



Z3 Programmable Intermittent Wiper Relay

WARNING: Installation of the Programmable Wiper Relay can and probably will void a portion of your vehicle warranty. Read all instructions before you do anything to your car. If you are unsure of any portion of the following procedure, please contact us *before* you start any work on your car or else contract your BMW dealer to do the work for you. Improper installation of Wiper Relay can cause serious damage to your car.

ALWAYS DISCONNECT THE NEGATIVE BATTERY TERMINAL ON YOUR CAR BEFORE DOING ANY WORK WITH THE CAR'S ELECTRICAL SYSTEM!

<u>Kit Contents</u>	<u>Tools Required</u>
<ul style="list-style-type: none">• BMW Programmable Wiper Relay, qty. 1• BMW trim caps, black or beige, qty. 6• LeatherZ installation manual	<ul style="list-style-type: none">• Flatblade screwdriver• Needlenose pliers• Phillips screwdriver• 10mm socket driver

Overview

The LeatherZ Z3 Programmable Wiper Relay uses original BMW parts. Installation requires removal of the glovebox and the stock Windshield Wiper Relay. Installation for the average do-it-yourselfer will take approximately 1 hour.

1. Passenger side footwell trim removal

The passenger side trim panel is black plastic. It is located underneath the glovebox. It is held in place with 3 ¼ turn fasteners. Begin by releasing the fasteners. Turn them gently either 90 degrees clockwise or counterclockwise. It does not matter which way you turn them. Be gentle as they are plastic and it is easy to shear off the head. They are all the same size so you do not have to keep track of where they came from. Pull the footwell panel towards the rear of the car. It has tabs that fit into slots. Pay attention to these connections so you know how the panel should be re-installed later. Put the footwell panel aside in a safe place.

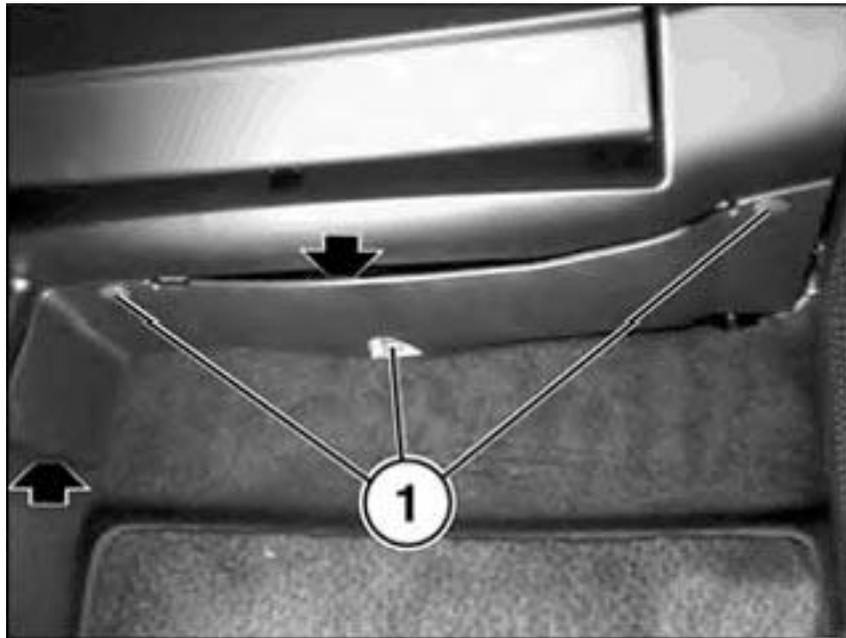


Figure X. Location of ¼ turn fasteners on passenger footwell trim panel. Driver's side is similar.

2. Glovebox removal

In order to remove the glovebox, you will have to remove 6 Phillips screws. The screws are hidden by plastic screw trim caps. Although it is possible to remove the trim caps without damaging them, we do not recommend it. Instead, we suggest pulling the screws off with needlenose pliers. This will destroy the caps, but it is less likely to cause any damage to your glovebox or other expensive interior trim pieces. We have included new trim caps with your kit so there is no need to preserve the caps for reuse. Pull the caps off of the screw heads and remove the 6 screws shown. Pay attention to the lengths and types of screws. They are different among the 6 locations based on the load requirements of the glovebox.

