## INSTRUCTION MANUAL

# MECHATROLINK I/O MODULE
**(NPN/PNP discrete input & PNP transistor output, 16 points each, MIL connector, MECHATROLINK- III use)**

MODEL **R7F4HML3-D-DAC32B**

## BEFORE USE ....

Thank you for choosing us. Before use, please check contents of the package you received as outlined below.
If you have any problems or questions with the product, please contact our sales office or representatives.

### ■ PACKAGE INCLUDES:

Discrete I/O module ............................................................(1)
DIN rail mounter slider ......................................................(2)

### ■ MODEL NO.

Confirm Model No. marking on the product to be exactly what you ordered.

### ■ INSTRUCTION MANUAL

This manual describes necessary points of caution when you use this product, including installation, connection and basic maintenance procedures.

## POINTS OF CAUTION

### ■ CONFORMITY WITH EU DIRECTIVES

• The equipment must be mounted inside the instrument panel of a metal enclosure.
• The actual installation environments such as panel configurations, connected devices, connected wires, may affect the protection level of this unit when it is integrated in a panel system. The user may have to review the CE requirements in regard to the whole system and employ additional protective measures to ensure the CE conformity.

### ■ POWER INPUT RATING & OPERATIONAL RANGE

• Locate the power input rating marked on the product and confirm its operational range as indicated below:
   24V DC rating: 24V ±10%, approx. 100mA

### ■ GENERAL PRECAUTIONS

• Before you remove the unit or mount it, turn off the power supply and I/O signal for safety.
• Before you remove the terminal block and MIL connector or mount it, make sure to turn off the power supply and I/O signal for safety.
• DO NOT set the switches on the module while the power is supplied. The switches are used only for maintenance without the power.

### ■ ENVIRONMENT

• Indoor use.
• When heavy dust or metal particles are present in the air, install the unit inside proper housing with sufficient ventilation.
• Do not install the unit where it is subjected to continuous vibration. Do not subject the unit to physical impact.
• Environmental temperature must be within -10 to +55°C (14 to 131°F) with relative humidity within 30 to 90% RH in order to ensure adequate life span and operation.
• With vertical mounting, for heat dissipation leave at least 10 mm (.39 in.) at the both side of the unit.

### ■ WIRING

• Do not install cables close to noise sources (relay drive cable, high frequency line, etc.).
• Do not bind these cables together with those in which noises are present. Do not install them in the same duct.

### ■ AND ....

• The unit is designed to function as soon as power is supplied, however, a warm up for 10 minutes is required for satisfying complete performance described in the data sheet.

# COMPONENT IDENTIFICATION
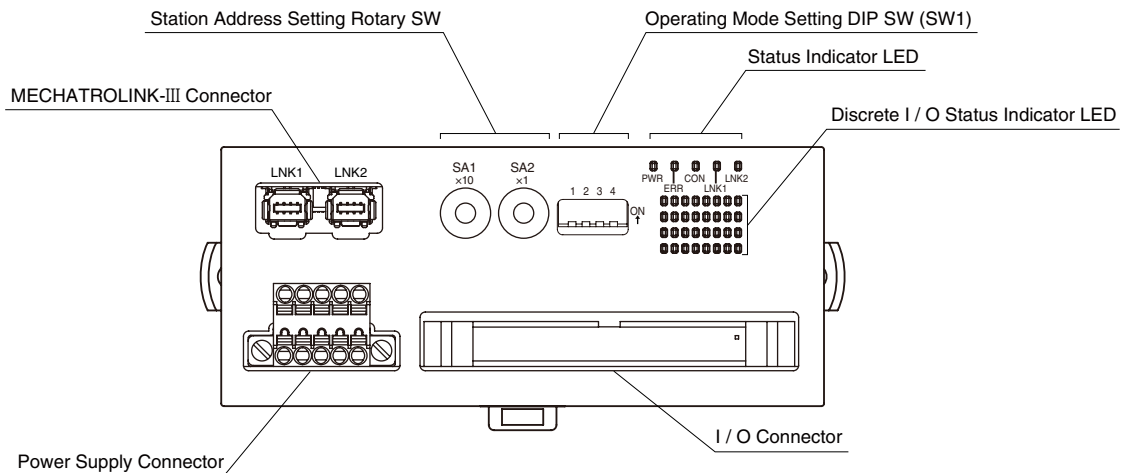


## ■ STATUS INDICATOR LED

| ID | COLOR | FUNCTION |
|---|---|---|
| PWR | Green | Turns on when the internal power is supplied normally. |
| ERR | Red | Turns on at MECHATROLINK-III communication error |
| CON | Green | Turns on at MECHATROLINK-III connection is established |
| LNK1 | Green | Turns on at MECHATROLINK-III LNK1 is established |
| LNK2 | Green | Turns on at MECHATROLINK-III LNK2 is established |

