

Modbus Sensor Connector Type Digital Remote I/O

ARM Series

USER MANUAL For COMMUNICATION

CE



ARM Series

Preface





Thank you for purchasing an Autonics product.

Please store this manual in a place where user can find easily, because it contains the guidance for the product and how to correctly use it.

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. Please visit our home-page (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 our 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.


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 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.
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 Caution	Caution	Cases that may cause minor injury or product damage if instructions are not followed.
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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 personal injury, fire, or economic loss.
- 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.
- Do not disassemble or modify the unit. Please contact us if necessary.
Failure to follow this instruction may result in electric shock, or fire.
- Keep material residue from flowing in to the unit.
Failure to follow this instruction may result in electric shock, fire, malfunction of the unit.



Caution

- Do not use the unit outdoors.
Failure to follow this instruction may result in electric shock or shorten the life cycle of the unit.
- Do not use the unit where flammable or explosive gas may be present.
Failure to follow this instruction may result in fire, or explosion.
- Do not use the unit where heavy vibration, and impact may be present.
Failure to follow this instruction may result in product damage.
- Check the power terminal and communication cable contact before wiring the unit.
Failure to follow this instruction may result in fire, or product damage.
- Tighten the communication cable connector as tight as possible for stable cable connection.
Failure to follow this instruction may result in serious communication or network malfunction.
- Do not use water or oil-based detergent when cleaning the unit. Use dry cloth to clean the unit.
Failure to follow this instruction may result in electric shock, or fire.
- Use the unit within the rated specifications.
Failure to follow this instruction may result in electric shock, personal injury, or product damage.
- When disposing the unit, please categorize it as industrial waste.

※ **The above specifications 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)

Reads 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)	
		Hi(Upper)	Lo(Lower)	Hi(Upper)	Lo(Lower)	Lo(Lower)	Hi(Upper)
1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte

← CRC16 →

(2) Response (Slave)

Slave Address	Function	Byte Count	Data (Data)	Data (Data)	Data (Data)	Error Check(CRC16)	
						Lo(Lower)	Hi(Upper)
1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte

← CRC16 →

If reading the output status(ON: 1, OFF: 0) of 10 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)	
		Hi(Upper)	Lo(Lower)	Hi(Upper)	Lo(Lower)	Lo(Lower)	Hi(Upper)
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)	
					Lo(Lower)	Hi(Upper)
11 H	01 H	02 H	CD H	01 H	## H	## H

1.2 Read Input Status(Func 02-02H)

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

(1) Query (Master)

Slave Address	Function	Starting Address		No. of Points		Error Check(CRC16)	
		Hi(Upper)	Lo(Lower)	Hi(Upper)	Lo(Lower)	Lo(Lower)	Hi(Upper)
1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte

←----- CRC16 ----->

(2) Response (Slave)

Slave Address	Function	Byte Count	Data (Data)	Data (Data)	Data (Data)	Error Check(CRC16)	
						Lo(Lower)	Hi(Upper)
1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte

←----- CRC16 ----->

If reading the input status(ON: 1, OFF: 0) of 10 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)	
		Hi(Upper)	Lo(Lower)	Hi(Upper)	Lo(Lower)	Lo(Lower)	Hi(Upper)
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) to 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)	
					Lo(Lower)	Hi(Upper)
11 H	02 H	02 H	CD H	01 H	## H	## H

1.3 Read Holding Registers(Func 03–03H)

Reads 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)	
		Hi(Upper)	Lo(Lower)	Hi(Upper)	Lo(Lower)	Lo(Lower)	Hi(Upper)
1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte

← CRC16 →

(2) Response (Slave)

Slave Address	Function	Byte Count	Data(Data)		Data(Data)		Data(Data)		Error Check(CRC16)	
			Hi(Upper)	Lo(Lower)	Hi(Upper)	Lo(Lower)	Hi(Upper)	Lo(Lower)	Lo(Lower)	Hi(Upper)
1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte

← CRC16 →

If reading the values of 2, from Holding Register 40001(0000 H) to 40002(0001 H), in Slave(Address 17) from the Master.

- Query (Master)

Slave Address	Function	Starting Address		No. of Points		Error Check(CRC16)	
		Hi(Upper)	Lo(Lower)	Hi(Upper)	Lo(Lower)	Lo(Lower)	Hi(Upper)
11 H	03 H	00 H	00 H	00 H	02 H	## H	## H

If the value of 40001(0000 H) on Slave is “555(22B H)” and the value of 40002(0001 H) is “100(64 H)”.

