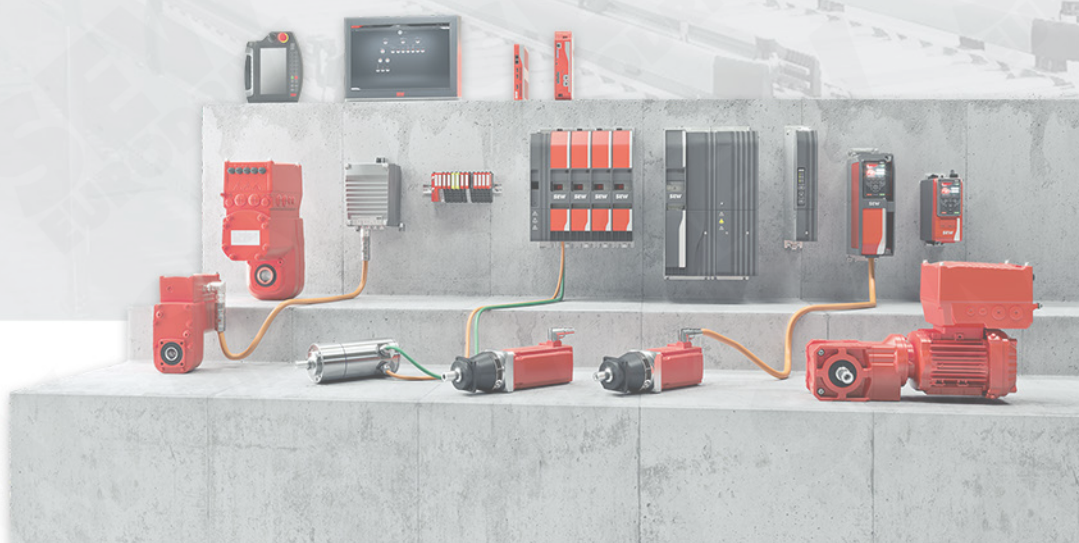


Product Training Workbook

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MOVI-C® Automation System
MOVIKIT® FilmFeeder Software Module
Parameterization and Diagnostics

C142

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Make sure that the operating instructions are made available in a legible condition to the system and operating managers, as well as to persons who work on the device under their own responsibility.

Objectives of this training document

- Knowing the startup process of the film transportation application on a training model.
- Being able to control the film transportation application via the process data interface.

Other documents

- MOVIKIT® FilmFeeder manual
- Brief information about MOVIKIT® FilmFeeder

If you have any questions or suggestions, please do not hesitate to contact the product training department.

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Meaning of the symbols:

Operating notes



Information



Safety-relevant information



Tip



Diagnostics and troubleshooting



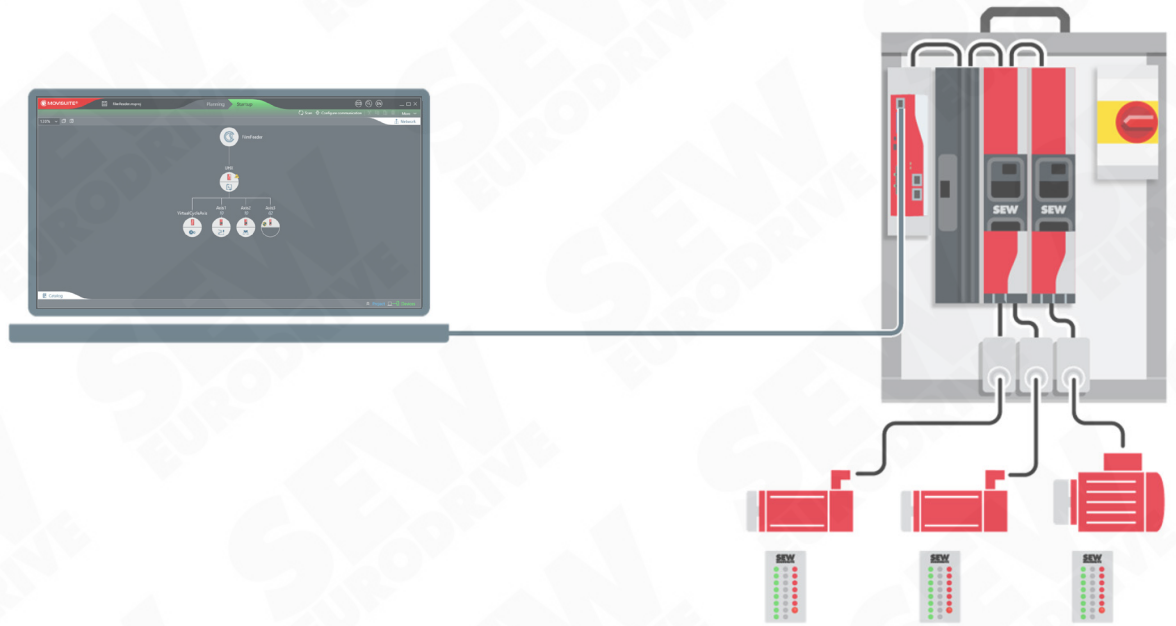
Practical task



Additional documentation

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Workbook steps

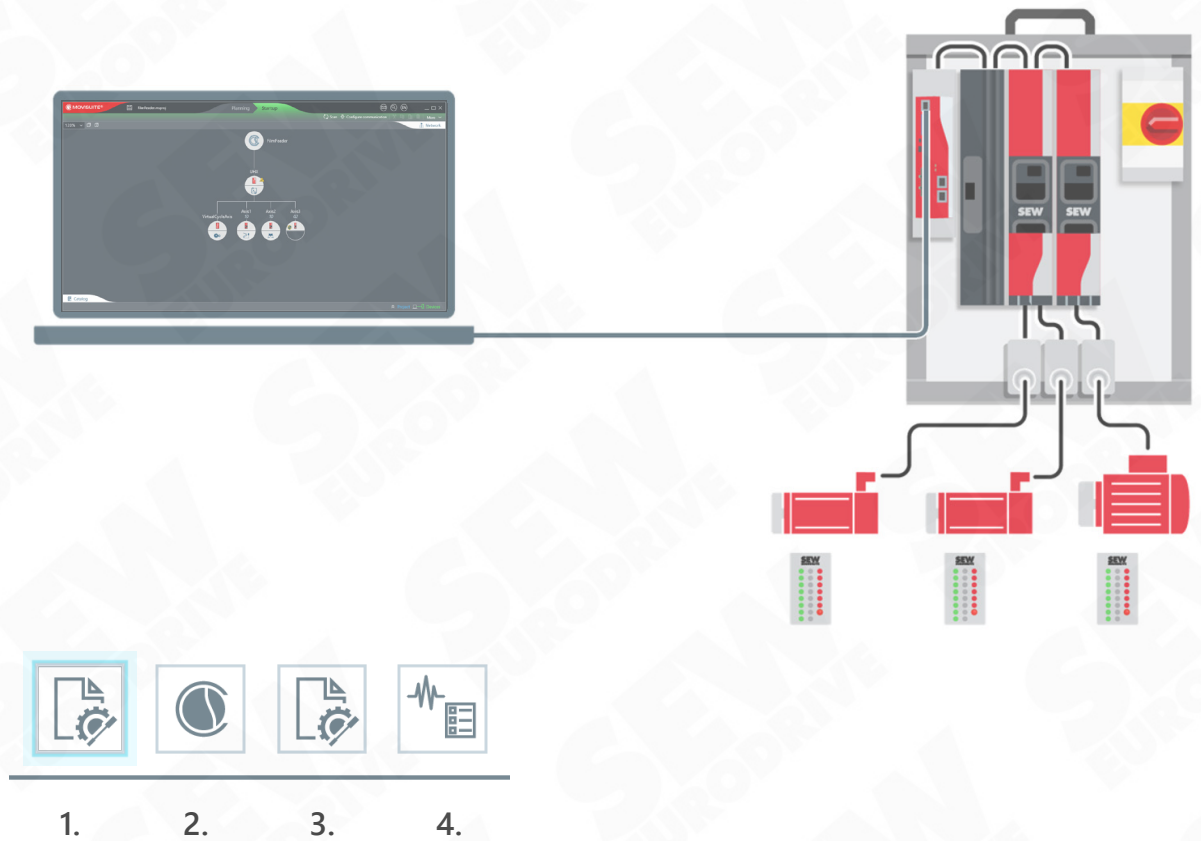


1. 2. 3. 4.

1. Introduction to the Vertical Form Fill Seal Machine application
2. Project setup and device configuration in MOVISUITE®
3. Creation and start of the IEC project
4. Control via the MOVIKIT® Process data monitor

1 Introduction to the Vertical Form Fill Seal Machine application

- Objectives:**
- Knowing a typical application of the MOVIKIT® FilmFeeder software module
 - Knowing the system configuration with the training model and the software used

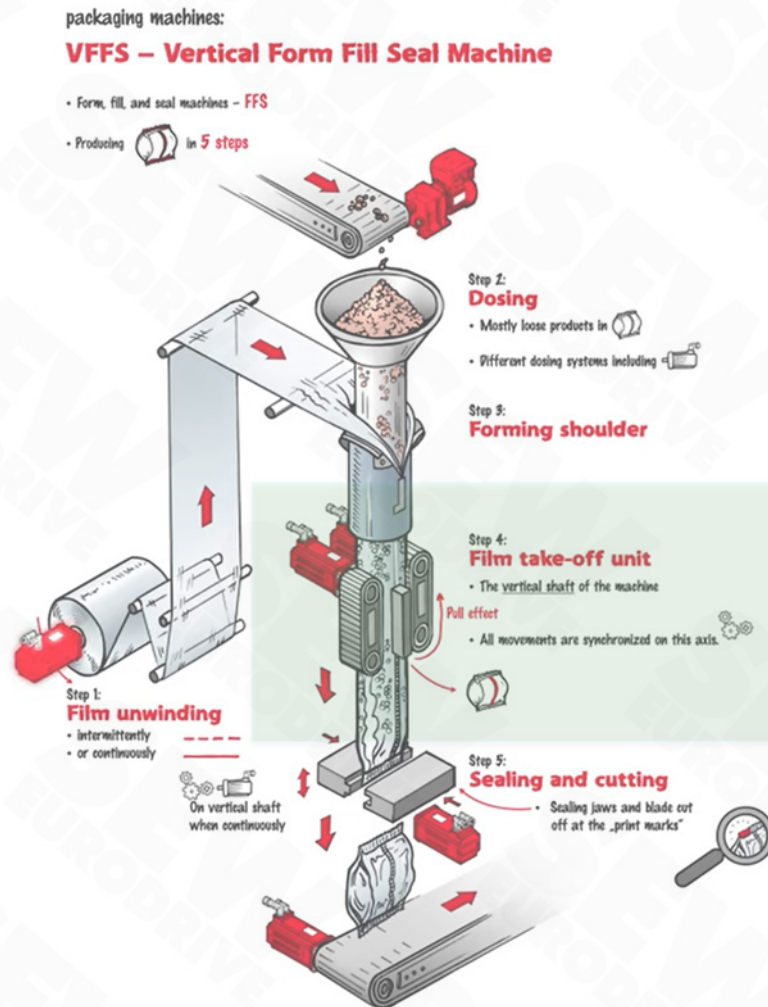


In the following exercises, the MOVIKIT® FilmFeeder software module is used in combination with the MOVIKIT® RotaryKnife software module. For more information, refer to **Workbook C140 MOVIKIT® RotaryKnife software module**.

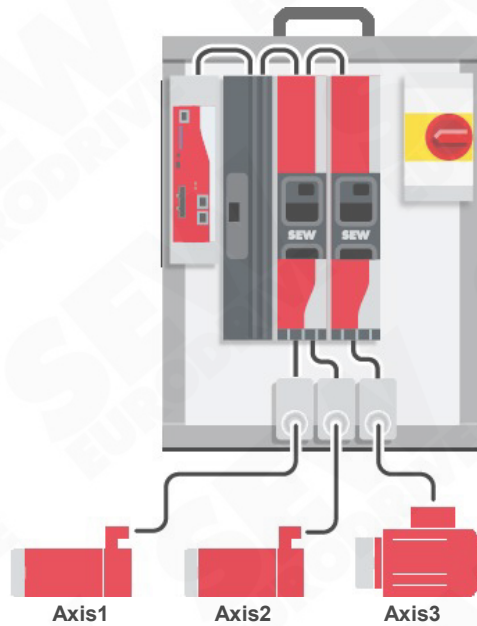
1.1 Application example Vertical Form Fill Seal Machine



The MOVIKIT® FilmFeeder software module implements film transport by a belt drive, for example in HFFS and VFFS machines (horizontal/vertical form fill seal machines). The software module provides the film feed function and the additional print mark control function for this purpose.



1.2 Training model



Hardware:

- MOVI-C® CONTROLLER
- MOVIDRIVE® modular
- Axis1 / CMP50S/BK/KY/AK0H/SB1: MOVIKIT® FILMFEEDER
- Axis2 / CMP50S/BK/KY/RH1M/SB1: MOVIKIT® ROTARYKNIFE:
- Axis3 / DRN71M4/BE05HR/FI/IS/TF/AK8W: Not used

Software:

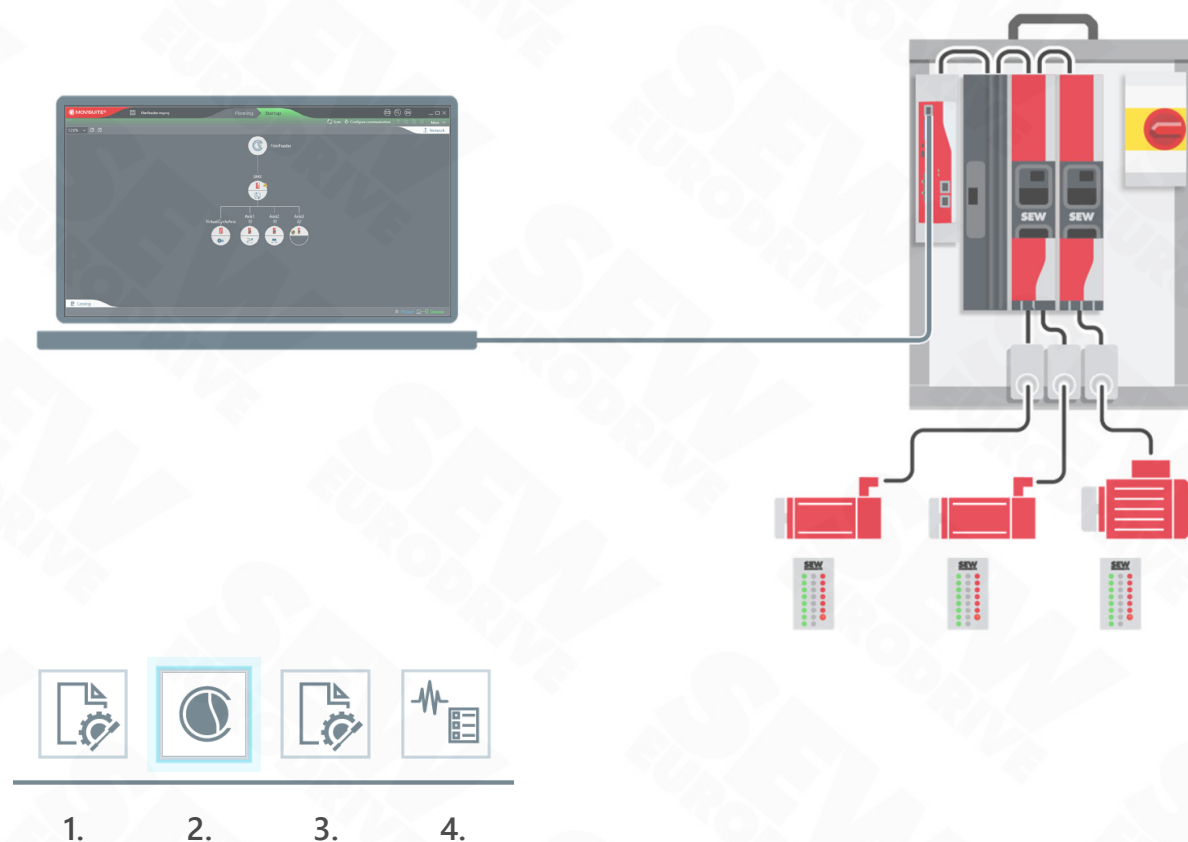
- MOVISUITE 2.5
- IEC Editor 3.5.18.2
- MOVIRUN® 9.0.8.200
- MOVIKIT® Gearing 9.0.22.200
- MOVIKIT® FilmFeeder 9.0.22.200
- MOVIKIT® RotaryKnife 9.0.16.200



If the training model shown is not available, the following exercises can also be performed with any MOVI-C® CONTROLLER, MOVIDRIVE® modular/system and synchronous or asynchronous motors with encoder feedback. The hardware configuration must then be adjusted according to the hardware used. If no inverters are available as hardware, the axes can also be operated in simulation.

