



DMCNET Remote Module

Remote Digital I/O Module

User Manual

Revised: 1.11.1

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ASIA

DELTA ELECTRONICS, INC.
Taoyuan Plant 1
31-1, XINGBANG ROAD,
GUISHAN INDUSTRIAL ZONE,
TAOYUAN COUNTY 33370, TAIWAN, R.O.C.
TEL: 886-3-362-6301
FAX: 886-3-362-7267

JAPAN

DELTA ELECTRONICS (JAPAN), INC.
Tokyo Office
DELTA SHIBADAIMON BUILDING
2-1-14 SHIBADAIMON, MINATO-KU,
TOKYO, 105-0012, JAPAN
TEL: 81-3-5733-1111
FAX: 81-3-5733-1211

NORTH/SOUTH AMERICA

DELTA PRODUCTS CORPORATION (USA)
Raleigh Office
P.O. BOX 12173
5101 DAVIS DRIVE,
RESEARCH TRIANGLE PARK, NC 27709, U.S.A.
TEL: 1-919-767-3813
FAX: 1-919-767-3969

EUROPE

DELTRONICS (THE NETHERLANDS) B.V.
Eindhoven Office
DE WITBOGT 15, 5652 AG EINDHOVEN,
THE NETHERLANDS
TEL: 31-40-259-2850
FAX: 31-40-259-2851

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Chapter 1 Installation Environment

1.1 Connection Examples

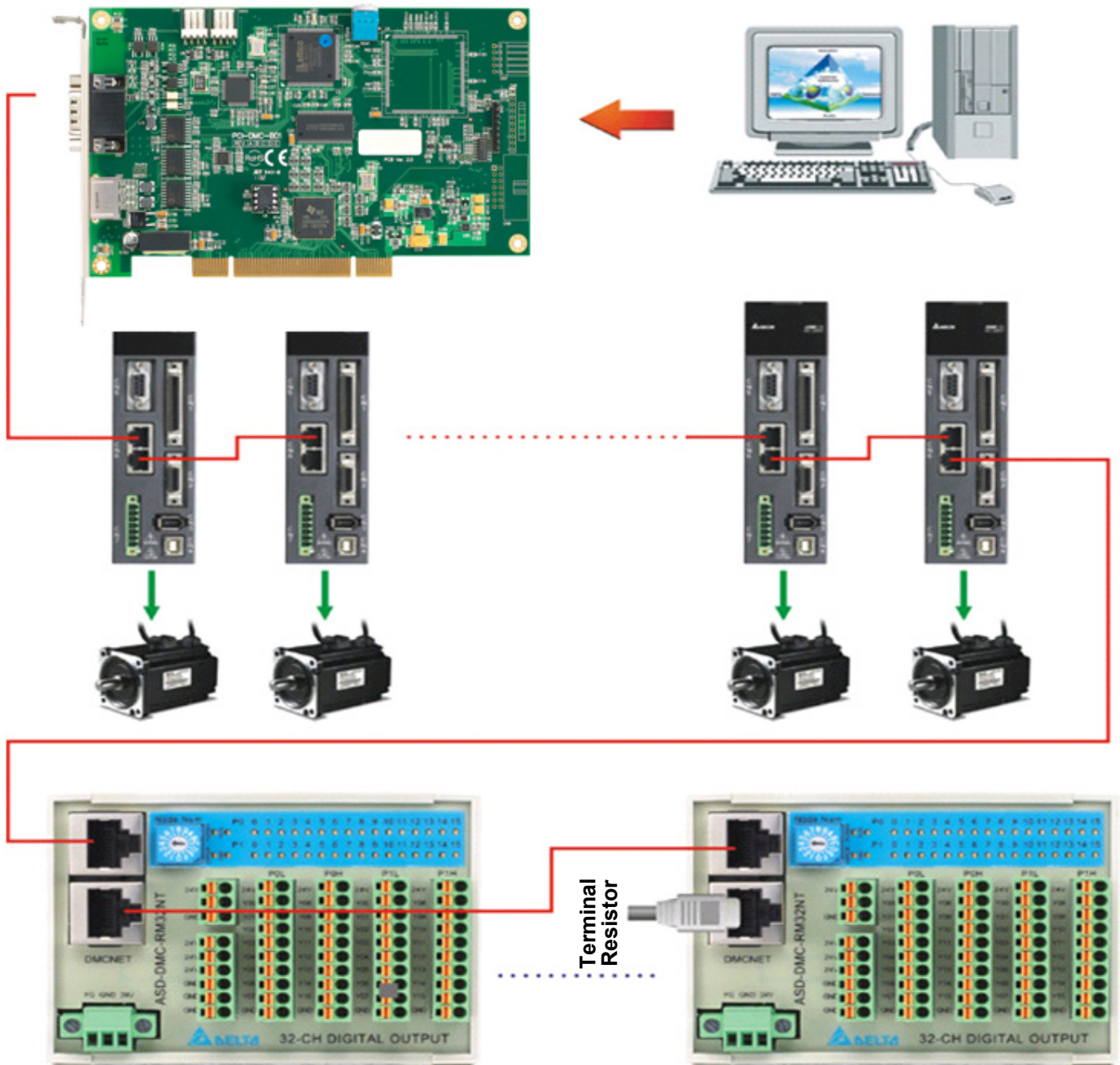


Figure 1.1 Connection Example of Servo Drives and RM32 Modules

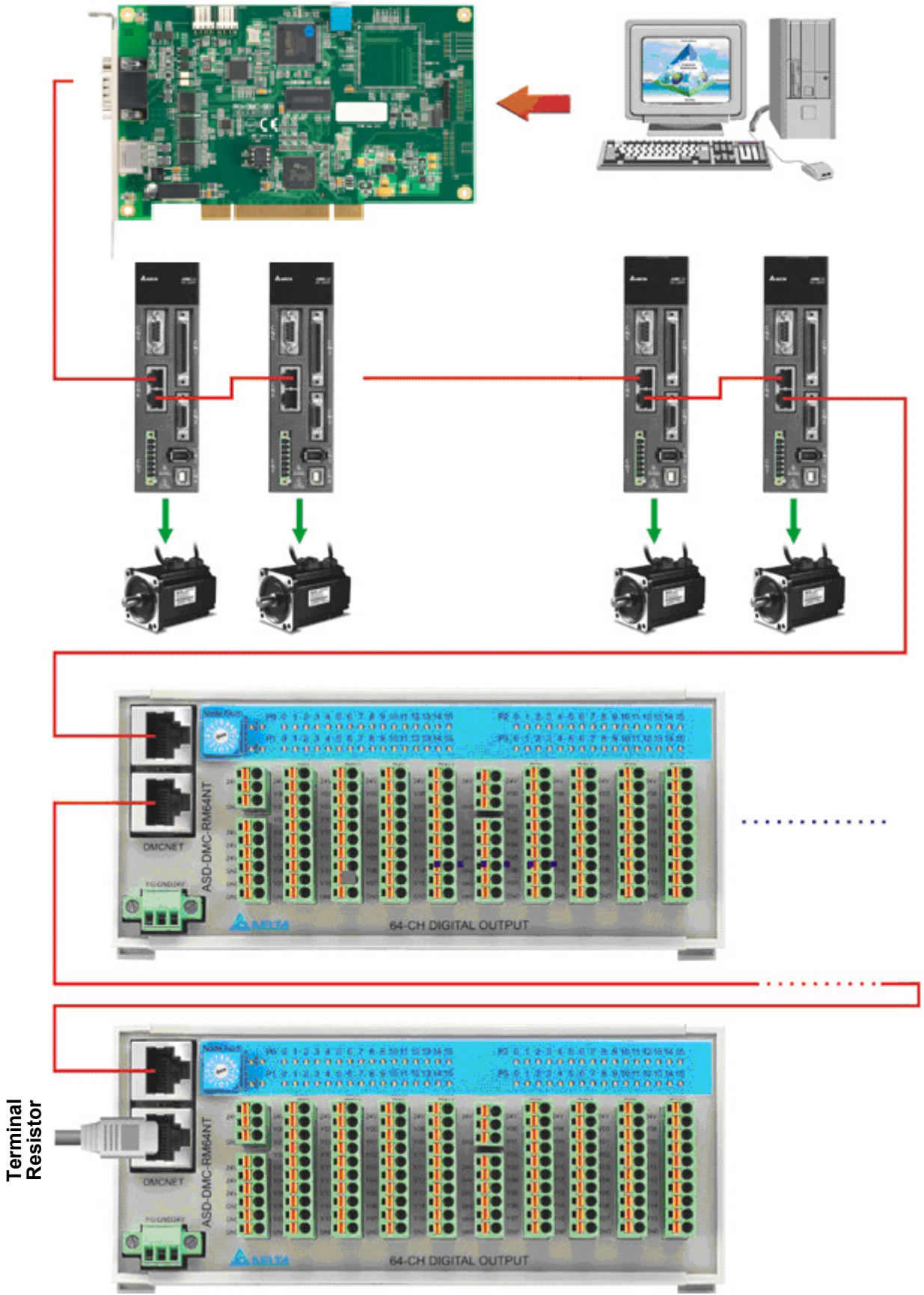


Figure 1.2 Connection Example of Servo Drives and RM64 Modules

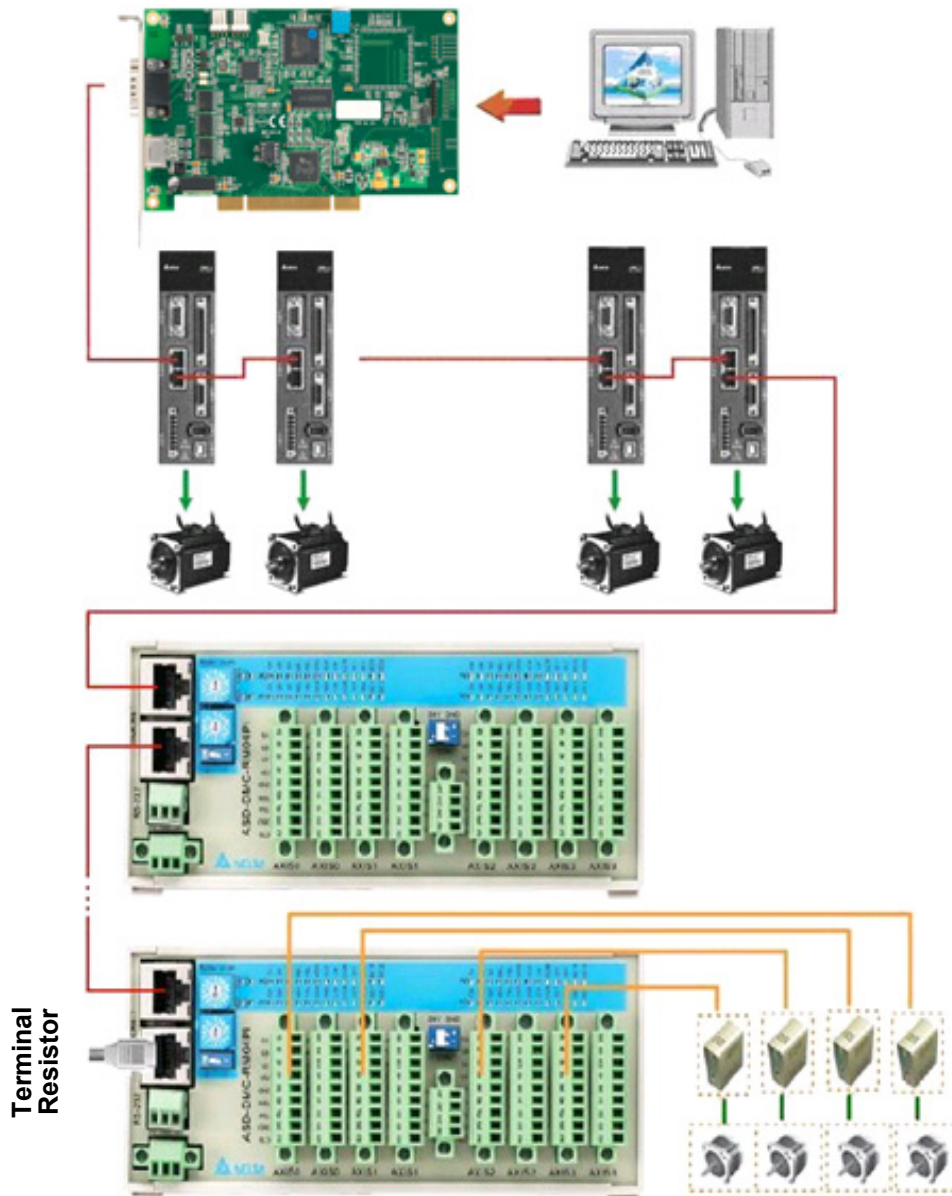


Figure 1.3 Connection Example of Servo Drives and RM04PI Modules

1.2 Electrical Specifications

General

- RM32 Module (MN/NT/PT) Dimensions: 100mm x 75mm x 43mm
- RM64 Module (MN/NT) Dimensions: 168mm x 75mm x 43mm
- RM04PI Module Dimensions: 168mm x 75mm x 40mm
- RM04DA Module Dimensions: 100mm x 75mm x 43mm
- RM04AD Module Dimensions: 100mm x 75mm x 43mm
- Power Supply Voltage: 24 VDC(15% ~ 20%)
- ESD: 8KV Air Discharge
- EFT: Power Line-2KV
- Digital I/O 1KV
- RS: 80MHz ~ 1GHz, 10V/m
- Operating Temperature: 0 °C ~ 50 °C

Digital Signal Input Point (RM32MN & RM64MN & RM32PT & RM64MN1)

- Input Circuit Type: Single-end Common Input:
- Input Signal Type: SINK / SOURCE
- Input Signal Voltage: 24VDC (5mA)
- Response Time: 0 ~ 3ms Adjustable
- Trigger Level (OFF - > ON): > 16.5VDC
- Trigger Level (ON - > OFF): < 8VDC

Pulse Interface Input Port (RM04PI Input)

- Input Circuit Type: Single-end Common Input:
- Input Signal Type: SINK / SOURCE
- Input Signal Voltage(Sensor) : 24VDC(5mA)
- Response Time: 1ms
- Trigger Level(OFF - > ON): > 16.5VDC
- Trigger Level (ON - > OFF): < 8VDC
- Input signal is 5VDC and SINK type only:
Maximum Switching (Operating) Frequency:
QA, QB, QZ: 200KHz (5mA/1 point)
DI1, DI2: 1KHz (5mA/1 point)

Digital Signal Output Point (RM32NT & RM64NT & RM32PT & RM64NT1)

- Output Circuit Type: Transistor
- Output Signal Type: SINK
- Maximum Switching (Operating) Frequency: 1KHz
- Current Specifications: 0.1A/1 point
- Voltage Specifications: 24VDC
- Response Time(OFF - > ON): 20us
- Response Time(ON - > OFF): 30us

Pulse Interface Output Port (RM04PI Output)

- Output Circuit Type: Transistor
- Output Signal Type: SINK
- Output Signal Voltage: 5~24VDC (30mA/1 point)
- Maximum Switching (Operating) Frequency: CW, CCW:200KHz (30mA/1 point)
DO1, DO2:1KHz (30mA/1 point)

Digital to Analog Output Point (RM04DA)

- Channel: 4 channels /unit
- Voltage Output Range: -10~10 V / -5~5V / 0~10V / 0~5V
- Current Output Range: 0 ~ 24mA / 0~20mA / 4~20mA
- Excess Limit (Voltage): 10%
- Maximum Output Current (Voltage): 24mA
- Allowable Load Resistance (Current):0 ~ 500Ω
- Digital Data Range: 0 ~ 4096
- Resolution: 16 bits
- DC Output Resistance: 0.3Ω
- Response Time: 1ms
- Digital Data Format: 16 valid data bits
- Isolation method: Internal circuit and analog output are isolated using an optical coupler.
- Protection: Voltage output circuit has short-circuit protection, but extended time short-circuit may damage the internal circuit and open path to current output.

Digital to Analog Input Point (RM04AD)

- Channel: 4 channels /unit
- Voltage Analog Input Range: -10~10V / -5~5V / 0~10V / 0~5V
- Current Analog Input Range: 0 ~ 20mA
- Digital Conversion Range: 0 ~ 65535
- Resolution: 16bits
- Voltage Input Resistance: 140KΩ
- Current Input Resistance: 249Ω
- General Precision: Within $\pm 0.5\%$ (25°C, 77°F) at full scale.
Within $\pm 1\%$ (0~55°C, 32~131°F) at full scale
- Response Time: Minimum of 1ms, maximum of 3ms x number of channels
- Isolation method: Internal circuit and analog input isolated using optical coupler
- Current Absolute Input Range:-15 ~ 15
- Voltage Absolute Input Range: 32mA
- Digital Data Format: 16 valid data bits
- Averaging function: Modes 2.4.8.16.32 provided

1.3 ASD-DMC-RM32MN

1.3.1 ASD-DMC-RM32MN Product Profile

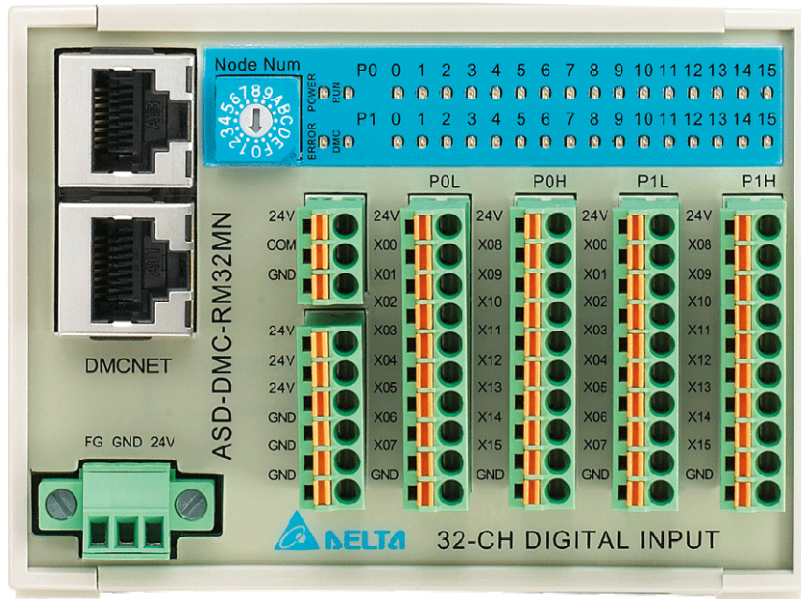


Figure 1.4 Front view of module

1.3.2 ASD-DMC-RM32MN Part Names

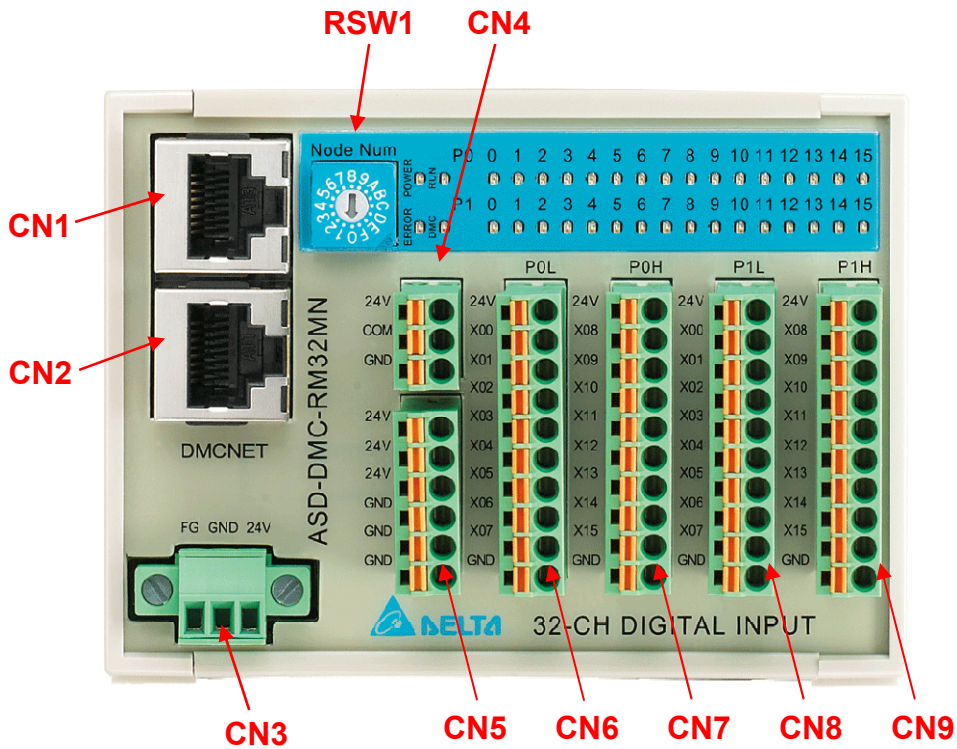


Figure 1.5 RM32MN Part Names

1.3.3 ASD-DMC-RM32MN Module and Connectors

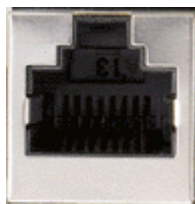


Figure 1.6 RSW1

| Pin | Label | Description |
|-------|-------------|-------------|
| 1~ 12 | Node Number | Node ID |

※ Invalid when dial is turned to 0, D ~ F

※ Each module takes up one Node ID



1 8

Figure 1.7 CN1 and CN2

Pin definitions

| Pin | Label | Description |
|-----|--------------|----------------------------------|
| 1 | RS485T_1 (+) | 1 st RS485 Signal (+) |
| 2 | RS485T_1 (-) | 1 st RS485 Signal (-) |
| 3 | RS485T_2 (+) | 2 nd RS485 Signal (+) |
| 6 | RS485T_2 (-) | 2 nd RS485 Signal (-) |
| 7 | EGND | RS485 Ground Signal |
| 8 | EGND | RS485 Ground Signal |



1 2 3

Figure 1.8 CN3

Pin definition

| Pin | Label | Description |
|-----|-------|---------------------|
| 3 | E24V | 24V Voltage Input |
| 2 | GND | Power Ground |
| 1 | FG | Case Ground (Earth) |

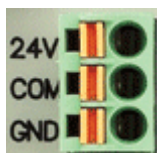


Figure 1.9 CN4

Pin definition

| Pin | Label | Description |
|-----|-------|---------------------|
| 3 | E24V | 24V Voltage Output |
| 2 | COM | Common Input Signal |
| 1 | GND | Power Ground |

※ This connector is used with the Input signal common point for Pull high or Pull low

※ COM to 24V → Low active (Pull high)

※ COM to GND → High active (Pull low)

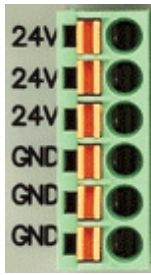


Figure 1.10 CN5
Pin definition

| Label | Description |
|-------|--------------------|
| 24V | 24V Voltage Output |
| 24V | 24V Voltage Output |
| 24V | 24V Voltage Output |
| GND | Power Ground |
| GND | Power Ground |
| GND | Power Ground |
| 24V | 24V Voltage Output |
| 24V | 24V Voltage Output |
| 24V | 24V Voltage Output |

※ Total voltage Output at 24V is 1.5A (Max)

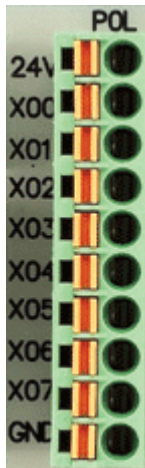


Figure 1.11 CN6
Pin definition

| Label | Description |
|-------|--------------------|
| 24V | 24V Voltage Output |
| X00 | P0 GPIO 1 Input |
| X01 | P0 GPIO 2 Input |
| X02 | P0 GPIO 3 Input |
| X03 | P0 GPIO 4 Input |
| X04 | P0 GPIO 5 Input |
| X05 | P0 GPIO 6 Input |
| X06 | P0 GPIO 7 Input |
| X07 | P0 GPIO 8 Input |
| GND | Power Ground |

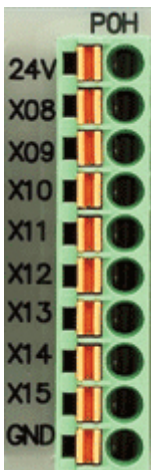


Figure 1.12 CN7
Pin definition

| Label | Description |
|-------|--------------------|
| 24V | 24V Voltage Output |
| X08 | P0 GPIO 9 Input |
| X09 | P0 GPIO 10 Input |
| X10 | P0 GPIO 11 Input |
| X11 | P0 GPIO 12 Input |
| X12 | P0 GPIO 13 Input |
| X13 | P0 GPIO 14 Input |
| X14 | P0 GPIO 15 Input |
| X15 | P0 GPIO 16 Input |
| GND | Power Ground |

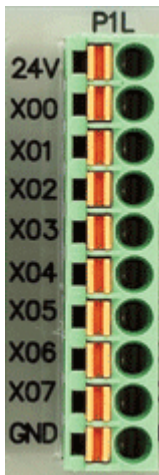


Figure 1.13 CN8
Pin definition

| Label | Description |
|-------|--------------------|
| 24V | 24V Voltage Output |
| X00 | P1 GPIO 1 Input |
| X01 | P1 GPIO 2 Input |
| X02 | P1 GPIO 3 Input |
| X03 | P1 GPIO 4 Input |
| X04 | P1 GPIO 5 Input |
| X05 | P1 GPIO 6 Input |
| X06 | P1 GPIO 7 Input |
| X07 | P1 GPIO 8 Input |
| GND | Power Ground |

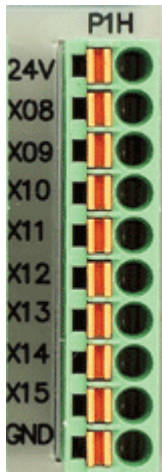


Figure 1.14 CN9
Pin definition

| Label | Description |
|-------|--------------------|
| 24V | 24V Voltage Output |
| X08 | P1 GPIO 9 Input |
| X09 | P1 GPIO 10 Input |
| X10 | P1 GPIO 11 Input |
| X11 | P1 GPIO 12 Input |
| X12 | P1 GPIO 13 Input |
| X13 | P1 GPIO 14 Input |
| X14 | P1 GPIO 15 Input |
| X15 | P1 GPIO 16 Input |
| GND | Power Ground |

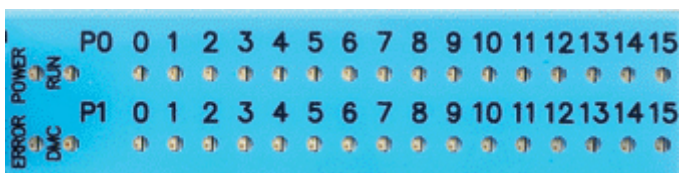


Figure 1.15 LED definitions

| Label | Description |
|---------|--------------------------------|
| POWER | Voltage status indicator |
| RUN | Operation indicator |
| ERROR | Error indicator |
| DMC | DMC communication indicator |
| P0 0~15 | P0 0~15 signal Input indicator |
| P1 0~15 | P1 0~15 signal Input indicator |

