, 2400: 1, 1200: 0

NO.	FUNC	R/W	Item	Description
400212(00D3)	03/06/16	R/W	Parity Bit	Sets parity bit. NONE: 0, EVEN: 1, ODD: 2
400213(00D4)	03/06/16	R/W	Stop Bit	Sets stop bit. 1: 0, 2: 1
400214(00D5)	03/06/16	R/W	Response Waiting Time	Sets response delay time. 05 to 99 ms
400215(00D6)	03/06/16	R/W	Lock	Sets lock. oFF: 0, LoC1: 1, LoC2: 2, LoC3: 3

2.2 MT4Y

2.2.1 Read Holding Register

NO.	FUNC	R/W	Item	Description
300001(0000)	04	R	Measured value 5tAd: Displays from -5% to 110% 5CAL: Displays from -1999 to 9999	Decimal number display method. Signal input (DV/DA/AV/AA) is set by each terminal. · Standard When outputs "HHHH", displays "30000" When outputs "LLLL", displays "-30000" · Scale At H-5C, L-5C, displays the set value. When displays "d-HH", outputs "30001" When displays "d-LL", outputs "-30001" · Frequency When outputs "F-HH", displays "30002"
300002(0001)	04	R	Sets decimal point 5tAd 0.000→0003H, 0.00→0002H 0.0→0001H, 0→0000H 5CAL 0.000→0103H, 0.00→0102H 0.0→0101H, 0→0100H	Outputs decimal point position's information of 5tAd / 5CAL mode.
300003(0002)	04	R	HI Peak Value	Decimal number display method. Outputs max. value of signal input . (DV/DA/AV/AA)
300004(0003)	04	R	LO Peak Value	Decimal number display method. Outputs min. value of signal input. (DV/DA/AV/AA)
300005(0004)	04	R	OUT Status	HI, GO, LO (ON : 1, OFF : 0)
300101(0064)	04	R	Product number H	0672H
300102(0065)	04	R	Product number L	DV : 8B4CH, DA : 8BB0H AV : 8C14H, AA : 8C78H
300103(0066)	04	R	Hardware version	20
300104(0067)	04	R	Software version	20
300105(0068)	04	R	Model name1	"MT "
300106(0069)	04	R	Model name2	"4Y "
300107(006A)	04	R	Model name3	"DV/DA/AA/AV "
300108(006B)	04	R	Model name4	"-4 "
300109(006C)	04	R	Model name5	"8 "
300110(006D)	04	R	Model name6	
300111(006E)	04	R	Model name7	
300112(006F)	04	R	Model name8	
300113(0070)	04	R	Model name9	
300114(0071)	04	R	Model name10	
300118(0075)	04	R	COIL START ADDRESS	0
300119(0076)	04	R	COIL QUANTITY	3
300120(0077)	04	R	INPUT START ADDRESS	0
300121(0078)	04	R	INPUT QUANTITY	0
300122(0079)	04	R	HOLDING REG START ADDRESS	0
300123(007A)	04	R	HOLDING REG QUANTITY	0
300124(007B)	04	R	INPUT REG START ADDRESS	0
300125(007C)	04	R	INPUT REG QUANTITY	4

2.2.2 Read Coil Status

NO.	FUNC	R/W	Item	Description
100001(0000)	02	R	OUT STATUS LO	ON: 1, OFF: 0
100002(0001)	02	R	OUT STATUS GO	ON: 1, OFF: 0
100003(0002)	02	R	OUT STATUS HI	ON: 1, OFF: 0

2.2.3 Read Holding Register/Preset Single Register/Preset Multiple Register

2.2.3.1 Parameter 0 group

NO.	FUNC	R/W	Item	Description
400001(0000)	03/06/16	R/W	High Preset	Unable to set.
400002(0001)	03/06/16	R/W	Low Preset	LOW set value of OUT.
400003(0002)	03/06/16	R/W	High Peak	Decimal number display method. Outputs max. value of signal input (DV/DA/AV/AA)., Factory default: 0
400004(0003)	03/06/16	R/W	Low Peak	Decimal number display method. Outputs min. value of signal input (DV/DA/AV/AA)., Factory default: 0

2.2.3.2 Parameter 1 group

NO.	FUNC	R/W	Item	Description
400101(0064)	03/06/16	R/W	Input Range	Selects input range. (Refer to input specification.)
400102(0065)	03/06/16	R/W	Display	Std: 0, SCAL: 1, FrEq: 2
400103(0066)	03/06/16	R/W	Dot	0: 3, 0.0: 2, 0.00: 1, 0.000: 0
400104(0067)	03/06/16	R/W	High Scale	-1999 to 9999 (Changes by decimal point position.)
400105(0068)	03/06/16	R/W	Low Scale	-1999 to 9999 (Changes by decimal point position.)
400106(0069)	03/06/16	R/W	Input Type	AVR: 0, RMS: 1
400107(006A)	03/06/16	R/W	Input Bias High	Corrects high-limit gradient of display value. Std., SCAL: 0.100 to 5.000 FrEq: 0.001 to 9.999 (mantissa)
400108(006B)	03/06/16	R/W	Input Bias Low	Corrects low-limit gradient of display value. Std, SCAL: -99 to +99
400109(006C)	03/06/16	R/W	Input Bias High Exponent	FrEq: Sets index. 10-2: 0, 10-1: 1, 10-0: 2, 10+1: 3

