Unauthorised AI-assisted translation

Speed controllers and control units

ZIMO MX33 + ZIMO APP and the rest of the world

The universe of digital controllers is almost overwhelmingly vast. The cosmos of handheld controllers and their compatibility is no less so.
How is a newcomer supposed to find their way around? What criteria should one use to make a choice? What are the special features of ZIMO?

I started using ZIMO in 2016; before that, I had begun my journey into the DCC digital world with the Lenz LZV100 and LH100. Until 2015,
was also running the black Roco Z21 with the Z21 app and the ECOS alongside the Lenz units. I have a wide selection of different
systems at my disposal, which I have used over the long term and have therefore put through their paces in practice.

I'd like to start with the 'Special Features' section.

ZIMO utilises more than any other manufacturer, both within the system and decoders, the capabilities of the 'RailCom' feedback system, which was introduced in its original form by Lenz Elektronik. This requires, amongst other things, sophisticated management of the transmission of data packets to the track. This enables the features described below, and many more:

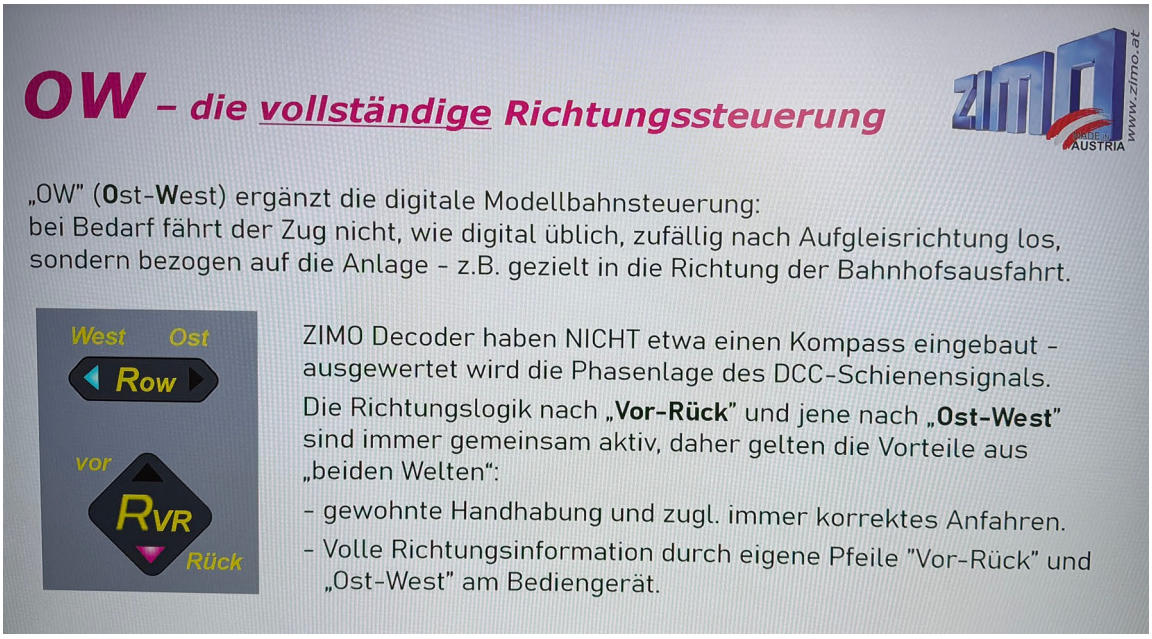
Which system or handheld controller can now display the **SPEEDO feedback in km/h of the actual model speed**?

With ZIMO decoders, the previously set model speed (i.e. the measured v) can now be entered directly as a value in the MX33 menu screen, and the SPEEDO immediately displays the actual speed in the correct scale. The image below shows the measured actual speed using a Halling speedometer and the corresponding speed on SPEEDO of the MX33FU speed controller. The deviation is negligible, here 1.5 km/h. The procedure is very simple, no problem at all; anyone can do it. A brilliant feature of great benefit to those who are also interested in the actual speed of their model in km/h.

