Welcome

Welcome to the Ford Fusion Forum

Sign In or Sign Up

My instructions on restoring the hybrid EV function on the Ford Fusion Hybrid approaching the 8/9+ years mark.

By allen84,
June 15, 2019 in Ford Fusion Hybrid

Share Followers 4

Start new topic Reply to this topic

1 2 3 4 5 6 NEXT » Page 1 of 24

allen84 Posted June 15, 2019 (edited) Popular Post

87

the way you've been used to anymore. It basically makes hypermiling near impossible. That is because Ford has programmed into the car's hybrid system, a high voltage battery age date which makes you believe you have to service or change out the HVB battery pack. This is most likely a precaution from the company itself to limit the batteries usefulness at it approaches the end of its life as the battery capacity has dropped from the years gone by. I believe this is to relieve stress from the ageing HVB which in turn will use your Internal Combustion Engine a lot more often, which defeats the purpose of word Hybrid.

From what I have seen in the Forscan program, it looks like the 15-years is the max date and the end mark for the battery in the hybrid system. Reaching this point is anyone's guess. It could have a message popping up on the dash saying something like "replace HVB battery now" or the HVB system ceases to function, and you just have a regular gasoline car.

So here is what I did to fix (or temporarily for now?) to restore the Hybrid EV function as you once remembered it. (This method should work from 2010-2012 Ford Fusion Hybrid and should work on most likely 2010-2012 Lincoln MKZ Hybrid, & 2010-2012 Mercury Milan Hyrbid as well (According to the Ford OASIS from Oct 3, 2019 these are the years affected). I highly doubt this fix will work on the 2013+ because the chassis has gone through a major change, the computing system of the vehicle is not the same and may behave differently with the vehicle and other additional

features are added to it not found in 2012 and below. They may not even exhibit the problem (Unless Ford really did screw everyone over by limiting the HVB's on all their hybrids ever produced. Who knows? I guess time will tell. You will find out around in 8 or 9 years I guess)

You will need a few things to get started (or what I have used):

Step 1 - Gather the tools for the job

- **A Windows laptop**
- **ODB II (ELM327 HS-CAN / MS-CAN) device.**
-ForScan software

The ODB II device I had on hand, which is a few years old, but it worked for me, is the brand/model **BBFLY BF32302**, you can buy this on Amazon for around $23 range (I'm sure you can use any other brand you choose and possibly cheaper, they have Bluetooth & wifi models. Or you might already have an ODB II device)

https://www.amazon.com/bbfly-BF32302-modified-Windows-ELMconfig-Forscan/dp/B01N9R9QS2
 USB model (I used)

If the other link sells out, this is also another good one https://www.amazon.com/Veepeak-Scanner-Professional-Diagnostic-Programming/dp/B07S7W14X9?ref_=ast_sto_dp

Wifi model $29

https://www.amazon.com/bbfly-BB77105-ELM327-Modified-FORScan-Windows/dp/B076VPXPK5

*****NOTE*** These are not affiliate links. I get nothing from it when the product is bought. These are just merely the products that I know I have no issues with it when using it.**

Step 2 - Drivers & Software

Once you have your OBD II device, you will need to install drivers with the device to the laptop for it to work (instructions should be included inside the box on how to do it from the manufacturer of the device), it might be plug and play and the drivers might install on its own.

Next, you need the FORScan software:

https://forscan.org/download.html

I downloaded/used the FORScan version 2.3.22 beta for Windows. Next, you need to activate the software with an "extended" license as it comes in "standard" license by default. Why do you need to activate the software to "extended" you ask?:

What is Extended License, why and when do I need it?
Extended License provides access to Configuration and Programming functions of FORScan, and also few Service functions (such as PATS programming). Base (Standard) FORScan functionality such as (connection, retrieving vehicle information, reading parameters, read and reset diagnostic trouble codes, run

tests and service functions etc) does NOT require an Extended License. There is a free 2 month Extended License that can be issued for anyone who has an account on our FORScan forum. Also, there are paid long-term and lifelong licenses.

the "Configuration and Programming" functions are making changes and edits to the car's computer data. Which includes programming keys, etc., or in this case you want to change the battery age. It falls within this category, which the Extended license is required.