- Response (Slave)

Slave Address	Function	Byte Count	Data(Data)		Data(Data)		Error Check(CRC16)	
			Hi(Upper)	Lo(Lower)	Hi(Upper)	Lo(Lower)	Lo(Lower)	Hi(Upper)
11 H	03 H	04 H	02 H	2B H	00 H	64 H	## H	

1.4 Read Input Registers(Func 04-04H)

Reads 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)	
		Hi(Upper)	Lo(Lower)	Hi(Upper)	Lo(Lower)	Lo(Lower)	Hi(Upper)
1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte

← CRC16 →

(2) Response (Slave)

Slave Address	Function	Byte Count	Data	Data	Data	Error Check(CRC16)	
						Lo(Lower)	Hi(Upper)
1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte

← CRC16 →

If reading the values of 2 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)	
		Hi(Upper)	Lo(Lower)	Hi(Upper)	Lo(Lower)	Lo(Lower)	Hi(Upper)
11 H	04 H	00 H	00 H	00 H	02 H	## H	## H

If the values of 300001(0000 H) on Slave is "10(A H)" and the values of 300002(0001 H) on Slave is "20(14 H)".

- Response (Slave)

Slave Address	Function	Byte Count	Data(Data)		Data(Data)		Error Check(CRC16)	
			Hi(Upper)	Lo(Lower)	Hi(Upper)	Lo(Lower)	Lo(Lower)	Hi(Upper)
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)

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

(1) Query (Master)

Slave Address	Function	Register Address		Preset Data(Data)		Error Check(CRC16)	
		Hi(Upper)	Lo(Lower)	Hi(Upper)	Lo(Lower)	Lo(Lower)	Hi(Upper)
1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte

←————— CRC16 —————→

(2) Response (Slave)

Slave Address	Function	Register Address		Preset Data(Data)		Error Check(CRC16)	
		Hi(Upper)	Lo(Lower)	Hi(Upper)	Lo(Lower)	Lo(Lower)	Hi(Upper)
1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte

←————— CRC16 —————→

If writing “10(A H)” to Holding Register 40001(0000 H) on Slave(Address 17) from Master.

- Query (Master)

Slave Address	Function	Starting Address		Preset Data(Data)		Error Check(CRC16)	
		Hi(Upper)	Lo(Lower)	Hi(Upper)	Lo(Lower)	Lo(Lower)	Hi(Upper)
11 H	06 H	00 H	00 H	00 H	0A H	## H	## H

- Response (Slave)

Slave Address	Function	Starting Address		Preset Data(Data)		Error Check(CRC16)	
		Hi(Upper)	Lo(Lower)	Hi(Upper)	Lo(Lower)	Lo(Lower)	Hi(Upper)
11 H	06 H	00 H	00 H	00 H	0A H	## H	## H

1.7 Preset Multiple Registers(Func 16-10H)

Writes 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)		Data(Data)		Error Check (CRC16)	
		Hi (Upper)	Lo (Lower)	Hi (Upper)	Lo (Lower)		Hi (Upper)	Lo (Lower)	Hi (Upper)	Lo (Lower)	Lo	Hi
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)	
		Hi(Upper)	Lo(Lower)	Hi(Upper)	Lo(Lower)	Lo(Lower)	Hi(Upper)
1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte

←————— CRC16 —————→

If writing "10(A H)" in common to the range of Holding Register 40001(0000 H) to 40002(0001 H) on Slave(Address 17) from Master.

- Query (Master)

Slave Address	Function	Starting Address		No. of Register		Byte Count	Data(Data)		Data(Data)		Error Check (CRC16)	
		Hi (Upper)	Lo (Lower)	Hi (Upper)	Lo (Lower)		Hi (Upper)	Lo (Lower)	Lo	Hi		
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)	
		Hi(Upper)	Lo(Lower)	Hi(Upper)	Lo(Lower)	Lo(Lower)	Hi(Upper)
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)	
			Lo(Lower)	Hi(Upper)
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).

If reading 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)	
		Hi(Upper)	Lo(Lower)	Hi(Upper)	Lo(Lower)	Lo(Lower)	Hi(Upper)
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)	
			Lo(Lower)	Hi(Upper)
11 H	81 H	02 H	## H	## H

