Newsletter *December 2023*

Large scale decoders *(MS, MN)* and *smoke generators*
## *... what belongs together.*

The ZIMO smoke generators **RAUSIx** (single) and **RAUDUx** (dual) are specially designed for use together with ZIMO large scale decoders, both with **MS990x** (sound decoder gauge 1 and gauge G) and **MS950** (sound decoder for gauge 0 and "smaller" large scale vehicles) and **MN950** (non-sound decoder for large scale). The respective decoder directly operates heating elements and fans, the smoke generator itself only contains electronics for over-temperature protection; this results in **favourably priced package solutions**.

The new edition of the locomotive boards **LOKPL990** and **LOKPL950** or **LOKPL950K** (with screw terminals, new type, see below) contain own plugs for connecting cables between decoder and smoke generator.

*Using the example of the **MS990L** large scale sound decoder:*

The cable is plugged into the locomotive board with the decoder unplugged, then the decoder is plugged in.
Note: The locomotive board is NOT included with the MS990L and must therefore be ordered separately.
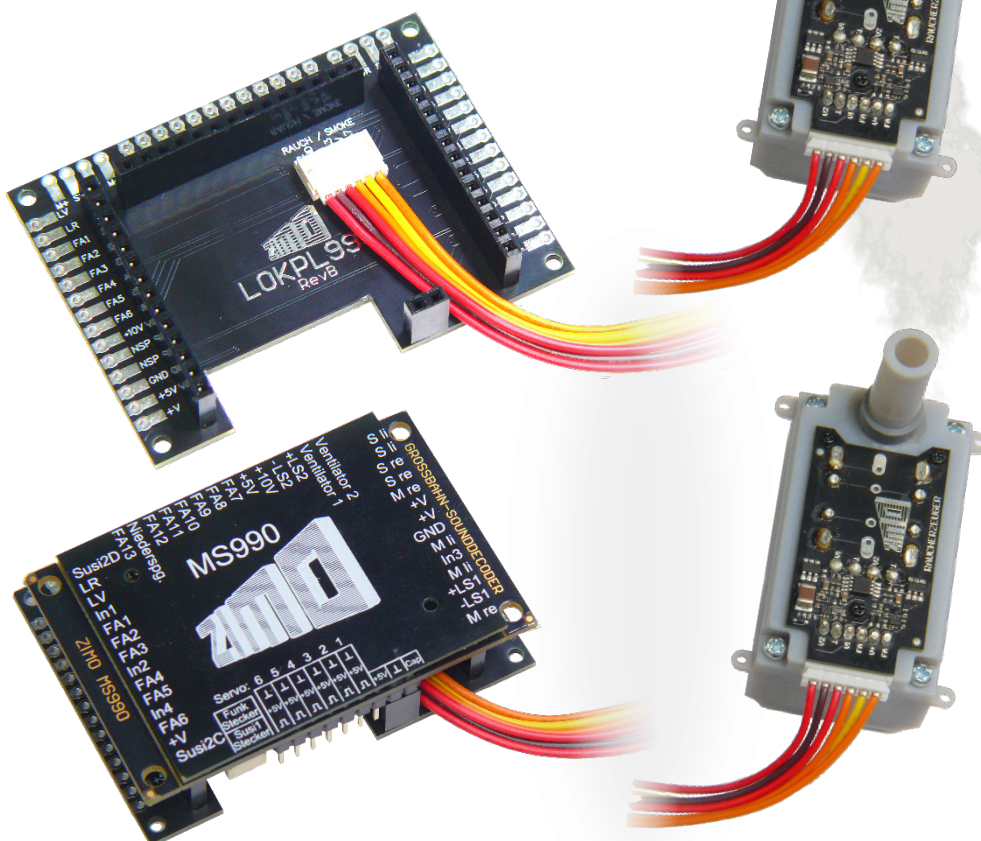
*The locomotive board for **MS950** ▶ or **MN950** (shown here as CAD: the version with screw terminals **LOKPL950K**) contains, as before, 4 servo pin headers. Note: the MS950 comes with a locomotive board, but one with solder pads, NOT the one with screw terminals; the LOKPL950K must be ordered separately.*
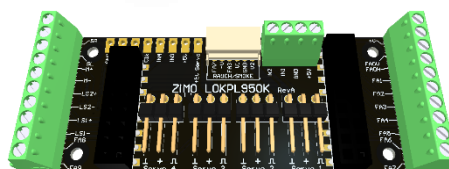
Editorial

Smoke generators are typical examples of the different approaches taken by suppliers with regard to "digital accessories", i.e. equipment for vehicles fitted with decoders.

a) the "everything with everything" strategy: an accessory product is developed that fits decoders of all brands; typically by connection via "SUSI" or "single-wire bus".

b) the "one-stop shop" strategy: a product is created that matches the company's own brand (in this case ZIMO decoders) and utilises its features.

ZIMO often takes the second approach, for example with smoke generators:

- This has technical advantages because the decoder can apply the current operating status directly (in this case to the smoke),

- and cost savings by eliminating redundant effort if the accessories share the "intelligence" (= the micro-controller) of the decoder, as well as the power electronics (the function outputs).

