

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](http://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  |
|--|--|
|  <b>Note</b>    | Supplementary information for a particular feature.                          |
|  <b>Warning</b> | Failure to follow instructions can result in serious injury or death.        |
|  <b>Caution</b> | Failure to follow instructions can lead to a minor injury or product damage. |
|  <b>Ex.</b>     | 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:

|  |                |   |
|--|----------------|---|
|  <b>Warning</b> | <b>Warning</b> | Cases that may cause serious injury or fatal accident if instructions are not followed. |
|--|----------------|---|

|  |                |   |
|--|----------------|---|
|  <b>Caution</b> | <b>Caution</b> | Cases that may cause minor injury or product damage if instructions are not followed. |
|--|----------------|---|



## 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 connection 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.**

# Table of Contents

|  |           |
|--|-----------|
| Preface .....                                    | iii       |
| User Manual Guide .....                          | iv        |
| User Manual Symbols .....                        | v         |
| Safety Precautions .....                         | vi        |
| Table of Contents .....                          | vii       |
| <b>1 Modbus RTU protocol.....</b>                | <b>9</b>  |
| 1.1 Read Coil Status(Func 01–01H).....           | 9         |
| 1.2 Read Input Status(Func 02–02H).....          | 10        |
| 1.3 Read Holding Registers(Func 03–03H) .....    | 11        |
| 1.4 Read Input Registers(Func 04–04H).....       | 12        |
| 1.5 Force single coil (Func 05–05H).....         | 13        |
| 1.6 Preset Single Registers(Func 06–06H).....    | 14        |
| 1.7 Preset Multiple Registers(Func 16–10H) ..... | 15        |
| 1.8 Exception Response-Error Code.....           | 16        |
| <b>2 Modbus Mapping Table .....</b>              | <b>17</b> |
| 2.1 Read Coil Status(Func: 01, RW: R/W) .....    | 17        |
| 2.2 Read Input Status (Func: 02, RW: R).....     | 19        |
| 2.3 Read Input Register (Func: 04, RW: R).....   | 21        |
| 2.4 Read Holding Register (Func: 03).....        | 25        |





# 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   | Error Check(CRC16) |           |
|---------------|----------|------------|--------|--------|--------|--------------------|-----------|
|               |          |            | (Data) | (Data) | (Data) | 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 00001(0000 H) to 00010(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 00008(0007 H) to 00001(0000 H) on the slave are "ON-ON-OFF-OFF-ON-ON-OFF-ON", and the values from 00010(0009 H) to 00009(0008 H) are respectively "OFF-ON".