Create a free member account on their forum to get the activation file key. there is a 2 free month trial. (even if it expires, you can just make another again to re-activate) Here is a 1-minute youtube video of how to activate the software with ease:

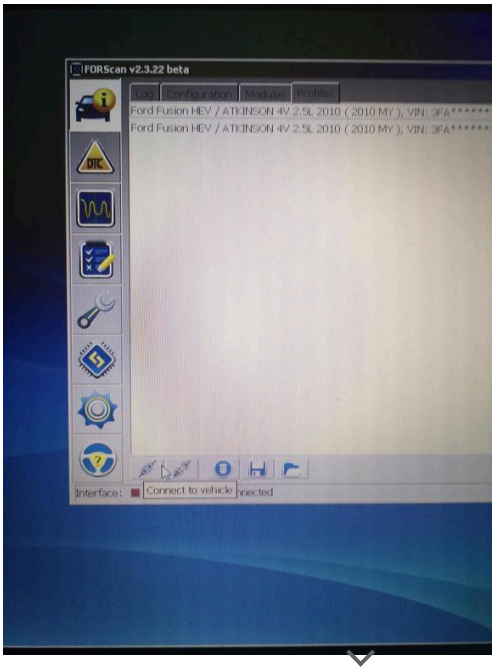
STEP 3 - Programming in your vehicle.

Under your steering wheel, is a small square cover. Open the cover. It will reveal the port for the OBD. Plug in the ODB II device into it.

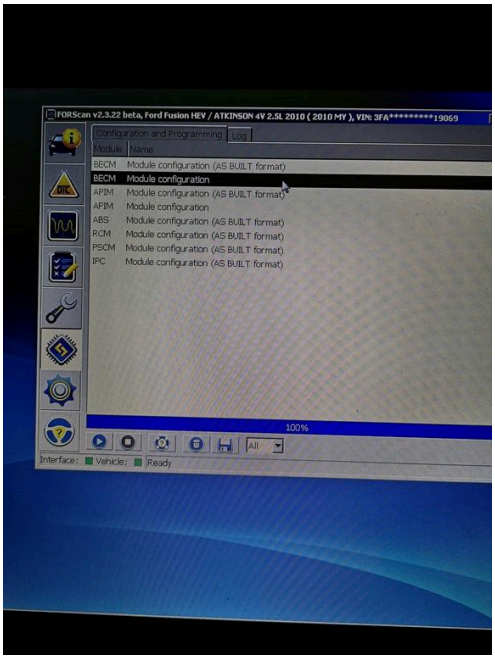
Next, insert your car keys, turn the key to the "ON" position (Don't start).

(Sample picture of key positions)

Open the FORScan program. Connect the device, a button below (two plugs joining icon). Once you connect, you will be instructed to create a profile, just follow the onscreen steps. If you get a message about the MS-CAN setting on the ODB II device, it is the toggle switch on my ODB device, I had it switched toggled towards the wire of the ODB II device.



Next, on the left-hand side of the program with the icons, go to the one with the CPU processor looking icon (5th one down), click on it, and you will be brought to this screen. on the **Configuration and Programming tab**, highlight the "**BECM Module Configuration"** and go hover your mouse pointer over to the **"blue play button"** icon below and press it.



Next is this section you will see.
Highlight the **"Config battery age"** (double click on it, can't remember this is just from my memory)
and press the play button icon again,

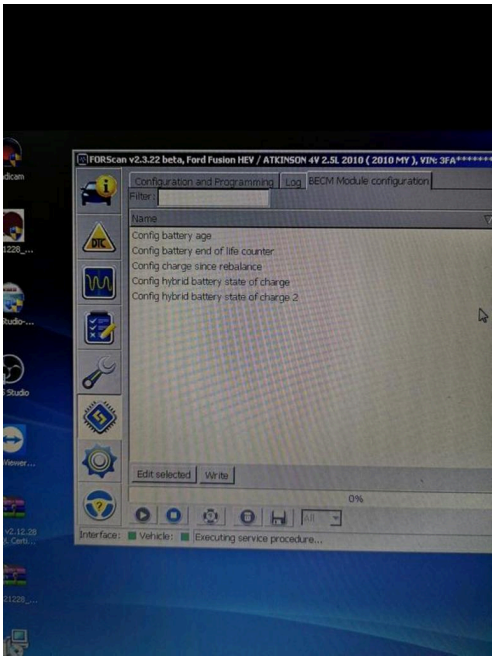
(the screen is cut off on the right side of the picture, but for me, it said (The values might differ for some people or may say the same for you, but I'm guessing this is the info it shows after 9+ years):