2 Modbus Mapping Table

2.1 Read Coil Status(Func: 01, RW: R/W)

No(Address)	Func	R/W	Parameter	Description	Setting range	Unit	Default	Note
000001(0000)	01/05	R/W		POINT 1 DO output value	0: OFF 1: ON	-		
000002(0001)	01/05	R/W		POINT 2 DO output value	0: OFF 1: ON	-		
000003(0002)	01/05	R/W		POINT 3 DO output value	0: OFF 1: ON	-		
000004(0003)	01/05	R/W		POINT 4 DO output value	0: OFF 1: ON	-		
000005(0004)	01/05	R/W		POINT 5 DO output value	0: OFF 1: ON	-		
000006(0005)	01/05	R/W		POINT 6 DO output value	0: OFF 1: ON	-		
000007(0006)	01/05	R/W		POINT 7 DO output value	0: OFF 1: ON	-		
000008(0007)	01/05	R/W		POINT 8 DO output value	0: OFF 1: ON	-		
000009(0008)	01/05	R/W		POINT 9 DO output value	0: OFF 1: ON	-		
000010(0009)	01/05	R/W		POINT 10 DO output value	0: OFF 1: ON	-		
000011(000A)	01/05	R/W		POINT 11 DO output value	0: OFF 1: ON	-		
000012(000B)	01/05	R/W		POINT 12 DO output value	0: OFF 1: ON	-		
000013(000C)	01/05	R/W		POINT 13 DO output value	0: OFF 1: ON	-		
000014(000D)	01/05	R/W		POINT 14 DO output value	0: OFF 1: ON	-		
000015(000E)	01/05	R/W		POINT 15 DO output value	0: OFF 1: ON	-		
000016(000F)	01/05	R/W		POINT 16 DO output value	0: OFF 1: ON	-		
000017(0010)	01/05	R/W		POINT 17 DO output value	0: OFF 1: ON	-		
000018(0011)	01/05	R/W		POINT 18 DO output value	0: OFF 1: ON	-		
000019(0012)	01/05	R/W		POINT 19 DO output value	0: OFF 1: ON	-		
000020(0013)	01/05	R/W		POINT 20 DO output value	0: OFF 1: ON	-		
000021(0014)	01/05	R/W		POINT 21 DO output value	0: OFF 1: ON	-		
000022(0015)	01/05	R/W		POINT 22 DO output value	0: OFF 1: ON	-		
000023(0016)	01/05	R/W		POINT 23 DO output value	0: OFF 1: ON	-		
000024(0017)	01/05	R/W		POINT 24 DO output value	0: OFF 1: ON	-		
000025(0018)	01/05	R/W		POINT 25 DO output value	0: OFF 1: ON	-		
000026(0019)	01/05	R/W		POINT 26 DO output value	0: OFF 1: ON	-		
000027(001A)	01/05	R/W		POINT 27 DO output value	0: OFF 1: ON	-		
000028(001B)	01/05	R/W		POINT 28 DO output value	0: OFF 1: ON	-		
000029(001C)	01/05	R/W		POINT 29 DO output value	0: OFF 1: ON	-		
000030(001D)	01/05	R/W		POINT 30 DO output value	0: OFF 1: ON	-		
000031(001E)	01/05	R/W		POINT 31 DO output value	0: OFF 1: ON	-		
000032(001F)	01/05	R/W		POINT 32 DO output value	0: OFF 1: ON	-		
000033(0020)	01/05	R/W		POINT 33 DO output value	0: OFF 1: ON	-		
000034(0021)	01/05	R/W		POINT 34 DO output value	0: OFF 1: ON	-		
000035(0022)	01/05	R/W		POINT 35 DO output value	0: OFF 1: ON	-		
000036(0023)	01/05	R/W		POINT 36 DO output value	0: OFF 1: ON	-		
000037(0024)	01/05	R/W		POINT 37 DO output value	0: OFF 1: ON	-		
000038(0025)	01/05	R/W		POINT 38 DO output value	0: OFF 1: ON	-		
000039(0026)	01/05	R/W		POINT 39 DO output value	0: OFF 1: ON	-		
000040(0027)	01/05	R/W		POINT 40 DO output value	0: OFF 1: ON	-		
000041(0028)	01/05	R/W		POINT 41 DO output value	0: OFF 1: ON	-		

No(Address)	Func	R/W	Parameter	Description	Setting range	Unit	Default	Note
000042(0029)	01/05	R/W	-	POINT 42 DO output value	0: OFF 1: ON	-		
000043(002A)	01/05	R/W	-	POINT 43 DO output value	0: OFF 1: ON	-		
000044(002B)	01/05	R/W	-	POINT 44 DO output value	0: OFF 1: ON	-		
000045(002C)	01/05	R/W	-	POINT 45 DO output value	0: OFF 1: ON	-		
000046(002D)	01/05	R/W	-	POINT 46 DO output value	0: OFF 1: ON	-		
000047(002E)	01/05	R/W	-	POINT 47 DO output value	0: OFF 1: ON	-		
000048(002F)	01/05	R/W	-	POINT 48 DO output value	0: OFF 1: ON	-		
000049(0030)	01/05	R/W	-	POINT 49 DO output value	0: OFF 1: ON	-		
000050(0031)	01/05	R/W	-	POINT 50 DO output value	0: OFF 1: ON	-		
000051(0032)	01/05	R/W	-	POINT 51 DO output value	0: OFF 1: ON	-		
000052(0033)	01/05	R/W	-	POINT 52 DO output value	0: OFF 1: ON	-		
000053(0034)	01/05	R/W	-	POINT 53 DO output value	0: OFF 1: ON	-		
000054(0035)	01/05	R/W	-	POINT 54 DO output value	0: OFF 1: ON	-		
000055(0036)	01/05	R/W	-	POINT 55 DO output value	0: OFF 1: ON	-		
000056(0037)	01/05	R/W	-	POINT 56 DO output value	0: OFF 1: ON	-		
000057(0038)	01/05	R/W	-	POINT 57 DO output value	0: OFF 1: ON	-		
000058(0039)	01/05	R/W	-	POINT 58 DO output value	0: OFF 1: ON	-		
000059(003A)	01/05	R/W	-	POINT 59 DO output value	0: OFF 1: ON	-		
000060(003B)	01/05	R/W	-	POINT 60 DO output value	0: OFF 1: ON	-		
000061(003C)	01/05	R/W	-	POINT 61 DO output value	0: OFF 1: ON	-		
000062(003D)	01/05	R/W	-	POINT 62 DO output value	0: OFF 1: ON	-		
000063(003E)	01/05	R/W	-	POINT 63 DO output value	0: OFF 1: ON	-		
000064(003F)	01/05	R/W	-	POINT 64 DO output value	0: OFF 1: ON	-		
000065(0040) to 000100(0063)	01	R/W	Reserved					