Once all 6 screws are removed, the glovebox can be pulled out of the car. It is best to close the glovebox for this operation. Be aware that there are sheet metal speed nuts on the glovebox at the screw locations. When removing the glovebox, be careful not to let the speed nuts come into contact with any other interior parts as they will cause scratches. To remove the glovebox, tip the outboard (right) side down. Lift up as much as possible on the inboard (left) side. The right rear corner of the glovebox interior will collide with a sheet metal support to the right of the glovebox. The glovebox is slightly flexible and you will have to bend it as required to clear the bracket. It is important to lift up on the left side so that the left edge of the glovebox trim and clear the right edge of the center console. It is not necessary to bend the edge of the center console.

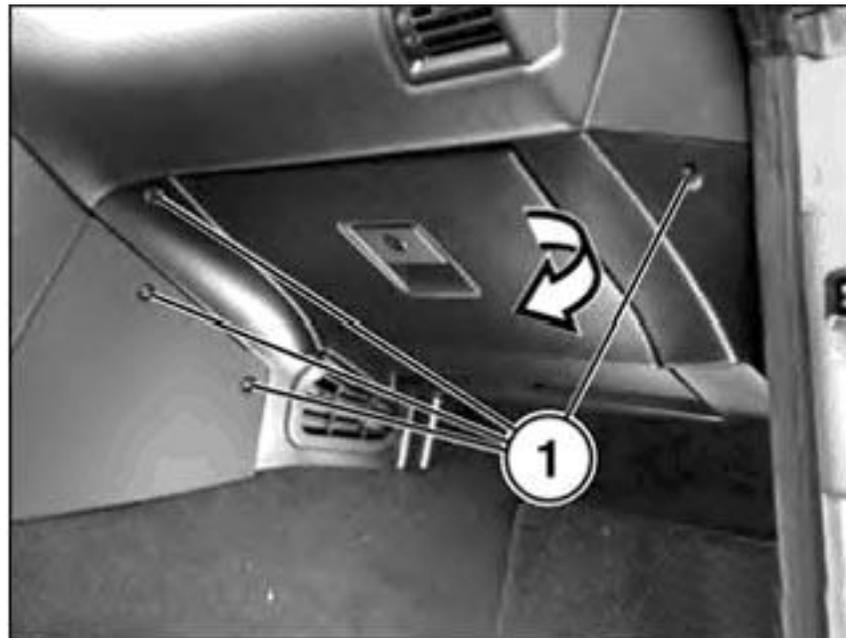
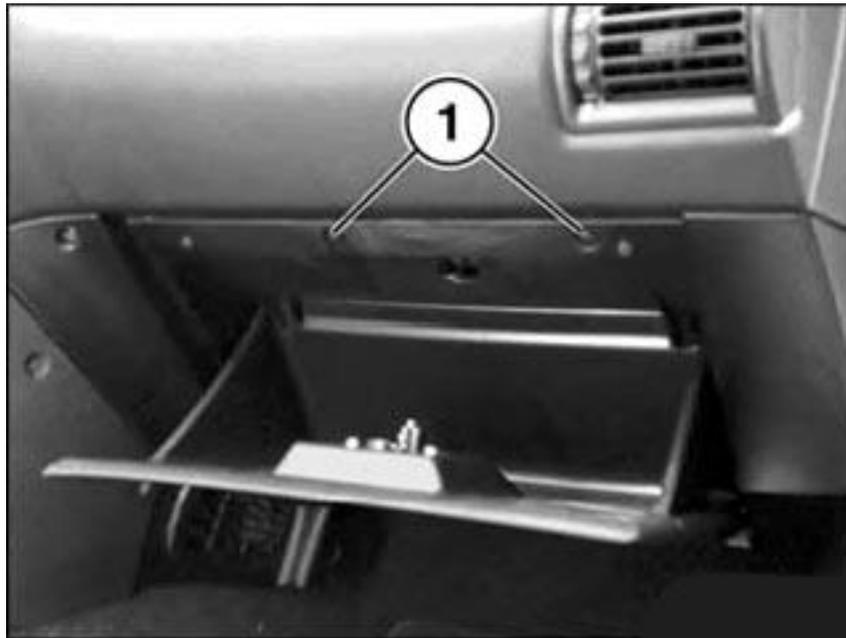
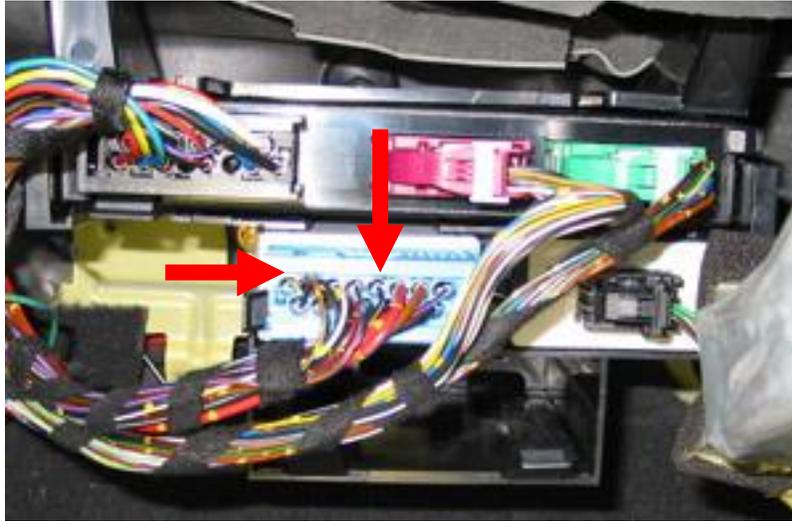