Name	**Value**
Config battery age	error

Config battery end life counter
Module configuration
Config charge since rebalance
error
config hybrid battery state of charge
error
config hybrid battery state of charge 2
error

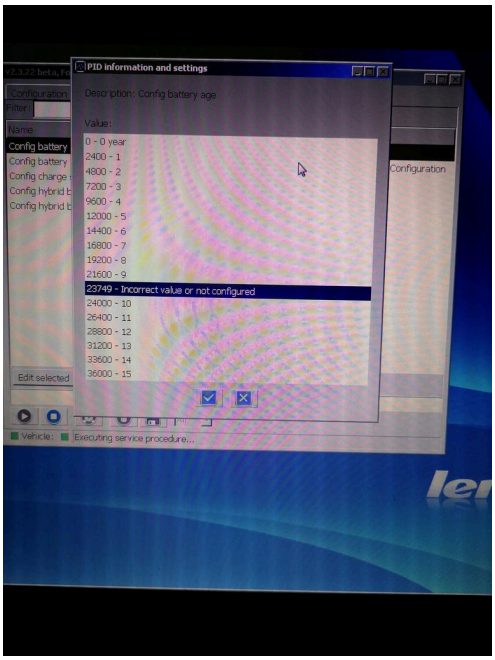
Just choose the "config battery age"

(I didn't change the other settings on that list, as I don't know what to do that might screw it up, so I didn't play around with it. You can go into it and see it, but I didn't save any of those changes. I guess in time I will find out more info or learn when I have time to tinker some more. I would love to get rid of all the error values)



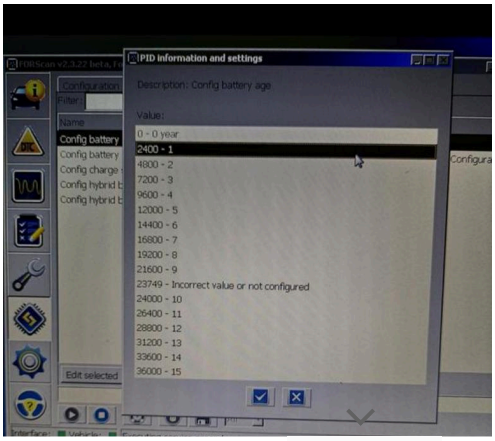
Next, you will see this screen, it looks like I was about to hit the 10-year mark (yours might be lower or higher than this number, this is just a running counter in their system to keep track

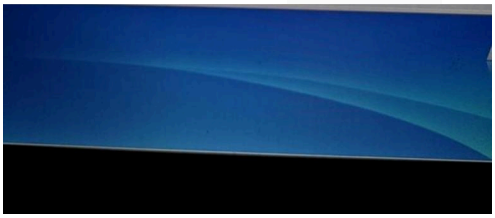
of the approaching total of years for the HVB.



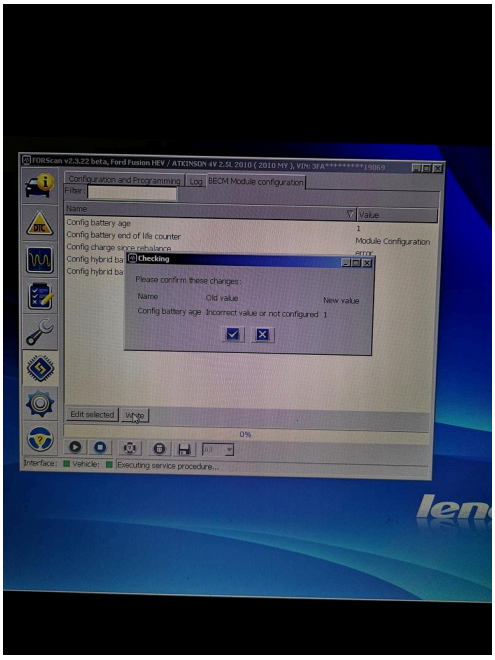
Select the "2400 - 1" and hit the "blue checkmark box"

