STEPPER MOTOR DRIVER

SBC-MD-TB6600 & SBC-MD-DM860H

JOY-iT

1. GENERAL INFORMATION

Dear customer

Thank you for choosing our product. In the following, we will show you what you need to bear in mind during commissioning and use.
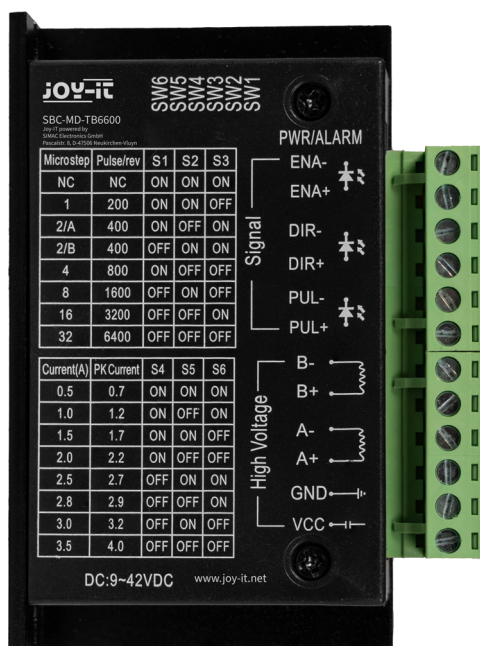
Should you encounter any unexpected problems during use, please do not hesitate to contact us.
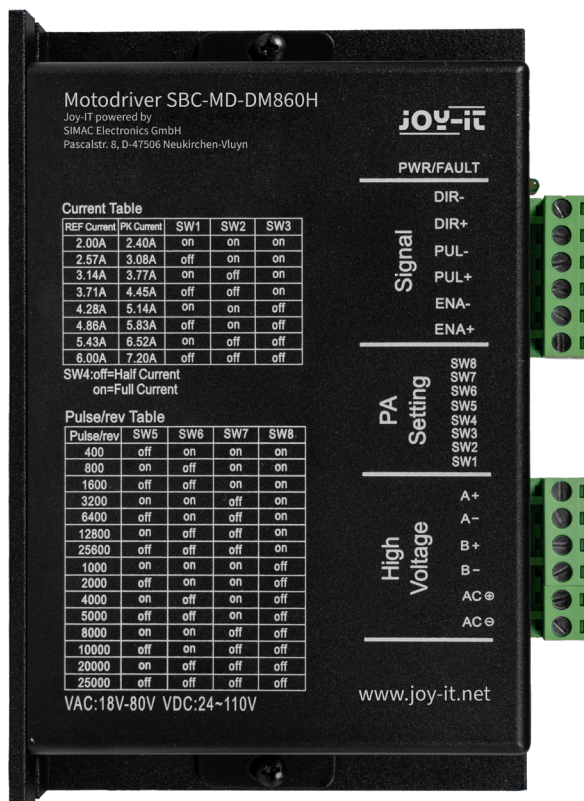
> **i** **For your own safety, work on voltages of 60 V and above must only be carried out by qualified electricians. There is a risk of electric shock, which can lead to serious injury or death!**
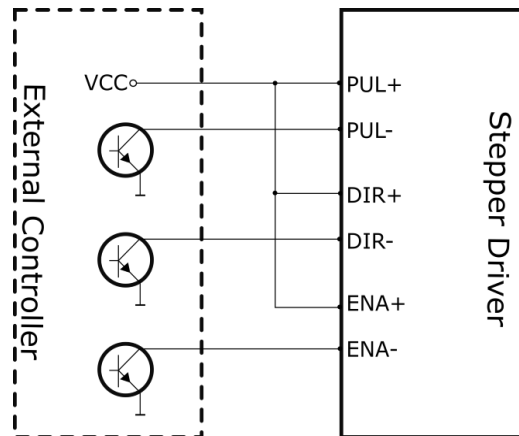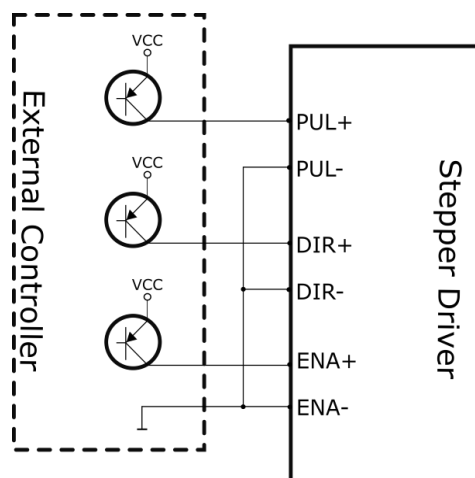
SBC-MD-TB6600

SBC-MD-DM860H

Connection	Function	Remarks
ENA+ ENA-	The positive and negative connections of the enable signal	5 - 24 V DC
DIR+ DIR-	The positive and negative connections of the direction signal	5 - 24 V DC
PUL+ PUL-	The positive and negative connections of the control pulse signal.	5 - 24 V DC
A+ A-	The positive and negative connections of the motor coil A	-
B+ B-	The positive and negative connections of the motor coil B	-
VCC (AC+) GND (AC-)	The positive and negative connections of the power supply	TB6600: 9 - 42 V DC DM860H: 24 - 110 V DC 18 - 80 V AC

Connection to open collector signal

Connection to PNP signal

SBC-MD-TB6600

The switches on the side of the motor driver are used to set both the microsteps and the rated current of the motor.