1.4 ASD-DMC-RM32NT

1.4.1 ASD-DMC-RM32NT Product Profile

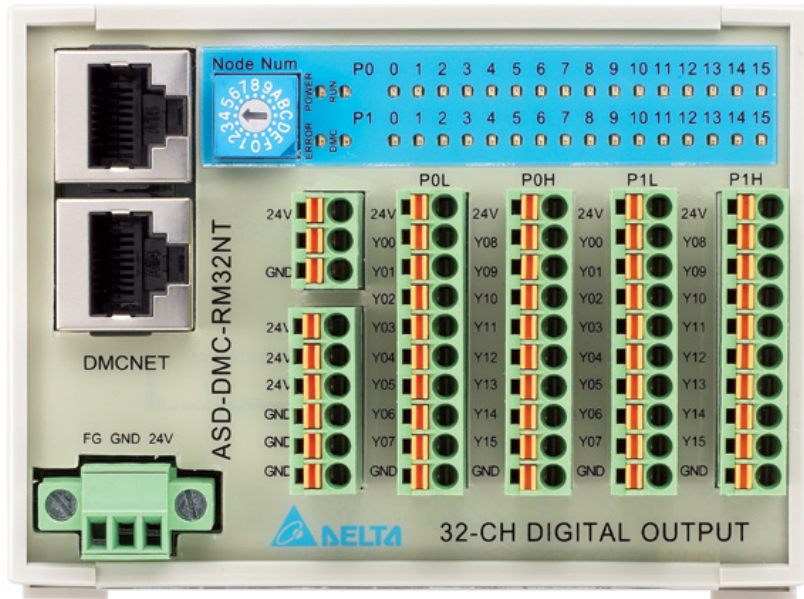


Figure 1.16 Front view of module

1.4.2 ASD-DMC-RM32NT Part Names

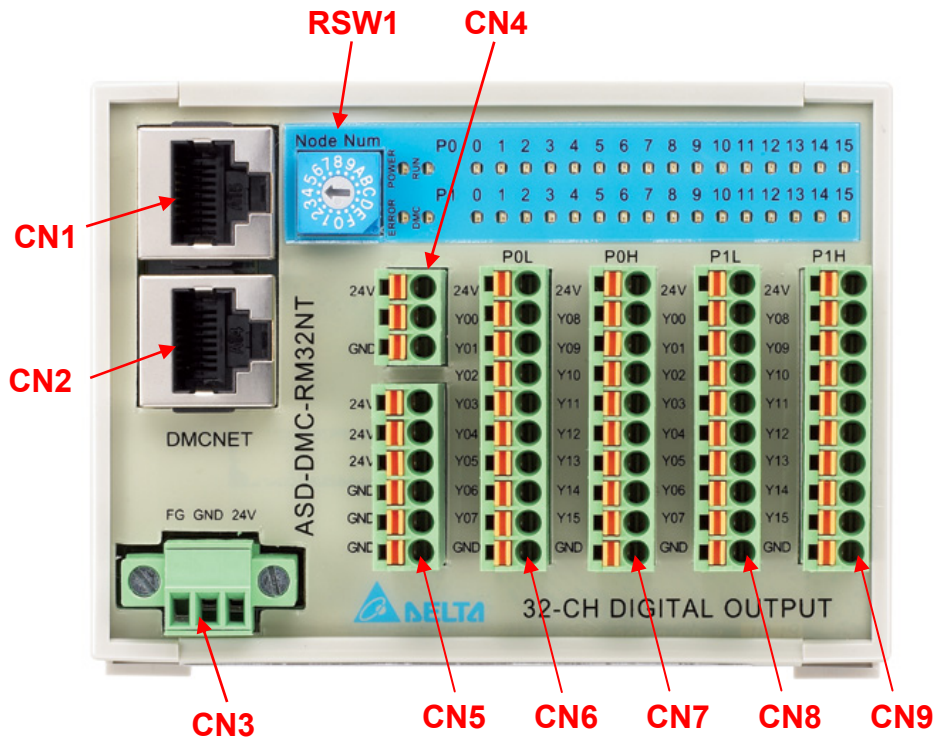


Figure 1.17 RM32NT Part Names

1.4.3 ASD-DMC-RM32NT Module and Connectors

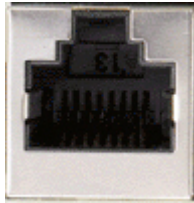


Figure 1.18 RSW1

| Pin | Label | Description |
|----------------|-------------|-------------|
| 1 ~ 9 A ~ F | Node Number | Node ID |

※ Invalid when dial is turned to 0, D ~ F

※ Each module takes up one Node ID



1 8

Figure 1.19 CN1 and CN2
Pin definitions

| Pin | Label | Description |
|-----|--------------|----------------------------------|
| 1 | RS485T_1 (+) | 1 st RS485 Signal (+) |
| 2 | RS485T_1 (-) | 1 st RS485 Signal (-) |
| 3 | RS485T_2 (+) | 2 nd RS485 Signal (+) |
| 6 | RS485T_2 (-) | 2 nd RS485 Signal (-) |
| 7 | EGND | RS485 Ground Signal |
| 8 | EGND | RS485 Ground Signal |



1 2 3

Figure 1.20 CN3
Pin definition

| Pin | Label | Description |
|-----|-------|---------------------|
| 3 | E24V | 24V Voltage Input |
| 2 | GND | Power Ground |
| 1 | FG | Case Ground (Earth) |

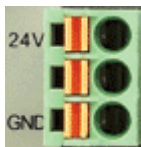


Figure 1.21 CN4
Pin definition

| Label | Description |
|-------|------------------------|
| 24V | 24V Voltage Output |
| N/A | Wire to wire connector |
| GND | Power Ground |



Figure 1.22 CN5
Pin definition

| Label | Description |
|-------|--------------------|
| 24V | 24V Voltage Output |
| 24V | 24V Voltage Output |
| 24V | 24V Voltage Output |
| GND | Power Ground |
| GND | Power Ground |
| GND | Power Ground |

※ Total voltage Output at 24V is 1.5A (Max)



Figure 1.23 CN6
Pin definition

| Label | Description |
|-------|--------------------|
| 24V | 24V Voltage Output |
| Y00 | P0 GPIO 1 Output |
| Y01 | P0 GPIO 2 Output |
| Y02 | P0 GPIO 3 Output |
| Y03 | P0 GPIO 4 Output |
| Y04 | P0 GPIO 5 Output |
| Y05 | P0 GPIO 6 Output |
| Y06 | P0 GPIO 7 Output |
| Y07 | P0 GPIO 8 Output |
| GND | Power Ground |

※ Output from one GPIO is 0.1 A(Max)

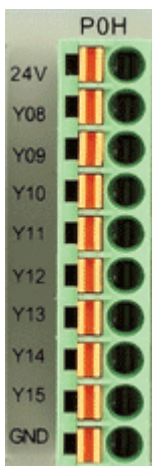


Figure 1.24 CN7
Pin definition

| Label | Description |
|-------|--------------------|
| 24V | 24V Voltage Output |
| Y08 | P0 GPIO 9 Output |
| Y09 | P0 GPIO 10 Output |
| Y10 | P0 GPIO 11 Output |
| Y11 | P0 GPIO 12 Output |
| Y12 | P0 GPIO 13 Output |
| Y13 | P0 GPIO 14 Output |
| Y14 | P0 GPIO 15 Output |
| Y15 | P0 GPIO 16 Output |
| GND | Power Ground |

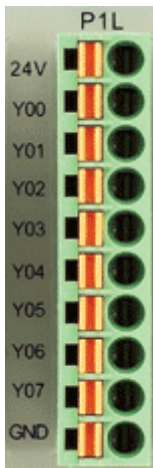


Figure 1.25 CN8
Pin definition

| Label | Description |
|-------|--------------------|
| 24V | 24V Voltage Output |
| Y00 | P1 GPIO 1 Output |
| Y01 | P1 GPIO 2 Input |
| Y02 | P1 GPIO 3 Output |
| Y03 | P1 GPIO 4 Output |
| Y04 | P1 GPIO 5 Output |
| Y05 | P1 GPIO 6 Output |
| Y06 | P1 GPIO 7 Output |
| Y07 | P1 GPIO 8 Output |
| GND | Power Ground |



Figure 1.26 CN9
Pin definition

| Label | Description |
|-------|--------------------|
| 24V | 24V Voltage Output |
| Y08 | P1 GPIO 9 Output |
| Y09 | P1 GPIO 10 Output |
| Y10 | P1 GPIO 11 Output |
| Y11 | P1 GPIO 12 Output |
| Y12 | P1 GPIO 13 Output |
| Y13 | P1 GPIO 14 Output |
| Y14 | P1 GPIO 15 Output |
| Y15 | P1 GPIO 16 Output |
| GND | Power Ground |

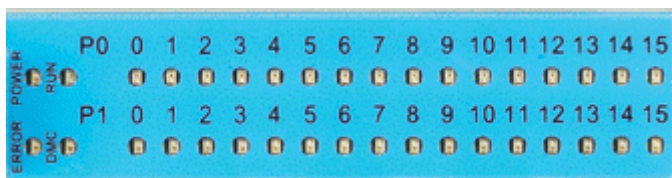


Figure 1.27 LED definition

| Label | Description |
|---------|---------------------------------|
| POWER | Voltage status indicator |
| RUN | Operation indicator |
| ERROR | Error indicator |
| DMC | DMC communication indicator |
| P0 0~15 | P0 0~15 signal Output indicator |
| P1 0~15 | P1 0~15 signal Output indicator |

1.5 ASD-DMC-RM64MN

1.5.1 ASD-DMC-RM64MN Product Profile

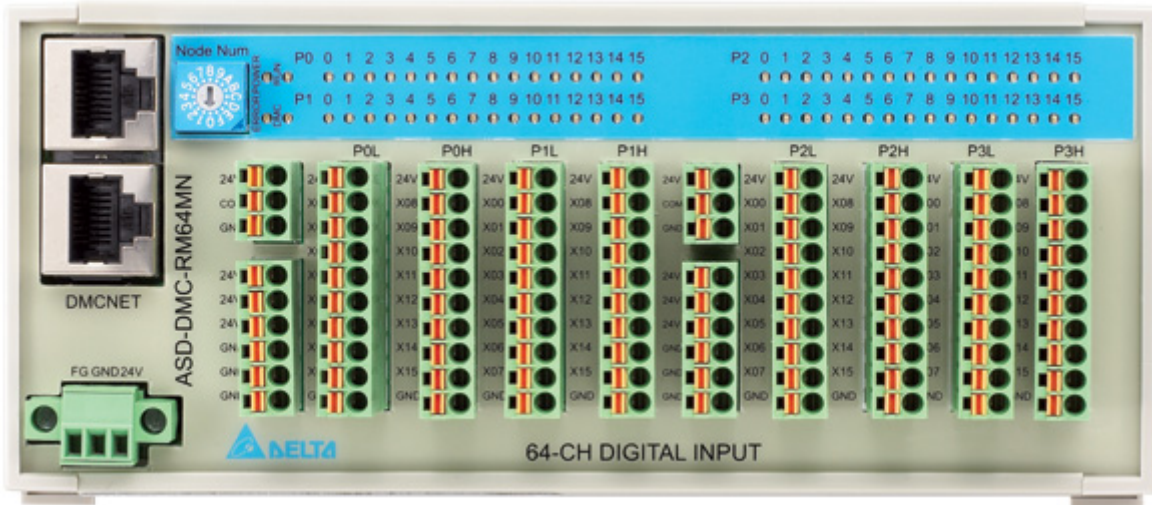


Figure 1.28 Front view of module

1.5.2 ASD-DMC-RM64MN Part Names

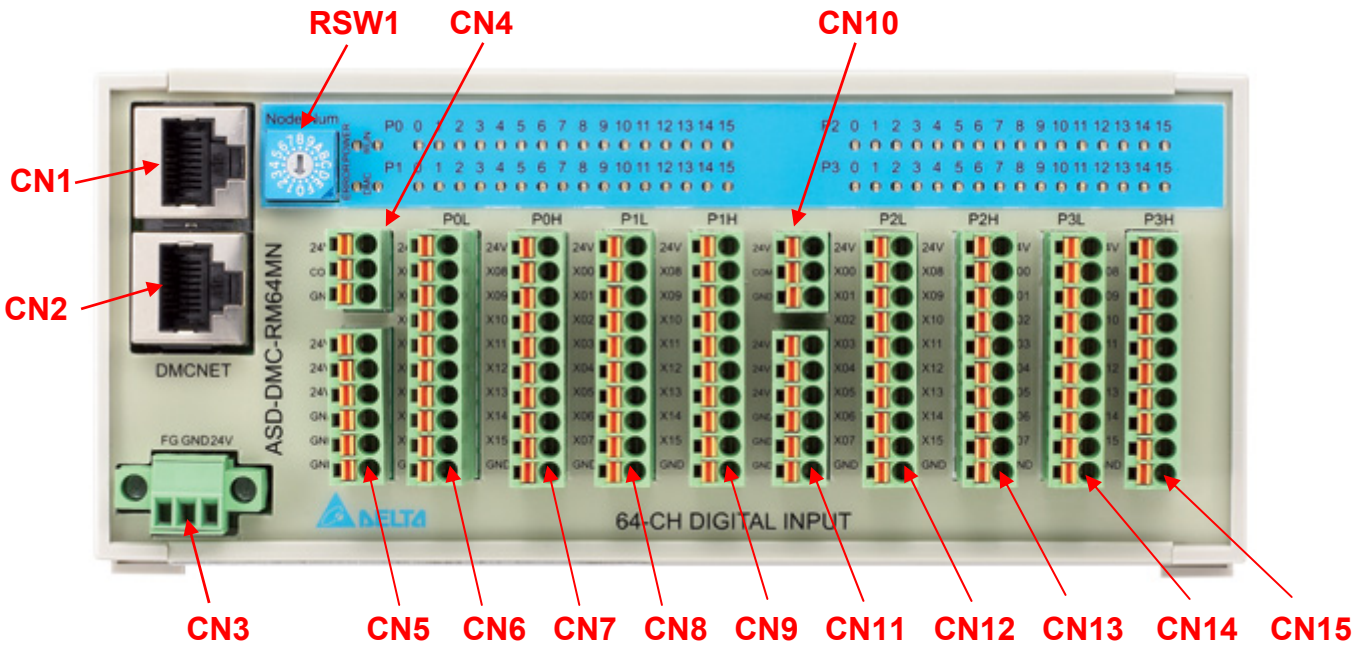


Figure 1.29 RM64MN Part Names

1.5.3 ASD-DMC-RM64MN Module and Connectors

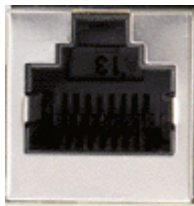


Figure 1.30 RSW1

| Pin | Label | Description |
|------------|-------------|-------------|
| 1~9 A~F | Node Number | Node ID |

※ Invalid when dial is turned to 0, D ~ F

※ Each module takes up one Node ID



1 8

Figure 1.31 CN1 and CN2
Pin definitions

| Pin | Label | Description |
|-----|--------------|----------------------------------|
| 1 | RS485T_1 (+) | 1 st RS485 Signal (+) |
| 2 | RS485T_1 (-) | 1 st RS485 Signal (-) |
| 3 | RS485T_2 (+) | 2 nd RS485 Signal (+) |
| 6 | RS485T_2 (-) | 2 nd RS485 Signal (-) |
| 7 | GND | RS485 Ground Signal |
| 8 | GND | RS485 Ground Signal |



1 2 3

Figure 1.32 CN3
Pin definition

| Pin | Label | Description |
|-----|-------|---------------------|
| 1 | FG | Case Ground (Earth) |
| 2 | GND | Power Ground |
| 3 | 24V | 24V Voltage Input |

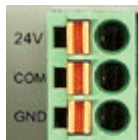


Figure 1.33 CN4
Pin definition

| Label | Description |
|-------|---------------------|
| 24V | 24V Voltage Output |
| COM | Common Input Signal |
| GND | Power Ground |

※ This connector is used with the Input signal common point for Pull high or Pull low

※ COM to 24V → Low active (Pull high)

※ COM to GND → High active (Pull low)

※ Total Input voltage is 3.0A (Max)

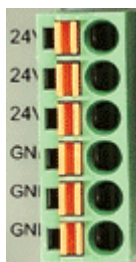


Figure 1.34 CN5
Pin definition

| Label | Description |
|-------|--------------------|
| 24V | 24V Voltage Output |
| 24V | 24V Voltage Output |
| 24V | 24V Voltage Output |
| GND | Power Ground |
| GND | Power Ground |
| GND | Power Ground |

Total voltage Output at 24V is 1.5A (Max)

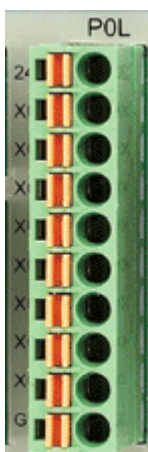


Figure 1.35 CN6
Pin definition

| Label | Description |
|-------|--------------------|
| 24V | 24V Voltage Output |
| X00 | P0 GPIO 1 Input |
| X01 | P0 GPIO 2 Input |
| X02 | P0 GPIO 3 Input |
| X03 | P0 GPIO 4 Input |
| X04 | P0 GPIO 5 Input |
| X05 | P0 GPIO 6 Input |
| X06 | P0 GPIO 7 Input |
| X07 | P0 GPIO 8 Input |
| GND | Power Ground |

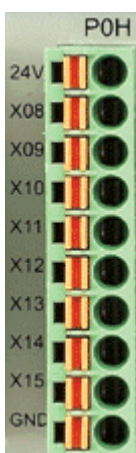


Figure 1.36 CN7
Pin definition

| Label | Description |
|-------|--------------------|
| 24V | 24V Voltage Output |
| X08 | P0 GPIO 9 Input |
| X09 | P0 GPIO 10 Input |
| X10 | P0 GPIO 11 Input |
| X11 | P0 GPIO 12 Input |
| X12 | P0 GPIO 13 Input |
| X13 | P0 GPIO 14 Input |
| X14 | P0 GPIO 15 Input |
| X15 | P0 GPIO 16 Input |
| GND | Power Ground |



Figure 1.37 CN8
Pin definition

| Label | Description |
|-------|--------------------|
| 24V | 24V Voltage Output |
| X00 | P1 GPIO 1 Input |
| X01 | P1 GPIO 2 Input |
| X02 | P1 GPIO 3 Input |
| X03 | P1 GPIO 4 Input |
| X04 | P1 GPIO 5 Input |
| X05 | P1 GPIO 6 Input |
| X06 | P1 GPIO 7 Input |
| X07 | P1 GPIO 8 Input |
| GND | Power Ground |

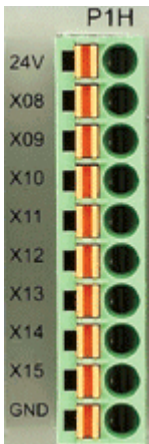


Figure 1.38 CN9
Pin definition

| Label | Description |
|-------|--------------------|
| 24V | 24V Voltage Output |
| X08 | P1 GPIO 9 Input |
| X09 | P1 GPIO 10 Input |
| X10 | P1 GPIO 11 Input |
| X11 | P1 GPIO 12 Input |
| X12 | P1 GPIO 13 Input |
| X13 | P1 GPIO 14 Input |
| X14 | P1 GPIO 15 Input |
| X15 | P1 GPIO 16 Input |
| GND | Power Ground |

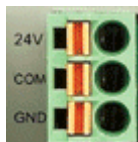


Figure 1.39 CN10
Pin definition

| Label | Description |
|-------|---------------------|
| 24V | 24V Voltage Output |
| COM | Common Input Signal |
| GND | Power Ground |



Figure 1.40 CN11
Pin definition

| Label | Description |
|-------|--------------------|
| 24V | 24V Voltage Output |
| 24V | 24V Voltage Output |
| 24V | 24V Voltage Output |
| GND | Power Ground |
| GND | Power Ground |
| GND | Power Ground |

Total voltage Output at 24V is 1.5A (Max)

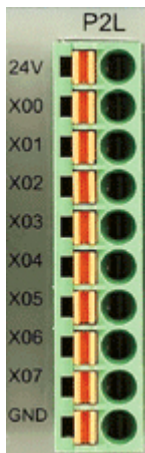


Figure 1.41 CN12
Pin definition

| Label | Description |
|-------|--------------------|
| 24V | 24V Voltage Output |
| X00 | P2 GPIO 1 Input |
| X01 | P2 GPIO 2 Input |
| X02 | P2 GPIO 3 Input |
| X03 | P2 GPIO 4 Input |
| X04 | P2 GPIO 5 Input |
| X05 | P2 GPIO 6 Input |
| X06 | P2 GPIO 7 Input |
| X07 | P2 GPIO 8 Input |
| GND | Power Ground |

※ When P3H/P3L (GPIO 3) is set to MPG mode,
Pin 9 (P2 X00) and Pin 8 (P2 X01) cannot be used.

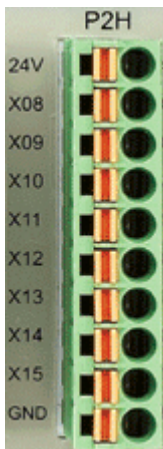


Figure 1.42 CN13
Pin definition

| Label | Description |
|-------|--------------------|
| 24V | 24V Voltage Output |
| X08 | P2 GPIO 9 Input |
| X09 | P2 GPIO 10 Input |
| X10 | P2 GPIO 11 Input |
| X11 | P2 GPIO 12 Input |
| X12 | P2 GPIO 13 Input |
| X13 | P2 GPIO 14 Input |
| X14 | P2 GPIO 15 Input |
| X15 | P2 GPIO 16 Input |
| GND | Power Ground |

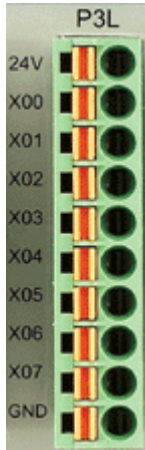


Figure 1.43 CN14
Pin definition

| Label | Description | |
|-------|--------------------|----------|
| | GPIO mode | MPG mode |
| 24V | 24V Voltage Output | |
| X00 | P3 GPIO 1 Input | X |
| X01 | P3 GPIO 2 Input | Y |
| X02 | P3 GPIO 3 Input | Z |
| X03 | P3 GPIO 4 Input | U |
| X04 | P3 GPIO 5 Input | x1 |
| X05 | P3 GPIO 6 Input | x10 |
| X06 | P3 GPIO 7 Input | x100 |
| X07 | P3 GPIO 8 Input | EN |
| GND | Power Ground | |

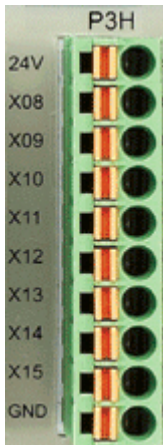


Figure 1.44 CN15
Pin definition

| Label | Description | |
|-------|--------------------|----------|
| | GPIO mode | MPG mode |
| E24V | 24V Voltage Output | |
| X08 | P3 GPIO 9 Input | PA |
| X09 | P3 GPIO 10 Input | PB |
| X10 | P3 GPIO 11 Input | J1+ |
| X11 | P3 GPIO 12 Input | J1- |
| X12 | P3 GPIO 13 Input | J2+ |
| X13 | P3 GPIO 14 Input | J2- |
| X14 | P3 GPIO 15 Input | J3+ |
| X15 | P3 GPIO 16 Input | J3- |
| GND | Power Ground | |



Figure 1.45 LED definition

| Label | Description |
|---------|--------------------------------|
| POWER | Voltage status indicator |
| RUN | Operation indicator |
| ERROR | Error indicator |
| DMC | DMC communication indicator |
| P0 0~15 | P0 0~15 signal Input indicator |
| P1 0~15 | P1 0~15 signal Input indicator |
| P2 0~15 | P2 0~15 signal Input indicator |
| P3 0~15 | P3 0~15 signal Input indicator |