2 Project setup and device configuration in MOVISUITE®

- Objectives:**
- Being able to set up the MOVISUITE® project and configure the devices
 - Being able to configure MOVIKIT® software modules



For the following exercises, the drives must be started up and optimized correctly in the CFC or VFC^{PLUS} control mode. For information on startup and operation of MOVISUITE®, refer to **Workbook C101 MOVISUITE® – Practice on the inverters.**

2.1 Creating the MOVISUITE® project

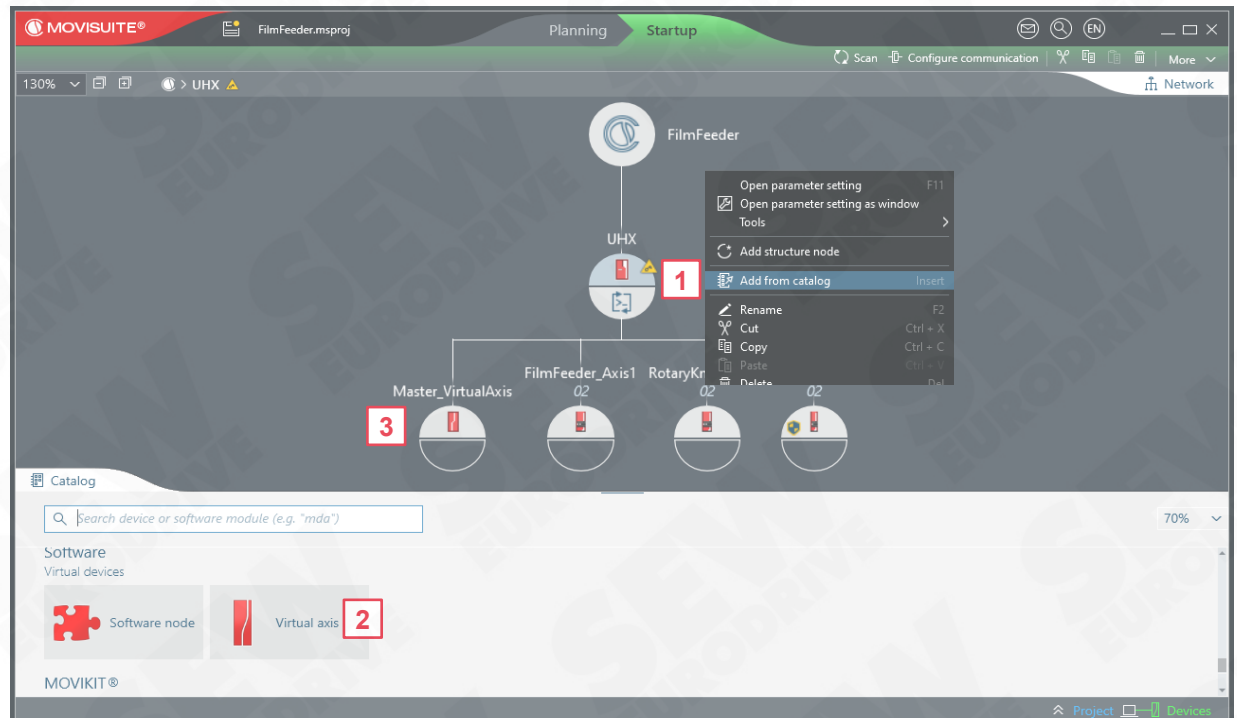


1. Create a new project and rename the devices



- 1 Create a new project and rename the devices as shown.

2. Insert virtual axis



- 1 Right-click the upper semicircle of the MOVI-C® CONTROLLER and select **Add from catalog**.
- 2 Insert a virtual axis with the current version into the project.
- 3 Place the virtual axis with drag and drop as shown.

2.2 Configuring Master_VirtualAxis



1. Configure the drive train

MOVISUITE® FilmFeeder.msproj Planning Startup

Parameter tree

- Enter search term here
- 2 Device properties
- 3 Drive train
 - 3.1 Drive train DT1
- 4 Functions

Drive train DT1

Scaling

1 Cycle
Cycle/min
Cycle/(min*s)

User unit

Calculation of user-defined unit

User unit: User-defined unit

Input: 1 revolutions = $\frac{1}{1}$ Unit: Cycle = Output: 1 Cycle

Distance: Unit: Cycle, Number of decimal places: 6

Speed: Unit: Cycle/min (User defined), Number of decimal places: 6

Acceleration: Unit: Cycle/(min*s) (User defined), Number of decimal places: 6

1 Apply changes

- 1 Configure the drive train as shown and apply the settings.
Set 6 decimal places for all user units!

2. Parameterize the Cycle limit

MOVISUITE® FilmF...sproj Planning Startup

Parameter tree

- Enter search term here
- 2 Device properties
- 3 Drive train
- 4 Functions
 - 4.6 Monitoring functions
 - 4.6.3 Limit values
 - 4.6.5 Control functions

Limit values

Application limits

	DT1
Positive speed	2147.483647 Cycle/min
Negative speed	2147.483647 Cycle/min
Acceleration	2147.483647 Cycle/(min*s)
Deceleration	2147.483647 Cycle/(min*s)

Limits

	DT1
Emergency stop deceleration	2147.483647 Cycle/(min*s)

Cycle limit

	DT1
Modulo minimum	0.000000 Cycle
Modulo maximum	1.000000 Cycle

1

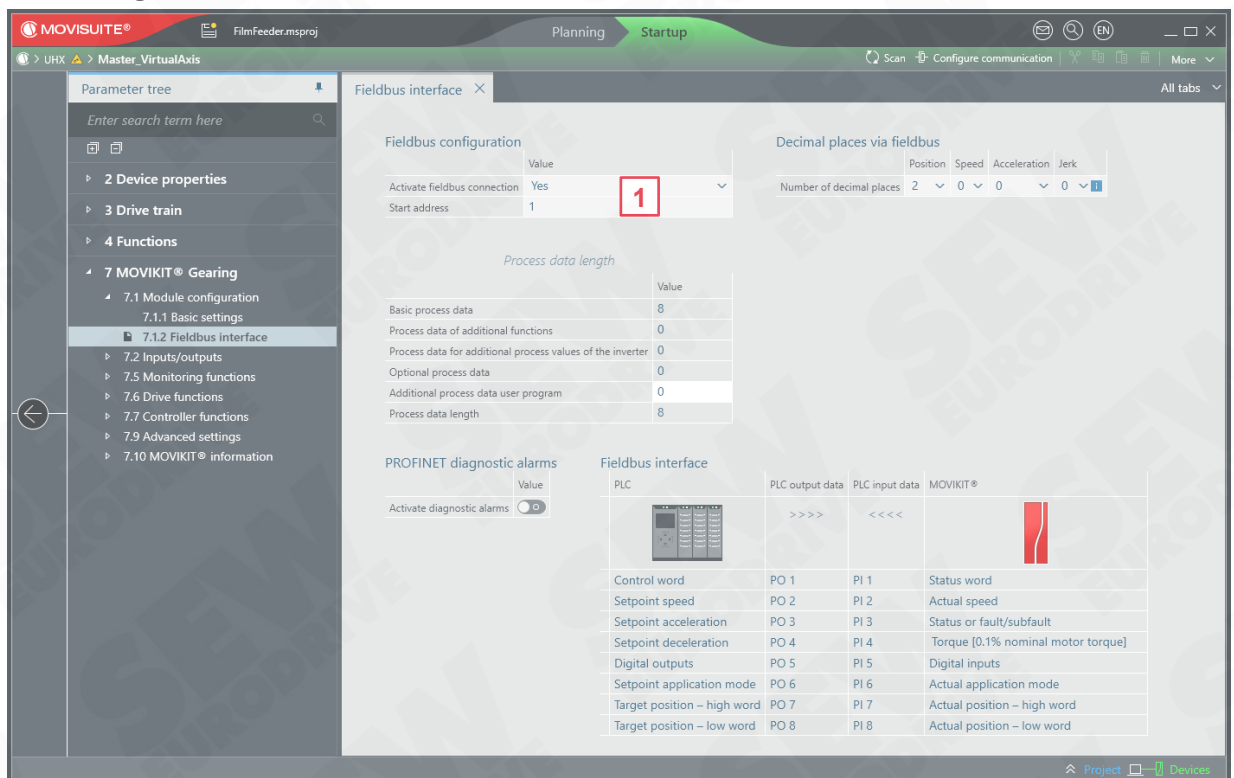
- 1 Parameterize **Modulo maximum > 1.000000 cycle**.

3. Add MOVIKIT® Gearing software module



- 1** Right-click the virtual axis and add the MOVIKIT® Gearing software module with the current version using **Add from catalog** and acknowledge the following error E-34.01.

4. Configure the fieldbus interface

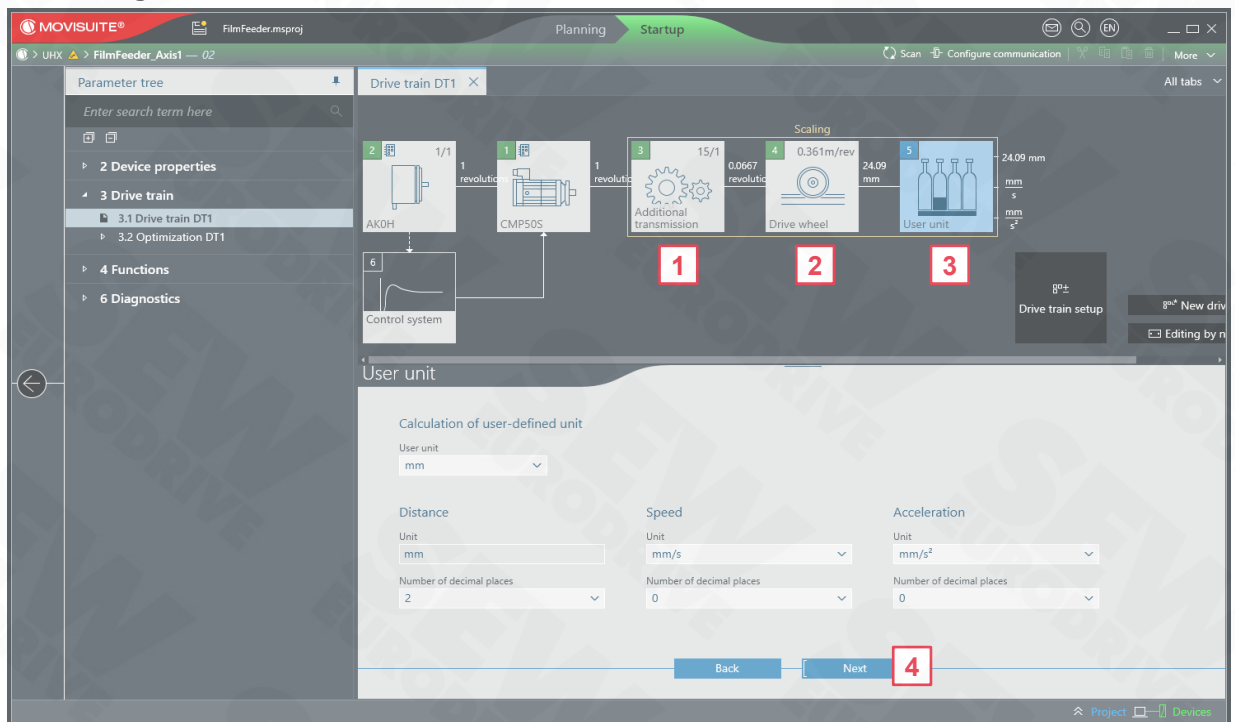


- 1** If you activate the fieldbus connection, keep the start address 1.

2.3 Configuring FilmFeeder_Axis1



1. Configure the drive train



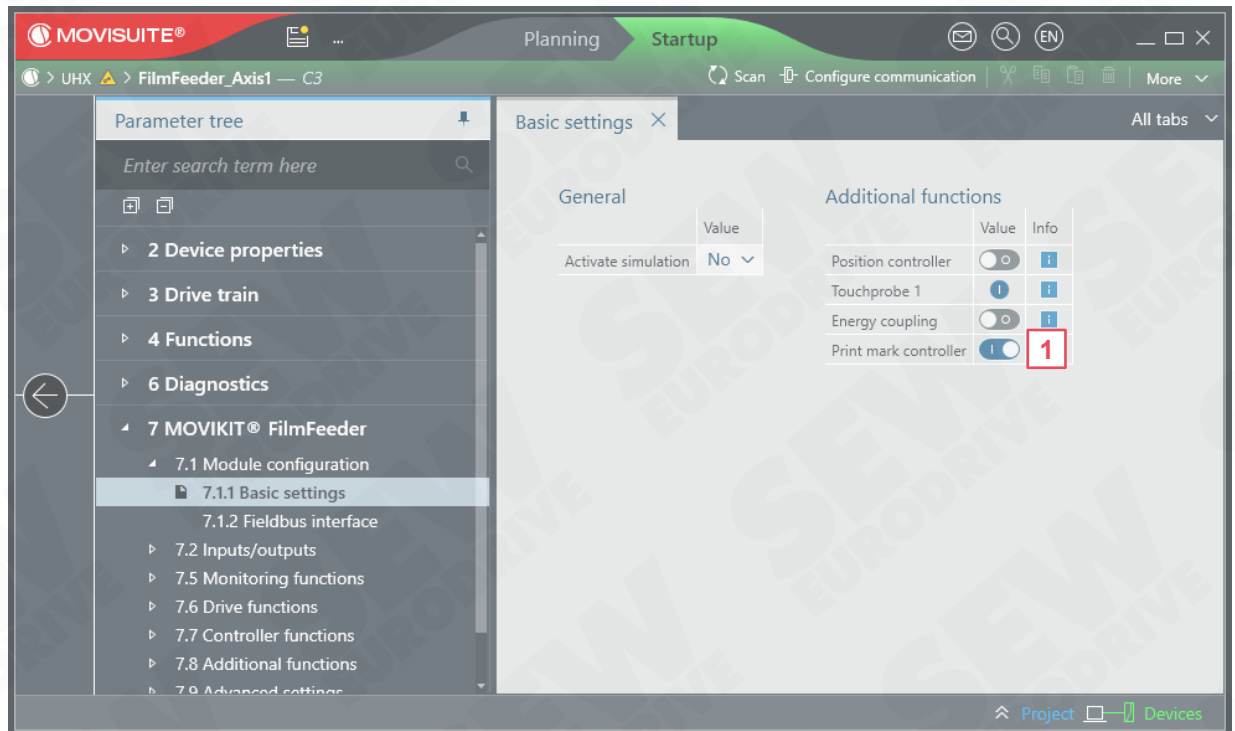
- 1 Add an additional transmission to the drive train with $i=15$.
- 2 Insert a drive unit with a diameter of 115 mm.
- 3 Insert user units and configure them as shown. The decimal places are subsequently adjusted automatically by the MOVIKIT® software module.
- 4 Transfer the drive train to the device using **Next > Transfer data to device**.

