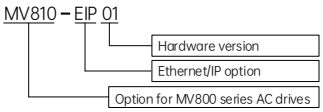
# MV800 Ethernet/IP Communication Option

# User Manual

BOM Code: R33011405
Version: V00

## 1 Product information

### 1.1 Designation rule




### 1.2 Functions and specifications

MV810-EIP01 option provides communication expansion for the MV800 drive series. Its functions and specifications are explained as below.

#### 1.2.1 Key functions

(1) PZD control of data exchange
(2) PKW access to drive parameters
(3) 100 Mbps full duplex
(4) Linear network topology and star-type topology

#### 1.2.2 Technical specifications

| | | |
|---|---|---|
| EIP connector | Interface | Two RJ45 ports |
| | Transmission mode | High-speed bus |
| | Transmission media | CAT5 shielded twisted pair cable |
| | Galvanic isolation | 500 V DC |
| Communication | Network standard | EIP |
| | Transmission protocol | 100BASE-TX (IEEE 802.3) |
| | Transmission distance | 100 M |
| | Bus transmission | 100 Mbps Auto-Defect |



| | | |
|---|---|---|
| | speed | |
| | Module name | MV810-EIP01 |
| | EDS file | MEGMEET_MV800_EthernetIP_V1.01.EDS |
| Electrical specifications | Power voltage | 3.3 V DC (provided by the drive) |
| | Insulation voltage | 500 V DC |
| | Power consumption | 1 W |
| | Weight | 25 g |
| Environment specifications | Noise immunity | ESD (IEC 61800-5-1, IEC 61000-4-2)<br>EFT (IEC 61800-5-1, IEC 61000-4-4)<br>Surge test (IEC 61800-5-1, IEC 61000-4-5)<br>Conducted susceptibility test<br>(IEC 61800-5-1, IEC 61000-4-6) |
| | Operating/Storage environment | Operating:<br>-10 to 50℃ (temperature), 95% (humidity)<br>Storage:<br>-45 to 70℃ (temperature), 95% (humidity) |
| | Vibration/Shock resistance | GB 4798.3-2007, GB 12668.501-2013 / IEC 61800-5-1 (IEC 60068-2-6) |

### 1.3 Terminal description

#### 1.3.1 Layout

The front and back views of MV810-EIP01 are illustrated in Fig. 1.




Fig. 1

The terminals of this option include the GND, two RJ45 ports, and the port for drive connection.



#### 1.3.2 Interface description

EIP communication adopts the standard RJ45 port. This option provides two RJ45 ports as illustrated in Fig. 2.

The pin definitions of the MV810-EIP01 connector are listed below:

| Pin | Name | Description |
|---|---|---|
| 1 | TX+ | Transmit Data+ |
| 2 | TX- | Transmit Data- |
| 3 | RX+ | Receive Data+ |
| 4 | N/C | NOT CONNECTED |
| 5 | N/C | NOT CONNECTED |
| 6 | RX- | Receive Data- |
| 7 | N/C | NOT CONNECTED |
| 8 | N/C | NOT CONNECTED |

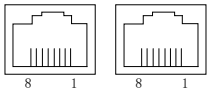



Fig. 2

#### 1.3.3 Parameter settings for EIP network connection

To operate the MV800 drive using MV810-EIP01, it is necessary to set the operation command channel and the frequency source of the MV800 drive to the bus communication card, as shown in the following table.

| Parameter | Value | Function description |
|---|---|---|
| P02.02 | 2 | Set the operation command channel to communication control |
| P02.03 | 3 | Set the communication command channel to Ethernet/IP |
| P02.05 | 8 | Set the main frequency source to Ethernet/IP |

Settings of IP address (IP, subnet mask, and gateway) are shown in the table below.