## ■ STATION ADDRESS

Station Address is selected between 03H and EFH in hexadecimal.
The SA1 switch determines the MSD, while the SA2 switch does the LSD of the address.
(Factory setting: 03H)
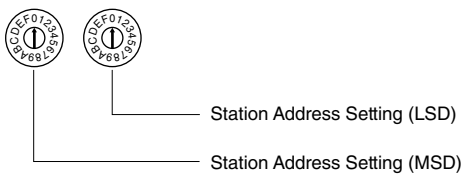


## ■ OPERATING MODE

(*) Factory setting

### • Read Rate (SW1-1, 1-2, 1-3)

| SW1-1 | SW1-2 | SW1-3 | READ RATE |
|---|---|---|---|
| OFF | OFF | OFF | ≤ 10 msec. (*) |
| ON | OFF | OFF | ≤ 1 msec. |
| OFF | ON | OFF | ≤ 5 msec. |
| ON | ON | OFF | ≤ 20 msec. |
| OFF | OFF | ON | ≤ 50 msec. |
| ON | OFF | ON | ≤ 70 msec. |
| OFF | ON | ON | ≤ 100 msec. |
| ON | ON | ON | ≤ 200 msec. |

### • Output at The Loss of Communication (SW1-4)

| SW1-4 | OUTPUT AT THE LOSS OF COMMUNICATION |
|---|---|
| OFF | Reset the output (turned off) |
| ON | Hold the output (*) (maintains the last data received normally) |

## ■ DISCRETE I/O STATUS INDICATOR LED

LED green indicators shows the signal status.
　ON　: LED ON
　OFF : LED OFF

## ■POWER SUPPLY

**Cable connector**: TFMC1,5/5-STF-3,5 (Phoenix Contact)
(included in the package)

**Applicable wire size**: 0.2 – 1.5 mm$^2$;  stripped length 10 mm

**Recommended solderless terminal**

- AI0,25-10YE    0.25 mm$^2$   (Phoenix Contact)
- AI0,34-10TQ    0.34 mm$^2$   (Phoenix Contact)
- AI0,5-10WH    0.5 mm$^2$    (Phoenix Contact)
- AI0,75-10GY    0.75 mm$^2$   (Phoenix Contact)
- A1-10      1.0 mm$^2$    (Phoenix Contact)
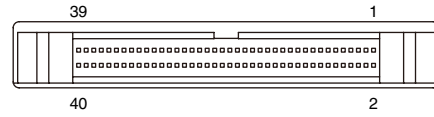- A1,5-10      1.5 mm$^2$    (Phoenix Contact)

1 2 3 4 5
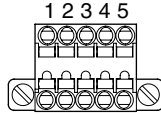
1.  FE      Functional Earth
2.  NC      —
3.  NC      —
4.  +24V     Power Input (24V DC)
5.  0V      Power Input (0V)

## ■ TERMINAL ASSIGNMENTS

### • I/O Connection

Recommended cable connector:  XG4M-4030 (OMRON)
The cable connector is not included in the package.

39            1

40            2

| PIN No. | ID | FUNCTION | PIN No. | ID | FUNCTION |
|---|---|---|---|---|---|
| 1 | V+ | External excitation | 2 | V+ | External excitation |
| 3 | V– | Out. Common | 4 | V– | Out. Common |
| 5 | Y15 | OUTPUT 15 | 6 | Y7 | OUTPUT 7 |
| 7 | Y14 | OUTPUT 14 | 8 | Y6 | OUTPUT 6 |
| 9 | Y13 | OUTPUT 13 | 10 | Y5 | OUTPUT 5 |
| 11 | Y12 | OUTPUT 12 | 12 | Y4 | OUTPUT 4 |
| 13 | Y11 | OUTPUT 11 | 14 | Y3 | OUTPUT 3 |
| 15 | Y10 | OUTPUT 10 | 16 | Y2 | OUTPUT 2 |
| 17 | Y9 | OUTPUT 9 | 18 | Y1 | OUTPUT 1 |
| 19 | Y8 | OUTPUT 8 | 20 | Y0 | OUTPUT 0 |
| 21 | NC | NC | 22 | NC | NC |
| 23 | COM | In. Common | 24 | COM | In. Common |
| 25 | X15 | INPUT 15 | 26 | X7 | INPUT 7 |
| 27 | X14 | INPUT 14 | 28 | X6 | INPUT 6 |
| 29 | X13 | INPUT 13 | 30 | X5 | INPUT 5 |
| 31 | X12 | INPUT 12 | 32 | X4 | INPUT 4 |
| 33 | X11 | INPUT 11 | 34 | X3 | INPUT 3 |
| 35 | X10 | INPUT 10 | 36 | X2 | INPUT 2 |
| 37 | X9 | INPUT 9 | 38 | X1 | INPUT 1 |
| 39 | X8 | INPUT 8 | 40 | X0 | INPUT 0 |

