

Installation Instructions

Heavy Duty Time Delay Bi-Stable Relay

Part Number: 08070900



08070900

Description

The Heavy Duty Time Delay Bi-Stable Relay disconnects the battery from the vehicle electrical system with voltage self-recognition. It has immediate switch ON, controlled switch OFF, programmable delay time, and service state managing (service switch OFF and switch ON). The Heavy Duty Time Delay Bi-Stable Relay has a non-volatile memory, low battery alert system, and is thermal protected.

Specifications Overview

Amperage:	250A
Voltage Ratings:	12V/24V
Operating Temp:	-40°C to 100°C
Ingress Protection:	IP67 X9K
Color:	Black
Voltage Range:	8.5V to 32V @ 23°C
Max. Cranking Current:	800A x 30 Sec.
Max. Peak Current (S.C.):	2000A x 5 Sec.
Light Line Current Rating:	1.3A continuous (6.5A protected)
Quiescent Current:	0.8mA @ 12V 1.5mA @ 24V
Input Active Line Current:	5mA @ 12V 10mA @ 24V
Programmable Delay Time:	1 Sec to 1 Hour
False Switch Status Immunity:	Detected as open down to 2kohm Detected as closed up to 25ohm

Ordering Information

PART NUMBERS	DESCRIPTION
08070900	Programmable Time Delay Bi-Stable Relay

Accessory Part Numbers



Part Number:
00227066
Sealed Bi-Stable
Position Switch with
Cover and GREEN
LED



Part Number:
00227068
Sealed Momentary
Position Switch With
Cover



Part Number:
00900400
Bi-Stable Position
Switch BLACK



Part Number:
00900900
Momentary Position
Switch RED



Part Number:
00901000
Momentary Position
Switch GREEN



Part Number:
00900800
GREEN LED

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Figure 2 - Installation Diagram to Start the Delay Opening at Ignition Switch Off

