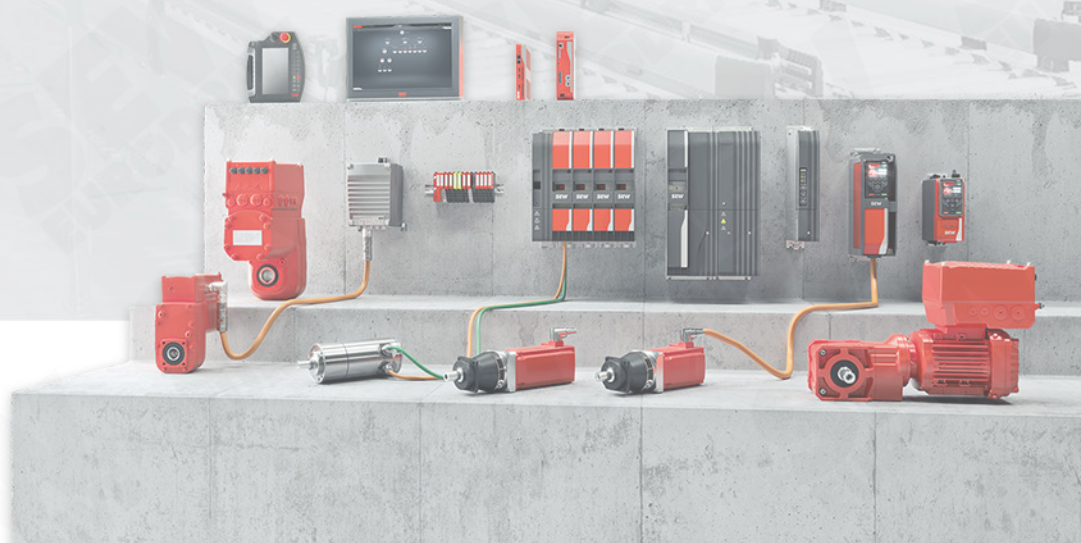


# Product Training Workbook



© SEW-EURODRIVE GmbH & Co KG

Copyright © SEW-EURODRIVE

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

**C140**

© SEW-EURODRIVE GmbH & Co KG

### **Urheberrecht**

Die Vervielfältigung der Trainingsunterlagen für nicht genehmigte Zwecke sowie die Weitergabe, Verwertung und Mitteilung ihres Inhalts an Dritte ist nicht gestattet. Zuwiderhandlungen verpflichten zum Schadenersatz. Die von SEW-EURODRIVE während der Trainings zu Übungszwecken zur Verfügung gestellte Software darf weder entnommen noch ganz oder teilweise kopiert oder in sonstiger, nicht genehmigter Weise nutzbar gemacht werden.

### Exclusion of liability

These training documents supplement the existing documentation from SEW-EURODRIVE GmbH & Co KG. They were created as informational documents to accompany training according to the author's best knowledge.

Compliance with the information in the operating instructions for the devices mentioned in the training documents has priority and is a basic requirement for safe operation. The safety provisions therein apply.

SEW-EURODRIVE GmbH & Co KG is not liable for personal injury or damage to equipment or property resulting from non-compliance with the operating instructions. Liability for defects is excluded in such cases.

Ensure that the operating instructions are made available in legible condition to those responsible for the system and its operation, as well as to personnel working on the device independently.

### Objectives of this training document

- In this workbook, you will learn to start up the cross cutter application on a training model and control it via the process data interface.

### Additional documents

- MOVIKIT® RotaryKnife software module manual
- MOVIKIT® RotaryKnife brief information

The product training team will be happy to assist you if you have any questions or suggestions.

SEW-EURODRIVE GmbH & Co KG  
Ernst-Blickle-Straße 42  
76646 Bruchsal, Germany  
Tel. +49 (0)7251 75-3911  
[www.driveacademy.sew-eurodrive.de](http://www.driveacademy.sew-eurodrive.de)

### Meaning of the symbols:



Operating notes



Information



Safety-relevant information



Tip



Diagnostics and troubleshooting



Practical task



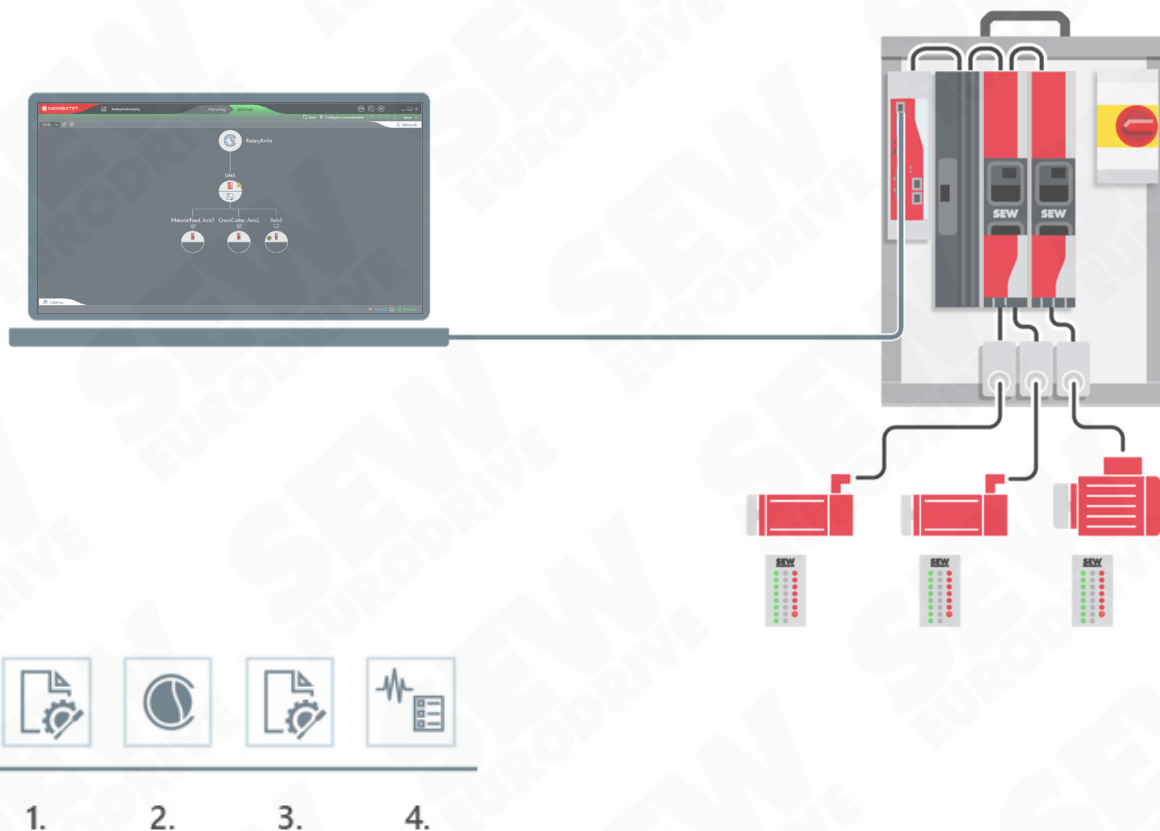
Additional documentation



<b>1</b>	<b>Introduction to the cross cutter application</b>	<b>1</b>
1.1	Cross cutter application	2
1.2	Training model	3
<b>2</b>	<b>Project setup and device configuration in MOVISUITE®</b>	<b>4</b>
2.1	Creating the MOVISUITE® project	5
2.2	Configuring MaterialFeed_Axis1	6
2.3	Configuring CrossCutter_Axis2	8
2.4	Configuring MOVI-C® CONTROLLER	10
<b>3</b>	<b>Creation and start of the IEC project</b>	<b>11</b>
3.1	Licensing the MOVI-C® CONTROLLER	12
3.2	Creating and starting the IEC project	13
<b>4</b>	<b>Control via MOVIKIT® Process data monitor</b>	<b>15</b>
4.1	Referencing the axes	17
4.2	Controlling axes in Automatic mode	18
4.3	Performing Trace measurement of automatic mode	20



## Workbook steps



1. Introduction to the cross cutter application
2. Project setup and device configuration in MOVISUITE®
3. Master configuration (material feed)
4. Slave configuration (cross cutter)
5. Creation and Start of the IEC project
6. Control via the MOVILINK® Process data monitor