# MOUNTING INSTRUCTIONS

## ■ DIN RAIL MOUNTING (PARALLEL)

### • Mounting
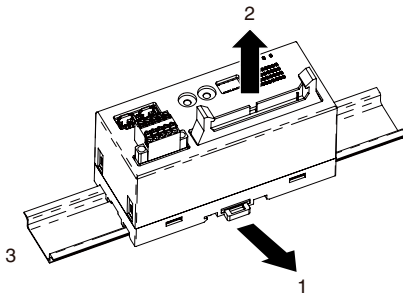
1) Set the upper hook at the rear side of the unit on the DIN rail.
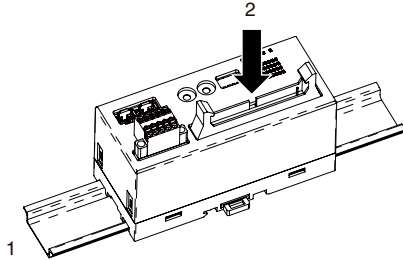
2) Push in the lower.

### • Dismounting

1) Push down the DIN rail mounter slider with tip of a minus screwdriver.
2) Pull the lower of the unit.
3) Remove the upper hook of the unit from the DIN rail.

## ■ DIN RAIL MOUNTING (RIGHT ANGLE)

### • Mounting

1) Insert the longer DIN rail mounter slider until it clicks twice, as shown below.

2) Set the upper hook at the rear side of the unit on the DIN rail.
3) Push in the lower.

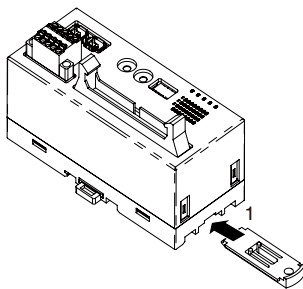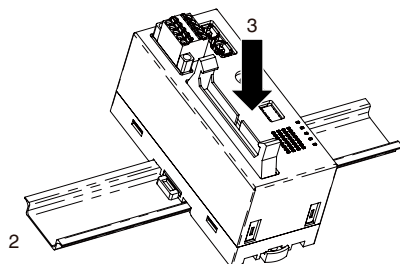Note: leave at least 10 mm (.39 in.) at the both side of the unit.

### • Dismounting

1) Push down the DIN rail mounter slider with tip of a minus screwdriver.
2) Pull the lower of the unit.
3) Remove the upper hook of the unit from the DIN rail.
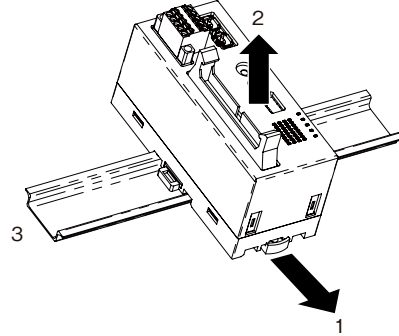
## ■ SURFACE MOUNTING

1) Insert the two DIN rail mounter sliders until it clicks once, as shown below.
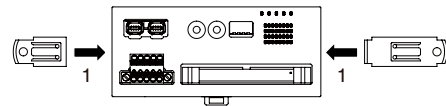
2) Mount the unit with M4 screws referring the External Dimensions. (Torque: 1.4 N·m)
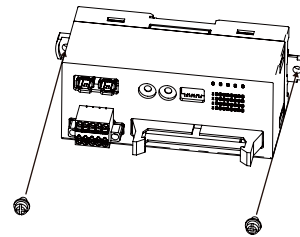
# TERMINAL CONNECTIONS

Connect the unit as in the diagram below.

