

absolutely clean from the dust and grease! If you are still experiencing mentioned signs of bad electric contact, consider cleaning and deoxidizing of upper truck contacts and brass wipers on the chassis.

Warning: Please note that maximal allowed track voltage in both digital and analog modes should not exceed 12 Volts! Many digital command stations output higher voltages; in this case, please use a digital voltage reducer between the command station and the track!

Tip: Alternating DCC voltage can be measured correctly only using multimeter with True RMS feature. Conventional multimeter without this function will show incorrect value.

Programming

This digital decoder is based on Doehler & Haass® hardware and software technology. All functions and features are equal to those of Doehler & Haass® DH05C multiprotocol digital decoder. Programming samples shown below only for DCC mode. For detailed information about all available features, as well as programming in other modes (MM, SelecTRIX 1 and 2), please refer to the complete programming manual available on Doehler & Haass official website: <https://doehler-haass.de>

1. DCC Address: Default DCC address is 3. To change default address, desired value (1-127) should be written to CV1. Long addresses (0001-9999) available; please refer to the complete programming manual available on Doehler & Haass® official website.

2. LED Brightness: The brightness of headlights can be adjusted. To change it, set CV52 value from 0 (off) to 31 (maximal brightness, default value).

3. Maximal speed: Maximal speed setting is already set to the highest value in this decoder (CV5 = 127). Default value is 92; it should be restored to 127 after reset of the decoder.

4. Decoder reset: This digital decoder comes already programmed; no additional adjustments needed. To reset decoder to the factory defaults, write "8" to CV8.

ATTENTION: This product is intended only for experienced users! Please perform all operations with all precautions that apply to work with ESD sensitive devices. The manufacturer is not responsible for any damage to the train model and/or digital decoder caused by improper installation, assembly or disassembly of the locomotive, as well as by exceeding the maximum allowed operating voltage.

Digital decoder
for AZL SW series switching diesel locomotives

User's Manual
Ver 1.03

Art. No: ZDL-AZL-SW



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Digital decoder
for AZL SW series
switching diesel locomotives



User's Manual

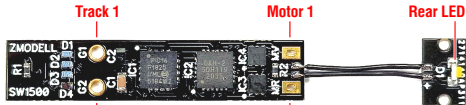
Art. No: ZDL-AZL-SW

Suitable for:
• AZL SW1000 • AZL SW1500

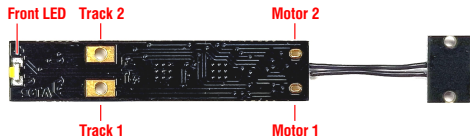
Ver 1.03

Overview

Top Side



Bottom Side



Package contents

- 1x ZDL-AZL-SW digital decoder
- 1x User's Manual

Technical data

Operating mode: DCC, MM, SelectRIX 1, SelectRIX 2, DC Analog

Max. voltage: 12 V (digital and analog)

LED: 2x warm white side glowing SMD 0602

Functions

F0 - Directionally controlled headlights

Default address: 3 (DCC), 01 (SelectRIX)

Installation

1. Prior to installing the digital decoder, make sure that your locomotive runs perfectly in analog mode - without jerks and stalls.

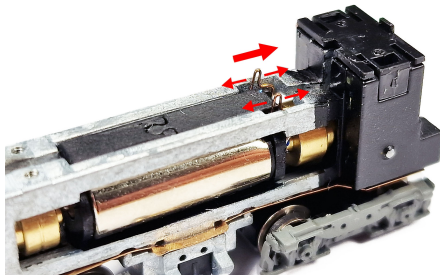
2. Carefully remove the housing of the locomotive from the chassis.

Important: Disassembling this class of locomotive is a complex process. Good user experience, accuracy and patience needed here. Although it is not recommended by the manufacturer to disassemble SW series locomotives, for installation of the digital decoder, please follow detailed instructions on disassembly on manufacturer's website:

<https://www.americanzline.com/docs/AZL-SW1500-Shell-Removal.pdf>

3. Unscrew 4 screws and remove stock circuit board. Keep all screws in the safe place.

4. It may be necessary to adjust the pins of the motor outputs. If you believe that electric contact between the pins and the holes in the circuit board is not reliable enough, you may do some fine adjustments to the pins, as shown on the following picture: slightly pull them apart and then bend them towards the cabin a little. Once again: normally it does not need to do this; perform this only if you believe that it is really needed:

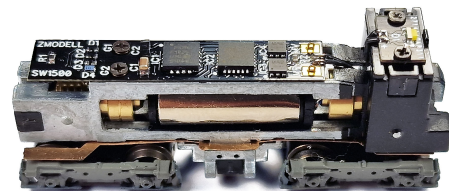


5. Install the circuit board and fix it with screws. Please do not overtighten the screws; otherwise, the circuit board either threads of the screws may be damaged.

Important: Please make sure that there is no short circuit between the motor outputs and the chassis! Motor outputs should not also touch the brass flywheel. Please note that short circuit between the motor and chassis may destroy the decoder and cause damage to the plastic parts of the locomotive!

6. After fixing the digital decoder with screws, carefully push the cables between two circuit boards into the gap between halves of the chassis. Make sure that these cables do not touch the driveshaft of the motor.

Correctly installed digital decoder should look like on the following picture:



7. It is recommended to put the locomotive onto the track and perform a test run before closing the housing in order to check if everything works correctly.

8. If the test run was successful, then carefully mount back the locomotive housing onto the chassis.

9. Put the locomotive onto the track once again and make further break-in run at the full speed for not less than 5 minutes in both directions.

Important: In order to avoid light flickering and jerky motion of the locomotive, please make sure the locomotive wheels and tracks are