(although technically the 0 - 0 year would work, but the auto techs at the dealers that have been fixing it, have been choosing year 1. So I will just choose that)

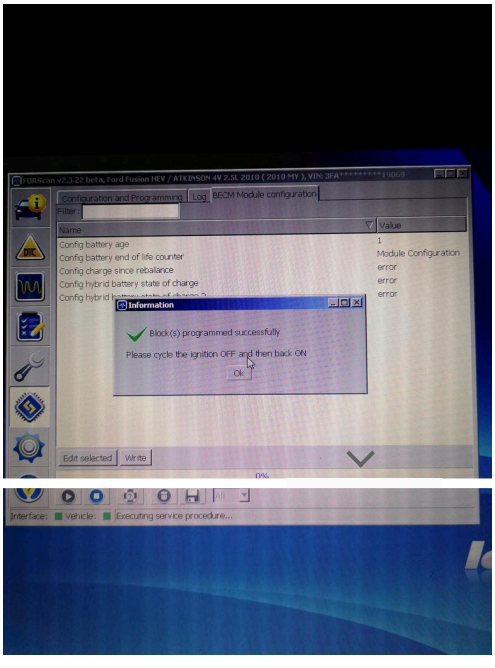




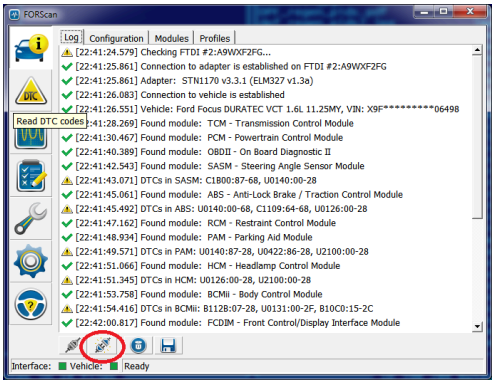
Next, it will take you back to the list of 5 config battery options, hit the "write" button below, and then this window will come up. hit the blue checkmark button to confirm



Done! here is the last window popup you will see confirming the change.



Click on the top icon on the left-hand side (car with the letter i in a bubble icon), Then press on the un-connect icon below (circled in red), to un-connect the vehicle from the program



Close the program, and then unplug the ODBII device. Cycle the ignition OFF and then back on as per the programming message you've just seen. The results of the EV activating will be immediately noticed when you start to drive your car (within a minute or so. It may take a few minutes if it's too cold). I hope this will help your problem fix your issue as it did for me, This forum post was done from my memory, as I didn't really take any notes down, so I hope what I've posted is pretty accurate. Please don't screw around with other settings. if you want to change other settings for the vehicle, I suggest you search or ask questions on the Forscan forums. there are guides on how to use the program to its full potential. There is a ton of info on there to do custom stuff (lights, upgrade sync, key programming if you lost original fob, etc), but that will be for another time for me.

If you are happy and this solved your issue, and you happen to feel

generous want to donate $ to me, I will happily accept lol (have PayPal). But it's your choice, not forcing anyone to give anything to me. I just want to spread the knowledge and help others out having this problem develop late in the car's ownership. (I'm sure as time goes by, some dealers that do not know of this fix, will catch wind of this thread and offer this solution to their customers and make money for the dealer, hahaha.

If anyone that owns this 2010, 2011, 2012? Ford Fusion Hybrid and lives in the Greater Toronto Area, and cannot find a dealer to do this, I can probably perform this for you if you'd like.