2. Add MOVIKIT® FilmFeeder software module



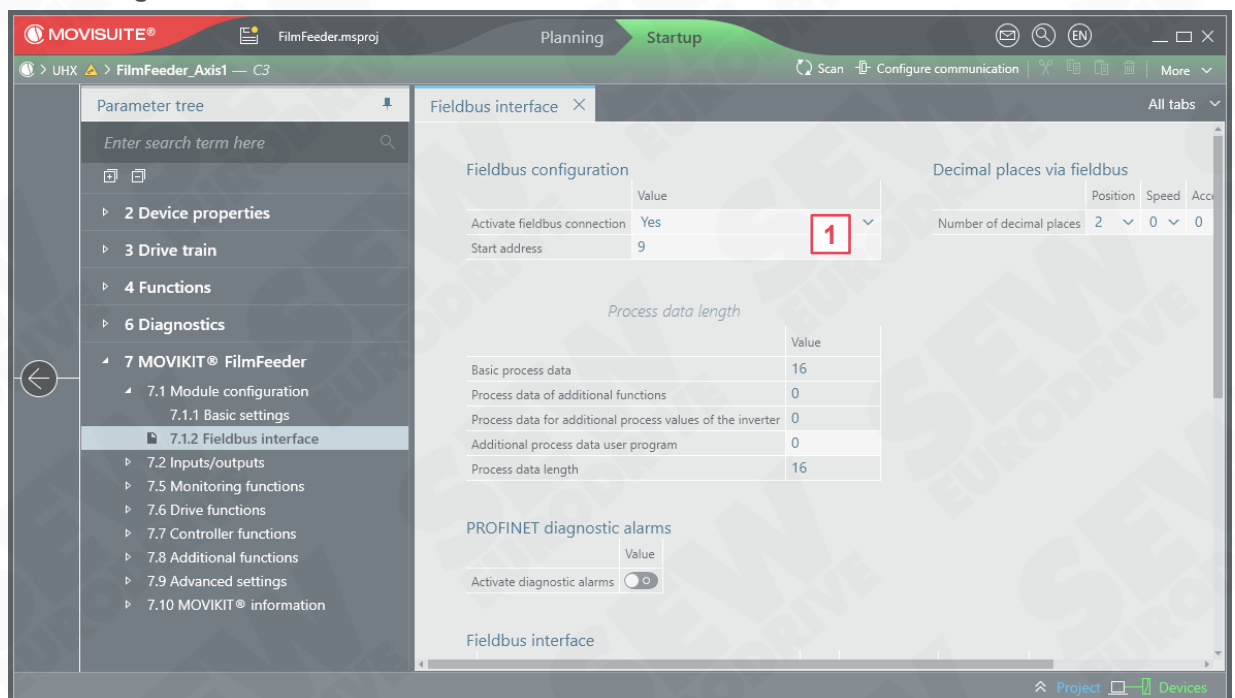
- 1 Insert the MOVIKIT® FilmFeeder software module with the current version into the device and acknowledge the following error E-34.01 again.

3. Configure basic settings



- 1 Activate the print mark controller.

4. Configure the fieldbus interface

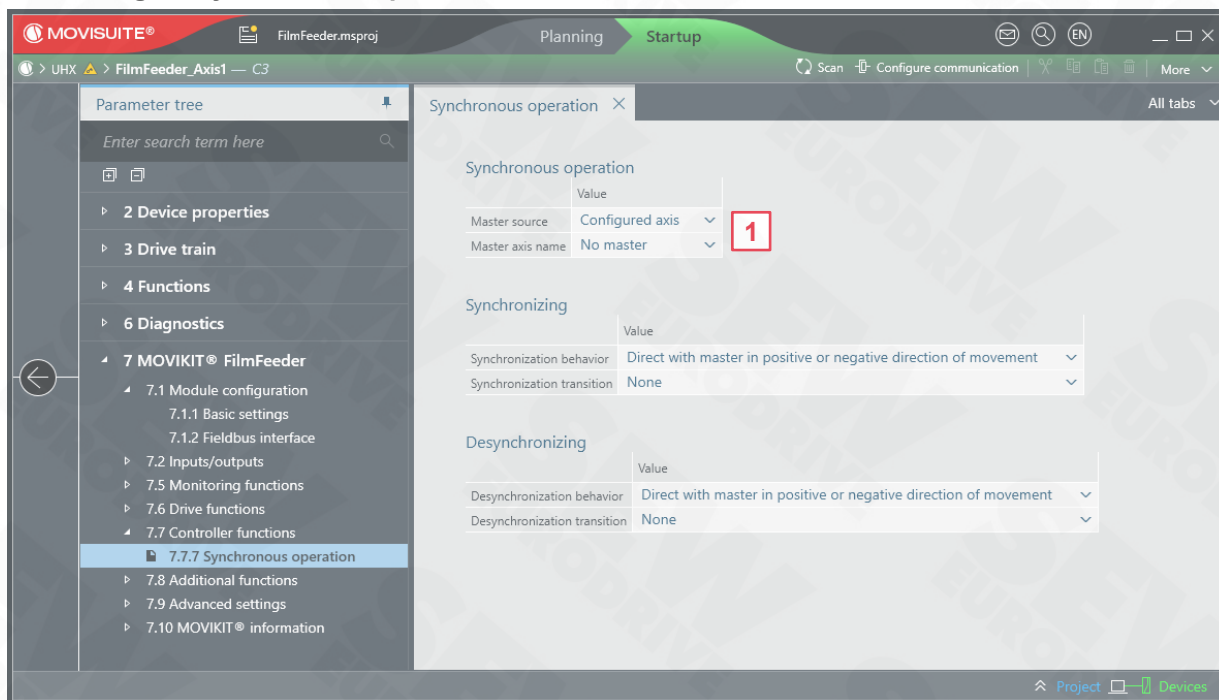


- 1 Activate the fieldbus connection and assign 9 as the start address.



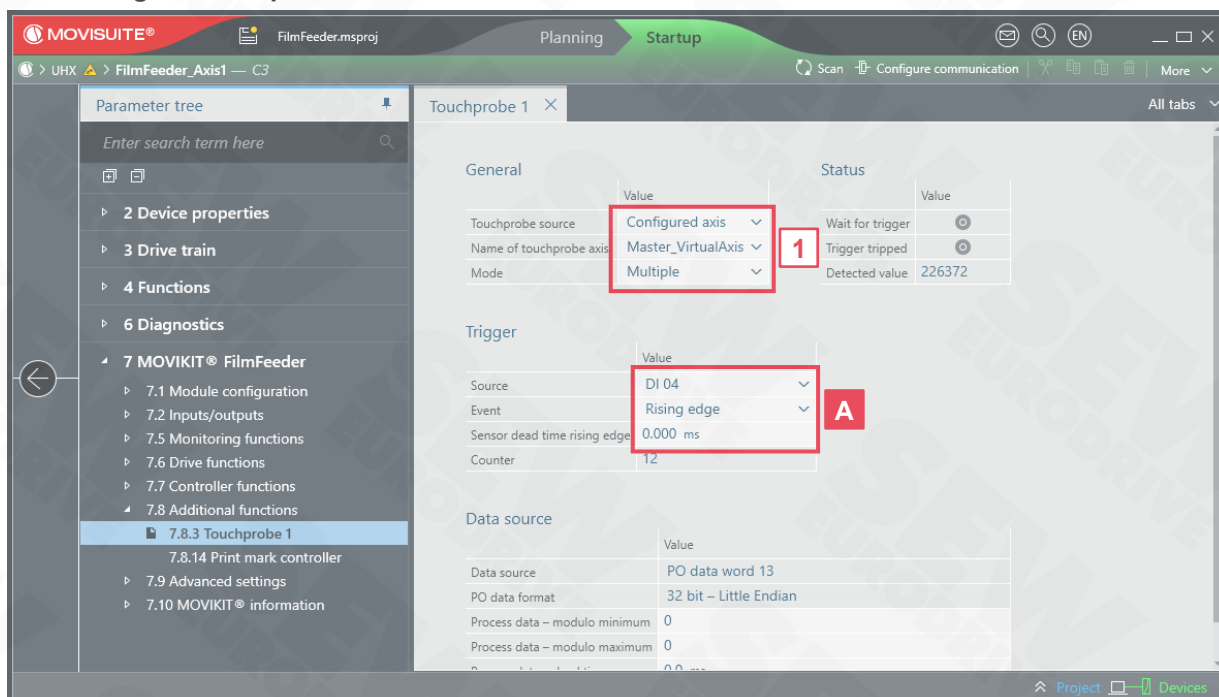
The start address 9 results from the start address (1) plus the number of process data words (8) of the previous axis Master_VirtualAxis.

5. Configure synchronous operation



1 Configure synchronous operation as shown.

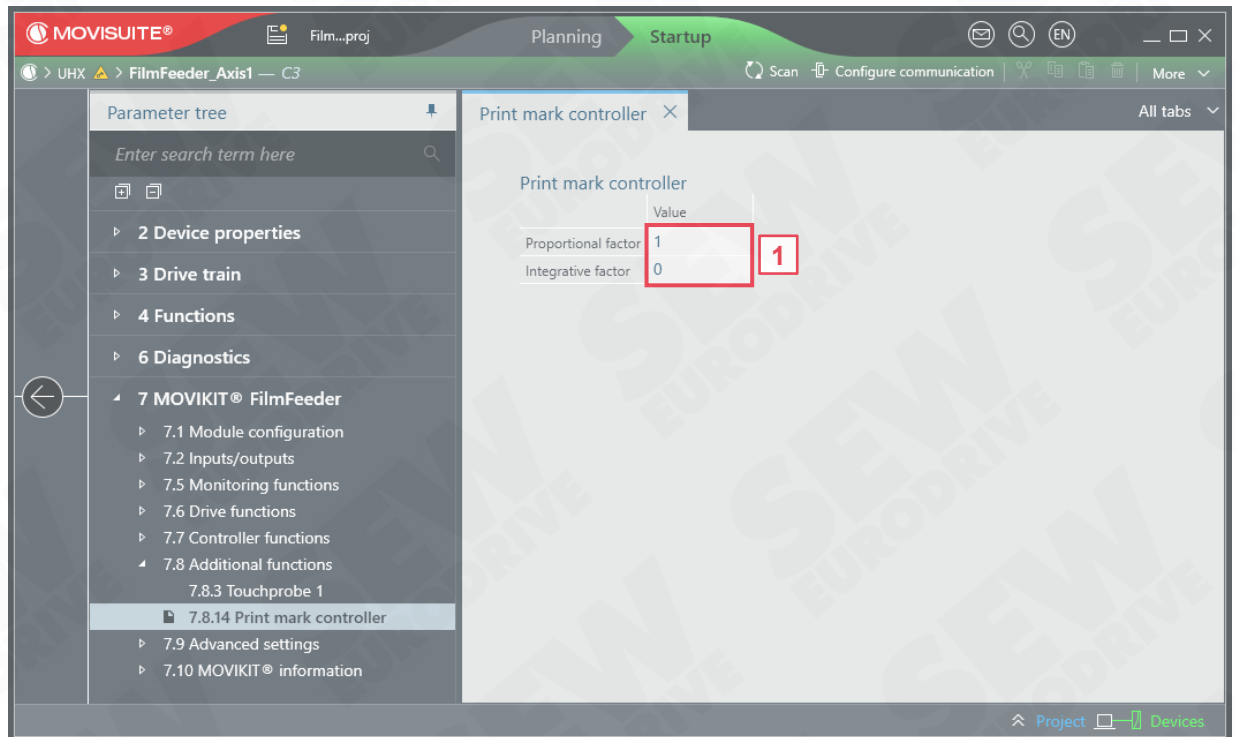
6. Configure touchprobe



1 Configure Touchprobe 1 as shown.

A You can configure the trigger for the touchprobe here; DI04 is the default setting.

7. Configure print mark controller



1 Configure the print mark controller as shown.

- Proportional factor: Affects the speed of the film feed in the cycle
- Integration factor: Affects the speed step by step over several cycles

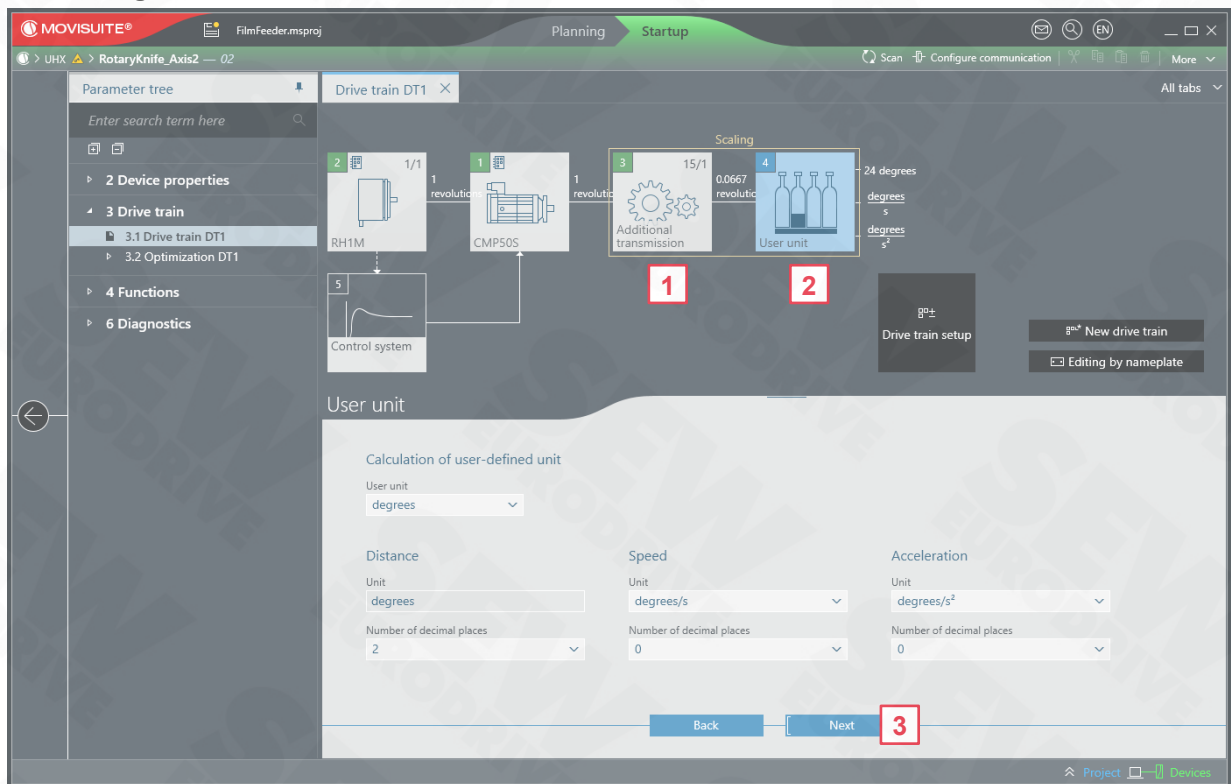


For a system or machine, the print mark controller must be adapted to the application.