1.6 ASD-DMC-RM64NT

1.6.1 ASD-DMC-RM64NT Product Profile

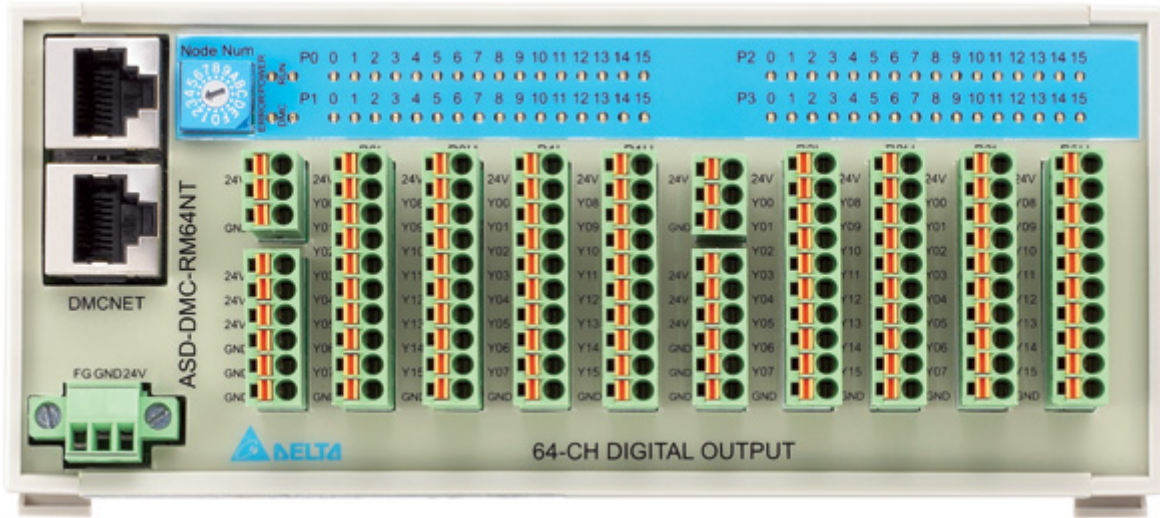


Figure 1.46 Front view of module

1.6.2 ASD-DMC-RM64NT Part Names

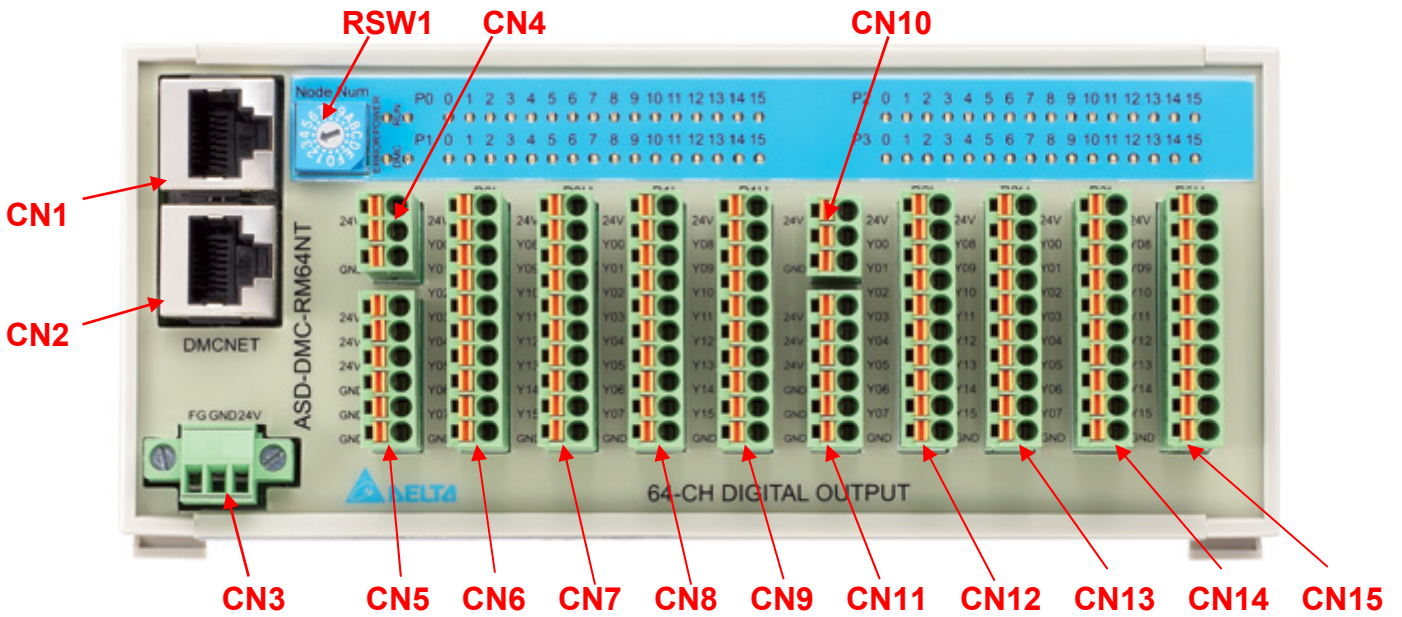


Figure 1.47 RM64NT Part Names

1.6.3 ASD-DMC-RM64NT Module and Connectors

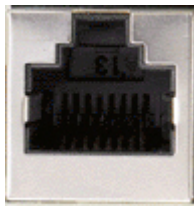


Figure 1.48 RSW1

| Pin | Label | Description |
|-------|-------------|-------------|
| 0 ~ 9 | Node Number | Node ID |
| A ~ F | | |

※ Invalid when dial is turned to 0, D ~ F

※ Each module takes up one Node ID



1 8

Figure 1.49 CN1 and CN2
Pin definitions

| Label | Description |
|--------------|----------------------------------|
| RS485T_1 (+) | 1 st RS485 Signal (+) |
| RS485T_1 (-) | 1 st RS485 Signal (-) |
| RS485T_2 (+) | 2 nd RS485 Signal (+) |
| RS485T_2 (-) | 2 nd RS485 Signal (-) |
| GND | RS485 Ground Signal |
| GND | RS485 Ground Signal |



1 2 3

Figure 1.50 N3
Pin definition

| Pin | Label | Description |
|-----|-------|---------------------|
| 1 | FG | Case Ground (Earth) |
| 2 | GND | Power Ground |
| 3 | 24V | 24V Voltage Input |

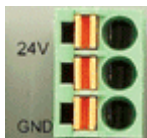


Figure 1.51 CN4
Pin definition

| Label | Description |
|-------|------------------------|
| 24V | 24V Voltage Output |
| N/A | Wire to wire connector |
| GND | Power Ground |

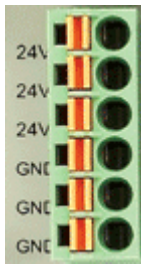


Figure 1.52 CN5
Pin definition

| Label | Description |
|-------|--------------------|
| 24V | 24V Voltage Output |
| 24V | 24V Voltage Output |
| 24V | 24V Voltage Output |
| GND | Power Ground |
| GND | Power Ground |
| GND | Power Ground |
| 24V | 24V Voltage Output |
| 24V | 24V Voltage Output |
| 24V | 24V Voltage Output |

※ Total voltage Output at 24V is 1.5A (Max)



Figure 1.53 CN6
Pin definition

| Label | Description |
|-------|--------------------|
| 24V | 24V Voltage Output |
| Y00 | P0 GPIO 1 Output |
| Y01 | P0 GPIO 2 Output |
| Y02 | P0 GPIO 3 Output |
| Y03 | P0 GPIO 4 Output |
| Y04 | P0 GPIO 5 Output |
| Y05 | P0 GPIO 6 Output |
| Y06 | P0 GPIO 7 Output |
| Y07 | P0 GPIO 8 Output |
| GND | Power Ground |

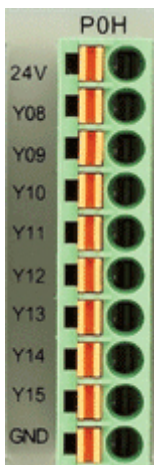


Figure 1.54 CN7
Pin definition

| Label | Description |
|-------|--------------------|
| 24V | 24V Voltage Output |
| Y08 | P0 GPIO 9 Output |
| Y09 | P0 GPIO 10 Output |
| Y10 | P0 GPIO 11 Output |
| Y11 | P0 GPIO 12 Output |
| Y12 | P0 GPIO 13 Output |
| Y13 | P0 GPIO 14 Output |
| Y14 | P0 GPIO 15 Output |
| Y15 | P0 GPIO 16 Output |
| GND | Power Ground |

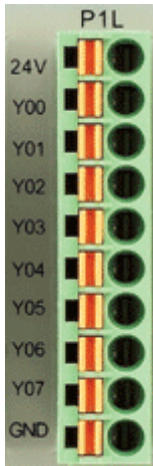


Figure 1.55 CN8
Pin definition

| Label | Description |
|-------|--------------------|
| 24V | 24V Voltage Output |
| Y00 | P1 GPIO 1 Output |
| Y01 | P1 GPIO 2 Output |
| Y02 | P1 GPIO 3 Output |
| Y03 | P1 GPIO 4 Output |
| Y04 | P1 GPIO 5 Output |
| Y05 | P1 GPIO 6 Output |
| Y06 | P1 GPIO 7 Output |
| Y07 | P1 GPIO 8 Output |
| GND | Power Ground |



Figure 1.56 CN9
Pin definition

| Label | Description |
|-------|--------------------|
| 24V | 24V Voltage Output |
| Y08 | P1 GPIO 9 Output |
| Y09 | P1 GPIO 10 Output |
| Y10 | P1 GPIO 11 Output |
| Y11 | P1 GPIO 12 Output |
| Y12 | P1 GPIO 13 Output |
| Y13 | P1 GPIO 14 Output |
| Y14 | P1 GPIO 15 Output |
| Y15 | P1 GPIO 16 Output |
| GND | Power Ground |



Figure 1.57 CN10
Pin definition

| Label | Description |
|-------|------------------------|
| 24V | 24V Voltage Output |
| N/A | Wire to wire connector |
| GND | Power Ground |

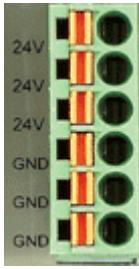


Figure 1.58 CN11
Pin definition

| Label | Description |
|-------|--------------------|
| 24V | 24V Voltage Output |
| 24V | 24V Voltage Output |
| 24V | 24V Voltage Output |
| GND | Power Ground |
| GND | Power Ground |
| GND | Power Ground |
| 24V | 24V Voltage Output |
| 24V | 24V Voltage Output |
| 24V | 24V Voltage Output |

Total voltage Output at 24V is 1.5A (Max)



Figure 1.59 CN12
Pin definition

| Label | Description |
|-------|--------------------|
| 24V | 24V Voltage Output |
| Y00 | P2 GPIO 1 Output |
| Y01 | P2 GPIO 2 Output |
| Y02 | P2 GPIO 3 Output |
| Y03 | P2 GPIO 4 Output |
| Y04 | P2 GPIO 5 Output |
| Y05 | P2 GPIO 6 Output |
| Y06 | P2 GPIO 7 Output |
| Y07 | P2 GPIO 8 Output |
| GND | Power Ground |
| 24V | 24V Voltage Output |
| 24V | 24V Voltage Output |
| 24V | 24V Voltage Output |
| 24V | 24V Voltage Output |
| 24V | 24V Voltage Output |



Figure 1.60 N13
Pin definition

| Label | Description |
|-------|--------------------|
| 24V | 24V Voltage Output |
| Y08 | P2 GPIO 9 Output |
| Y09 | P2 GPIO 10 Output |
| Y10 | P2 GPIO 11 Output |
| Y11 | P2 GPIO 12 Output |
| Y12 | P2 GPIO 13 Output |
| Y13 | P2 GPIO 14 Output |
| Y14 | P2 GPIO 15 Output |
| Y15 | P2 GPIO 16 Output |
| GND | Power Ground |
| 24V | 24V Voltage Output |
| 24V | 24V Voltage Output |
| 24V | 24V Voltage Output |
| 24V | 24V Voltage Output |
| 24V | 24V Voltage Output |
| 24V | 24V Voltage Output |
| 24V | 24V Voltage Output |

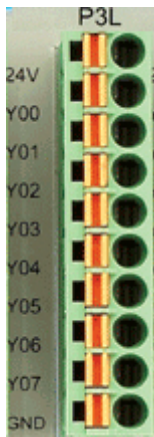


Figure 1.61 CN14
Pin definition

| Label | Description |
|-------|--------------------|
| 24V | 24V Voltage Output |
| Y00 | P3 GPIO 1 Output |
| Y01 | P3 GPIO 2 Output |
| Y02 | P3 GPIO 3 Output |
| Y03 | P3 GPIO 4 Output |
| Y04 | P3 GPIO 5 Output |
| Y05 | P3 GPIO 6 Output |
| Y06 | P3 GPIO 7 Output |
| Y07 | P3 GPIO 8 Output |
| GND | Power Ground |



Figure 1.62 CN15
Pin definition

| Label | Description |
|-------|--------------------|
| 24V | 24V Voltage Output |
| Y08 | P3 GPIO 9 Output |
| Y09 | P3 GPIO 10 Output |
| Y10 | P3 GPIO 11 Output |
| Y11 | P3 GPIO 12 Output |
| Y12 | P3 GPIO 13 Output |
| Y13 | P3 GPIO 14 Output |
| Y14 | P3 GPIO 15 Output |
| Y15 | P3 GPIO 16 Output |
| GND | Power Ground |

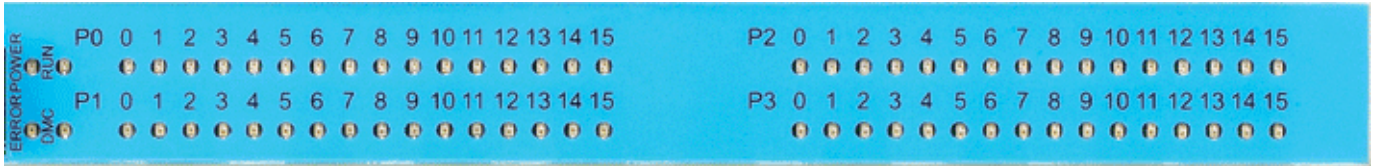


Figure 1.63 LED definition

| Label | Description |
|---------|---------------------------------|
| POWER | Voltage status indicator |
| RUN | Operation indicator |
| ERROR | Error indicator |
| DMC | DMC communication indicator |
| P0 0~15 | P0 0~15 signal Output indicator |
| P1 0~15 | P1 0~15 signal Output indicator |
| P2 0~15 | P2 0~15 signal Output indicator |
| P3 0~15 | P3 0~15 signal Output indicator |

1.7 ASD-DMC-RM04PI

1.7.1 ASD-DMC-RM04PI Product Profile

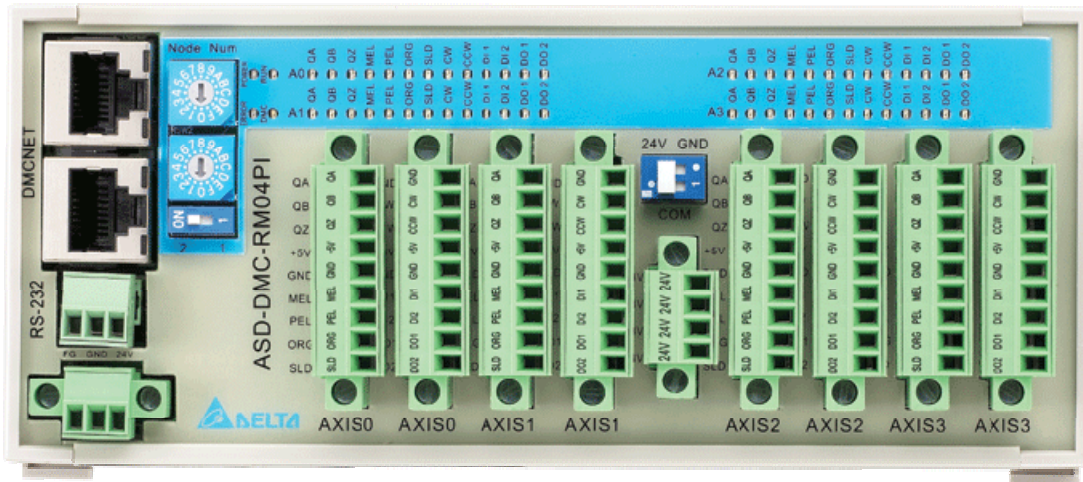


Figure 1.64 Front view of module

1.7.2 ASD-DMC-RM04PI Part Names

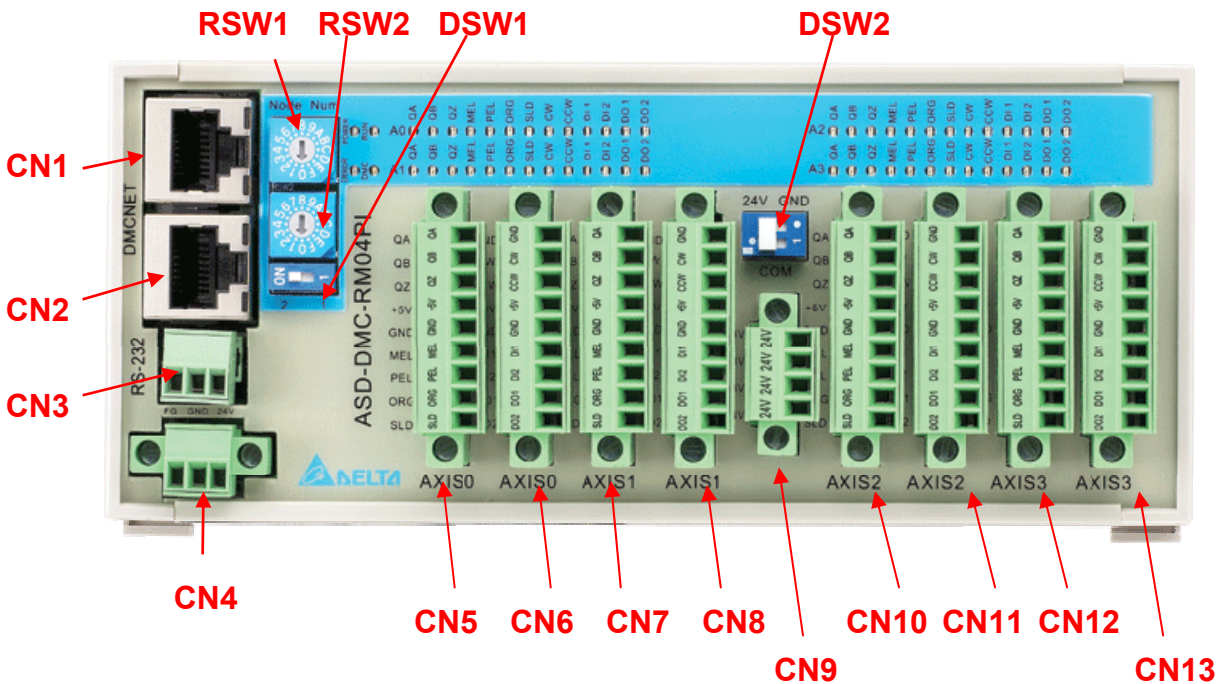


Figure 1.65 RM04PI Part Names

1.7.3 ASD-DMC-RM04PI Module and Connectors



Figure 1.66 RSW1 and RSW2

| Pin | Label | Description |
|-------|-------------|-------------------------|
| 1~ 12 | Node Number | Starting Node ID (RSW1) |
| 1~ 12 | Node Number | End Node ID (RSW2) |

※When DSW1 is switched to 1 (mode 1), because RM04PI only takes up one Node at this time, dials RSW1 and RSW2 must be set to the same value.

※When DSW1 is set to ON (mode 2), because one RM04PI can take up to 4 Nodes (Axis0 to Axis3), the interval between RSW1 and RSW2 must not exceed 3. RSW1 must also be set as the starting Slot and RSW2 set as the end Node.
(ex. Change RSW1 to 5, change RSW2 to 8).



Figure 1.67 DSW1

| Pin | Label | Description |
|-----|--------|------------------|
| 1 | MODE_1 | Operation mode 1 |
| ON | MODE_2 | Operation mode 2 |

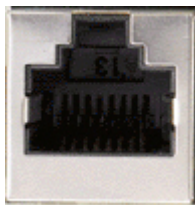
※Adjust the operation mode based on operating requirements



Figure 1.68 DSW2

| Pin | Label | Description |
|-----|-------|-------------|
| 1 | GND | (Reserved) |
| ON | E24V | SINK type |

※Set SINK type for 04PI module based on the type of circuit connection.



1 8

Figure 1.69 CN1 and CN2
Pin definitions

| Pin | Label | Description |
|-----|--------------|----------------------------------|
| 1 | RS485T_1 (+) | 1 st RS485 Signal (+) |
| 2 | RS485T_1 (-) | 1 st RS485 Signal (-) |
| 3 | RS485T_2 (+) | 2 nd RS485 Signal (+) |
| 6 | RS485T_2 (-) | 2 nd RS485 Signal (-) |
| 7 | EGND | RS485 Ground Signal |
| 8 | EGND | RS485 Ground Signal |



1 2 3

Figure 1.70 CN3
Pin definition

| Pin | Label | Description |
|-----|----------|---------------------|
| 3 | GND | Port ground |
| 2 | RS232_TX | Serial port TX port |
| 1 | RS232_RX | Serial port RX port |

※DSUB9 female port is used here (cable-side)

※This port is used for updating the module firmware program



1 2 3

Figure 1.71 CN4
Pin definition

| Pin | Label | Description |
|-----|-------|---------------------|
| 3 | E24V | 24V Voltage Input |
| 2 | GND | Power Ground |
| 1 | FG | Case Ground (Earth) |



Figure 1.72 CN5
Pin definition

| Label | Description |
|-------|-------------------------------------|
| QA | 0-axis Encoder A phase signal Input |
| QB | 0-axis Encoder B phase signal Input |
| QZ | 0-axis Encoder Z phase signal Input |
| +5V | 5V Voltage Output |
| GND | Power Ground |
| MEL | 0-axis Negative Limit Signal Input |
| PEL | 0-axis Positive Limit Signal Input |
| ORG | 0-axis Home Limit Signal Input |
| SLD | 0-axis Slow Down Signal Input |



Figure 1.73 CN6
Pin definition

| Label | Description |
|-------|--|
| GND | Power Ground |
| CW | 0-axis Motor Clockwise Rotation Signal Input |
| CCW | 0-axis Motor CCW Rotation Signal Input |
| +5V | 5V Voltage Output |
| GND | Power Ground |
| DI1 | 0-axis Digital Signal Input 1 |
| DI2 | 0-axis Digital Signal Input 2 |
| DO1 | 0-axis Digital Signal Output 1 |
| DO2 | 0-axis Digital Signal Output 2 |



Figure 1.74 CN7
Pin definition

| Label | Description |
|-------|-------------------------------------|
| QA | 1-axis Encoder A phase signal Input |
| QB | 1-axis Encoder B phase signal Input |
| QZ | 1-axis Encoder Z phase signal Input |
| +5V | 5V Voltage Output |
| GND | Power Ground |
| MEL | 1-axis Negative Limit Signal Input |
| PEL | 1-axis Positive Limit Signal Input |
| ORG | 1-axis Home Limit Signal Input |
| SLD | 1-axis Slow Down Signal Input |



Figure 1.75 CN8
Pin definition

| Label | Description |
|-------|--|
| GND | Power Ground |
| CW | 1-axis Motor Clockwise Rotation Signal Input |
| CCW | 1-axis Motor CCW Rotation Signal Input |
| +5V | 5V Voltage Output |
| GND | Power Ground |
| DI1 | 1-axis Digital Signal Input 1 |
| DI2 | 1-axis Digital Signal Input 2 |
| DO1 | 1-axis Digital Signal Output 1 |
| DO2 | 1-axis Digital Signal Output 2 |



Figure 1.76 CN9
Pin definition

| Label | Description |
|-------|--------------------|
| 24V | 24V Voltage Output |
| 24V | 24V Voltage Output |
| 24V | 24V Voltage Output |
| 24V | 24V Voltage Output |

※ Total voltage Output at 24V is 0.75A (Max)



Figure 1.77 CN10
Pin definition

| Label | Description |
|-------|-------------------------------------|
| QA | 2-axis Encoder A phase signal Input |
| QB | 2-axis Encoder B phase signal Input |
| QZ | 2-axis Encoder Z phase signal Input |
| +5V | 5V Voltage Output |
| GND | Power Ground |
| MEL | 2-axis Negative Limit Signal Input |
| PEL | 2-axis Positive Limit Signal Input |
| ORG | 2-axis Home Limit Signal Input |
| SLD | 2-axis Slow Down Signal Input |



Figure 1.78 CN11
Pin definition

| Label | Description |
|-------|--|
| GND | Power Ground |
| CW | 2-axis Motor Clockwise Rotation Signal Input |
| CCW | 2-axis Motor CCW Rotation Signal Input |
| +5V | 5V Voltage Output |
| GND | Power Ground |
| DI1 | 2-axis Digital Signal Input 1 |
| DI2 | 2-axis Digital Signal Input 2 |
| DO1 | 2-axis Digital Signal Output 1 |
| DO2 | 2-axis Digital Signal Output 2 |



Figure 1.79 CN12
Pin definition

| Label | Description |
|-------|-------------------------------------|
| QA | 3-axis Encoder A phase signal Input |
| QB | 3-axis Encoder B phase signal Input |
| QZ | 3-axis Encoder Z phase signal Input |
| +5V | 5V Voltage Output |
| GND | Power Ground |
| MEL | 3-axis Negative Limit Signal Input |
| PEL | 3-axis Positive Limit Signal Input |
| ORG | 3-axis Home Limit Signal Input |
| SLD | 3-axis Slow Down Signal Input |



Figure 1.80 CN13
Pin definition

| Label | Description |
|-------|--|
| GND | Power Ground |
| CW | 3-axis Motor Clockwise Rotation Signal Input |
| CCW | 3-axis Motor CCW Rotation Signal Input |
| +5V | 5V Voltage Output |
| GND | Power Ground |
| DI1 | 3-axis Digital Signal Input 1 |
| DI2 | 3-axis Digital Signal Input 2 |
| DO1 | 3-axis Digital Signal Output 1 |
| DO2 | 3-axis Digital Signal Output 2 |



Figure 1.81 LED definition

| Label | Description |
|---------------|--------------------------------|
| POWER | Voltage status indicator |
| RUN | Operation indicator |
| ERROR | Error indicator |
| DMC | DMC communication indicator |
| Axis 0 QA~DO2 | 0-axis Signal Output Indicator |
| Axis 1 QA~DO2 | 1-axis Signal Output Indicator |
| Axis 2 QA~DO2 | 2-axis Signal Output Indicator |
| Axis 3 QA~DO2 | 3-axis Signal Output Indicator |

1.8.3 ASD-DMC-RM04DA Module and Connectors



Figure 1.84 RSW

| Pin | Label | Description |
|-------|-------------|------------------|
| 1~ 12 | Node Number | Starting Node ID |



1 8

Figure 1.85 CN1 and CN2
Pin definitions

| Pin | Label | Description |
|-----|--------------|----------------------------------|
| 1 | RS485T_1 (+) | 1 st RS485 Signal (+) |
| 2 | RS485T_1 (-) | 1 st RS485 Signal (-) |
| 3 | RS485T_2 (+) | 2 nd RS485 Signal (+) |
| 6 | RS485T_2 (-) | 2 nd RS485 Signal (-) |
| 7 | EGND | RS485 Ground Signal |
| 8 | EGND | RS485 Ground Signal |



1 2 3

Figure 1.86 CN3
Pin definition

| Pin | Label | Description |
|-----|-------|---------------------|
| 3 | E24V | 24V Voltage Input |
| 2 | GND | Power Ground |
| 1 | FG | Case Ground (Earth) |

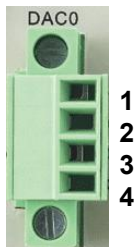


Figure 1.87 CN4
Pin definition

| Pin | Label | Description |
|-----|-------|----------------------------|
| 1 | V+ | Voltage Output 1 (-10~10V) |
| 2 | I+ | Current Output 1 (0~24mA) |
| 3 | COM | Common point |
| 4 | FG | Case Ground (Earth) |



Figure 1.88 CN5
Pin definition

| Pin | Label | Description |
|-----|-------|----------------------------|
| 1 | V+ | Voltage Output 2 (-10~10V) |
| 2 | I+ | Current Output 2 (0~24mA) |
| 3 | COM | Common point |
| 4 | FG | Case Ground (Earth) |

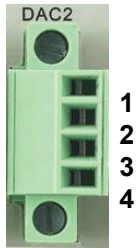


Figure 1.89 CN6
Pin definition

| Pin | Label | Description |
|-----|-------|----------------------------|
| 1 | V+ | Voltage Output 3 (-10~10V) |
| 2 | I+ | Current Output 3 (0~24mA) |
| 3 | COM | Common point |
| 4 | FG | Case Ground (Earth) |