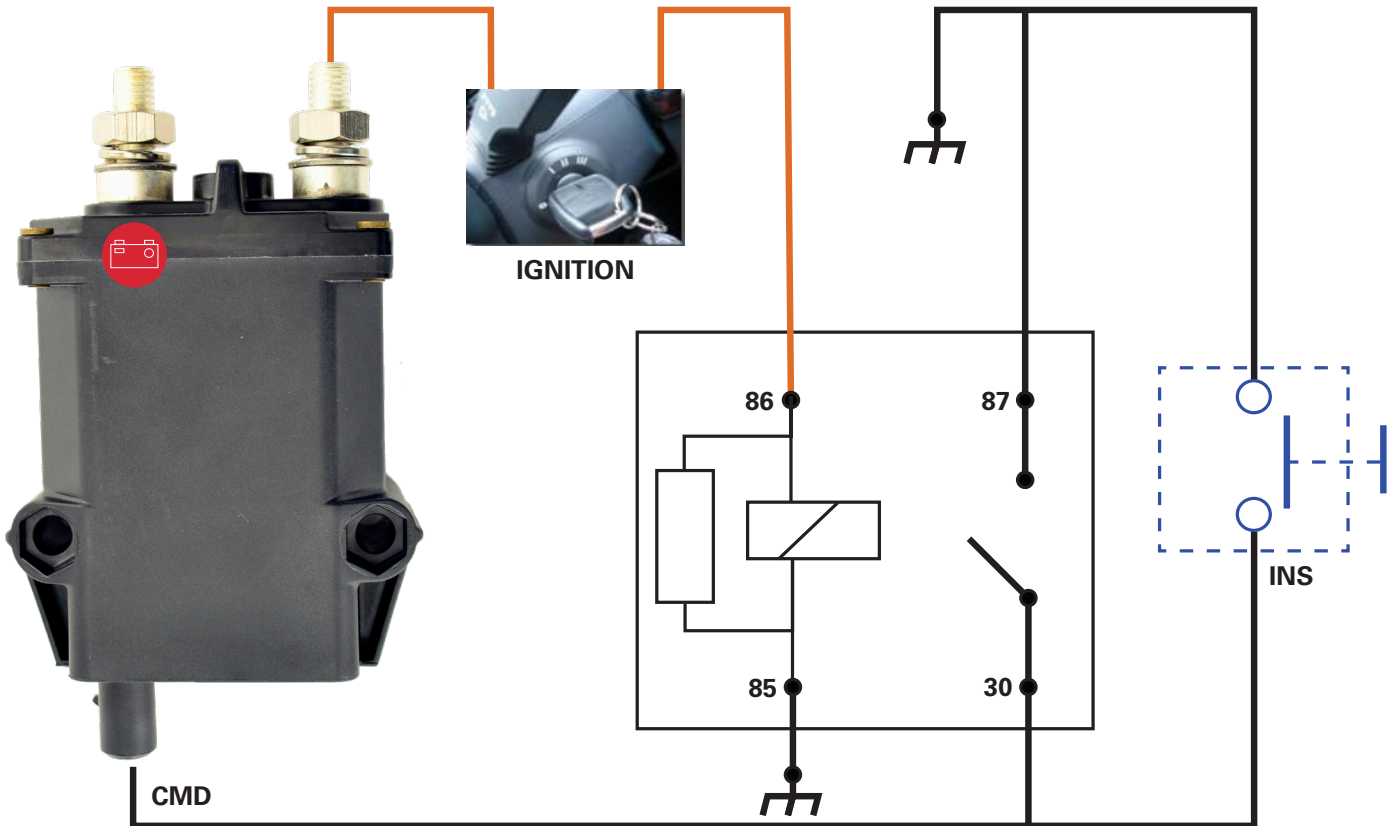


Diagram Description

1. Apply the normal installation diagram, but for CMD line, which has to be connected as per this diagram
2. Activate the device by pressing once the INS push button
3. Then turn the IGNITION ON (within the current delay time) and so the device stays active through the relay
4. When the IGNITION is turned OFF, the device starts the time delay countdown and the main contact will be OPEN when it expires

NOTICE: The push button is necessary to allow the Battery Switch be activated, being the ignition isolated from the battery. That is the ignition cannot drive the external relay coil at pin #86, until the Battery Switch is activated through the push button.

Specifications, descriptions and illustrative material in this literature are as accurate as known at the time of publication, but are subject to changes without notice. Visit littelfuse.com for the most up-to-date technical information.


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Installation

Following the below sequence to install the Bi-Stable Relay:

1. Connect to battery positive to the stud indicated by the red label 
2. Connect command signals and GND lines to the super seal built-in connector according to the scheme
3. Fit the device and power cables according to the indicated fixed torque values.

Normal Mode

CLOSING: When deactivated (main contact OPEN and LAMP OFF), put S1 in ON position to CLOSE the main contact (LAMP switches ON).

OPENING: When activated (main contact CLOSED and LAMP ON), put S1 in OFF position to OPEN the main contact, after the preset time delay (LAMP links during the delay). Default delay value is 5 minutes and 30 seconds.

EMERGENCY OPENING AND SERVICE MODE

ACTIVATION: From every NORMAL MODE status, activate P1 for at least 1 second to open immediately the main contact (if not already open), short LAMP links are shown. The device enters automatically in SERVICE MODE. If just an emergency opening was applied, apply the SERVICE MODE DEACTIVATION procedure.

Service Mode

CLOSING: When deactivated (main contact OPEN and LAMP OFF), put P1 in ON position (1 second to 5 seconds) to CLOSE the main contact (long LAMP blinks).

OPENING: When activated (main contact CLOSED and long LAMP blinks), put P1 in ON position (1 second to 4 seconds) to OPEN the main contact (short LAMP blinks). No time delay is applied in this case.