**■ EXTERNAL DIMENSIONS  unit: mm (inch)**

138 (5.43)

123 (4.84)

115 (4.53)

50 (1.97)

5 (.2)

3(.12)

75 (2.95)

55 (2.17)

DIN RAIL
35mm wide

2 – 4.3 dia.  4 deep
(2 – 1.17 dia.  0.16 deep)

[4 (.16)]
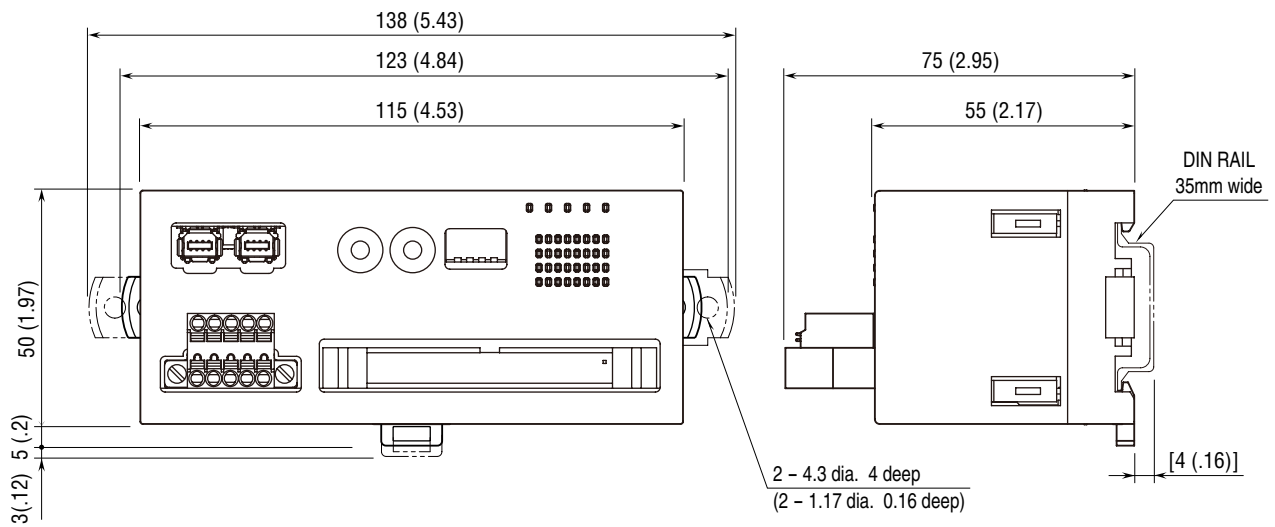
## ■ CONNECTION DIAGRAM

Note: In order to improve EMC performance, bond the FE
terminal to ground.

Caution: FE terminal is NOT a protective conductor terminal.

*1  MECHATROLINK-III CONNECTOR

*1  MECHATROLINK-III CONNECTOR

| | |
|---|---|
| 24V DC | 4 |
| 0V | 5 |
| FE | 1 |

| | | | | |
|---|---|---|---|---|
| COM | 23 | | 1 | V+ |
| COM | 24 | | 2 | V+ |
| X15 | 25 | | 3 | V− |
| X7 | 26 | | 4 | V− |
| X14 | 27 | | 5 | Y15 |
| X6 | 28 | | 6 | Y7 |
| X13 | 29 | | 7 | Y14 |
| X5 | 30 | | 8 | Y6 |
| X12 | 31 | | 9 | Y13 |
| X4 | 32 | | 10 | Y5 |
| X11 | 33 | | 11 | Y12 |
| X3 | 34 | | 12 | Y4 |
| X10 | 35 | | 13 | Y11 |
| X2 | 36 | | 14 | Y3 |
| X9 | 37 | | 15 | Y10 |
| X1 | 38 | | 16 | Y2 |
| X8 | 39 | | 17 | Y9 |
| X0 | 40 | | 18 | Y1 |
| | | | 19 | Y8 |
| | | | 20 | Y0 |

*1. The network cable can be connected to either one.
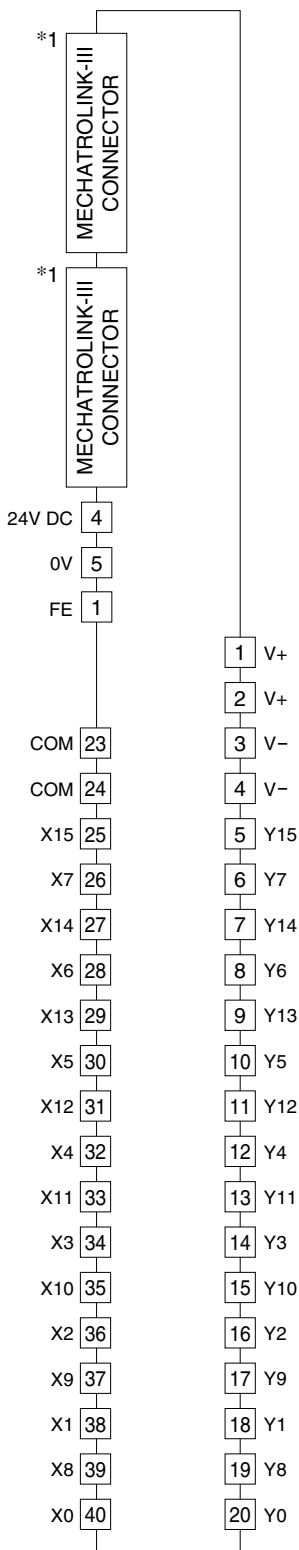
■ **Input Connection Examples**

