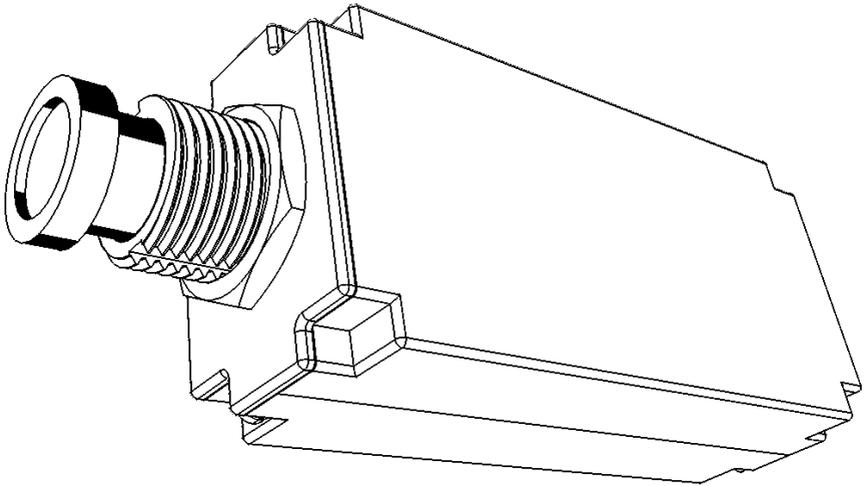


SHCB01

User Manual



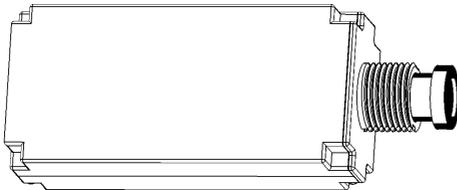
Version 1.0
OCT 8th 2019
SIMiONIC

Overview

Thanks for choosing products from SIMiONIC. We strive to provide the best quality and realistic hardware for the use of building flight simulators.

This manual includes the spec and usage of the simulated circuit breaker produced by SIMiONIC which is supposed to be used on flight simulators. Inside the circuit breaker is an electric magnet which is powered by 5V power source.

