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Autonics sensors & controllers

Autonics

Sensors & Controllers

Pulse Meter

MP Series

User Manual for Communication

MP Series

Thank you very much for selecting Autonics products.

For your safety, please read the following before using.

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

MP5 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 Precautions

- 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.

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

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 electric shock or fire.
- Do not connect, repair, or inspect the unit while connected to a power source.
  Failure to follow this instruction may result in electric shock or 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 electric shock or fire.

Caution

- When connecting the power/measurement input and relay output, use AWG 24(0.20mm^2) to AWG 15(1.65mm^2) cable and tighten the terminal screw with a tightening torque of 0.98 to 1.18N·m.
  Use proper cables for the rated load current.
  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 electric shock or 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.

The specifications of communication manual are subject to change and some models may be discontinued without notice.

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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 (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	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 100001)	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

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 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	FFH	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	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 write “10(A H)” to Holding Register 40001(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 (Address 17) 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.
- ILLEGAL 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 010001 (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 Read coil status (Func 01) / Force single coil (Func 05)

No(Address)	Func	R/W	Parameter		Description	Setting range	Note
000001(0000)	01	R/W	HH	HH comparative output	Comparative output LED	0: OFF / 1: ON	
000002(0001)	01	R/W	H	H comparative output		0: OFF / 1: ON	
000003(0002)	01	R/W	GO	GO comparative output		0: OFF / 1: ON	
000004(0003)	01	R/W	L	L comparative output		0: OFF / 1: ON	
000005(0004)	01	R/W	LL	LL comparative output		0: OFF / 1: ON	
000006(0005)	01	R/W				0: OFF / 1: ON	
000007(0006)	01	R/W				0: OFF / 1: ON	
000008 to 000050	01	R/W				0: OFF / 1: ON	

2.2 Read input status (Func 02)

No(Address)	Func	R/W	Parameter		Description	Setting range	Note
100001(0000)	02	R		RESET(HOLD)	External input variables	RESET input status	
100002(0001)	02	R		BANK		BANK input status	
100003(0002)	02	R				0: OFF / 1: ON	
100004(0003)	02	R				0: OFF / 1: ON	
100005(0004)	02	R				0: OFF / 1: ON	
100006(0005)	02	R				0: OFF / 1: ON	
100007(0008)	02	R				0: OFF / 1: ON	
100008(0007)	02	R				0: OFF / 1: ON	
100009(0008)	02	R				0: OFF / 1: ON	
100010(0009)	02	R				0: OFF / 1: ON	
100011(000A)	02	R				0: OFF / 1: ON	
100012 to 100050	02	R				0: OFF / 1: ON	

2.3 Read input registers (Func 04)

No(Address)	Func	R/W	Parameter	Description	Factory default	Note
300001 to 300100	04	R		Reserved		
300101(0064)	04	R		Product number H	0	Dedicated model number
300102(0065)	04	R		Product number L	0	
300103(0066)	04	R		Hardware version	1	
300104(0067)	04	R		Software version	1	
300105(0068)	04	R		Model 1	"MP"	MP5Y-□5, MP5W-□8 (※MP5W-□9 displayed as MP5W-□8)
300106(0069)	04	R		Model 2	"5□"	
300107(006A)	04	R		Model 3	"-□"	
300108(006B)	04	R		Model 4	"□"	
300109(006C)	04	R		Model 5	" "	
300110(006D)	04	R		Model 6	" "	
300111(006E)	04	R		Model 7	" "	
300112(006F)	04	R		Model 8	" "	
300113(0070)	04	R		Model 9	" "	
300114(0071)	04	R		Model 10	" "	