Edited February 20, 2021 by allen84
added info in extended license on why it's needed

+ Quote 20

Replies	Created	Last Reply
584	**6 yr**	**Jul 19**

TOP POSTERS IN THIS TOPIC

29 34

allen84

Fusion Member

87

Posted June 16, 2019 (edited)

Author

(This post no longer needed. Managed to merge the picture with the original post)

Edited March 2, 2020 by allen84
merged picture with original post

Quote 5

ICEY

Fusion Member

27

Region:U.S. Pacific Coast
My Fusion:2010

Posted June 16, 2019

Thanks Allen,
Thank you. Very informative, but I guess from what you describe this is only usable if a person has a laptop with MS Operating system and not Apple OS?? I have neither.

If there is anyone having this Hybrid problem and in the San Jose, Calif. area and was able to do this procedure on their vehicle please contact me and maybe we can get together.

Steve

Quote 1

allen84

Posted June 16, 2019 Author

Fusion Member

87

> **On 6/16/2019 at 3:45 PM, ICEY said:**
>
> Thanks Allen,
> Thank you. Very informative, but I guess from what you describe this is only usable if a person

Expand

They also have the FORscan program on IOS on the app store or Android in the google play store, so it can be used, but it costs 5.99 & 7.99 respectively, But i'm not sure how limited the functions are in those apps as it's called a Lite version. You would use the ODB II bluetooth or wifi versions to connect with it.

Quote 1

Milan_OH

Fusion Member

76
Region:U.S. Great Lakes
My Fusion:2010

Posted June 17, 2019

Allen,

Wow, did your post hit home with me. My '10 Milan started exhibiting this exact symptom this Summer. Normally, my Ohio Winter mpg drops to mid+ 30's, then Summer I climb back to low 40s with minimal hypermiling. As it is now, hitting the 47 mph mark in EV is impossible unless going downhill. The green EV gauge NEVER shows available EV power, as it did last Summer. It was my understanding since the HVB is maintained between 20% - 80% SoC, it lasted the life of the car which is 200K+ miles IMO. Mine has 135K purchased in 8/2009. Can't wait to try this and get my "old" car back. I assume you obtained this inside info from a Ford Tech? Thanks for the post, will report back.

Jack in Ohio

akirby

Posted June 17, 2019

Moderator

7.3k
Region:Decline
My Fusion:2013

This sounds more like a bug than planned obsolescence. Maybe they only allowed one digit for the year. It sounds like Ford told a dealer to do this at some point so it's probably ok but I would be a little worried that it was some type of safety feature. Would be a lot better if Ford would issue a TSB.

+ Quote

Download
to use extension (Free)

Only 2 Steps

Click **"Download"**

Add Privacy Shield for Ch

bangster

Posted June 17, 2019

Fusion Member

1.1k
Region:U.S. Pacific Coast
My Fusion:2012

2400 in 1 year seems to correspond to number of hours in a year in hex (365.25 × 24) = 0x2400(ish) I wonder if is the error part that really isn't an error, or it is past 9 years. Very interesting indeed.

+ Quote

allen84

Posted June 18, 2019 Author

Fusion Member

87

> **On 6/17/2019 at 6:58 AM, Milan_OH said:**
>
> Allen,
>
> Wow, did your post hit home with me. My '10 Milan started
>
> Expand

Since your car has such high mileage, I'm not sure how degraded your HVB is. At 200k+ miles you've driven, the battery must have gone through a ton of charging cycles. My car is almost 10-years old, and it only has 115k km (71,000 miles). My car has really low mileage for a 10 year old car, so it probably has been through the least amount of charge cycles, and for them to code their system to make me believe it's dying, is wrong. By doing this fix for myself, also makes the ICE go through the least amount of wear and tear, when the EV is on more frequently.

Ford claims that the HVB requires no maintenance and lasts the life of the vehicle. What is their definition of a life term? Although the HVB still

works somewhat, but not great as before, once you hit the 9 year age limit. Which leads you to believe that the battery will need changing out soon. Now I don't know much on the science of how long HVB batteries truly last. Some articles I read that that there are 2008-2010 Toyota Prius's out there that have driven between 200k - 400k miles on the original batteries. I believe it uses the same type of batteries as the Fusion Hybrids. Ni-MH batteries.