• **PNP Connection**

| | |
|---|---|
| COM | 23 |
| COM | 24 |
| X0 | 40 |
| X15 | 25 |

• **NPN Connection**

| | |
|---|---|
| COM | 23 |
| COM | 24 |
| X0 | 40 |
| X15 | 25 |
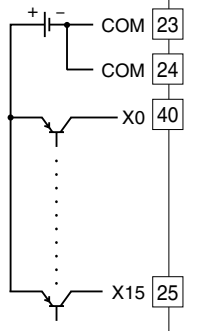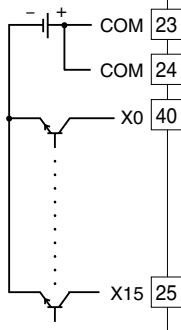
■ **Output Connection Examples**

| | |
|---|---|
| V+ | 1 |
| V+ | 2 |
| V− | 3 |
| V− | 4 |
| Y0 | 20 |
| Y15 | 5 |

## MOUNTING REQUIREMENTS  unit: mm (inch)

125 (4.92)

2–M4
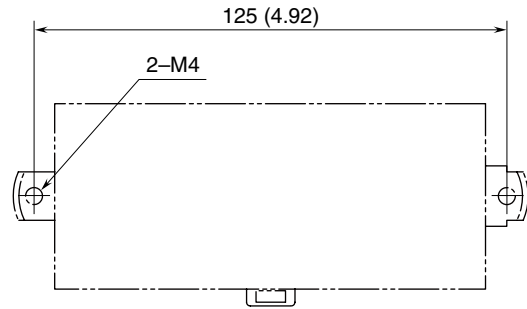
# MECHATROLINK-III COMMUNICATION

**Transmission cycle**: 125 µsec., 250 µsec., 500 µsec., 1 – 64 msec. (with 1 msec. increments)
**Communication cycle**: 125 µsec. through 64 msec.
**Applicable profile**: Standard I/O profile (cyclic communication)
Event-driven communication acquiring ID profile (event-driven communication)
**Transmission bytes**: 16 bytes
**Station address**: 03H through EFH (set with rotary switches)
**Cyclic communication**: Available
**Event-driven communication**: Available
**Slave monitoring**: None

# MECHATROLINK-III RELATED COMMANDS

Commands available with this unit are the following.

| PROFILE | COMMAND | CODE | FUNCTION |
|---|---|---|---|
| Common command | NOP | 00H | No operation command |
| | ID_RD | 03H | Read ID command |
| | CONFIG | 04H | Setup device command |
| | ALM_RD | 05H | Read alarm or warning command |
| | ALM_CLR | 06H | Clear alarm or warning command |
| | CONNECT | 0EH | Establish connection command |
| | DISCONNECT | 0FH | Release connection command |
| Standard I/O profile | DATA_RWA | 20H | Transmit I/O data |

### • NOP (00H)

Does nothing except sending back current status

| BYTE | COMMAND | RESPONSE | REMARKS |
|---|---|---|---|
| 0 | NOP (00H) | NOP (00H) | No operation command |
| 1 | 00H | 00H | Not used |
| 2 | CMD_CTRL | CMD_STAT | Refer to CMD_CTRL/CMD_STAT. |
| 3 | | | |
| ≥ 4 | 00H | 00H | Reserve |

### • ID_RD (03H)

Reads the product ID.

| BYTE | COMMAND | RESPONSE | REMARKS |
|---|---|---|---|
| 0 | ID_RD (03H) | ID_RD (03H) | Read ID command |
| 1 | 00H | 00H | Not used |
| 2 | CMD_CTRL | CMD_STAT | Refer to CMD_CTRL/CMD_STAT. |
| 3 | | | |
| 4 | ID_CODE | ID_CODE | Refer to ID_CODE |
| 5 | OFFSET | OFFSET | OFFSET: designates the place to read data |
| 6 | SIZE | SIZE | SIZE: specify the size of data to read |
| 7 | | | |
| ≥ 8 | 00H | ID | Product's ID |

### • CONFIG (04H)

No parameter to set for this unit. Immediately response with completion.