Here is the locomotive SPEEDO of the Bern small locomotive (1:45) in the MX33FU, which displays 10 km/h. Measured with the Halling model SPEEDO, which shows 11.5 km/h here. With ZIMO MS decoders, this is no problem at all and simply requires entering the value, left photo. Right-hand photo: Read out via PoM, main track, referred to as 'Op Prog' by ZIMO. However, the locomotive's speed must first be measured as a reference

At the MX33 controller, you simply need to run the locomotive with the ZIMO decoder at a steady, medium speed (or even at maximum speed) and, whilst doing so, enter the km/h value that the SPEEDO should now display. The decoder is then automatically reprogrammed (CV 136) so that the speed display is correct from then on.

The display of **the** so-called **“EAST–WEST direction”** is another notable feature of the ZIMO system:



A convenient feature – particularly for locomotives with dual cabs – where you never know exactly which is cab 1 or 2, and where the locomotives may not be clearly visible when operated on point-to-point layouts. Even during a 180° turn on turntables, the direction is always automatically displayed correctly, which is brilliant. I operate the 26 m turntable from Real Modell in 1:45 scale and wouldn’t want to be without this feature now.

The function of **the RG shunting button** on the MX33 and in the ZIMO app:

Another unique feature of the ‘third kind’ from ZIMO: almost all locomotive decoders from various manufacturers often have a so-called shunting button function on board, which allows the shunting mode to be switched on using a function key

, which reduces the speed by approx. 50%. On Lenz decoders, this is often the F5 key. So far, so good. But with the ZIMO MX33 and the ZIMO app, an independent second stage for shunting mode, independent of the function key for the decoder. Absolutely brilliant for even smoother shunting, almost as if by magic. This effectively reduces the 50% shunting mode function by another 50%.
What makes this special, however, is that decoders without a shunting mode button can still execute shunting mode via the MX33 controller or the ZIMO app.
Or, if you want to save a button for other sounds, this be helpful. If you have both the decoder shunting mode and the RG button on the controller / app activated, you get a reduction in speed to approx. 25% simply by pressing a button – and without any programming. Visually a feast for the eyes; the locomotive almost seems to float, such is the smoothness of the running.

Scroll wheel on the MX33 and MX33FU:

I particularly like the additional fine-tuning via the clicky scroll wheel . This allows for very precise control of a locomotive. From each speed level, you can fine-tune the speed up or down in 12 drive levels. From 0 to 12 drive levels, then continue with the slider.
Precise shunting or driving at walking pace – no problem. I also like to use the scroll wheel when driving onto the turntable.
Speed control is superb with the click-stop dial. A real treat to use.

function keys with symbols: these days, they're indispensable, as the sounds in current decoder generations are becoming more extensive. Who can remember all the functions for every locomotive? Mapping isn't a solution either, as the functions vary across different types of traction. An 'absolute must' when choosing a speed controller. Fremos Fredis are therefore a no-go for me. The argument of assigning just one locomotive to a fellow player is, with ZIMO via the LoR or LoR Aktiv.
Assigning the function symbols to the individual buttons naturally requires a certain amount of effort; it's certainly more convenient on the ZIMO app than on the controller, and the controller then adopts the assignments automatically. But according to information from the ZIMO boss, it will become really simple in future with the help of the measures ZIMO is currently working on, which will of course be free software update: the assignment list (e.g. F0=light symbol, F1=tail light symbol, … F8=sound on/off, …), along with other information, is to be incorporated into the sound projects and from there transferred into the system via the KLUG programming device and the ZIMO app. And across systems (standardised by Railcommunity and NMRA – known as DCC-A or RCN-218), decoders will hopefully in future transmit their own 'GUI' (Graphical User Interface) to the respective system.

