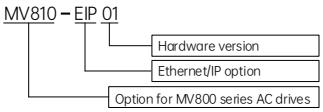
MV800 Ethernet/IP Communication Option

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

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	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) EFT (IEC 61800-5-1, IEC 61000-4-4) Surge test (IEC 61800-5-1, IEC 61000-4-5) Conducted susceptibility test (IEC 61800-5-1, IEC 61000-4-6)
	Operating/Storage environment	Operating: -10 to 50℃ (temperature), 95% (humidity) Storage: -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.

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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

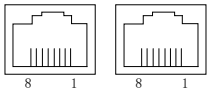

Fig. 2

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

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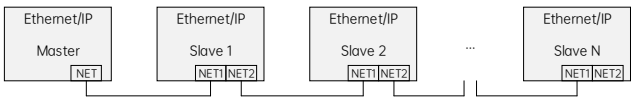
Drive parameter	Value	Function description
P40.07	0 to 255	Subnet mask 2
P40.08	0 to 255	Subnet mask 3
P40.09	0 to 255	Subnet mask 4
P40.10	0 to 255	Gateway 1
P40.11	0 to 255	Gateway 2
P40.12	0 to 255	Gateway 3
P40.13	0 to 255	Gateway 4

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

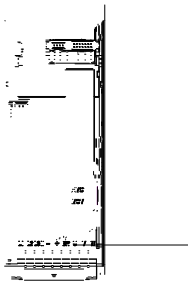
Name	Specification	Quantity
MV810-EIP01 option (with an expansion box)	75 × 60 × 24 mm	1
User manual	A4 × 1	1

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.



<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
Bit5: Coast to stop 0: Disable; 1: Enable
Bit6: Fault reset 0: Disable; 1: Enable
Bit7: Emergency stop 0: Disable; 1: Enable
Byte8: Command word high byte
Byte9: Command word low byte
Status word of slave response:
Bit0: FWD running 0: Disable; 1: Enable
Bit1: REV running 0: Disable; 1: Enable
Bit2: Stop 0: Disable; 1: Enable
Bit3: Fault 0: Disable; 1: Enable
Bit4: Power failure 0: Disable; 1: Enable
Bit5: Ready state 0: Disable; 1: Enable
Bit6: Motor number 0: Motor 1; 1: Motor 2
Bit7: Motor type
0: Asynchronous; 1: Synchronous
Bit8: Overload pre-alarm 0: Disable; 1: Enable
Bit9 to Bit10: Control mode
0: Keypad; 1: Terminal; 2: Communication
Byte8: Status word high byte
Byte9: Status word low byte</td></tr>
<tr><td>PZD2</td><td>Byte10
Byte11</td><td rowspan="8">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).
<table><tr><td>P43.02</td><td>PZD2 received</td><td rowspan="6">0: Disable
1: Frequency reference (0.00 to P02.10)
2: Drive torque upper limit reference (0.0 to 300.0% motor rated current)
3: Brake torque upper limit reference (0.0 to 300.0% motor rated current)</td></tr><tr><td>P43.03</td><td>PZD3 received</td></tr><tr><td>P43.04</td><td>PZD4 received</td></tr><tr><td>P43.05</td><td>PZD5 received</td></tr><tr><td>P43.06</td><td>PZD6</td></tr></table></td></tr>
<tr><td>PZD3</td><td>Byte12
Byte13</td></tr>
<tr><td>PZD4</td><td>Byte14
Byte15</td></tr>
<tr><td>PZD5</td><td>Byte16
Byte17</td></tr>
<tr><td>PZD6</td><td>Byte18
Byte19</td></tr>
<tr><td>PZD7</td><td>Byte20
Byte21</td></tr>
<tr><td>PZD8</td><td>Byte22
Byte23</td></tr>
</table>

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Parameter	Byte	Description
		4: Torque reference (-300.0 to 300.0% motor rated current) 5: FWD run frequency reference upper limit (0.00 to P02.10) 6: REV run frequency reference upper limit (0.00 to P02.10) 7: Voltage reference (V/F separation) (0 to 1000) 8: Virtual input terminal command (0 to 0xFF are corresponding to DI8 to DI1) 9: Output terminal bus command (the output terminal function is set to 39; 0 to 0xF are corresponding to R d.04