SEW EURODRIVE

Perfect control for every application: **Controlling movements with MOVIDRIVE® and IPOS$^{plus®}$**

Application modules + technology functions

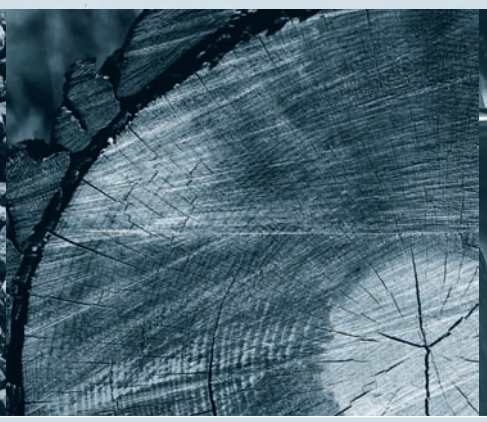
MOVIDRIVE® gives you the flexibility to meet any challenge

Manufacturers of machine and system solutions using MOVIDRIVE® drive inverters benefit from an intelligent drive inverter that meets the most exacting requirements in terms of both dynamics and control quality. In either asynchronous AC drives or synchronous servo drives – the MOVIDRIVE® drive inverters control all types of drive systems.

Furthermore, the intelligent IPOS$^{plus®}$ positioning and sequence control system is integrated as standard in MOVIDRIVE®. For all applications, IPOS$^{plus®}$ makes no compromises when it comes to precision because it uses the exact and highly-dynamic control properties of the drive inverter. The user can set the programming to either windows programming or high language. It is also possible to use the preconfigured control programs, the application modules. Thanks to the direct access to all the internal inverter parameters, IPOS$^{plus®}$ is fast and flexible. This allows for diverse movement controls, which can be tailored to meet the individual requirements of the system. The variety of options available in MOVIDRIVE® means that the system can be extended at any time in accordance with the modular concept.

The large
MOVIDRIVE® family

Driving the world – with innovative drive solutions for all branches of industry and for every application. Products and systems from SEW-EURODRIVE for any application – worldwide. SEW-EURODRIVE products are found in a variety of industries, such as automotive, building materials, food and beverage as well as metal-processing. The decision to use drive technology "made by SEW-EURODRIVE" stands for safety regarding functionality and investment.



Whether you use the standard or technology version: MOVIDRIVE® will always help you find the perfect solution

Manufacturers of machine and system solutions using MOVIDRIVE® drive inverters lay the foundation for flexible and efficient operation. The standard equipment and options ensure that MOVIDRIVE® units can be operated worldwide for many years to come.

MOVIDRIVE® units offer a power range from 0.55 to 160 kW. This allows for diverse motion control tailored to the specific requirements of the systems. MOVIDRIVE® drive inverters are available as standard and application versions. The IPOS$^{plus®}$ positioning and sequence control system is integrated in both versions. Independent control programs can be generated in assembler or high-level language using IPOS$^{plus®}$.

The MOVIDRIVE® application version offers additional functions:
The technology functions
– electronic cam disk and
– internal synchronous operation
or access to preprogrammed control programs, the so-called application modules. The technology functions enable MOVIDRIVE® to take over the function of a position controller, flying saw or other application solution. At the same time, it offers quick parameter setting rather than time-consuming programming. Simply enter the mechanical data and load the program into the drive inverter. Ready for operation!
And for optimum operating and visualization provides the five operator panels of the DOP (Drive Operator Panel) series.

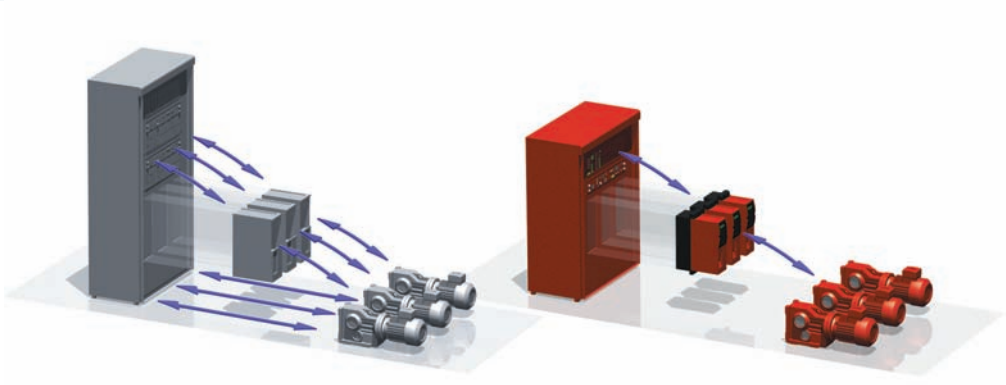
Perfect communication: MOVIDRIVE® drive inverter with optional keypad and gearmotors from SEW-EURODRIVE

IPOS$^{plus®}$, the proven integrated positioning and sequence control system

MOVIDRIVE® with IPOS$^{plus®}$ units are universally approved for all applications with the interfaces available for all commercial fieldbus systems.

