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The Specification are for the customer's reference and are subject to change without notice

1. Format details:

The command contains 8 bytes data to write and read.

Bytes	Description
1	Adress
2	Function code
3	Address of register (big-endian)
4	Data of register (big-endian)
5	CRC checksum (little-endian)

2. Function code:

Function Code	Description
0x01	Read state of Relay
0x02	Read Input Pin State
0x03	Read address, Firmware Version
0x05	Write/Control Relay
0x06	Configure Baud Rate, Device Address
0x07	Enable EEPROM Data Store

3. Command Details:

3.1 Read state of Relay (0x01):

Command：01 01 00 00 00 08 3D CC

Bytes	Meaning	Description
01	Device address	0x00 is broadcast address；0x01-0xFF are device addresses
01	01 Command	Command for checking states of Relay
00 00	Initial Address	Fixed 0x0000 (Read All)
00 08	Command	Fixed 0x0008
3D CC	CRC16	The CRC checksum of first six bytes of data

Response: 01 01 01 00 51 88

Bytes	Meaning	Description
01	Device address	0x00 is broadcast address；0x01-0xFF are device addresses
01	01 Command	Command for checking states of Relay
01	Number	The number of bytes returned
00	Sate	The state of Relay 0 = OFF 1 = ON Bit0:The state of the first Relay； Bit1: The state of the second Relay； Bit2: The state of the third Relay； …… BitF: The state of the sixteen Relay
51 88	CRC16	The CRC checksum of first six bytes of data

Examples:

Read All Relay State:

Close: Command: 01 01 00 00 00 08 3D CC

Open: Command: 01 01 01 00 51 88 //Close all Relays 0x00

Relay 1

Close: Command: 01 05 00 01 00 00 9C 0A

Open: Command: 01 05 00 01 FF 00 DD FA

3.2 Read state of Input PIN (0x02): Voltage Can support 2 ~ 24V

Command：01 02 00 00 00 01 B9 CA

Bytes	Meaning	Description
01	Device address	0x00 is broadcast address；0x01-0xFF are device addresses
02	02 Command	Command for Read Input Pins
00 00	Address	Fixed 0x0000 (Read All)
00 01	PIN Address	0x0001：Read Pin 1 State
B9 CA	CRC16	The CRC checksum of first six bytes of data

Response: 01 02 01 00 A1 88

Bytes	Meaning	Description
01	Device address	0x00 is broadcast address；0x01-0xFF are device addresses
02	02 Command	Command for Read Input Pins
01	Number	The number of bytes returned
00	PIN Address	0：Digital LOW 1：Digital HIGH Bit0:The state of the first Input； Bit1: The state of the second Input； Bit2: The state of the third Input； …… BitF: The state of the sixteen Input
B9 CA	CRC16	The CRC checksum of first six bytes of data

3.3 Read Address, Firmware Version

3.3.1 Read Device Address Command (0x03):

Command：00 03 40 00 00 01 90 1B

Bytes	Meaning	Description
00	Device address	0x00 is broadcast address；0x01-0xFF are device addresses
03	03 Command	Read the device address command
40 00	Command Register	0x4000: Read the device address, 0x8000: Read the software version
00 01	Device Address	Fixed 0x0001
90 1B	CRC16	The CRC checksum of first six bytes of data

Response: 01 03 02 00 01 79 84

Bytes	Meaning	Description
01	Device address	0x00 is broadcast address；0x01-0xFF are device addresses
03	03 Command	Read the software version and the device address command
02	Command Register	Return Bytes
00 01	Device Address	Set the device address as 0x0001-0x00FF
79 84	CRC16	The CRC checksum of first six bytes of data

Examples:

[Device with Address 01]

Send: 00 03 40 00 00 01 90 1B
Return: 01 03 02 00 01 79 84 //address 0x01

[Device with Address 02]

Send: 00 03 40 00 00 01 90 1B
Return: 02 03 02 00 02 7D 85 //address 0x02

[Device with Address 03]

Send: 00 03 40 00 00 01 90 1B
Return: 03 03 02 00 03 81 85 //address 0x03

3.3.2 Read Software Version Command (0x03):

Command：00 03 80 00 00 01 AC 1B

Bytes	Meaning	Description
00	Device address	0x00 is broadcast address；0x01-0xFF are device addresses
03	03 Command	Read the device address command
80 00	Command Register	0x4000: Read the device address, 0x8000: Read the software version
00 01	Bytes	Fixed 0x0001
AC 1B	CRC16	The CRC checksum of first six bytes of data

Response: 01 03 02 00 C8 B9 D2

Bytes	Meaning	Description
01	Device address	0x00 is broadcast address；0x01-0xFF are device addresses
03	03 Command	Read the software version and the device address command
02	Command Register	Return Bytes
00 C8	Software version	Convert to decimal and move the decimal point to the left by two places to indicate the software version 0x00C8 = 200 = V2.00
B9 D2	CRC16	The CRC checksum of first six bytes of data

Examples:

Send: 00 03 80 00 00 01 AC 1B

Return: 03 03 02 00 C8 F1 00 //0x00C8=200=V2.00

3.4 Write/Control Relay (0x05):

Command：01 05 00 00 FF 00 8C 3A

Bytes	Meaning	Description
01	Device address	0x00 is broadcast address；0x01-0xFF are device addresses
05	05 Command	Command for controlling Relay
00 00	Address	The register address of controlled Relay, 0x00 - 0x000F
FF 00	Command	0xFF00：Open Relay 0x0000：Close Relay
8C 3A	CRC16	The CRC checksum of first six bytes of data

Response: 01 05 00 00 FF 00 8C 3A

Bytes	Meaning	Description
01	Device address	0x00 is broadcast address；0x01-0xFF are device addresses
05	05 Command	Command for controlling Relay
00 00	Address	The register address of controlled Relay, 0x00 - 0x000F
FF 00	Command	0xFF00：Open Relay 0x0000：Close Relay
8C 3A	CRC16	The CRC checksum of first six bytes of data

Examples:

Relay 0

Close: Command: 01 05 00 00 00 00 CD CA

Open: Command: 01 05 00 00 FF 00 8C 3A

Relay 1

Close: Command: 01 05 00 01 00 00 9C 0A

Open: Command: 01 05 00 01 FF 00 DD FA

3.5 Configure Baud Rate, Device Address

3.5.1 Set Device Address Command (0x06):

Command：01 06 40 00 00 02 1D CB

Bytes	Meaning	Description
01	Device address	0x00 is broadcast address；0x01-0xFF are device addresses
06	06 Command	set the baud rate and device address
40 00	Command Register	0x2000 sets the baud rate, 0x4000 sets the device address
00 02	Device Address	Set the device address as 0x0001-0x00FF
1D CB	CRC16	The CRC checksum of first six bytes of data

Response: 01 06 40 00 00 02 1D CB

Bytes	Meaning	Description
01	Device address	0x00 is broadcast address；0x01-0xFF are device addresses
06	06 Command	Set the baud rate and Device address
40 00	Command Register	0x2000 sets the baud rate, 0x4000 sets the device address
00 02	Device Address	Set the device address as 0x0001-0x00FF
1D CB	CRC16	The CRC checksum of first six bytes of data

Examples:

[Device with Address 01]

Set device address as 0x01: 01 06 40 00 00 01 5D CA

Set device address as 0x02: 01 06 40 00 00 02 1D CB

Set device address as 0x03: 01 06 40 00 00 03 DC 0B

[Device with Address 02]

Set device address as 0x01: 02 06 40 00 00 01 5D F9

Set device address as 0x02: 02 06 40 00 00 02 1D F8

Set device address as 0x03: 02 06 40 00 00 03 DC 38

3.5.2 Set Baud Rate Command (0x06):

Command：01 06 20 00 00 01 43 CA

Bytes	Meaning	Description
01	Device address	0x00 is broadcast address；0x01-0xFF are device addresses
06	06 Command	set the baud rate and device address
20 00	Command Register	0x2000 sets the baud rate, 0x4000 sets the device address
00	Parity	0x00: no parity check, 0x01: even parity check, 0x02: odd parity check
01	Baud Rate value	The corresponding baud rate value: 0x00: 4800 0x01: 9600 0x02: 19200 0x03: 38400 0x04: 57600 0x05: 115200 0x06: 128000 0x07: 256000
43 CA	CRC16	The CRC checksum of first six bytes of data

Response: 01 06 20 00 00 01 43 CA

Bytes	Meaning	Description
01	Device address	0x00 is broadcast address；0x01-0xFF are device addresses
06	06 Command	Set the baud rate and Device address
20 00	Command Register	0x2000 sets the baud rate, 0x4000 sets the device address
00	Parity	0x00: no parity check, 0x01: even parity check, 0x02: odd parity check
01	Baud Rate value	The corresponding baud rate value: 0x00: 4800 0x01: 9600 0x02: 19200 0x03: 38400 0x04: 57600 0x05: 115200 0x06: 128000 0x07: 256000
43 CA	CRC16	The CRC checksum of first six bytes of data

Examples:

[Device with Address 01]

Set Baud Rate as 4800: 01 06 20 00 00 00 82 0A

Set Baud Rate as 9600: 01 06 20 00 00 01 43 CA

Set Baud Rate as 11500: 01 06 20 00 00 05 42 09

3.6 **Enable EEPROM Data Store (0x07):** if this feature is enabled then it will store the relay state after power restore.

Command：01 07 70 00 00 01 6F 0A

Bytes	Meaning	Description
01	Device address	0x00 is broadcast address；0x01-0xFF are device addresses
07	07 Command	set the baud rate and device address
70 00	Command Register	Fixed bytes
00 01	State	0x0000 : Disable 0x0001 : Enable
6F 0A	CRC16	The CRC checksum of first six bytes of data

Response: 01 07 01 01 70 49

Bytes	Meaning	Description
01	Device address	0x00 is broadcast address；0x01-0xFF are device addresses
07	07 Command	Command for checking states of Relay
01	Number	The number of bytes returned
01	Sate	0x00 : Disable 0x01 : Enable
70 49	CRC16	The CRC checksum of first six bytes of data

Examples:

[Device with Address 01]

Enable Send: 01 07 70 00 00 01 6F 0A

Enable Response: 01 07 01 01 70 49

Disable Send: 01 07 70 00 00 00 AE CA

Disable Response: 01 07 01 00 B1 89