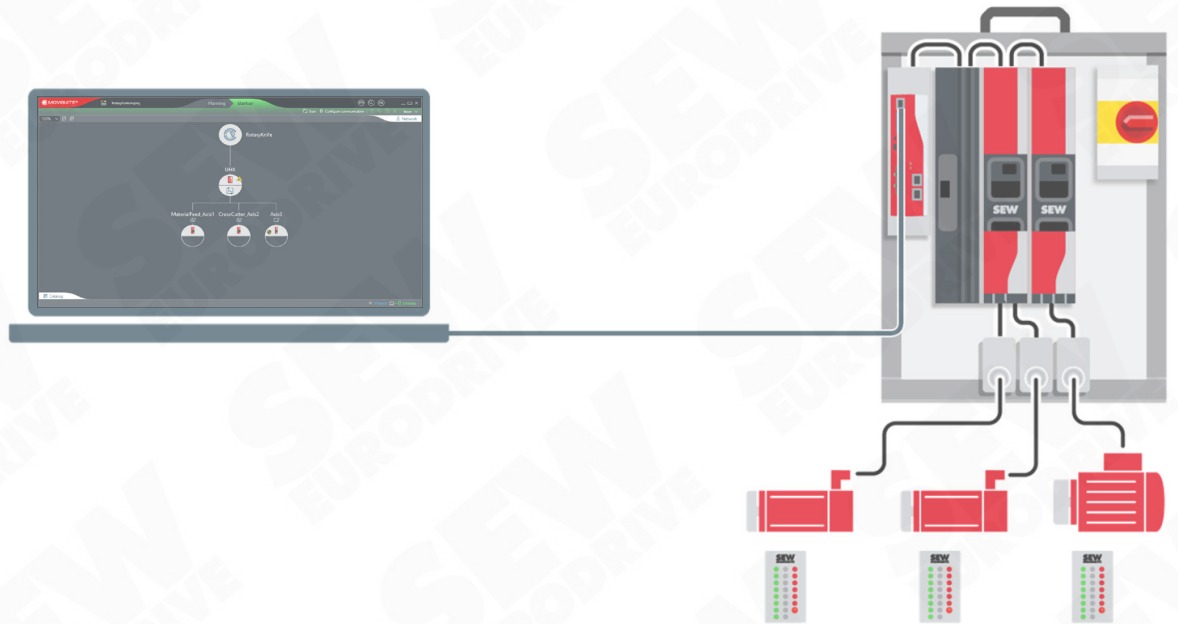
For the following exercises, the drives must be started up and optimized correctly in CFC or VFC<sup>PLUS</sup> control mode. For information on startup and operation of MOVISUITE®, refer to **Workbook C101 MOVISUITE® – Practice on the Inverter.**



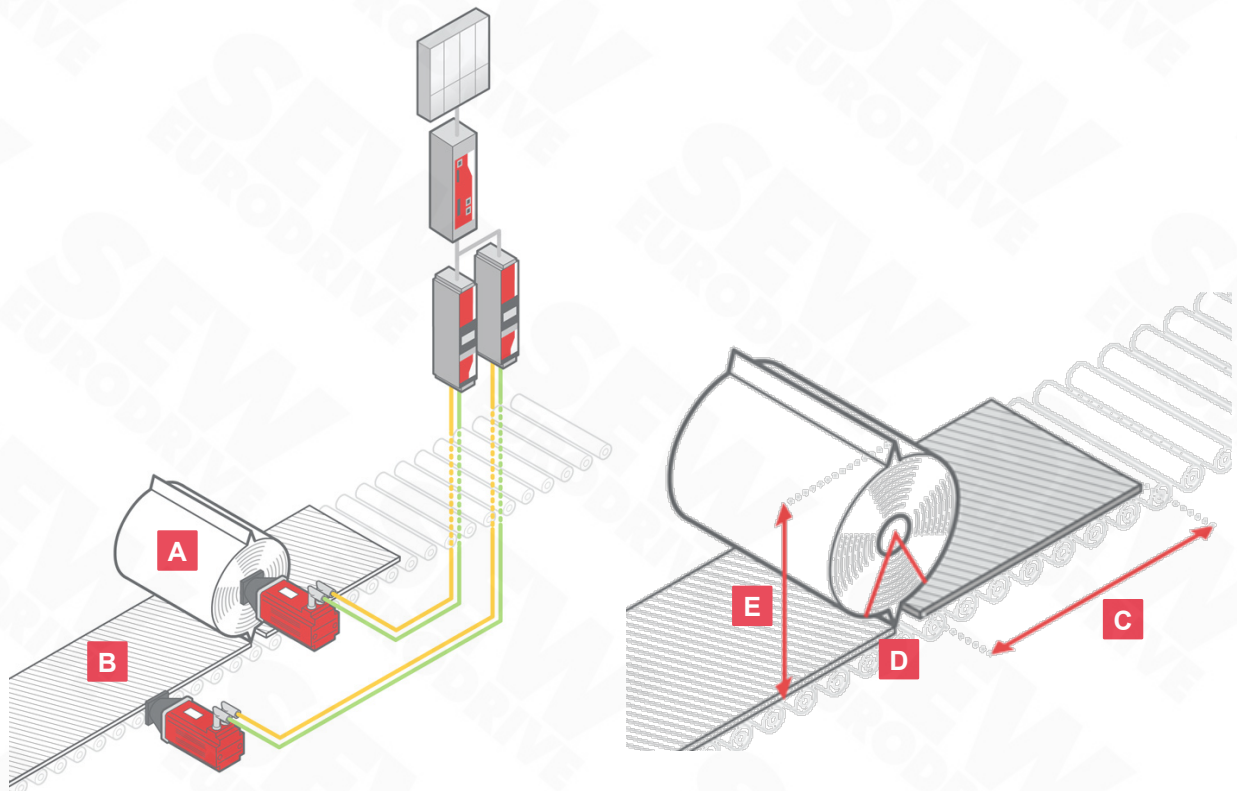


# 1 Introduction to the cross cutter application

- Objectives:**
- Being familiar with the cross cutter as a typical application for the MOVIKIT® RotaryKnife
  - Being familiar with the system configuration of the training model and software used



## 1.1 Cross cutter application

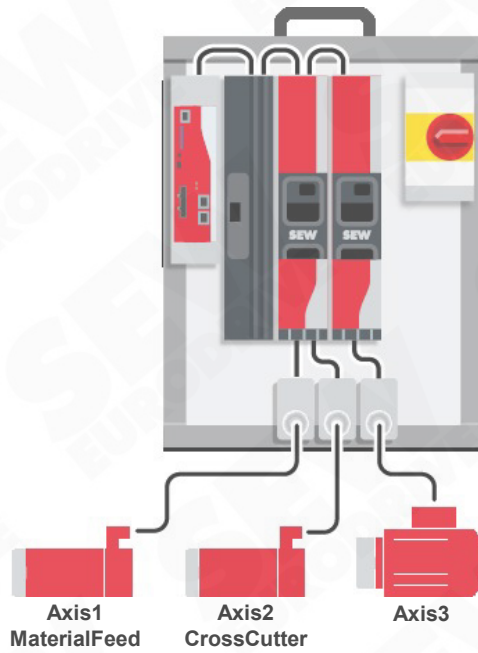


### Application:

A common industrial application for the MOVIKIT® RotaryKnife is the cross cutter. It cuts thin material such as paper, cardboard, or metal into individual products without stopping the production line.