MOVIDRIVE® units with IPOS$^{plus®}$ control positioning and sequencing processes independently without requiring additional components. The MOVITOOLS® MotionStudio operating software and a comprehensive reporting system for diagnostic purposes monitor all operating states and makes it possible to remedy any errors that occur.

IPOS$^{plus®}$ is very precise even at high speeds, since it uses the exact and highly-dynamic control properties of the MOVIDRIVE® units.



While the setup of conventional solutions requires a lot of effort, the MOVIDRIVE® units with IPOS$^{plus®}$ have a flexible solution installed as standard.

IPOS$^{plus®}$, the positioning and sequence control system integrated as standard, ensures that all tasks are solved flexibly.

Save time and money with the application modules and technology functions

Alongside the purely technical aspects, user friendliness is becoming an increasingly important aspect in the development of our units. SEW-EURODRIVE provides the MOVIDRIVE® units in a technology version so that users can make more effective use of the devices' comprehensive functionality. This ensures that, in addition to the standard IPOS$^{plus®}$ positioning and sequence control system, you also have access to the application modules and technology functions. This additional intelligence makes startup on-site more straightforward and ensures that demanding applications can be realized simply and easily.

Application modules

Setting parameters instead of programming – making it quick and easy to solve complex drive tasks!

The ready-made application modules in the technology version make it easy to solve many tasks by simply setting parameters without having any special programming training. Since the functionality has been tested and documented, it can be loaded into the inverter and operated by simply pressing a button.

A comprehensive package of coordinated functions, easy-to-use input screens and finely-tuned user guidance make startup child's play: All the important machine data is easily accessible. There are almost no sources for errors, since only those parameters required for the application have to be entered. All relevant data, for example, terminal states or position values, can be observed using a diagnostics tool during the ongoing operating process for a simple service.

Technology functions

Currently two programmed functions are available:
- Electronic cam disc CAM
- Internal synchronous operation I-SYNC

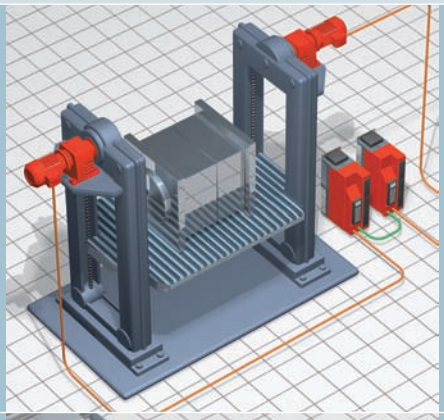
Engineers at SEW-EURODRIVE have optimized these technology functions so that the user can, to a certain extent, use basic programming knowledge to program and startup demanding applications independently.

The intelligent application modules in the technology version offer you a new level of functionality for controlling and starting systems.

MOVIDRIVE® and the technology version:

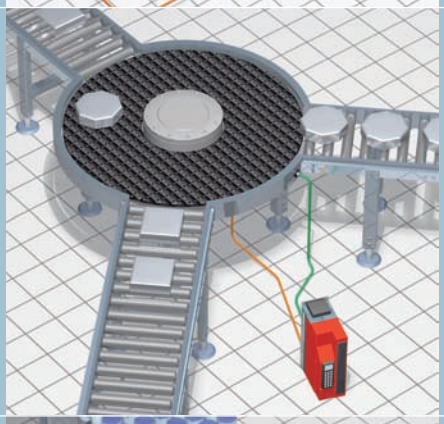
Tasks, for which you would have previously needed days, can now be completed in minutes

