
Shifter Hardware Manual

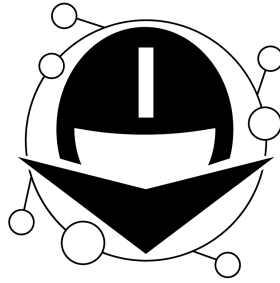
Release 1.0

Embention

2023-08-07

CONTENTS

1	Introduction	3
2	Quick Start	5
2.1	Warnings	5
3	Technical	7
3.1	Specifications	7
3.1.1	Mechanical	7
3.1.2	Electrical	7
3.2	Dimensions	7
4	Hardware Installation	9
4.1	Wiring	9
4.2	Pinout	10
4.3	Cascade connection	10
5	Maintenance	11
6	Acronyms and Definitions	13
7	Contact Data	15



SHIFTER | **VERONTE**
A V I / O N I C S

Shifter is an OEM miniaturized DC-DC converter.

INTRODUCTION

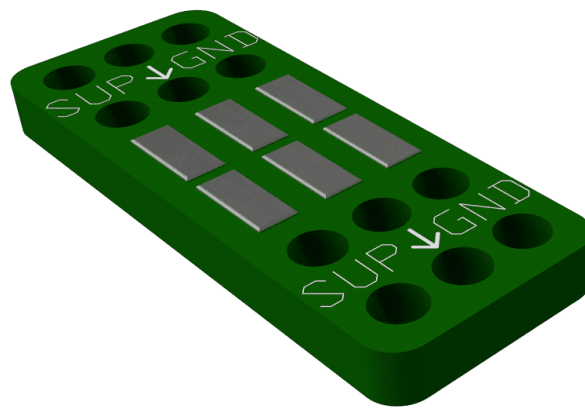


Fig. 1: Veronte Shifter

Veronte Shifter is an OEM DC-DC converter able to reduce or amplify voltage of binary signals (such as PWM or PPM) up to 12 V. Since its size is very reduced (7 mm wide), it can be introduced in wires or heat shrink tubes. In addition, several of them can be connected in series, sharing electrical conduit.

QUICK START

This user manual covers the *assembly* of **Shifter**. To use it, weld input and output wires according to the *Pinout section*. The following diagram and table summarize the **Shifter** behaviour:

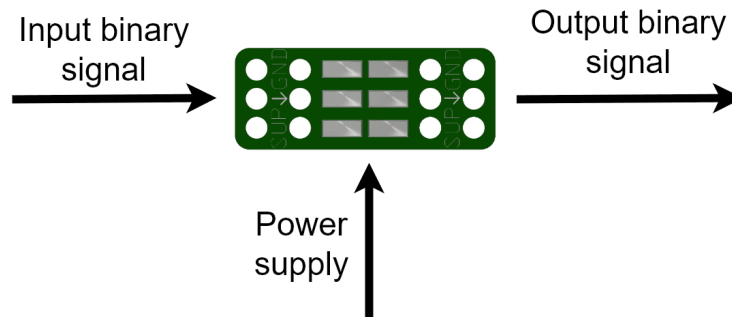


Fig. 1: Input and output diagram

Case	Result
Input binary signal > 1.6 V	Output binary signal = Power supply voltage
Input binary signal < 1.6 V	Output binary signal = 0 V (connected to ground)

2.1 Warnings

- Maximum voltage for input and power supply is 12 V.
- Minimum voltage for the input signal is 1.6 V to be detected as high state.
- Make sure **Shifter** is not thermally very insulated, to prevent overheating.
- Be careful welding pads and avoid short-circuits between them.

3.1 Specifications

3.1.1 Mechanical

- Operative temperature range: -50 to 85 °C.
- Weight: 0.5 g.

3.1.2 Electrical

- Input and output voltage range: 0 to 12 V.
- Power consumption: up to 300 mW.
- Wire size compatibility. Up to 22 AWG.

3.2 Dimensions

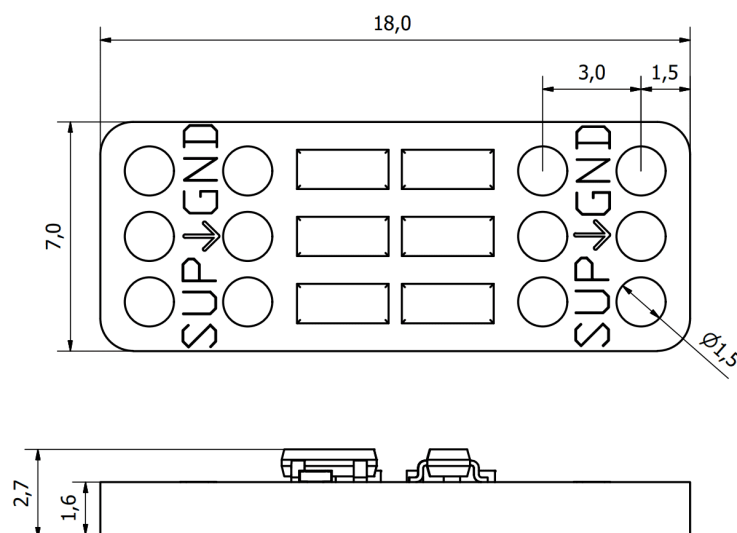


Fig. 1: Dimensions (mm)

HARDWARE INSTALLATION

4.1 Wiring

Each wire can be protected against pulling efforts. To do this, pass it through its corresponding pair of holes and weld it to the pad.