No(Address)	Func	R/W	Parameter		Description	Factory default	Note
300115(0072)	04	R			Reserved		
300116(0073)	04	R			Reserved		
300117(0074)	04	R			Reserved		
300118(0075)	04	R			Coil Status Start Address	0000	
300119(0076)	04	R			Coil Status Quantity	0	
300120(0077)	04	R			Input Status Start Address	0000	
300121(0078)	04	R			Input Status Quantity	0	
300125(007C)	04	R			Holding Register Start Address	0000	
300126 to 300200	04	R			Reserved		
No(Address)	**Func**	**R/W**	**Parameter**		**Description**	**Setting range**	**Note**
301001(03E8)	04	R	HH	Front Display LED	HH LED Display	0: OFF / 1: ON	0-bit
			H		H LED Display	0: OFF / 1: ON	1-bit
			GO		GO LED Display	0: OFF / 1: ON	2-bit
			L		L LED Display	0: OFF / 1: ON	3-bit
			LL		LL LED Display	0: OFF / 1: ON	4-bit
301002(03E9)	04	R	PV		Measurement value	-19999 to 99999	
301003(03EA)							
301004(03EB)	04	R	DOT			0: 0.0.0.0.0 1: 0.0.0.0.0 2: 0.0.0.0.0 3: 0.0.0.0.0 4: 0.0.0.0.0	
301005(03EC)	04	R	UNIT			0: 999.99s 1: 9999.9s 2: 99m 59.9s 3: 9h 59m 59s 4: 99999s 5: 999.99m 6: 9999.9m 7: 99h 59.9m 8: 999h 59m 9: 99999m	
301006(03ED)	04	R	MODE		Operation mode	0: F1 / 1: F2 / 2: F3 / to / 14: F15 / 15: F16	
301007(03EE)	04	R					

2.4 Read holding registers (Func03) / Preset single registers (Func 06) / Preset multiple registers (Func 16)

2.4.1 Comparative value settings and peak value check group

No(Address)	Func	R/W	Parameter		Description	Setting range	Factory default
400001(0000)	03/16	R/W	PSt.HH	Preset HH	HH comparative value	0 to 99999	99999
400002(0001)							
400003(0002)	03/16	R/W	PSt. H	Preset H	H comparative value	0 to 99999	99999
400004(0003)							
400005(0004)	03/16	R/W	PSt. L	Preset L	L comparative value	0 to 99999※1	00000
400006(0005)							
400007(0006)	03/16	R/W	PSt.LL	Preset LL	LL comparative value	0 to 99999※1	00000
400008(0007)							
400009(0008)	03/16	R/W	H.PEU	High Peak	High peak value of measured value	99999※2	-
400010(0009)							
400011(000A)	03/16	R/W	L.PEU	Low Peak	Low peak value of measured value	-19999※2	-
400012(000B)							
400013 to 400050	03/06/16	R/W	Reserved				

※1. In operation modes F8, F10, F14, F15, the setting range is -19999 to 99999

※2. Max./Min. measurement value

2.4.2 Parameter 1 group

No(Address)	Func	R/W	Parameter		Description	Setting range	Factory default
400051(0032)	03/06/16	R/W	modE	Mode	Input operation mode	0: F1 / 1: F2 / 2: F3 / to / 14: F15 / 15: F16	0
400052(0033)	03/06/16	R/W	In-A	Input A	Sensor type	0: nPn.HF 1: nPn.nF 2: nPn.LF 3: PnP.HF 4: PnP.nF 5: PnP.LF	0
400053(0034)	03/06/16	R/W	In-b	Input B			
400054(0035)	03/06/16	R/W	oUt-t	Output type	Output mode	0: StArd 1: oUt-H 2: oUt-L 3: oUt-b 4: oUt-I 5: oUt-F	0
400055(0036)	03/06/16	R/W	HYS	Hysteresis	Hysteresis value	1 to 9999	1
400056(0037)	03/06/16	R/W	GUAr.d	Output limit	Output limit function	0: F.dEFY 1: StAr.t	0
400057(0038)	03/06/16	R/W	StAr.t	Start limit 값	Start compensation timer value	0.0 to 99.9	0.0
400058(0039)	03/16	R/W	AUto.A	Auto-zero A	Auto-zero time	0.1 to 9999.9	9999.9
400059(003A)	03/16	R/W					
400060(003B)	03/16	R/W	AUto.b	Auto-zero B			
400061(003C)	03/16	R/W					
400062(003D)	03/06/16	R/W	mEmo	Memory	Memory retention	0: oFF 1: on	0

No(Address)	Func	R/W	Parameter	Description	Setting range	Factory default
400063 to 400100	03/06/16	R/W	Reserved			

