Addendum to the Manual

MOVIFIT® – Device Replacement Function

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1 General information

1.1 Structure of the safety notes

1.1.1 Meaning of signal words

The following table shows the grading and meaning of the signal words for safety notes.

<table>
<thead>
<tr>
<th>Signal word</th>
<th>Meaning</th>
<th>Consequences if disregarded</th>
</tr>
</thead>
<tbody>
<tr>
<td>⚠️ DANGER</td>
<td>Imminent hazard</td>
<td>Severe or fatal injuries</td>
</tr>
<tr>
<td>⚠️ WARNING</td>
<td>Possible dangerous situation</td>
<td>Severe or fatal injuries</td>
</tr>
<tr>
<td>⚠️ CAUTION</td>
<td>Possible dangerous situation</td>
<td>Minor injuries</td>
</tr>
<tr>
<td>NOTICE</td>
<td>Possible damage to property</td>
<td>Damage to the product or its environement</td>
</tr>
<tr>
<td>INFORMATION</td>
<td>Useful information or tip: Simplifies handling of the product.</td>
<td></td>
</tr>
</tbody>
</table>

1.1.2 Structure of section-related safety notes

Section-related safety notes do not apply to a specific action but to several actions pertaining to one subject. The hazard symbols used either indicate a general hazard or a specific hazard.

This is the formal structure of a safety note for a specific section:

⚠️ SIGNAL WORD
Type and source of hazard.
Possible consequence(s) if disregarded.
• Measure(s) to prevent the hazard.

1.1.3 Structure of embedded safety notes

Embedded safety notes are directly integrated into the instructions just before the description of the dangerous action.

This is the formal structure of an embedded safety note:

⚠️ SIGNAL WORD Type and source of hazard. Possible consequence(s) if disregarded. Measure(s) to prevent the hazard.
1.2 Rights to claim under limited warranty

Read the information in this documentation. This is essential for fault-free operation and fulfillment of any rights to claim under limited warranty. Read the documentation before you start working with the product.

1.3 Exclusion of liability

Read the information in this documentation, otherwise safe operation is impossible. You must comply with the information contained in this documentation to achieve the specified product characteristics and performance features. SEW-EURODRIVE assumes no liability for injury to persons or damage to equipment or property resulting from non-observance of these operating instructions. In such cases, SEW-EURODRIVE assumes no liability for defects.

1.4 Product names and trademarks

The brands and product names in this documentation are trademarks or registered trademarks of their respective titleholders.

1.5 Copyright notice

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1.6 Other applicable documentation

- This additional information does not replace the detailed operating instructions or the manual.
- MOVIFIT® FC may only be started up by electrical specialists observing the relevant accident prevention regulations and the following documents:
  - "MOVIFIT® MC" operating instructions (only for MOVIFIT® MC)
  - "MOVIFIT® FC" operating instructions (only for MOVIFIT® FC)
  - "MOVIFIT® SC" operating instructions (only for MOVIFIT® SC)
  - "MOVIFIT® Function Level Classic.." manual (only for function level "Classic")
  - "MOVIFIT® Function Level Technology.." manual (only for function level "Technology")
2 Device replacement function

2.1 ABOX replacement

INFORMATION

If there is an electronic defect in the MOVIFIT®, you have to replace only the EBOX. You only have to replace the ABOX if plug connectors or terminals are mechanically damaged.

Replace a defective ABOX only with:
- An ABOX that has never been operated
- or an ABOX that has been operated with an EBOX of the same function level.

ABOX and EBOX combination

During the first operation, the MOVIFIT® device saves the data of the installed EBOX onto the ABOX. The EBOX characteristics are saved as well, e.g.:
- Type (MOVIFIT® MC, SC, FC)
- Power rating
- Fieldbus interface
- Function level (Classic/Technology)

Afterwards, the MOVIFIT® device does only work when the ABOX and EBOX that are combined have the same characteristics.

MOVIFIT® with S12 safety option

After having replaced an ABOX at a MOVIFIT® device with safety option S12, you always must:
- save all data from the PC to the ABOX and EBOX
- or select, validate, and accept all S12 parameters anew.

2.2 Description of device replacement function

With activated device replacement function, the MOVIFIT® device checks if the EBOX has been replaced after each restart.