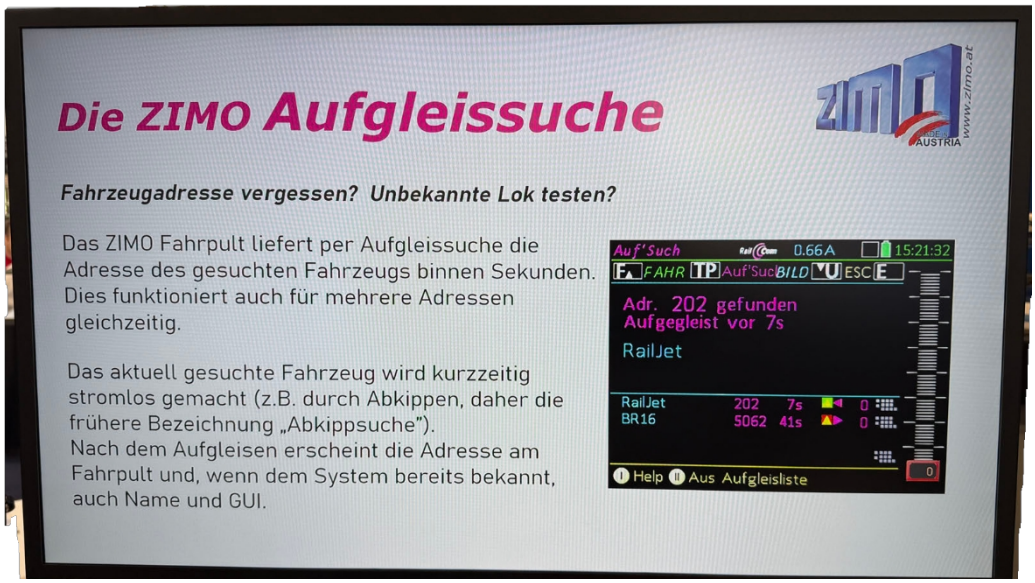
Double and multiple traction: This can be implemented in two different ways : using linked addresses via decoders or system-controlled traction operation, a method specific to ZIMO; the term “traction” (double heading, triple traction, …) is used for this type of combination, in contrast to “consist” for the decoder-controlled type. The Control of several (two, three, etc.) vehicles as part of a traction unit is carried out via their own addresses; the system ensures that the drive commands for speed and direction are identical in each case and are sent out virtually simultaneously (in quick succession).

A brilliant solution: speed synchronisation can be performed, thus eliminating the need for time-consuming CV adjustment on a computer using a programming device for locomotives with different drive systems.

Changing the **locomotive’s** direction by pressing the R button (RVR), also possible whilst driving. This means that reducing speed using the slider below zero is not strictly necessary. This facilitates various shunting manoeuvres and falls under the heading of ‘model railway control convenience’

The design, style and high-quality finish of ZIMO devices are hard to match in the ‘lunar landscape’ of many other control units.

on-track search:



ZIMO APP

Development took a long time, but the result is a rather ‘spacy’ control tool. The ZIMO APP is actually intended as a complement to the MX32 and MX33 controllers. But because it has turned out so well, I’m finding it quite difficult to decide which one to use for driving and operating. A prerequisite is an MX10 command station; at ZIMO, this corresponds to the common term ‘digital centre’. The ZIMO APP is then connected via Wi-Fi through a separate router. This works very reliably and without crashes or the like. For an Android smartphone, I recommend a Samsung A16 or higher. Alternatively, a tablet, see photo above: pictured here is a Lenovo Idea Tab Pro. This makes the display ‘ridiculously’ huge. Good for ageing model railway enthusiasts. For an understanding of the intuitive operation and range of functions of the ZIMO app, I would like to refer you here to the new video tutorial on the ZIMO app.

N But what criteria should you use to make your choice? How do I decide on a digital system?

Well, that is the question. The analyst draws up a comparison table, another makes a gut decision, perhaps mainly based on visual appeal, whilst yet another focuses solely on the cost. Or you might not give it much thought at all and just take whatever is available, or decide based on what other club members are using.

I can only recommend not letting yourself be driven by price alone. The key question should rather be: Which system, design, range of functions, what are my own preferences, and what do I definitely not want to do without?

And here's another important practical tip from me: when choosing handheld controllers, please think backwards. What does that mean? First, define your requirements for the features and functions you simply cannot do without, and then select a handheld controller. Only in the second step should you then look at which digital centre is needed for this, your preferred handheld controller. Not the other way round!

And why go to all that trouble if you're already happy with a different controller? After all, I don't just have one locomotive or a single carriage. Theoretically, that would be enough, wouldn't it? It's the variety that makes the music. Driving and shunting on a digital keyboard… and digital high culture. An old saying: "Digital matters – that's why ZIMO is our choice".