2.4.3 Parameter 2 group

No(Address)	Func	R/W	Parameter		Description	Setting range	Factory default
400101(0064)	03/06/16	R/W	P.bAnK	Data bank	Data bank	0: 1 1: 2	0
400102(0065)	03/06/16	R/W	dot	Dot	Decimal point	0: 0000 1: 000.0 2: 00.00 3: 0.000 4: .0000	0
400103(0066)	03/06/16	R/W	t.Unt	Time unit	Time unit	0: t.SEC 1: t.Min	0
400104(0067)	03/06/16	R/W	t.SEC	Time sec	Time range	0: 999.99 999.99s 1: 9999.9 9999.9s 2: 99.59.9 99m 59.9s 3: 9.59.59 9h 59m 59s 4: 99999 99999s 5: 999.99 999.99m 6: 9999.9 9999.9m 7: 99.59.9 99h 59.9m 8: 999.59 999h 59m 9: 99999 99999m	0
400105(0068)	03/16	R/W	PSt.HH	Preset HH	HH comparative value	0 to 99999	99999
400106(0069)	03/16	R/W					
400107(006A)	03/16	R/W	PSt. H	Preset H	H comparative value	0 to 99999	99999
400108(006B)	03/16	R/W					
400109(006C)	03/16	R/W	PSt. L	Preset L	L comparative value	0 to 99999※1	0
400110(006D)	03/16	R/W					
400111(006E)	03/16	R/W	PSt.LL	Preset LL	LL comparative value	0 to 99999※1	0
400112(006F)	03/16	R/W					
400113(0070)	03/16	R/W	PSC.AH	Prescale A Mantissa	Prescale A mantissa	0.0001 to 9.9999	6.0000
400114(0071)	03/16	R/W					
400115(0072)	03/06/16	R/W	PSC.AY	Prescale A Exponent	Prescale A exponent	00 to 09: +(0 to 9) 10 to 19: -(0 to 9)	01
400116(0073)	03/16	R/W	PSC.bH	Prescale B Mantissa	Prescale B mantissa	0.0001 to 9.9999	6.0000
400117(0074)	03/16	R/W					
400118(0075)	03/06/16	R/W	PSC.bY	Prescale B Exponent	Prescale B exponent	00 to 09: +(0 to 9) 10 to 19: -(0 to 9)	01
400119(0076)	03/06/16	R/W	dI SP.t	Display time	Display cycle	0: oFF 1: 0.05 2: 0.5 3: 1 4: 2 5: 4 6: 8	1
400120(0077)	03/16	R/W	CoUn.b	INB Setting value	Operation mode F16 INB	1 to 99999	99999
400121(0078)	03/16	R/W					
400122 to 400150	03/06/16	R/W	Reserved				

※1. In operation modes F8, F10, F14, F15, the setting range is -19999 to 99999

2.4.4 Parameter 3 group

No(Address)	Func	R/W	Parameter		Description	Setting range	Factory default
400151(0096) 400152(0097)	03/16	R/W	FS-H	Full scale High	High-limit value of PV transmission output	Setting range varies by model and operation mode※1	99999
400153(0098) 400154(0099)	03/16	R/W	FS-L	Full scale Low	Low-limit value of PV transmission output		0
400155(009A)	03/06/16	R/W	mA	mA	Transmission output spec.	0: 4-20 (mA) 1: 0-20 (mA)	0
400156(009B)	03/06/16	R/W	Addr	Unit address	Communication address	1 to 99	1
400157(009C)	03/06/16	R/W	bPS	Bits per sec	Communication Speed	0: 2400 1: 4800 2: 9600 3: 19200 4: 38400	2
400158(009D)	03/06/16	R/W	PrtY	Parity bit	Communication parity bit	0: nonE 1: EuEn 2: odd	0
400159(009E)	03/06/16	R/W	StP	Stop bit	Communication stop bit	0: 1 1: 2	1
400160(009F)	03/06/16	R/W	rSUt	Response waiting time	Communication response waiting time	5 to 99(ms)	20
400161(00A0)	03/06/16	R/W	CoMU	Communication write	Communication write enable/disable	0: dI SA 1: EnA	0
400162(00A1)	03/06/16	R/W	LoC	Lock	Lock	0: oFF 1: LoC.0 2: LoC.1 3: LoC.2 4: LoC.3	0
400163 to 400200	03/06/16	R/W	Reserved				

※1. High-limit/low-limit setting value of PV transmission output.
(varies by model and operation mode)

Series	Operation mode	Setting range
MP5Y MP5W	F1, F2, F7, F9, F11, F12, F13, F16	0 to 99999
	F3, F4, F5, F6	0.01 to set time range
	F8, F10, F14, F15	-19999 to 99999

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