For this purpose, it compares the software characteristics of the new EBOX with the characteristics saved on the ABOX.
- If the EBOX is replaced with a permitted EBOX (identical characteristics), the software saves all data (characteristics, parameters) saved on the ABOX to the EBOX.
- If you replace the EBOX with a wrong EBOX (different characteristics), the EBOX generates an error message.

You can reset the error by:
- Resetting the MOVIFIT® device to the factory settings
- And performing a startup again.
2.3 Activating the device replacement function

The device replacement function is only necessary if the MOVIFIT® device has been started up in Expert mode (DIP switch S10/1 = “ON”).

If required, activate the device replacement function manually as follows.

1. Connect the PC/laptop to the MOVIFIT® device.
2. Start the MOVITOOLS® MotionStudio software.
3. Perform an online scan.
4. Start up the MOVIFIT® device [2].
   ⇒ See "MOVIFIT® Function Level .." manual.
5. In the project (upper left side) right-click on the control board icon [1] and select "Startup" > "Gateway Configurator".
   ⇒ The "Gateway Configurator" opens:
   6. Click the [Data backup] button.
      ⇒ The data of the MOVIFIT® device is saved in the ABOX.
      ⇒ The device replacement function is activated.
## 2.4 Procedure for EBOX replacement

Before replacing a defective EBOX, determine the correct procedure for EBOX replacement based on the following factors:

- Function level
- Startup mode
- Safety option
- Data backup location
- Application module (only for function level Technology)

The table below helps you to determine the right procedure. During EBOX replacement, observe the chapter specified in the right column.

<table>
<thead>
<tr>
<th>Influencing factors</th>
<th>Data backup</th>
<th>Instructions</th>
<th>See page/Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Function level</td>
<td>Startup mode</td>
<td>Without S11 S12 S12 fieldbus operation</td>
<td>In the ABOX</td>
</tr>
</tbody>
</table>

### Easy 1)

- Without S11: x
- With S11: x
- S12 autonomous operation: x
- S12 fieldbus operation: x
- Data backup: (→ 9)

### Classic

- Without S11: x
- With S11: x
- S12 autonomous operation: x
- S12 fieldbus operation: x
- Data backup: (→ 10)

### Expert

- Without S11: x
- With S11: x
- S12 autonomous operation: x
- S12 fieldbus operation: x
- Data backup: (→ 12)

### Technology 4)

- Without S11: x
- With S11: x
- S12 autonomous operation: x
- S12 fieldbus operation: x
- Data backup: (→ 10)

**Influencing factor present.**

1) Data cannot be transferred in Easy mode due to parameter lock.
2) Safety-relevant data cannot be saved in the ABOX in autonomous operation.
3) Data backup is performed in the "Assist S12" parameterization tool.
4) The same application modules are installed on the new and old EBOX.
3 Service

3.1 No data backup – EBOX replacement by identical DIP switch setting

Prerequisites

The following characteristics must be identical with the new and the EBOX to be replaced:

- Same type (MOVIFIT® MC, SC, FC)
- Same power rating
- Same fieldbus interface
- Same function level Classic

For these characteristics, refer to the type designation on the EBOX nameplate.

3.1.1 Data backup

For this type of MOVIFIT® device, no data backup is required.

3.1.2 EBOX replacement

⚠️ WARNING

Electric shock due to dangerous voltages in the ABOX.
Severe or fatal injuries.

- Observe the minimum switch-off time after disconnection from the supply system:
  - 1 minute

Replace the EBOX as follows:

1. Disconnect the MOVIFIT® device from the supply system and secure it against unintentional reconnection to the voltage supply.
2. Remove the current EBOX from the ABOX.
   ⇒ See operating instructions
3. Transfer the DIP switch settings from the old EBOX to the new EBOX.
4. Install the new EBOX on the ABOX.
5. Switch on the line, 24V_C, and 24V_S supply voltages.
3.2 Data backup in the ABOX – EBOX replacement without PC

Prerequisites

The following characteristics must be identical with the new and the EBOX to be replaced:

- Same type (MOVIFIT® MC, SC, FC)
- Same power rating
- Same fieldbus interface
- Same function level Classic or Technology

For these characteristics, refer to the type designation on the EBOX nameplate.

