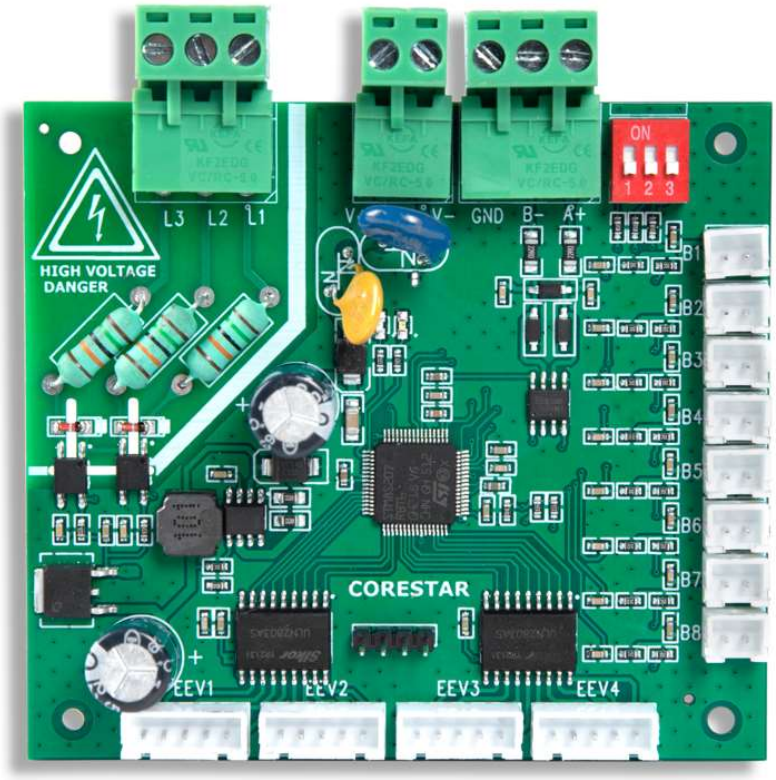
User Manual

（Version V1.1）

EVD4

Four unipolar EEV expansion board



Introduction

This product is specially designed for the application of drying heat pump, machine room air conditioning, cold storage refrigeration and other industries that need to control multiple electronic expansion valves at the same time. It can be connected to the control system through the MODBUS RTU protocol. The module adopts a compact structure design,

which can help customers save installation space to the maximum extent. The module also supports 8-way NTC expansion for the collection of electronic expansion valve control signals.

Product Features

• Modular design, supporting up to 7 modules cascade;

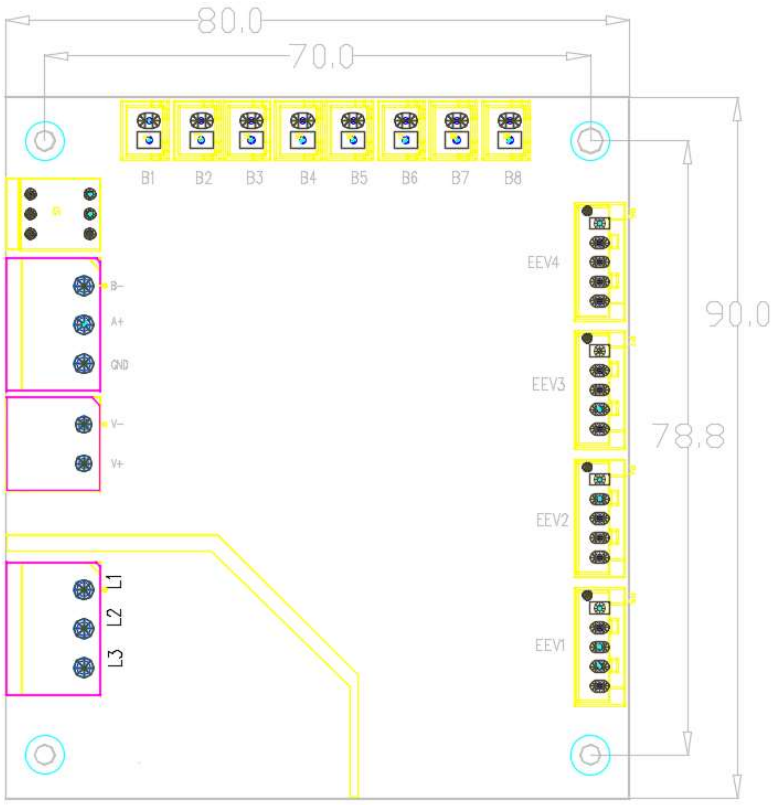
• Wide voltage power supply, suitable for a variety of working environments;

• Onboard DIP switch for easy address configuration;

• Supports the mainstream 5-wire valve on the market

• Standard MODBUS RTU output

Dimmensions(unit： mm)



Terminal definition

V+	Power supply V+
V-	Power supply V-
A	RS485 A+
B	RS485 B-
GND	Signal ground
B1~B8	NTC sensors, °C Beta 3435
EEV1~EEV4	5-wires EEV
L1，L2，L3	Three-phase detection (optional, not support in default)

Technical Specifications

Power supply	24 Vac/Vdc ±10%
Current consumption	<500mA
installation	Plastic tower
dimensions(mm)	LengthxHeightxWidth=80x90x30
Operating condition	-25 to 60°C, Humidity <90%rH，non-condensing
Storage condition	-35 to 70°C Humidity <90%rH，non-condensing
IP level	IP20

