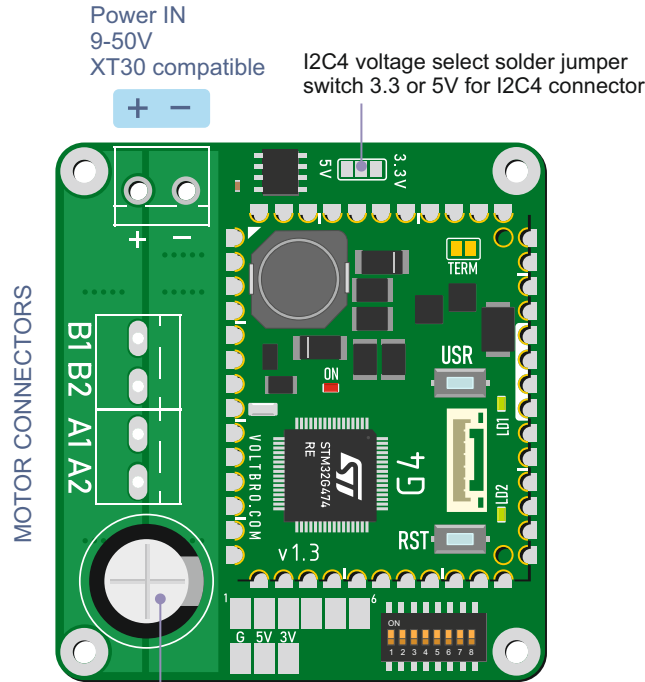
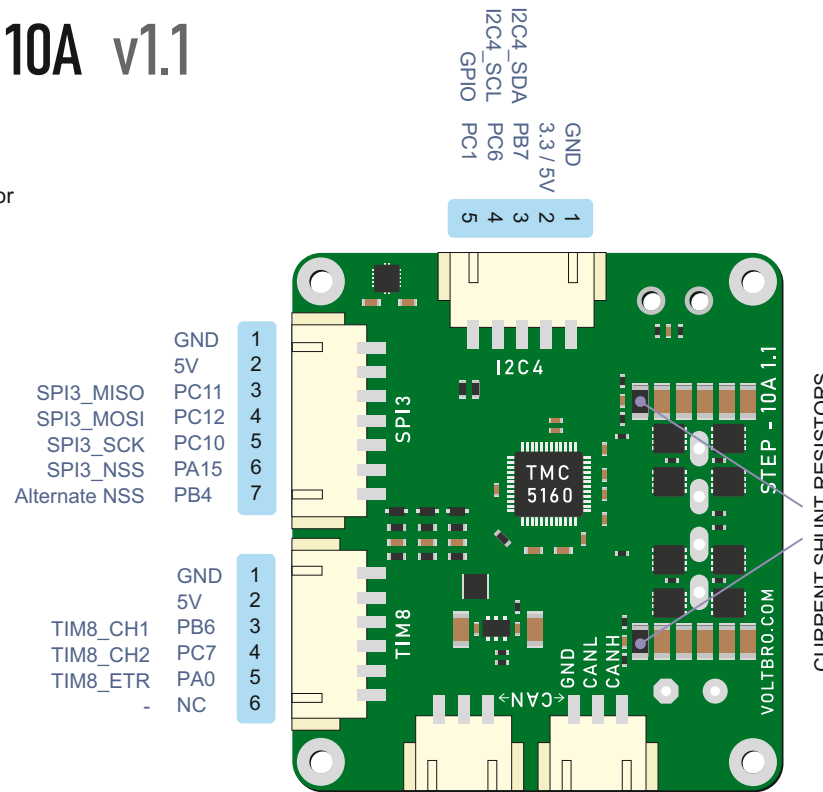


# VBCore Stepper Driver 10A v1.1



Power line bulk capacitor.  
Can be moved in case of built-in use



TIM8 for incremental rotary encoder  
AB 2-Channel / ABZ 3-Channel

## VBCore Stepper Driver v1.1

VIN: 9-50V  
 MAX CURRENT 10A  
 MCU: VB32G4 (STM32G474RE)  
 DRIVER: TMC5160  
 SPI interface  
 ABZ encoder interface  
 I2C interface  
 Current control  
 I2C EEPROM  
 CAN / CAN-FD  
 Dimensions: 51x56mm  
 Mount holes: 45x50mm D2.5 mm

### NOTES:

1. SPI3 connector connected to controller via level shifters
2. Hall sensors connectors connected to controller via filter
3. I2C4 SCL and SDA lines pulled up - **DON'T USE** internal pull-up
4. I2C4 line (including EEPROM) is powered through solder bridge

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## Stepper driver

TMC5160, 8 to 60 V  
 Universal high voltage controller/driver  
 for two-phase bipolar stepper motor.

Controll	PIN	Timer
REFL_STEP	PA8	TIM1_CH1
REFL_DIR	PA9	TIM1_CH2
CSN_CFG3	PA4	SPI1_NSS
SCK_CFG2	PA5	SPI1_SCK
SDI_CFG1	PA7	SPI1_MOSI
SDO_CFG0	PA6	SPI1_MISO
DIAG1_SWP	PC3	
DIAG0_SWN	PC2	
SD_MODE	PA12	
SPI_MODE	PA11	
ENCA_DCIN_CFG5	PB1	
ENCB_DCEN_CFG4	PB0	
ENCN_DCO_CFG6	PB2	
DRV_ENN	PC5	

## EEPROM

256K  
 AT24C256C

Controll	PIN	I2C
A0	GND	
A1	GND	
A2	GND	
SCL	PC6	I2C4_SCL
SDA	PB7	I2C4_SDA

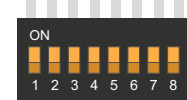
## Voltage controll

Resistive voltage divider 16:1

Controll	PIN	ADC
V input	PC0	ADC1/2

### User switch

8 pin, ON == HIGH



Pb10  
 PB11  
 PB12  
 PB13  
 PB14  
 PB15  
 PC8  
 PC9

## Current shunt resistor

Connected to TMC5160

Size	Default
1206	0.05 Ohm