2.2 Read Input Status (Func: 02, RW: R)

No(Address)	Func	R/W	Parameter	Description	Setting range	Unit	Default	Note
100001(0000)	02	R	-	POINT 1 DI input value	0: OFF 1: ON	-		
100002(0001)	02	R	-	POINT 2 DI input value	0: OFF 1: ON	-		
100003(0002)	02	R	-	POINT 3 DI input value	0: OFF 1: ON	-		
100004(0003)	02	R	-	POINT 4 DI input value	0: OFF 1: ON	-		
100005(0004)	02	R	-	POINT 5 DI input value	0: OFF 1: ON	-		
100006(0005)	02	R	-	POINT 6 DI input value	0: OFF 1: ON	-		
100007(0006)	02	R	-	POINT 7 DI input value	0: OFF 1: ON	-		
100008(0007)	02	R	-	POINT 8 DI input value	0: OFF 1: ON	-		
100009(0008)	02	R	-	POINT 9 DI input value	0: OFF 1: ON	-		
100010(0009)	02	R	-	POINT 10 DI input value	0: OFF 1: ON	-		
100011(000A)	02	R	-	POINT 11 DI input value	0: OFF 1: ON	-		
100012(000B)	02	R	-	POINT 12 DI input value	0: OFF 1: ON	-		
100013(000C)	02	R	-	POINT 13 DI input value	0: OFF 1: ON	-		
100014(000D)	02	R	-	POINT 14 DI input value	0: OFF 1: ON	-		
100015(000E)	02	R	-	POINT 15 DI input value	0: OFF 1: ON	-		
100016(000F)	02	R	-	POINT 16 DI input value	0: OFF 1: ON	-		
100017(0010)	02	R	-	POINT 17 DI input value	0: OFF 1: ON	-		
100018(0011)	02	R	-	POINT 18 DI input value	0: OFF 1: ON	-		
100019(0012)	02	R	-	POINT 19 DI input value	0: OFF 1: ON	-		
100020(0013)	02	R	-	POINT 20 DI input value	0: OFF 1: ON	-		
100021(0014)	02	R	-	POINT 21 DI input value	0: OFF 1: ON	-		
100022(0015)	02	R	-	POINT 22 DI input value	0: OFF 1: ON	-		
100023(0016)	02	R	-	POINT 23 DI input value	0: OFF 1: ON	-		
100024(0017)	02	R	-	POINT 24 DI input value	0: OFF 1: ON	-		
100025(0018)	02	R	-	POINT 25 DI input value	0: OFF 1: ON	-		
100026(0019)	02	R	-	POINT 26 DI input value	0: OFF 1: ON	-		
100027(001A)	02	R	-	POINT 27 DI input value	0: OFF 1: ON	-		
100028(001B)	02	R	-	POINT 28 DI input value	0: OFF 1: ON	-		
100029(001C)	02	R	-	POINT 29 DI input value	0: OFF 1: ON	-		
100030(001D)	02	R	-	POINT 30 DI input value	0: OFF 1: ON	-		
100031(001E)	02	R	-	POINT 31 DI input value	0: OFF 1: ON	-		
100032(001F)	02	R	-	POINT 32 DI input value	0: OFF 1: ON	-		
100033(0020)	02	R	-	POINT 33 DI input value	0: OFF 1: ON	-		
100034(0021)	02	R	-	POINT 34 DI input value	0: OFF 1: ON	-		
100035(0022)	02	R	-	POINT 35 DI input value	0: OFF 1: ON	-		
100036(0023)	02	R	-	POINT 36 DI input value	0: OFF 1: ON	-		
100037(0024)	02	R	-	POINT 37 DI input value	0: OFF 1: ON	-		
100038(0025)	02	R	-	POINT 38 DI input value	0: OFF 1: ON	-		
100039(0026)	02	R	-	POINT 39 DI input value	0: OFF 1: ON	-		
100040(0027)	02	R	-	POINT 40 DI input value	0: OFF 1: ON	-		
100041(0028)	02	R	-	POINT 41 DI input value	0: OFF 1: ON	-		
100042(0029)	02	R	-	POINT 42 DI input value	0: OFF 1: ON	-		
100043(002A)	02	R	-	POINT 43 DI input value	0: OFF 1: ON	-		