Synchronous operation DriveSync Page 16

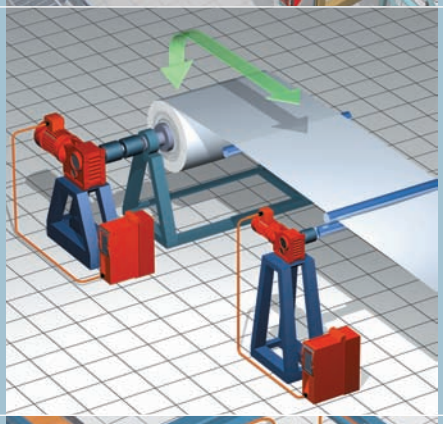


Positioning Page 8

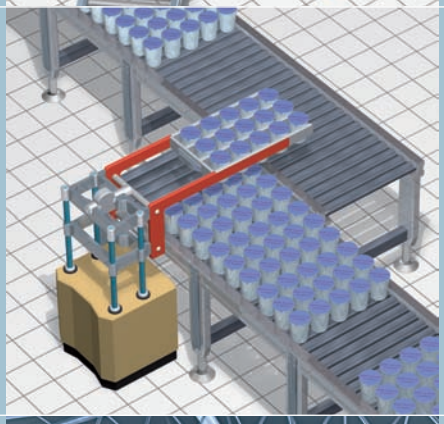
Rotational positioning Page 18



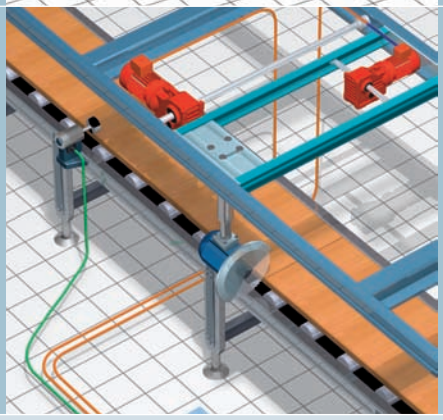
Winding Page 12



Electronic cam disc CAM Page 20



Flying saw Page 14



Internal synchronous operation I-SYNC Page 22

Drive application: Positioning

Positioning is one of the most common conveyor and logistic applications, as used, for example, in storage and retrieval units for high-bay warehouses. This application typically involves three different movements: Horizontal travel, lifting and horizontal loading and unloading. Depending on the number of target positions, the movement records are either managed in the drive inverter or in the machine controller (PLC).

If an application includes up to 32 different target positions, the MOVIDRIVE® technology version performs this task using the "Table positioning" application module. If the number of positions varies, the "Positioning via bus" application module can be used. In this case, the target position, speed and ramp can be adjusted according to the requirements.

Solving tasks using the MOVIDRIVE® technology version

Setting parameters instead of programming:
You can choose from:
- Table positioning
- Positioning via bus
- Extended positioning via bus
- Sensor based positioning

These application modules are included in the technology version of the MOVIDRIVE® operating software MOVITOOLS® MotionStudio. A user-friendly user interface guides you through the process of setting the parameters. All you have to do is enter the parameters you need for your application, for example, ratios, travel speeds, driving diameter and target positions. The application module uses this information to create the control program and then loads it into the inverter. Ready!

Application fields:
- Materials handling technology:
  Trolley, hoist and rail vehicles
- Logistics:
  Storage and retrieval units for high-bay warehouses and transverse carriages
- Palletizing / handling:
  Multi-axis handling robots and gantries