Figure X. Location of screws to remove on glovebox.

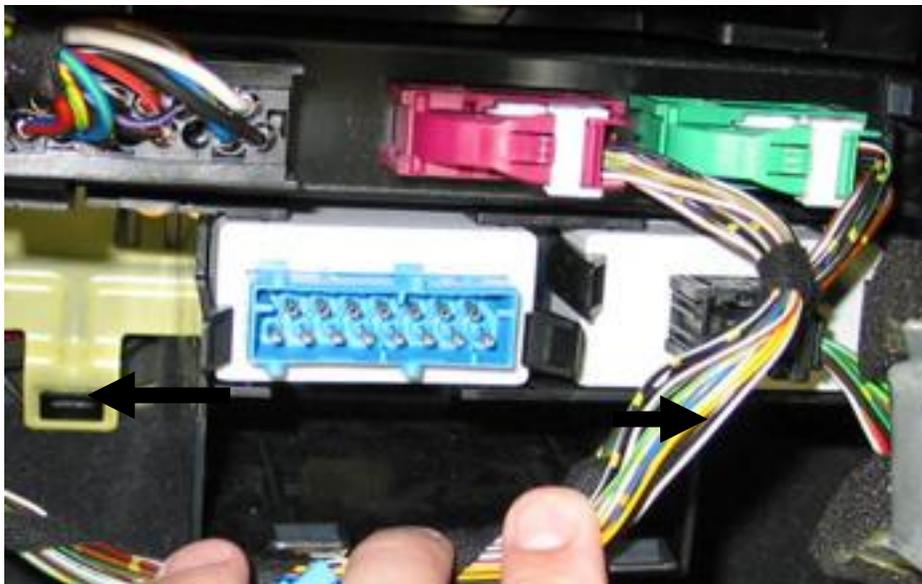
With the Glovebox removed, set out of the way.

3. Installation of the Programmable Wiper Relay

With the glove box removed, you will see several bundles of wires running into different connectors and relays. The wiper relay is white and light blue. There is a fairly large light blue connector with many wires coming out of attached to the wiper relay. The following picture has 2 arrows pointing at the wiper relay.



