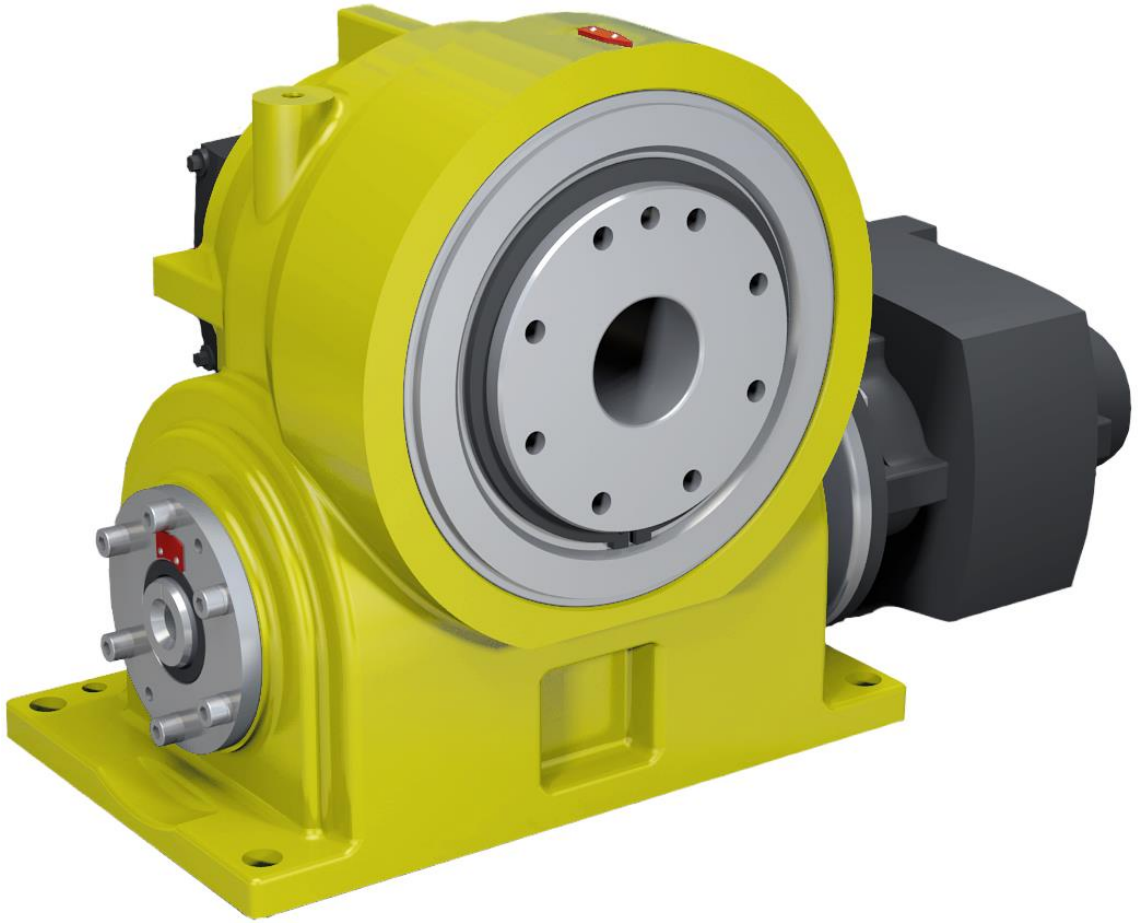
EXPERT
Indexing & Positioning.

EXPERT-TÜNKERS
FLEXIBLE UNDER BODY CLAMPING
EEW 125 WITH DRC-GEARED MOTOR



EEW | APRIL 2024

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Drehen
Rotating

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General features

EXPERT Gear box	EEW125
Drive Motor	DRC-Spiroplanedrivemotor
Turningtime	90°~ 1,6 s 270°~ 3,8 s
Accuracy	+/- 0.025 mm auf R = 140 mm
Fz max.	7500 N
max. allowed tilting moment	3450 Nm
max. allowed static	2700 Nm at a standstill
Tangential torque	
Hollow shaft diameter	55 mm
Number of geometry recordings	2 – 4

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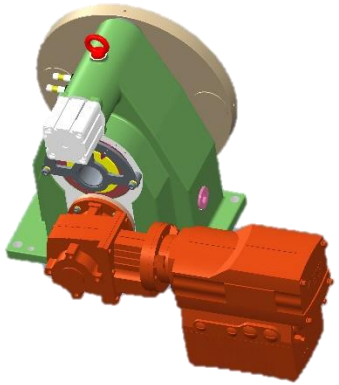
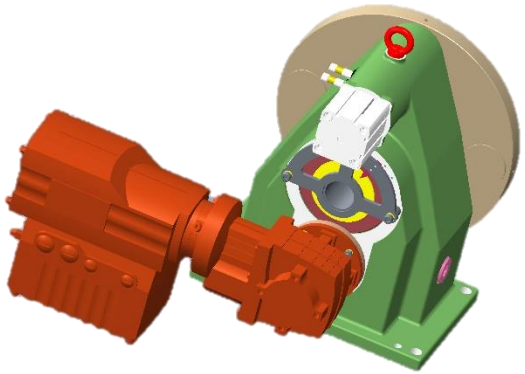
Installation variant