- A Cross cutter:** The cross cutter consists of a cylinder with knife blades fastened along the longitudinal axis. While the cylinder is rotating, the knife cuts the material running under it.
- B Material feed:** The material is continuously moved forward depending on the machine speed.
- C Cutting length:** The cutting length can be influenced by the speed of the cross cutter. To adjust the cutting length, the cross cutter is decelerated or accelerated after the cut.
- D Cutting position:** The cross cutter moves synchronously to the material at the cutting position or at a specific angle (synchronous angle).
- E Knife diameter:** Diameter of the rotary knife when there are 2 Knives

## 1.2 Training model



Axis1 / Master **MaterialFeed\_Axis1**: Drive with motor encoder => MOVIKIT® Gearing  
 Axis2 / Slave **CrossCutter\_Axis2**: Drive with motor encoder => MOVIKIT® RotaryKnife  
 Axis3: Drive with motor encoder => not used



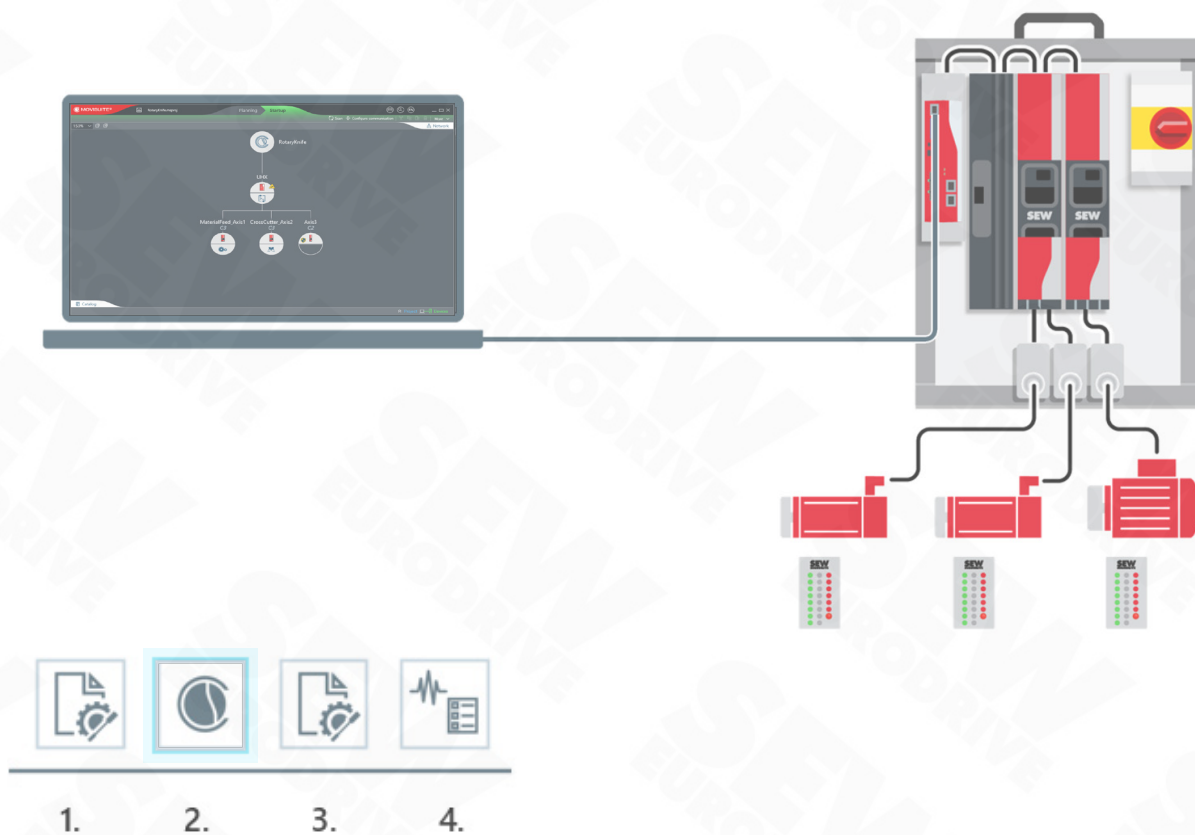
If the training model is not available, the exercises can also be done using any MOVI-C® CONTROLLER and MOVIDRIVE® modular/system with drive. The hardware configuration must then be adapted according to the hardware being used. If no inverter/drive hardware is available, the axes can be operated in a simulation.

### Software:

- MOVISUITE® 2.50
- IEC Editor 3.5.18.2
- MOVIKIT® RotaryKnife 9.0.16.200
- MOVIKIT® Gearing 9.0.22.200

## 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



## 2.1 Creating the MOVISUITE® project



### 1. Create a new project and rename the devices



- 1 Create a new project from network scan and save it as RotaryKnife.
- 2 Assign the names for the devices as shown.

## 2.2 Configuring MaterialFeed\_Axis1



### 1. Configure the drive train

The screenshot shows the MOVISUITE software interface. On the left, a parameter tree is visible with '3.1 Drive train DT1' selected. The main workspace displays a drive train diagram with components: AKOH, CMPSOS, and User unit. A 'Scaling' window is open, showing the calculation of user-defined units. The 'User unit' is set to 'Cycle'. The calculation is: 1 revolutions = 1 Cycle. Below this, there are fields for Distance, Speed, and Acceleration, each with a unit dropdown and a number of decimal places field. The 'Next' button is highlighted with a red box.

- 1 Configure the user units for the material feed as shown. The number of decimal places will be set automatically by the following MOVIKIT® software module.
- 2 Click **Next > Transfer data to device**.

### 2. Assign the MOVIKIT® Gearing software module

The screenshot shows the MOVISUITE software interface. The 'MaterialFeed\_Axis1' component is right-clicked, and the context menu is open. The 'Add from catalog' option is selected. The 'MOVIKIT® Gearing' module is shown in the catalog, and the 'Add' button is highlighted with a red box.

- 1 Right-click MaterialFeed\_Axis1 and select **Add from catalog**.
- 2 Add MOVIKIT® Gearing, then reset the following error E-34.01.

### 3. Configure the Cycle limit

The screenshot shows the MOVISUITE interface with the 'Limit values' configuration page open. The 'Cycle limit' section is highlighted with a red box and a red '1' in a box, indicating the configuration step.

Application limits		Info
	DT1	
Positive speed	4500.0000 Cycle/min	
Negative speed	4500.0000 Cycle/min	
Acceleration	180000.0 Cycle/min <sup>2</sup>	
Deceleration	180000.0 Cycle/min <sup>2</sup>	
Jerk time	0.000 ms	<b>i</b>
Torque	400.0 % nominal motor torque	

Limits		DT1
Emergency stop deceleration	180000.0 Cycle/min <sup>2</sup>	

Limit values from startup		DT1
Maximum speed at motor shaft	8100 1/min	
Maximum torque at motor shaft	5 Nm	

Application limits for controller functions <b>i</b>		Info
Value		
Jerk	0 → 0 Cycle/(min <sup>2</sup> s)	<b>i</b>

Cycle limit		DT1
Modulo minimum	0.00000 Cycle	
Modulo maximum	1.00000 Cycle	

**1** Configure the Cycle limit as shown.

### 4. Activate the fieldbus interface

The screenshot shows the MOVISUITE interface with the 'Fieldbus interface' configuration page open. The 'Activate fieldbus connection' dropdown is highlighted with a red box and a red '1' in a box, indicating the configuration step.

Fieldbus configuration	Value
Activate fieldbus connection	Yes <b>1</b>
Start address	1

Process data length		Value
Basic process data		8
Process data of additional functions		0
Process data for additional process values of the inverter		0
Optional process data		0
Additional process data user program		0
Process data length		8

Decimal places via fieldbus				
Number of decimal places	Position	Speed	Acceleration	Jerk
2	0	0	0	0

PROFINET diagnostic alarms		Value
Activate diagnostic alarms	<input type="checkbox"/>	

Fieldbus interface			
PLC	PLC output data	PLC input data	MOVIKIT®
	>>>>	<<<<	

**1** Activate the fieldbus connection and keep the default start address **1**.

## 2.3 Configuring CrossCutter\_Axis2



### 1. Configure the drive train

**1** Configure the user units for the material feed as shown. Here, too, the number of decimal places will be set by the following MOVIKIT® software module.

**2** Click **Next > Transfer data to device**.

### 2. Assign the MOVIKIT® RotaryKnife software module

**1** Assign MOVIKIT® RotaryKnife to CrossCutter\_Axis2 and reset the following error E-34.01 again.



### 3. Configure the Cycle limit

The screenshot shows the MOVISUITE interface with the 'Limit values' tab selected. The 'Cycle limit' section is highlighted with a red box and a '1' in a red square. The 'Modulo minimum' is set to 0.000 degrees and the 'Modulo maximum' is set to 360.000 degrees.