The 2010 Fusion hybrid uses this type of battery according to this link of the guy that found a used one for $300 for disassembly. http://www.etotheipiplusone.net/?p=3109 D cell sized @ 8000 mAH NiMH batteries stringed together. Wikipedia mentions that the battery brand is Sanyo.

Most articles I read that 10 years is the average time for replacing the battery. This article states that some original hybrid batteries are still charged up after 15 years later. https://www.thetruthaboutcars.com/2016/07/original-hybrid-batteries-still-charged-15-years-later/

The worse that can happen is the battery capacity will decrease more and more on the batteries current charge on the dashboard, and maintaining EV mode, the green box will just get smaller and smaller for the red line to be in it.

No, I did not converse with any Ford Techs about this. I've managed to figure this out and piece the information together through a lot of reading around by the links on this forum and through googling similar

problems, and what other people have been through at the dealership that attempted to do the job and how they got it fixed. So I decided to take a gamble and perform this myself as I had the necessary tools on hand. I'm 95% certain that what I've done is almost exactly what the very few dealerships have done when they went through with the fix.

+ Quote 1

akirby

Posted June 18, 2019

Moderator

7.3k
Region:Decline
My Fusion:2013

> **On 6/17/2019 at 11:47 AM, bangster said:**
>
> 2400 in 1 year seems to correspond to number of hours in a year in hex (365.25 × 24) = 0x2400(ish) I wonder if is the error part that really isn't an error, or it is past 9 years. Very interesting indeed.

I think Error is just coming from Forscan because it's expecting an increment of 2400.

+ Quote

Milan_OH

Posted June 18, 2019

Fusion Member

76

Region:U.S. Great Lakes

My Fusion:2010

> **On 6/18/2019 at 12:16 AM, allen84 said:**
>
> At 200k+ miles you've driven, the battery must have gone through a ton of charging cycles.

I'm @ 135K miles, so there should be life remaining.

+ Quote

allen84

Posted June 18, 2019 Author

Fusion Member

87

> **On 6/18/2019 at 7:05 AM, Milan_OH said:**
>
> I'm @ 135K miles, so there should be life remaining.

My mistake, I misread that, I thought you were at 200k miles. I agree your HVB is still good. I hope it works for you. I never thought I would fall in

love with my car all over again, Oh how I've missed the EV green box expanding large upon me frequently now.

+ Quote

Milan_OH

Posted June 20, 2019

Fusion Member

76

Region:U.S. Great Lakes

My Fusion:2010

> **On 6/18/2019 at 7:39 PM, allen84 said:**
>
> My mistake, I misread that, I thought you were at 200k miles. I agree your HVB is still good. I hope it works for you. I never thought I would fall in love with my car all over again, Oh how I've missed the EV green box expanding large upon me frequently now.

Process completed last night, I can confirm my EV mode is back! Normal commute the last 6 months, car reported ~35mpg, today 43.6mpg. Thanks Allen! This thread should be a sticky. I have a sneaking suspicion this will also fix my A/C compressor not running at idle which I'm sure draws off the HVB. Another HVB preservation "engineering feature" I'm sure. That symptom started last Summer.....very annoying in 90 degree stop and go traffic.

Jack in Ohio

+ Quote 3

6 yr akirby pinned this topic

akirby

Moderator

7.3k
Region:Decline
My Fusion:2013

Posted June 20, 2019

> **On 6/20/2019 at 6:21 AM, Milan_OH said:**
>
> This thread should be a sticky.

Done

+ Quote 1

Kv3blue

Fusion Member

2
Region:U.S. Pacific Coast
My Fusion:2010

Posted June 22, 2019

Hi Everyone.
Joined this forum after reset battery age to 1st year. I have had this same issue of barely going ev mode on my 2010 Fusion Hybrid for over a year. I have asked myself many times is that how Ford's hybrids last, 9 to 10 years? Then it just turned into a regular car and have to haul the extra battery weight for the rest of its life? have also searched if the Toyota Prius has this problem, nope but different problem. I have searched for this Fusion ev problem over a year all over for info, but got none till last week. I always felt there was nothing wrong with the battery and it had to do with something Ford had put in.