2.4 Configuring RotaryKnife_Axis2

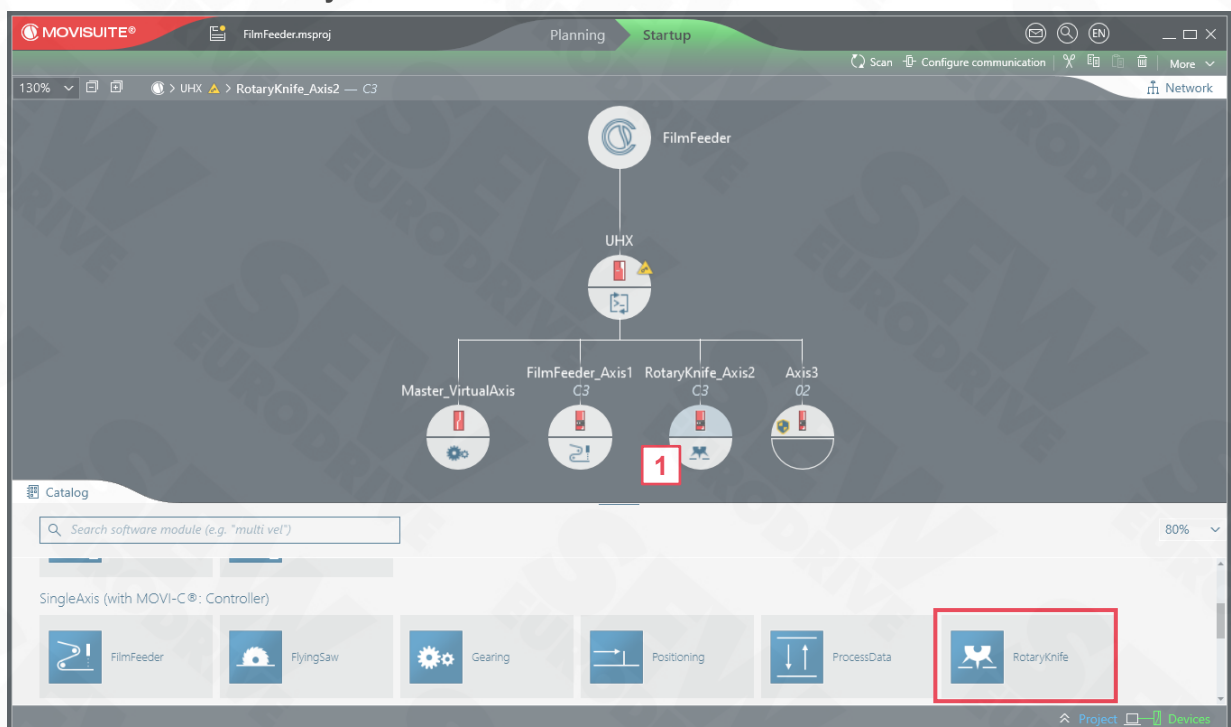


1. Configure the drive train



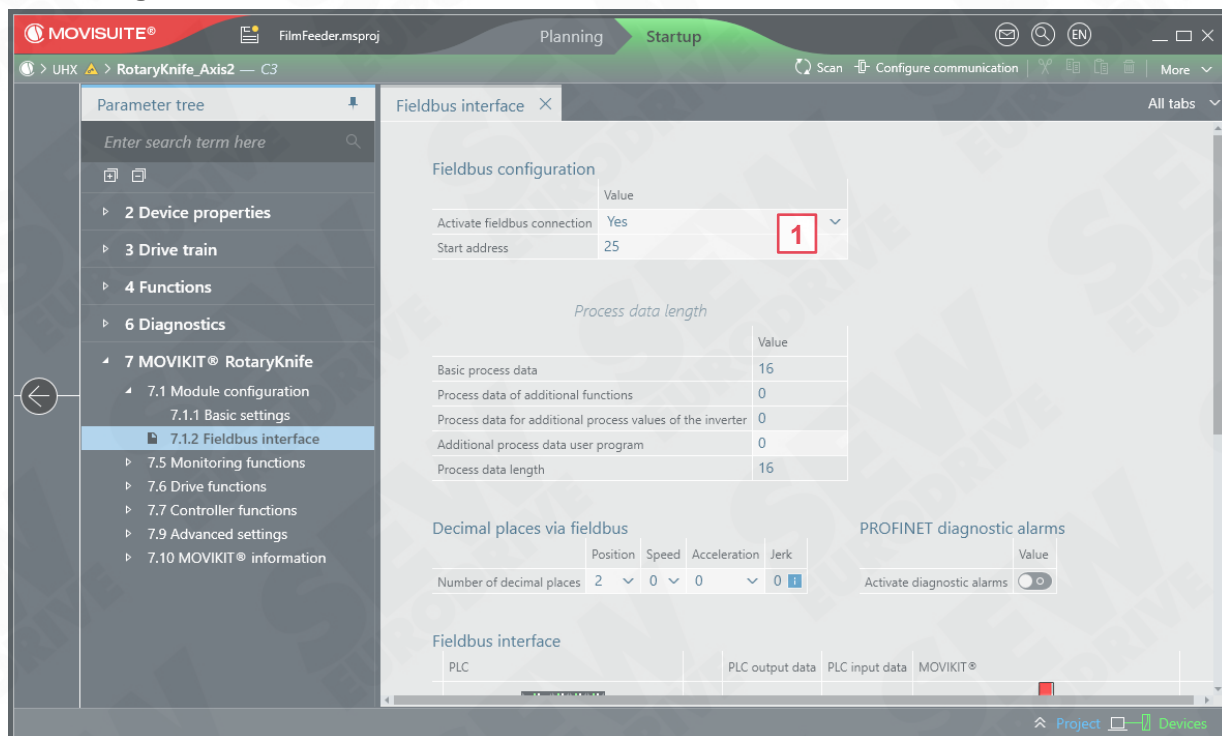
- 1 Add an additional transmission to the drive train with $i=15$.
- 2 Insert user units and configure them as shown. The decimal places are automatically adjusted again by the MOVIKIT® software module.
- 3 Transfer the drive train to the device using **Next > Transfer data to device**.

2. Add MOVIKIT® RotaryKnife software module



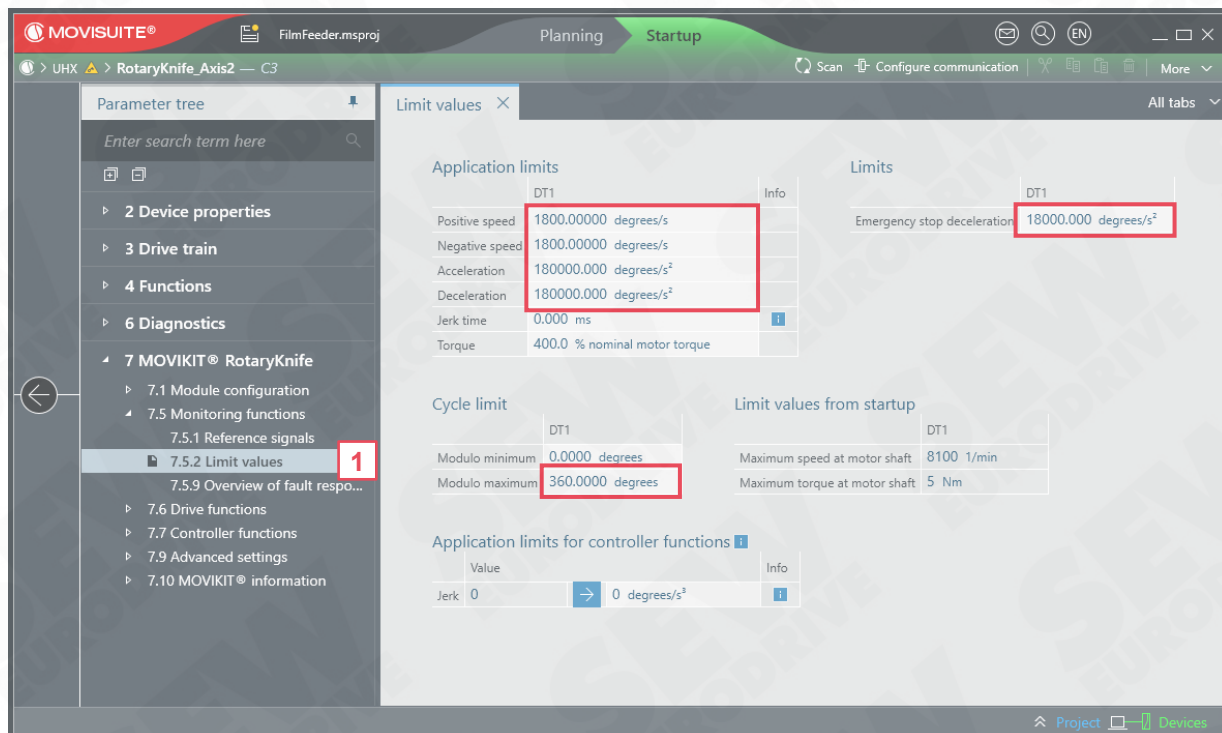
- 1 Insert the MOVIKIT® RotaryKnife software module with the current version into the device and acknowledge the following error E-34.01 again.

3. Configure the fieldbus interface



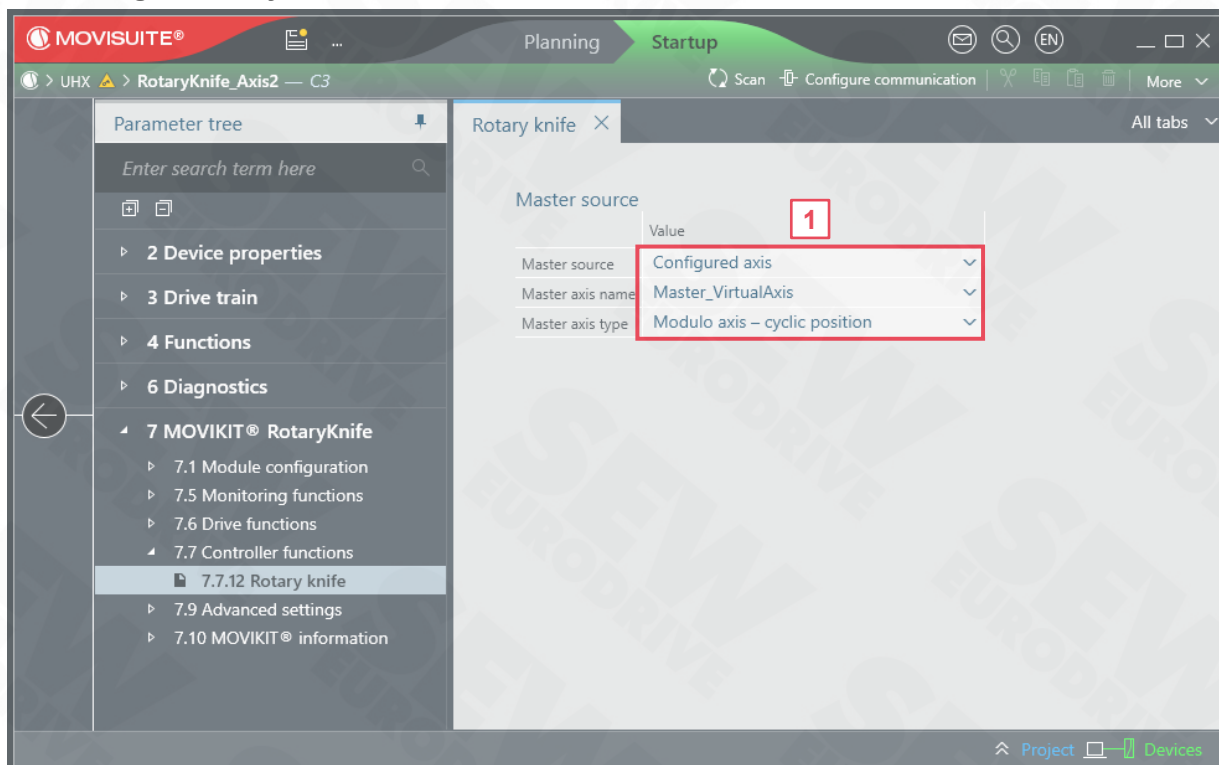
1 Activate the fieldbus connection and assign 25 as the start address.

4. Configure limit values



1 Parameterize the limit values as shown.

5. Configure Rotary knife



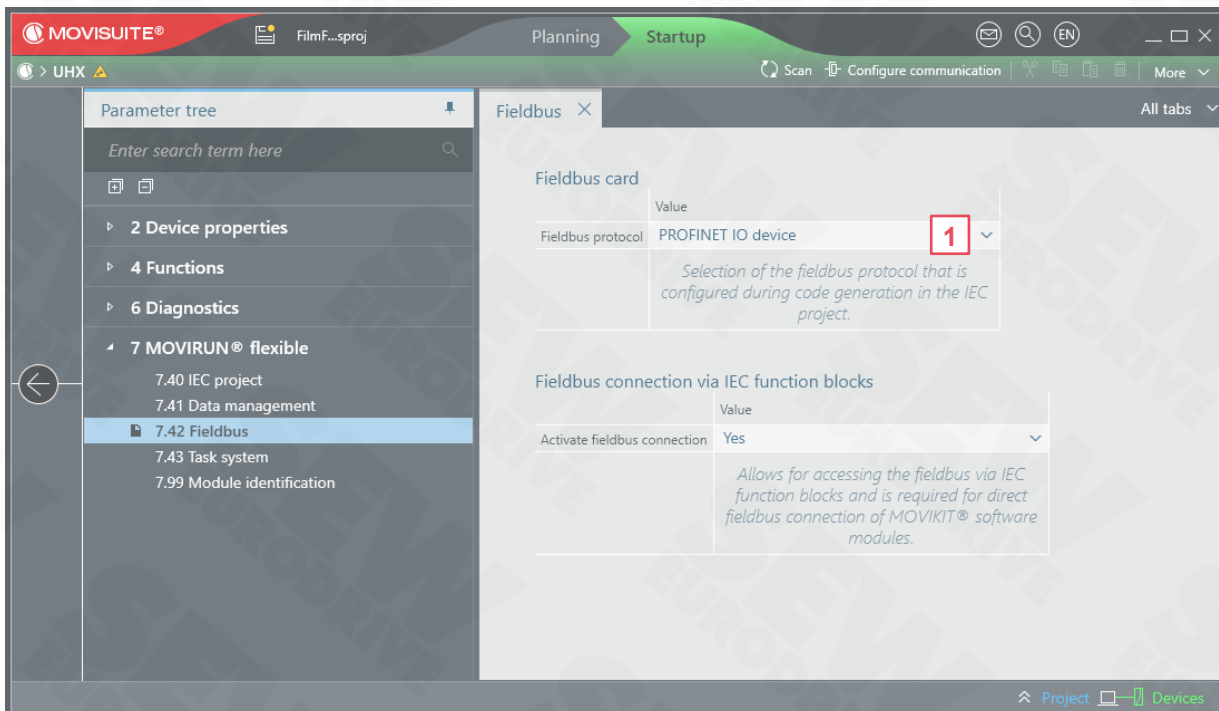
- 1 Parameterize the master source as shown.