Installation variant Gear motor „terminal box“ can be rotated in 90°steps

Standard



Variant L



Variant R

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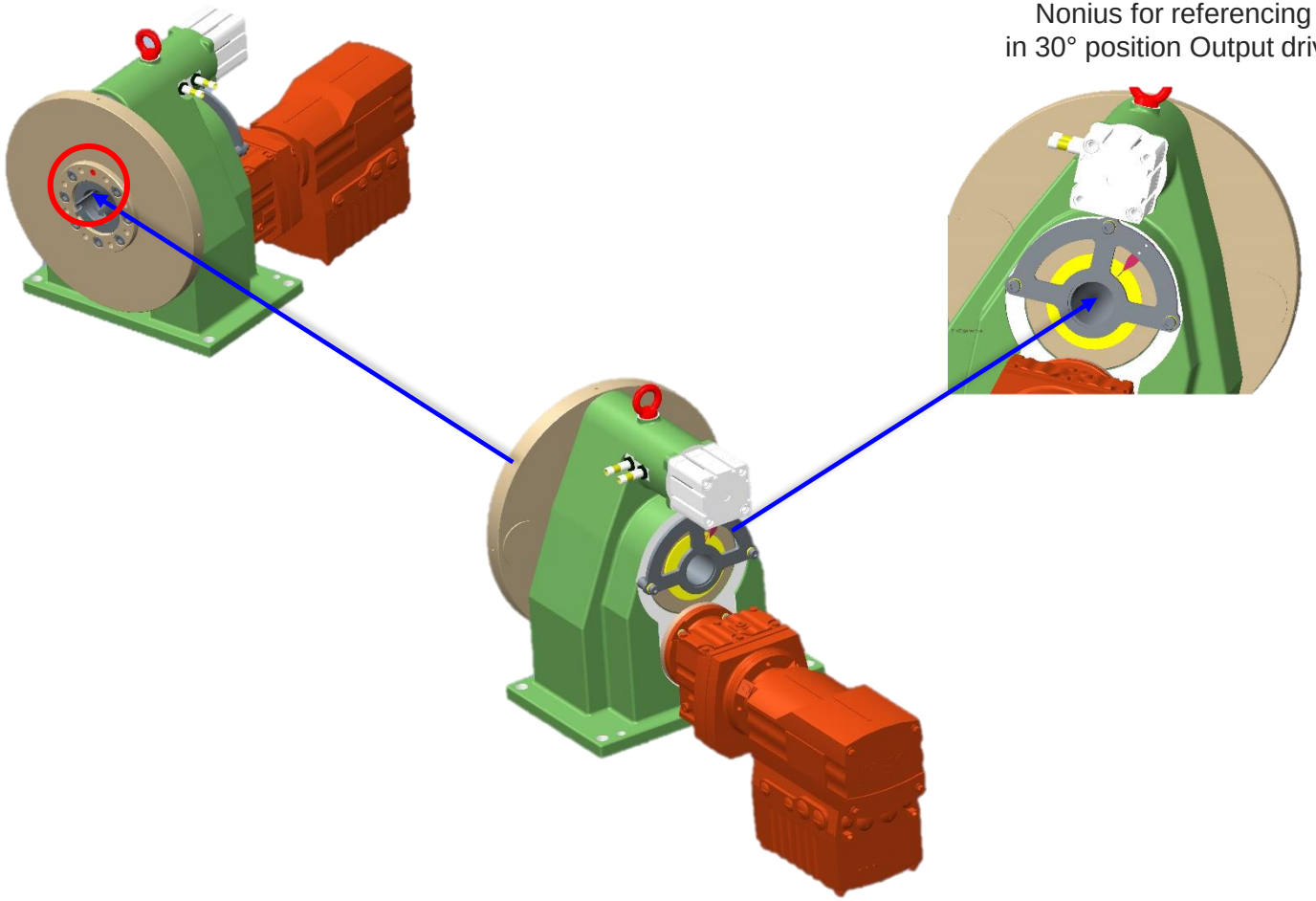
Referencing and position display

Visual zero position indicator for each position,
When pin is in “12 o'clock“

Nonius for referencing
in 30° position Output drive



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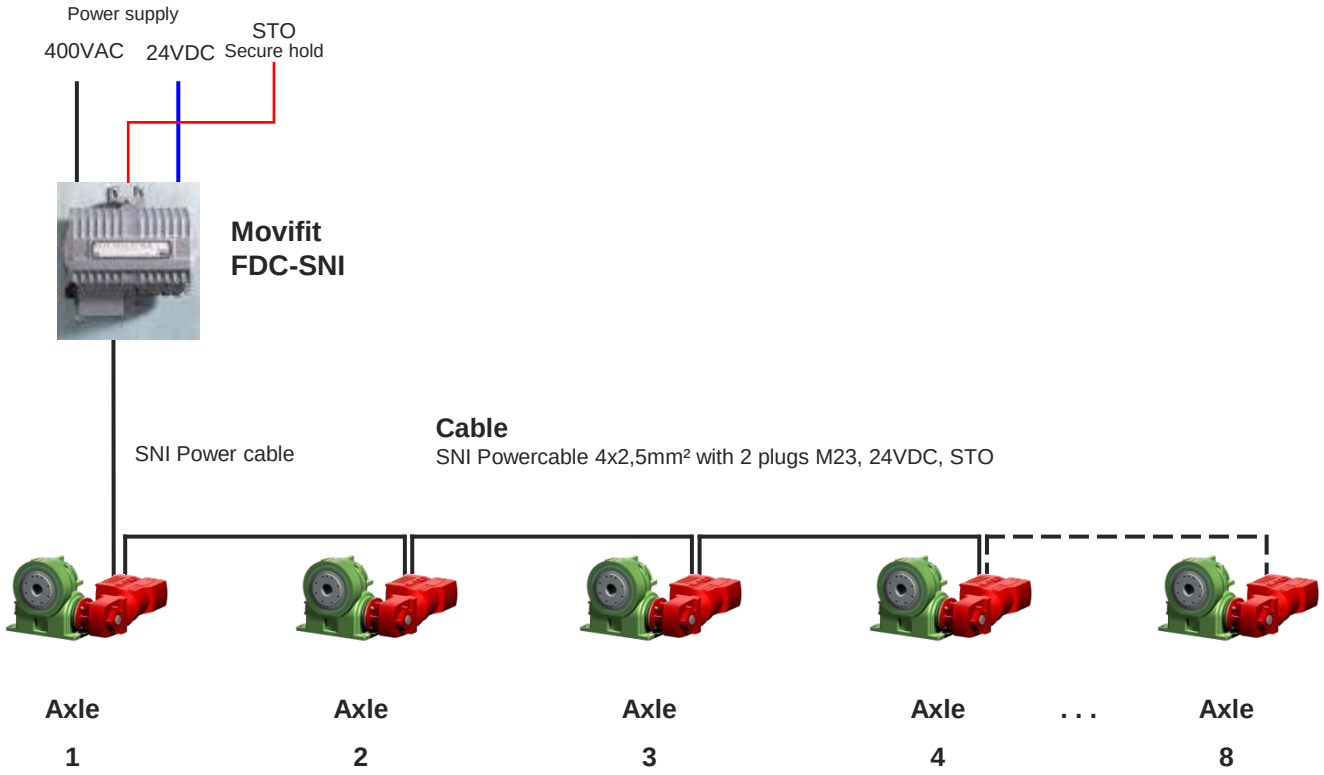
Installation Concept