Figure 1.90 CN7
Pin definition

| Pin | Label | Description |
|-----|-------|----------------------------|
| 1 | V+ | Voltage Output 4 (-10~10V) |
| 2 | I+ | Current Output 4 (0~24mA) |
| 3 | COM | Common point |
| 4 | FG | Case Ground (Earth) |

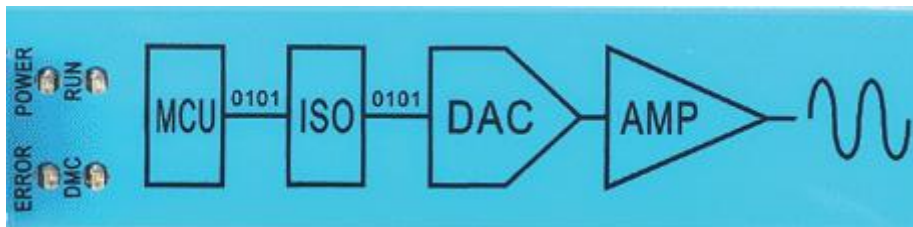


Figure 1.91 LED definition

| Label | Description |
|-------|-----------------------------|
| POWER | Voltage status indicator |
| RUN | Operation indicator |
| ERROR | Error indicator |
| DMC | DMC communication indicator |

1.9 ASD-DMC-RM04AD

1.9.1 ASD-DMC-RM04AD Product Profile

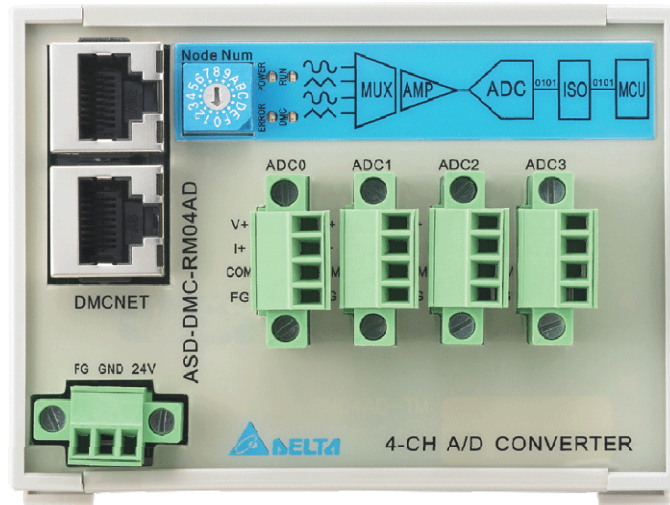


Figure 1.92 Front view of module

1.9.2 ASD-DMC-RM04AD Part Names

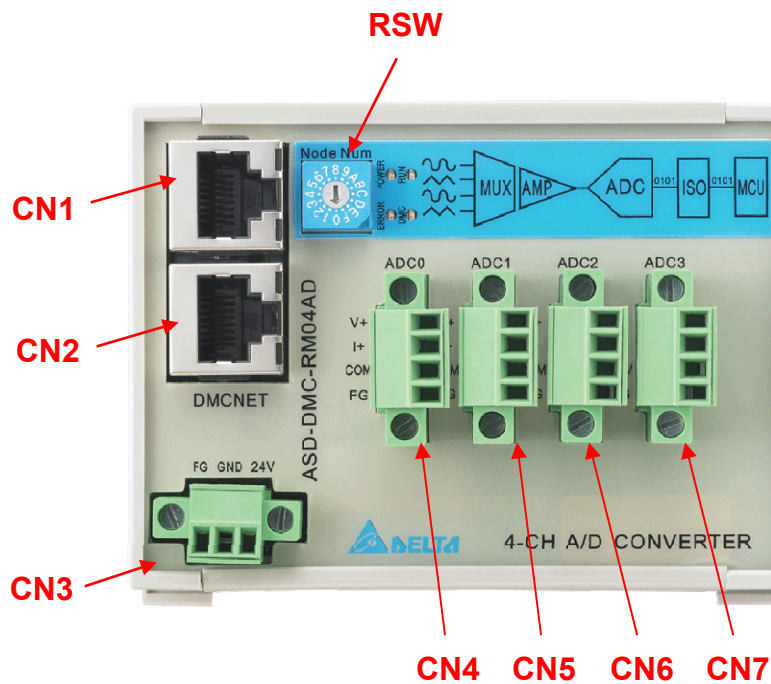


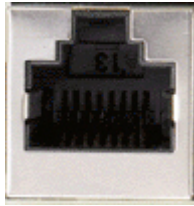
Figure 1.93 RM04AD Part Names

1.9.3 ASD-DMC-RM04AD Module and Connectors



Figure 1.94 RSW

| Pin | Label | Description |
|-------|-------------|------------------|
| 1~ 12 | Node Number | Starting Node ID |



1 8

Figure 1.95 CN1 and CN2
Pin definitions

| Pin | Label | Description |
|-----|--------------|----------------------------------|
| 1 | RS485T_1 (+) | 1 st RS485 Signal (+) |
| 2 | RS485T_1 (-) | 1 st RS485 Signal (-) |
| 3 | RS485T_2 (+) | 2 nd RS485 Signal (+) |
| 6 | RS485T_2 (-) | 2 nd RS485 Signal (-) |
| 7 | EGND | RS485 Ground Signal |
| 8 | EGND | RS485 Ground Signal |



1 2 3

Figure 1.96 CN3
Pin definition

| Pin | Label | Description |
|-----|-------|---------------------|
| 3 | E24V | 24V Voltage Input |
| 2 | GND | Power Ground |
| 1 | FG | Case Ground (Earth) |



1
2
3
4

Figure 1.97 CN4
Pin definition

| Pin | Label | Description |
|-----|-------|---------------------|
| 1 | V+ | Voltage Input 1 |
| 2 | I+ | Current Input 1 |
| 3 | COM | Common point |
| 4 | FG | Case Ground (Earth) |

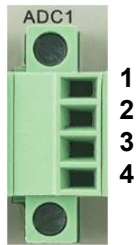


Figure 1.98 CN5
Pin definition

| Pin | Label | Description |
|-----|-------|---------------------|
| 1 | V+ | Voltage Input 2 |
| 2 | I+ | Current Input 2 |
| 3 | COM | Common point |
| 4 | FG | Case Ground (Earth) |



Figure 1.99 CN6
Pin definition

| Pin | Label | Description |
|-----|-------|---------------------|
| 1 | V+ | Voltage Input 3 |
| 2 | I+ | Current Input 3 |
| 3 | COM | Common point |
| 4 | FG | Case Ground (Earth) |



Figure 1.100 CN7
Pin definition

| Pin | Label | Description |
|-----|-------|---------------------|
| 1 | V+ | Voltage Input 4 |
| 2 | I+ | Current Input 4 |
| 3 | COM | Common point |
| 4 | FG | Case Ground (Earth) |

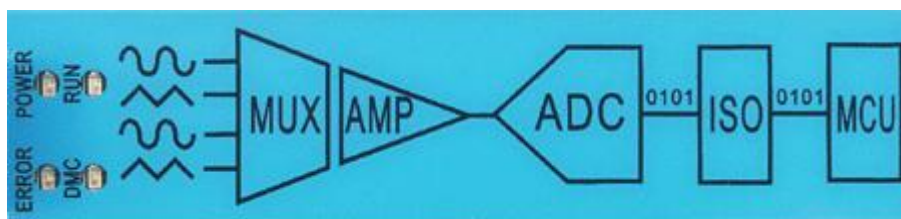


Figure 1.101 LED definition

| Label | Description |
|-------|-----------------------------|
| POWER | Voltage status indicator |
| RUN | Operation indicator |
| ERROR | Error indicator |
| DMC | DMC communication indicator |

1.10 ASD-DMC-RM32PT

1.10.1 ASD-DMC-RM32PT Product Profile

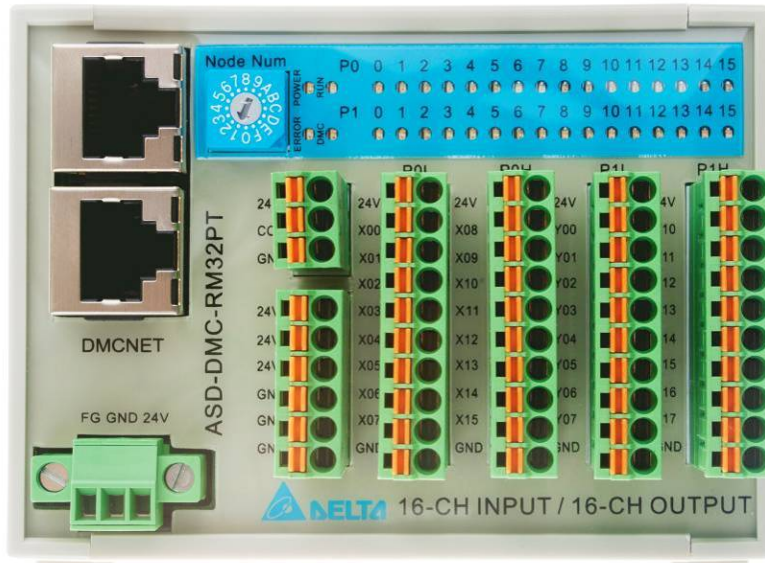


Figure 1.102 Front view of module

1.10.2 ASD-DMC-RM32PT Part Names

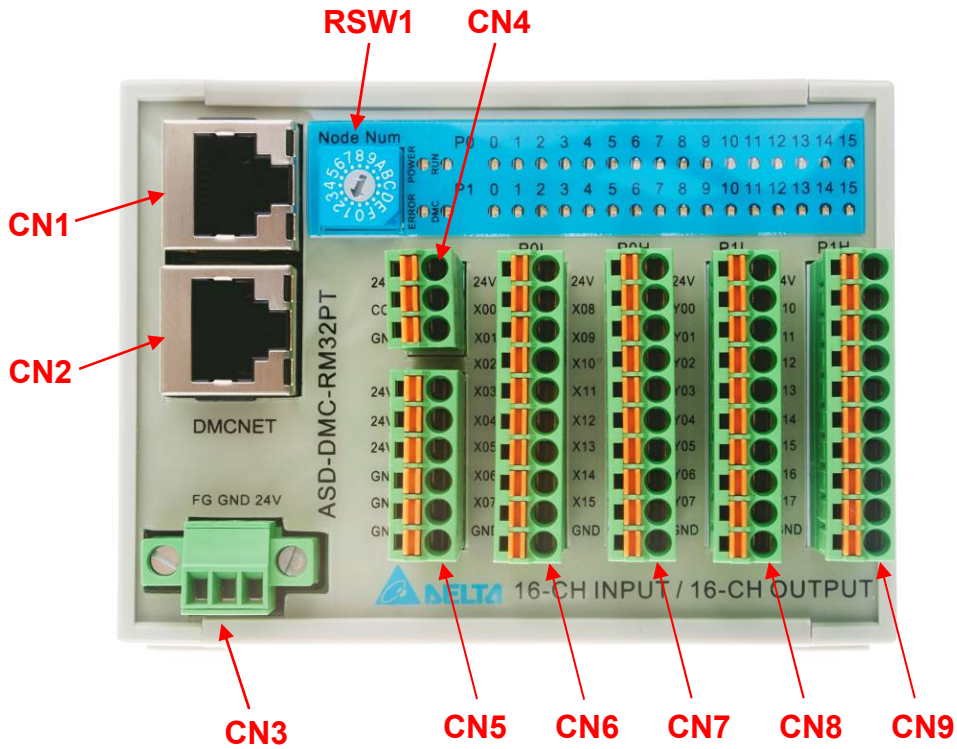


Figure 1.103 RM32PT Part Names

1.10.3 ASD-DMC-RM32PT Module and Connectors

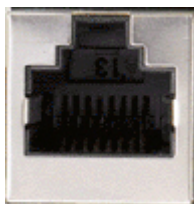


Figure 1.104 RSW1

| Pin | Label | Description |
|----------------|-------------|-------------|
| 1 ~ 9 A ~ F | Node Number | Node ID |

※ Invalid when dial is turned to 0, D ~ F

※ Each module takes up one Node ID



1 8

Figure 1.105 CN1 and CN2

Pin definitions

| Pin | Label | Description |
|-----|--------------|----------------------------------|
| 1 | RS485T_1 (+) | 1 st RS485 Signal (+) |
| 2 | RS485T_1 (-) | 1 st RS485 Signal (-) |
| 3 | RS485T_2 (+) | 2 nd RS485 Signal (+) |
| 6 | RS485T_2 (-) | 2 nd RS485 Signal (-) |
| 7 | EGND | RS485 Ground Signal |
| 8 | EGND | RS485 Ground Signal |



1 2 3

Figure 1.106 CN3

Pin definition

| Pin | Label | Description |
|-----|-------|---------------------|
| 3 | E24V | 24V Voltage Input |
| 2 | GND | Power Ground |
| 1 | FG | Case Ground (Earth) |



Figure 1.107 CN4

Pin definition

| Pin | Label | Description |
|-----|-------|---------------------|
| 3 | E24V | 24V Voltage Output |
| 2 | COM | Common Input Signal |
| 1 | GND | Power Ground |

※ This connector is used with the Input signal common point for Pull high or Pull low

※ COM to 24V → Low active (Pull high)

※ COM to GND → High active (Pull low)



Figure 1.108 CN5
Pin definition

| Label | Description |
|-------|--------------------|
| 24V | 24V Voltage Output |
| 24V | 24V Voltage Output |
| 24V | 24V Voltage Output |
| GND | Power Ground |
| GND | Power Ground |
| GND | Power Ground |

※ Total voltage Output at 24V is 1.5A (Max)

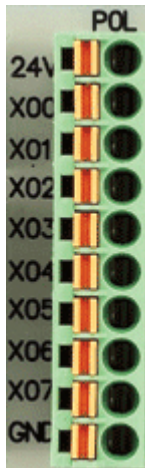


Figure 1.109 CN6
Pin definition

| Label | Description |
|-------|--------------------|
| 24V | 24V Voltage Output |
| X00 | P0 GPIO 1 Input |
| X01 | P0 GPIO 2 Input |
| X02 | P0 GPIO 3 Input |
| X03 | P0 GPIO 4 Input |
| X04 | P0 GPIO 5 Input |
| X05 | P0 GPIO 6 Input |
| X06 | P0 GPIO 7 Input |
| X07 | P0 GPIO 8 Input |
| GND | Power Ground |



Figure 1.110 CN7
Pin definition

| Label | Description |
|-------|--------------------|
| 24V | 24V Voltage Output |
| X08 | P0 GPIO 9 Input |
| X09 | P0 GPIO 10 Input |
| X10 | P0 GPIO 11 Input |
| X11 | P0 GPIO 12 Input |
| X12 | P0 GPIO 13 Input |
| X13 | P0 GPIO 14 Input |
| X14 | P0 GPIO 15 Input |
| X15 | P0 GPIO 16 Input |
| GND | Power Ground |

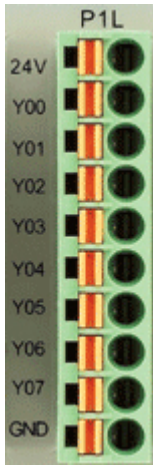


Figure 1.111 CN6
Pin definition

| Label | Description |
|-------|--------------------|
| 24V | 24V Voltage Output |
| Y00 | P1 GPIO 1 Output |
| Y01 | P1 GPIO 2 Output |
| Y02 | P1 GPIO 3 Output |
| Y03 | P1 GPIO 4 Output |
| Y04 | P1 GPIO 5 Output |
| Y05 | P1 GPIO 6 Output |
| Y06 | P1 GPIO 7 Output |
| Y07 | P1 GPIO 8 Output |
| GND | Power Ground |

※ Output from one GPIO is 0.1 A(Max)



Figure 1.112 CN7
Pin definition

| Label | Description |
|-------|--------------------|
| 24V | 24V Voltage Output |
| Y08 | P1 GPIO 9 Output |
| Y09 | P1 GPIO 10 Output |
| Y10 | P1 GPIO 11 Output |
| Y11 | P1 GPIO 12 Output |
| Y12 | P1 GPIO 13 Output |
| Y13 | P1 GPIO 14 Output |
| Y14 | P1 GPIO 15 Output |
| Y15 | P1 GPIO 16 Output |
| GND | Power Ground |

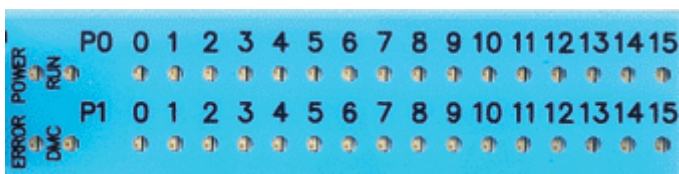


Figure 1.113 LED definition

| Label | Description |
|---------|--------------------------------|
| POWER | Voltage status indicator |
| RUN | Operation indicator |
| ERROR | Error indicator |
| DMC | DMC communication indicator |
| P0 0~15 | P0 0~15 signal Input indicator |
| P1 0~15 | P1 0~15 signal Input indicator |

1.11 ASD-DMC-RM64MN1

1.11.1 ASD-DMC-RM64MN1 Product Profile

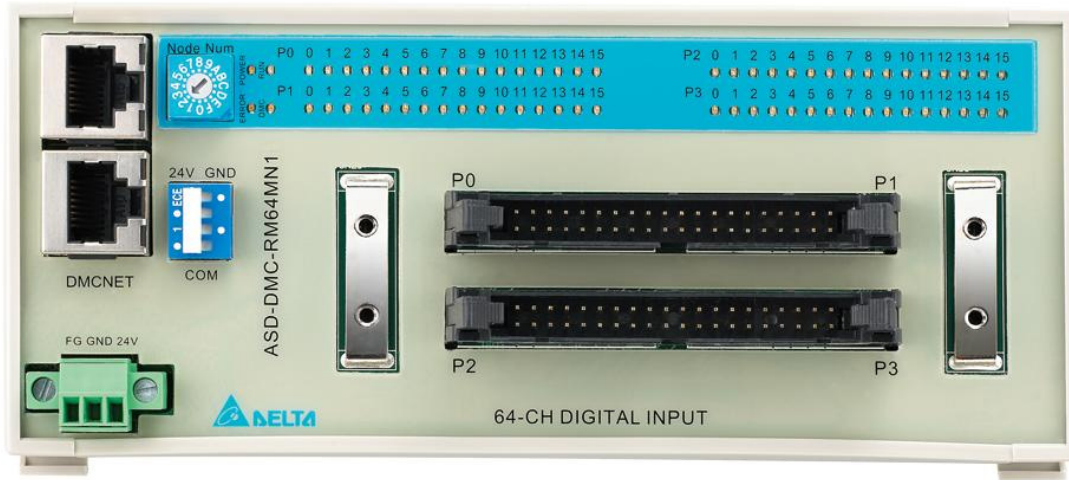


Figure 1.114 Front view of module

1.11.2 ASD-DMC-RM64MN1 Part Names

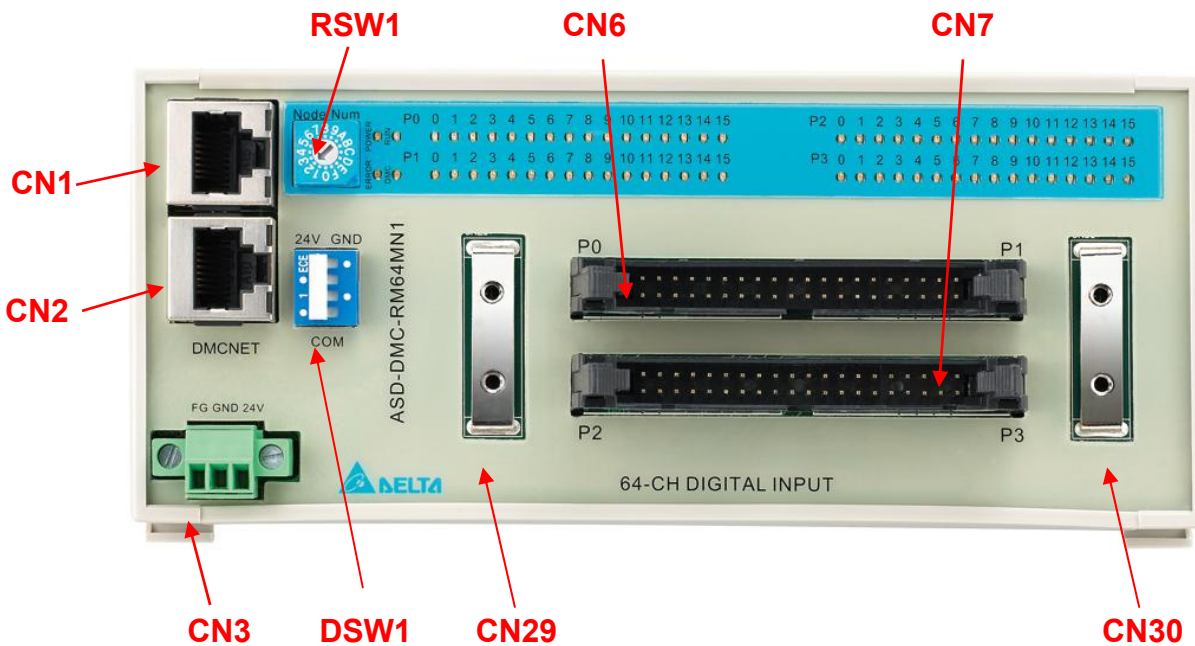


Figure 1.115 RM64MN1 Part Names

1.11.3 ASD-DMC-RM64MN1 Module and Connectors

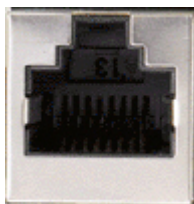


Figure 1.116 RSW1

| Pin | Label | Description |
|------------|-------------|-------------|
| 1~9 A~F | Node Number | Node ID |

※ Invalid when dial is turned to 0, D ~ F

※ Each module takes up one Node ID



1 8

Figure 1.117 CN1 and CN2

Pin definitions

| Pin | Label | Description |
|-----|--------------|----------------------------------|
| 1 | RS485T_1 (+) | 1 st RS485 Signal (+) |
| 2 | RS485T_1 (-) | 1 st RS485 Signal (-) |
| 3 | RS485T_2 (+) | 2 nd RS485 Signal (+) |
| 6 | RS485T_2 (-) | 2 nd RS485 Signal (-) |
| 7 | GND | RS485 Ground Signal |
| 8 | GND | RS485 Ground Signal |



1 2 3

Figure 1.118 CN3

Pin definition

| Pin | Label | Description |
|-----|-------|---------------------|
| 1 | FG | Case Ground (Earth) |
| 2 | GND | Power Ground |
| 3 | 24V | 24V Voltage Input |



Figure 1.119 DSW1

Pin definition

| Label | Description |
|-------|---------------------|
| 24V | 24V Voltage Output |
| COM | Common Input Signal |
| GND | Power Ground |

※ This connector is used with the Input signal common point for Pull high or Pull low

※ COM to 24V (set to position marked as 1) → Low active (Pull high)

※ COM to GND → High active (Pull low)

※ Total Input voltage is 3.0A(Max)



※ This is a metallic fastener used for connecting and securing the customer's own daughter board.