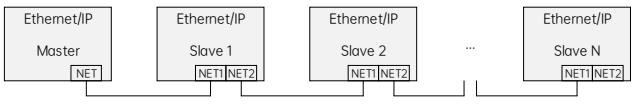
| Drive parameter | Value | Function description |
|---|---|---|
| P40.02 | 0 to 255 | IP address 1 |
| P40.03 | 0 to 255 | IP address 2 |
| P40.04 | 0 to 255 | IP address 3 |
| P40.05 | 0 to 255 | IP address 4 |
| P40.06 | 0 to 255 | Subnet mask 1 |



| Drive parameter | Value | Function description |
|---|---|---|
| P40.07 | 0 to 255 | Subnet mask 2 |
| P40.08 | 0 to 255 | Subnet mask 3 |
| P40.09 | 0 to 255 | Subnet mask 4 |
| P40.10 | 0 to 255 | Gateway 1 |
| P40.11 | 0 to 255 | Gateway 2 |
| P40.12 | 0 to 255 | Gateway 3 |
| P40.13 | 0 to 255 | Gateway 4 |

#### 1.3.4 Network topology

EIP network is generally composed of a master station and multiple slave stations. The network can be structured into a bus type, star type, tree type, etc., or a combination of several types, enabling flexible device connection and wiring. The bus-type network topology is shown in the figure below.




## 2 Installation

### 2.1 Accessory list

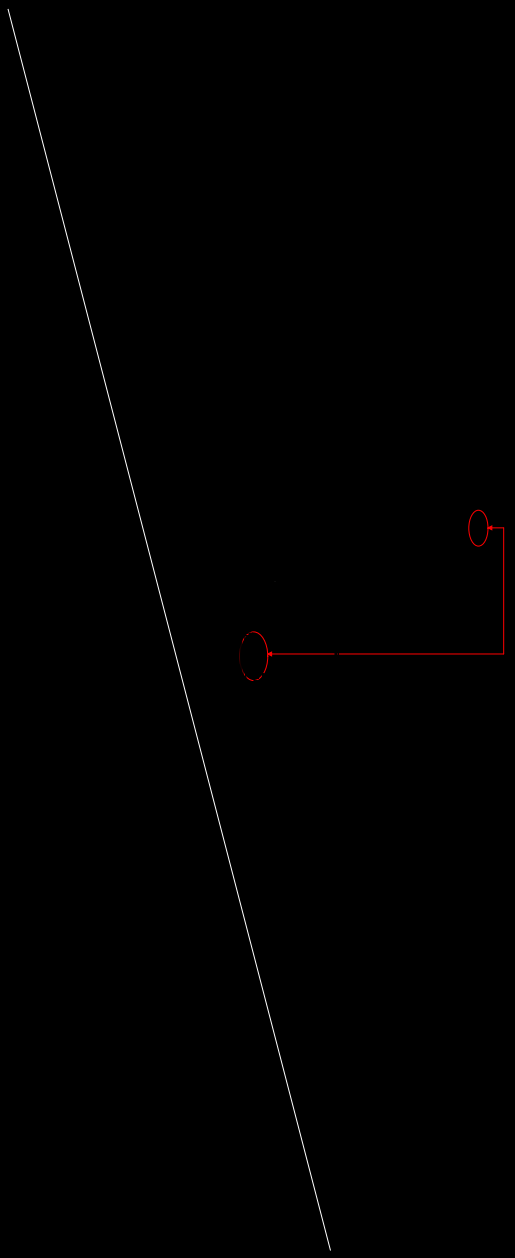
| Name | Specification | Quantity |
|---|---|---|
| MV810-EIP01 option (with an expansion box) | 75 × 60 × 24 mm | 1 |
| User manual | A4 × 1 | 1 |

### 2.2 Installation method

The installation position, interface, and steps of MV810-EIP01 option are described as below.