- All device connections pluggable
- Up to 8 EGV125s can be controlled with one Movifit FDC-SNI
- Only 1 cable required for power, control, STO required
- Installation takes place in a linear structure from one DRC motor to the next
- Up to 100m cable length possible between Movifit and the last DRC motor

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Antriebskomponenten

MTC11A000-503-R9600-00/MTA11A-503-S843-M16-00

Movifit-FDC complete

HybridPLUS-ABOX with Round plug M23 Power + 24V-auxiliary signal (STO-compatible)

Installation bus SNI, 8x M12 für I/Os

Maintenance switch und Line protection 15A

Feldbus Profinet / Ethernet , M12 Plug

M12-Plug, 24VDC-input auxiliary signal (STO-compatible)

Output Stream 15A

WHF47 DRC1-005-SNI-A-ACR/BY1C/IV/BW1

DRC-SNI spiroplane drive motor

Power 0,55kW, 2,65 Nm

Motor rotation speed 2000 1/min

Gear ratio 25,62

Absolute encoder ACR

IN/OUT plug connector 2xM23 Power+ 24V-auxiliary signal (STO-compatible)

DRC/MOVIGEAR SNIDSC Hybridcable (4x2,5+(2x0,75)+(2x0,24))mm²

DRC/Movigear SNI/DSC Hybridcable (4x2,5+(2x0,75)+/2x0,24))mm²

Power + Communication + 24V-auxiliary signal (STO-compatible)

2xM23 round plug 12 pol., schielded, draggable, pre-assembled

Length 7,0m

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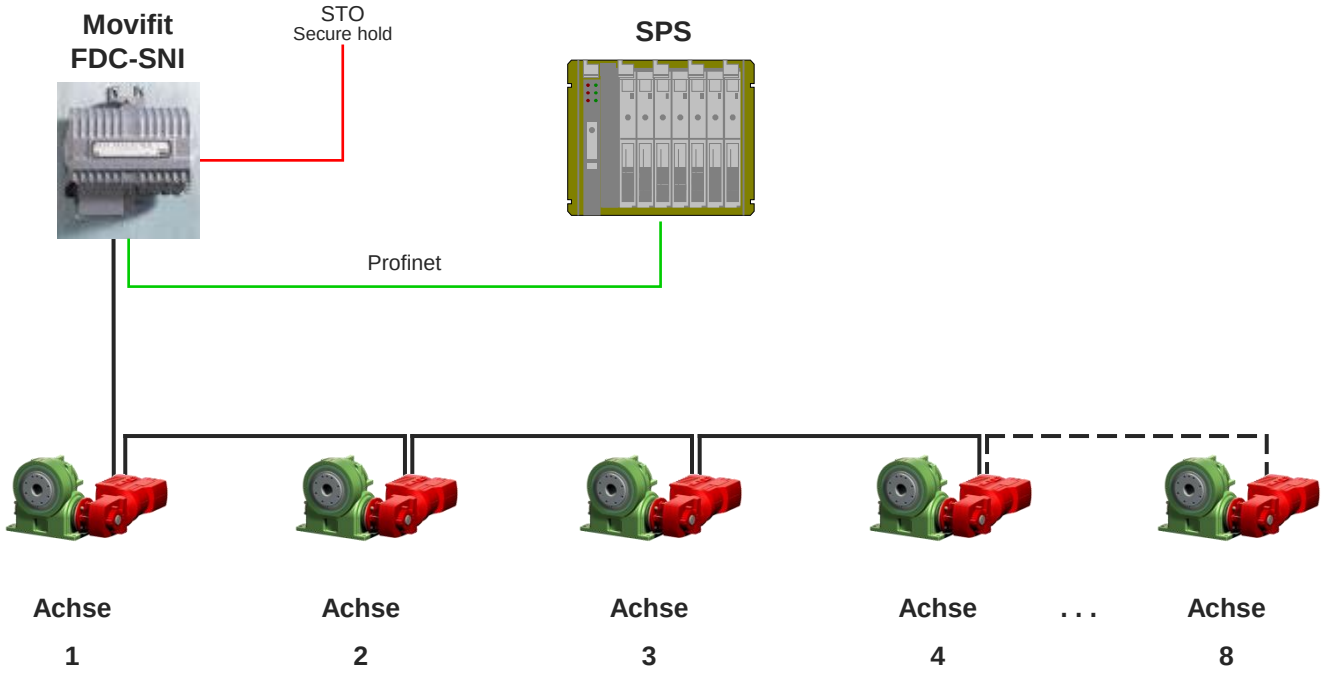
Control Concept



The SPS controls each motor individually by means of binary setpoint specification via Profinet. The process data is identical to the VW standard application AMA0801. Up to 8 drives on one Movifit FDC-SNI are possible.

Integrated safety function STO (Safe Torque Off according to EN 61800-5-2) SIL 3 according to EN 61800-5-2:2007, PL e in accordance with EN ISO 13849-1:2008 by switching off the STO input. Drives can be switched off individually or in groups. The drive can be switched off from the safety controller using SS1(c) (safe stop 1, function variant c in accordance with EN 61800-5-2) by time delayed switch-off via braking ramp.