Figure 1.120 CN29 & CN30



Figure 1.121 CN6
Pin definition

| Pin | Description | Pin | Description |
|-----|--------------------|-----|--------------------|
| 01 | P0 GPIO 1 Input | 02 | P0 GPIO 2 Input |
| 03 | P0 GPIO 3 Input | 04 | P0 GPIO 4 Input |
| 05 | P0 GPIO 5 Input | 06 | P0 GPIO 6 Input |
| 07 | P0 GPIO 7 Input | 08 | P0 GPIO 8 Input |
| 08 | P0 GPIO 9 Input | 10 | P0 GPIO 10 Input |
| 11 | P0 GPIO 11 Input | 12 | P0 GPIO 12 Input |
| 13 | P0 GPIO 13 Input | 14 | P0 GPIO 14 Input |
| 15 | P0 GPIO 15 Input | 16 | P0 GPIO 16 Input |
| 17 | Power Ground | 18 | Power Ground |
| 19 | 24V Voltage Output | 20 | 24V Voltage Output |
| 21 | P1 GPIO 1 Input | 22 | P1 GPIO 2 Input |
| 23 | P1 GPIO 3 Input | 24 | P1 GPIO 4 Input |
| 25 | P1 GPIO 5 Input | 26 | P1 GPIO 6 Input |
| 27 | P1 GPIO 7 Input | 28 | P1 GPIO 8 Input |
| 29 | P1 GPIO 9 Input | 30 | P1 GPIO 10 Input |
| 31 | P1 GPIO 11 Input | 32 | P1 GPIO 12 Input |
| 33 | P1 GPIO 13 Input | 34 | P1 GPIO 14 Input |
| 35 | P1 GPIO 15 Input | 36 | P1 GPIO 16 Input |
| 37 | Power Ground | 38 | Power Ground |
| 39 | 24V Voltage Output | 40 | 24V Voltage Output |



Figure 1.122 CN7
Pin definition

| Pin | Description | Pin | Description |
|-----|--------------------|-----|--------------------|
| 01 | P2 GPIO 1 Input | 02 | P2 GPIO 2 Input |
| 03 | P2 GPIO 3 Input | 04 | P2 GPIO 4 Input |
| 05 | P2 GPIO 5 Input | 06 | P2 GPIO 6 Input |
| 07 | P2 GPIO 7 Input | 08 | P2 GPIO 8 Input |
| 08 | P2 GPIO 9 Input | 10 | P2 GPIO 10 Input |
| 11 | P2 GPIO 11 Input | 12 | P2 GPIO 12 Input |
| 13 | P2 GPIO 13 Input | 14 | P2 GPIO 14 Input |
| 15 | P2 GPIO 15 Input | 16 | P2 GPIO 16 Input |
| 17 | Power Ground | 18 | Power Ground |
| 19 | 24V Voltage Output | 20 | 24V Voltage Output |
| 21 | P3 GPIO 1 Input | 22 | P3 GPIO 2 Input |
| 23 | P3 GPIO 3 Input | 24 | P3 GPIO 4 Input |
| 25 | P3 GPIO 5 Input | 26 | P3 GPIO 6 Input |
| 27 | P3 GPIO 7 Input | 28 | P3 GPIO 8 Input |
| 29 | P3 GPIO 9 Input | 30 | P3 GPIO 10 Input |
| 31 | P3 GPIO 11 Input | 32 | P3 GPIO 12 Input |
| 33 | P3 GPIO 13 Input | 34 | P3 GPIO 14 Input |
| 35 | P3 GPIO 15 Input | 36 | P3 GPIO 16 Input |
| 37 | Power Ground | 38 | Power Ground |
| 39 | 24V Voltage Output | 40 | 24V Voltage Output |



Figure 1.123 LED definition

| Label | Description |
|---------|--------------------------------|
| POWER | Voltage status indicator |
| RUN | Operation indicator |
| ERROR | Error indicator |
| DMC | DMC communication indicator |
| P0 0~15 | P0 0~15 signal Input indicator |
| P1 0~15 | P1 0~15 signal Input indicator |
| P2 0~15 | P2 0~15 signal Input indicator |
| P3 0~15 | P3 0~15 signal Input indicator |

1.12 ASD-DMC-RM64NT1

1.12.1 ASD-DMC-RM64NT1 Product Profile

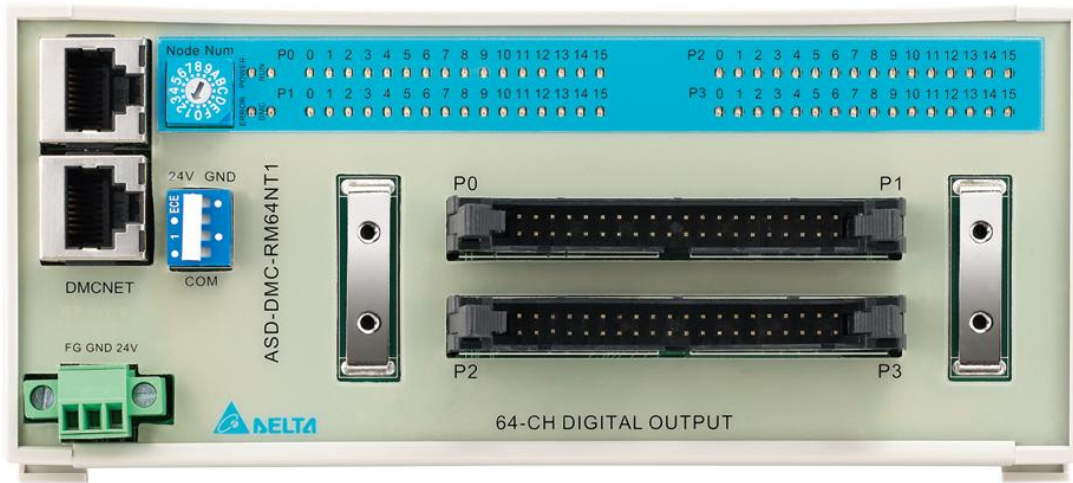


Figure 1.124 Front view of module

1.12.2 ASD-DMC-RM64NT1 Part Names

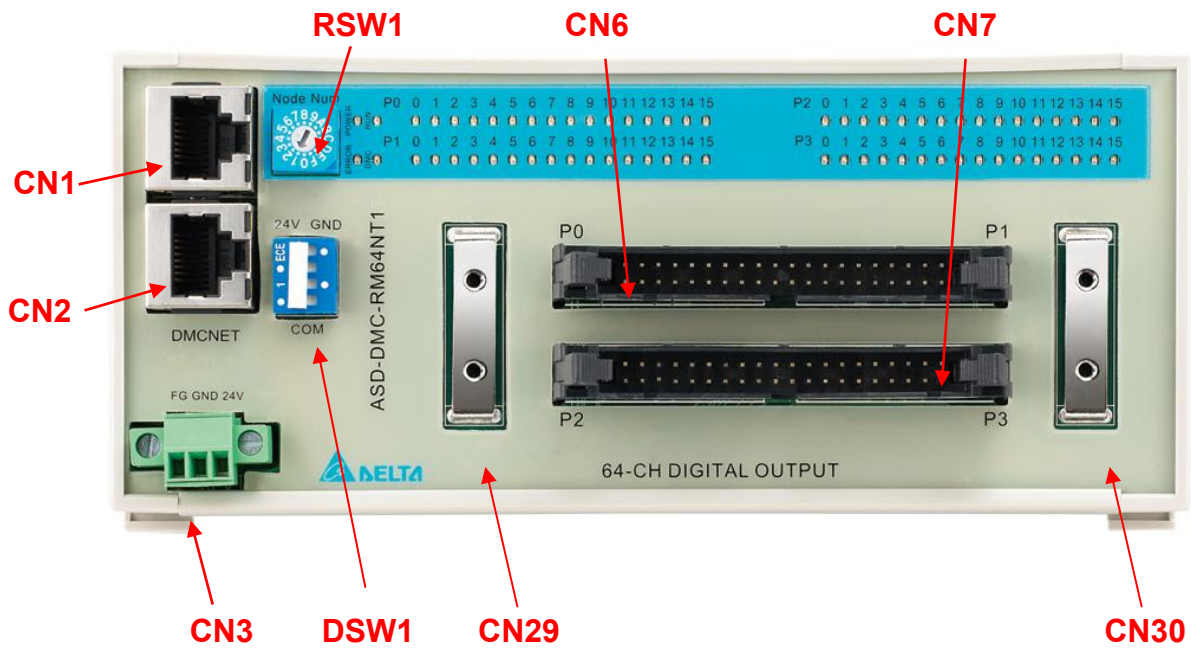


Figure 1.125 RM64NT1 Part Names

1.12.3 ASD-DMC-RM64NT1 Module and Connectors

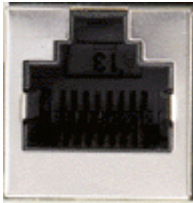


Figure 1.126 RSW1

| Pin | Label | Description |
|-------|-------------|-------------|
| 0 ~ 9 | Node Number | Node ID |
| A ~ F | | |

※ Invalid when dial is turned to 0, D ~ F

※ Each module takes up one Node ID



1 8

Figure 1.127 CN1 and CN2
Pin definitions

| Label | Description |
|--------------|----------------------------------|
| RS485T_1 (+) | 1 st RS485 Signal (+) |
| RS485T_1 (-) | 1 st RS485 Signal (-) |
| RS485T_2 (+) | 2 nd RS485 Signal (+) |
| RS485T_2 (-) | 2 nd RS485 Signal (-) |
| GND | RS485 Ground Signal |
| GND | RS485 Ground Signal |



1 2 3

Figure 1.128 CN3
Pin definition

| Pin | Label | Description |
|-----|-------|---------------------|
| 1 | FG | Case Ground (Earth) |
| 2 | GND | Power Ground |
| 3 | 24V | 24V Voltage Input |



Figure 1.129 DSW1
Pin definition

| Label | Description |
|-------|------------------------|
| 24V | 24V Voltage Output |
| N/A | Wire to wire connector |
| GND | Power Ground |



※ This is a metallic fastener used for connecting and securing the customer's own daughter board.

Figure 1.130 CN29 & CN30



Figure 1.131 CN7
Pin definition

| Pin | Description | Pin | Description |
|-----|--------------------|-----|--------------------|
| 01 | P0 GPIO 1 Output | 02 | P0 GPIO 2 Output |
| 03 | P0 GPIO 3 Output | 04 | P0 GPIO 4 Output |
| 05 | P0 GPIO 5 Output | 06 | P0 GPIO 6 Output |
| 07 | P0 GPIO 7 Output | 08 | P0 GPIO 8 Output |
| 08 | P0 GPIO 9 Output | 10 | P0 GPIO 10 Output |
| 11 | P0 GPIO 11 Output | 12 | P0 GPIO 12 Output |
| 13 | P0 GPIO 13 Output | 14 | P0 GPIO 14 Output |
| 15 | P0 GPIO 15 Output | 16 | P0 GPIO 16 Output |
| 17 | Power Ground | 18 | Power Ground |
| 19 | 24V Voltage Output | 20 | 24V Voltage Output |
| 21 | P1 GPIO 1 Output | 22 | P1 GPIO 2 Output |
| 23 | P1 GPIO 3 Output | 24 | P1 GPIO 4 Output |
| 25 | P1 GPIO 5 Output | 26 | P1 GPIO 6 Output |
| 27 | P1 GPIO 7 Output | 28 | P1 GPIO 8 Output |
| 29 | P1 GPIO 9 Output | 30 | P1 GPIO 10 Output |
| 31 | P1 GPIO 11 Output | 32 | P1 GPIO 12 Output |
| 33 | P1 GPIO 13 Output | 34 | P1 GPIO 14 Output |
| 35 | P1 GPIO 15 Output | 36 | P1 GPIO 16 Output |
| 37 | Power Ground | 38 | Power Ground |
| 39 | 24V Voltage Output | 40 | 24V Voltage Output |



Figure 1.132 CN7
Pin definition

| Pin | Description | Pin | Description |
|-----|--------------------|-----|--------------------|
| 01 | P2 GPIO 1 Output | 02 | P2 GPIO 2 Output |
| 03 | P2 GPIO 3 Output | 04 | P2 GPIO 4 Output |
| 05 | P2 GPIO 5 Output | 06 | P2 GPIO 6 Output |
| 07 | P2 GPIO 7 Output | 08 | P2 GPIO 8 Output |
| 08 | P2 GPIO 9 Output | 10 | P2 GPIO 10 Output |
| 11 | P2 GPIO 11 Output | 12 | P2 GPIO 12 Output |
| 13 | P2 GPIO 13 Output | 14 | P2 GPIO 14 Output |
| 15 | P2 GPIO 15 Output | 16 | P2 GPIO 16 Output |
| 17 | Power Ground | 18 | Power Ground |
| 19 | 24V Voltage Output | 20 | 24V Voltage Output |
| 21 | P3 GPIO 1 Output | 22 | P3 GPIO 2 Output |
| 23 | P3 GPIO 3 Output | 24 | P3 GPIO 4 Output |
| 25 | P3 GPIO 5 Output | 26 | P3 GPIO 6 Output |
| 27 | P3 GPIO 7 Output | 28 | P3 GPIO 8 Output |
| 29 | P3 GPIO 9 Output | 30 | P3 GPIO 10 Output |
| 31 | P3 GPIO 11 Output | 32 | P3 GPIO 12 Output |
| 33 | P3 GPIO 13 Output | 34 | P3 GPIO 14 Output |
| 35 | P3 GPIO 15 Output | 36 | P3 GPIO 16 Output |
| 37 | Power Ground | 38 | Power Ground |
| 39 | 24V Voltage Output | 40 | 24V Voltage Output |



Figure 1.133 LED definition

| Label | Description |
|---------|---------------------------------|
| POWER | Voltage status indicator |
| RUN | Operation indicator |
| ERROR | Error indicator |
| DMC | DMC communication indicator |
| P0 0~15 | P0 0~15 signal output indicator |
| P1 0~15 | P1 0~15 signal output indicator |
| P2 0~15 | P2 0~15 signal output indicator |
| P3 0~15 | P3 0~15 signal output indicator |

1.13 Wiring Example

1.13.1 Wiring of RM32MN/RM32PT/RM64MN/RM64MN1 Input Points

Connection Type

Type 1: SINK
(Current flows into common point)

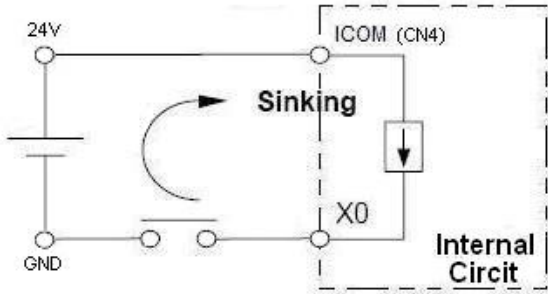


Figure 1.134

Type 2: SOURCE
(Current flows out of common point)

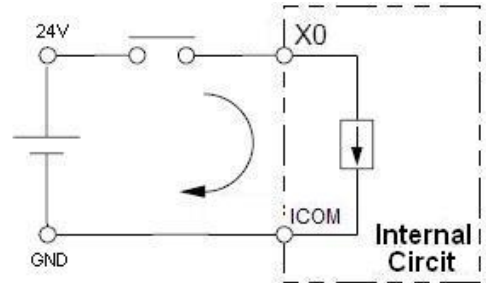


Figure 1.135

SINK type wiring

Input point loop equivalent circuit

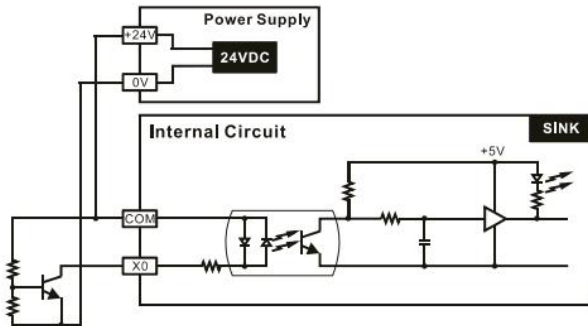


Figure 1.136

SOURCE type wiring

Input point loop equivalent circuit

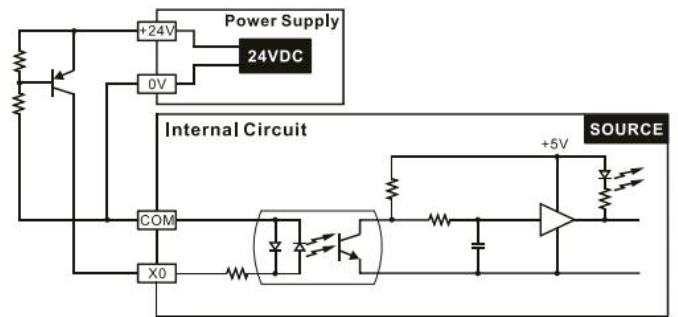


Figure 1.137

1.13.2 Wiring of RM32NT/RM32PT/RM64NT/RM64NT1 Output Points

Connection Type: Transistor T

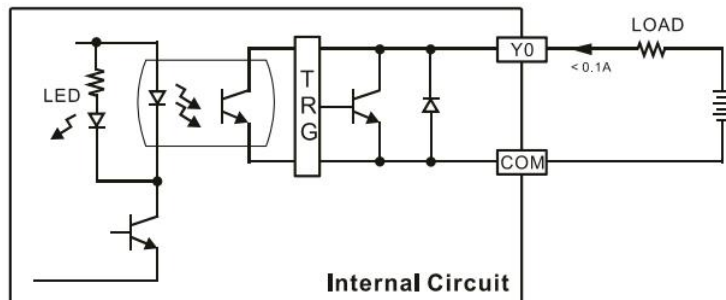


Figure 1.138

1.13.3 Wiring of RM04PI Input Point (MEL, PEL, ORG, SLD)

Connection Type: SINK

SINK
(Current flows into common point)

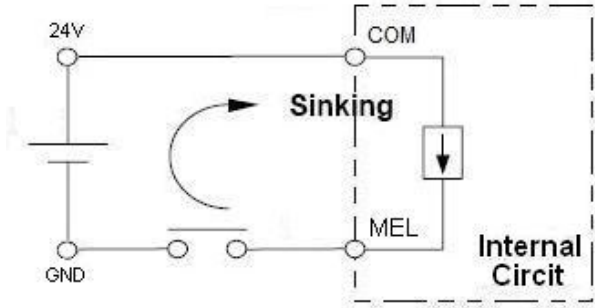


Figure 1.139

SINK type connection
(Input point loop equivalent circuit)

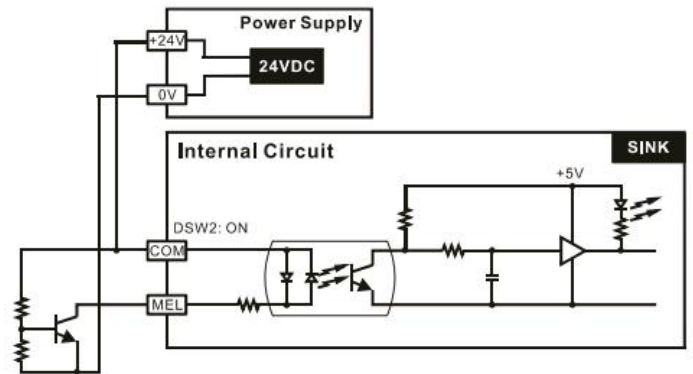


Figure 1.140

1.13.4 Wiring of RM04PI Output Point (CW, CCW, D01, D02)

Connection Type: Transistor T

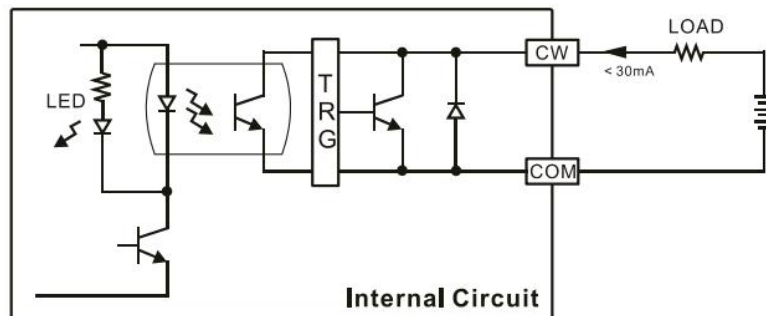


Figure 1.141

1.13.5 Connecting RM04PI to Stepping Motor Drive

Diagram of connecting to a 5-phase stepping motor drive

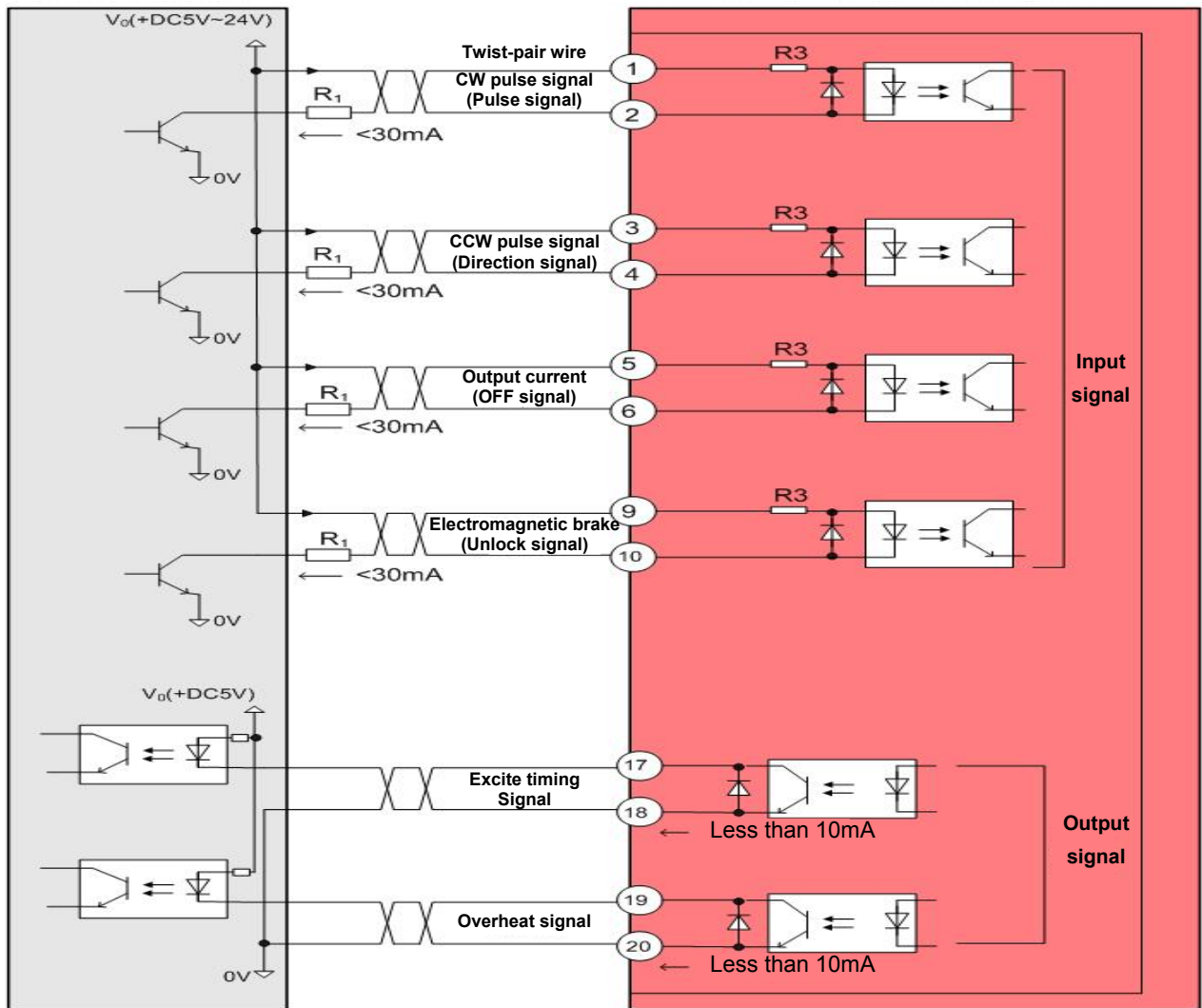


Figure 1.142

| Pin | RM04PI Signal mark | Corresponding Step number | Pin | RM04PI Signal mark | Corresponding Step number |
|-----|--------------------|---------------------------|-----|--------------------|---------------------------|
| 8 | CW | ② | 4 | DI1 | ⑰ |
| 7 | CCW | ④ | 3 | DI2 | ⑲ |
| 6 | +5V | ①,③,⑤,⑨ | 2 | DO1 | ⑥ |
| 5 | GND | ⑱,⑳ | 1 | DO2 | ⑩ |

※Attention! The table for external power supply and corresponding series resistor is shown below:

| External power voltage (V_o) | External series resistor (R_1) |
|----------------------------------|------------------------------------|
| 5V | External resistor not needed |
| 24V | 2.2K Ω /2W |

© If the wiring environment has more ambient noise or involves longer wiring distances, a 24Vdc external power supply is recommended instead.

Diagram of connecting to a 2-phase stepping motor drive

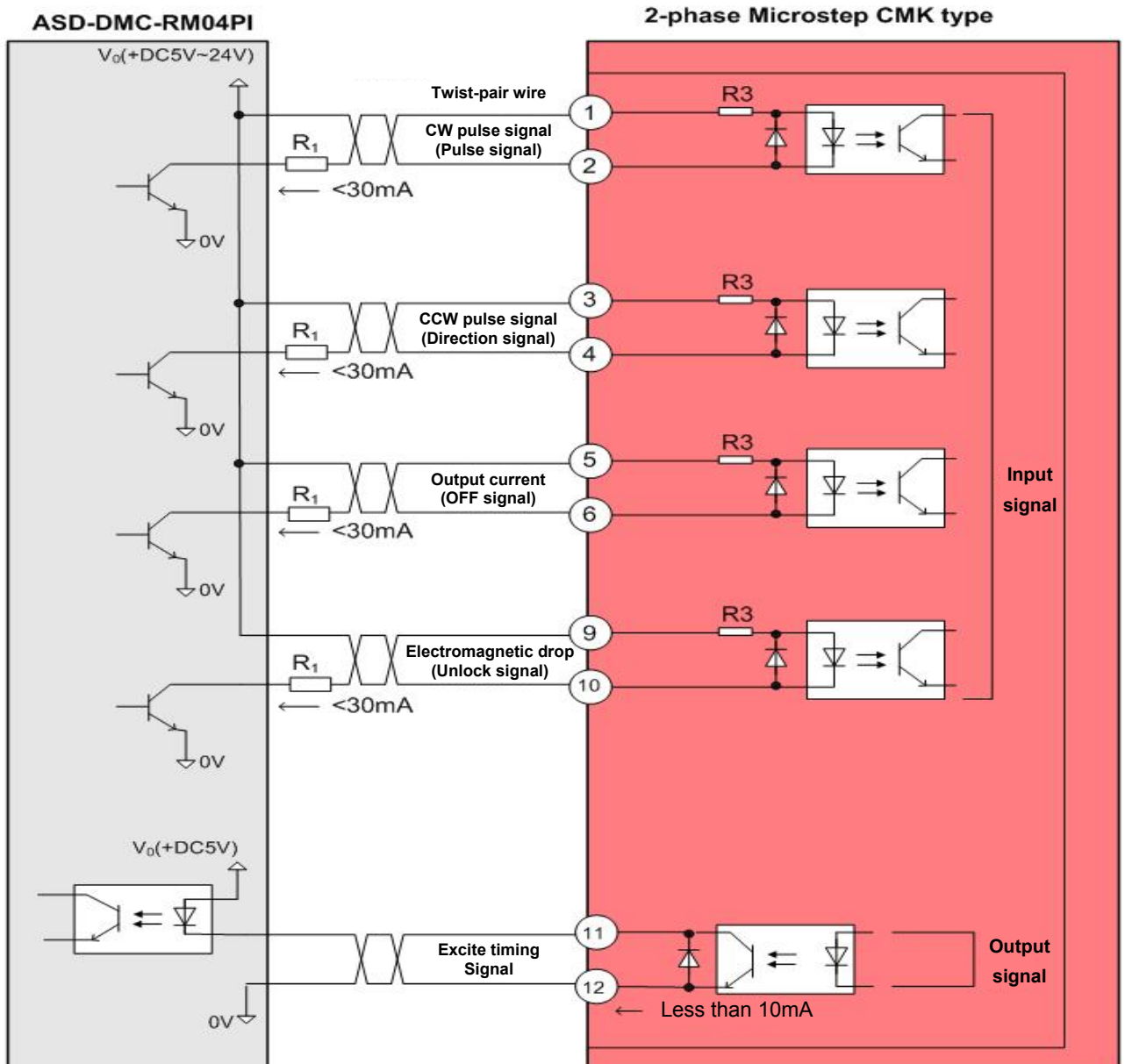


Figure 1.143

| Pin | RM04PI Signal mark | Corresponding Step number | Pin | RM04PI Signal mark | Corresponding Step number |
|-----|--------------------|---------------------------|-----|--------------------|---------------------------|
| 8 | CW | ② | 4 | DI1 | ⑪ |
| 7 | CCW | ④ | 3 | DI2 | |
| 6 | +5V | ①,③,⑤,⑨ | 2 | DO1 | ⑥ |
| 5 | GND | □ | 1 | DO2 | ⑩ |

※Attention! The table for external power supply and corresponding series resistor is shown below:

| External power voltage (Vo) | External series resistor (R1) |
|-----------------------------|-------------------------------|
| 5V | External resistor not needed |
| 24V | 2.2KΩ/2W |

© If the wiring environment has more ambient noise or involves longer wiring distances, a 24Vdc external power supply is recommended instead.