SERVICE MODE DEACTIVATION: From every SERVICE MODE status, with S1 in OFF position, activate P1 for at least 5 seconds. The main contact opens after 1 second (if not already open), the LAMP blinks slowly for 4 seconds and then shows a very slow blinking, at this point release the button and the NORMAL MODE is restored (LAMP OFF).

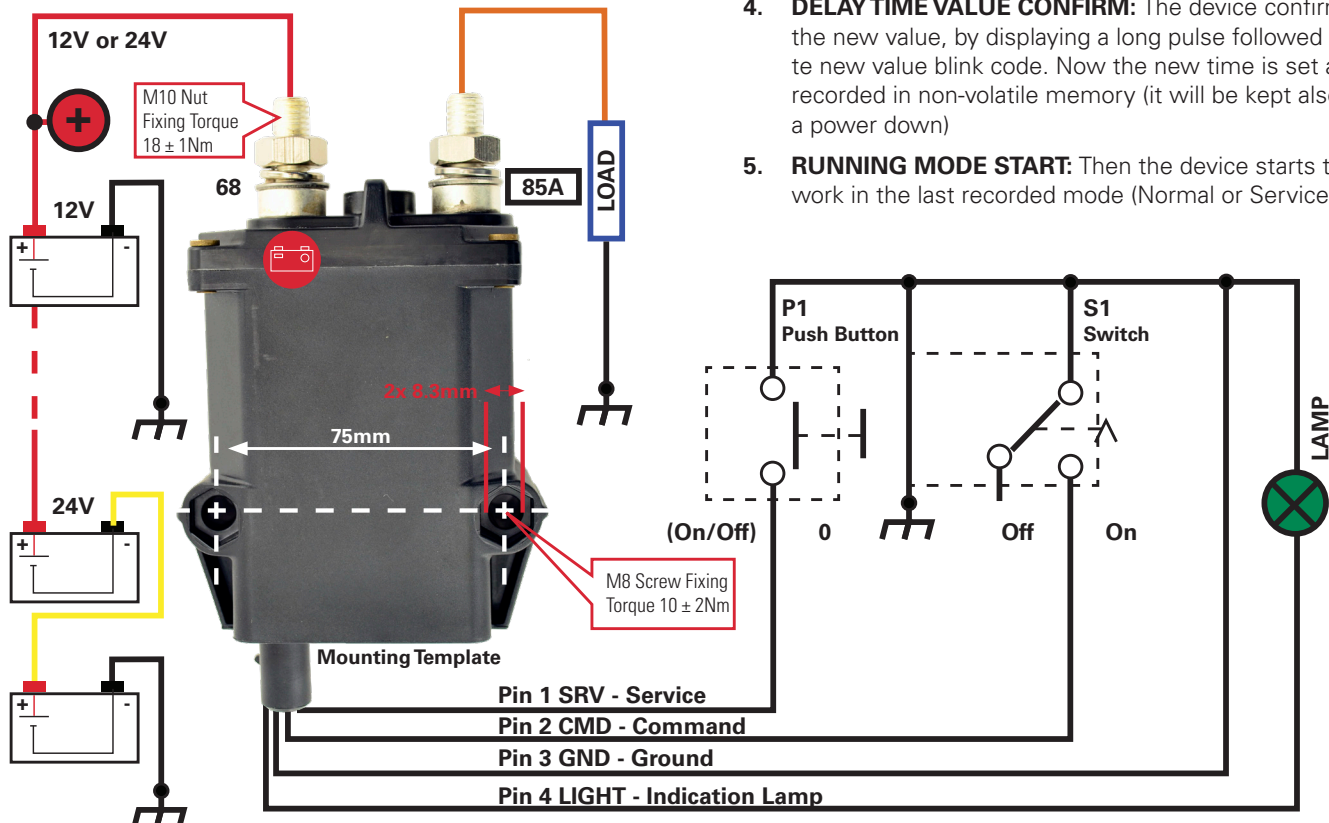
Time Delay Setup Procedure

To apply this setup, refer to Time Setup Blink Codes:

1. **SETUP MODE ACTIVATION AND DELAY TIME DISPLAY:** Power up the device with both inputs (CMD and SRV lines) active (connected to GND) and keep them active; after 1 second, the currently active time delay blink is shown.
2. **PROGRAMMING MODE ENTERING:** When the LAMP is activated again release and activate the P1 (SRV line), within 4 seconds, then keep it active.
3. **DELAY TIME SET:** With P1 still pressed, wait for the desired time value blink code and release definitively P1
4. **DELAY TIME VALUE CONFIRM:** The device confirms the new value, by displaying a long pulse followed by the new value blink code. Now the new time is set and recorded in non-volatile memory (it will be kept also after a power down)
5. **RUNNING MODE START:** Then the device starts to work in the last recorded mode (Normal or Service)

Figure 1 - Installation Diagram

TGC/RME-M2 • 12/24V + 100°C



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LAMP Blink Codes

Normal & Service Mode	
Blink Type	Active When
Steady OFF	Normal Mode - Main Contact Open
Steady ON	Normal Mode - Main Contact Closed
Slow Sequence	Delayed Opening Countdown in Progress
Short Blinks	Service Mode - Main Contact Open
Long Blinks	Service Mode - Main Contact Closed
Fast Blinks	P1 Has Just Been Activated
Slow Blinks	Service Mode - First Action Ready to be Carried Out at P1 Release
Very Slow Blinks	Service Mode - Ready to Come Back in Normal Mode at P1 Release

Error Codes	
Blink Type	Active When
Very Fast Sequence	Service Mode Exit Failed – S1 Left in ON Position
2 Blinks	Low Battery (under 7V) – No Command will be Served
3 Blinks	Unexpected Main Contact Status Change
4 Blinks	Switch Operation Failed Even After 4 Additional Retrials
5 Blinks	Time Delay Setup Failed – The Sequence was not Followed Properly
6 Blinks	Thermal Protection Active – No Switch Operation Allowed for 1 Min
When an Error Code is Present, the Current Status Blink can be Restored for 10 Sec, by a P1 Activation (<1 Sec) (Except for Thermal Protection)	

Time Setup Blink Codes	
Blink Type	Active When
1 Slow Blink	Time Delay = 5 Min 30 Sec DEFAULT
2 Slow Blinks	Time Delay = 1 Sec
3 Slow Blinks	Time Delay = 35 Sec
4 Slow Blinks	Time Delay = 4 Min
5 Slow Blinks	Time Delay = 15 Min
6 Slow Blinks	Time Delay = 30 Min
7 Slow Blinks	Time Delay = 60 Min
0.8 Sec Blinks Spaced Out 10 Sec From Each To Another	

Notices

- From every service or normal mode status as action (>1 Sec) on SRV will open the main contact
- At the first power up, CMD and SRV lines shall be disconnected (any switch and/or command relay in OFF position)
- If a power down occurs, the last operating mode (normal or service) is recorded and restored at the next power up
- The device is compliant with UNECE REG. NR.10 REV05 regarding road vehicles

Warnings

- Littelfuse guarantees the product 24 months against fabrication defects, in compliance with applicable laws and terms of liability. All damages caused by improper - handling, installation, use, service or lack of service will void warranty. It is also excluded malfunctions attributable to outside phenomena, Littelfuse will take over the possible replacement of the defective product at its own discretion. In case of controversies or disputes related to the product and/or interpretation of the warranty conditions of the competent FORUM OF VERONA
- Littelfuse is not liable for any damage that can, directly, or indirectly, affect persons, objects and pets as a consequence of failure to comply with the indications included in this manual.
- Littelfuse reserves the right to change the features and data described in this manual without forewarning, in order to improve the product. This manual cannot be considered as a contract for a third party.

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