Conclusion: In my experience, ZIMO sets the benchmark in all categories with the MX33FU and the ZIMO app. However, the MX33 controller and the ZIMO app require the ZIMO MX10 or MX10EC digital centre to connect the ZIMO app and the MX33 and MX32 controllers with all ZIMO functions (and even older ZIMO generations). ZIMO IS A SYSTEM and follows this approach. The focus is not on being able to connect to all systems, which in turn brings or can bring other difficulties. And by the way: ZIMO is rapidly approaching its 50th anniversary! Respect, respect.

However, when you buy an MX10 or MX10EC, you also acquire Roco's Z21 functionality. If you deduct the price of a Z21 XXL with 6.5 A, the price calculation looks considerably better. I believe this is rarely taken into account. And boosters are generally not needed, as the MX10 is very powerful at 20 A.

And: ZIMO is not complicated in its basic operation, contrary to what is often claimed. Commissioning and assigning a locomotive to the handheld controller is just as simple as with the Z21 or the ECOS.

The full range of features and all the individual settings described in the manuals are the icing on the cake. Simply driving and programming locomotives is straightforward. And there are several ways to select locomotives.

Of course, ZIMO can do far more, such as **HLU, gyro sensor, stop balls, battery management, precise short-circuit detection** (even at full load/high current settings), and there are two levels of spark suppression circuits that prevent short-circuit arcs from occurring in the first place. **Voltage display** at the central output and **measurement of the**

voltage in the ZIMO decoder, including **a readout on the MX33 display, convenient programming**, etc. etc.

But for standard plug-and-play operation, ZIMO is no different from other systems.

1. Enter locomotive address using the A button
2. Define drive levels at the same time as entering, confirm with the F key.
3. Drive using the slider
4. The RVR button is used to select the locomotive's direction of travel (forward or reverse) (R = direction, V = forward, R = reverse)

Important **Note:** The subject of hand controllers is, of course, closely linked to your own model railway philosophy and is also dependent on it. As I currently run without PC control and operate 0-gauge locomotive models manually, and also enjoy shunting, this presents different requirements compared to operating many trains simultaneously on an H0 or N layout. In this respect, the basic requirements and priorities do not apply equally to everyone, but can certainly vary greatly from person to person. However, the ZIMO STEIN modules can also be used to operate large PC-controlled layouts.

Advantage of manufacturer systems over **open-platform devices**: should protocol changes from supported digital centres or software updates occur, open systems have a potential disadvantage if the changes are not immediately updated. The size of the company can also play a major role, as capacity is often the bottleneck.

Paco hand controller as a DIY kit: PacoMouseCYD, a DIY hand controller from Spain, not for commercial use. Can also be connected to the ZIMO system via the Z21 in the MX10. This is useful if, at model railway meetings, other colleagues are using different hand controllers, such as Lenz, for example. With the PacoMouse PYD, you can simply hand fellow players the affordable PacoMouse PYD, which is limited to the essentials but can display the function keys with symbols on the screen.
https://usuaris.tinet.cat/fmco/home_en.htm and https://www.stummiforum.de/t241914f7-PacoMouseCYD-handregler.html

Other control devices that I use or have used over the years:

- Lenz LH101-R and the Apple Touchcab controller (no longer available)
- Funky by Matthias Manhart, Switzerland, connects to the MX10 via the ZIMO CAN socket. It works extremely reliably and stably, wirelessly via DECT and the Funky base station. Four Funky units can be connected to and operated from a single base station.
- Roco Z21 and Roco Wi-Fi mouse and Z21 app
- ESU ECOS and Mobile Control Pro
- LoDi-Con A and B

- PacoMouseCYD, a DIY hand controller from Spain, not for commercial use.

- Various Bollow controllers as DIY projects and the new “BentoBox” (prototype, still in development) via XpressNet on the ZIMO MX10

- Daisy II: Anyone who finds the display with the function icons and the menu navigation, there’s no helping them, or they might as well go and ‘dance with the devil in hell’.

- Zavavov: Unfortunately, the build quality does not meet my expectations.

A word of advice to all H0 and N-gauge modellers: switch to larger gauge models (from 0 gauge upwards) early on; you’ll get more enjoyment out of them as you get older.

ZIMO Exhibition stand, Gießen, March 2026