Getting started

Perform the following steps:

1. Data backup in the ABOX (Classic or Technology)
2. EBOX replacement
3. Restore

3.2.1 Data backup in the ABOX

Proceed as follows to save data in the ABOX:

1. Connect the PC/laptop to the MOVIFIT® device.
2. Start the MOVITOOLS® MotionStudio software.
3. Perform an online scan.
4. In the project (upper left side) right-click on the control board icon and select "Startup" > "Gateway Configurator".
   → The Gateway Configurator opens:

   ![Gateway Configurator](image)

   - Click the [Data backup] button.
     → The data of the MOVIFIT® device is saved in the ABOX.)
3.2.2  EBOX replacement

⚠️ WARNING

Electric shock due to dangerous voltages in the ABOX.
Severe or fatal injuries.
• Observe the minimum switch-off time after disconnection from the supply system:
  – 1 minute

Replace the EBOX as follows:
1. Disconnect the MOVIFIT® device from the supply system and secure it against unintentional reconnection to the voltage supply.
2. Remove the current EBOX from the ABOX.
   ➔ See operating instructions
3. Transfer the DIP switch settings from the old EBOX to the new EBOX.
4. Install the new EBOX on the ABOX.
5. Switch on the line, 24V_C, and 24V_S supply voltages.

3.2.3  Restore to the EBOX

For following options are available to restore data in the EBOX:
• Automatic restore
• Manual restore

Automatic restore

Prerequisites  For automatic restoring of the data, the EBOX must fulfil the following requirements:
• There is no fault in the MOVIFIT® device.
• The "Auto Restore" function is active (only for function level Technology).

Function  If you switch on the voltage supply, the MOVIFIT® device automatically saves data from the ABOX to the EBOX.
After this, the MOVIFIT® drive is ready for operation again.

Manual restore

(Only for function level Technology)

If the "Auto Restore" function is deactivated, you have to start restoring of the data manually.
For this purpose, click the [Download] button in the "Data management" window.
After this, the MOVIFIT® drive is ready for operation again.
3.3 Data backup on a PC – EBOX replacement with PC and MotionStudio

Prerequisites

The following characteristics must be identical with the new and the EBOX to be replaced:

- Same type (MOVIFIT® MC, SC, FC)
- Same power rating
- Same fieldbus interface
- Same function level Classic or Technology

For these characteristics, refer to the type designation on the EBOX nameplate.

Getting started

Perform the following steps:

1. Data backup on a PC
2. EBOX replacement
3. Restore

3.3.1 Data backup on a PC

Data backup on a PC depends on the safety option.

- Generally, you only save data for the MOVIFIT® devices.
- For MOVIFIT® with safety option S12 in autonomous operation, you save data and the S12 parameters in addition.

Saving data

Save the data (parameters, application data, ....) on a PC as follows:

1. Connect the PC/laptop to the MOVIFIT® device.
2. Start the MOVITOOLS® MotionStudio software.
3. Perform an online scan.
4. Select the control board icon on the network (lower left side) using the left mouse button.
5. Click on "Manage parameter sets".
   - The following window appears:
     - Click [Upload].
     - The data of the MOVIFIT® device is saved on the PC/laptop.

   - Create new project or load a project
   - Choose connection mode and create network
   - Manage parameter sets
   - Download (PC --> unit): Is used to transfer the parameter set of the configured unit from your PC to the unit accessible online.
   - Upload (unit --> PC): Is used to transfer the parameter set of the unit accessible online to the configured unit on your PC.
   - Synchronize (PC --> unit --> PC): Is used to carry out the actions 'download parameter set' (PC --> unit) and 'upload parameter set' (unit --> PC) one after the other.

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Saving S12 parameters

(Only for MOVIFIT® with safety option S12 in autonomous operation)

Save the S12 parameters on a PC as follows:
1. Connect the PC/laptop to the MOVIFIT® device.
2. Start the MOVITOOLS® MotionStudio software.
3. Perform an online scan.
4. In the network (lower left side) right-click on the safety option S12 icon and select the menu item "Assist S12".
   ⇒ The “Assist S12” parameterization tool opens:

   ![Assist S12](image)

   19108141195

5. Click the [Save] button in the toolbar.
   ⇒ A file with the S12 parameters is saved in the project directory.

3.3.2 EBOX replacement

⚠️ WARNING

Electric shock due to dangerous voltages in the ABOX.
Severe or fatal injuries.
- Observe the minimum switch-off time after disconnection from the supply system:
  - 1 minute

Replace the EBOX as follows:
1. Disconnect the MOVIFIT® device from the supply system and secure it against unintentional reconnection to the voltage supply.
2. Remove the current EBOX from the ABOX.
   ⇒ See operating instructions
3. Transfer the DIP switch settings from the old EBOX to the new EBOX.
4. Install the new EBOX on the ABOX.
5. Switch on the line, 24V_C, and 24V_S supply voltages.
3.3.3 Restore to the EBOX

Restore of the data in the EBOX depends on the safety option.