| BYTE | COMMAND | RESPONSE | REMARKS |
|---|---|---|---|
| 0 | CONFIG (04H) | CONFIG (04H) | Setup device command |
| 1 | 00H | 00H | Not used |
| 2 | CMD_CTRL | CMD_STAT | Refer to CMD_CTRL/CMD_STAT. |
| 3 | | | |
| 4 | 00H | 00H | Recalculation of parameters and set up. Other than 00H is not supported. |
| ≥ 5 | 00H | 00H | Reserve |

• **ALM_RD (05H)**

Reads alarm or warning

| BYTE | COMMAND | RESPONSE | REMARKS |
|---|---|---|---|
| 0 | ALM_RD (05H) | ALM_RD (05H) | Read alarm or warning command |
| 1 | 00H | 00H | Not used |
| 2 | CMD_CTRL | CMD_STAT | Refer to CMD_CTRL/CMD_STAT. |
| 3 | | | |
| 4 | 0000H | 0000H | Read current alarm or warning. |
| 5 | | | 12 points max. (2 bytes in 8th to 31st byte) Other than 0000H is not available. |
| 6 | 0000H | 0000H | 0 |
| 7 | | | |
| ≥ 8 | 00H | 00H | 0 |

• **ALM_CLR (06H)**

Clears alarm or warning

| BYTE | COMMAND | RESPONSE | REMARKS |
|---|---|---|---|
| 0 | ALM_CLR (06H) | ALM_CLR (06H) | Clear alarm or warning command |
| 1 | 00H | 00H | Not used |
| 2 | CMD_CTRL | CMD_STAT | Refer to CMD_CTRL/CMD_STAT. |
| 3 | | | |
| 4 | 0000H | 0000H | Clear current alarm or warning.  Other than 0000H is not available. |
| 5 | | | |
| ≥ 6 | 00H | 00H | Reserve |

• **CONNECT (0EH)**

Starts communication with master station.

| BYTE | COMMAND | RESPONSE | REMARKS |
|---|---|---|---|
| 0 | CONNECT (0EH) | CONNECT (0EH) | Establish connection command |
| 1 | 00H | 00H | Not used |
| 2 | CMD_CTRL | CMD_STAT | Refer to CMD_CTRL/CMD_STAT. |
| 3 | | | |
| 4 | 30H | 30H | MECHATROLINK application layer: 30H |
| 5 | 00H | 00H | Communication mode: Asynchronous, single transmission, subcommand disabled |
| 6 | COM_TIME | COM_TIME | Communication cycle: Multiple of transmission cycle. E.g. Transmission cycle: 0.5 msec., communication cycle: 2 msec. Set 4 (=2/0.5) |
| 7 | 30H or 01H | 30H or 01H | Profile type 30H: Standard I/O profile 01H: Event-driven communication acquiring ID profile |
| ≥ 8 | 00H | 00H | Reserve |

• **DISCONNECT (0FH)**

Stops communication with master station.

| BYTE | COMMAND | RESPONSE | REMARKS |
|---|---|---|---|
| 0 | DISCONNECT (0FH) | DISCONNECT (0FH) | Release connection command |
| ≥ 1 | 00H | 00H | Reserve |

• **DATA_RWA (20H)**

Transmits I/O data to master station.  Data allocation is following.

Data size is 16 bytes.

| BYTE | COMMAND | RESPONSE | REMARKS |
|---|---|---|---|
| 0 | DATA_RWA (20H) | DATA_RWA (20H) | Transmit I/O data |
| 1 | 00H | 00H | Not used |
| 2 | CMD_CTRL | CMD_STAT | Refer to CMD_CTRL/CMD_STAT. |
| 3 | | | |
| 4 | CH0 OUT LO | CH0 IN LO | CHx OUT: Output data: See 'Output Data' of 'I/O DATA' |
| 5 | CH0 OUT HI | CH0 IN HI | CHx IN: Input data: See 'Input Data' of 'I/O DATA' |
| 6 | CH1 OUT LO | CH1 IN LO | |
| 7 | CH1 OUT HI | CH1 IN HI | |
| 8 | CH2 OUT LO | CH2 IN LO | |
| 9 | CH2 OUT HI | CH2 IN HI | |
| 10 | CH3 OUT LO | CH3 IN LO | |
| 11 | CH3 OUT HI | CH3 IN HI | |
| 12 | 00H | 00H | Not used |
| 13 | 00H | 00H | Not used |
| 14 | 00H | 00H | Not used |
| 15 | 00H | 00H | Not used |

**[ I/O DATA ]**

• **Input data**

Input data to be sent from the slave to the master are set in the response.