No(Address)	Func	R/W	Parameter	Description	Setting range	Unit	Default	Note
100044(002B)	02	R	-	POINT 44 DI input value	0: OFF 1: ON	-		
100045(002C)	02	R	-	POINT 45 DI input value	0: OFF 1: ON	-		
100046(002D)	02	R	-	POINT 46 DI input value	0: OFF 1: ON	-		
100047(002E)	02	R	-	POINT 47 DI input value	0: OFF 1: ON	-		
100048(002F)	02	R	-	POINT 48 DI input value	0: OFF 1: ON	-		
100049(0030)	02	R	-	POINT 49 DI input value	0: OFF 1: ON	-		
100050(0031)	02	R	-	POINT 50 DI input value	0: OFF 1: ON	-		
100051(0032)	02	R	-	POINT 51 DI input value	0: OFF 1: ON	-		
100052(0033)	02	R	-	POINT 52 DI input value	0: OFF 1: ON	-		
100053(0034)	02	R	-	POINT 53 DI input value	0: OFF 1: ON	-		
100054(0035)	02	R	-	POINT 54 DI input value	0: OFF 1: ON	-		
100055(0036)	02	R	-	POINT 55 DI input value	0: OFF 1: ON	-		
100056(0037)	02	R	-	POINT 56 DI input value	0: OFF 1: ON	-		
100057(0038)	02	R	-	POINT 57 DI input value	0: OFF 1: ON	-		
100058(0039)	02	R	-	POINT 58 DI input value	0: OFF 1: ON	-		
100059(003A)	02	R	-	POINT 59 DI input value	0: OFF 1: ON	-		
100060(003B)	02	R	-	POINT 60 DI input value	0: OFF 1: ON	-		
100061(003C)	02	R	-	POINT 61 DI input value	0: OFF 1: ON	-		
100062(003D)	02	R	-	POINT 62 DI input value	0: OFF 1: ON	-		
100063(003E)	02	R	-	POINT 63 DI input value	0: OFF 1: ON	-		
100064(003F)	02	R	-	POINT 64 DI input value	0: OFF 1: ON	-		
100065(0040) to 100100(0063)	02	R	Reserved					

2.3 Read Input Register (Func: 04, RW: R)

No(Address)	Func	R/W	Parameter	Description	Setting range	Unit	Default	Note	
300001(0000)	04	R	-	Input #1, 2	-	-	-		
300002(0001)	04	R	-	Input #3, 4	-	-	-		
300003(0002)	04	R	-	Input #5, 6	-	-	-		
300004(0003)	04	R	-	Input #7, 8	-	-	-		
300005(0004) to 300100(0063)	04	R	Reserved						
300101(0064)	04	R	-	Product number H	-	-	2302	“ERP model registered unique number”	
300102(0065)	04	R	-	Product number L	-	-	0010		
300103(0066)	04	R	-	Hardware version	-	-	100		
300104(0067)	04	R	-	Software version	-	-	200		
300105(0068)	04	R	-	Model name 1	-	-	“AR”	One of below strings; ARM-DI08N-4S, ARM-DI08P-4S, ARM-DO08N-4S, ARM-DO08P-4S	
300106(0069)	04	R	-	Model name 2	-	-	“M-”		
300107(006A)	04	R	-	Model name 3	-	-	“DI”		
300108(006B)	04	R	-	Model name 4	-	-	“08”		
300109(006C)	04	R	-	Model name 5	-	-	“N-”		
300110(006D)	04	R	-	Model name 6	-	-	“4S”		
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) to 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		
300122(0079)	04	R	-	Holding Register Start Address	-	-	0000		
300123(007A)	04	R	-	Holding Register Quantity	-	-	0		
300124(007B)	04	R	-	Input Register Start Address	-	-	0000		
300125(007C)	04	R	-	Input Register Quantity	-	-	0		
300126(007D) to 300129(0080)	04	R	Reserved						
300130(0081)	04	R	-	Extension unit1 Model name 1	-	-	“AR”	One of below strings; ARX-DI08N-4S, ARX-DI08P-4S, ARX-DO08N-4S, ARX-DO08P-4S	
300131(0082)	04	R	-	Extension unit1 Model name 2	-	-	“M-”		
300132(0083)	04	R	-	Extension unit1 Model name 3	-	-	“DI”		
300133(0084)	04	R	-	Extension unit1 Model name 4	-	-	“08”		
300134(0085)	04	R	-	Extension unit1 Model name 5	-	-	“P-”		

