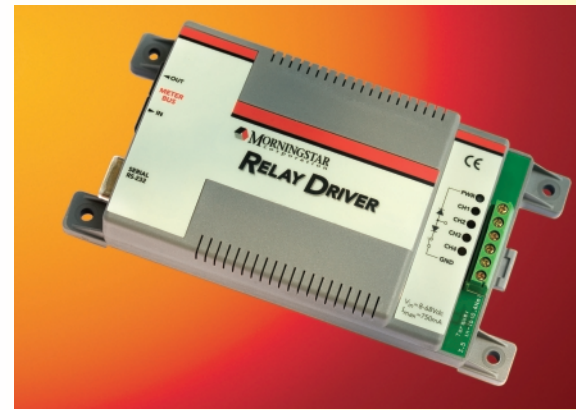


RELAY DRIVER™

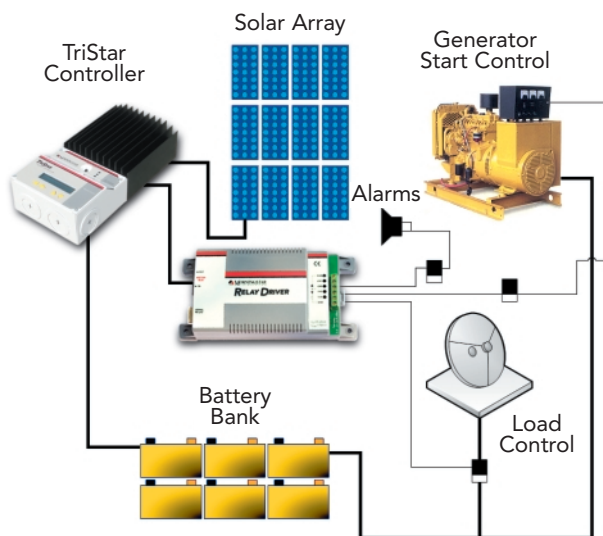
LOGIC MODULE ACCESSORY FOR SOLAR CONTROLLERS



Morningstar's **Relay Driver** is a logic module which provides high level system control functions such as high/low voltage alarms, load control and generator start. The product controls **four** independent relay driver outputs by reading digital data inputs from Morningstar's TriStar controller or by reading battery voltage when used in systems with other controllers.

Typical Functions

- **High and Low Alarm Contacts for Industrial Applications**
- **Load Control Including High Power Applications (pumps and large motors)**
- **Temperature Controlled Settings for Battery Fans or Cooling Vents**
- **Generator Start Functions**
- **Auxiliary AC Backup Charge Control**



■ = External Relay

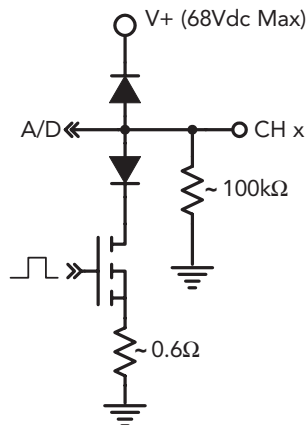
Data Control Input Options

- **Connected to a TriStar Controller:**
Battery voltage, charge/load current, battery temperature, TriStar heatsink temperature, PWM duty cycle, PV/load voltage, and all TriStar alarms or faults.
- **Used in Systems with Other Controllers:**
Battery voltage, Relay Driver temperature, input voltages from other sources.

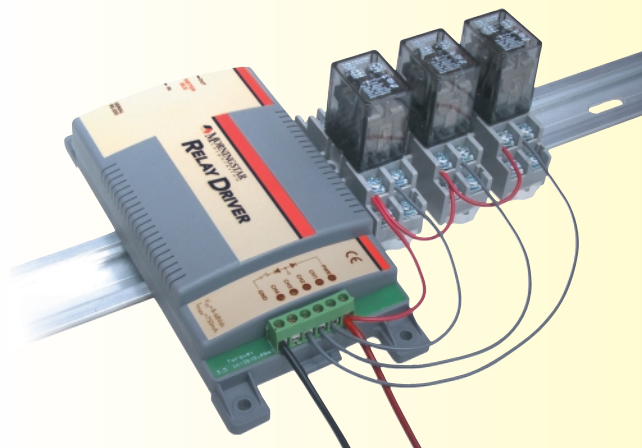
Key Features and Benefits

- **Cost Effective**
The four channels provide up to four high level system control functions at a lower cost compared to other alarm and generator start packages.
- **High Reliability**
Each channel has complete electronic protections for high reliability.
- **Flexibility**
The system designer may choose the exact relay needed for each application including a wide range of current ratings and solid state, mechanical or mercury displacement relays.
- **Fully Programmable**
It is easy to program the Relay Driver with the included PC software via serial RS-232 port connection. Data is stored in non-volatile memory. The Relay Driver is pre-programmed with four commonly used settings.
- **Advanced Generator Control**
Provides flexible parameters to control one, two or three-wire generator schemes and complete control of preheat, crank, ignition and cool-down.
- **Industrial Design**
Each relay driver output may be controlled directly by MODBUS commands via the RS-232 for use with PLC's and other industrial hardware. Mounts to a DIN rail or a flat surface.
- **LED Indicators**
Displays power and status of each channel as well as faults and data sampling intervals.

RELAY DRIVER™ LOGIC MODULE ACCESSORY



General Channel Schematic



DIN Rail Mounted Relay Driver with Relays

TECHNICAL SPECIFICATIONS

Electrical

- System Voltage 12 to 48 Volts*
- Max. Channel Current 750 mA
- Accuracy
 - Voltage 2% ± 50 mV
 - Temperature ± 2°C
- Min. Operating Voltage 8 Volts
- Max. Operating Voltage 68 Volts
- Self-consumption < 20 mA
- Temperature Sensor Range -40°C to +85°C
- Transient Surge Protection 1500 W / channel
- Comm. Ports (opto-isolated)
 - (2) RJ-11 meter bus connections
 - (1) 9-pin serial RS-232

*voltage of user selected relays must be same as battery voltage

Electronic Protections

- Reverse Polarity Protection
- Short-Circuit Protection
- Overcurrent Protection
- Lightning and Transient Surge Protection

Mechanical

- Dimensions
 - Length: 16.3 cm / 6.4 inch
 - Width: 8.1 cm / 3.2 inch
 - Depth: 3.3 cm / 1.3 inch
- Weight 0.2 kg / 0.4 lb
- Largest Wire 1.0 to 0.25 mm²
16 to 24 AWG
- Torque Terminals 0.4 Nm / 3.5 in-lb
- Enclosure Type 1, indoor rated
- DIN Rail Attachment 35 mm standard

Environmental

- Operating Temperature -40°C to +45°C
- Storage Temperature -55°C to +85°C
- Humidity 100% (NC)
- Tropicalization Conformal coating on both sides of printed circuit board

WARRANTY: Five year warranty period. Contact Morningstar or your authorized distributor for complete terms.

AUTHORIZED MORNINGSTAR DISTRIBUTOR:



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