Application limits		
	DT1	Info
Positive speed	27000.0000 degrees/s	
Negative speed	27000.0000 degrees/s	
Acceleration	18000.00 degrees/s <sup>2</sup>	
Deceleration	18000.00 degrees/s <sup>2</sup>	
Jerk time	0.000 ms	
Torque	400.0 % nominal motor torque	

Limits		
	DT1	
Emergency stop deceleration	18000.00 degrees/s <sup>2</sup>	

Limit values from startup		
	DT1	
Maximum speed at motor shaft	8100 1/min	
Maximum torque at motor shaft	5 Nm	

Cycle limit		
	DT1	
Modulo minimum	0.000 degrees	
Modulo maximum	360.000 degrees	

1 Configure the Cycle limit as shown.

### 4. Configure the Master source

The screenshot shows the MOVISUITE interface with the 'Rotary knife' tab selected. The 'Master source' section is highlighted with a red box and a '1' in a red square. The 'Master source' is set to 'Configured axis', 'Master axis name' is 'MaterialFeed\_Axis1', and 'Master axis type' is 'Modulo axis - cyclic position'.

Master source	
	Value
Master source	Configured axis
Master axis name	MaterialFeed_Axis1
Master axis type	Modulo axis - cyclic position

1 Set the master source as shown.

MOVIKIT® RotaryKnife requires a modulo axis as the master.

## 5. Activate the fieldbus interface

The screenshot shows the MOVISUITE interface with the 'Fieldbus interface' configuration window open. The 'Activate fieldbus connection' dropdown is set to 'Yes' and is highlighted with a red box containing the number 1. The 'Start address' is set to 9. Below, a table shows process data lengths for various parameters.

Process data length	Value
Basic process data	16
Process data of additional functions	0
Process data for additional process values of the inverter	0
Additional process data user program	0
Process data length	16

1 Activate the fieldbus connection and set the start address 9.

The start address 9 results from the start address (1) plus the number of process data words (8) of the previous axis MaterialFeed\_Axis1 .



## 2.4

## Configuring MOVI-C® CONTROLLER



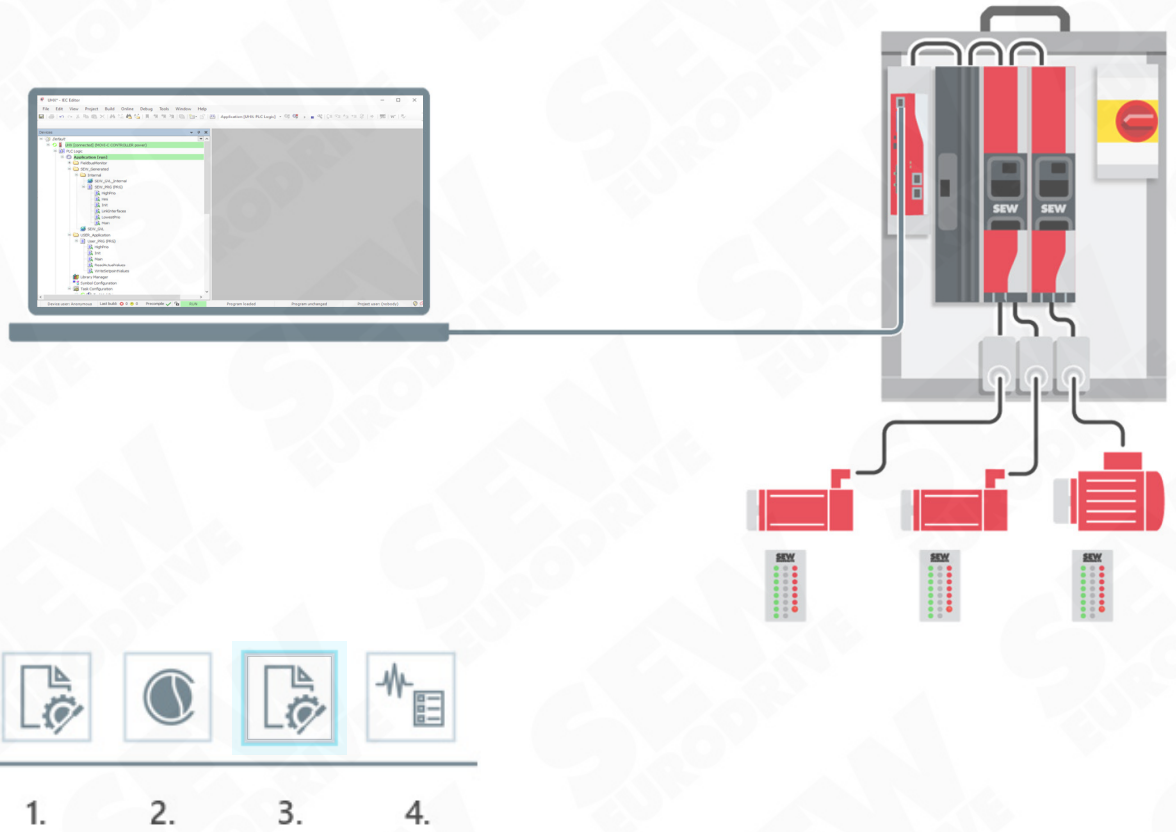
### 1. Configure the fieldbus interface

The screenshot shows the MOVISUITE interface with the 'Fieldbus' configuration window open. The 'Fieldbus protocol' dropdown is set to 'PROFINET IO device' and is highlighted with a red box containing the number 1. The 'Activate fieldbus connection' dropdown is set to 'Yes'.

1 Select the appropriate **Fieldbus protocol**. The fieldbus connection will be automatically activated.

### 3 Creation and start of the IEC project

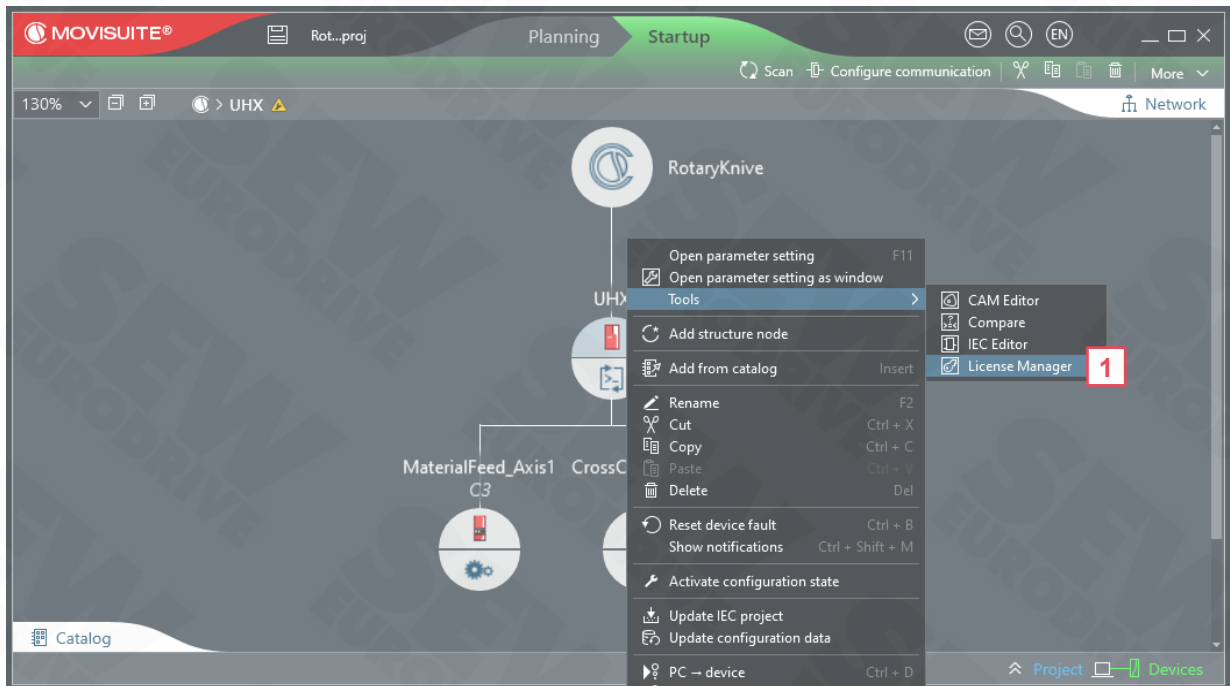
- Objectives:**
- Being able to configure the fieldbus interface of the MOVI-C® CONTROLLER
  - Being able to select and activate the appropriate licenses
  - Be able to create and start an IEC project



