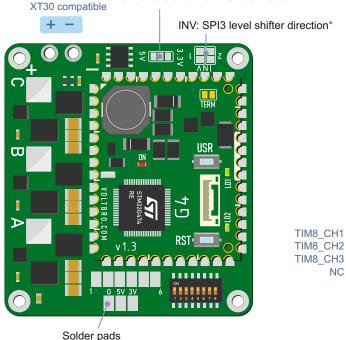
# VBCore BLDC Driver 30A v1.4

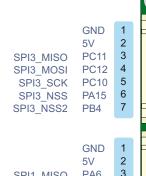


Use common pins with user switch (1-6 inputs)

NOTE: put switches off in case of using solder pads

I2C4 voltage select solder jumper switch 3.3 or 5V for I2C4 connector

INV: SPI3 level shifter direction\*



3 PA6 SPI1 MISO 4 PA7 SPI1 MOSI SPI1 SCK

5 PA5 6 SPI1 NSS PA4

Solder jumper switch Use TIM8 for Hall sensors (UVW)

Need select and solder jumpers for work!

# 7 0 8 327

GND 3.3 / PB7 PC6 PB0

5400-

5

## **VBCore BLDC Driver** v1.4

Power IN

9-60V

VIN: 6-60V MAX CURRENT 30A MCU: VB32G4 (STM32G474RE) DRIVER IC: DRV8328B SPI encoder interface **UVW Hall encoder interface** I2C encoder interface **Current sensors** EEPROM CAN / CAN-FD Dimensions: 51x56mm Mount holes: 45x50mm D2.5 mm

#### **NOTES:**

- 1. The SPI1 and SPI3 connectors are connected to the controller via level shifters.
- 2. The Hall sensor connectors are connected to the controller via a filter.

**GND** 

5V

PB6

PC7

PC8

NC

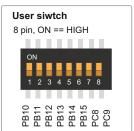
NC

5

3. The I2C4 SCL and SDA lines have external pull-ups — do not use the internal pull-up.

SPI1 or TIM8

- 4. To supply power to the I2C4 bus (including the EEPROM), close the voltage selection solder iumper.
- 5. To use the SPI3 7-pin connector as an SPI bus, leave the INV solder pads open. Close the INV 1 solder jumper to configure the PA15 and PB4 pins as inputs. Close the INV 2 solder jumper to configure the PC10 and PC12 pins as inputs.



# **VBCores**

#### www.vbcores.com

Electronics for robotics research and development

#### Motor driver

DRV8328B 4.5 to 60 V Three-phase BLDC Gate Driver

Controll	PIN	Timer
INLA	PB13	TIM1_CH1N
INLB	PB14	TIM1_CH2N
INLC	PB15	TIM1_CH3N
INHA	PA8	TIM1_CH1
INHB	PA9	TIM1_CH2
INHC	PA10	TIM1_CH3
NSLEEP	PB3	
NFAULT	PB5	

#### **Current sensor**

VBCORES.COM

ACS711KEXLT-31AB-T

Range: ±31A Sensitivity: 45mV/A

Controll	PIN	ADC
I_A	PC1	ADC12_IN7
I_B	PC2	ADC12_IN8
I_C	PC3	ADC12_IN9

### **EEPROM**

256K, AT24C256C

\*For enable, one of I2C4 voltage select solder jumper must be closed

Controll	PIN	I2C
A0, A1, A2	GND	
Address		0x50
SCL	PC6	I2C4_SCL
SDA	PB7	I2C4 SDA

# Voltage controll

Resistive voltage divider 16:1

Controll	PIN	ADC
V input	PC0	ADC12_IN6