1.13.6 Connecting RM04PI to Encoder

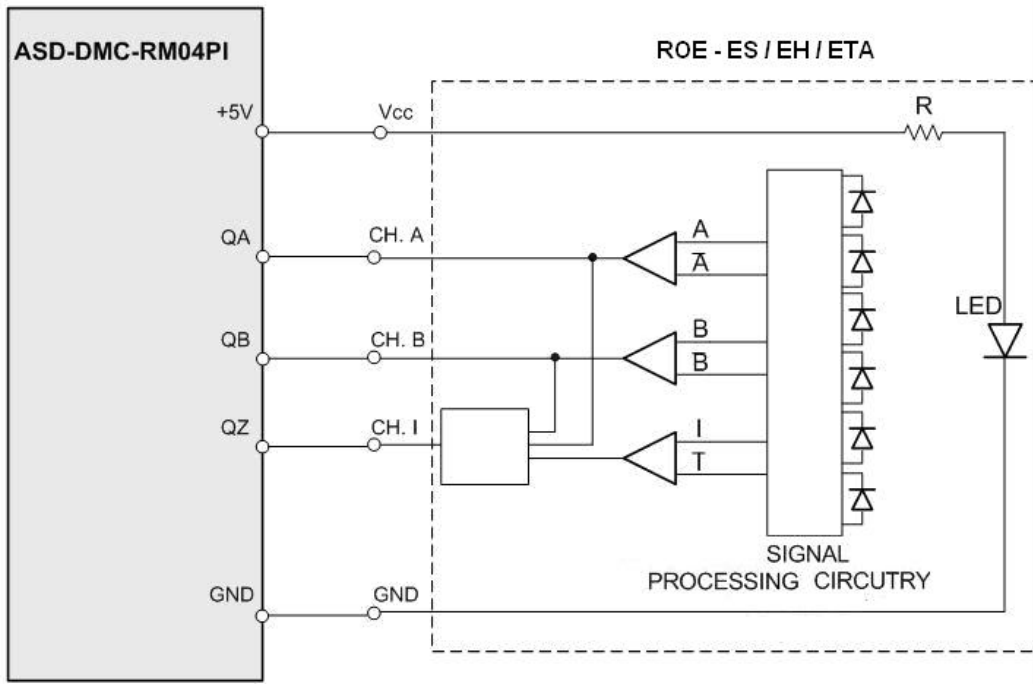


Figure 1.144

1.13.7 Connecting RM64MN to MPG

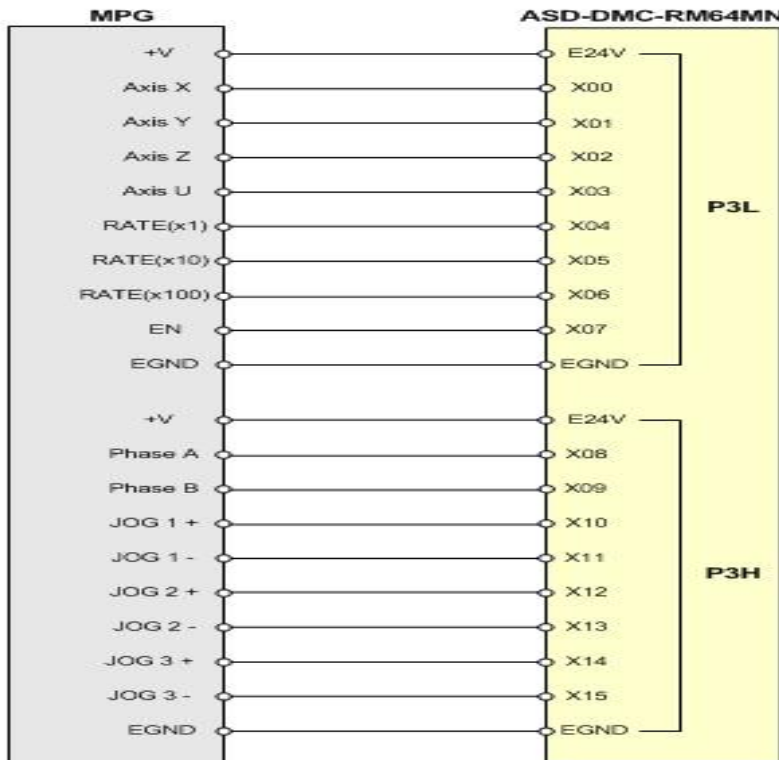


Figure 1.145

1.13.8 Wiring Diagram for RM04DA Output Point

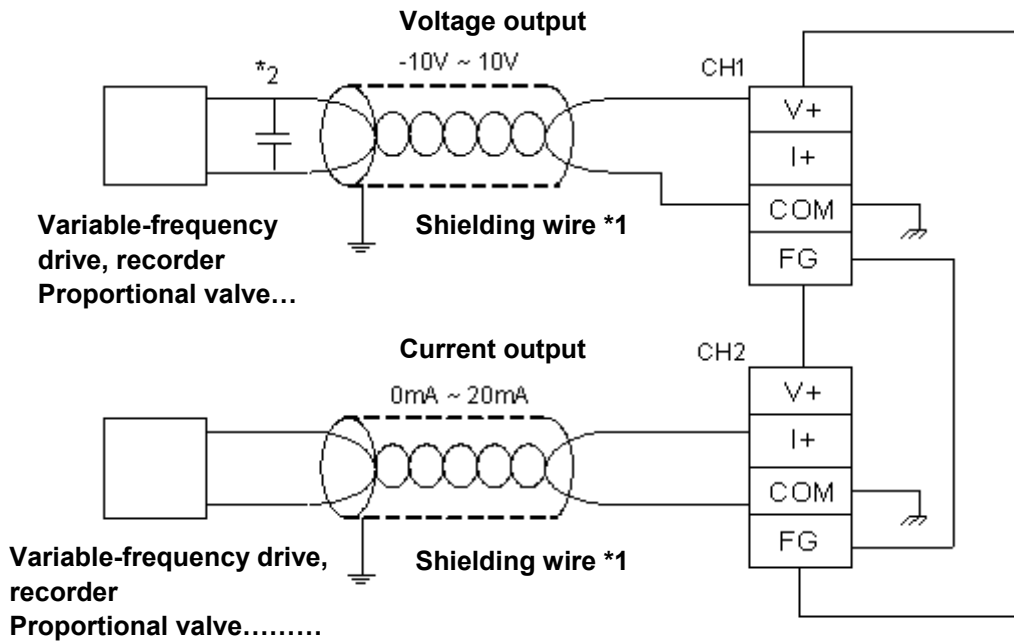


Figure 1.146

1.13.9 Wiring Diagram for RM04AD Input Point

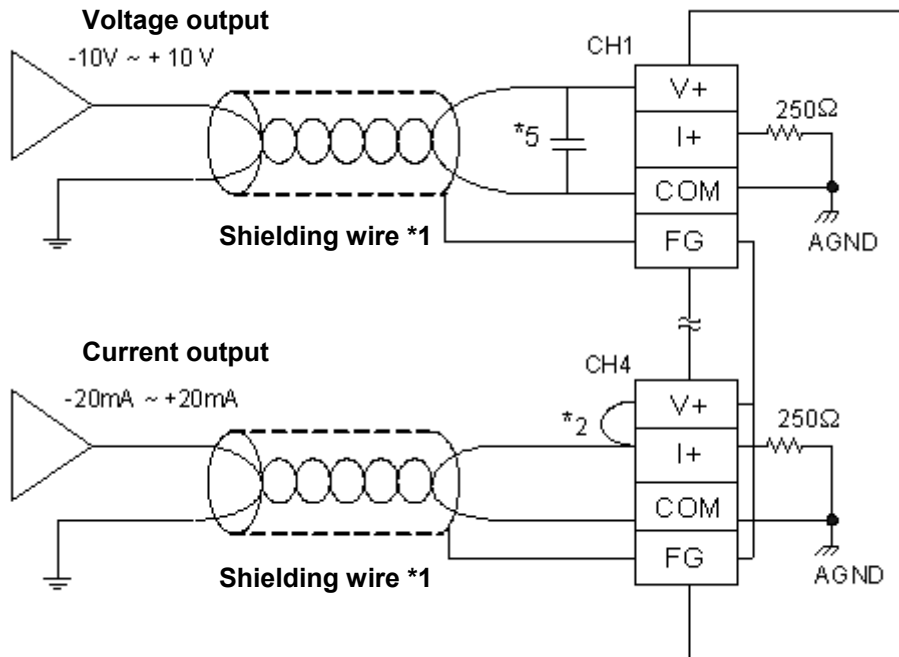


Figure 1.147

Chapter 2 Using EzDMC

2.1 Launching the Program

The connected device, Remote module, and motion control card must first be connected using CAT5e networking cables. The Remote module must also be provided with a 24VDC power supply.

※ When the DI module (RM32MN/RM64MN) connected to the Remote is Low-active, please connect the COM port on the DI module to 24V (CN4's Pin2 and Pin3) so that the module will display normally; if the device is High-active, then connect the COM port to GND.

Only turn the power on once you have checked that all hardware is connected properly. Wait for the power indicators on the device and module to light up before running the program (EzDMC.exe) on the CD to control the module.

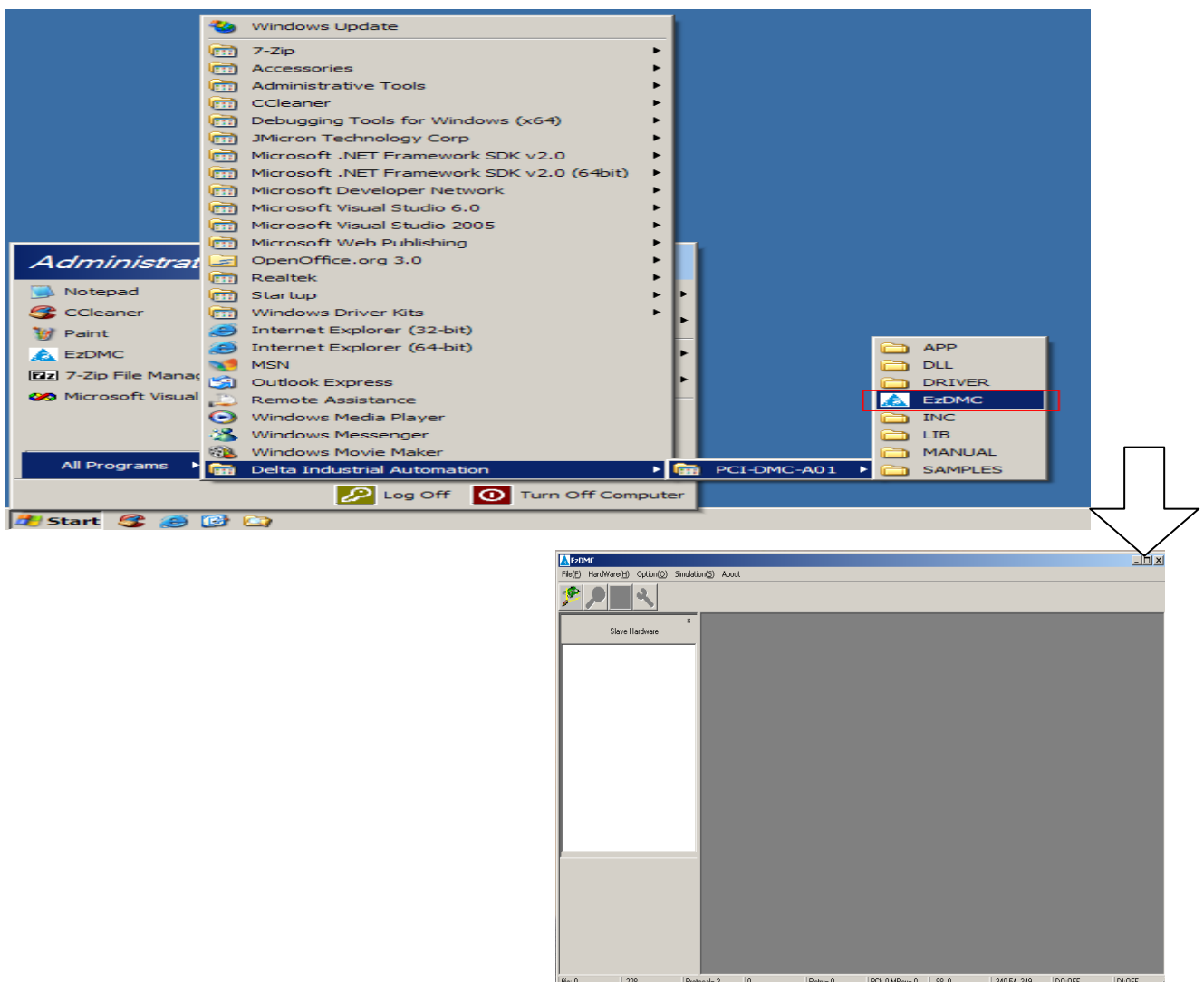


Figure 2.1 Launching the EzDMC Program

2.2 Connecting to Remote Module

After launching the EzDMC program, click on the "Search Card" button. When the program has found the PCI-DMC-A01 interface on the system, select the icon for the card and then click on the "Scan Slave" button to find the connected Remote module. (For a more detailed description of the EzDMC program interface and operating instructions, please refer to the "User Guide of PCI-DMC-A01/B01 DMCNET Motion Control Card").

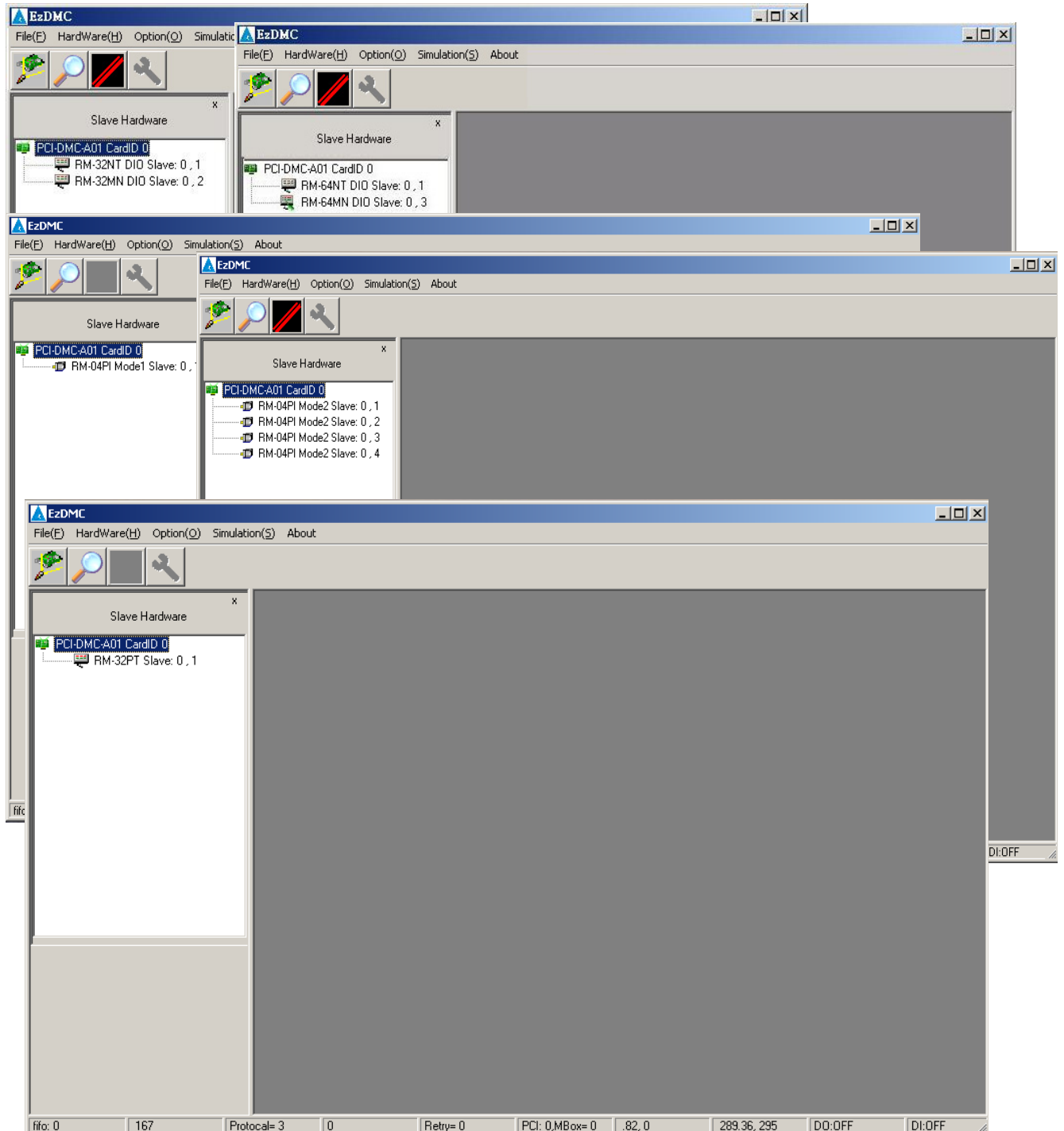


Figure 2.2 Finding the connected Remote module (RM32, RM64, RM04PI)

2.3 Remote Module Interface

2.3.1 ASD-DMC-RM32MN

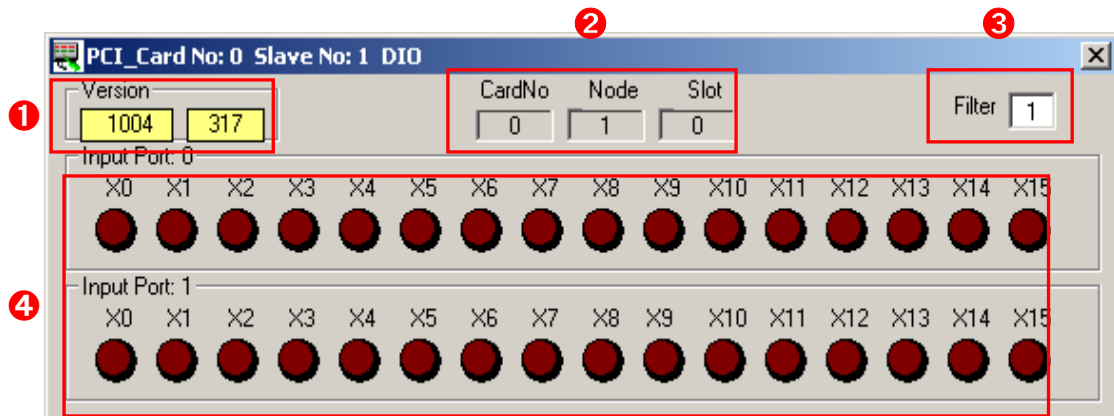


Figure 2.3 RM32MN Digital Input Signal Display

- 1 RM32MN module's firmware version.
- 2 RM32MN module information. (In this example, the module is Node 2 connected to Card 0)
- 3 RM32MN module's software filter. (In this example it is set to 1ms)
- 4 RM32MN module's Input signal display.

2.3.2 ASD-DMC-RM32NT

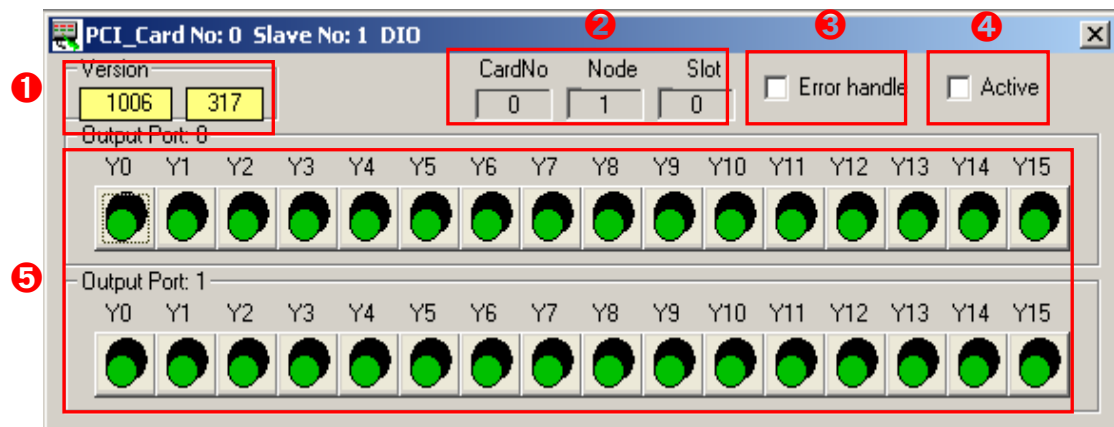


Figure 2.4 RM32NT Digital Output Signal Control

- 1 RM32NT module's firmware version.
- 2 RM32NT module information. (In this example, the module is Node 1 connected to Card 0)
- 3 Error Handle option: Choose whether to keep after power off. (Check to keep record)
- 4 Active option: Output the selected Output signal to the connected device.
- 5 Shows each bit of the RM32NT module's Output signal.

2.3.3 ASD-DMC-RM64MN(1)

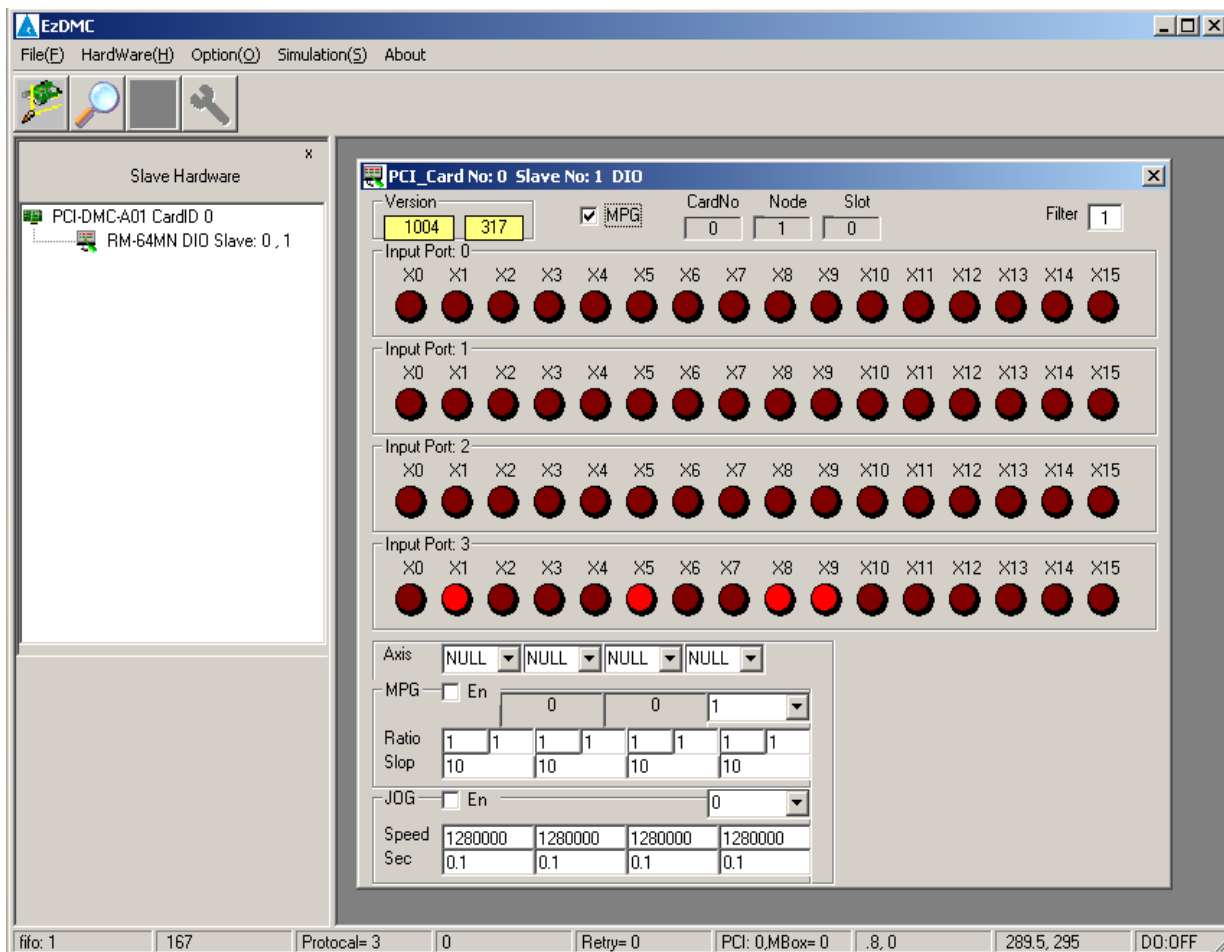


Figure 2.5 RM64MN Display Interface (includes MPG mode controlled Servo Driver)

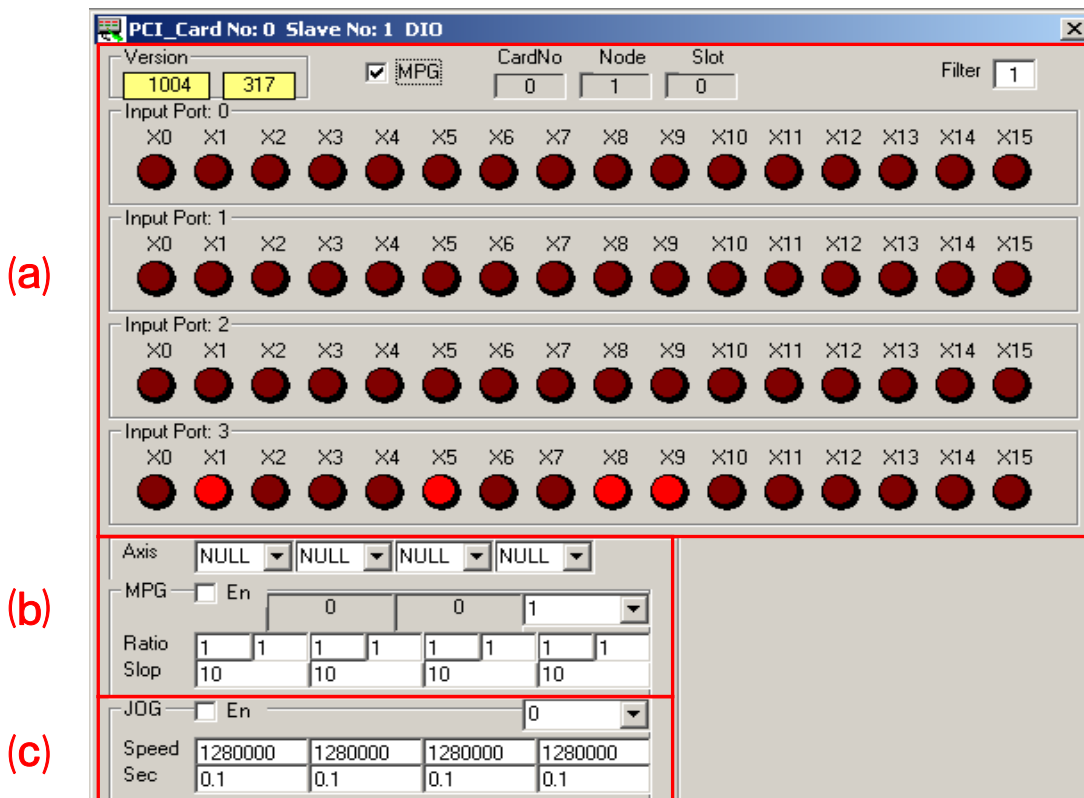


Figure 2.6 RM64MN Display Interface

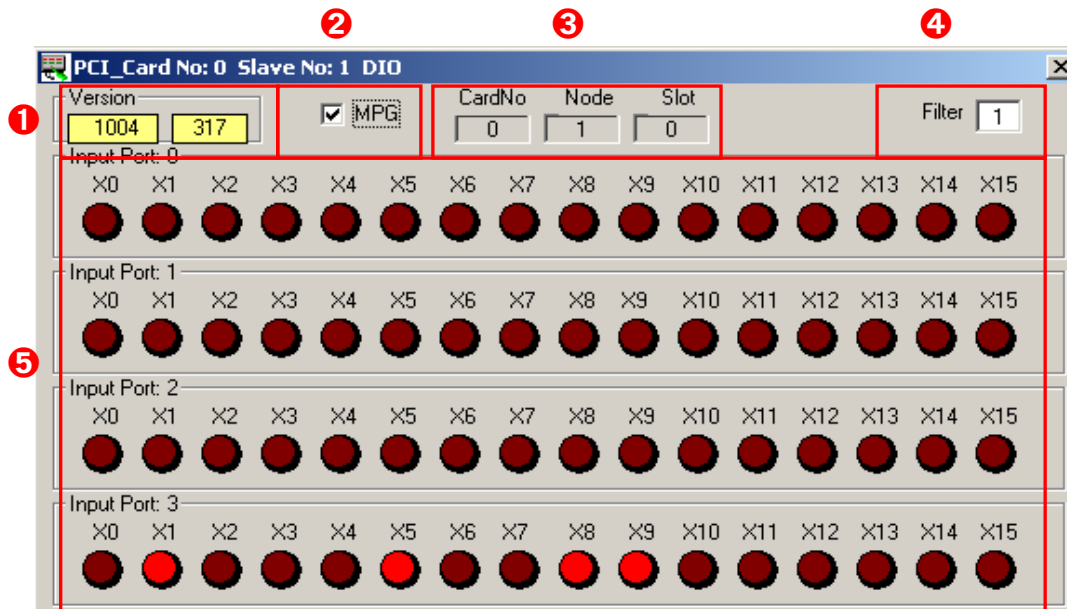


Figure 2.7 RM64MN (a) Block Functions

- ❶ RM64MN module's firmware version.
- ❷ Checkbox for enabling RM64MN MPG interface.
- ❸ RM64MN module information. (In this example, the module is Node 12 connected to Card 0)
- ❹ RM64MN module's software filter. (In this example it is set to 1ms)
- ❺ RM64MN module's Input signal display.