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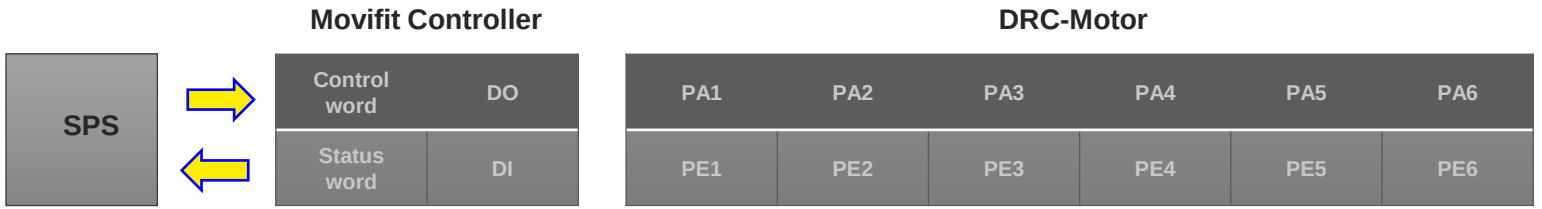
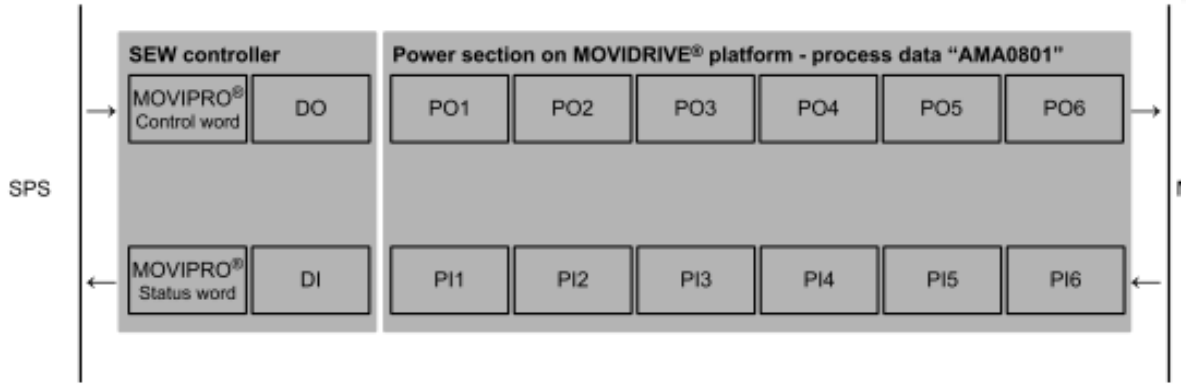
„USER-Applikation“ with binary setpoint specification



In the Movifit FDC, a USER application module controls the data exchange with the SPS and the control of the motors.

The interface to the SPS is identical to the standard application AMA0801. The same standard blocks can therefore be used in the SPS. Like the Movipro, the application requires 2 words for controller status/control and DI/DO as well as 6 PD words per axis



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„USER-Applikation“ Process data assignment

4.5.4 "Binary setpoint" operating mode

Process output data (6 PD) The following table describes the process output data from the PLC to the inverter for control via fieldbus with 6 process data words.

Word		Bit	Function	
PO1	Control word	0	Controller inhibit/enable	0 = Enabled 1 = Controller inhibit
		1	Enable / rapid stop	0 = Rapid stop 1 = Enabled
		2	Enable / stop	0 = Stop 1 = Enabled
		3	Reserved	
		4	Ramp scaling	FALSE: 10 ms/digit TRUE: 100 ms/digit
		5	Reserved	
		6	Reset	
		7	Fast speed / slow speed	FALSE: Slow speed TRUE: Fast speed
		8	Start	
		9	Jog positive	
		10	Jog negative	
		11	Mode 2^0	000 = jog mode 001 = referencing mode 010 = positioning mode with smooth component transfer 011 = synchronous mode 100 = reserved 101 = teach mode 110 = positioning mode with smooth component transfer in positive direction 111 = positioning mode with smooth component transfer in negative direction
		12	Mode 2^1	
		13	Mode 2^2	
		14	Synchronous offset	
		15	software limit switch off	0 = SWLS activated 1 = SWLS deactivated
PO2	Single bit positions	0 – 15	Target position (table position 01 - 15) Smooth component transfer (table position 16)	
PO3	Position offset (high word)	0 – 15	[User unit]	
PO4	Position offset (low word)	0 – 15	[User unit]	
PO5	Reserved	0 – 7	Reserved	
PO6	Synchronous offset	0 – 15	[User unit]	

Process input data (6 PD) The following table describes the process input data input data from the inverter to the PLC for control via fieldbus with 6 process data words.

Word		Bit	Function
PI1	Status word	0	Drive synchronous[1] / Drive rotates
		1	Frequency inverter ready for operation
		2	IPOS referenced (= drive referenced)
		3	in position (target position reached)[2]
		4	Brake released
		5	Inverter error/warning
		6	Limit switch right
		7	Limit switch left
		8 – 15	Code for status/warning/error of the FI[3]
PI2	Actual position (high word)	0 – 15	[User unit]
PI3	Actual position (low word)	0 – 15	[User unit]
PI4	Single bit position	0 – 15	Actual position (table position 01 - 15)[4] Smooth component transfer (table position 16)
PI5	Single bit cams	0 – 15	Cam position 01 – 15
PI6	Actual current	0 – 15	Actual current [% I_N]

Binary setpoint presetting“ is permanently set as the operating mode. The PA and PE assignment corresponds to AMA0801.

In control mode PA1, the jog mode, referencing mode and positioning mode can be activated. WBÜ synchronous and teach mode cannot be activated. In PA1 the bits for ramp scaling and synchronous offset have no function, all other bits have the functionality corresponding to AMA0801. The position is selected via the binary single bit selection in PA2, PA3 –PA6 have no function.

