

# Mercedes DAS3 Drive Authorization Immobilizer

Andrew Technician  
Commack, New York

**Posted** a year ago   **Latest** a year ago   **Edited** a year ago

Discussion   Security   No Crank / No Start   Key Won't Turn   Security Theft / No Start



[Largest automotive aftermarket parts provider in North America.](#)

[CORPORATE PARTNER](#)

Time for a crash course on MB Immobilization issues. You're most likely to work on "DAS3" systems which were phased in in the early 2000s. DAS3 keys are easy to recognize, they don't use a blade to turn the ignition. There's also an infrared port on the tip of the key.

So, some important notes about those keys. They have a battery inside but that battery is only for the remote locking functions, it will never prevent the car from cranking. Take the battery out and try starting the car if you're a "seeing is believing" type of person like me. There's an inductive coil inside the ignition switch that turns on when it detects the key is inserted. It pulses at 125khz.

The keys are NOT serviceable. They're programmed ONCE at the factory in Germany using the vehicle production data record, probably "FDOK" where the SA codes (option codes) are stored. When you get a new key from the dealer (3 days turn around from Germany is typical), it should stick right into the car and fire it up if the problem was only a bad key. There are no adaptations or programming procedures for any of these vehicles for the last 20 years or so. Don't try to buy ebay keys, don't try to buy used keys, don't buy them anywhere but the dealer.

Caveat: if you know MB well, you may know some of the very latest cars use DAS4 with keys that can be programmed at the dealer only. They're not failing in the aftermarket much yet so I'm glossing over it. Be advised, even if you can't program the keys, some dealers have still sold them to people.

A really common issue is that the key will not turn on older vehicles with steering locks, so 202, 208 210, 203, 209. In general newer vehicles like the 204 C-Class will allow you to turn the key even if they are equipped with a steering lock, but the electrical power **will not switch on**.

So, how do you diagnose it, *in general*? **Does the customer have a second key? No? BUY A KEY!** No really, buy a second key. The other drive authorization components are substantially more expensive, and it is **very difficult** on the older cars to determine whether a key-won't-turn issue is a steering lock, EIS, or key. Keep in mind an ignition switch also has a fair amount of labor involved in R&R. I recommend that you do not reassemble the vehicle until you have verified that it works. Besides being **cheaper** to start with a key and **more effective diagnostically**, the customer also really needs to have a second key for the car!!! So typically there is about a 3-day out-lay from when you order a key to when you actually get one, but in the past week I've heard two customers report that the DAS3 keys are back ordered, one customer waited 2 weeks. One other note; our experiences vary but none of these parts – key, ignition switch, or steering lock are reliable components. The other modules in the system are considerably rarer to cause drive authorization problems.

Speaking of buying keys – you will need a locksmith ID (NASTF LSID) to purchase them from the dealer and documentation proving identity and ownership of the vehicle from the customer. Some dealers are refusing to sell keys but if you have all your ducks in a row they are (legally?) required to do so and you can try filing a complaint with NASTF. The issue is that there are extremely extremely strict policies in place by Mercedes at the dealer level. If a dealer gets audited and failed they could be fined very large amounts and lose their ability to obtain DAS3 keys! This makes the parts guys sweat. It's probably why they try to avoid selling keys to the A/M in some areas.

If you go on [Startekinfo.com](#) even without an account you can view Mercedes' Theft Relevant Parts policy and ordering information.

So what defines a theft relevant part? On any given car there are generally 3 systems that are affected: power distribution and starter, engine management, and transmission shifting/function.

Vehicles without a steering lock generally have a \* high security \* shifter instead. So 220, 215, and 230 for example. *On these particular cars if the vehicle is immobilized you can turn the key on, depress the brake, remove the shifter knob, and give it a light tap with a deadblow.* Normally the shifter will pop free and you can put it into neutral. **Just to be safe You might want to disconnect the battery. We have heard of a few cases where the airbags went off because the blow triggered the SRS system.**

Many newer vehicles (only with 722.9 transmission) have a shifter mounted on the steering column, a shift by wire system. These vehicles such as the 221, 164, 251 and others have a shifter-module on the side of the transmission called the ISM. All the ISM does is manually move the linkage in the transmission to place the vehicle in gear, neutral, and park. The ISM is a theft relevant part and stores drive authorization information, if it fails the vehicle can not be shifted, driven, **or pushed around the parking lot**. It locks the vehicle in park. This is a headache!

Mercedes has a Special Service Tool which is a free-wheeling hub, you remove a wheel, mount it on the car, then install the wheel. It allows the wheel to rotate even with the drivetrain locked, and the vehicle can be pushed. So, what if you don't have the dealer tool? Well, you can try using a floor jack, you can ask your friendly tow truck operator to drop it in a convenient spot, or you can try crawling under the vehicle and removing the ISM. I think MB originally intended to use tamper proof bolts on it but they probably decided crawling under the car was difficult enough. Once removed, you can stick something in there and manually shift it. (might want to chock the wheels so the vehicle doesn't roll away). If you know for sure the ISM is bad you can try to break it off and use the lever from it to shift it. If you replace an ISM, break it and keep the lever, there is an SST which is the same thing.

If you replace a transmission (722.9) you will need to program the trans module (conductor plate) and it has drive authorization data. If you put a used trans in with a used plate you will be able to start the vehicle but it will not shift. Some vehicles might require all modules to positively verify the key (OK!) to start the engine, but with this trans you can still start it you just can't shift. The trans module even without belonging to the car will send the Park/Neutral status out on the CAN.