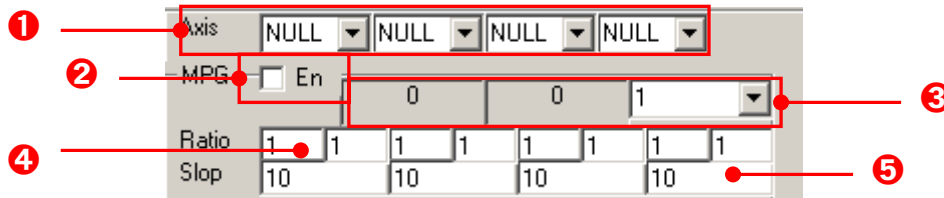


Figure 2.8 RM64MN (b) Block Functions

- ❶ Selects servo drive node to control using RM64MN module's MPG mode. (Max. of 4 sets)
- ❷ RM64MN MPG enable.
- ❸ MPG mode operation information (from left to right):
 - Increase Encoder
 - Target displacement position for selected axis ID
 - Output pulse ratio for each click of MPG
- ❹ Sets ratio (numerator/denominator) of one full MPG turn to pulse Output (motor rotations). (When ratio is set to 1, this means 1 click of MPG is equal to 1/100 of motor rotation).
- ❺ Sets maximum allowable MPG speed (PPS/sec, Max=1000).

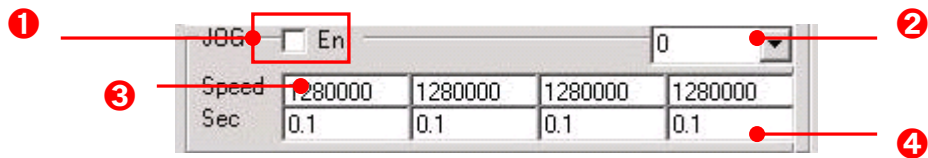


Figure 2.9 RM64MN (C) Block Functions

- ❶ Check to enable RM64MN JOG function
- ❷ Sets JOG operation mode.
Mode 0: Each axis corresponds to a JOG. (X→J1+/J1-, Y→J2+/J2-, Z→J3+/J3-)
Mode 1: Select axis (X/Y/Z) to correspond to J1+/J1-.
- ❸ Maximum velocity used by each axis during motion displacement.
- ❹ Acceleration/deceleration time used by each axis during motion displacement.

2.3.4 ASD-DMC-RM64NT(1)

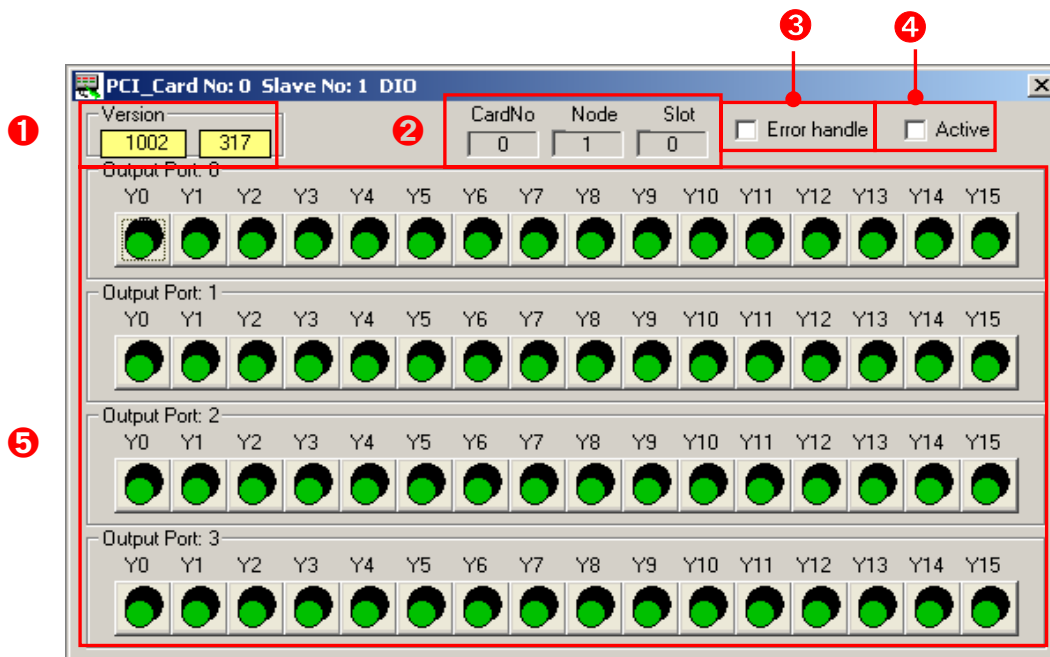


Figure 2.10 RM64NT Interface

- ❶ RM64NT module's firmware version.
- ❷ RM64NT module information. (In this example, the module is Node 1 connected to Card 0)
- ❸ Error Handle option: Choose whether to keep after power off. (Check to keep record)
- ❹ Active option: Output the selected Output signal to the connected device.
- ❺ Shows each bit of the RM64NT module's Output signal. (In this example, Port0 bit 0~15 are set to ON)

2.3.5 ASD-DMC-RM04PI (MODE 1)

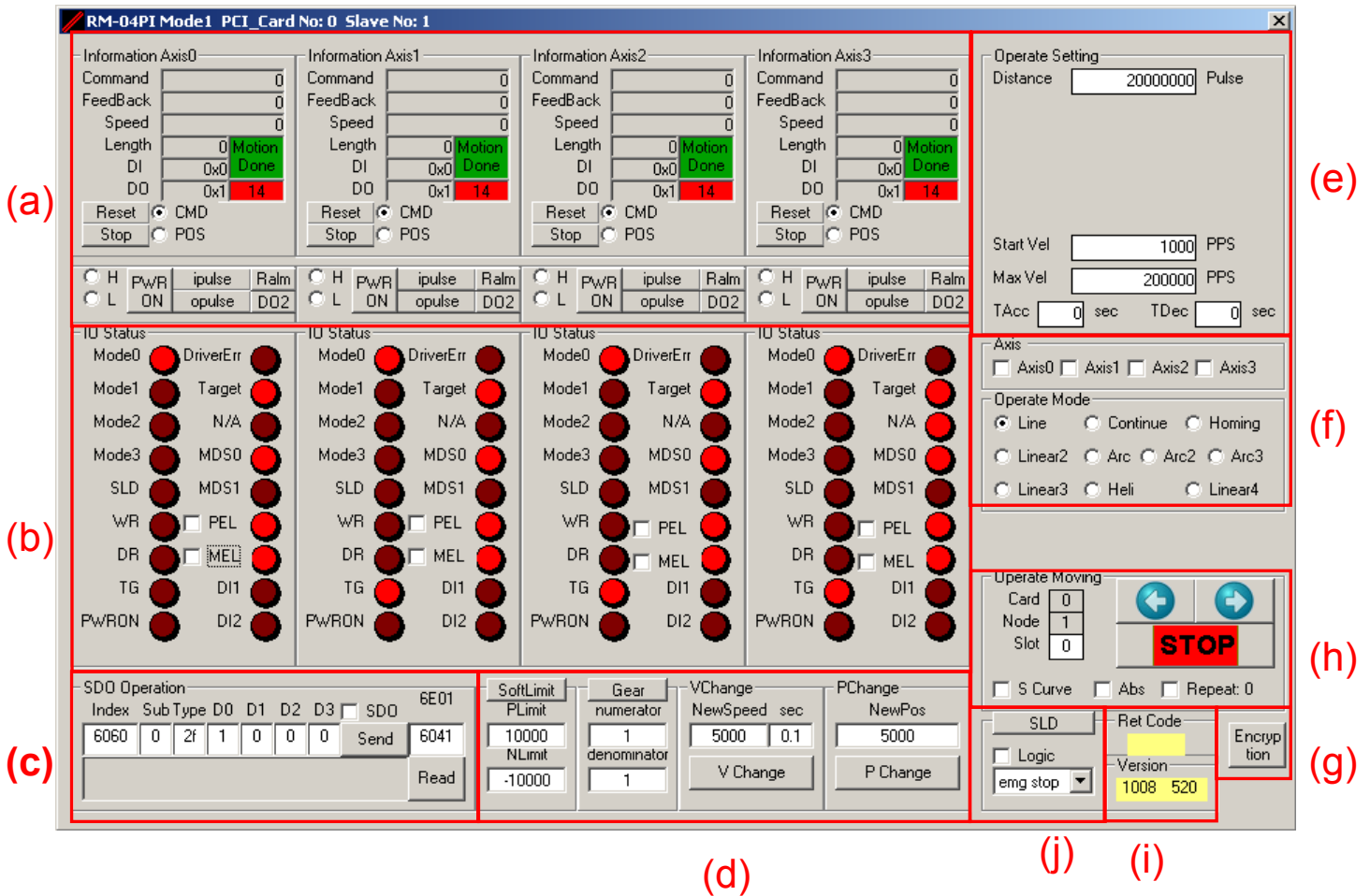


Figure 2.11 RM04PI MODE 1 Interface

- (a) Displays the status values, excite, and reset of each axis during motion displacement.
- (b) Displays the status indicators of each IO port on RM04PI.
- (c) Sets CANopen command. User can control the module by using this to read/send CANopen commands.
- (d) Sets the motion and software limit settings for motion displacement.
- (e) Motion displacement parameter settings. (Parameters will vary depending on the mode selected in block F)
- (f) Axis selection and motion displacement operation mode.
- (g) Opens Slave Encryption interface. (Please see section 2.3.7)
- (h) Executes motion commands such as clockwise rotation, CCW rotation and stop. (Includes velocity cross-section selection, reference coordinates selection, and repeat option)
- (i) Error return value and the firmware version of the connected RM04PI module.
- (j) Sets SLD port functions.

Blocks (a) and (d) are described in greater detail below

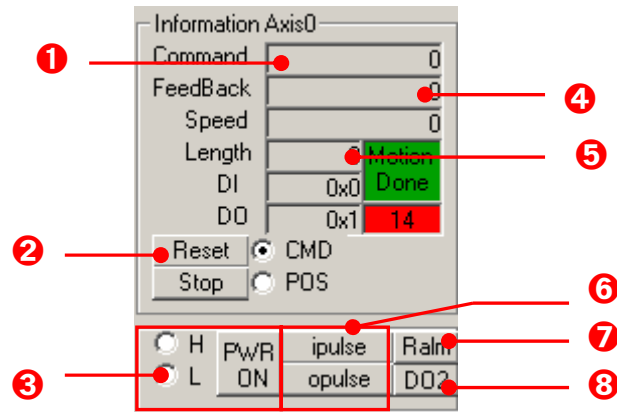


Figure 2.12 RM04PI MODE 1(a) Block Functions

- ❶ Displays the motion displacement commands for each axis and other information.
- ❷ Clears all current motion displacement commands.
- ❸ Sets module's Output level when "SVON" button is pressed.
Select "H" for High active.
Select "L" to set Output as Low active.
- ❹ Displays current motion displacement status.
- ❺ Buffer Length counter. If more data is being added when buffer is full, the value "299" is displayed.
- ❻ Sets the module's Input/Output phase. The phase can be changed according to user requirements. (AB phase: Velocity must not be set higher than **500Kpps**; CW phase: Velocity must not be set higher than **200Kpps**)
- ❼ Resets IO error on module.
- ❽ Controls the second set of Digital Outputs.

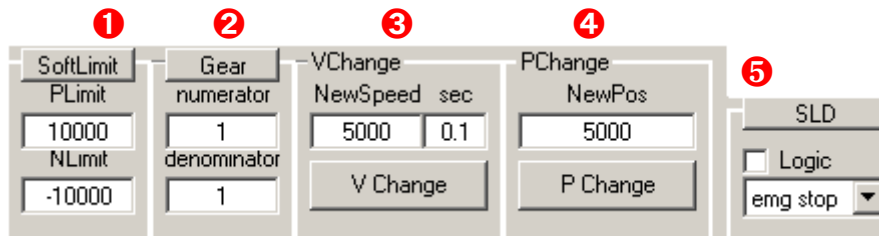


Figure 2.13 RM04PI MODE 1(d) Block Functions

- ❶ Sets software limit. First, set the positive limit (PLimit) and negative limit (NLimit), and then click on the "SoftLimit" button to set the software limits.
- ❷ "Gear" functions like electronic gear ratios.
New motion displacement distance - original motion displacement distance x numerator value/denominator value.
- ❸ This function is used to set the new velocity value (NewSpeed) and the new acceleration/deceleration time (sec). Click on "V Change" button to change to the new velocity displacement settings.
- ❹ This changes the displacement position. First, set the new position (NewPos), and then click on "P Change" to apply the new setting.
- ❺ Sets the SLD. First, select emg stop or sd stop mode, and then set the Logic. 0 is always on (Normal high) and 1 is always off (Normal low).

2.3.6 ASD-DMC-RM04PI (MODE 2)

1-Axis Control Interface

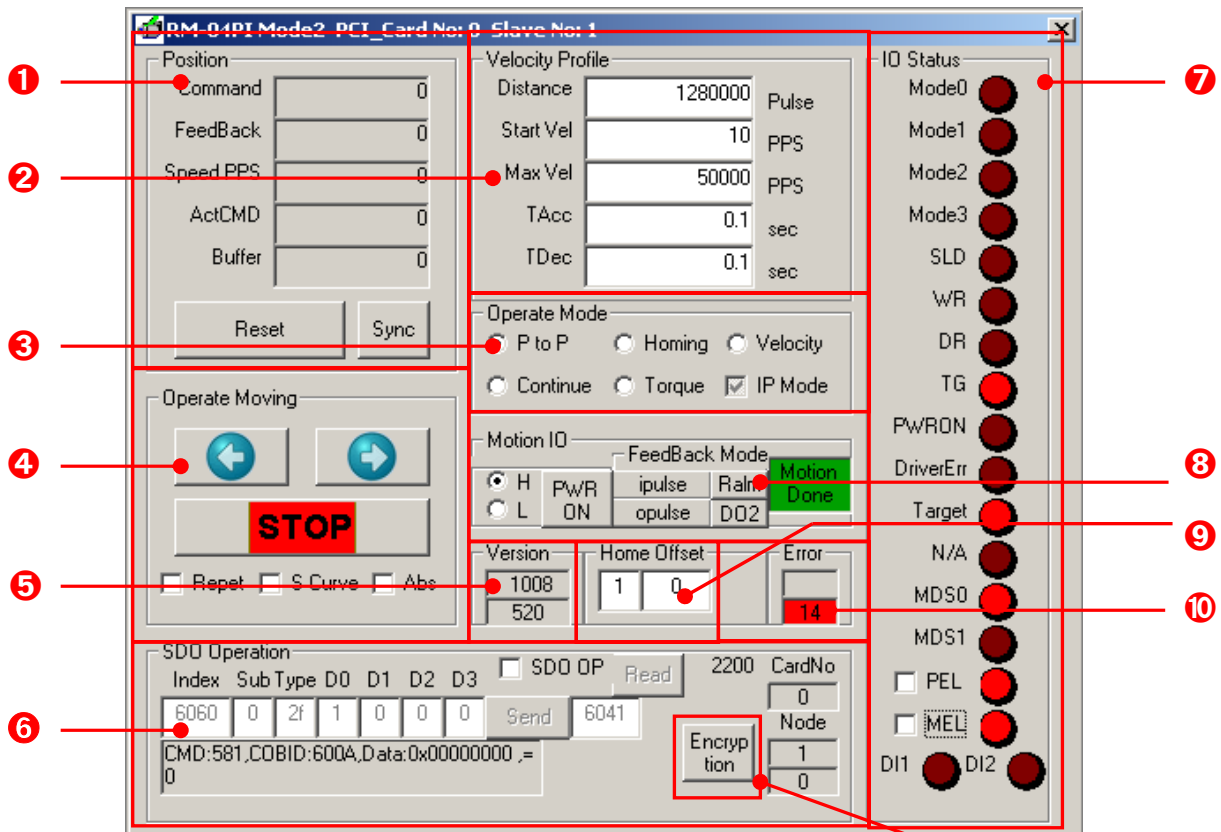


Figure 2.14 RM04PI MODE 2 1-Axis Control Interface

- ❶ Displays the counter values for motion displacement. These include position, velocity, torque, number of buffered commands, position reset, and sync motion (this function matches the values of Command and Feedback).
- ❷ Sets the motion command. This includes motion distance, starting velocity, maximum velocity, and acceleration/deceleration time.
- ❸ Selects the operate mode for motion displacement.
- ❹ Executes motion commands such as clockwise rotation, CCW rotation and stop. (Includes velocity cross-section selection, reference coordinates selection, and repeat option)
- ❺ Firmware version of connected RM04PI.
- ❻ Sets CANopen command. User can control the module by using this to read/send CANopen commands.
- ❼ Displays the status indicators of the IO port for that axis on RM04PI.
- ❽ Sets the excite, reset alarm, and motion displacement status functions for that axis. (Instructions are the same as those for section 2.3.5 block a)
- ❾ Sets the Homing mode and offset value.
- ❿ Displays error indicator. (See following table)
- ⓫ Opens Slave Encryption interface. (Please see section 2.3.7)

| Indicator | Description | How to clear the indicator | Indicator | Description | How to clear the indicator |
|-----------|---|-----------------------------------|-----------|--|--|
| 0 | Normal | None (Indicator does not come ON) | 15 | Collision with machine positive limit | Move away from the positive limit |
| 9 | Velocity limit exceeded | Reset the velocity | 283 | Collision with software positive limit | Move away from the software positive limit |
| 13 | EMG | Press the "RALM" button | 285 | Collision with software negative limit | Move away from the software negative limit |
| 14 | Collision with the machine negative limit | Move away from the negative limit | 299 | Invalid operation | Press the "RALM" button |

Multi-axis Control Interface (up to 3 axes can currently be controlled simultaneously)
(Please see section 3.7 of the User Manual for instructions on switching from 1-axis to multi-axis control interface)

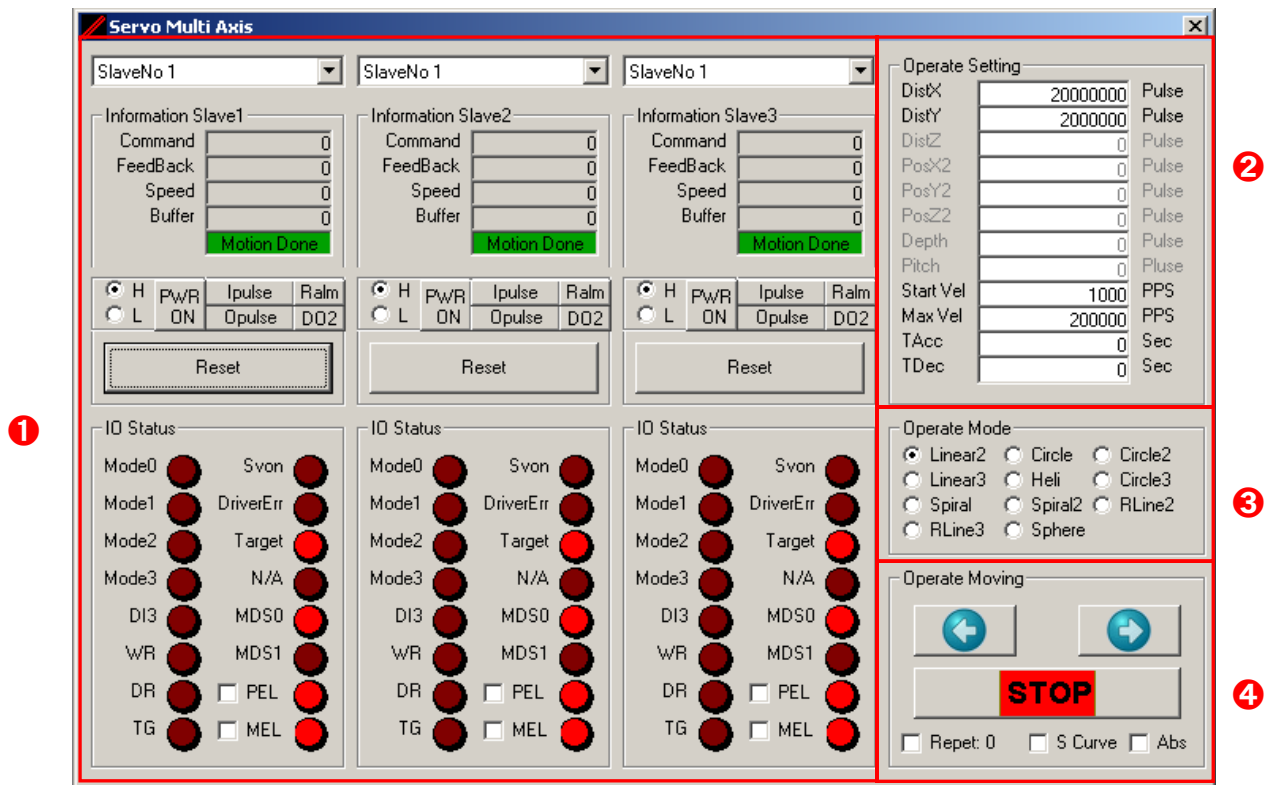


Figure 2.15 RM04PI MODE 2 Multi-axis Control Interface

- ① Selects the operating axis, displays motion displacement counter values, excite function, position reset and the status indicators for that axis' IO port.
- ② Motion displacement parameter settings. (The selection mode in Block ③ will change the parameters displayed)
- ③ Selects the operate mode for motion displacement.
- ④ Executes motion commands such as clockwise rotation, CCW rotation and stop. (Includes velocity cross-section selection, reference coordinates selection, and repeat option)

Checking "Repeat" will continue to move forward and back displacement along the set Distance.

Checking "S Curve" will use the S Curve velocity cross-section during acceleration/deceleration. The T Curve velocity cross-section is used otherwise.

Checking "Abs" means motion displacement commands will use absolute coordinates. Relative coordinates will be used otherwise.

