

# cedargrove\_drv8830

A CircuitPython class for operating the Cedar Grove DRV8830 I2C Motor Controller FeatherWing.

The Cedar Grove DRV8830 FeatherWing is a custom board that integrates the DRV8830 I2C motor controller with an INA260 power monitor. The FeatherWing was designed for use by a DC motor testing apparatus, providing both motor control and the ability to measure motor power. The FeatherWing also provides a connection for an external RPM sensor.

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## Implementation Notes

Hardware:

Software and Dependencies:

- Adafruit CircuitPython firmware for the supported boards: <https://github.com/adafruit/circuitpython/releases>

```
class cedargrove_drv8830.DRV8830(*, i2c_bus, address=0x2A)
```

Class representing the Cedar Grove DRV8830, a DC motor driver with I2C interface. Using an internal PWM scheme, the DRV8830 produces a regulated output voltage from a normalized input value (-1.0 to +1.0) or voltage input value (-5.06 to +5.06 volts).

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| <b>Parameters:</b> | <ul style="list-style-type: none"><li>• <b>i2c_bus</b> – The I2C data and clock bus signals as defined in the host device’s <b>board</b> definition. Typical value is <b>board.I2C()</b> . No default value.</li><li>• <b>address</b> – The I2C bus address. Defaults to <b>0x2A</b> (d42).</li></ul> |
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throttle

A class property.

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| <b>Parameters:</b> | <b>value</b> – Change or read the numeric value of the motor speed, ranging from -1.0 (full speed reverse) to +1.0 (full speed forward), or <b>None</b> (controller off). If <b>None</b> , the H-bridge is set to high-impedance (coasting). If <b>0.0</b> , the H-bridge is set to cause braking. |
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throttle\_volts

A class property.

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| <b>Parameters:</b> | <b>value</b> – Change or read the numeric value of the motor speed, ranging from -5.06 volts (full speed reverse) to +5.06 volts (full speed forward), or <b>None</b> (controller off). If <b>None</b> , the H-bridge is set to high-impedance (coasting). If <b>0.0</b> , the H-bridge is set to cause braking. |
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## bridge\_control

A class property.

**Parameters:** (Read-Only) Motor driver bridge status. Returns the 2-bit bridge control integer value and corresponding description string:

0b00	STANDBY / COAST
0b01	FORWARD
0b10	REVERSE
0b11	BRAKE

## fault

A class property.

**Parameters:** (Read-Only) Motor driver fault register status. Returns state of FAULT flag and a list of activated fault flag descriptors. FAULT flag is **True** if one or more fault register flags are **True**.

**Fault Register Flag Descriptors**

FAULT	Any fault condition
OCP	Overcurrent event; device disabled, clear fault to reactivate
UVLO	Undervoltage lockout; device disabled, resumes with voltage restoration
OTS	Overtemperature condition; device disabled, resumes with lower temperature
ILIMIT	Extended current limit event; device disabled, clear fault to reactivate

## clear\_faults()

Clears all fault condition flags.