

Motorola®

The decoder utilizes 4 Motorola® addresses to access functions F1 - F 16, when using a Motorola—based command station. The three sequence addresses for the functions F5 - F16 are ascending to the decoder address and can be activated in CV61 as required by the values 1 (F5 - F8), 2 (F5 - F12), or 3 (F5 - F16).

Configuration of CVs

CVs 12 and 29 control the operating mode and configuration CVs, respectively. As a rule, an indexed CV contains various basic settings of a decoder, such as reversing the direction of travel. CV calculation examples can be found in the detailed operating instructions.

RailCom®, RailCom Plus®

In the sound decoder, CV29 (RailCom®) can be turned on or off via bit 3. The decoder is automatically recognized by RailCom Plus® - equipped command stations (like PIKO SmartControl) if the RailCom Plus® option is activated in CV 28. The decoder name, locomotive symbol, and special function symbols will appear automatically on your control device's screen. With RailCom Plus® technology, no locomotive data has to be stored in the DCC central control unit and no locomotive addresses have to be programmed into the decoder.

mfx®

The PIKO SmartDecoder XP 5.1 Sound also masters the mfx® data format. If the digital control unit used is mfx® capable, the sound decoder automatically registers with its locomotive symbol, decoder name and its special function symbols. This mfx® technology means that no locomotive data has to be stored in the command station and no locomotive addresses have to be programmed into the sound decoder.

Braking

The sound decoder understands the following braking methods:

Märklin® braking section (brakes with analog DC voltage)

DCC braking function

ABC (Automatic Brake Control) braking section

The decoder's adjustable braking distance can bring the train to a stop within a centimeter of a signal. More information on "braking behavior" can be found in the detailed operating instructions for PIKO SmartDecoder XP 5.1 Sound.

Function outputs

A comprehensive description of all options related to the function outputs can be found in the detailed operating instructions.

Simple and extended function mapping

In the **simple function mapping** (CVs 33 - 46), the assignments of the switching tasks such as lighting and special function outputs can be freely assigned to the function keys F0 to F12 of the digital central unit. The switchable starting and braking delay and the shunting mode can be assigned to any function key in CVs 156 and 157. More detailed information can be found in the detailed operating instructions.

Smoke generator control

A smoke generator can be connected to outputs A1 to A7 which are load-sensitive and react to the model's speed. Function key assignment is done using extended function mapping.

Electric coupler control

PIKO electric couplers are operated by tiny copper wire resistance wires which heat up when the decoder sends current through them. The heat causes the wires to expand, causing the coupler hook to move to the uncoupled position. The model can then back away from the car. With the appropriate decoder settings, function outputs A4 and A5 will automatically switch off after a user-adjustable time without having to press their function key.

Switching (shunting) scenario, remote coupling/uncoupling

If your layout has remote electric uncouplers installed, you can program the locomotive decoder to perform a switching scenario like the following:

- 1) The locomotive runs in one direction for a certain distance.
- 2) The locomotive stops and reverses direction.
- 3) The locomotive uncouples and moves back from the uncoupled car for a certain distance.
- 4) The locomotive stops, and resumes switching..

Extended function mapping

Due to its complex nature, extended **function mapping** cannot easily be set by programming individual CVs. To work with extended **function mapping**, you will need the PIKO SmartProgrammer device (#56415) and, if desired, the PIKO SmartTester (#56416). Detailed information on extended function mapping is available in the instruction manual.

Servo control

The sound decoder enables the control of servo motors via all function outputs. The assignment to the function keys is done exclusively via the extended function mapping.

The use of a servo with the decoder requires electronics expertise.

Further information can be found in the detailed operating instructions.

ATTENTION: Soldering on the decoder should only be carried out by experienced specialists with the appropriate tools. Decoders damaged by improper handling will not be covered by the warranty.

Sound settings

To change the overall sound volume of the SmartDecoder XP 5.1 Sound, first program CV31 to a value of 16 and CV32 to a value of 0.

This will take you to the programming area for setting the total volume. You can now set this as you wish in CV257 in the value range 0 - 255.

NOTE: In order to play a PIKO sound on the sound decoder, the test and programming device requires PIKO SmartProgrammer (#56415) and (optional) the PIKO SmartTester (#56416). All further information about the sound section of the PIKO SmartDecoder XP 5.1 Sound as well as the available For setting options, please refer to the detailed operating instructions.

Factory reset

To restore the sound decoder to its factory settings, program CV8 to a value of 8.

Programming

Configuration variables (CVs) form the basis of all the decoder's settings. This decoder can be used with the PIKO SmartControl^{light} DCC system, the PIKO SmartControl DCC system, or any other Motorola-based system. For more information on programming options, please refer to the instruction manual.

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RailComPlus® is a registered trademark of Lenz Elektronik GmbH, 35398 Gießen

NOTE: This product is not a toy and is not suitable for children under the age of 14. Any liability for damage of any kind caused by improper use or failure to observe these instructions is excluded.

Service:

Internet: www.piko.de

E-Mail: info@piko.de

Hotline: Di + Do 16-18 Uhr

In the event of a defective decoder, please return the decoder module to PIKO along with proof of purchase, the decoder address, and a short description of the problem.

Warranty Statement

Each decoder module is fully tested before shipment. Nevertheless, should a malfunction occur within the 2-year warranty period, we will repair the module free of charge on presentation of the proof of purchase. This warranty is voided if the unit has been damaged by improper use. Please note that, according to the German Electromagnetic Compatibility Law (EMV-Gesetz), the decoder module may only be used inside models bearing the CE mark.

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