2.3.7 ASD-DMC-RM04PI Interrupt Factor Control Interface

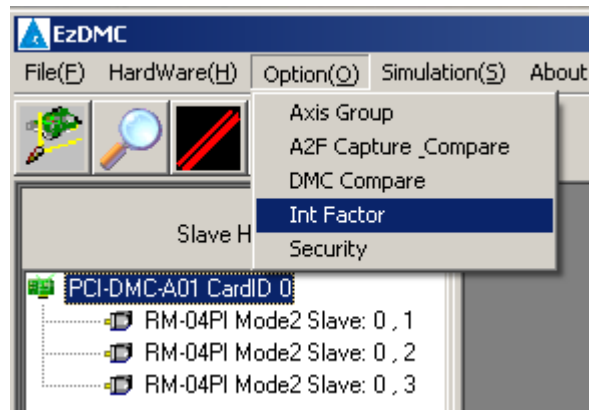


Figure 2.16 Open ASD-DMC-RM04PI Interrupt Factor Control Interface

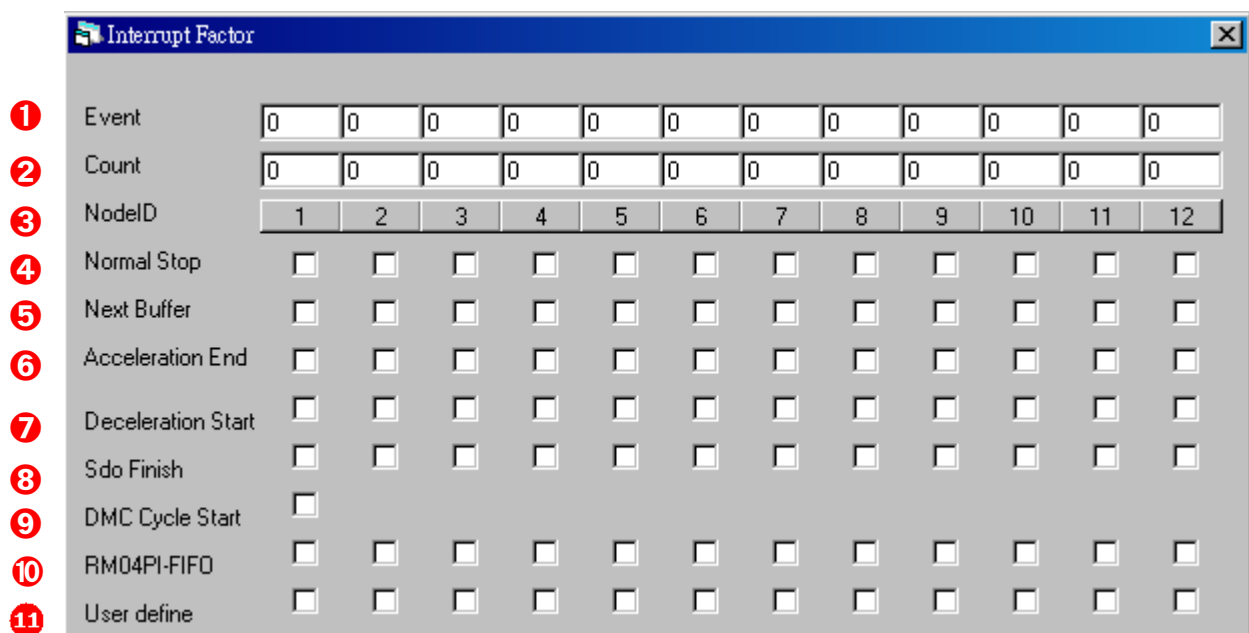


Figure 2.17 RM04PI Interrupt Factor Control Interface

- ① Event: Type of trigger event.
- ② Count: Event trigger counter.
- ③ NodeID: Select Node to enable Interrupt. (This event can only be used in Mode2)
- ④ Normal Stop: Triggers at the end of any motion. (This event can only be used in Mode2)
- ⑤ Next Buffer: Triggers when executing Buffer action. (This event can only be used in Mode2)
- ⑥ Acceleration End: Triggers when acceleration ends. (This event can only be used in Mode2)
- ⑦ Deceleration Start: Triggers when deceleration starts. (This event can only be used in Mode2)
- ⑧ Sdo Finish: (Function not available)

- ⑨ DMC Cycle Start: Triggers when DMC Cycle starts.
- ⑩ RM04PI-FIFO: Triggers when 04PI FIFO starts (This event can only be used in Mode1)
- ⑪ User defined: (Function not available)

2.3.8 ASD-DMC-RM04PI Slave Encryption Control Interface

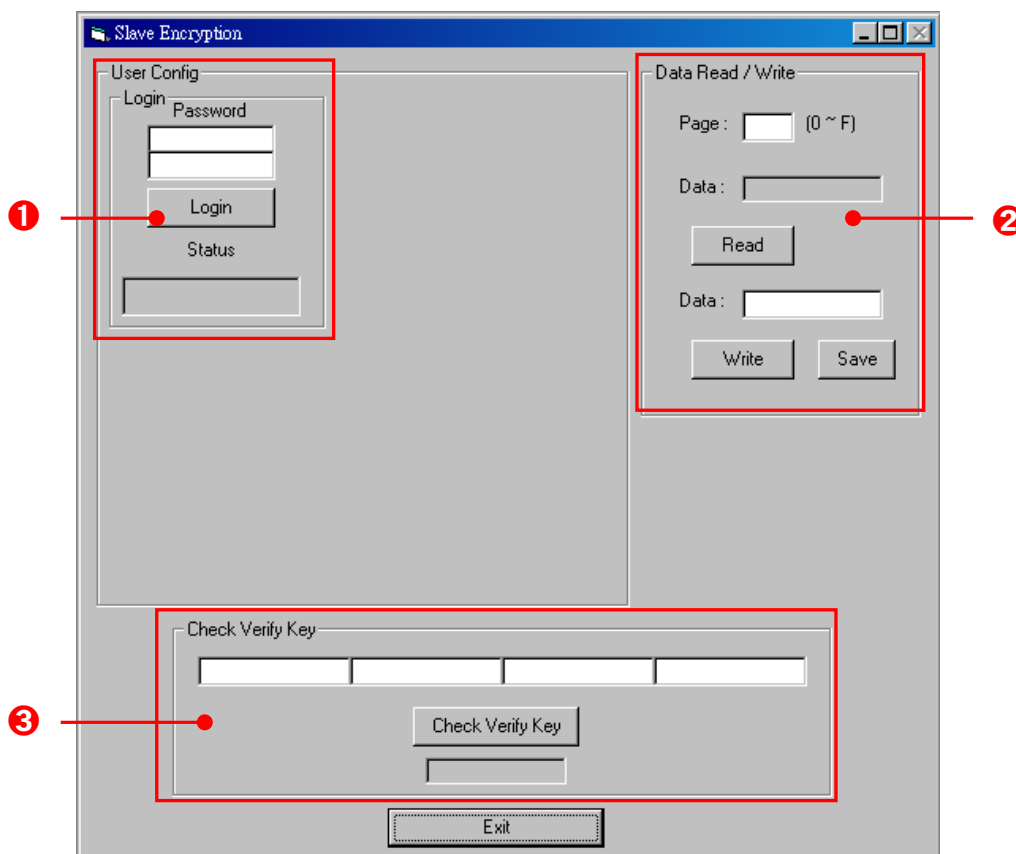


Figure 2.18 RM04PI Slave Encryption User Login Interface

Input fields in Blocks ①,③,④,⑤ are all 1 to 8 bits and take hexadecimal values between 0 and F.

- ① User login and status display field.

| Default password | |
|------------------|------|
| Password1 | abcd |
| Password2 | abcd |

(If login is successful, status will display "Pass" and grant access to the functions in 2.19 Blocks ④,⑤; If login fails then "Error!" is displayed. User must attempt to login again)

- ※ If password is incorrect, the correct password must be entered twice to login.
- ※ After logging in, user must change password or change verify key before they can leave this page.

- ② "Data read": Select Page then click on "Read" to read data.
"Data write": Select Page to write to, Input data, click on "Write" to write to buffer then click on "Save" to save data to the 04PI module.
- ③ Verify key confirmation field and status display.
Enter the 4 sets of Verify Key values in Fig. 2.19 block ⑤ into the 4 fields of Check Verify Key and then click on "Check Verify Key".
(If verification is successful, then "Pass" is displayed on the status bar below".
"Lock!" is displayed otherwise.)

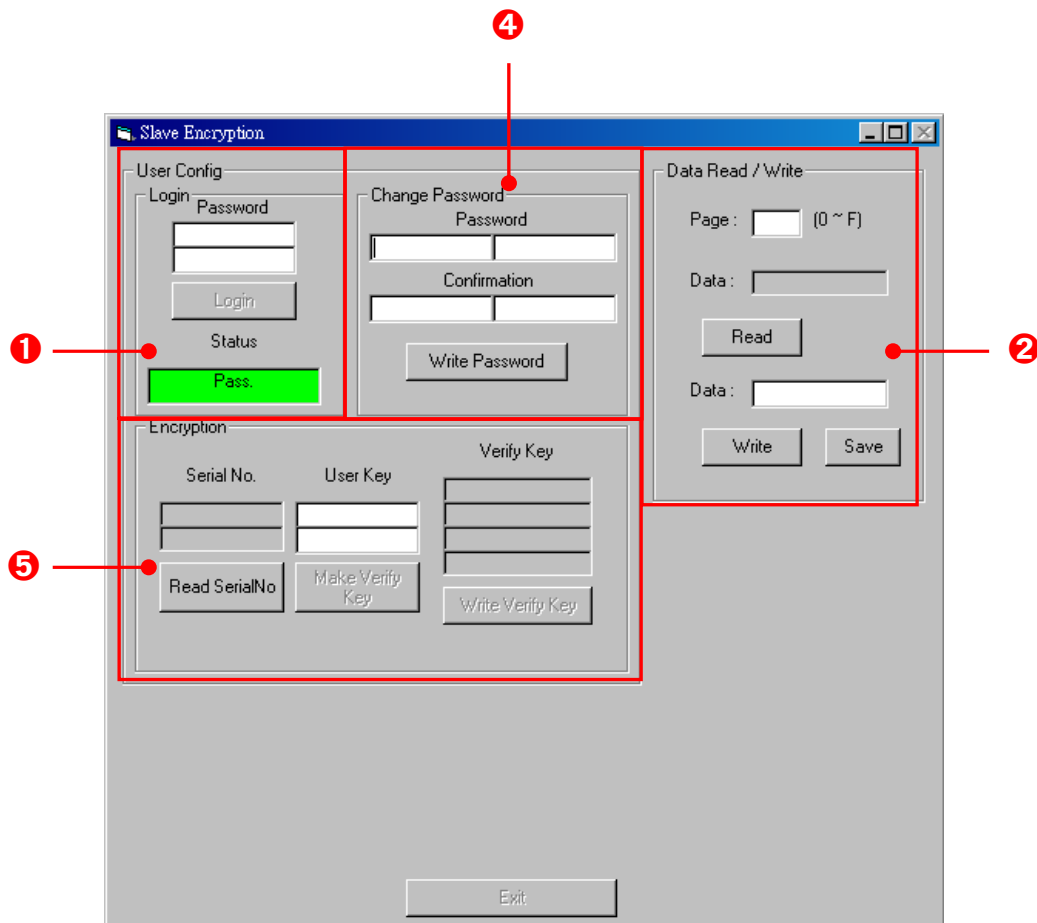


Figure 2.19 RM04PI Slave Encryption User Post-Login Interface

- ① User login and status display field.
- ② "Data read": Select Page then click on "Read" to read data.
"Data write": Select Page to write to, Input data, click on "Write" to write to buffer then click on "Save" to save data to the 04PI module.
- ④ Change password field.
Step 1: Enter two new passwords in the "Password" field. Each is 1 to 8 bits in length and take hexadecimal values between 0 and F.
Step 2: Enter the same password from "Password" in "Confirmation" again for verification.

Step 3: If the two passwords in "Password" and "Confirmation" match, clicking on "Write" will change the password. If the passwords do not match, then block ❶'s status will show the error message "Confirmation Error". The change password procedure must now be repeated again.

❺ Generate verify key.

Step 1: Click on "Read SerialNO." button read the product serial number. This gives two sets of 1 to 8 bit values made up of hexadecimal values between 0 and F.

Step 2: User enters a custom User Key then click on "Make Verify Key" to generate a verify key. (Input and Output will be 1-8 bit hexadecimal values between 0 ~ F)

Step 3: Click on "Write Verify Key" to write the generated Verify Key to the module.

(If write is successful, block ❶'s status will display "Done". "Failed" is displayed otherwise)

2.3.9 ASD-DMC-RM04DA

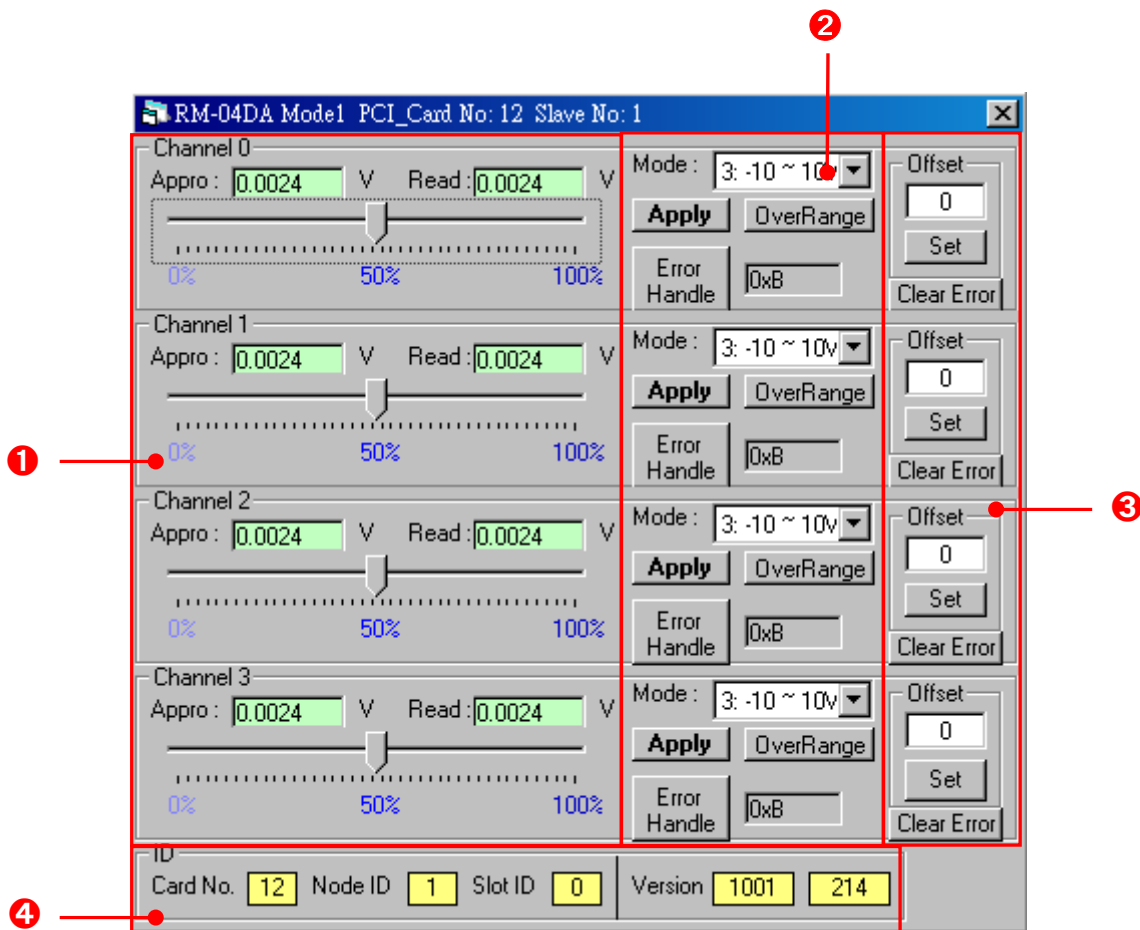


Figure 2.20 RM04DA Interface

- ❶ The voltage/current return values and Output mode percentage settings for each Channel.
 Appro: Approximate Output voltage/current based on the percentage setting.
 Read: Actual Output voltage/current. Must click on "Apply" button to sync with Appro.
 (The values will differ slightly)
- ❷ The settings and returned status for each Channel. (A detailed description is provided on the next page)
- ❸ Offset: Offset setting (-128~127); Clear Error: Clear error status
 (When an error occurs, set Offset to 0 then click on "Clear Error" to clear the error.)
- ❹ RM04DA module information.

Below is a more detailed description of block ❷ in Fig. 2.20

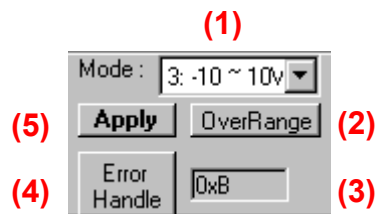


Figure 2.21 RM04DA Block ❷ Functions

- (1) "Mode": Set voltage/current Output mode.
- (2) "OverRange": Increase the maximum value by 10% based on Output mode.
- (3) Display field for returned status.
- (4) "Error Handle": Choose whether to keep after power off. (Click to keep record)
- (5) "Apply": Change actual voltage/current Output to Appro value.

2.3.10 ASD-DMC-RM04AD

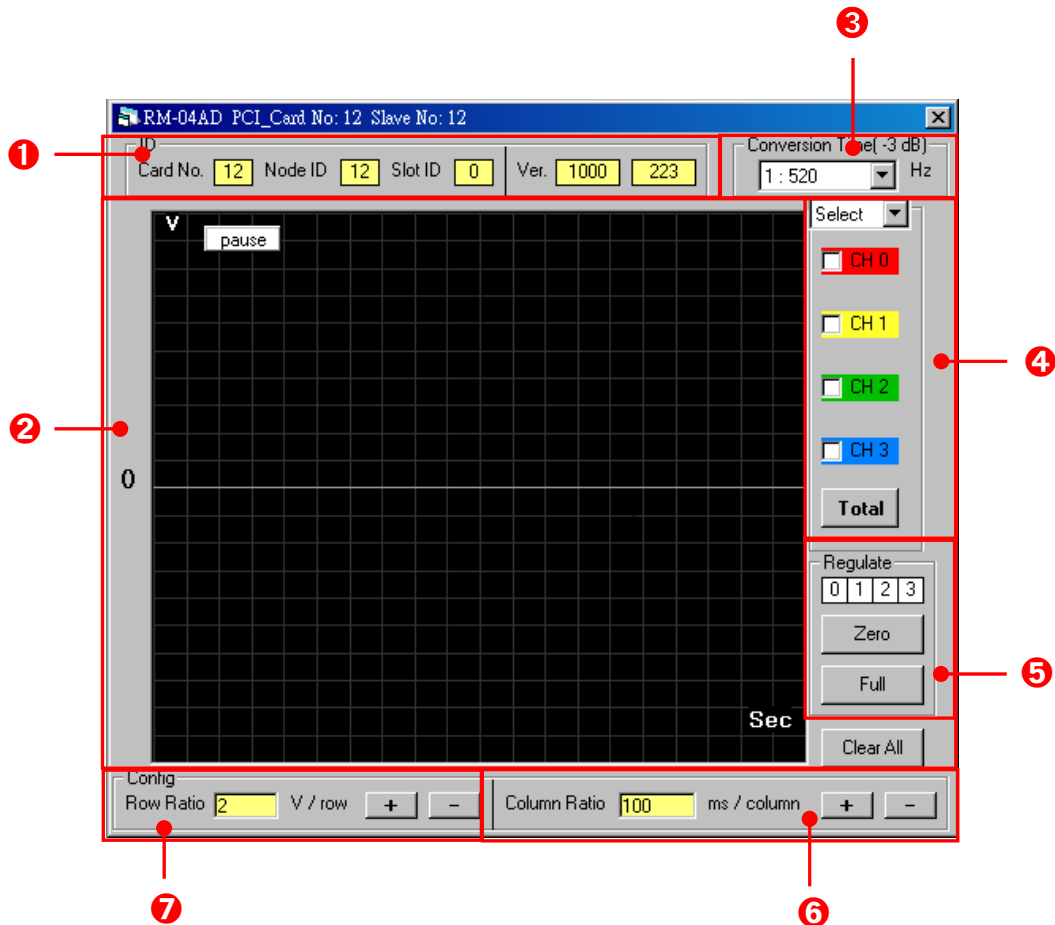


Figure 2.22 RM04AD Control Interface

- ❶ RM04AD module information.
- ❷ Display current voltage.
"Clear All": Clear the voltage display.
"Pause": Pause to get the current voltage using a coordinate position.

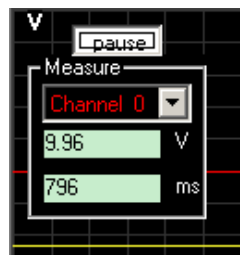
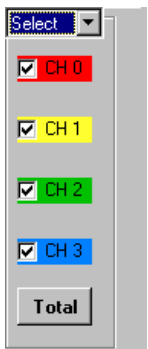
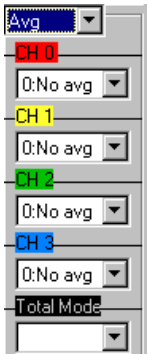
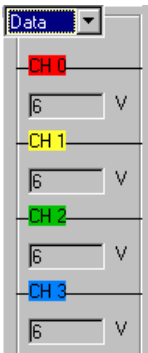
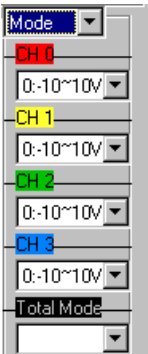


Figure 2.23 RM04AD Pause and Measurement Interface

- ❸ Sets AD conversion time.
- ❹ Function settings. (A detailed description is provided on the next page)
- ❺ Zero calibration
"Zero": Zero calibration. (Only the selected Channel will be calibrated)
"Full": Full scale calibration. (Only the selected Channel will be calibrated)
- ❻ Sets the display time for each click of X-axis.
- ❼ Sets the voltage difference for each click of the Y-axis.

Below is a more detailed description of block 4 in Fig. 2.26

| Figure | Description |
|---|---|
|  <p>Figure 2.24 RM04AD Channel Select Control Interface</p> | <p>Select the Channel to display and check to enable Channel Input. Input is disabled otherwise.</p> <p>"Total": Checks all Channels.</p> |
|  <p>Figure 2.25 RM04AD Avg Control Interface</p> | <p>Sets the average mode.</p> <p>"Total": Sets all channels.</p> |
|  <p>Figure 2.26 RM04AD Data (Read Value) Display Interface</p> | <p>Displays current voltage</p> |
|  <p>Figure 2.27 RM04AD Mode Control Interface</p> | <p>Sets AD voltage read range</p> |

2.3.11 ASD-DMC-RM32PT

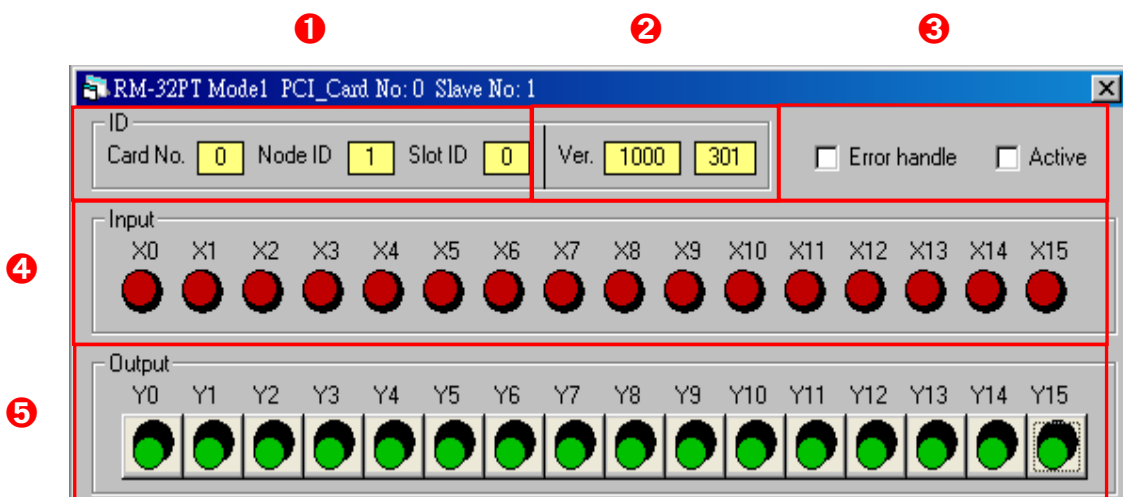


Figure 2.28 RM32PT Digital Input Signal Display

- ❶ RM32PT module information. (In this example, the module is Node 1 connected to Card 0)
- ❷ RM32PT module's firmware version.
- ❸ Error Handle option: Choose whether to keep after power off. (Check to keep record)
Active option: Output the selected Output signal to the connected device.
- ❹ RM32PT module's Input signal display.
- ❺ Each bit of the RM32PT module's Output signal.

FAQ

Q1 Why can't I find a Remote module after changing its Node ID or mode when I use the "Search Slave" function of EzDMC again?

If the Node ID or mode of a Remote module (RM32/64/04PI) is changed, please turn off the power before making the changes, and then use the *search slave* function after turning on the power again.

Q2 Why do other connected servers stop working when power to a RM04PI module is cut?

If servers and RM04PI modules are connected as slaves and power is cut to one module, then other slave modules will be unable to continue performing motion displacement commands.

Q3 Why does a motion displacement command currently being executed disappear when I open another EzDMC window?

You must open all control (viewing) windows before executing any motion commands for 1-axis or multi-axis. Performing any other actions (opening another window) while motion commands are being executed may lead to the loss of all command values.

Q4 I have set and executed the motion commands for RM04PI module in EzDMC but instead of executing the motion displacement, it stops and generates the alarm indicator "9". Why?

Please stop the execution of the motion command and then check the settings for starting velocity and maximum velocity.

When Output phase is in AB mode, please set velocity to less than 500Kpps; when Output phase is CW, please set velocity to less than 200Kpps. If the initial settings exceed the above limits, then current motion will be stopped. The Driver Error light will light up and the alarm indicator "9" will be shown.

Q5 Why is the current velocity for each axis the same even though they have different distance displacement settings during multi-axis linear interpolation?

In EzDMC, the velocity displayed for each axis is the component velocity. During this multi-axis "linear interpolation" motion, the actual velocity will be less than or equal to the displayed velocity depending on the distance set for each axis. During "arc interpolation" or "spiral interpolation" motions, however, the displayed velocity will be the actual velocity of that axis.

Q6 Why is it that only the Command value moves, while Feedback fluctuates in single digits after setting and executing motion displacement commands for RM04PI through EzDMC?

Please cancel the current motion command and then check the fields of the Output and Input modes (AB phase, CW/CCW) to ensure that they have been properly selected. Next, check to see if wires QA and QB are properly connected.

Q7 Why does the current motion command being executed stop when the motion mode is changed in the EzDMC 1-axis control window (i.e., driver and MODE2 of RM04PI)?

This is a normal occurrence. Manually changing the motion mode will interrupt the current motion command.

Q8 Why does the error light and IO status light in the control window blink when using EzDMC to control the RM04PI module?

This indicates a signal anomaly in the connected Slave module. Please disconnect the power source and then check the CAT5e cable connection for the Slave device. Make sure that the module (server) at the last stop (node) has a terminal resistor attached to the RJ45 port.

Q9 If the SLD port is enabled on RM04PI module with EzDMC, why does SLD enable stop working if soft limit is enabled during motion displacement?

To use the soft limit function, please set and enable the soft limit function before executing any motion commands. There is no restriction on whether SLD port is enabled or not during operation.

Q10 If the SLD port is enabled on the RM04PI module with EzDMC during multi-axis motion displacement, why is it that one axis cannot move backwards when it comes into contact with the SLD port signal?

When encountering this situation, use the "Line" motion mode to back away from the SLD port signal. However, please be sure to first check the direction. (This can be confirmed using the N/A light)

Q11 Why does an error occur with the Gear function when using EzDMC to control the RM04PI module?

Gear calculates original Position* numerator/denominator. The result is the final target position. In other words, the value of the "P Change" field in EzDMC is the original Position value. The new position will be the calculated target position.

Even if the distance of the final position is longer than the original distance, it must still be completed in the same amount of time.

Motion velocity will be automatically increased but if this exceeds the module limit (AB:500Kpps, CW:200Kpps) an error will occur. The above limitations must be taken into account when setting motion parameters to avoid errors.

※When Gear is changed from enabled to disabled, make sure that the value of Position is Reset to zero as well.

Q12 Why do _DMC_01_set_command API functions sometimes not work, and return error messages like "Alarm 9" and "Driver Error"?

If this function is not working properly, please check to ensure that the Position value is correct. If it is not in the right position, please use the _DMC_01_set_position function to adjust the position before using the _DMC_01_set_command function again.

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