No(Address)	Func	R/W	Parameter	Description	Setting range	Unit	Default	Note
300135(0086)	04	R		Extension unit1 Model name 6			"4S"	
300136(0087)	04	R		Extension unit1 Model name 7				
300137(0088)	04	R		Extension unit1 Model name 8				
300138(0089)	04	R		Extension unit1 Model name 9				
300139(008A)	04	R		Extension unit1 Model name 10				
300140(008B) to 300149(0094)	04	R		Extension unit2 – Same as unit 1				
300150(0095) to 300159(009E)	04	R		Extension unit3 – Same as unit 1				
300160(009F) to 300169(00A8)	04	R		Extension unit4 – Same as unit 1				
300170(00A9) to 300179(00B2)	04	R		Extension unit5 – Same as unit 1				
300180(00B3) to 300189(00BC)	04	R		Extension unit6 – Same as unit 1				
300190(00BD) to 300199(00C6)	04	R		Extension unit7 – Same as unit 1				
300200(00C7)	04	R	Reserved					
300201(00C8) to 300208(00CF)	04	R	Base Unit Count	POINT 1 to 8 Input Count	0 to 65535		0	Reading au to counter register value, it is reset as 0. Address range (64 POINT) : 300201(00C8) to 300264(0107)
300209(00D0) to 300216(00D7)	04	R	Extension Unit 1 Count	POINT 9 to 16 Input Count	0 to 65535		0	
300217(00D8) to 300224(00DF)	04	R	Extension Unit 2 Count	POINT 17 to 24 Input Count	0 to 65535		0	
300225(00E0) to 300232(00E7)	04	R	Extension Unit 3 Count	POINT 25 to 32 Input Count	0 to 65535		0	
300233(00E8) to 300240(00EF)	04	R	Extension Unit 4 Count	POINT 33 to 40 Input Count	0 to 65535		0	
300241(00F0) to 300248(00F7)	04	R	Extension Unit 5 Count	POINT 41 to 48 Input Count	0 to 65535		0	
300249(00F8) to 300256(00FF)	04	R	Extension Unit 6 Count	POINT 49 to 56 Input Count	0 to 65535		0	
300257(0100) to 300264(0107)	04	R	Extension Unit 7 Count	POINT 57 to 64 Input Count	0 to 65535		0	
300301(012C) to 300308(0133)	04	R	Base Unit Cumulative Count	POINT 1 to 8 Cumulative Input Count	0 to 65535		0	Cumulated before resetting cumulative counter. (over 65535, re-start from 0) Address range (64 POINT) : 300301(012C) to 300364(016B)
300309(0134) to 300316(013B)	04	R	Extension Unit 1 Cumulative Count	POINT 9 to 16 Cumulative Input Count	0 to 65535		0	
300317(013C) to 300324(0143)	04	R	Extension Unit 2 Cumulative Count	POINT 17 to 24 Cumulative Input Count	0 to 65535		0	
300325(0144) to 300332(014B)	04	R	Extension Unit 3 Cumulative Count	POINT 25 to 32 Cumulative Input Count	0 to 65535		0	
300333(014C) to 300340(0153)	04	R	Extension Unit 4 Cumulative Count	POINT 33 to 40 Cumulative Input Count	0 to 65535		0	
300341(0154) to 300348(015B)	04	R	Extension Unit 5 Cumulative Count	POINT 41 to 48 Cumulative Input Count	0 to 65535		0	
300349(015C) to 300356(0163)	04	R	Extension Unit 6 Cumulative Count	POINT 49 to 56 Cumulative Input Count	0 to 65535		0	
300357(0164) to 300364(016B)	04	R	Extension Unit 7 Cumulative Count	POINT 57 to 64 Cumulative Input Count	0 to 65535		0	

※The setting value of 300102 address is different by model.