I have followed everything Allen had described. I could not get a laptop, so I haul my all in one Lenovo 23" inside the car to do it. I have two 2010 Fusion Hybrid (since this post takes

care of the hybrid problem I am going to get another one 2011 $9000 with 20k miles). One Fusion with 96k miles and the other at 165k miles. Set both back to 1st year battery age. Now the ev mode will stay engaged up to the middle bar. That put a big smile on my face and some hollering. Finally got my hybrids back! Also I was able to programmed 2 extra keyfobs (from eBay with used Ford oem chips, but after market blank key blades) for one of the car, because the car came with only one key at the time it was purchased used. Both the hybrids drove/accelerate about the same now, even with the mileage difference.
I also want to personally thank Allen for this post (also the reason I joined this forum). Thanks allen84! I also want to donate to your PayPal, let me know how.

+ Quote 3

asicking

Posted June 24, 2019

Fusion Member

27
Region:U.S. Northeast
My Fusion:Decline

My 2010 just clicked over 300K. I'm getting mid to upper 30s combined. This time last year I would typically get low 40s. Do any of you think I have anything to lose in resetting to year one, given the high mileage?

+ Quote

Milan_OH

Posted June 25, 2019

Fusion Member

It's anyone's guess how the HVB & charging system will behave once the HVB nears the *actual* end-of-life.
Perhaps with more research or inquiries to Ford service, we could

76
Region:U.S. Great Lakes
My Fusion:2010

get the rationale behind the ~9 year mark. There certainly could be ramifications for which we're not aware, but personally I'll take my chances. Once I reach the 10 year mark of car ownership, I consider the car a throw-away, and every year thereafter is a bonus. This is not new for FMC , they sold the Escape hybrid ~2004-2010. Similar technology I'd expect, maybe they characterized the HVB's life then, and took a conservative approach for the next gen hybrids.

Maybe FMC monitors this board and we'll get an anonymous response.....

+ Quote 1

jzavadil

Posted June 26, 2019

Fusion Member

12
Region:U.S. Southern Atlantic
My Fusion:2010

YES!! I started the other thread back in December hoping to find a solution. Dealer had my car for 3 weeks, no solution. Just did the procedure exactly as you laid out in impressive detail - car seems to run much better now, using the battery as it is supposed to. Curious to see how the car responds when it is cold again - but I am guessing that this fixed it based on how the car drives now. The only thing I would add to this thread is the fact that when I wrote the new battery age setting to the car, I heard a mechanical noise (maybe a relay?) from the area of the HVB - so I'm guessing that whatever happened back there got the battery back in business.

Awesome work - I would have never been able to figure this out. I'm going to mention this in the comments of

my YouTube video on the topic and direct folks to this thread as well.

Thanks again Allen. If you send me your contact info I'd be happy to send some PayPal appreciation your way. I think Ford owes you as well!

john.zavadil@gmail.com

+ Quote 4

asicking

Fusion Member

27
Region:U.S. Northeast
My Fusion:Decline

Posted June 26, 2019

jzavadil, I'm curious as to how many miles are on your Fusion...I'm thinking of doing this operation on my 2010 with 300K+

+ Quote 1

allen84

Fusion Member

87

Posted June 27, 2019 (edited) Author

> **On 6/26/2019 at 4:24 PM, asicking said:**
>
> jzavadil, I'm curious as to how many miles are on your Fusion...I'm thinking of doing this operation on my 2010 with 300K+

I'm sure there wouldn't be an issue. All its doing is the hybrid system is preventing you the use of EV mode. What the point of having a fully charged battery if you can't even use it. The car does a good job of it discharging in EV and charging the battery, as it never lets its rundown

past 20% when the engine kicks in and recharges it. If while driving, you see a normal rate of acceptable discharge of the battery level on the dashboard that you remember on EV mode. Also, when you turn off the car for the day and come back to the same charge as it was before the next day, then the battery is still good.

If the battery level on the dashboard discharges too fast while EV, and when you turned off the car with a decent amount of charge left, and when you come back the next day, and the battery level is less then 10%, it means the battery is dying and needs replacing.