Block warehouse

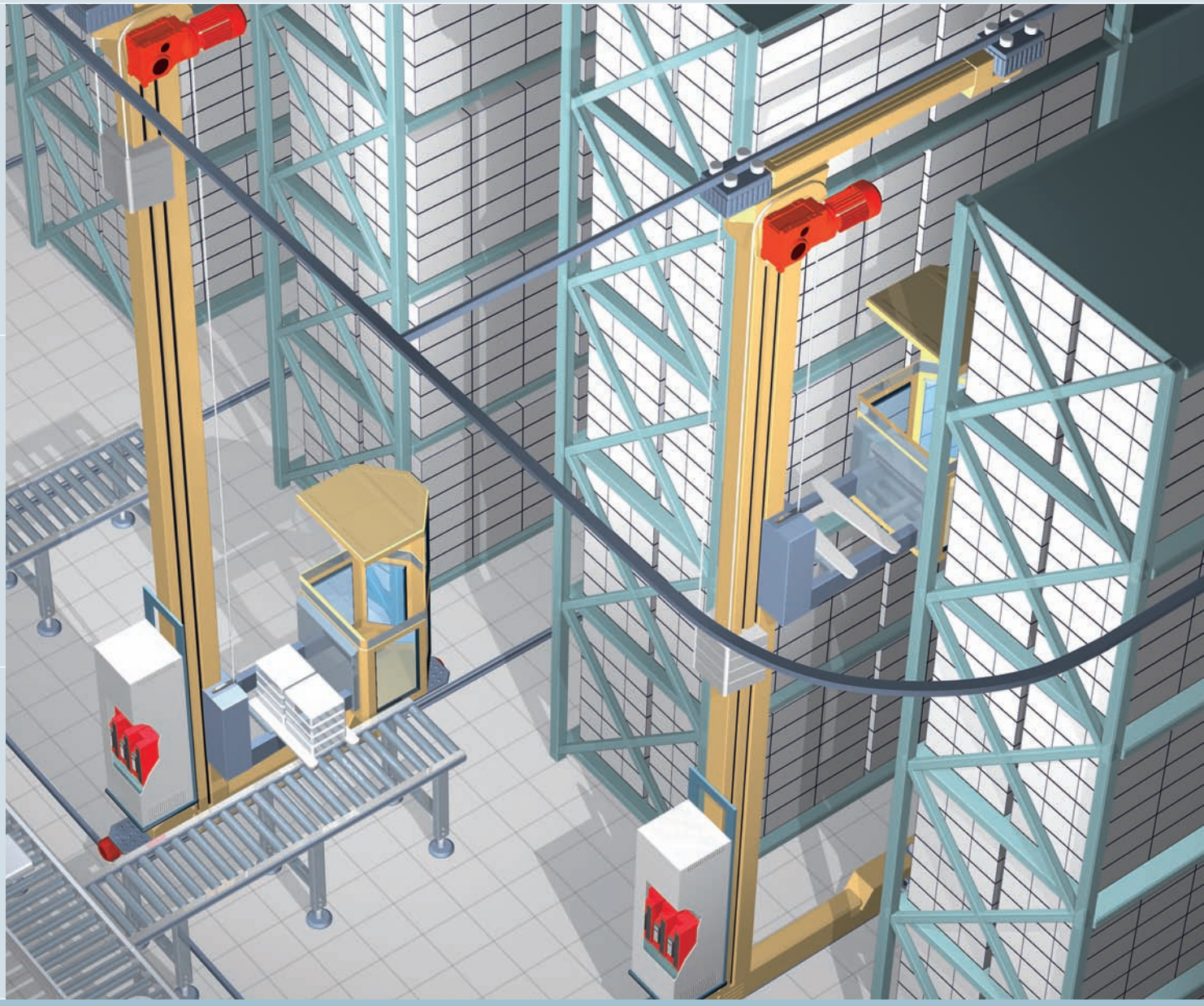
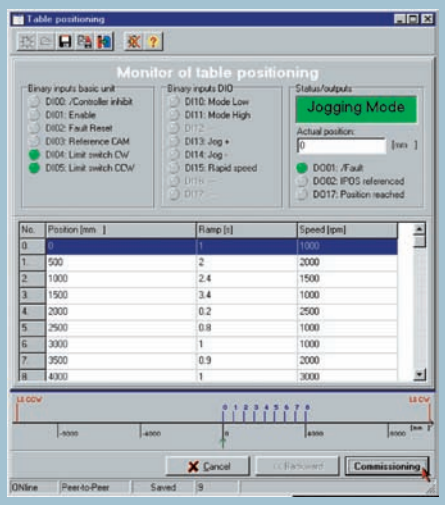


Table positioning

Wide range of functions
- Choice of fieldbus or terminal control
- 32 table positions in inverter
- Choice of travel speed for positioning



The functionality is realized with different operating modes:

Jog mode
The drive is moved CCW or CW using two input signals.

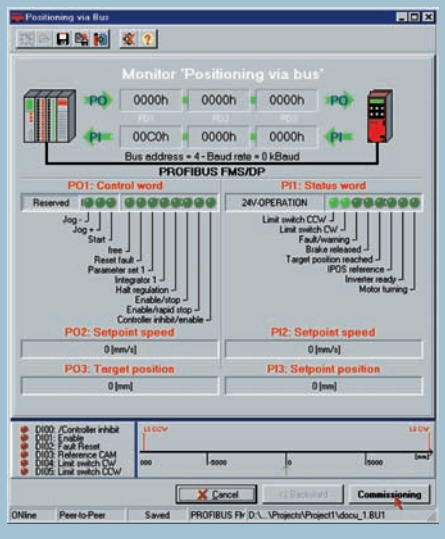
Teach mode
Movement can be performed to every single position in jog mode and then stored in teach mode.