## 3.1 Licensing the MOVI-C® CONTROLLER

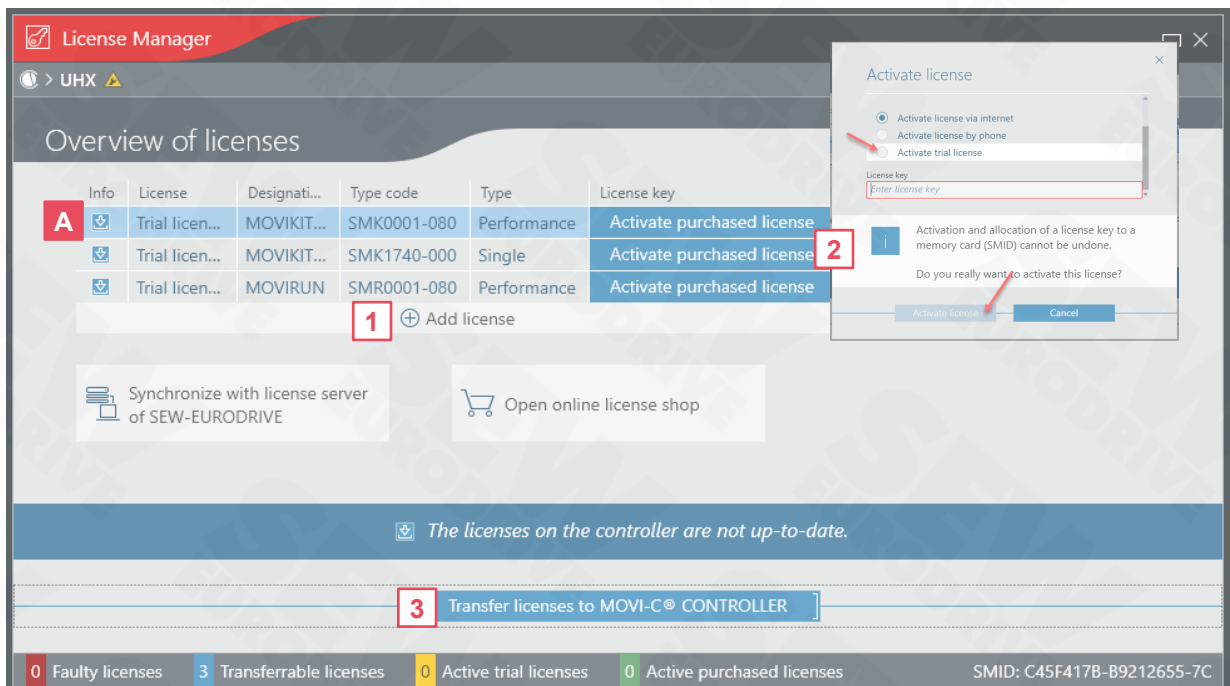


### 1. Start the License Manager



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

### 2. Select, activate and transfer the licenses



1 Click **Add license** and select the required licenses as shown.

2 Click **Activate purchase license** and activate trial licenses.

3 Transfer the licenses.

A The MOVIKIT® MultiMotion Camming license contains the license for MOVIKIT® Gearing.

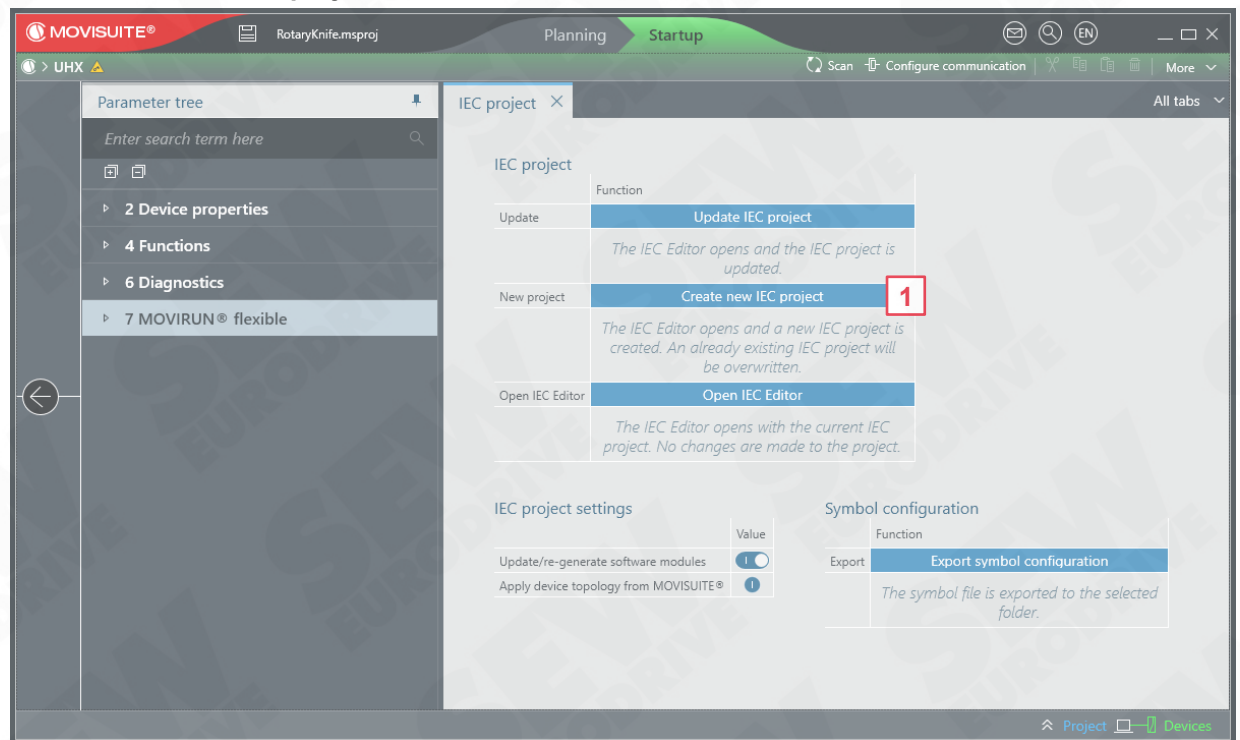


A trial license allows software functions to be tested before purchase. It is valid for 7 days and can be reactivated at any time. After the trial license expires, the program continues to run. A message regarding the expired trial license will be displayed on the MOVI-C® CONTROLLER.