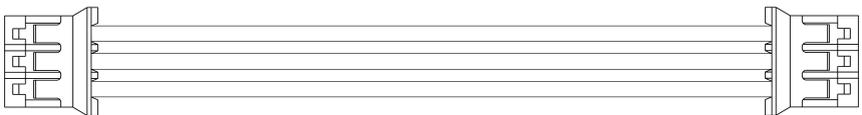
Unpacking



Circuit breaker

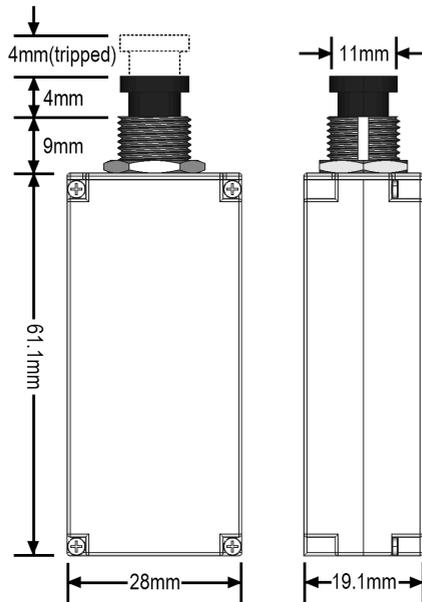


M12 hex nut x 2

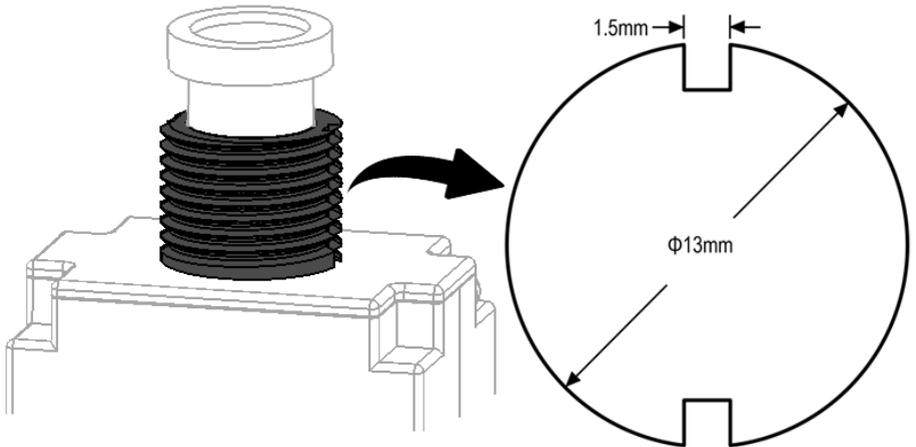


Cable with JST-PH-2.0 3pin plugs

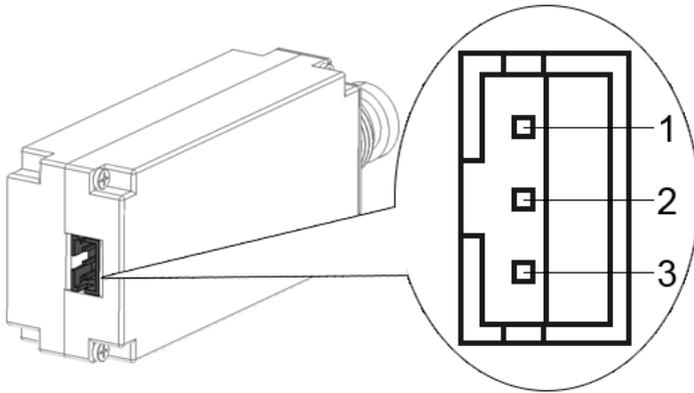
Dimensions



Cutout Diagram



Connector pinout



Pin number	Name	Purpose
1	FB	Feedback – connected to ground when tripped, otherwise suspended
2	TRIG	Trigger – momentarily add 5V power to trip, otherwise always keep 0V
3	GND	Ground

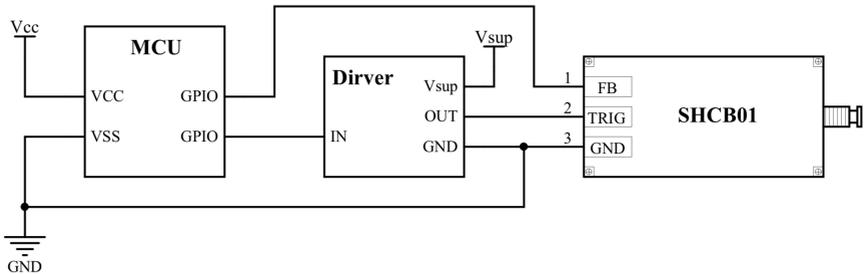
Electrical profile

To power the electromagnet with enough strength, it needs at least 800mA current. The resistance of the electromagnet inside SHCB01 is about 5 ohms at 15°C. A 5V power with at least 5 watt capacity will be enough to power this simulated circuit breaker to pop out. However, please keep in mind that the resistance of the coil inside the electromagnet rises with temperature. And because of the low resistance of the electromagnet, please also mind the resistance of wire/cable used to connect SHCB01. Higher the power voltage if needed.

Typical power consumption

	4.8V	5.0V	5.2V	5.4V	5.6V	5.8V	6.0V
15°C	0.96A	1.00A	1.04A	1.08A	1.12A	1.16A	1.20A
25°C	0.92A	0.96A	1.00A	1.04A	1.08A	1.12A	1.15A
35°C	0.89A	0.93A	0.96A	1.00A	1.04A	1.07A	1.11A
45°C	0.86A	0.89A	0.93A	0.96A	1.00A	1.04A	1.07A

Typical application



Because of the huge power consumption, you need a driver circuit to power the electromagnet instead of connect it directly to an MCU's IO port. Depending on the MCU's TTL voltage, IO output capability and the way you program the MCU, you may use an MOSFET or a triode or a combination of both as a driver for the electromagnet.

Limited Warranty

- 1. The product is covered by a 1 year limited warranty from the date of purchase, against any defects in materials or workmanship.*
- 2. This limited warranty does not cover any damage, deterioration or malfunction resulting from any improper use.*
- 3. We will repair the product using either new or refurbished replacement parts.*
- 4. To obtain warranty service, you must first contact us to determine the problem and the most appropriate solution for you.*
- 5. Shipping costs for products returned for warranty are never included in the warranty. Shipping towards us as well as shipping from us towards the client shall be paid by the client. We may require pre-payment of return shipping costs in advanced by bank prepayment or other type of payment.*

Company address:

*1024 2nd South Building, Software Park
No.18 Hi-Tech West Road
Hi-Tech Industry District, Tianjin
China*

Support e-mail: *support@simionic.net*