2.5



Configuring MOVI-C® CONTROLLER

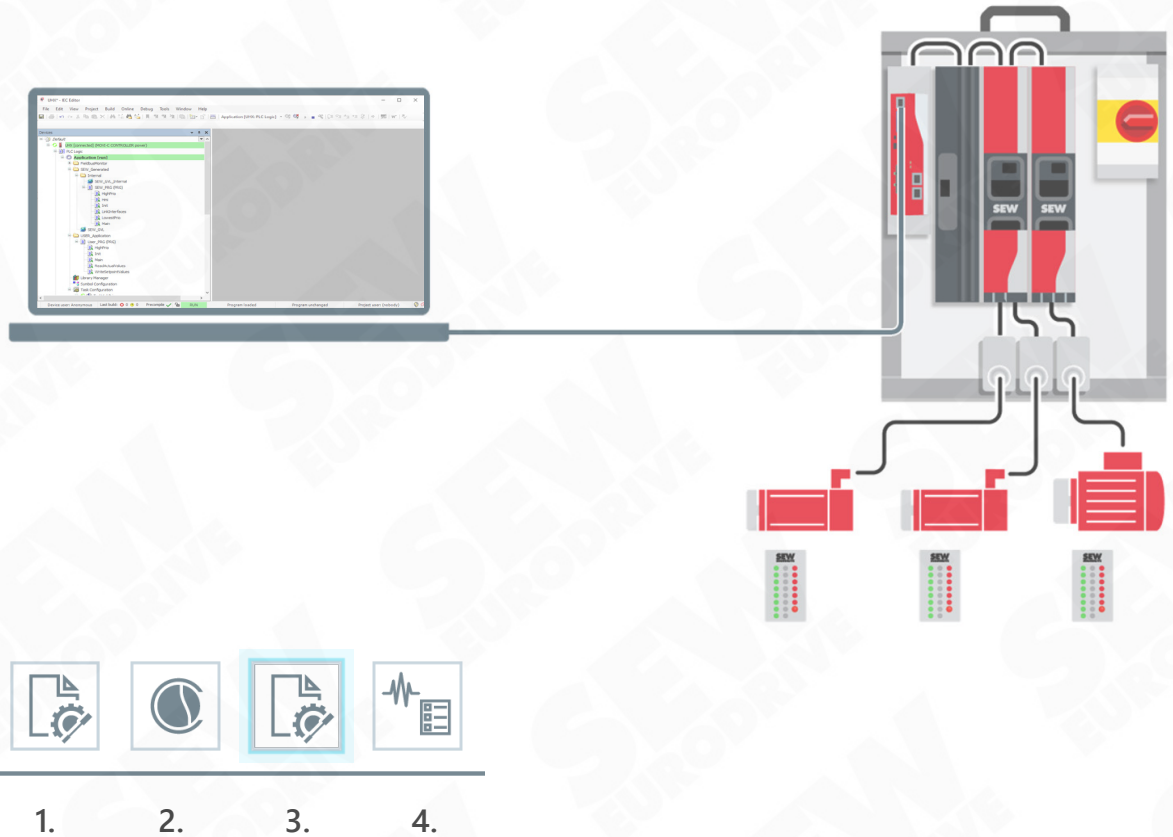
1. Configure the fieldbus interface



- 1 Select the corresponding **Fieldbus protocol**, which also automatically activates the fieldbus connection via IEC function blocks.

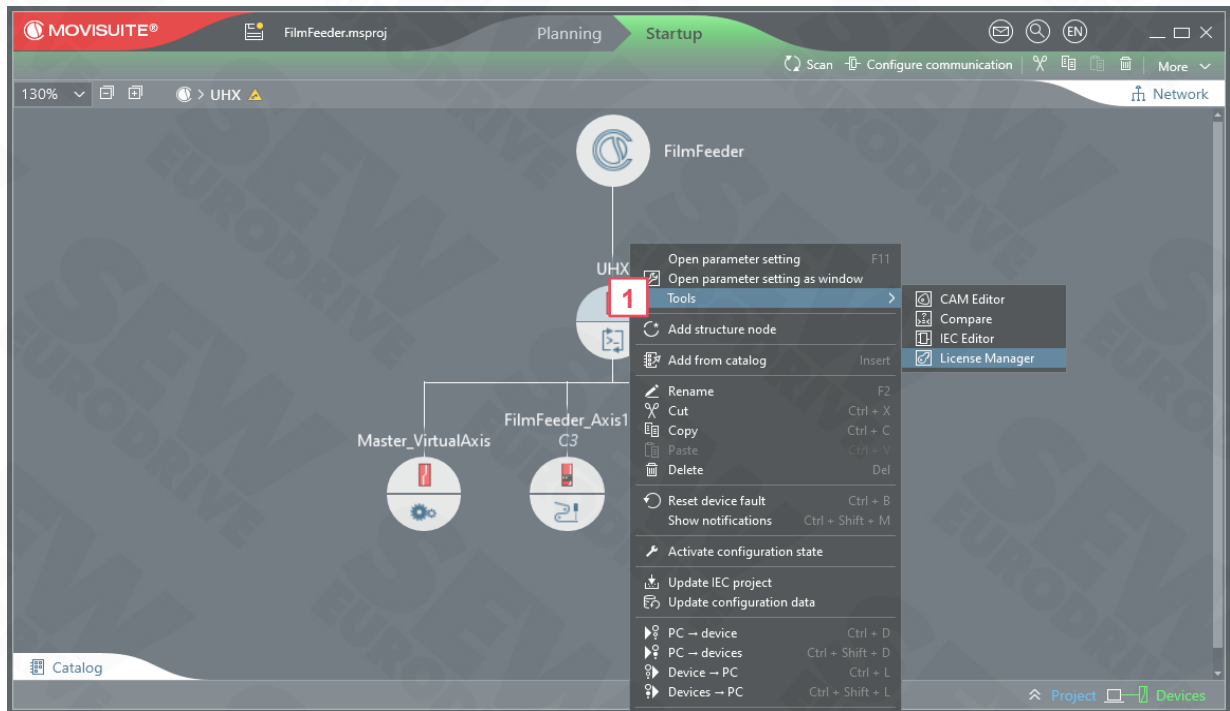
3 Creation and start of the IEC project

- Objectives:**
- Being able to use the License Manager tool and select the appropriate licenses
 - Being able to activate the trial licenses and load them onto the MOVI-C® CONTROLLER
 - Being able to create and start an IEC project



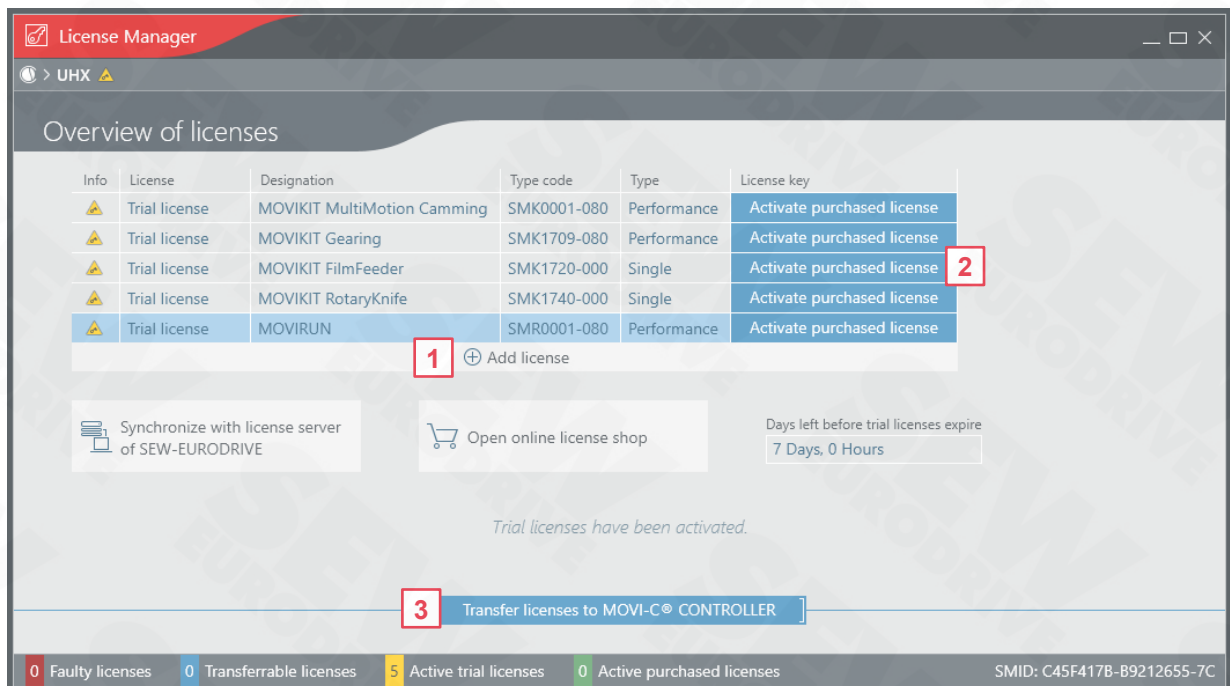
3.1 Licensing the MOVI-C® CONTROLLER

1. Start the license manager



- 1 Right-click the MOVI-C® CONTROLLER and select **Tools > License Manager**.

2. Select licenses



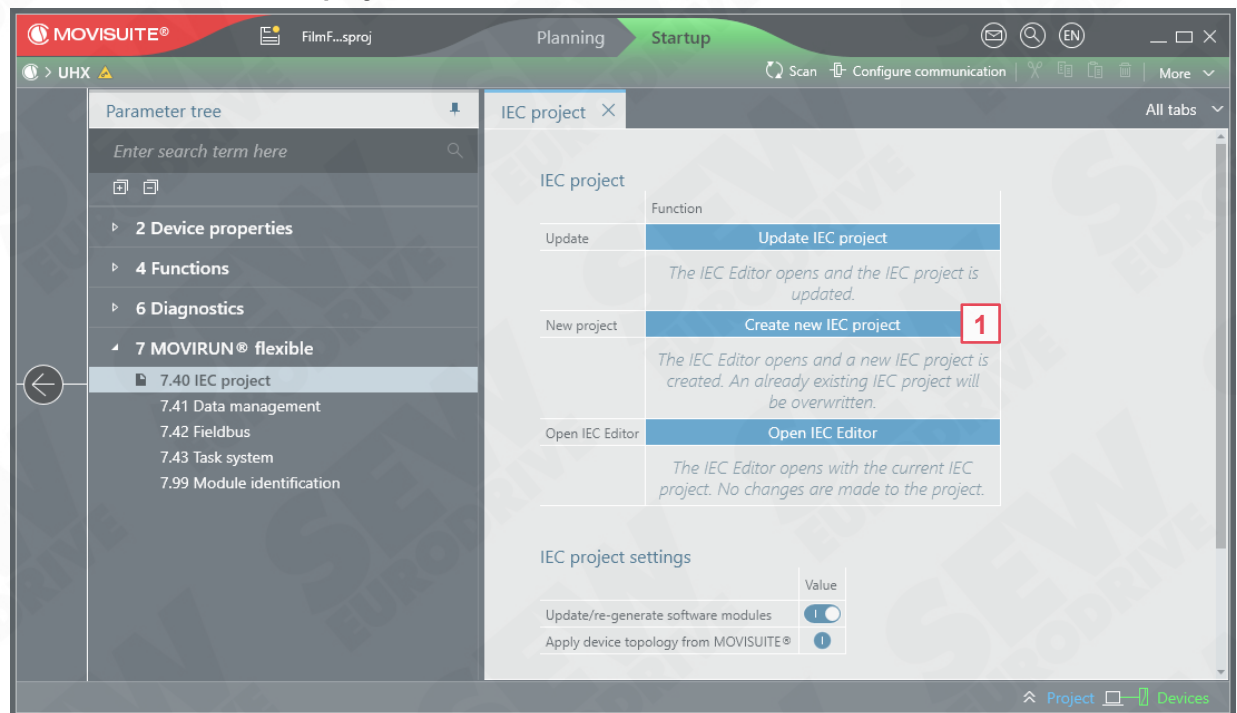
- 1 Add the licenses shown.
- 2 Activate trial licenses.
- 3 Transfer the licenses to the MOVI-C® CONTROLLER.1

A trial license allows software functions to be tested before purchase. It is valid for 7 days and can be reactivated at any time. After the trial license has expired, the program continues to run and is not switched off. A message is displayed on the MOVI-C® CONTROLLER regarding the expired trial license.