2.2.3.3 Parameter 2 group

NO.	FUNC	R/W	Item	Description
400201(00C8)	03/06/16	R/W	Out Type	OFF: 0, L: 1
400202(00C9)	03/06/16	R/W	Hysteresis	Within 1 to 10% F.S range
400203(00CA)	03/06/16	R/W	Startup Compensation Time	Output delay time. 0.0 to 99.9 sec
400204(00CB)	03/06/16	R/W	Peak Time	PEAK monitoring delay time. 00 to 30 sec
400205(00CC)	03/06/16	R/W	Display Time	Display cycle time. 0.1 to 5.0 sec
400206(00CD)	03/06/16	R/W	Zero Key	Uses front zero key. NO: 0, YES: 1
400207(00CE)	03/06/16	R/W	Event Input	Sets external terminal. HOLD: 0, ZERO: 1
400208(00CF)	03/06/16	R/W	Full Scale High	Unable to set.
400209(00D0)	03/06/16	R/W	Full Scale Low	Unable to set.
400210(00D1)	03/06/16	R/W	Address	Sets communication address. 01 to 99
400211(00D2)	03/06/16	R/W	Bit Per Second	Sets communication speed. 9600: 3, 4800: 2, 2400: 1, 1200: 0
400212(00D3)	03/06/16	R/W	Parity Bit	Sets parity bit. NONE: 0, EVEN: 1, ODD: 2
400213(00D4)	03/06/16	R/W	Stop Bit	Sets stop bit. 1: 0, 2: 1
400214(00D5)	03/06/16	R/W	Response Waiting	Sets response delay time.

NO.	FUNC	R/W	Item	Description
			Time	05 to 99 ms
400215(00D6)	03/06/16	R/W	Lock	Sets lock. oFF: 0, Loc1: 1, Loc2: 2, Loc3: 3

2.3 MT4N

2.3.1 Read Holding Register

NO.	FUNC	R/W	Item	Description
300001(0000)	04	R	Measured value StAd: Displays from -5% to 110% SCAL : Displays from -1999 to 9999	Decimal number display method. Signal input (DV/DA/AV/AA) is set by each terminal. • Standard When outputs "HHHH", displays "30000" When outputs "LLLL", displays "-30000" • Scale At H-SC, L-SC, displays the set value. When displays "d.-HH", outputs "30001" When displays "d.-LL", outputs "-30001" • Frequency When outputs "F-HH", displays "30002"
300002(0001)	04	R	Sets decimal point StAd 0.000→0003H, 0.00→0002H 0.0→0001H, 0→0000H SCAL 0.000→0103H, 0.00→0102H 0.0→0101H, 0→0100H	Outputs decimal point position's information of StAd / SCAL mode.
300003(0002)	04	R	HI Peak Value	Decimal number display method. Outputs max. value of signal input . (DV/DA/AV/AA)
300004(0003)	04	R	LO Peak Value	Decimal number display method. Outputs min. value of signal input. (DV/DA/AV/AA)
300005(0004)	04	R	OUT Status	OUT1(ON : 1, OFF : 0)
300101(0064)	04	R	Product number H	0672H
300102(0065)	04	R	Product number L	DV: B25CH, DA: B2C0H AV: B324H, AA: B388H
300103(0066)	04	R	Hardware version	20
300104(0067)	04	R	Software version	20
300105(0068)	04	R	Model name1	"MT "
300106(0069)	04	R	Model name2	"4N "
300107(006A)	04	R	Model name3	"DV/DA/AA/AV "
300108(006B)	04	R	Model name4	"-4 "
300109(006C)	04	R	Model name5	"8 "
300110(006D)	04	R	Model name6	
300111(006E)	04	R	Model name7	
300112(006F)	04	R	Model name8	
300113(0070)	04	R	Model name9	
300114(0071)	04	R	Model name10	
300118(0075)	04	R	COIL START ADDRESS	0
300119(0076)	04	R	COIL QUANTITY	1
300120(0077)	04	R	INPUT START ADDRESS	0
300121(0078)	04	R	INPUT QUANTITY	0
300122(0079)	04	R	HOLDING REG START ADDRESS	0
300123(007A)	04	R	HOLDING REG QUANTITY	0
300124(007B)	04	R	INPUT REG START ADDRESS	0
300125(007C)	04	R	INPUT REG QUANTITY	4