With output data read back.

| CH0 IN LO | CH0 data  low 8 bits | Bit 0 through 7 of input data are set |
|---|---|---|
| CH0 IN HI | CH0 data  high 8 bits | Bit 8 through 15 of input data are set |
| CH1 IN LO | CH1 data  low 8 bits | Bit 0 through 7 of the data, which reads back the output data, are set |
| CH1 IN HI | CH1 data  high 8 bits | Bit 8 through 15 of the data, which reads back the output data, are set |
| CH2 IN LO | CH2 data  low 8 bits | Not used |
| CH2 IN HI | CH2 data  high 8 bits | Not used |
| CH3 IN LO | CH3 data  low 8 bits | Not used |
| CH3 IN HI | CH3 data  high 8 bits | Not used |

Without output data read back (with option code /NR)

| CH0 IN LO | CH0 data  low 8 bits | Bit 0 through 7 of input data are set |
|---|---|---|
| CH0 IN HI | CH0 data  high 8 bits | Bit 8 through 15 of input data are set |
| CH1 IN LO | CH1 data  low 8 bits | Not used |
| CH1 IN HI | CH1 data  high 8 bits | Not used |
| CH2 IN LO | CH2 data  low 8 bits | Not used |
| CH2 IN HI | CH2 data  high 8 bits | Not used |
| CH3 IN LO | CH3 data  low 8 bits | Not used |
| CH3 IN HI | CH3 data  high 8 bits | Not used |

• **Output data**

Output data to be sent from the master to the slave are set in the command.  Unused with input module.

With output data read back.

| CH0 OUT LO | CH0 data  low 8 bits | Not used |
| CH0 OUT HI | CH0 data  high 8 bits | Not used |
| CH1 OUT LO | CH1 data  low 8 bits | Bit 0 through 7 of the output data are set |
| CH1 OUT HI | CH1 data  high 8 bits | Bit 8 through 15 of the output data are set |
| CH2 OUT LO | CH2 data  low 8 bits | Not used |
| CH2 OUT HI | CH2 data  high 8 bits | Not used |
| CH3 OUT LO | CH3 data  low 8 bits | Not used |
| CH3 OUT HI | CH3 data  high 8 bits | Not used |

Without output data read back (with option code /NR)

| CH0 OUT LO | CH0 data  low 8 bits | Bit 0 through 7 of the output data are set |
| CH0 OUT HI | CH0 data  high 8 bits | Bit 8 through 15 of the output data are set |
| CH1 OUT LO | CH1 data  low 8 bits | Not used |
| CH1 OUT HI | CH1 data  high 8 bits | Not used |
| CH2 OUT LO | CH2 data  low 8 bits | Not used |
| CH2 OUT HI | CH2 data  high 8 bits | Not used |
| CH3 OUT LO | CH3 data  low 8 bits | Not used |
| CH3 OUT HI | CH3 data  high 8 bits | Not used |

# CMD_CTRL

CMD_CTRL command area is following.

| BIT | FUNCTION | REMARKS |
|---|---|---|
| 0 – 2 | Reserve | Not used |
| 3 | ALM_CLR | 0: Clear alarm/warning disabled<br>1: Clear alarm/warning triggered |
| 4 – 5 | Reserve | Not used |
| 6 – 7 | CMD_ID | Not used in the standard I/O command profile |
| 8 – 15 | Reserve | Not used |

# CMD_STAT

CMD_STAT response area is following.

| BIT | FUNCTION | REMARKS | |
|---|---|---|---|
| 0 | D_ALM | Not used | |
| 1 | D_WAR | Not used | |
| 2 | CMDRDY | 1: Command reception enabled<br>0: Other | |
| 3 | ALM_CLR_CMP | 1: Completion of execution of ALM_CLR<br>0: Other<br>ALM_CLR_CMP can be canceled by setting '0' for ALM_CLR in CMD_CTRL command area. | |
| 4 – 5 | Reserve | Not used | |
| 6 – 7 | RCMD_ID | Not used in the standard I/O command profile | |
| 8 – 11 | CMD_ALM | Warning | 0: Normal, 1: Invalid data |
| | | Alarm | 8: Unsupported command received, 9: Invalid data, A: Command execution condition error, B: Subcommand combination error, C: Phase error |
| 12 – 15 | COMM_ALM | Warning | 0: Normal, 1: FCS error, 2: Command data not received, 3: Synchronous frame not received |
| | | Alarm | 8: FCS error, 9: Command data not received, A: Synchronous frame not received, B: Synchronization time interval error, C: WDT error |

## ID_CODE

ID_CODE is following.

