# H09R00 AC Solid-state Relay
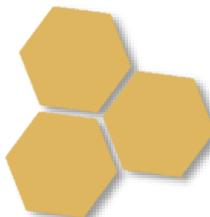
Technical Specifications
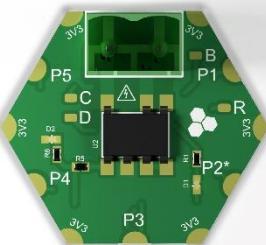
Top (1:1)   Bottom (1:1)

- Five array ports and six power ports (+3.3V and GND).
- Access to 5xUART, 2xI²C, SWD, BOOT0, RESET.
- Panasonic AQH3213ARGB solid-state relay (SSR):
  - **600 V AC** peak OFF-state voltage.
  - **1.2 A** ON-state RMS current.
  - **100 µsec** maximum turn-on time.
  - Zero-crossing detection.
- Yellow indication LED for SSR state.
- SSR load connector: TE Connectivity/AMP 2-position 5.08mm shrouded header.
- STM32F091CBU6 MCU.
- 8MHz external oscillator.

Available colors:

Commands *use with any serial terminal software*

```
command parameter1 parameter2 …
```

on *timeout*

Turn SSR on with a *timeout* (ms). Use `portMAX_DELAY = 0xFFFFFFFF` for indefinite timeout.

off

Turn SSR off.

toggle

Toggle SSR.

ledmode *mode*

SSR indicator LED *mode* (`ON`,`OFF`).

pwm *dutycycle*

Control SSR with a 24 KHz PWM signal with % *dutycycle* (`0-100`).

Examples

```
ledmode on

on 60000
```

Messages *for inter-array communication*

```
code, parameter1 [value], parameter2 [value],
```

```
CODE_H09R0_ON, timeout

CODE_H09R0_OFF

CODE_H09R0_TOGGLE

CODE_H09R0_PWM, dutycycle
```

Examples

```
// Timeout 10 seconds
messageParams[0] = (uint8_t)(10000>>24);
messageParams[1] = (uint8_t)(10000>>16);
messageParams[2] = (uint8_t)(10000>>8);
messageParams[3] = (uint8_t)(10000);

SendMessageToModule(BOS_BROADCAST,
CODE_H09R0_ON, 4);
```

APIs *getting your hands dirty!*

```
output API_function(inputs)
```

```
H09R0_Status SSR_on(uint32_t timeout)

H09R0_Status SSR_off()

H09R0_Status SSR_toggle()

H09R0_Status SSR_PWM()
```

Examples

```
SSR_PWM(50);

SSR_off(); SSR_on(10000);
```