## 3.2 Creating and starting the IEC project



### 1. Create a new IEC project

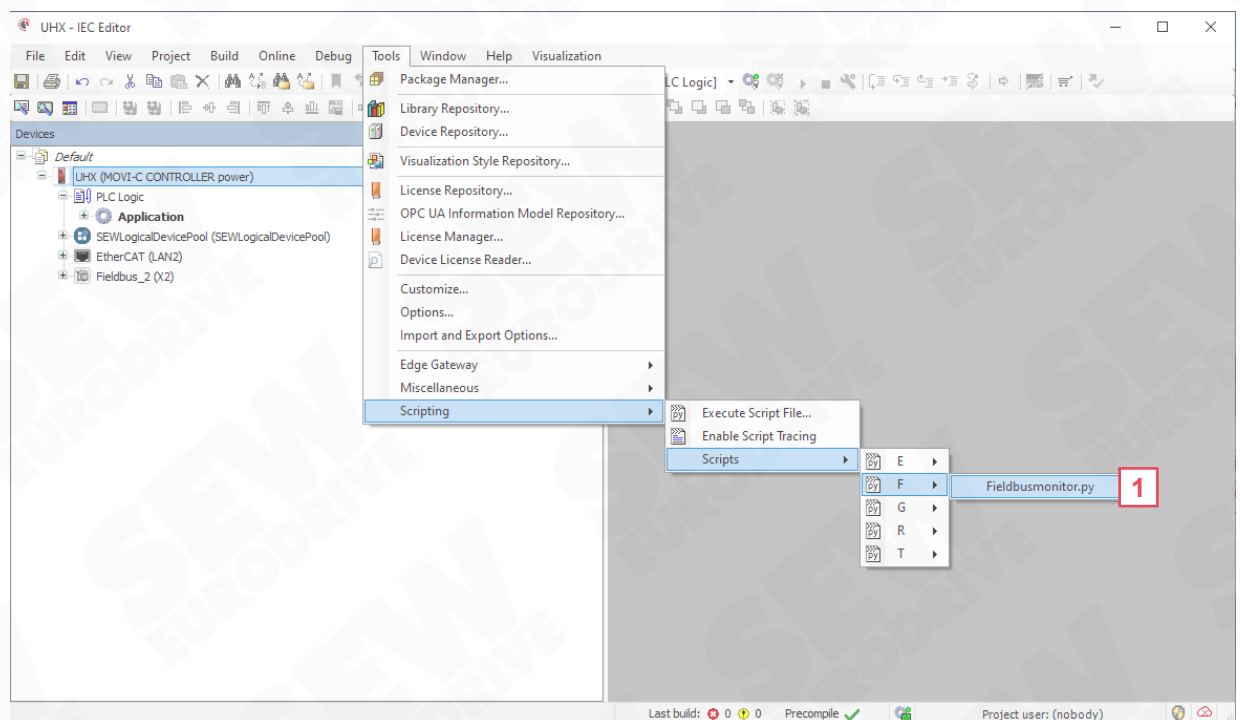


**1** Click **Create new IEC project** to start the code generation process.



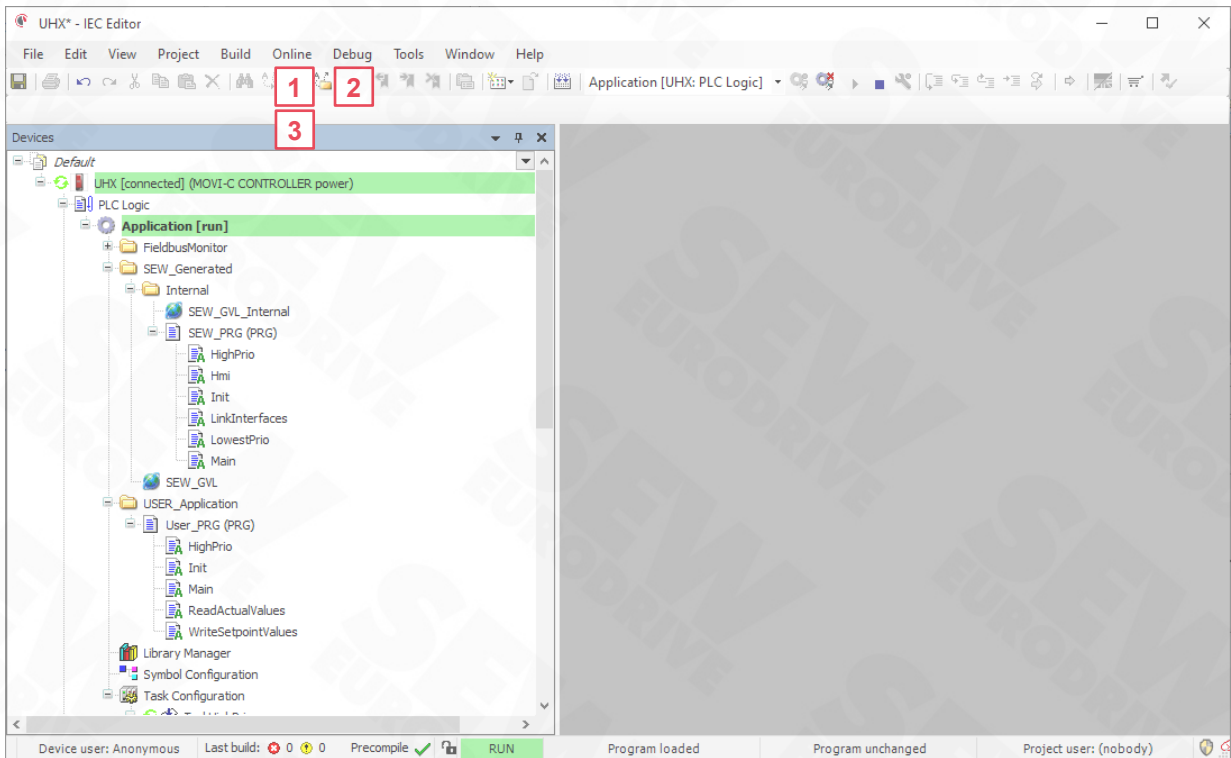
When you create a new IEC project, the existing project will be deleted. A self-programmed part then will also be overwritten/deleted.

### 2. Activate the Fieldbusmonitor



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

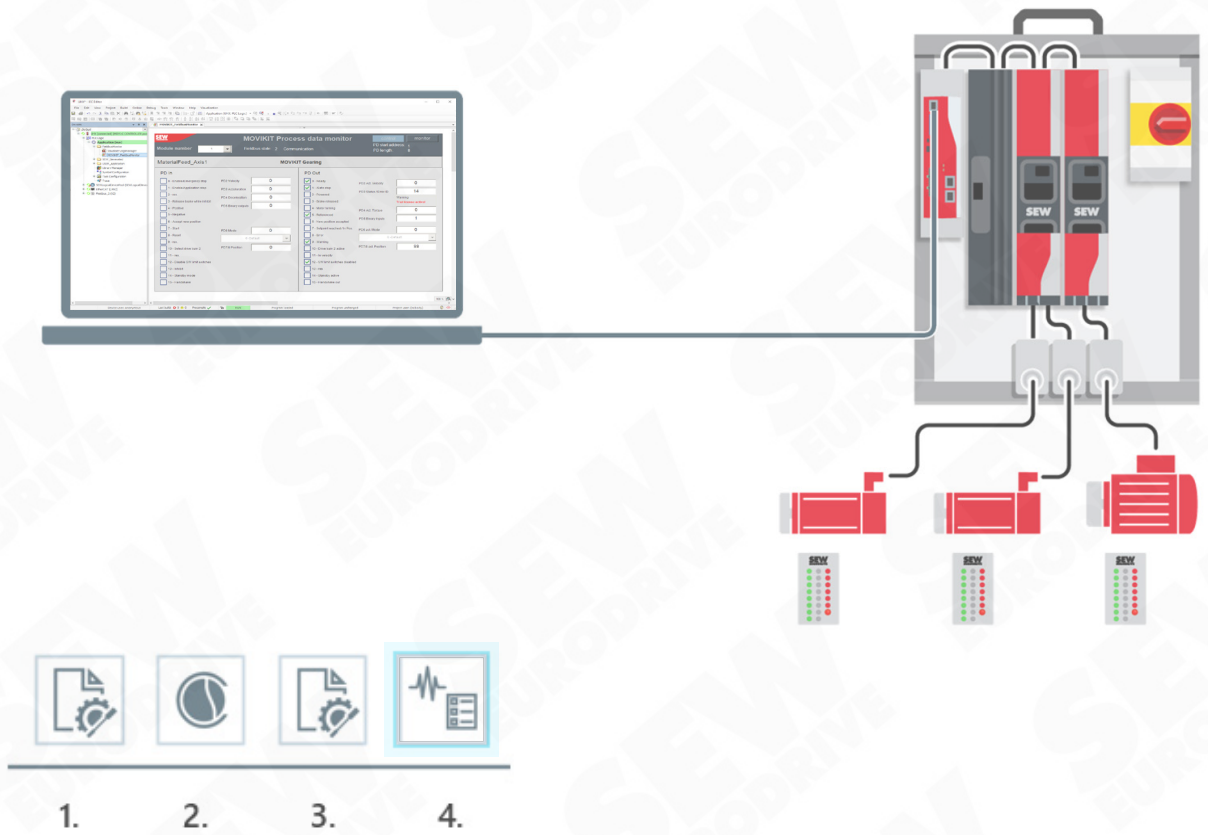
### 3. Start the IEC program



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

## 4 Control via MOVIKIT® Process data monitor

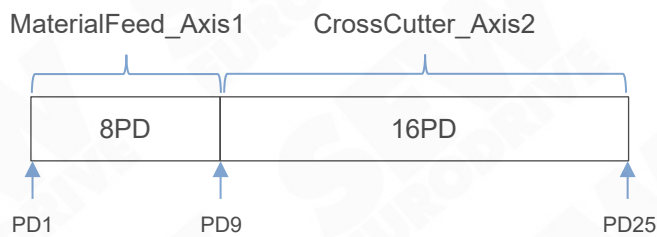
**Objectives:** ▪ Control of the cross cutter application using the MOVIKIT® Process data monitor