At this point, you will want to free the relay from the group of other relays. To do so, you will need to spread the 2 black tabs on either side of the relay away from the relay itself. In the following picture you can see the 2 tabs. Please note that I have already disconnected the wire harness from the relay. This is to show the tabs, do not remove the harness in your car at this point.



Once you have freed the relay, you can disconnect the wire harness. To do so, use a flatblade screw driver. On the passenger side of the connector, there should be a slot to allow for the screw driver. The connect will slide about ½" toward the passenger side of the car. In doing so, it will unlock allowing you to pull the connector off. See the following picture.



Once the connector has been disconnected from the stock relay, pull the relay out of the bay it was in and get the Programmable Wiper Relay. To reconnect the connector to the new relay, look at the new relay. There are 2 round nubbins that stick up about 1/6". These nubbins will line up with points on the inside edges of the wire harness. Slide the harness onto the relay. You do not need to push it too far in as when you lock the connector, it will pull itself in. When you disconnected the wire harness, a portion of the harness slid towards the passenger side of the car. At this point, you want to slide that piece in the opposite direction. The harness will pull itself towards the relay and will lock (you will not be able to slide the lock any further). This should not take much force or effort. With the wire harness connected to the relay, slide the relay with the wires facing out, into the same bay that it came out of. Slide the relay in until the 2 black tabs lock the relay in.

4. Reinstall Glovebox

Installation is reverse of removal. Again, make sure you use the correct screws in each location. It may help to have someone hold the glovebox until the first few screws are installed. Do not tighten any screw completely until each screw is started. Once each screw is started, go back and tighten them hand tight. Install the new screw caps provided with the kit.

5. Reinstall footwell trim panels

Installation is reverse of removal. Make sure all of the plastic tab and slot connections are made and then reinstall the ¼ turn fasteners. The ¼ turn fasteners will only go into the car in one orientation.

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Push them all the way in (up) and then turn them gently ¼ turn. Do not force them. They do not work like screws... only a ¼ turn is required.

That's it! You're finished.

6. Programming the Intermittent Wipers

Speed Sensitive Wipers:

When vehicle is stationary, wiper stage 1 is set back to intermittent wipe. During intermittent wipe, the interval of time between wipes is adapted by the vehicles speed (Speed Sensitive Wipers). The interval of time for a stationary vehicle at this point is 14 seconds between wipes. The interval of time between wipes for a moving vehicle is:

Stage 1: 16-40km/h-8 Seconds

Stage 2: 40-80km/h-7 Seconds

Stage 3: 80-110km/h-6 Seconds

Stage 4: 110-150km/h-5 Seconds

Stage 5: 150km/h-4 Seconds

*Intermittent period cannot be programmed

Windshield Wash:

Briefly tipping the switch activates the windshield washing pump and switches the wipers on after a brief delay. This function remains the same as the stock set-up that came in your car.

Programming the Wipers:

With the ignition on, briefly set the wiper switch to intermittent wipe and then turn off (Do not run the wipers on a dry windshield at anytime! Doing so could potentially damage your windshield). Begin counting off intervals of second between 0 and 25 (25 seconds is the maximum interval you can have between the wiper intervals) and switch the intermittent wipers back on once you have the desired interval. Example: to set the interval to 16 seconds between wipes, switch the wipers to the intermittent stage and then off again. The wipers will run once. After switching to the off location, begin counting until you reach 16 seconds. Switch the wipers back to the intermittent location and let it go. This will program the wipers to run once every 16 seconds. If you choose to change the time interval between wipes, repeat as above substituting in the new interval. The intermittent function is the first of the three (3) upward settings on the wiper stalk.

Customer Satisfaction

Please do not hesitate to contact me if you need help installing your lights. I have done many installs and have plenty of tricks to make your life easier.

If you like my work, please drop me a line and let me know. Tell other BMW owners. If you are not happy with my work, let me know. Let me make it right for you. -- Andy Maddux