The first three switches are used to set the microsteps

Microsteps	Pulse/revolution	S1	S2	S3
0	0	ON	ON	ON
1	200	ON	ON	OFF
2/A	400	ON	OFF	ON
2/B	400	OFF	ON	ON
4	800	ON	OFF	OFF
8	1600	OFF	ON	OFF
16	3200	OFF	OFF	ON
32	6400	OFF	OFF	OFF

The last three switches are used to set the current

Current (A)	Peak current (A)	S1	S2	S3
0,5	0,7	ON	ON	ON
1,0	1,2	ON	OFF	ON
1,5	1,7	ON	ON	OFF
2,0	2,2	ON	OFF	OFF
2,5	2,7	OFF	ON	ON
2,8	2,9	OFF	OFF	ON
3,0	3,2	OFF	ON	OFF
3,5	4,0	OFF	OFF	OFF

When setting the current, make sure that the maximum current of the motor you are using is not exceeded.

SBC-MD-DM860H

The switches on the side of the motor driver are used to set both the microsteps and the rated current of the motor.

The first four switches are used to set the current

Current (A)	Peak current (A)	S1	S2	S3
2,00	2,40	ON	ON	ON
2,57	3,08	OFF	ON	ON
3,14	3,77	ON	OFF	ON
3,71	4,45	OFF	OFF	ON
4,28	5,14	ON	ON	OFF
4,86	5,83	OFF	ON	OFF
5,43	6,52	ON	OFF	OFF
6,00	7,20	OFF	OFF	OFF

S4 serves as a multiplier here. If S4 is set to ON, the current as shown in the table applies. If S4 is set to OFF, the current set with the other three switches is divided in half. When setting the current, make sure that the maximum current of the motor you are using is not exceeded.

The last four switches are used to set the microsteps

Microsteps	Pulse/revolution	S1	S2	S3	S4
2	400	OFF	ON	ON	ON
4	800	ON	OFF	ON	ON
8	1600	OFF	OFF	ON	ON
16	3200	ON	ON	OFF	ON
32	6400	OFF	ON	OFF	ON
64	12800	ON	OFF	OFF	ON
128	25600	OFF	OFF	OFF	ON
5	1000	ON	ON	ON	OFF
10	2000	OFF	ON	ON	OFF
20	4000	ON	OFF	ON	OFF
25	5000	OFF	OFF	ON	OFF
40	8000	ON	ON	OFF	OFF
50	10000	OFF	ON	OFF	OFF
100	20000	ON	OFF	OFF	OFF
125	25000	OFF	OFF	OFF	OFF

5. SIMPLE ARDUINO CONTROL EXAMPLE

In this simple example, we show the control of the motor driver with the help of an Arduino. We make the motor rotate 5000 steps in one direction and then 5000 steps in the other direction.

Connect the motor driver to your Arduino as shown in the table.

Motor driver	Arduino	Power supply
ENA+	Pin 6	-
ENA-	GND	-
PUL+	Pin 5	-
PUL-	GND	-
DIR+	Pin 4	-
DIR-	GND	-
VCC (AC+)	-	+24 V
GND (AC-)	-	GND

Now connect your motor to the corresponding connections for motor coils A and B. Refer to the documentation for your motor for the correct pin assignment.

Then copy the following code example and upload it to your Arduino.

```
#define DIR 4 //Direction pin
#define PUL 5 //Pulse pin
#define ENA 6 //Enable pin
void setup()
{
pinMode(DIR, OUTPUT); //Direction
pinMode(PUL, OUTPUT); //Pulse
pinMode(ENA, OUTPUT); //Enable
digitalWrite(ENA,LOW);
}
void loop()
{
digitalWrite(DIR,HIGH);

for(int Step = 0; Step < 5000; Step++)
{
digitalWrite(PUL,HIGH);
delayMicroseconds(500);
digitalWrite(PUL,LOW);
delayMicroseconds(500);
}
delay(1000);
digitalWrite(DIR,LOW);
for(int Step = 0; Step < 5000; Step++)
{
digitalWrite(PUL,HIGH);
delayMicroseconds(500);
digitalWrite(PUL,LOW);
delayMicroseconds(500);
}
delay(1000);
}
```

6. INFORMATION & TAKE-BACK OBLIGATIONS

Our information and take-back obligations under the German Electrical and Electronic Equipment Act (ElektroG)

Symbol on electrical and electronic appliances:

This crossed-out dustbin means that electrical and electronic appliances do not belong in household waste. You must hand in the old appliances at a collection point. Before handing in old batteries and accumulators that are not enclosed by the old appliance must be separated from it.

Return options:

As an end user, you can return your old appliance (which essentially fulfills the same function as the new appliance purchased from us) for disposal free of charge when you purchase a new appliance. Small appliances with no external dimensions greater than 25 cm can be returned in normal household quantities, irrespective of the purchase of a new appliance.

Returns can be made at our company location during opening hours:
SIMAC Electronics GmbH, Pascalstr. 8, D-47506 Neukirchen-Vluyn

Possibility to return in your area:

We will send you a parcel stamp with which you can return the device to us free of charge. To do this, please contact us by e-mail at Service@joy-it.net or by telephone.

Information on packaging:

Please pack your old appliance securely for transportation. If you do not have suitable packaging material or do not wish to use your own, please contact us and we will send you suitable packaging.

7. SUPPORT

We are also there for you after your purchase. Should any questions remain unanswered or problems arise, we are also available by e-mail, telephone and ticket support system.

E-Mail: service@joy-it.net
Ticket-System: https://support.joy-it.net
Telephone: +49 (0)2845 9360 – 50

For further information, please visit our website:
www.joy-it.net