If you buy a transmission from Mercedes it will generally come with a new ISM, which kind of unnecessarily complicates things. In that case the TCM and the ISM will both need to be programmed, and the ISM needs to go through a calibration. Any time the TCM is replaced the shifter needs to be taught in, if this isn't performed the engine won't crank. Note: **you can not use a used TCM/conductor plate in another car. It will never work! Once the drive authorization is learned to the module it is permanently stored and this is the most commonly failed aspect of an aftermarket unit! Only if the module was professionally and completely unlocked could it be used (good luck).**

**When you get that vehicle that won't crank and won't start it's a good idea to make a fork in the road between an engine system problem and an immobilizer problem.** The way we do this is by going into the EIS actual values and status of circuits, check Circuit 50. Key on it should be OFF, when the key is in the crank position, it should come ON. If it does not come on there could be a P/N problem, or a key verification issue. Check P/N status in the transmission module. Otherwise, move to the Drive Authorization actual values and check "Start Enable" status for each module listed.

As far as I know the engine modules whether gasoline or diesel all function the same way. Note that the engine modules don't get real power until the key is in the run position and circuits 15, 15R, and **87** turn ON. If you can't turn the key or the key turns but the cluster doesn't light up, don't expect to have "Start Enable" from the Transmission or Engine modules to be "YES". They won't even be awake. Like many vehicles with Immobilizer problems, you may not get power distribution to activate at all when there is a problem with recognizing the key.

If Circuit 50 does come on, you need to troubleshoot the starter circuit. Make sure the fuse is not blown, the relay is working, the starter will work. If circuit 50 comes on but the starter doesn't operate you can jump power to the starter solenoid circuit with the key on. **Set the parking brake, chock the wheels, or have the vehicle on the lift off the ground. Make sure it's not going anywhere. In some cases problems with the shifter or shift linkage have caused the vehicle to take off after jumping the starter.** A bit of advice, the starter relay circuit is (I believe always) controlled directly by the engine module via a hard wire (no CAN message) but this circuit is often poorly documented in the schematics.

**IMPORTANT:** If you replace the EIS you must get the "Workshop Key" from the dealer, it will probably be blue but there were orange and green ones in the past. It's about 4mm thick, the dealer should have the sense to order it and supply it when ordering the EIS. Don't leave without it. The EIS does **not** require programming. It comes blank. Once it is installed you insert the workshop key. An LED in the key will come on solid for about 5-10 seconds while the immobilizer data is transferred to the EIS and then go out. If there is a problem it will blink and go out. Pay attention. Often a blinking LED is caused by a defective key and a new one has to be ordered. Now write the VIN. There are instructions in our tool. If the EIS is the gateway and there is no CGW, the EIS must be manually coded because it is kind of a global master of the vehicle options and configurations data. The easiest way to do this is to take notes of the coding on the old one and manually enter the same information. If you're lucky and you have a similar vehicle you can copy it. We sometimes help customers code them manually when the old one will not communicate. **DO NOT INSERT THE WORKSHOP KEY REPEATEDLY IF IT DOES NOT WORK YOU MAY CAUSE A PROBLEM IN THE EIS.**

**ONLY AFTER YOU HAVE INSTALLED THE EIS, PERSONALIZED IT WITH THE WORKSHOP KEY, AND WRITTEN THE VIN SHOULD YOU INSERT THE CUSTOMER'S KEY. PLEASE DO NOT INSERT THE CUSTOMER'S KEY BEFORE THAT IS DONE.** On some vehicles when the key is turned on, a module might ask the EIS what the VIN of the vehicle is and compare it to the VIN stored in its memory. When the EIS has no VIN, that comparison sets a fault code that can't be cleared without reprogramming the module, an ESP module comes to mind. This can be a very difficult situation to get out of. Depending on whether the key is a replacement for an existing key or a new key on its own track the key may need to synchronize the immobilizer codes with the vehicle. So if it is a replacement it may have to catch up to where the key that was lost was at in the list of codes. This is done by computing the key verification math once for every time the original key was ever used. You will see a message saying something like "Computing" or something. The key may have to do that in the inserted position and then do it again when turned (the engine/trans modules come online).

If the installation of the EIS worked correctly you can go into the actual values "Operating State" and check that "transport protection" "initialized" "personalized and "activated" are YES for all drive auth modules listed. If you have a hard to diagnose problem with drive authorization, go there and check that everything is YES. In some rare cases a component is corrupted or was not installed correctly.

If you choose to replace the EIS and ESL (Steering lock) at the same time, **MAKE SURE THE DEALER GIVES YOU TWO WORKSHOP KEYS THAT ARE LABELED FOR WHICH PART THEY BELONG TO.** Install the EIS first like I have written, make sure everything went correctly, THEN install the ESL and activate it with the key. Don't physically install the steering lock until you have verified it is working.

That's all that comes to mind I'll try to add amendments and corrections as necessary. Questions? Comments? Thanks.

 Reply


 Bookmark

 +9 

- Steve

Keys are not on the drop down menu for TRP parts ordering. Technically their purchase is not allowed under TRP. Some dealers will bypass that ar... 1y
- Andrew


Good point Steve. Those documents also kind of vaguely specify what types of things are considered theft relevant, but it seems more or less... 1y
- Steve

When TRP first came out, the standard for TRP exclusion was any part that carried the VIN. That even included fenders as the original ca... 1y  1y
- Simon

Thanks for the Information Andrew, it really helps us techs out here to understand the ins and outs of a system to better diagnose these issues. 1y
- Andrew

Some other notes: only the EIS and the ESL (Electronic Ignition Switch and Electronic Steering Lock) are brought into service using workshop k... 1y
- Adrean

Thank you for this post . very valuable information. 1y
- Rudy

One thing Id like to add: Having a NASTF LSID is not enough to purchase keys from MBz. One must also be registered with ALOA aloa.org/ind... 1y  1y