3.2 Creating and starting the IEC project

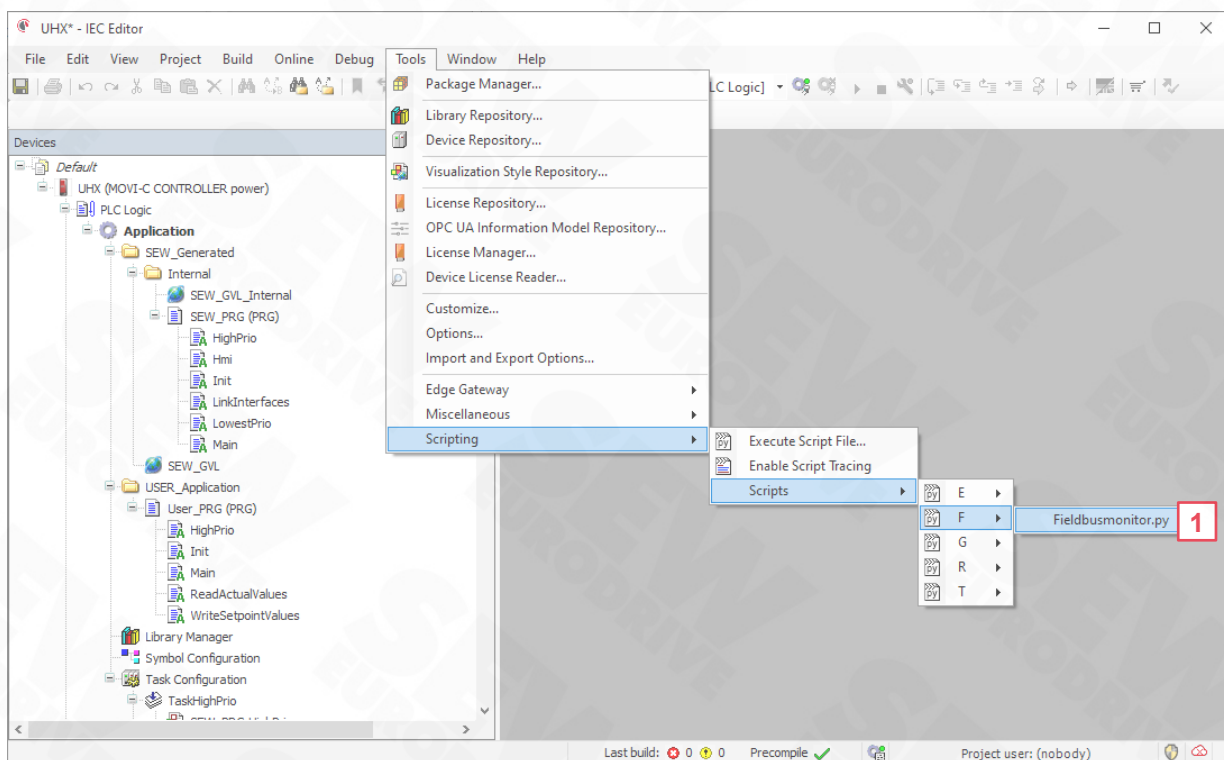


1. Generate a new IEC project



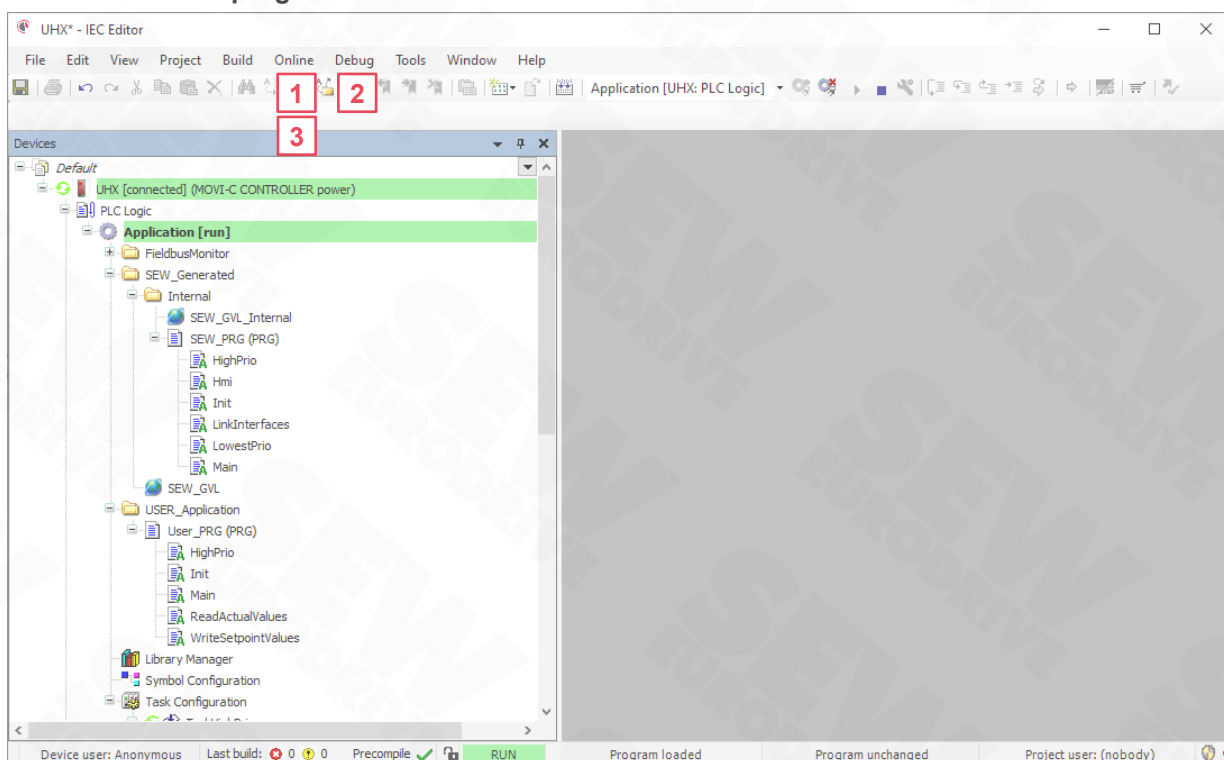
1 Activate code generation with **Create new IEC project**.

2. Activate Fieldbusmonitor



- 1 Select **Tools > Scripting > Scripts > F > Fieldbusmonitor.py**

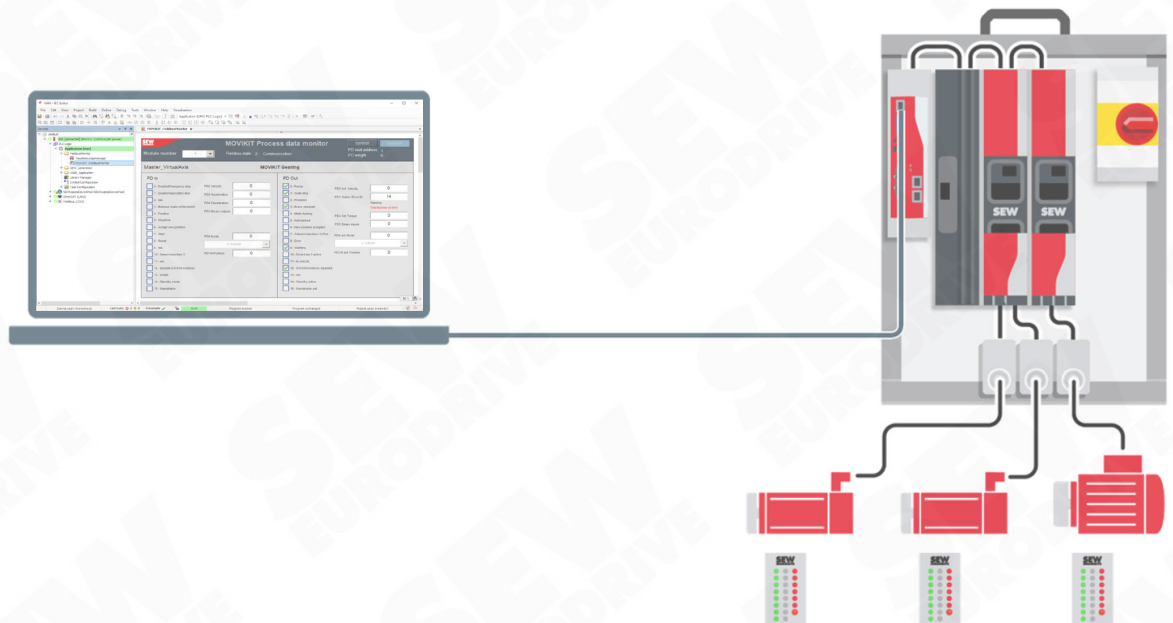
3. Start the IEC program



- 1 Compile and load the IEC program with **Online > Login**.
- 2 Start the IEC program with **Debug > Start**.
- 3 Save the program to the MOVI-C® CONTROLLER in a fail-safe manner **Online > Create Boot Application**.

4 Control via the MOVIKIT® Process data monitor

Objectives: ▪ Being able to control of the application with the MOVIKIT® Process data monitor



1.

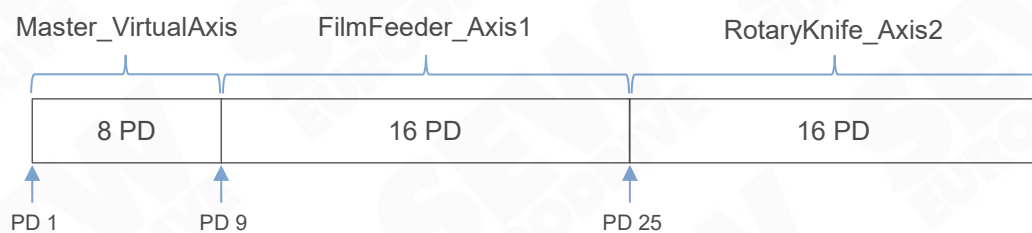
2.

3.

4.

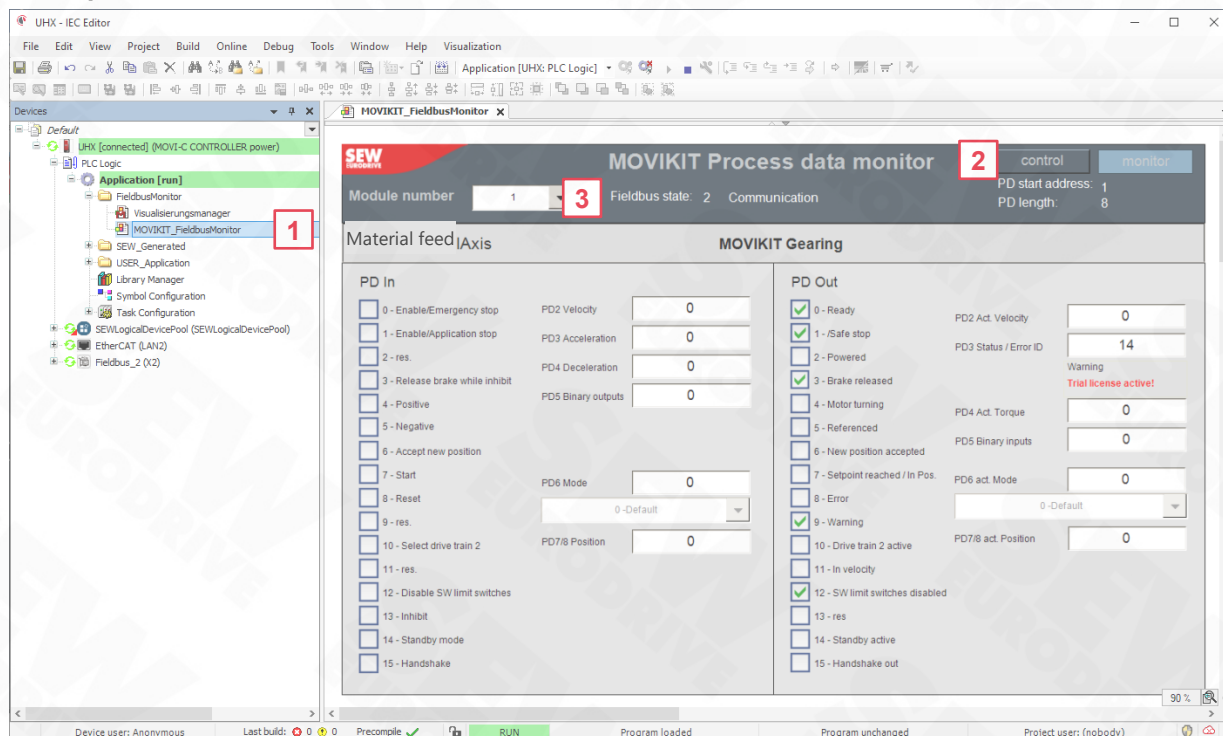


The configuration results in the following process data assignment:





1. Open the MOVIKIT® Process data monitor



1 Open the MOVIKIT® Process data monitor by double-clicking **MOVIKIT® FieldbusMonitor**.

2 Switch to control mode with **control**.

3 You can select the control of the axes using the respective module number:

Master_VirtualAxis / MOVIKIT® Gearing:	Module number: 1
FilmFeeder_Axis1 / MOVIKIT® FilmFeeder:	Module number: 2
RotaryKnife_Axis1 / MOVIKIT® RotaryKnife:	Module number: 3

4.1 Referencing the axes



1. Reference RotaryKnife_Axis1

SEW eurodrive **MOVIKIT Process data monitor** control monitor

Module number: 1 Fieldbus state: 2 Communication PD start address: 1 PD length: 8

Master_VirtualAxis **MOVIKIT Gearing**

PD In		PD Out	
<input type="checkbox"/> 0 - Enable/Emergency stop	PD2 Velocity: 0	<input checked="" type="checkbox"/> 0 - Ready	PD2 Act. Velocity: 0
<input type="checkbox"/> 1 - Enable/Application stop	PD3 Acceleration: 0	<input checked="" type="checkbox"/> 1 - /Safe stop	PD3 Status / Error ID: 14
<input type="checkbox"/> 2 - res.	PD4 Deceleration: 0	<input type="checkbox"/> 2 - Powered	
<input type="checkbox"/> 3 - Release brake while inhibit	PD5 Binary outputs: 0	<input checked="" type="checkbox"/> 3 - Brake released	
<input type="checkbox"/> 4 - Positive		<input type="checkbox"/> 4 - Motor turning	PD4 Act. Torque: 0
<input type="checkbox"/> 5 - Negative		<input type="checkbox"/> 5 - Referenced A	PD5 Binary inputs: 0
<input type="checkbox"/> 6 - Accept new position		<input type="checkbox"/> 6 - New position accepted	
<input checked="" type="checkbox"/> 7 - Start 2	PD6 Mode: 300 1	<input type="checkbox"/> 7 - Setpoint reached / In Pos.	PD6 act. Mode: 300
<input type="checkbox"/> 8 - Reset	300 - Homing offset configured	<input type="checkbox"/> 8 - Error	300 - Homing offset configured
<input type="checkbox"/> 9 - res.	PD7/8 Position: 0	<input type="checkbox"/> 9 - Warning	
<input type="checkbox"/> 10 - Select drive train 2		<input type="checkbox"/> 10 - Drive train 2 active	PD7/8 act. Position: 0 B
<input type="checkbox"/> 11 - res.		<input type="checkbox"/> 11 - In velocity	
<input type="checkbox"/> 12 - Disable SW limit switches		<input checked="" type="checkbox"/> 12 - SW limit switches disabled	
<input type="checkbox"/> 13 - Inhibit		<input type="checkbox"/> 13 - res	
<input type="checkbox"/> 14 - Standby mode		<input type="checkbox"/> 14 - Standby active	
<input type="checkbox"/> 15 - Handshake		<input type="checkbox"/> 15 - Handshake out	

1 Set the mode with **PD6 Mode = 300**.

2 Start referencing.

A Here you can see the reference status of the drive.

B Here you can see the actual position of the axis. After referencing, this value is 0° or the value of the set reference offset.



By default, the reference travel type is set as **Referencing without reference travel**, which means that no further settings are required for referencing the axes.