#### 2.2.1 Installation position

MV800 provides two installation positions for accessory cards/options, as shown in Fig. 3 (the following example is based on Enclosure B, and also serves as the reference for other enclosure types). Position 1 is for the installation of various PG cards; position 2 is for the installation of PN bus options, ECAT bus options, EIP bus options, I/O expansion options, etc.



| Accessory card | Screw | Diameter | Stripped part | Torque (±10%) |
|---|---|---|---|---|

<table>
<tr><th>Parameter</th><th>Byte</th><th>Description</th></tr>
<tr><td></td><td></td><td>Bit4: Decelerate to stop 0: Disable; 1: Enable<br>Bit5: Coast to stop 0: Disable; 1: Enable<br>Bit6: Fault reset 0: Disable; 1: Enable<br>Bit7: Emergency stop 0: Disable; 1: Enable<br>Byte8: Command word high byte<br>Byte9: Command word low byte<br>Status word of slave response:<br>Bit0: FWD running 0: Disable; 1: Enable<br>Bit1: REV running 0: Disable; 1: Enable<br>Bit2: Stop 0: Disable; 1: Enable<br>Bit3: Fault 0: Disable; 1: Enable<br>Bit4: Power failure 0: Disable; 1: Enable<br>Bit5: Ready state 0: Disable; 1: Enable<br>Bit6: Motor number 0: Motor 1; 1: Motor 2<br>Bit7: Motor type<br>0: Asynchronous; 1: Synchronous<br>Bit8: Overload pre-alarm 0: Disable; 1: Enable<br>Bit9 to Bit10: Control mode<br>0: Keypad; 1: Terminal; 2: Communication<br>Byte8: Status word high byte<br>Byte9: Status word low byte</td></tr>
<tr><td rowspan="2">PZD2</td><td>Byte10</td><td rowspan="12">The eleven words (PZD2 to PZD12) are used to read/write the drive internal parameters which include P43.02 to P43.23 (parameters P43.02 to P43.12 are used for write operation; P43.13 to P43.23 are used for read operation).<br><table><tr><td rowspan="2">P43.02</td><td rowspan="2">PZD2 received</td><td rowspan="12">0: Disable<br>1: Frequency reference (0.00 to P02.10)<br>2: Drive torque upper limit reference (0.0 to 300.0% motor rated current)<br>3: Brake torque upper limit reference (0.0 to 300.0% motor rated current)</td></tr><tr></tr><tr><td rowspan="2">P43.03</td><td rowspan="2">PZD3 received</td></tr><tr></tr><tr><td rowspan="2">P43.04</td><td rowspan="2">PZD4 received</td></tr><tr></tr><tr><td rowspan="2">P43.05</td><td rowspan="2">PZD5 received</td></tr><tr></tr><tr><td>P43.06</td><td>PZD6</td></tr></table></td></tr>
<tr><td>Byte11</td></tr>
<tr><td rowspan="2">PZD3</td><td>Byte12</td></tr>
<tr><td>Byte13</td></tr>
<tr><td rowspan="2">PZD4</td><td>Byte14</td></tr>
<tr><td>Byte15</td></tr>
<tr><td rowspan="2">PZD5</td><td>Byte16</td></tr>
<tr><td>Byte17</td></tr>
<tr><td rowspan="2">PZD6</td><td>Byte18</td></tr>
<tr><td>Byte19</td></tr>
<tr><td rowspan="2">PZD7</td><td>Byte20</td></tr>
<tr><td>Byte21</td></tr>
<tr><td rowspan="2">PZD8</td><td>Byte22</td></tr>
<tr><td>Byte23</td></tr>
</table>

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<table>
<tr><th>Parameter</th><th>Byte</th><th>Description</th></tr>
<tr><td></td><td></td><td>4: Torque reference (-300.0 to 300.0% motor rated current)<br>5: FWD run frequency reference upper limit (0.00 to P02.10)<br>6: REV run frequency reference upper limit (0.00 to P02.10)<br>7: Voltage reference (V/F separation) (0 to 1000)<br>8: Virtual input terminal command (0 to 0xFF are corresponding to DI8 to DI1)<br>9: Output terminal bus command (the output terminal function is set to 39; 0 to 0xF are corresponding to R dr ☒O ☒ ☒ ☒ utput termi</td></tr>
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