The 6 PE words correspond to AMA0801, PE5 (single bit cam) is not active

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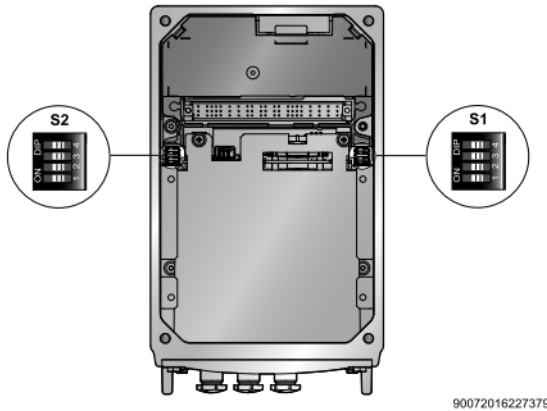
Commissioning DRC-Motor

The following figure shows the DIP switches S1 and S2:



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DIP switch S1

The following table shows the functions of DIP switch S1:

DIP switch	S1			
	1	2	3	4
	Binary coding SNI unit address			
	Bit 2^0	Bit 2^1	Bit 2^2	Bit 2^3
ON	1	1	1	1
OFF	0	0	0	0

DIP switch S2

The following table shows the functions of DIP switch S2:

DIP switch	S2			
	1	2	3	4
	Binary coding operating mode		Use of the motion control inputs	Reserved
	Bit 2^0	Bit 2^1		
ON	1	1	Local mode	res.
OFF	0	0	Sensors	res.

DIP-Switch S1
Set the SNI address of the DRC motor.

Setting the SNI address

These DIP switches are used to set the SNI addresses of DRC drive units. You can set addresses from 0 to 9. Other settings are not permitted.

SNI address	0	1	2	3	4	5	6	7	8	9
S1/1	–	X	–	X	–	X	–	X	–	X
S1/2	–	–	X	X	–	–	X	X	–	–
S1/3	–	–	–	–	X	X	X	X	–	–
S1/4	–	–	–	–	–	–	–	–	X	X

X = ON
– = OFF

DIP-Switch S2
Die DIP-Switches S2/1 and S2/2 to “ON“
Set the VARIABLE operating mode.

Setting the operating mode

This DIP switch is used to set the operating mode of the DRC drive unit. It determines how the unit is controlled.

When using MOVIFIT® SNI, the operating mode must be set to "SNI-SEWOS", when using MOVIFIT® FDC SNI, it must be set to "VARIABLE".

Mode	MOVIFIT® SNI (SNI-SEWOS)	Reserved	Reserved	MOVIFIT® FDC (VARIABLE)
S2/1	–	X	–	X
S2/2	–	–	X	X

X = ON
– = OFF

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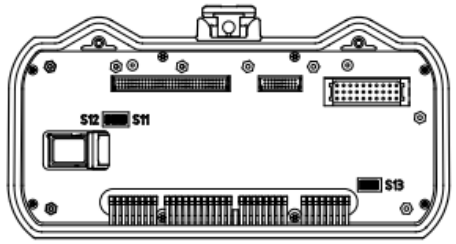
Commissioning Movifit-FDC SNI

X: Detailed view of the EBOX from bottom



DIP-Switch S11 .

Die DIP-Schalter S11/1 – S11/8 der EBOX werden werkseitig eingestellt.

Die Einstellung der DIP-Schalter S11/1 – S11/8 dürfen Sie **nicht ändern**!

DIP-Switch S12
Set the DIP switches S12/1 and S12/2 to “ON“:

The following table shows the functions of DIP switch S12:

DIP switch	**S12**	
	1	**2**
	IP address allocation	**Ethernet protocol**
ON	DHCP / Saved IP parameters	PROFINET IO
OFF	Default values	EtherNet/IP or Modbus/TCP

DIP-Switch S13 .

Die DIP-Schalter S13/1 – S13/8 der EBOX werden werkseitig eingestellt.

Die Einstellung der DIP-Schalter S13/1 – S13/8 dürfen Sie **nicht ändern**!

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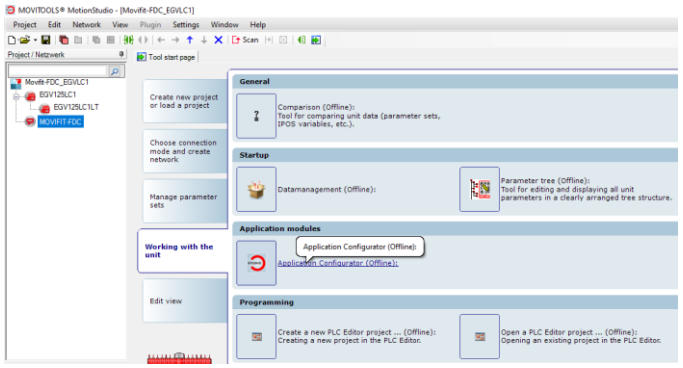
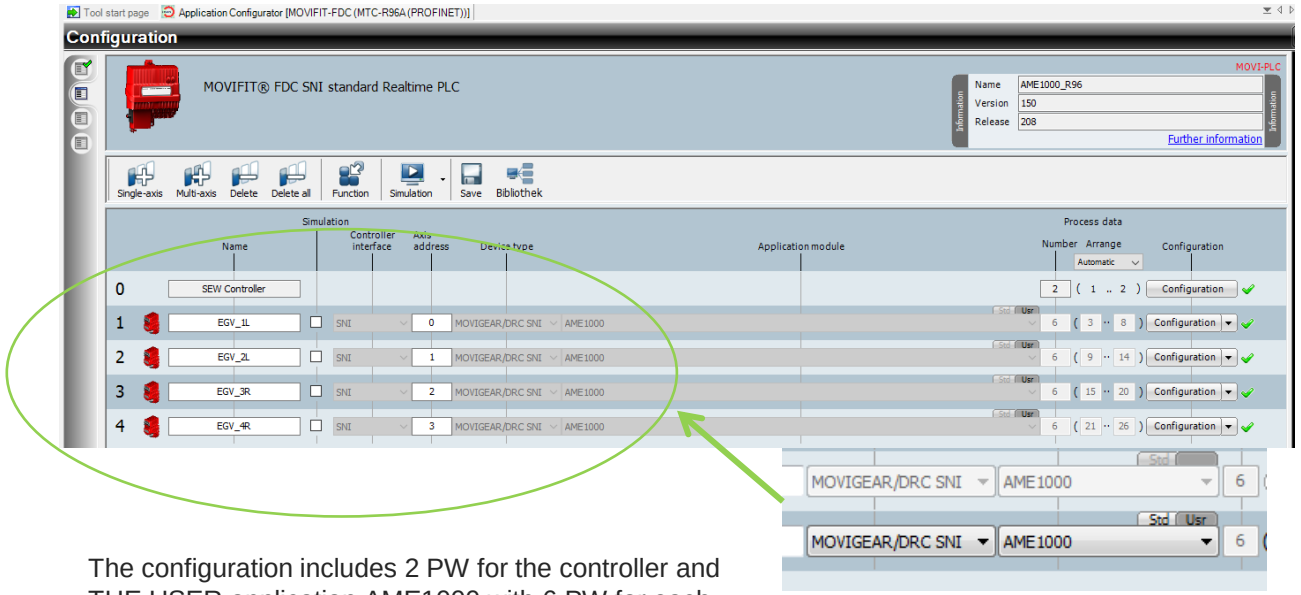
Commissioning SEW-Motionstudio