| ID_CODE | NAME | SIZE (BYTES) | SUPPORT | VALUE (HEXADECIMAL) | REMARKS |
|---|---|---|---|---|---|
| 01H | Vendor ID Code | 4 | Yes | 0x00000021 | M-SYSTEM CO., LTD. |
| 02H | Device Code | 4 | Yes | 0x00000404 | R7F4HML3-D-DAC32B |
| 03H | Device Version | 4 | Yes | Firmware version | E.g. 1.00 -> 0x0064 |
| 04H | Device Definition File version | 4 | Yes | 0x00001000 | |
| 05H | Extended Address Setting | 4 | Yes | 0x00000001 | |
| 06H | Serial No. | 32 | Yes | Unit serial number | E.g. AB123456 ->　0x32314241<br>0x36353433<br>0x00000000<br>0x00000000<br>0x00000000<br>0x00000000<br>0x00000000<br>0x00000000 |
| 10H | Profile Type 1 | 4 | Yes | 0x00000030 | Standard I/O profile |
| 11H | Profile Version 1 | 4 | Yes | 0x00000100 | |
| 12H | Profile Type 2 | 4 | Yes | 0x000000FF | Indicates the unit does not support |
| 13H | Profile Version 2 | 4 | Yes | 0x00000000 | |
| 14H | Profile Type 3 | 4 | Yes | 0x000000FF | Indicates the unit does not support |
| 15H | Profile Version 3 | 4 | Yes | 0x00000000 | |
| 16H | Min. Transmission Cycle | 4 | Yes | 0x000030D4 | 125 µsec. |
| 17H | Max. Transmission Cycle | 4 | Yes | 0x0061A800 | 64 msec. |
| 18H | Increments of Transmission Cycle | 4 | Yes | 0x00000001 | Available to 31.25, 62.5, 125, 250, 500 [µsec.] & 1 – 64 [msec.] (1 msec. increments) |
| 19H | Min. Communication Cycle | 4 | Yes | 0x000030D4 | 125 µsec. |
| 1AH | Max. Communication Cycle | 4 | Yes | 0x0061A800 | 64 msec. |
| 1BH | Transmission Bytes | 4 | Yes | 0x00000002 | 16 Bytes |
| 1CH | Transmission Bytes (Current Setting) | 4 | Yes | 0x00000002 | 16 Bytes |
| 1DH | Profile Type (Current Selection) | 4 | Yes | 0x00000001 / 0x00000030 | Event-driven communication / Cyclic communication |
| 20H | Supported Communication Mode | 4 | Yes | 0x00000003 | Event-driven communication / Cyclic communication |
| 21H | MAC Address | 4 | No | ---- | |
| 30H | List of Supported Main Commands | 32 | Yes | 0x0000C079<br>0x00000001<br>0x00000000<br>0x00000000<br>0x00000000<br>0x00000000<br>0x00000000<br>0x00000000 | ALM_CLR, ALM_RD, CONFIG, ID_RD, NOP, DISCONNECT, CONNECT, DATA_RWA |
| 38H | List of Supported Sub Commands | 32 | No | ---- | |
| 40H | List of Common Parameters | 32 | No | ---- | |
| 80H | Main Device Name | 32 | Yes | 0x34463752<br>0x334C4D48<br>0x442D442D<br>0x32334341<br>0x00000042<br>0x00000000<br>0x00000000<br>0x00000000 | "R7F4HML3-D-DAC32B" |
| 90H | Sub Device 1 Name | 4 | No | ---- | |
| 98H | Sub Device 1 Version | 32 | No | ---- | |
| A0H | Sub Device 2 Name | 4 | No | ---- | |
| A8H | Sub Device 2 Version | 32 | No | ---- | |
| B0H | Sub Device 3 Name | 4 | No | ---- | |
| B8H | Sub Device 3 Version | 32 | No | ---- | |

# I/O DATA DESCRIPTION

■ **DISCRETE I/O MODULE**

```
        Byte n+1              Byte n
    7              0  7              0
  ┌──┬──┬──┬──┬──┬──┬──┬──┬──┬──┬──┬──┬──┬──┬──┬──┐
  └──┴──┴──┴──┴──┴──┴──┴──┴──┴──┴──┴──┴──┴──┴──┴──┘
```

| | |
|---|---|
| Input 0 | Output 0 |
| Input 1 | Output 1 |
| Input 2 | Output 2 |
| Input 3 | Output 3 |
| ⋮ | ⋮ |
| Input 7 | Output 7 |
| Input 8 | Output 8 |
| ⋮ | ⋮ |
| Input 15 | Output 15 |

0: OFF   1: ON