© SEW-EURODRIVE GmbH & Co KG



The configuration results in the following process data assignment:





## 1. Open the MOVIKIT® Process data monitor

The screenshot shows the UHX IEC Editor interface with the MOVIKIT FieldbusMonitor window open. The window title is 'SEW MOVIKIT Process data monitor'. The interface includes a 'control' button (highlighted with a red box 3) and a 'monitor' button. The 'Module number' is set to 1 (highlighted with a red box 2). The 'Fieldbus state' is 2. The 'PD start address' is 1 and the 'PD length' is 8. The main display area is titled 'MaterialFeed\_Axis1 MOVIKIT Gearing' and is split into 'PD In' and 'PD Out' sections. The 'PD In' section has 16 checkboxes, and the 'PD Out' section has 16 checkboxes. The 'PD Out' section also includes numerical displays for 'PD2 Act. Velocity', 'PD3 Status / Error ID', 'PD4 Act. Torque', 'PD5 Binary inputs', 'PD6 act. Mode', and 'PD7/8 act. Position'. A 'Warning' message 'Trial license active!' is visible in the 'PD Out' section. The status bar at the bottom shows 'Device user: Anonymous', 'Last build: 0 0 0', 'Precompile', 'RUN', 'Program loaded', 'Program unchanged', and 'Project user: (nobody)'.

1 Double-click **MOVIKIT\_FieldBusmonitor**.

2 Select the process data monitor by selecting the module number:  
 MaterialFeed\_Axis1 / MOVIKIT® Gearing: Module number: 1  
 CrossCutter\_Axis2 / MOVIKIT® RotaryKnife: Module number: 2

3 Click **control** to switch to the control mode.



## 4.1 Referencing the axes



### 1. Reference MaterialFeed\_Axis1

MOVIKIT Process data monitor

control
monitor

PD start address: 1  
 PD length: 8

Module number 
Fieldbus state: 2 Communication

MaterialFeed\_Axis1
MOVIKIT Gearing

<b>PD In</b> <input type="checkbox"/> 0 - Enable/Emergency stop <input type="checkbox"/> 1 - Enable/Application stop <input type="checkbox"/> 2 - res. <input type="checkbox"/> 3 - Release brake while inhibit <input type="checkbox"/> 4 - Positive <input type="checkbox"/> 5 - Negative <input type="checkbox"/> 6 - Accept new position <input checked="" type="checkbox"/> 7 - Start <span style="border: 1px solid red; padding: 2px;">2</span> <input type="checkbox"/> 8 - Reset <input type="checkbox"/> 9 - res. <input type="checkbox"/> 10 - Select drive train 2 <input type="checkbox"/> 11 - res. <input type="checkbox"/> 12 - Disable SW limit switches <input type="checkbox"/> 13 - Inhibit <input type="checkbox"/> 14 - Standby mode <input type="checkbox"/> 15 - Handshake	PD2 Velocity <input style="width: 50px;" type="text" value="0"/> PD3 Acceleration <input style="width: 50px;" type="text" value="0"/> PD4 Deceleration <input style="width: 50px;" type="text" value="0"/> PD5 Binary outputs <input style="width: 50px;" type="text" value="0"/>  PD6 Mode <input style="width: 50px;" type="text" value="300"/> <span style="border: 1px solid red; padding: 2px;">1</span> <div style="border: 1px solid gray; padding: 2px; font-size: 0.8em;">300 - Homing offset configured</div> PD7/8 Position <input style="width: 50px;" type="text" value="0"/>	<b>PD Out</b> <input checked="" type="checkbox"/> 0 - Ready <input checked="" type="checkbox"/> 1 - /Safe stop <input type="checkbox"/> 2 - Powered <input type="checkbox"/> 3 - Brake released <input type="checkbox"/> 4 - Motor turning <input checked="" type="checkbox"/> 5 - Referenced <span style="border: 1px solid red; padding: 2px;">A</span> <input type="checkbox"/> 6 - New position accepted <input type="checkbox"/> 7 - Setpoint reached / In Pos. <input type="checkbox"/> 8 - Error <input type="checkbox"/> 9 - Warning <input type="checkbox"/> 10 - Drive train 2 active <input type="checkbox"/> 11 - In velocity <input checked="" type="checkbox"/> 12 - SW limit switches disabled <input type="checkbox"/> 13 - res. <input type="checkbox"/> 14 - Standby active <input type="checkbox"/> 15 - Handshake out	PD2 Act. Velocity <input style="width: 50px;" type="text" value="0"/> PD3 Status / Error ID <input style="width: 50px;" type="text" value="14"/>  PD4 Act. Torque <input style="width: 50px;" type="text" value="0"/> PD5 Binary inputs <input style="width: 50px;" type="text" value="1"/> PD6 act. Mode <input style="width: 50px;" type="text" value="300"/> <div style="border: 1px solid gray; padding: 2px; font-size: 0.8em;">300 - Homing offset configured</div> PD7/8 act. Position <input style="width: 50px;" type="text" value="0"/> <span style="border: 1px solid red; padding: 2px;">B</span>
--	--	---	---

- 1 Select the operating mode **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 (0 after referencing).

### 2. Reference CrossCutter\_Axis2

MOVIKIT Process data monitor

control
monitor

PD start address: 9  
 PD length: 16

Module number 
Fieldbus state: 2 Communication

CrossCutter\_Axis2
MOVIKIT RotaryKnife

<b>PD In</b> <input type="checkbox"/> 0 - Enable/Emergency stop <input type="checkbox"/> 1 - Enable/Application stop <input type="checkbox"/> 2 - res. <input type="checkbox"/> 3 - Release brake while inhibit <input type="checkbox"/> 4 - Positive <input type="checkbox"/> 5 - Negative <input type="checkbox"/> 6 - Accept new position <input checked="" type="checkbox"/> 7 - Start <span style="border: 1px solid red; padding: 2px;">1</span> <input type="checkbox"/> 8 - Reset <input type="checkbox"/> 9 - res. <input type="checkbox"/> 10 - Select drive train 2 <input type="checkbox"/> 11 - res. <input type="checkbox"/> 12 - Disable SW limit switches <input type="checkbox"/> 13 - Inhibit <input type="checkbox"/> 14 - Standby mode <input type="checkbox"/> 15 - Handshake	PD2 Velocity <input style="width: 50px;" type="text" value="0"/> PD3 Acceleration <input style="width: 50px;" type="text" value="0"/> PD4 Deceleration <input style="width: 50px;" type="text" value="0"/> PD5 Binary outputs <input style="width: 50px;" type="text" value="0"/>  PD6 Mode <input style="width: 50px;" type="text" value="300"/> <span style="border: 1px solid red; padding: 2px;">1</span> <div style="border: 1px solid gray; padding: 2px; font-size: 0.8em;">300 - Homing offset configured</div> PD7/8 Position <input style="width: 50px;" type="text" value="0"/>	<b>PD Out</b> <input checked="" type="checkbox"/> 0 - Ready <input checked="" type="checkbox"/> 1 - /Safe stop <input type="checkbox"/> 2 - Powered <input type="checkbox"/> 3 - Brake released <input type="checkbox"/> 4 - Motor turning <input checked="" type="checkbox"/> 5 - Referenced <span style="border: 1px solid red; padding: 2px;">1</span> <input type="checkbox"/> 6 - New position accepted <input type="checkbox"/> 7 - Setpoint reached / In Pos. <input type="checkbox"/> 8 - Error <input type="checkbox"/> 9 - Warning <input type="checkbox"/> 10 - Drive train 2 active <input type="checkbox"/> 11 - In velocity <input checked="" type="checkbox"/> 12 - SW limit switches disabled <input type="checkbox"/> 13 - res. <input type="checkbox"/> 14 - Standby active <input type="checkbox"/> 15 - Handshake out	PD2 Act. Velocity <input style="width: 50px;" type="text" value="2"/> PD3 Status / Error ID <input style="width: 50px;" type="text" value="14"/>  PD4 Act. Torque <input style="width: 50px;" type="text" value="0"/> PD5 Binary inputs <input style="width: 50px;" type="text" value="1"/> PD6 act. Mode <input style="width: 50px;" type="text" value="300"/> <div style="border: 1px solid gray; padding: 2px; font-size: 0.8em;">300 - Homing offset configured</div> PD7/8 act. Position <input style="width: 50px;" type="text" value="0"/> <span style="border: 1px solid red; padding: 2px;">1</span>
--	--	---	---

- 1 Reference the axis as shown.