2.3.2 Read Coil Status

NO.	FUNC	R/W	Item	Description
100001(0000)	02	R	OUT STATUS OUT1	ON: 1, OFF: 0

2.3.3 Read Holding Register/Preset Single Register/Preset Multiple Register

2.3.3.1 Parameter 0 group

NO.	FUNC	R/W	Item	Description
400001(0000)	03/06/16	R/W	OUT1 High Preset	HIGH set value of OUT1.
400002(0001)	03/06/16	R/W	OUT1 Low Preset	LOW set value of OUT1.
400003(0002)	03/06/16	R/W	OUT2 High Preset	HIGH set value of OUT2.
400004(0003)	03/06/16	R/W	OUT2 Low Preset	LOW set value of OUT2.
400005(0004)	03/06/16	R/W	High Peak	Decimal number display method. Outputs max. value of signal input (DV/DA/AV/AA)., Factory default: 0
400006(0005)	03/06/16	R/W	Low Peak	Decimal number display method. Outputs min. value of signal input (DV/DA/AV/AA)., Factory default: 0

2.3.3.2 Parameter 1 group

NO.	FUNC	R/W	Item	Description
400101(0064)	03/06/16	R/W	Input Range	Selects input range. (Refer to input specification.)
400102(0065)	03/06/16	R/W	Display	Stnd: 0, SCAL: 1, FrEQ: 2
400103(0066)	03/06/16	R/W	Dot	0: 3, 0.0: 2, 0.00: 1, 0.000: 0
400104(0067)	03/06/16	R/W	High Scale	-1999 to 9999 (Changes by decimal point position.)
400105(0068)	03/06/16	R/W	Low Scale	-1999 to 9999 (Changes by decimal point position.)
400106(0069)	03/06/16	R/W	Input Type	AVR: 0, RMS: 1
400107(006A)	03/06/16	R/W	Display Unit Lamp	UNIT: 0, mV: 1, V: 2, mA: 3, A: 4, Hz: 5, OFF: 6
400108(006B)	03/06/16	R/W	Input Bias High	Corrects high-limit gradient of display value. Stnd, SCAL : 0.100 to 5.000 FrEQ: 0.001 to 9.999 (mantissa)
400109(006C)	03/06/16	R/W	Input Bias Low	Corrects low-limit gradient of display value. Stnd, SCAL : -99 to +99
400110(006D)	03/06/16	R/W	Input Bias Exponent	FrEQ: Sets index 10-2: 0, 10-1: 1, 10-0: 2, 10+1: 3

2.3.3.3 Parameter 2 group

NO.	FUNC	R/W	Item	Description
400201(00C8)	03/06/16	R/W	OUT1 Type	OFF : 0, HI : 1, LO : 2, HL : 3, HL-G : 4
400202(00C9)	03/06/16	R/W	OUT2 Type	Unable to set.
400203(00CA)	03/06/16	R/W	Hysteresis OUT1	Within 1 to 10% F.S range.
400204(00CB)	03/06/16	R/W	Hysteresis OUT2	Unable to set.
400205(00CC)	03/06/16	R/W	Startup Compensation Time	Output delay time. 0.0 to 99.9 sec
400206(00CD)	03/06/16	R/W	Peak Time	PEAK monitoring delay time. 00 to 30 sec
400207(00CE)	03/06/16	R/W	Display Time	Display cycle time. 0.1 to 5.0 sec
400208(00CF)	03/06/16	R/W	Color	Front backlight color RED: 0, GRN: 1, YEL: 2, R-G: 3, G-R: 4
400209(00D0)	03/06/16	R/W	Zero Key	Uses front zero key. NO: 0, YES: 1
400210(00D1)	03/06/16	R/W	Event Input	Sets external terminal. HOLD: 0, ZERO: 1
400211(00D2)	03/06/16	R/W	Full Scale High	Unable to set.
400212(00D3)	03/06/16	R/W	Full Scale Low	Unable to set.
400213(00D4)	03/06/16	R/W	Address	Sets communication address. 01 to 99
400214(00D5)	03/06/16	R/W	Bit Per Second	Sets communication speed.

NO.	FUNC	R/W	Item	Description
				9600: 3, 4800: 2, 2400: 1, 1200: 0
400215(00D6)	03/06/16	R/W	Parity Bit	Sets parity bit. NONE: 0, EVEN: 1, ODD: 2
400216(00D7)	03/06/16	R/W	Stop Bit	Sets stop bit. 1: 0, 2: 1
400217(00D8)	03/06/16	R/W	Response Waiting Time	Sets response delay time. 05 to 99 ms
400218(00D9)	03/06/16	R/W	Lock	Sets lock. oFF: 0, Loc1: 1, Loc2: 2, Loc3: 3

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