- Generally, you only save data for the MOVIFIT® devices.
- For MOVIFIT® with safety option S12 in autonomous operation, you save data and the S12 parameters in addition.

Saving data

Save the data (parameters, application data, ...) in the EBOX as follows:

1. Connect the PC/laptop to the MOVIFIT® device.
2. Start the MOVITOOLS® MotionStudio software.
3. Perform an online scan.
4. In the network (lower left side) right-click on the control board icon and select the menu item "Configure device".
   - The following window appears:

   ![Download and upload window](19107951115)

   - Click [Download].
     - A window is displayed. This window shows information on the saved data on the EBOX.
   - Click the [YES] button.
     - The data of the MOVIFIT® device is saved in the EBOX.
     - A window is displayed. The status display in the lower part of the window shows the progress of the saving procedure.
   - Once the saving procedure is completed, click the [OK] button.

Saving S12 parameters

(Only for MOVIFIT® with safety option S12 in autonomous operation)

Restoring S12 parameters in the EBOX depends on whether the S12 parameters are saved on a PC.
**S12 parameters are saved on a PC**

If a suitable S12 parameter set is saved on a PC/laptop, save the S12 parameters on the EBOX as follows:

1. Connect the PC/laptop to the MOVIFIT® device.
2. Start the MOVITOOLS® MotionStudio software.
3. Perform an online scan.
4. In the network (lower left side) right-click on the safety option S12 icon and select the menu item "Assist S12".

⇒ After you entered the serial number of the complete device in the logon screen, the "Assist A12" parameterization tool opens:

5. In the upper toolbar, click the [Import] button.

⇒ A selection window opens.
6. Select the suitable S12 parameter set.

⇒ The S12 parameter set is imported.
7. In the toolbar, click the [Download] button.

⇒ A logon screen opens.
8. Enter the password (factory setting = "sew_s12") and confirm it by clicking the [OK] button.

⇒ The S12 parameters are saved in the EBOX.

⇒ The "Actual values S12" column shows the values of the saved S12 parameters.
9. Check the values of each S12 parameter.
10. If all values of the S12 parameters are correct, activate the "verified" check box.
11. Repeat verification for each parameter group.

⇒ If the S12 parameters of all parameter groups are verified, the [Finish] button in the upper toolbar is activated and can be clicked.
12. Click the [Finish] button and perform the acceptance procedure.

⇒ See "MOVIFIT® MC/FC with S12 Safety Option" manual.
13. Switch the 24V_C and 24V_S supply voltages off and on again.

⇒ The MOVIFIT® drive is ready for operation again.
**S12 parameters are not saved on a PC**

If no suitable S12 parameter set is saved on a PC/laptop, save the S12 parameters on the EBOX as follows:

1. Connect the PC/laptop to the MOVIFIT® device.
2. Start the MOVITOOLS® MotionStudio software.
3. Perform an online scan.
4. In the network (lower left side) right-click on the safety option S12 icon and select the menu item "Assist S12".

After you entered the serial number of the complete device in the logon screen, the "Assist A12" parameterization tool opens:

5. In the upper toolbar, click the [Upload] button.
   - The S12 parameters are saved from the ABOX to the EBOX.
   - The "Actual values S12" column shows the values of the saved S12 parameters.
6. Transfer all S12 parameters from the "Actual value/S12" column in the "Input value" column manually. Compare the Block CRC during the procedure.
7. Check the values of each S12 parameter.
8. If all values of the S12 parameters are correct, activate the "verified" check box.
9. Repeat verification for each parameter group.
   - If the S12 parameters of all parameter groups are verified, the [Finish] button in the upper toolbar is activated and can be clicked.
10. Click the [Finish] button and perform the acceptance procedure.
    - See "MOVIFIT® MC/FC with S12 Safety Option" manual.
11. Switch the 24V_C and 24V_S supply voltages off and on again.
    - The MOVIFIT® drive is ready for operation again.