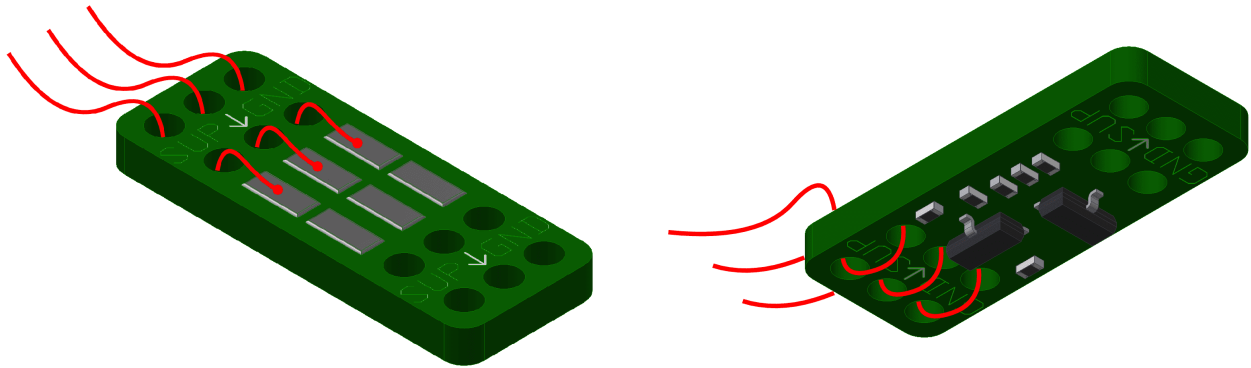


Fig. 1: Wiring diagram

4.2 Pinout

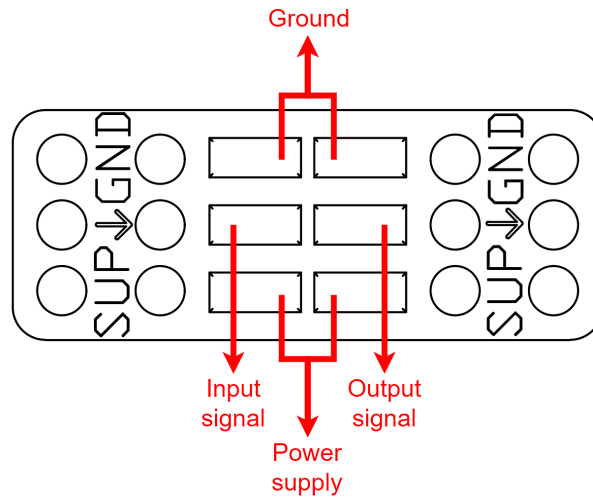


Fig. 2: Pinout diagram

Notice that power supply and ground pads are duplicated. Each couple of pads are connected each other to allow a *cascade connection*.

Shifter has an open drain output with internal pull-up tied to power supply. So, when the input signal is on, the output pin is connected to the power supply through a 300 Ω resistor; otherwise, it is connected to ground.

4.3 Cascade connection

It is possible to connect multiple **Shifters** in cascade, saving unnecessary wiring. The following image shows an example of 3 **Shifters**, each one using a different signal for its own device.

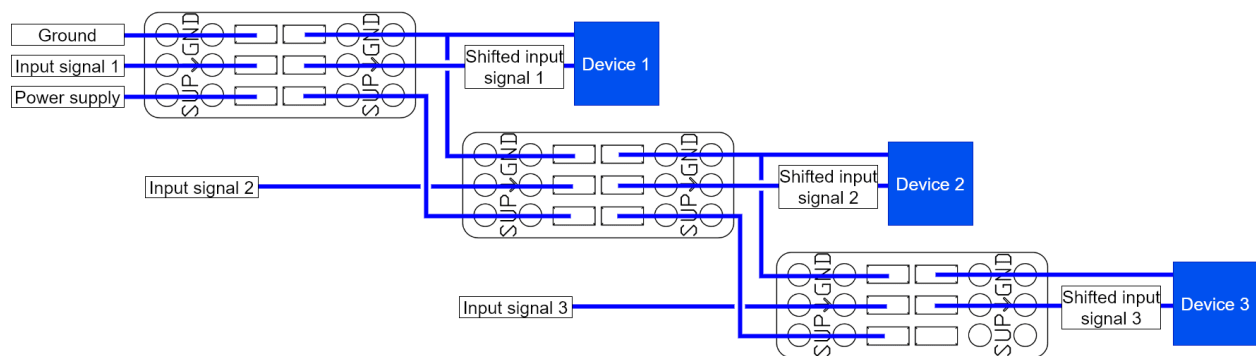


Fig. 3: Cascade example diagram

MAINTENANCE

Apart from cleaning, no extra maintenance is required to guarantee the correct operation of **Veronte Shifter**.

In order to clean **Shifter** properly, follow the next recommendations:

- Disconnect the device before cleaning.
- Use a clean, soft and dry brush to clean the unit.
- Do not immerse the unit in water to clean it.

ACRONYMS AND DEFINITIONS

AWG	American Wire Gauge
DC-DC	Direct Current to Direct Current
OEM	Original Equipment Manufacturer
PPM	Pulse-Position Modulation
PWM	Pulse-Width Modulation

CONTACT DATA

You can contact Embention if you need further help and support.

Embention contact data is as follows:

Email: support@embention.com

Telephone: (+34) 965 421 115

Address: [Polígono Industrial Las Atalayas, C/ Chelín, Nº 16, CP 03114, Alicante \(España\).](#)