So you don't need SUSI or a single-wire bus to "smoke", you need coordinated products "from a single mould" and get a cost-effective and generally better result.

The situation is similar with system products: the ZIMO MX33 (or MX33FU) control panel runs via its own CAN protocol with MX10 (-EC) or Roco Z21.

However, it does NOT support any bus with a universal claim (such as Loconet, BiDiB...), because the bus protocol inevitably defines and limits the functionality of the connected products. The "specials" from ZIMO such as HLU, East-West or the future GUI transmission from ZIMO decoders would not work, nor would the entire system memory organisation.

In recent years, repair times have increased more and more. Now there are signs that the situation is easing, as the labour market is no longer "dried up". Unfortunately, this cannot simply be seen in a positive light, as it is of course anything but a good sign for the economy as a whole and for the model railway industry in particular.

Even more choice for **miniature decoders** (MS, MN)

# ... *ZIMO fits in* (almost) *every locomotive.*

MN160 - *The ZIMO flat decoder (assembled on one side, only **1.6 mm**) for N, TT and small H0 scale models*
*The **most favourably priced** decoder types in MN technology (optionally wired or NEM-651)*

13 x 7.5 x 1.6 mm - top side equipped, bottom side labelled,
4 function outputs + 2 logic level outputs,
0.5 A total and motor current continuous (1 A peak).
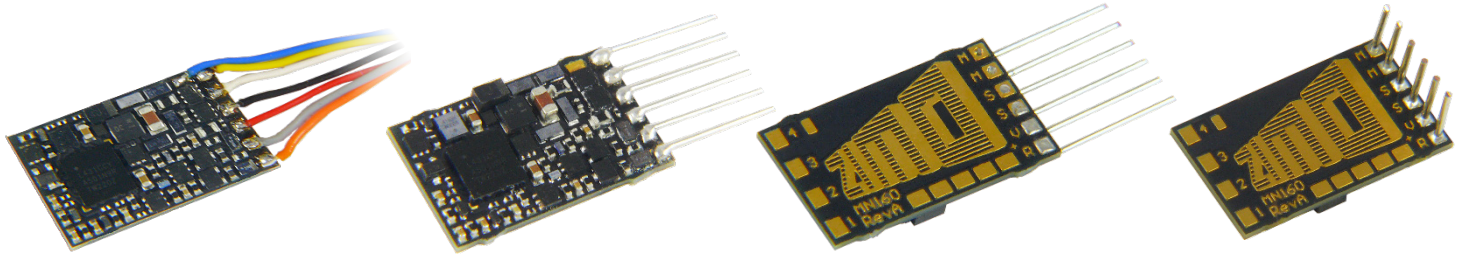
MS581N18 - *The Next18 sound decoder with **3 watt** speaker output*
New edition of the MS580N18 with extended outputs and smaller dimensions

24.9 x 10 x 4 mm (new - instead of 25 x 10.5 x 4),
6 function outputs + 1 logic level output (new - instead of 4 + 3) + SUSI (or 2 servos, etc.)
0.8 A total and motor current continuous (1 A peak),
3 watts (new - instead of 1 watt) audio for 4 to 8 ohm speakers,
Variant for connecting 5V energy storage devices, gold caps or 6.3V tantals.
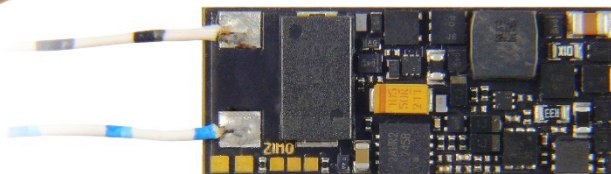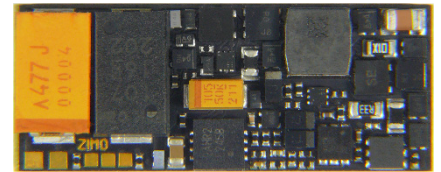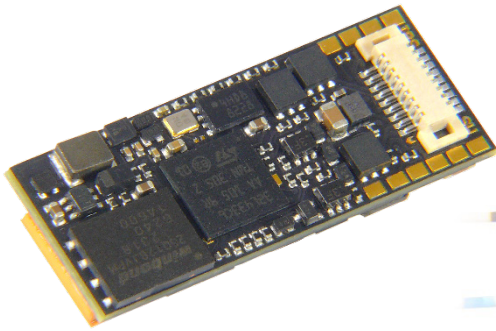
MS491 - *The slim ZIMO sound decoder (**only 7.8 mm**)*
New edition of the MS490 with extended outputs and smaller dimensions (optionally wired or NEM-651)