The drive system is commissioned using the Application Configurator from the Movifit FDC



The configuration includes 2 PW for the controller and THE USER application AME1000 with 6 PW for each connected motor

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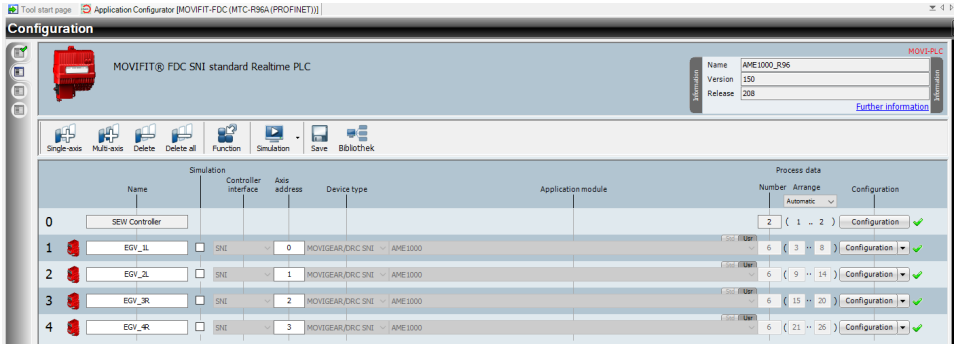
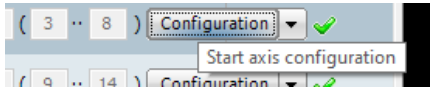
Commissioning SEW-Motionstudio



The DRC motor is commissioned via the axle configuration axis configuration.



The settings in the axle configuration are made according to EXPERT specifications.

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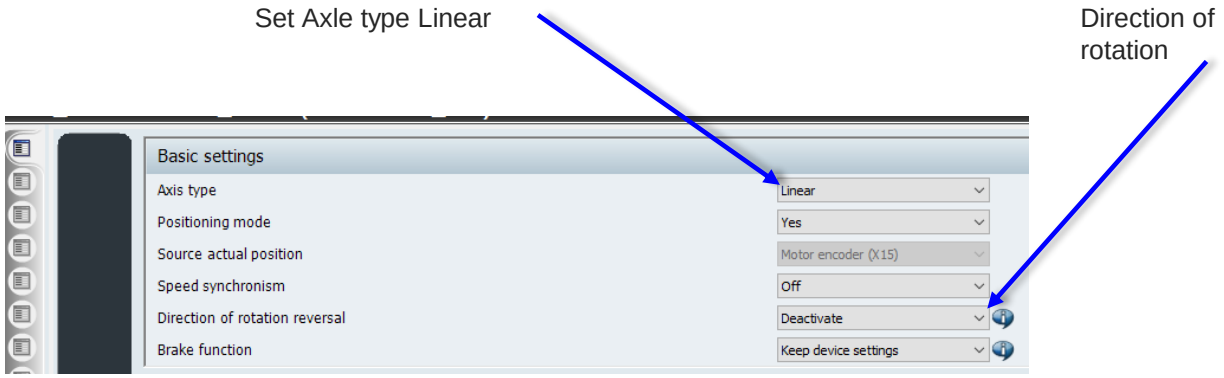
Commissioning SEW-Motionstudio



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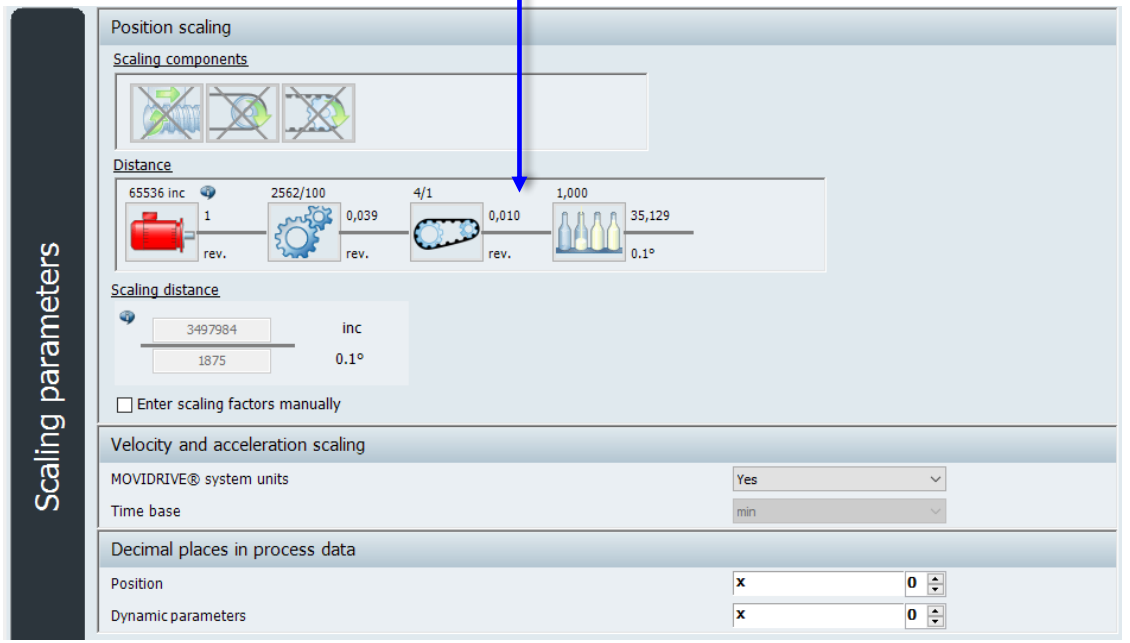
Enter gearbox data