## 4.2 Controlling axes in Automatic mode



### 1. Control CrossCutter\_Axis2 in automatic mode

### MOVIKIT Process data monitor

control
monitor

PD start address: 9  
 PD length: 16

Module number 2
Fieldbus state: 2 Communication

**PD In** 4

- 0 - Enable/Emergency stop
- 1 - Enable/Application stop
- 2 - res.
- 3 - Release brake while inhibit
- 4 - Positive
- 5 - Negative
- 6 - Accept new position
- 7 - Start
- 8 - Reset
- 9 - res.
- 10 - Select drive train 2
- 11 - res.
- 12 - Disable SW limit switches
- 13 - Inhibit
- 14 - Standby mode
- 15 - Handshake

**PD2 Velocity** 2

PD2 Velocity 100

PD3 Acceleration 1000

PD4 Deceleration 1000

PD5 Binary outputs 0

PD6 Mode 1400 1

1400 - Application automatic

PD7/8 Position 0

**PD Out**

- 0 - Ready
- 1 - /Safe stop
- 2 - Powered
- 3 - Brake released
- 4 - Motor turning
- 5 - Referenced
- 6 - New position accepted
- 7 - Setpoint reached / In Pos.
- 8 - Error
- 9 - Warning
- 10 - Drive train 2 active
- 11 - In velocity
- 12 - SW limit switches disabled
- 13 - res
- 14 - Standby active
- 15 - Handshake out

PD2 Act. Velocity 1

PD3 Status / Error ID 10 B

Warning  
Trial license active!

PD4 Act. Torque -2

PD5 Binary inputs 1

PD6 act. Mode 1400

1400 - Application automatic

PD7/8 act. Position 9000 A

3 RotaryKnife Parameters

PD9 Application Controlword	PD13 Diameter	10000	PD9 Application Statusword	PD13 reserved	0	
PD10/11 Product Length	PD14 Sync.Angle	100000	Gearing state	PD14 reserved	0	
	PD15 Sync.Corr.	4500	PD11 reserved	2	PD15 reserved	0
PD12 Tools	PD16 reserved	2	PD12 Number of Cuts	0	PD16 reserved	0

1 Set the mode with **PD6 Mode = 1400**.

2 Set the travel parameters.

3 Set the parameters for the RotaryKnife:

- **PD10/11 Product Length = 100000** > nominal cut length in [mm] with 2 decimal places
- **PD12 Tools = 2** > number of tools on the rotating knife
- **PD13 Diameter = 10000** > knife diameter in [mm] with 2 decimal places
- **PD14 Sync.Angle = 4500** > 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.

© SEW-EURODRIVE GmbH & Co KG

Product Training

05.10.2024

## 2. Control MaterialFeed\_Axis1 in velocity mode

SEW EURODRIVE MOVIKIT Process data monitor

control monitor

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

MaterialFeed\_Axis1 MOVIKIT Gearing

PD In	PD2 Velocity	PD3 Acceleration	PD4 Deceleration	PD5 Binary outputs	PD6 Mode	PD7/8 Position	PD Out	PD2 Act. Velocity	PD3 Status / Error ID	PD4 Act. Torque	PD5 Binary inputs	PD6 act. Mode	PD7/8 act. Position
<input checked="" type="checkbox"/> 0 - Enable/Emergency stop	100	1000	1000	0	200	0	<input checked="" type="checkbox"/> 0 - Ready	108	10	6	1	200	80
<input checked="" type="checkbox"/> 1 - Enable/Application stop					200 - Velocity		<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 checked="" 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 checked="" 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 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						

- 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**.



MaterialFeed\_Axis1 is the master axis for automatic mode of the application.

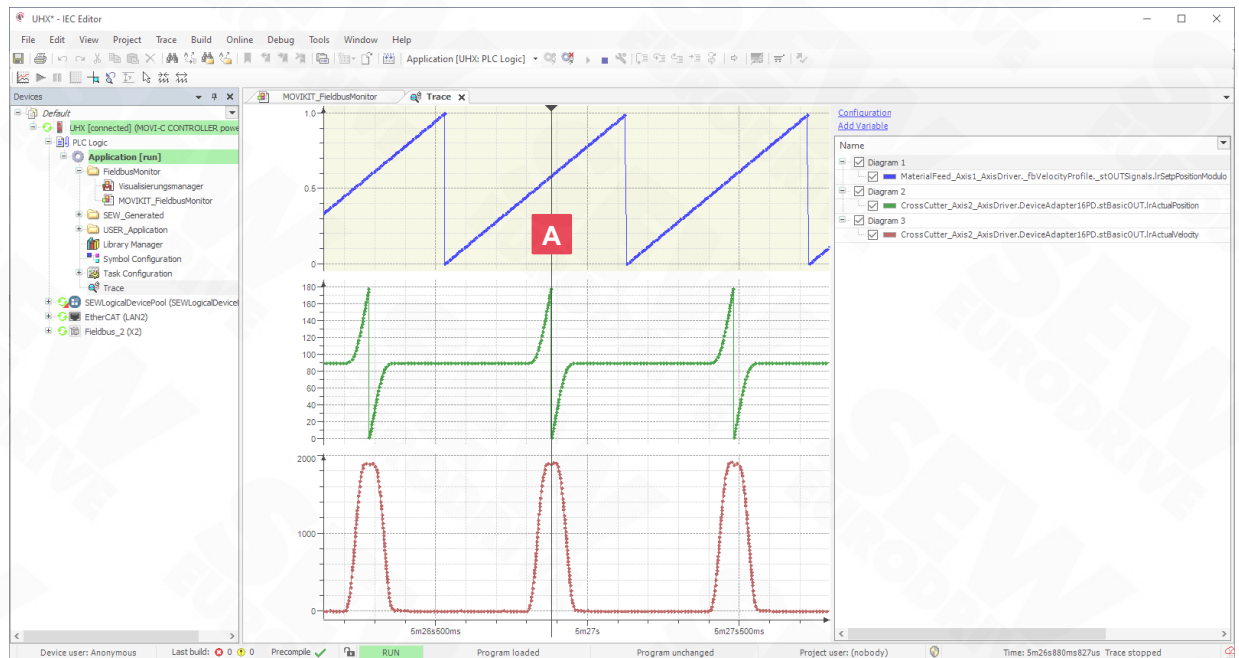
### 4.3 Performing Trace measurement of automatic mode



#### 1. Configure a Trace measurement with the following variables from SEW\_GVL\_Internal:

- MaterialFeed\_Axis1\_AxisDriver\_fbVelocityProfile\_stOUTSignals.IrSetpPositionModulo
- CrossCutter\_Axis2\_AxisDriver.DeviceAdapter16PD.stBasicOUT.IrActualPosition
- CrossCutter\_Axis2\_AxisDriver.DeviceAdapter16PD.stBasicOUT.IrActualVelocity

#### 2. Perform the Trace measurement



**A** The cut starts in the middle of the cycle because the rotary knife was at the position of  $90^\circ$  before the master axis started.



For more information on Trace, refer to **Workbook C105 Basics of IEC Programming / Workbook C103 MOVIKIT® Software Modules MultiMotion Category**.







# Driving the world

Are you already familiar with our online learning opportunities? Scan the QR code or click it to find out more about our learning content..



Version 2.1

**DRIVE**ACADEMY®

SEW-EURODRIVE GmbH & Co. KG  
Ernst-Blickle-Str. 42  
D-76646 Bruchsal  
Tel. +49 (0)7251 75-3911

T\_EN\_C\_140

[www.sew-eurodrive.de](http://www.sew-eurodrive.de)