ARM-DI08N-4S	ARM-DI08P-4S	ARM-DO08N-4S	ARM-DO08P-4S
0010	0020	0030	0040

No(Address)	Func	R/W	Parameter	Description	Setting range	Unit	Default	Note
301001(03E8)	04	R	Expand Unit	The number of connected extension unit	00 to 07			
301002(03E9)	04	R	Base unit Spec	Connected basic unit Spec				
301003(03EA)	04	R	Expand unit Spec 1	Connected CH1 extension unit Spec				
301004(03EB)	04	R	Expand unit Spec 2	Connected CH2 extension unit Spec				
301005(03EC)	04	R	Expand unit Spec 3	Connected CH3 extension unit Spec				
301006(03ED)	04	R	Expand unit Spec 4	Connected CH4 extension unit Spec				
301007(03EE)	04	R	Expand unit Spec 5	Connected CH5 extension unit Spec				
301008(03EF)	04	R	Expand unit Spec 6	Connected CH6 extension unit Spec				
301009(03F0)	04	R	Expand unit Spec 7	Connected CH7 extension unit Spec				
301010(03F1)	04	R	Read In port Size	Connected input point number	0 to 64			
301011(03F2)	04	R	Read Out port Size	Connected output point number	0 to 64			
301012(03F3) to 301023(03FE)	04	R	Reserved					
301024(03FF)	04	R	Module status Error(MS Led)	Error lamp for unit status	0: Normal 1: Error			
301025(0400)	04	R	Network status Error(NS Led)	Error lamp for network status	0: Normal 1: Error			
301026(0401)	04	R	Expand Unit Comm. Error(MS Led)	Communication error of extension unit	0: Normal 1: Error			
301027(0402)	04	R	Reserved					
301028(0403)	04	R	Auto Baudrate	Communication speed setting	0: Set value 1: Auto baudrate		0	
301029(0404)	04	R	EEPROM MacID	Inner MacID setting	0 to 255		1	
301030(0405)	04	R	Baudrate	Communication speed	0: 2400, 1: 4800, 2: 9600, 3: 19200, 4: 38400. 5: 57600, 6: 115200		2	
301031(0406)	04	R	Parity bit		0: None, 1: Odd, 2: Even		0	
301032(0407)	04	R	Stop Bit		1: 1Stop, 2: 2Stop		2	

No(Address)	Func	R/W	Parameter	Description	Setting range	Unit	Default	Note
301033(0408)	04	R	Status bit flag					Status Bit Flag Bit 0: MS LED status Bit 1: NS LED status Bit 2: Expansion unit error Bit 3: NPV status Bit 4: Reserved Bit 5: Reserved Bit 6: Reserved Bit 7: Reserved
301034(0409)	04	R	Reserved					
301035(040A)	04	R	Counter Function Flag	Counter operation	0: Stop, 1: Continue, 2: Restart		0	
301036(040B) to 301100(044B)	04	R	Reserved					

※Bit data structure of 301002 to 301009 address

Bit F	Bit E	Bit D	Bit C	Bit B	Bit A	Bit 9	Bit 8	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
-	-	-	-	Type				In size				Out size			
-	-	-	-	0: IN(NPN) 2: OUT(NPN)	1: IN(PNP) 3: OUT(PNP)			0 to 8				0 to 8			
1 byte								1 byte							

※301033 Status bit flag

Bit 0	MS LED status	Bit 4	Reserved
Bit 1	NS LED status	Bit 5	
Bit 2	Extension unit error	Bit 6	
Bit 3	NPV status	Bit 7	

2.4 Read Holding Register (Func: 03)

No(Address)	Func	R/W	Parameter	Description	Setting range	Unit	Default	Note	
400001(0000)	03	R	-	Input #1, 2	-	-			
400002(0001)	03	R	-	Input #3, 4	-	-			
400003(0002)	03	R	-	Input #5, 6	-	-			
400004(0003)	03	R	-	Input #7, 8	-	-			
400005(0004)	03/06 /16	R/W	-	Output #1, 2	-	-			
400006(0005)	03/06 /16	R/W	-	Output #3, 4	-	-			
400007(0006)	03/06 /16	R/W	-	Output #5, 6	-	-			
400008(0007)	03/06 /16	R/W	-	Output #7, 8	-	-			
400009(0008) to 400010(0009)	03	R	Reserved						
401024(03FF)	03/06 /16	R/W	NS-Led Timeout	Timeout value setting	0 to 60	sec	5sec		
401025(0400)	03/06 /16	R/W	TE(Terminal Register Enable)	Terminal Register Enable	0: Disable, 1: Enable		0		
401026(0401) to 401027(0402)	03/06 /16	R/W	Reserved						
401028(0403)	03/06 /16	R/W	Auto Baudrate	Communication speed setting	0: Set value 1: Auto Baudrate		0		
401029(0404)	03/06 /16	R/W	EEPROM MacID	Inner MacID setting	0 to 255		1		
401030(0405)	03/06 /16	R/W	Baudrate	Communication speed	0: 2400, 1: 4800, 2:9600, 3: 19200, 4: 38400, 5: 57600, 6: 115200		2		
401031(0406)	03/06 /16	R/W	Parity bit	-	0:None, 1 :Odd, 2:Even		0		
401032(0407)	03/06 /16	R/W	Stop Bit	-	1 :1Stop, 2:2Stop		2		
401033(0408)	03/06 /16	R/W	Reserved						
401034(0409)	03/06 /16	W	Reset Counter(All)	Reset cumulative count value	0: No reset 1: Resets all CH's counter value, Resets all CH's cumulative counter value		0		
401035(040A)	03/06 /16	R/W	Counter Stop/Continue/Restart	Counter Stop/Run	0: Stop(no clear counter value) 1: Continue 2: Clear & Run, Resets all CH's counter value, Resets all CH's cumulative counter value		0		
401036(040B) to 401100(044B)	03/06 /16	R/W	Reserved						

※ MacID setting

● By rotary switch for address

- ① Two rotary switches are used for setting address. X10 switch represents tens digit and X1 switch represents ones digit. The address can be set 01 to 99.
- ② After setting the desired address, re-supply the unit power for applying the changed address.