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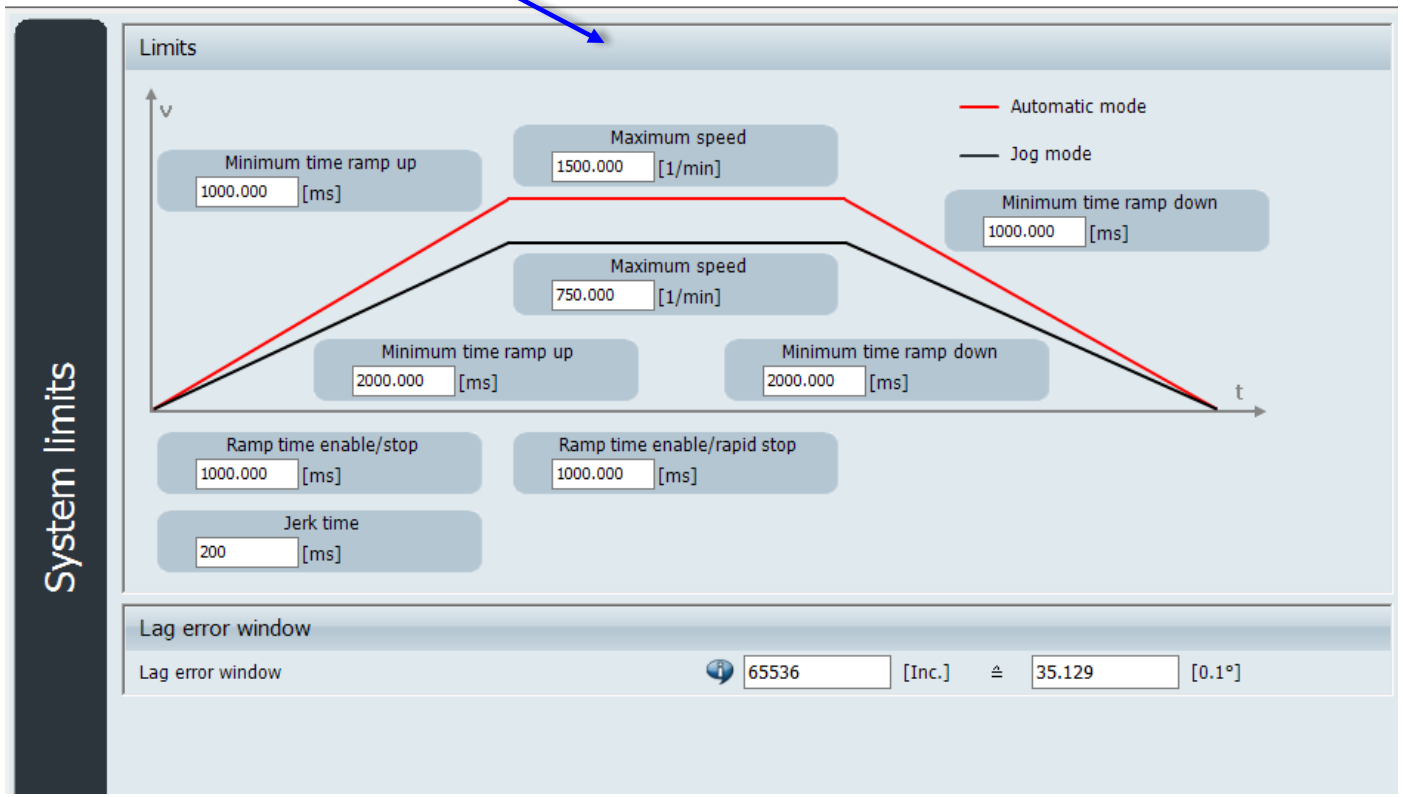
Define limitations



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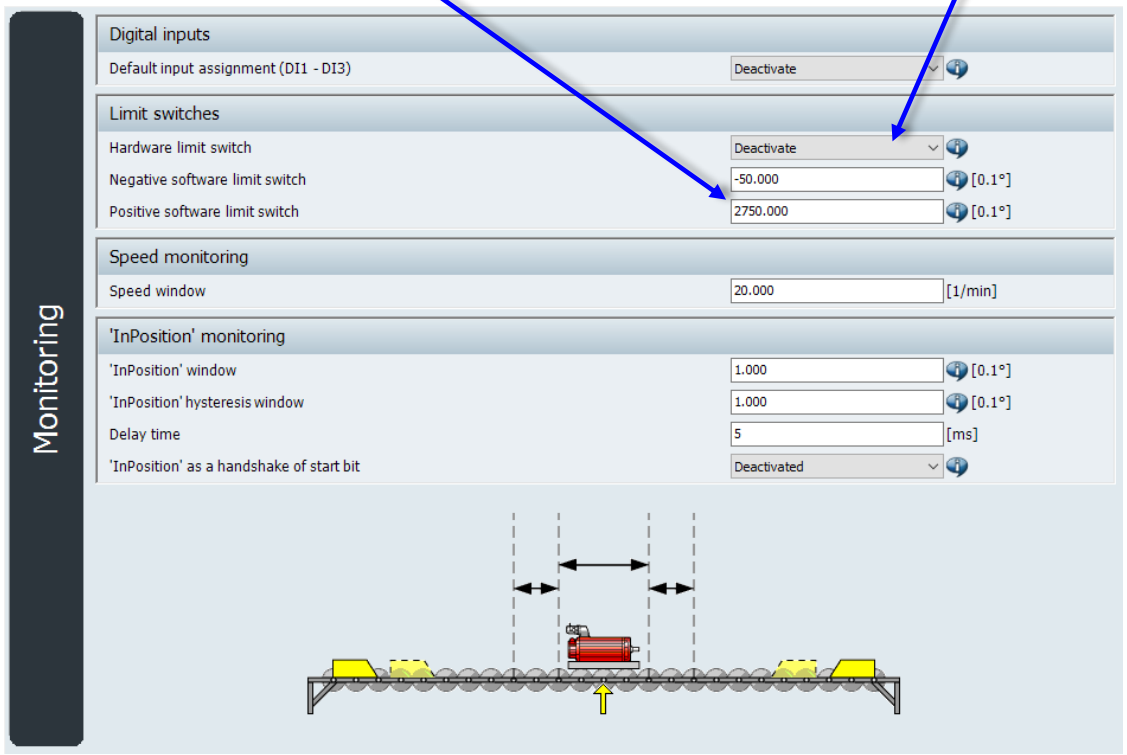
The travel range limitation by software limit switches left/right is individually possible

