

SERIES SS1 SOLID-STATE RELAY



innovative microcontroller technology



SS1 Module
Shown
with Optional
Wire Harness
042-9010-0003

The SS-1 solid-state relay was developed for adding simple I/O to engines and mobile equipment. This compact microcontroller resembles an automotive style cube relay with plug-in connector socket, however this module is completely controlled by a microprocessor.

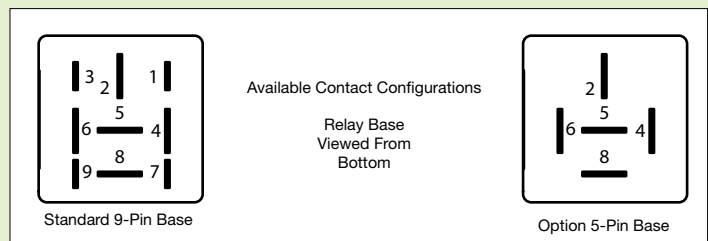
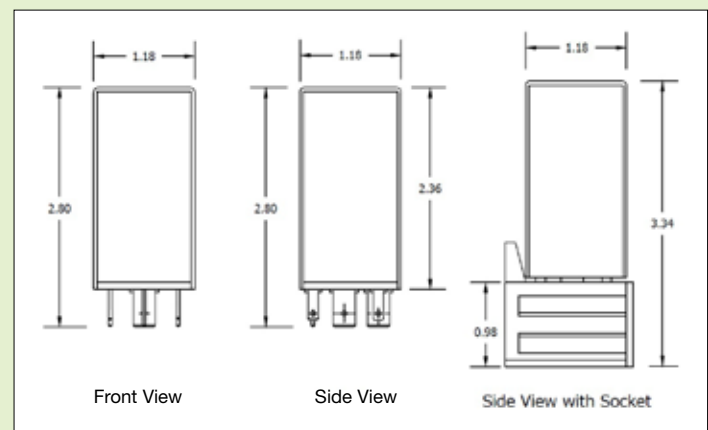
Originally designed for the off-highway industry, these solid-state modules can withstand high vibration, fluctuating battery voltages, moisture, extreme high and low temperature conditions as well as overload or short circuits conditions. Not only is this module practically indestructible, the SS-1 also includes one high power output capable of 10 amps continuous at 12 volts or up to 70 amps for one second. This solid-state output is powered by intelligent semiconductor technology and is capable of controlling a wide variety of high-current devices such as solenoids, DC electric motors, or lighting directly to the output without external electromechanical relays. Other features available include two digital or analog

inputs, a separate 5-volt power output, an external potentiometer input, Modbus RS-485, and the ability to configure the output as either a high-side or low-side signal.

Each module is factory programmed for a wide variety of configurations including but not limited to: on-delay timers, off-delay timers, interval-delay timers, flashers, glow-plug control, starter motor protection, automatic load switch, RPM over-speed protection, after-run timer, DC voltage monitoring, impulse sensing, latching output, PWM, solenoid control, energize to stop solenoid conversions and even Modbus RS-485 control and/or monitoring. Since each module is equipped with a microprocessor, custom turn-key software programs can be easily created by our software development team to meet your application's specific needs. Our modular software design allows us to economically create custom programs typically without engineering cost.

Specification:

- Operating Temperature: -40 to +85 Degrees C
- Voltage: 8 to 32 Volts
- Current Draw: 3.5 mA with Load Off and 8 mA with Load On
- Output Quiescent Current (i.e. Leakage is 15uA Maximum)
- Timing Accuracy: +/- 1%
- Voltage Input Accuracy +/- 1%
- Vibration and Shock Resistant
- Solid State Inputs/Output
- Output (10 A Continuous, 70A for 1 Second)
- Inputs: Maximum 2 (Digital or Analog)
- Reverse Polarity Protection
- External Potentiometer Input
- Housing Dimension: 1.18" x 1.18" x 2.36" (30 x 30 x 60mm)
- Housing Material: PA 6.6 + 30% Glass Fiber
- Environmental Protected Waterproof Design
- Accepts Standard 9-Pin Automotive Style Relay Socket
- Contact Material: CuZn Tin Plated
- Contact size: 5x .250" (6.3mm) 4x .110" (2.8mm)
- 2-Year Limited Warranty



Configurable Parameters:

- Time Duration
- Debounce Timing
- Input Signals:
 - Digital: High-side or Low-side
 - Analog: 0 to 36 Volts, 0-5V or 4-20mA
 - Analog: Frequency
- Input Function: Normally Open or Normally Closed
- Digital Output Function: Normally Open or Normally Closed
- Digital Output: High-Side 10A or Low-Side 1A

Options:

- Time Adjustable Internal Potentiometer
- Time Adjustable External Potentiometer
- Modbus RS-485
- PWM Output
- Automotive Style 5-Pin Contact Base
(Note: This Option Removes RS-485, 5 Volt Output and External Potentiometer)
- Private Labeling Name Branding
- Custom Wire Harnesses
- DIN Rail Mounting Bracket
- Custom Software

Accessories

- 041-9000-0000** Terminal Kit .250" (6.3mm) Fast-on
- 041-9000-0001** Terminal Kit .250 (6.3mm) / .110 (2.8mm) Fast-on
- 041-9010-0001** Relay Connector & Terminal Kit 9-Position Basic
- 041-9010-0002** Relay Connector & Terminal Kit 9-Position Deluxe
- 042-9010-0002** Harness (SS1) 9-Position Relay Socket / Bracket 48" (12 AWG Power Wires)
- 042-9010-0003** Harness (SS1) 9-Position Relay Socket / Bracket 48" (14 AWG Power Wires)
- 043-9020-0009** Socket 9-Position with Mounting Bracket Black

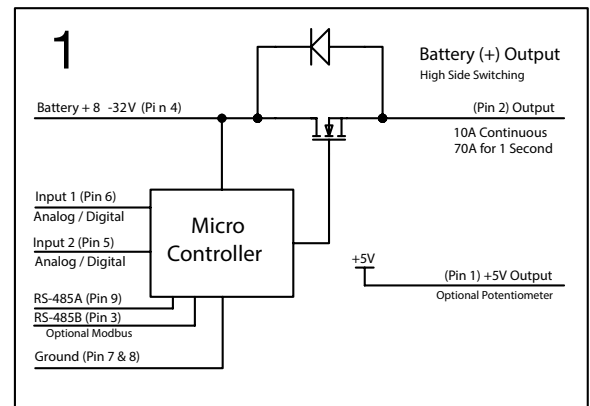


Typical Applications:

- Timer Module
- Battery Voltage Monitoring Device
- Automatic Glow Plug Controller
- Solenoids Pull /Hold Controller
- Engine Run Timer
- After-run Timer Module
- Automatic Hydraulic Load Controller
- Starter Motor Protection Module
- Energize to Stop Output Module
- Engine Prestart Alarm
- Engine Over-speed Shutdown
- Engine Exercise Timer
- Headlight Flasher
- Analog to RS-485 Converter

Schematics:

Standard High-Side Output



Optional Low-Side Output