2. Reference FilmFeeder_Axis1

SEW EURODRIVE **MOVIKIT Process data monitor** control monitor

Module number: Fieldbus state: 2 Communication PD start address: 9 PD length: 16

FilmFeeder_Axis1 **MOVIKIT FilmFeeder**

PD In	PD Out
<input type="checkbox"/> 0 - Enable/Emergency stop	<input checked="" type="checkbox"/> 0 - Ready
<input type="checkbox"/> 1 - Enable/Application stop	<input checked="" type="checkbox"/> 1 - /Safe stop
<input type="checkbox"/> 2 - res.	<input type="checkbox"/> 2 - Powered
<input type="checkbox"/> 3 - Release brake while inhibit	<input type="checkbox"/> 3 - Brake released
<input type="checkbox"/> 4 - Positive	<input type="checkbox"/> 4 - Motor turning
<input type="checkbox"/> 5 - Negative	<input checked="" type="checkbox"/> 5 - Referenced
<input type="checkbox"/> 6 - Accept new position	<input type="checkbox"/> 6 - New position accepted
<input checked="" type="checkbox"/> 7 - Start	<input type="checkbox"/> 7 - Setpoint reached / In Pos.
<input type="checkbox"/> 8 - Reset	<input type="checkbox"/> 8 - Error
<input type="checkbox"/> 9 - res.	<input type="checkbox"/> 9 - Warning
<input type="checkbox"/> 10 - Select drive train 2	<input type="checkbox"/> 10 - Drive train 2 active
<input type="checkbox"/> 11 - res.	<input type="checkbox"/> 11 - In velocity
<input type="checkbox"/> 12 - Disable SW limit switches	<input checked="" type="checkbox"/> 12 - SW limit switches disabled
<input type="checkbox"/> 13 - Inhibit	<input type="checkbox"/> 13 - res
<input type="checkbox"/> 14 - Standby mode	<input type="checkbox"/> 14 - Standby active
<input type="checkbox"/> 15 - Handshake	<input type="checkbox"/> 15 - Handshake out

PD2 Velocity: PD3 Acceleration: PD4 Deceleration: PD5 Binary outputs:

PD6 Mode:

PD7/8 Position:

PD2 Act. Velocity: PD3 Status / Error ID:

PD4 Act. Torque: PD5 Binary inputs:

PD6 act. Mode:

PD7/8 act. Position:

1 Reference the axis as shown.

3. Reference Master_VirtualAxis

SEW EURODRIVE **MOVIKIT Process data monitor** control monitor

Module number: Fieldbus state: 2 Communication PD start address: 1 PD length: 8

Master_VirtualAxis **MOVIKIT Gearing**

PD In	PD Out
<input checked="" type="checkbox"/> 0 - Enable/Emergency stop	<input checked="" type="checkbox"/> 0 - Ready
<input checked="" type="checkbox"/> 1 - Enable/Application stop	<input checked="" type="checkbox"/> 1 - /Safe stop
<input type="checkbox"/> 2 - res.	<input checked="" type="checkbox"/> 2 - Powered
<input type="checkbox"/> 3 - Release brake while inhibit	<input checked="" type="checkbox"/> 3 - Brake released
<input type="checkbox"/> 4 - Positive	<input type="checkbox"/> 4 - Motor turning
<input type="checkbox"/> 5 - Negative	<input checked="" type="checkbox"/> 5 - Referenced
<input type="checkbox"/> 6 - Accept new position	<input type="checkbox"/> 6 - New position accepted
<input checked="" type="checkbox"/> 7 - Start	<input type="checkbox"/> 7 - Setpoint reached / In Pos.
<input type="checkbox"/> 8 - Reset	<input type="checkbox"/> 8 - Error
<input type="checkbox"/> 9 - res.	<input checked="" type="checkbox"/> 9 - Warning
<input type="checkbox"/> 10 - Select drive train 2	<input type="checkbox"/> 10 - Drive train 2 active
<input type="checkbox"/> 11 - res.	<input type="checkbox"/> 11 - In velocity
<input type="checkbox"/> 12 - Disable SW limit switches	<input checked="" type="checkbox"/> 12 - SW limit switches disabled
<input type="checkbox"/> 13 - Inhibit	<input type="checkbox"/> 13 - res
<input type="checkbox"/> 14 - Standby mode	<input type="checkbox"/> 14 - Standby active
<input type="checkbox"/> 15 - Handshake	<input type="checkbox"/> 15 - Handshake out

PD2 Velocity: PD3 Acceleration: PD4 Deceleration: PD5 Binary outputs:

PD6 Mode:

PD7/8 Position:

PD2 Act. Velocity: PD3 Status / Error ID:

PD4 Act. Torque: PD5 Binary inputs:

PD6 act. Mode:

PD7/8 act. Position:

1 Reference the axis as shown.

A To start the referencing of the virtual axis you also have to set the enable bits **Bit 0 / Bit 1**.

4.2 Controlling the axes in Automatic mode



1. Control RotaryKnife_Axis1 in automatic mode

SEW Eurodrive **MOVIKIT Process data monitor** control monitor

Module number: Fieldbus state: 2 Communication PD start address: 25 PD length: 16

RotaryKnife_Axis2 **MOVIKIT RotaryKnife**

PD In	PD2 Velocity	PD2 Out
<input checked="" type="checkbox"/> 0 - Enable/Emergency stop	<input type="text" value="100"/>	<input checked="" type="checkbox"/> 0 - Ready
<input checked="" type="checkbox"/> 1 - Enable/Application stop	<input type="text" value="100"/>	<input checked="" type="checkbox"/> 1 - /Safe stop
<input type="checkbox"/> 2 - res.	<input type="text" value="100"/>	<input checked="" type="checkbox"/> 2 - Powered
<input type="checkbox"/> 3 - Release brake while inhibit	<input type="text" value="0"/>	<input checked="" type="checkbox"/> 3 - Brake released
<input type="checkbox"/> 4 - Positive		<input type="checkbox"/> 4 - Motor turning
<input type="checkbox"/> 5 - Negative		<input checked="" type="checkbox"/> 5 - Referenced
<input type="checkbox"/> 6 - Accept new position		<input type="checkbox"/> 6 - New position accepted
<input checked="" type="checkbox"/> 7 - Start		<input checked="" type="checkbox"/> 7 - Setpoint reached / In Pos.
<input type="checkbox"/> 8 - Reset	<input type="text" value="1400"/>	<input type="checkbox"/> 8 - Error
<input type="checkbox"/> 9 - res.	<input type="text" value="1400 - Application automatic"/>	<input checked="" type="checkbox"/> 9 - Warning
<input type="checkbox"/> 10 - Select drive train 2	<input type="text" value="0"/>	<input type="checkbox"/> 10 - Drive train 2 active
<input type="checkbox"/> 11 - res.		<input type="checkbox"/> 11 - In velocity
<input type="checkbox"/> 12 - Disable SW limit switches		<input checked="" type="checkbox"/> 12 - SW limit switches disabled
<input type="checkbox"/> 13 - Inhibit		<input type="checkbox"/> 13 - res
<input type="checkbox"/> 14 - Standby mode		<input type="checkbox"/> 14 - Standby active
<input type="checkbox"/> 15 - Handshake		<input type="checkbox"/> 15 - Handshake out

PD2 Act. Velocity:
 PD3 Status / Error ID: **B**
 Warning: Trial license active!
 PD4 Act. Torque:
 PD5 Binary inputs:
 PD6 act. Mode:
 1400 - Application automatic
 PD7/8 act. Position: **A**

RotaryKnife Parameters

PD9	PD10/11 Product Length	PD12 Tools	PD13 Diameter	PD14 Sync.Angle	PD15 Sync.Corr.	PD16 reserved
Application Controlword	<input type="text" value="50000"/>	<input type="text" value="2"/>	<input type="text" value="11500"/>	<input type="text" value="5000"/>	<input type="text" value="0"/>	<input type="text" value="0"/>

PD9	Application Statusword	PD13 reserved
Gearing state	<input type="text" value="ACTIVE"/>	<input type="text" value="0"/>
PD11 reserved	<input type="text" value="2"/>	<input type="text" value="0"/>
PD12 Number of Cuts	<input type="text" value="0"/>	<input type="text" value="0"/>

- 1** Set the mode with **PD6 Mode = 1400**.
- 2** Set the travel parameters as shown.
- 3** Set the the RotaryKnife Parameters:
 - **PD10/11 Product Length = 50000** > nominal cut length in [mm] with 2 decimal places
 - **PD12 tools = 2** > number of tools on the rotary knife
 - **PD13 diameter = 11500** > knife diameter in [mm] with 2 decimal places
 - **PD14 Sync.Angle = 5000** > angle at which the rotating knife moves synchronously to the product. User unit [degrees] with two decimal places
- 4** Set the two enable bits **Bit 0 / Bit 1** and start automatic mode with **Bit 7**.
- A** When automatic mode is activated, the axis automatically aligns with the specified travel parameters to the start position 90°.
- B** In automatic mode, the **FCB10 Interpolated position control** is activated.



Note: Automatic mode may only be activated at standstill; the master must be stopped!

2. Control FilmFeeder_Axis1 in automatic mode

SEW EURODRIVE **MOVIKIT Process data monitor** control monitor

Module number: Fieldbus state: 2 Communication PD start address: 9 PD length: 16

FilmFeeder_Axis1 **MOVIKIT FilmFeeder**

PD In	PD Out
<input checked="" type="checkbox"/> 0 - Enable/Emergency stop	<input checked="" type="checkbox"/> 0 - Ready
<input checked="" type="checkbox"/> 1 - Enable/Application stop	<input checked="" type="checkbox"/> 1 - /Safe stop
<input type="checkbox"/> 2 - res.	<input checked="" type="checkbox"/> 2 - Powered
<input type="checkbox"/> 3 - Release brake while inhibit	<input checked="" type="checkbox"/> 3 - Brake released
<input type="checkbox"/> 4 - Positive	<input type="checkbox"/> 4 - Motor turning
<input type="checkbox"/> 5 - Negative	<input checked="" type="checkbox"/> 5 - Referenced
<input type="checkbox"/> 6 - Accept new position	<input type="checkbox"/> 6 - New position accepted
<input checked="" type="checkbox"/> 7 - Start	<input checked="" type="checkbox"/> 7 - Setpoint reached / In Pos.
<input type="checkbox"/> 8 - Reset	<input type="checkbox"/> 8 - Error
<input type="checkbox"/> 9 - res.	<input checked="" type="checkbox"/> 9 - Warning
<input type="checkbox"/> 10 - Select drive train 2	<input type="checkbox"/> 10 - Drive train 2 active
<input type="checkbox"/> 11 - res.	<input type="checkbox"/> 11 - In velocity
<input type="checkbox"/> 12 - Disable SW limit switches	<input checked="" type="checkbox"/> 12 - SW limit switches disabled
<input type="checkbox"/> 13 - Inhibit	<input type="checkbox"/> 13 - res
<input type="checkbox"/> 14 - Standby mode	<input type="checkbox"/> 14 - Standby active
<input type="checkbox"/> 15 - Handshake	<input type="checkbox"/> 15 - Handshake out

PD In	PD Out
PD2 Velocity: <input type="text" value="100"/>	PD2 Act. Velocity: <input type="text" value="0"/>
PD3 Acceleration: <input type="text" value="100"/>	PD3 Status / Error ID: <input type="text" value="10"/> A
PD4 Deceleration: <input type="text" value="100"/>	Warning: Trial license active!
PD5 Binary outputs: <input type="text" value="0"/>	PD4 Act. Torque: <input type="text" value="9"/>
PD6 Mode: <input type="text" value="1400"/> 1	PD5 Binary inputs: <input type="text" value="1"/>
<input type="text" value="1400 - Application automatic"/>	PD6 act. Mode: <input type="text" value="1400"/>
PD7/8 Position: <input type="text" value="0"/>	PD7/8 act. Position: <input type="text" value="0"/>

FilmFeeder Parameters

PD9	Application Controlword	PD13 PM Reference	PD9	Application Statusword	PD13 PM Reference
PD10/11 Product Length: <input type="text" value="50000"/> 3	PD14 Detection Window: <input type="text" value="0"/>	PD15 Corr. Limit: <input type="text" value="0"/>	Gearing state: <input type="text" value="ACTIVE"/>	PD14 Detection Window: <input type="text" value="0"/>	PD15 PM Error: <input type="text" value="0"/>
	PD16 Corr.Startposition: <input type="text" value="0"/>	PD12 Missing PMs: <input type="text" value="0"/>		PD16 Corr.Startposition: <input type="text" value="0"/>	

- 1** Set the mode with **PD6 Mode = 1400**.
- 2** Set the travel parameters.
- 3** Set the nominal cut length here in [mm] with 2 decimal places.
- 4** Set the two enable bits **Bit 0 / Bit 1** and start automatic mode with **Bit 7**.
- A** The **FCB10 Interpolated position control** is also activated on the FilmFeeder.

3. Control Master_VirtualAxis in velocity mode

SEW EURODRIVE **MOVIKIT Process data monitor** control monitor

Module number: Fieldbus state: 2 Communication PD start address: 1 PD length: 8

Master_VirtualAxis **MOVIKIT Gearing**

PD In		PD Out
<input checked="" type="checkbox"/> 0 - Enable/Emergency stop	PD2 Velocity: <input type="text" value="30"/>	<input checked="" type="checkbox"/> 0 - Ready
<input checked="" type="checkbox"/> 1 - Enable/Application stop	PD3 Acceleration: <input type="text" value="30"/>	<input checked="" type="checkbox"/> 1 - /Safe stop
<input type="checkbox"/> 2 - res.	PD4 Deceleration: <input type="text" value="30"/>	<input checked="" type="checkbox"/> 2 - Powered
<input type="checkbox"/> 3 - Release brake while inhibit	PD5 Binary outputs: <input type="text" value="0"/>	<input checked="" type="checkbox"/> 3 - Brake released
<input type="checkbox"/> 4 - Positive	PD6 Mode: <input type="text" value="200"/>	<input type="checkbox"/> 4 - Motor turning
<input type="checkbox"/> 5 - Negative	<input type="text" value="200 - Velocity"/>	<input type="checkbox"/> 5 - Referenced
<input type="checkbox"/> 6 - Accept new position	PD7/8 Position: <input type="text" value="0"/>	<input type="checkbox"/> 6 - New position accepted
<input checked="" type="checkbox"/> 7 - Start		<input type="checkbox"/> 7 - Setpoint reached / In Pos.
<input type="checkbox"/> 8 - Reset		<input type="checkbox"/> 8 - Error
<input type="checkbox"/> 9 - res.		<input checked="" type="checkbox"/> 9 - Warning
<input type="checkbox"/> 10 - Select drive train 2		<input type="checkbox"/> 10 - Drive train 2 active
<input type="checkbox"/> 11 - res.		<input checked="" type="checkbox"/> 11 - In velocity
<input type="checkbox"/> 12 - Disable SW limit switches		<input checked="" type="checkbox"/> 12 - SW limit switches disabled
<input type="checkbox"/> 13 - Inhibit		<input type="checkbox"/> 13 - res
<input type="checkbox"/> 14 - Standby mode		<input type="checkbox"/> 14 - Standby active
<input type="checkbox"/> 15 - Handshake		<input type="checkbox"/> 15 - Handshake out

PD2 Act. Velocity:
 PD3 Status / Error ID:
 Warning: Trial license active!
 PD4 Act. Torque:
 PD5 Binary inputs:
 PD6 act. Mode:

 PD7/8 act. Position:

- 1** Set the mode with **PD6 Mode = 200**.
- 2** Set the travel parameters.
- 3** Set the two enable bits **Bit 0 / Bit 1** and start velocity mode with **Bit 7**.



Master_VirtualAxis is the master axis for automatic mode of the application.