The hardware limit switches can additionally activated or deactivated.



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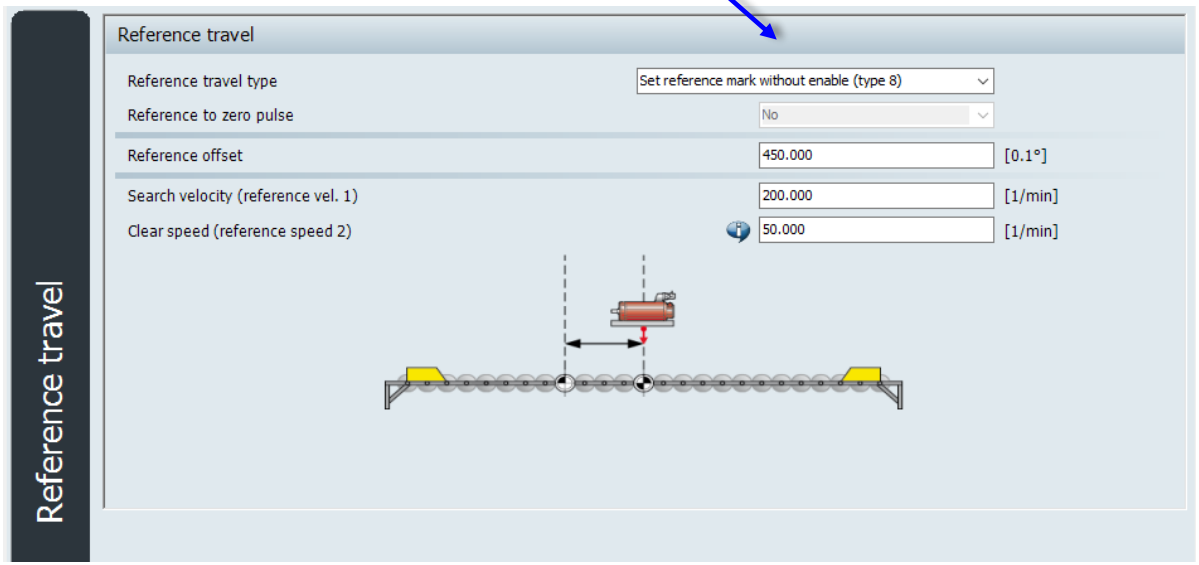
Homing type 8
Offset set to 45°



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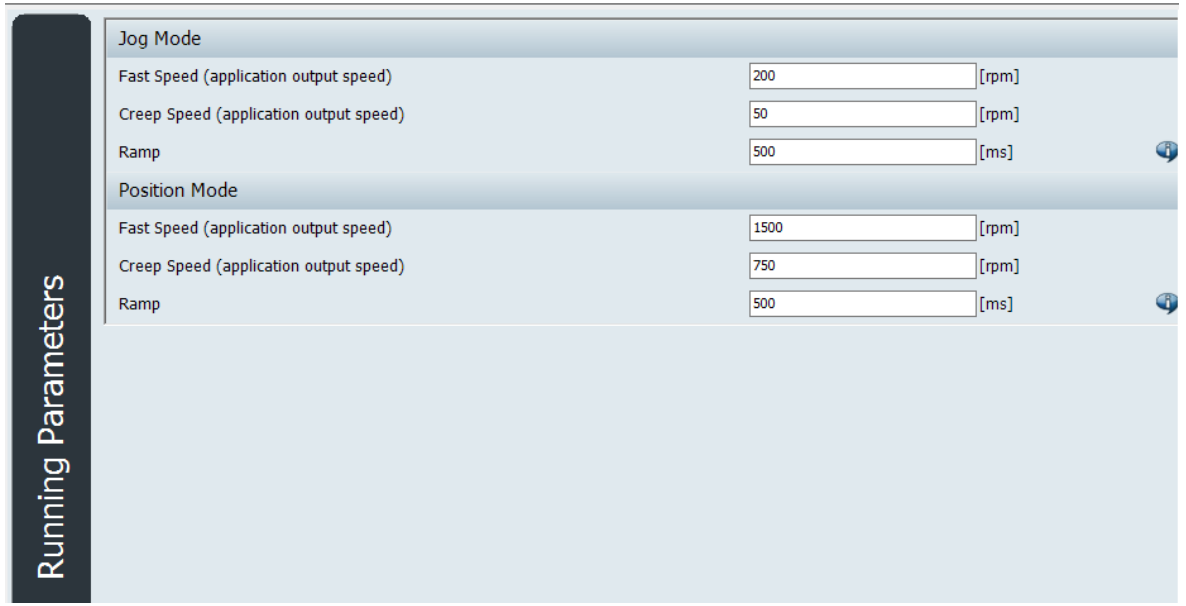
Set travel parameters



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Set binary positions

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