● By in the EEPROM for address

- ① During communicate status with upper system (PLC or PC), set the desired address on the 41029 EEPROM MAC ID parameter.
- ② The set address is changed after unit power is supplied. Re-supply the unit power for applying the changed address.

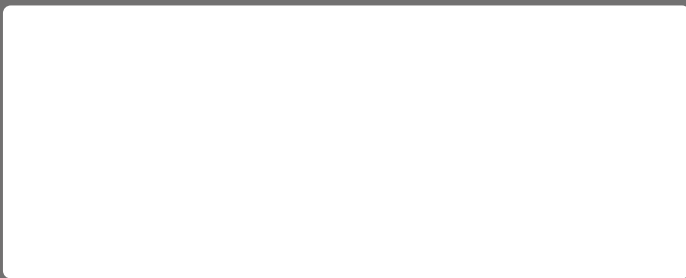
No(Address)	Func	R/W	Parameter	Description	Setting range	Unit	Default	Note
400201(00C8) to 400208(00CF)	03/06 /16	R/W	Base Unit Counter Start Value	POINT 1 to 8 Input Counter Start Value	0 to 65535		0	Designates counter start value by each point. Entering 0, counter is clear.
400209(00D0) to 400216(00D7)	03/06 /16	R/W	Extension Unit 1 Counter Start Value	POINT 9 to 16 Input Counter Start Value	0 to 65535		0	
400217(00D8) to 400224(00DF)	03/06 /16	R/W	Extension Unit 2 Counter Start Value	POINT 17 to 24 Input Counter Start Value	0 to 65535		0	
400225(00E0) to 400232(00E7)	03/06 /16	R/W	Extension Unit 3 Counter Start Value	POINT 25 to 32 Input Counter Start Value	0 to 65535		0	
400233(00E8) to 400240(00EF)	03/06 /16	R/W	Extension Unit 4 Counter Start Value	POINT 33 to 40 Input Counter Start Value	0 to 65535		0	
400241(00F0) to 400248(00F7)	03/06 /16	R/W	Extension Unit 5 Counter Start Value	POINT 41 to 48 Input Counter Start Value	0 to 65535		0	
400249(00F8) to 400256(00FF)	03/06 /16	R/W	Extension Unit 6 Counter Start Value	POINT 49 to 56 Input Counter Start Value	0 to 65535		0	
400257(0100) to 400264(0107)	03/06 /16	R/W	Extension Unit 7 Counter Start Value	POINT 57 to 64 Input Counter Start Value	0 to 65535		0	
400301(012C) to 400308(0133)	03/06 /16	R/W	Base Unit Cumulative Count	POINT 1 to 8 Cumulative Input Counter Start Value	0 to 65535		0	Designates cumulative counter start value by each point. Entering 0, cumulative counter is clear.
400309(0134) to 400316(013B)	03/06 /16	R/W	Extension Unit 1 Cumulative Counter Start Value	POINT 9 to 16 Cumulative Input Counter Start Value	0 to 65535		0	
400317(013C) to 400324(0143)	03/06 /16	R/W	Extension Unit 2 Cumulative Counter Start Value	POINT 17 to 24 Cumulative Input Counter Start Value	0 to 65535		0	
400325(0144) to 400332(014B)	03/06 /16	R/W	Extension Unit 3 Cumulative Counter Start Value	POINT 25 to 32 Cumulative Input Counter Start Value	0 to 65535		0	
400333(014C) to 400340(0153)	03/06 /16	R/W	Extension Unit 4 Cumulative Counter Start Value	POINT 33 to 40 Cumulative Input Counter Start Value	0 to 65535		0	
400341(0154) to 400348(015B)	03/06 /16	R/W	Extension Unit 5 Cumulative Counter Start Value	POINT 41 to 48 Cumulative Input Counter Start Value	0 to 65535		0	
400349(015C) to 400356(0163)	03/06 /16	R/W	Extension Unit 6 Cumulative Counter Start Value	POINT 49 to 56 Cumulative Input Counter Start Value	0 to 65535		0	
400357(0164) to 400364(016B)	03/06 /16	R/W	Extension Unit 7 Cumulative Counter Start Value	POINT 57 to 64 Cumulative Input Counter Start Value	0 to 65535		0	

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