lamaPLC: Multi-channel Solid State Relay Module

Microcontroller-compatible Solid State Relays (SSRs) connect low-power microcontrollers with high-power AC devices. Unlike traditional mechanical relays, SSRs lack moving parts, instead using light and semiconductors for safe, quiet switching of electricity.

A key feature of an SSR is safety via optical isolation. When an Arduino pin outputs a HIGH signal (usually 5V or 3.3V), it activates a small internal Infrared (IR) LED. The chip contains a physical gap that electricity cannot cross, but light can, preventing dangerous high-voltage AC from returning to the microcontroller. A light-sensitive semiconductor, such as a phototriac, is positioned opposite the LED. When it detects the IR light, it becomes conductive, completing the circuit to power the load.

G3MB-202P Multi-Channel Solid State Relay Module

The OMRON G3MB-202P is a low-cost, subminiature, PCB-mounting *Solid State Relay* (**SSR**) designed for high-density applications. It is widely used in DIY electronics, Arduino, and Raspberry Pi projects to safely switch AC loads up to 2A using low-voltage DC signals.

Key Specifications

- **Load Voltage:** 100 to 240 V AC (50/60 Hz).
- **Maximum Load Current:** 2 A.
- **Input Control Voltage:** 5 V DC (standard model variant).
- **Switching Method:** Zero-cross function (turns on when AC voltage crosses zero to reduce noise).
- **Form Factor:** 4-pin compact SIP (Single In-line Package) layout.