19 x 7.8 x 2.8 mm (new - instead of 19 x 8.6 x 2.9),
5 function outputs (new - instead of 4), + 2 logic level outputs + SUSI (or 2 servos, etc.)
0.7 A total and motor current, continuous (1 A peak)
1 watt audio for 8 Ohm speakers
15V energy storage can be connected, for electrolytic capacitor (max. 1000µF)
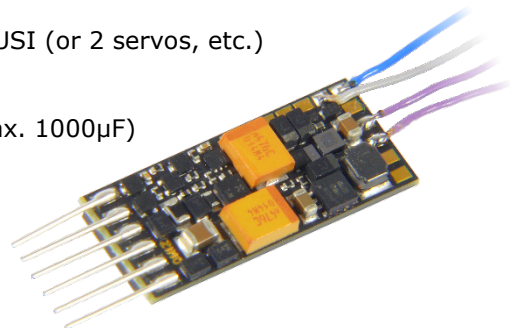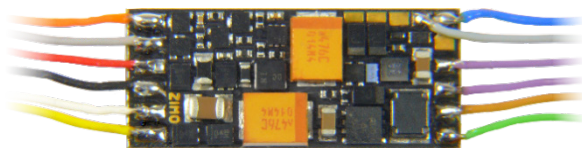
MS250 - *The non-sound decoder for low-voltage motors (5V) for Z, N, TT gauge*
planned for 1st quarter 2024

9.9 x 7.5 x 2 mm,
4 function outputs,
0.2 A continuous motor current, 5V motor output,
for connecting 5V energy storage devices, gold caps or 6.3V tantals.
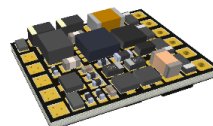
Correction of an "incompatibility":
between accessory decoders *MX820, MX821* and *MX10*
and new configuration tools as part of ZSP for MX820, MX821

The ZIMO accessory decoders MX820 (points and signals) and MX821 (servo drives) contain a software error that has not been discovered for a long time: this was discovered after the introduction of the transmission of "DCC time commands" by

MX10 (MX10EC) with software version 1.30.0200 or 1.30.0300 from March 2023

These "time commands" according to the standard (Railcommunity and NMRA) are intended to continuously inform all decoders on the layout (both in the vehicles and in the accessories) "what time it is" so that all clocks are synchronised with the digital control centre. At present these "time commands" are not yet used by decoders, but in the future there will certainly be features based on them, both from ZIMO and from other suppliers. The ZIMO base units have been prepared for this, unfortunately with an unpleasant side effect:

the software error in the MX820 and MX821 accessory decoders causes the "time commands" to be interpreted as CV programming commands, which completely "alters" the accessory decoders (address and parameters).

The error is NOT in the software for MX10, but can be suppressed by

MX10 (MX10EC) from software version **1.30.0500**

where the "time commands" described above can be deactivated (see update description). However, this would have the disadvantage that the problem would only be postponed because future decoders will expect such "time commands", even without this fact having to be explicitly mentioned in the documentation.

However, it is BETTER to "repair" the MX820 and MX821 accessory decoders, i.e. to update the software. new version from **6.0** (same number for MX820 and MX821, although of course different software).

Then the "time commands" in the accessory decoder will no longer cause any damage. However, in many cases the address and CVs of the accessory decoders must be reprogrammed, as these have already been destroyed by the "time commands"!

In order to carry out this update via synchronous update (see MX820 and MX821 operating instructions), i.e. without having to remove each individual accessory decoder already permanently connected in the system and connect it separately to the MXULF update device, it is necessary to first load a new

MXULF software version **0.84.80** or higher into the MXULF itself!

Programming the accessory decoders (including reprogramming in the event of the misfortune with the "time commands") is simple as long as it concerns the "main outputs" to which turnouts or two-position signals are connected.

Using the "light outputs" in the MX820X, -Y, -Z versions or in the MX821 is much more complicated, especially for signals with many lights (HV signals, etc.).

The **ZSP** (= ZIMO Sound Programmer) **software provides** a range of configuration tools for this purpose ...

... and also suitable switch consoles. □

"Christmas updates" *and ZSP extensions*

A few new software versions for various products are to be released at www.zimo.at shortly before the holidays:

MS and MN decoder 4.241: e.g. fading of steam chuffs; optimisation of RailCom transmissions to report current speed more frequently; and (since V. 4.237): a decoder self-test (CV #30).

MXULF 0.84.80: Synchronisation update for MX820 (see above), bootloader replacement for "old" MS decoders, bug fixes.

MX10, MX32, MX33 01.30.0500: New radio protocol, various optimisations, correction of graphical errors.

ZSP: new "nicer" driving windows for operation with MXULF; several of these can now be opened and used simultaneously with different addresses.

Open Day 2023
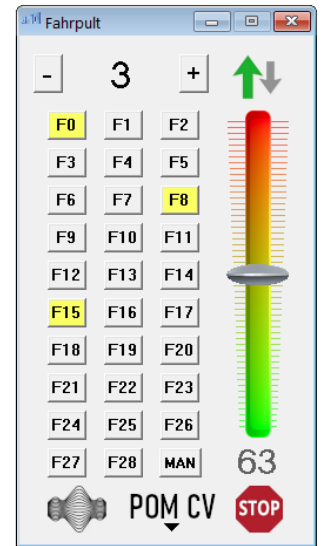
New in the ZIMO Team
Since newsletter March 2023

Peter Kropac
Trainee
Repairs

Vian Bawah
Hand soldering, final assembly, rapid decoder tests

Hande Süssenbacher
Management Assistant
Sales, Service