Edited June 27, 2019 by allen84

+ Quote 1

sjrqi

Posted June 28, 2019

Fusion Member

3

Region:U.S. Great Lakes

My Fusion:Decline

Thanks, Allen, I updated my 2010 Milan about three weeks ago using your procedure. I will note that I experimented with the battery on year 1 setting, and on year 0 setting, and I cannot tell a difference between them. I left the car programmed on year 0.

Have you made any progress in clearing the other error marks in the BECM settings? I understand that Forscan doesnt presently have the rebalance function. However, I do see in Forscan the 'config battery since last rebalance and config battery state of charge' settings. I will be driving 1000 miles cross country in august and would like to have the errors removed as best as i can before that so that the battery health is optimized during the trip.

Any information of how to correct these error settings would be helpful, thanks again.

+ Quote 1

allen84

Fusion Member

87

Posted June 29, 2019 Author

> **On 6/28/2019 at 2:58 PM, sjrqi said:**
>
> Thanks, Allen, I updated my 2010 Milan about three weeks ago using your procedure. I will note that I experimented with
>
> Expand

The config battery since last rebalance is probably the one I need to figure out how that works. As for the config battery state of charge, I think I'll leave that as is. That is probably a way for the battery to keep track of the current state of the battery charging level and health of the battery. Changing that might mess with the battery level charge indicator on the dashboard, as it might go out of whack. Again, this is my guess. I might be wrong until I know more info on how it works. Going to have to call Ford and find a department where a person that specializes in this and knows more about it before I mess around with it.

+ Quote 1

jzavadil

Posted June 29, 2019

Fusion Member

12
Region:U.S. Southern Atlantic
My Fusion:2010

asicking - About 90K miles.

+ Quote 1

2 weeks later...

mmtphoto

Posted July 10, 2019

Fusion Member

20
Region:U.S. Southern Atlantic
My Fusion:2010

I want to express my appreciation to Allen84 for posting this-my wife's 2010 FFH was getting progressively worse when going into EV, even on level ground-mileage was hovering around 30 mpg, and at 108,000 miles I was looking into replacing the HVB, but after applying this work around, it's getting north of 37 mpg with the same type of driving. What a difference! I have a friend who is a sales manager of a large Ford dealer and I spoke with him about this-he got me on the phone with the service manager who was unaware this was happening to vehicles approaching 10 years of age. Although I did not want to take it to a dealership for this fix, he told me if I couldn't do this myself he'd look into having it done there. Now I don't have to, and my neighbor, who has a 2010 Fusion Hybrid and a 2011 Lincoln MKZ Hybrid wants me to do his cars too.

If you have one of these cars you need to look into doing this, makes it run as intended, and I'm sure we'll get more years out of this car now, it's fun to drive again so follow these

instructions, you'll love it! Thanks again, Allen, great post!

+ Quote 2

Milan_OH

Posted July 10, 2019

Fusion Member

76
Region:U.S. Great Lakes
My Fusion:2010

> **On 6/29/2019 at 4:42 PM, allen84 said:**
>
> The config battery since last rebalance is probably the one I need to figure out how that works. As for the config battery state of charge, I think I'll leave that as is. That is probably a way for the battery to keep track of the current state of the battery charging level and health of the battery. Changing that might mess with the battery level charge indicator on the dashboard, as it might go out of whack. Again, this is my guess. I might be wrong until I know more info on how it works. Going to have to call Ford and find a department where a person that specializes in this and knows more about it before I mess around with it.

Found this post, I forgot about the reconditioning function. Read the 2nd post from acdii, perhaps the rebalance & reconditioning are one in the same. Since my fix, I haven't experienced a recondition cycle, my HVB barely ever gets above 60% SoC which seems a little odd.

http://fordfusionhybridforum.com/topic/9335-high-voltage-battery-re-

conditioning/

+ Quote 1

oldone

Fusion Member

5

Posted July 14, 2019

Just wanted to report that i just used this "fix" on my 2010 Fusion with 179,000 miles, and it worked perfectly. Its only been one day, but i will try and report back if there are any drawbacks. I used wifi version of the OBD2.

+ Quote 1

Join the conversation

You can post now and register later. If you have an account, sign in now to post with your account.

Note: Your post will require moderator approval before it will be visible.

Reply to this topic...