#### ▪ Response (Slave)

| Slave Address | Function | Byte Count | Data               | Data               | Error Check(CRC16) |           |
|---------------|----------|------------|--------------------|--------------------|--------------------|-----------|
|               |          |            | (000008 to 000001) | (000010 to 000009) | 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 00001 (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<br>+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<br>+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<br>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<br>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<br>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;<br>ARM-DI08N-4S,<br>ARM-DI08P-4S,<br>ARM-DO08N-4S,<br>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<br>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<br>300129(0080) | 04   | R   | Reserved  |                                |               |      |         |  |
| 300130(0081)                    | 04   | R   | -         | Extension unit1 Model name 1   | -             | -    | “AR”    | One of below strings;<br>ARX-DI08N-4S,<br>ARX-DI08P-4S,<br>ARX-DO08N-4S,<br>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.<br>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)<br>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<br>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,<br>2: 9600, 3: 19200,<br>4: 38400. 5: 57600,<br>6: 115200 |      | 2       |      |
| 301031(0406)                 | 04   | R   | Parity bit                      |  | 0: None, 1: Odd,<br>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<br>Bit 0: MS LED status<br>Bit 1: NS LED status<br>Bit 2: Expansion unit error<br>Bit 3: NPV status<br>Bit 4: Reserved<br>Bit 5: Reserved<br>Bit 6: Reserved<br>Bit 7: Reserved |
| 301034(0409)                 | 04   | R   | Reserved              |                   |  |      |         |   |
| 301035(040A)                 | 04   | R   | Counter Function Flag | Counter operation | 0: Stop,<br>1: Continue,<br>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)<br>2: OUT(NPN) | 1: IN(PNP)<br>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<br>/16 | R/W | -                             | Output #1, 2                 | -   | -    |         |      |
| 400006(0005)                    | 03/06<br>/16 | R/W | -                             | Output #3, 4                 | -   | -    |         |      |
| 400007(0006)                    | 03/06<br>/16 | R/W | -                             | Output #5, 6                 | -   | -    |         |      |
| 400008(0007)                    | 03/06<br>/16 | R/W | -                             | Output #7, 8                 | -   | -    |         |      |
| 400009(0008) to<br>400010(0009) | 03           | R   | Reserved                      |                              |   |      |         |      |
| 401024(03FF)                    | 03/06<br>/16 | R/W | NS-Led Timeout                | Timeout value setting        | 0 to 60   | sec  | 5sec    |      |
| 401025(0400)                    | 03/06<br>/16 | R/W | TE(Terminal Register Enable)  | Terminal Register Enable     | 0: Disable,<br>1: Enable  |      | 0       |      |
| 401026(0401) to<br>401027(0402) | 03/06<br>/16 | R/W | Reserved                      |                              |   |      |         |      |
| 401028(0403)                    | 03/06<br>/16 | R/W | Auto Baudrate                 | Communication speed setting  | 0: Set value<br>1: Auto Baudrate  |      | 0       |      |
| 401029(0404)                    | 03/06<br>/16 | R/W | EEPROM MacID                  | Inner MacID setting          | 0 to 255  |      | 1       |      |
| 401030(0405)                    | 03/06<br>/16 | R/W | Baudrate                      | Communication speed          | 0: 2400, 1: 4800,<br>2:9600, 3: 19200,<br>4: 38400,<br>5: 57600,<br>6: 115200   |      | 2       |      |
| 401031(0406)                    | 03/06<br>/16 | R/W | Parity bit                    | -                            | 0:None, 1 :Odd,<br>2:Even   |      | 0       |      |
| 401032(0407)                    | 03/06<br>/16 | R/W | Stop Bit                      | -                            | 1 :1Stop, 2:2Stop   |      | 2       |      |
| 401033(0408)                    | 03/06<br>/16 | R/W | Reserved                      |                              |   |      |         |      |
| 401034(0409)                    | 03/06<br>/16 | W   | Reset Counter(All)            | Reset cumulative count value | 0: No reset<br>1: Resets all CH's counter value,<br>Resets all CH's cumulative counter value  |      | 0       |      |
| 401035(040A)                    | 03/06<br>/16 | R/W | Counter Stop/Continue/Restart | Counter Stop/Run             | 0: Stop(no clear counter value)<br>1: Continue<br>2: Clear & Run,<br>Resets all CH's counter value,<br>Resets all CH's cumulative counter value |      | 0       |      |
| 401036(040B) to<br>401100(044B) | 03/06<br>/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.

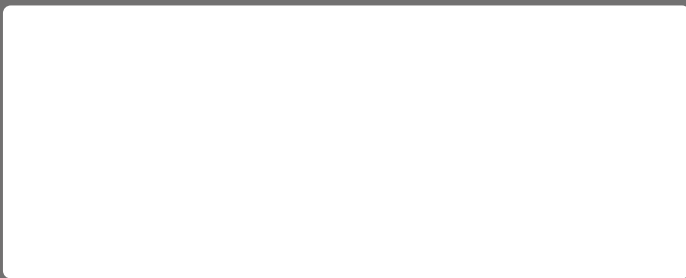
| No(Address)                     | Func         | R/W | Parameter   | Description   | Setting range | Unit | Default | Note  |
|---------------------------------|--------------|-----|---|---|---------------|------|---------|---|
| 400201(00C8) to<br>400208(00CF) | 03/06<br>/16 | R/W | Base Unit Counter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

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