Communication Protocol

Modbus RTU parameters：

Data byte format definition: 1 start bit, 8 data bits, no parity, 2 stop bits

Data transmission order: low bit first, LSB to MSB

Baud rate: 19200bps (default)

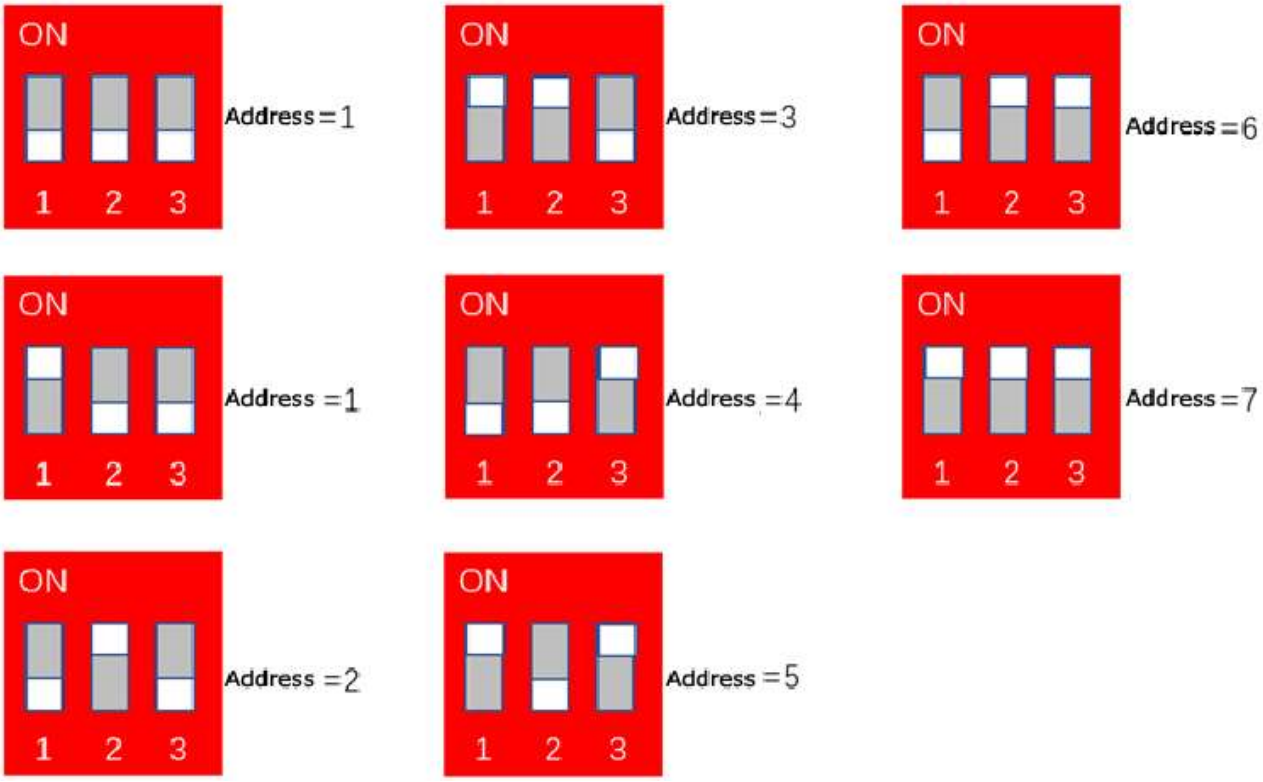
Communication parameter setting:

First connect with the default communication parameters.

After the connection is successful, change the register address 201 according to the following table (the default value is 2)

value	Baud rate	Stop bit	parity
0	4800	2	None
1	9600	2	None
2	19200	2	None
4	4800	1	None
5	9600	1	None
6	19200	1	None
16	4800	2	Even
17	9600	2	Even
18	19200	2	Even
20	4800	1	Even
21	9600	1	Even
22	19200	1	Even
24	4800	2	Odd
25	9600	2	Odd
26	19200	2	Odd
28	4800	1	Odd
29	9600	1	Odd
30	19200	1	Odd

Address configure：



Note:

After resetting the address, you need to power off and restart to take effect

Registers

Sensos reading （read only）	address	description
S1	0	Real value= reading value /10.0
S2	1	
S3	2	
S4	3	
S5	4	
S6	5	
S7	6	
S8	7	
E0	9	0=normal phase， 1=wrong phase， 2=phase lost

EEV1 enable/disable	234	1：default enable 0：disable
EEV1 Max. steps	235	Default 500 stps
EEV1 target steps	238	Target moving steps
EEV1 real steps	239	Real moving steps
EEV2 enable/disable	240	1：default enable 0：disable
EEV2 Max. steps	241	Default 500 stps
EEV2 target steps	244	Target moving steps
EEV2 real steps	245	Real moving steps
EEV3 enable/disable	246	1：default enable 0：disable
EEV3 Max. steps	247	Default 500 stps
EEV3 target steps	250	Target moving steps
EEV3 real steps	251	Real moving steps
EEV4 enable/disable	252	1：default enable 0：disable
EEV4 Max. steps	253	Default 500 stps
EEV4 target steps	256	Target moving steps
EEV4 real steps	257	Real moving steps