4.3 Performing Trace measurement of Automatic mode



1. Configure a trace measurement with the following variables from SEW_GVL_Internal

Master_VirtualAxis:

- Master_VirtualAxis_AxisDriver._fbVelocityProfile._stOUTSignals.IrSetpPositionModulo

RotaryKnife_Axis2:

- RotaryKnife_Axis2_AxisDriver.DeviceAdapter16PD.stBasicOUT.IrActualPosition
- RotaryKnife_Axis2_AxisDriver.DeviceAdapter16PD.stBasicOUT.IrActualVelocity

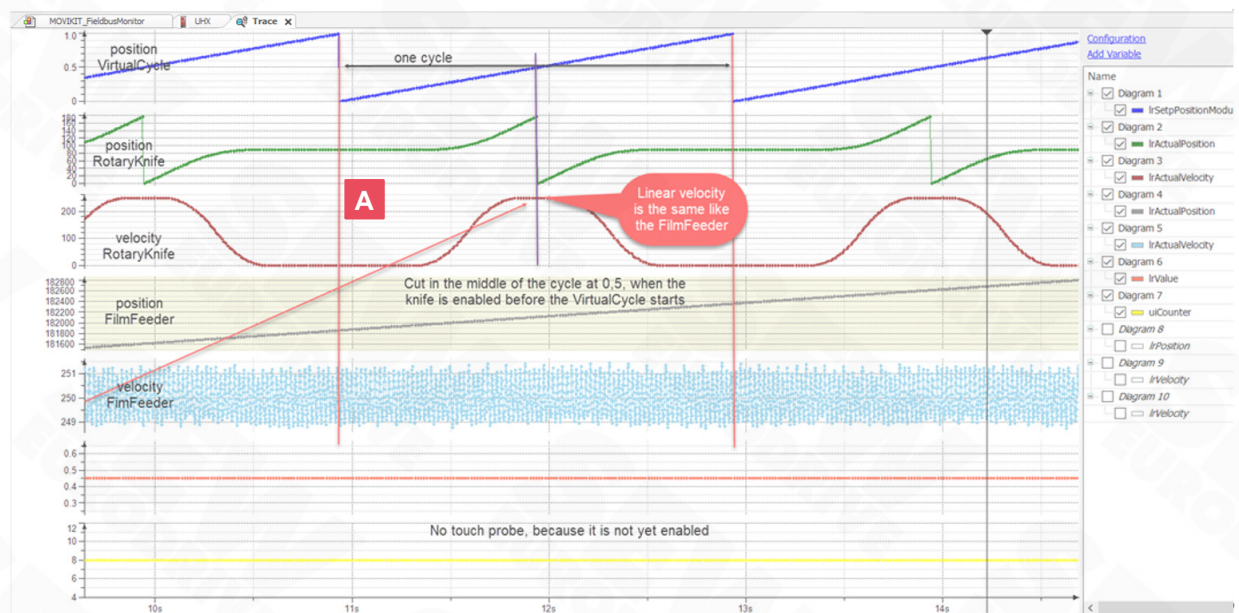
FilmFeeder_Axis1:

- FilmFeeder_Axis1_AxisDriver.DeviceAdapter16PD.stBasicOUT.IrActualPosition
- FilmFeeder_Axis1_AxisDriver.DeviceAdapter16PD.stBasicOUT.IrActualVelocity

FilmFeeder_Axis1 Touch probe position and counter:

- FilmFeeder_Axis1_AxisDriver._fbTouchProbe._stOUTSignals.IrValue
- FilmFeeder_Axis1_AxisDriver._fbTouchProbe._stOUTSignals.uiCounter

2. Perform the trace measurement



A

The cut starts in the middle of the cycle because the RotaryKnife has been enabled and at position 90° before the start of the master axis.

4.4

Activating Automatic mode with Gear-in-Gear-out on-the-fly



1. Activate Gear-in-Gear-out on-the-fly

SEW EURODRIVE **MOVIKIT Process data monitor** control monitor

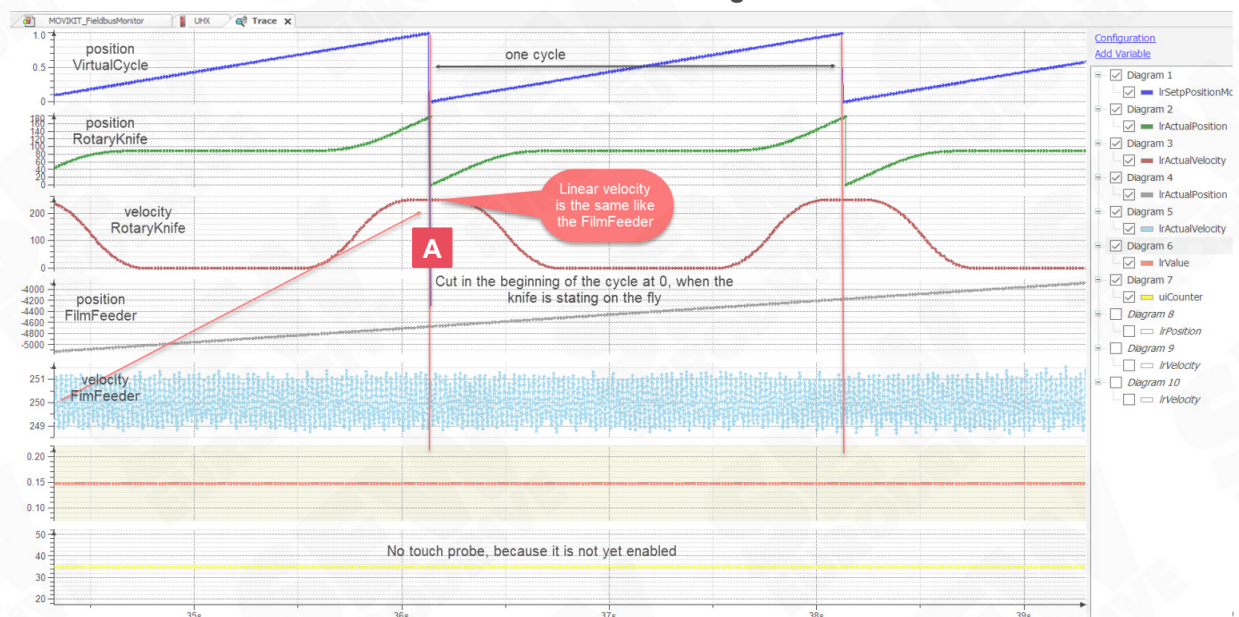
Module number: 3 Fieldbus state: 2 Communication PD start address: 25 PD length: 16

RotaryKnife_Axis2 **MOVIKIT RotaryKnife**

PD In	PD2 Velocity	PD3 Acceleration	PD4 Deceleration	PD5 Binary outputs	PD6 Mode	PD7/8 Position	PD9 Application Controlword	PD10/11 Product Length	PD12 Tools	PD13 Diameter	PD14 Sync.Angle	PD15 Sync.Corr.	PD16 reserved	PD Out	PD2 Act. Velocity	PD3 Act. Acceleration	PD4 Act. Deceleration	PD5 Act. Binary outputs	PD6 Act. Mode	PD7/8 Act. Position	PD9 Act. Application Controlword	PD10/11 Act. Product Length	PD12 Act. Tools	PD13 Act. Diameter	PD14 Act. Sync.Angle	PD15 Act. Sync.Corr.	PD16 Act. reserved
<input checked="" type="checkbox"/> 0 - Enable/Emergency stop	100				1400 - Application		1	50000	2			0	0	<input checked="" type="checkbox"/> 0 - Ready	0												
<input checked="" type="checkbox"/> 1 - Enable/Application stop														<input checked="" type="checkbox"/> 1 - Select Gear-in-Gear-out on the fly	10												
<input type="checkbox"/> 2 - res.														<input type="checkbox"/> 2 - Reset cut counter													
<input type="checkbox"/> 3 - Release brake while inhibit														<input type="checkbox"/> 3 - res.													
<input type="checkbox"/> 4 - Positive														<input type="checkbox"/> 4 - res.													
<input type="checkbox"/> 5 - Negative														<input type="checkbox"/> 5 - res.													
<input type="checkbox"/> 6 - Accept new position														<input type="checkbox"/> 6 - res.													
<input type="checkbox"/> 7 - Start														<input type="checkbox"/> 7 - res.													
<input type="checkbox"/> 8 - Reset														<input type="checkbox"/> 8 - res.													
<input type="checkbox"/> 9 - res.														<input type="checkbox"/> 9 - res.													
<input type="checkbox"/> 10 - Select drive train 2														<input type="checkbox"/> 10 - res.													
<input type="checkbox"/> 11 - res.														<input type="checkbox"/> 11 - res.													
<input type="checkbox"/> 12 - Disable SW limit switches														<input type="checkbox"/> 12 - res.													
<input type="checkbox"/> 13 - Inhibit														<input type="checkbox"/> 13 - res.													
<input type="checkbox"/> 14 - Standby mode														<input type="checkbox"/> 14 - res.													
<input type="checkbox"/> 15 - Handshake														<input type="checkbox"/> 15 - res.													

- 1** With the master deactivated, set **PD9 Application Controlword > Bit1** at RotaryKnife_Axis2 . The change is applied by toggling the start bit **PD In > Bit 7**.

2. Perform a trace measurement with the current settings



- A** The cut is made at the beginning of the cycle.

4.5 Activating Automatic mode with print mark control



1. Activate print mark control

MOVIKIT Process data monitor

Module number: 2 Fieldbus state: 2 Communication PD start address: 9 PD length: 16

FilmFeeder_Axis1

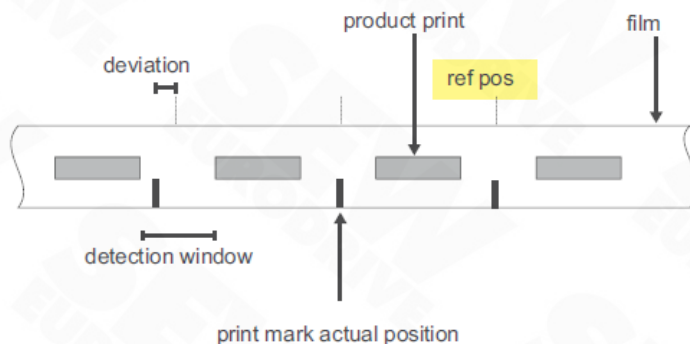
Application Controlword

- ☒ 0 - Enable Printmarkcontrol
- ☐ 1 - Enable Correction Limit
- ☐ 2 - res.
- ☐ 3 - res.
- ☐ 4 - res.
- ☐ 5 - res.
- ☐ 6 - res.
- ☐ 7 - res.
- ☐ 8 - res.
- ☐ 9 - res.
- ☐ 10 - res.
- ☐ 11 - res.
- ☐ 12 - res.
- ☐ 13 - res.
- ☐ 14 - res.
- ☐ 15 - res.

FilmFeeder Parameters

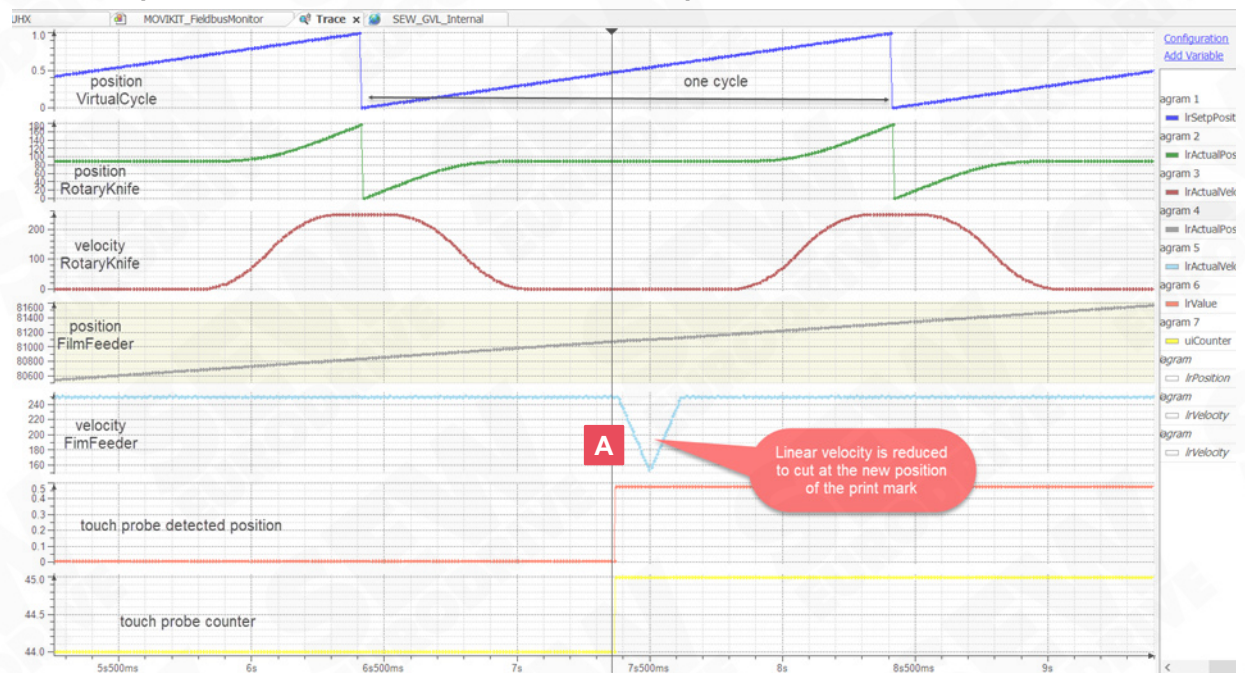
PD9 Application Controlword	PD13 PM Reference	5000	PD9 Application Statusword	PD13 PM Reference	5000
PD10/11 Product Length	PD14 Detection Window	0	Gearing state	PD14 Detection Window	0
	PD15 Corr. Limit	0	PD11 reserved	PD15 PM Error	0
	PD16 Corr.Startposition	0	PD12 Missing PMs	PD16 Corr.Startposition	0

- 1 Open **PD9 Application Controlword** at FilmFeeder_Axis1 and activate print mark control **Bit 0**.
- 2 Parameterize **PD13 PM Reference = 5000**. This is the setpoint for the reference position of the print mark. This is the user unit of the master axis with four decimal places => **The print mark is expected at position 0.5**. Then start automatic mode again and activate print mark control several times by toggling DI04.

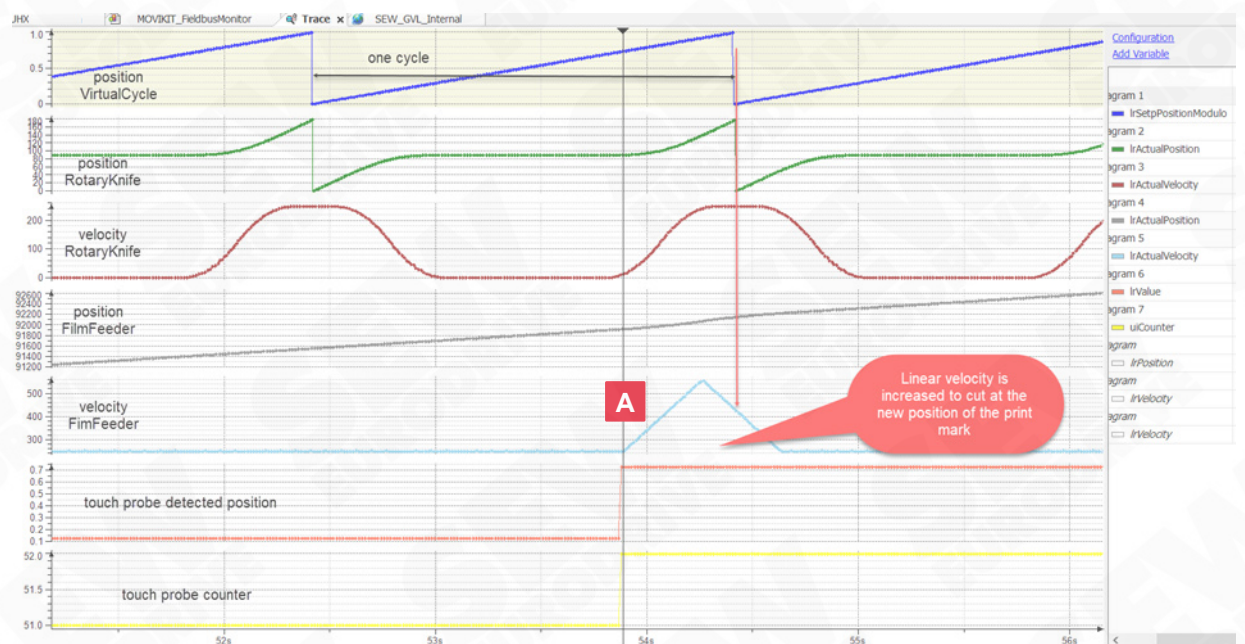


When activating print mark control, all drives must be stopped/deactivated!

2. Examples of trace measurements with activated print mark control



A In this measurement, the print mark is detected at position 0.47, so the FilmFeeder reduces the speed somewhat to reach the new position.



A Here, the print mark at position 0.73 was detected. The FilmFeeder drive increases the speed to reach the new position.

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