Referencing mode
Reference travel establishes the reference point (machine zero) for absolute positioning operations. Reference travel is started with a start command via an input signal. Reference travel can also be performed when using an absolute encoder.

Automatic mode
The target position is selected using five input signals (binary coded). The selected target position is transmitted back before the movement starts. Once the selected position has been reached, a confirmation message is output.

Positioning via bus

Wide range of functions
- Variable, unrestricted number of target positions
- Choice of travel speed for positioning travel
- Maximum travel distance ± 32,7 m (in unit mm)



The functionality is realized with different operating modes:

Jog mode
The drive is moved from CW or CCW using two input signals from the control word. The speed is specified as the set speed.

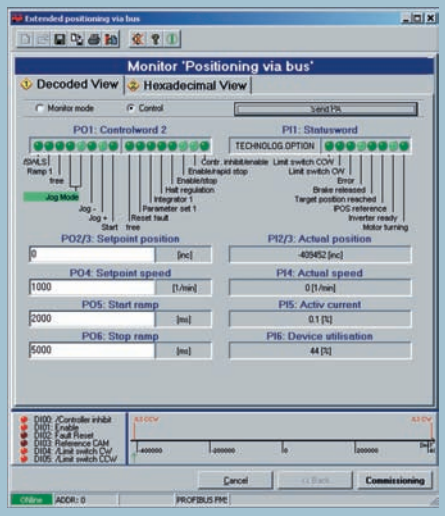
Referencing mode
Reference travel establishes the reference point (machine zero) for absolute positioning operations. Reference travel is started with a start command via an input signal. Reference travel can also be performed when using an absolute encoder.

Automatic mode
Positioning is started with an input signal from the control word. The controller specifies the set speed and set position. The inverter continuously reports the actual speed and position back to the controller during travel.

Extended positioning via bus

Wide range of functions

– Variable, unrestricted number of target positions
– Free choice of travel speed for positioning travel as well as acceleration and deceleration ramp
– 4 process data items instead of 6 can be used for operation (in this case, the ramp form cannot be specified)
– Maximum travel distance ± 262.1 m (in unit mm)



The functionality is realized with different operating modes:

Jog mode
The drive is moved CW or CCW using two input signals.

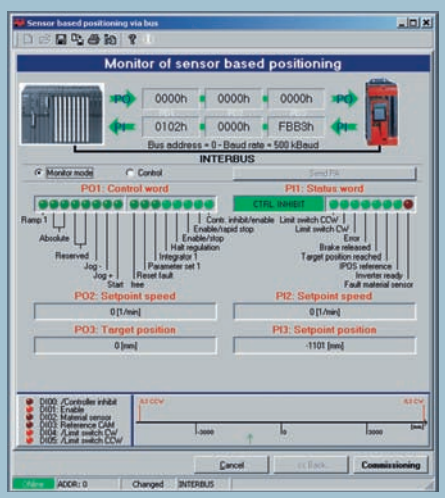
Referencing mode
Reference travel establishes the reference point (machine zero) for absolute positioning operations. Reference travel is started with a start command via an input signal. Reference travel can also be performed when using an absolute encoder.

Automatic mode
The target position is selected using five input signals (binary coded). The selected target position is transmitted back before the movement starts. Once the selected position has been reached, a confirmation message is output.

Sensor based positioning

Wide range of functions

– Variable, unrestricted number of target positions
– Free choice of travel speed for positioning travel (changes can be made during travel for linear positioning ramps)
– Maximum travel distance ± 32,7 m (in unit mm)



The functionality is realized with different operating modes:

Jog mode
The drive is moved from CW or CCW using two input signals from the control word.

Referencing mode
Reference travel establishes the reference point (machine zero) for absolute positioning operations. Reference travel is started with a start command via an input signal. Reference travel can also be performed when using an absolute encoder.

Automatic mode
– Absolute positioning: Target position has an absolute reference point to reference position.
– Relative positioning: Before the travel starts, the current actual position is stored as the reference position. Once the start input has been set, the specified target position is added to the reference position as the cycle distance.
– Position remaining distance **CW** according to the detection of the touch probe signal or
– Position remaining distance **CCW** according to the detection of the touch probe signal.

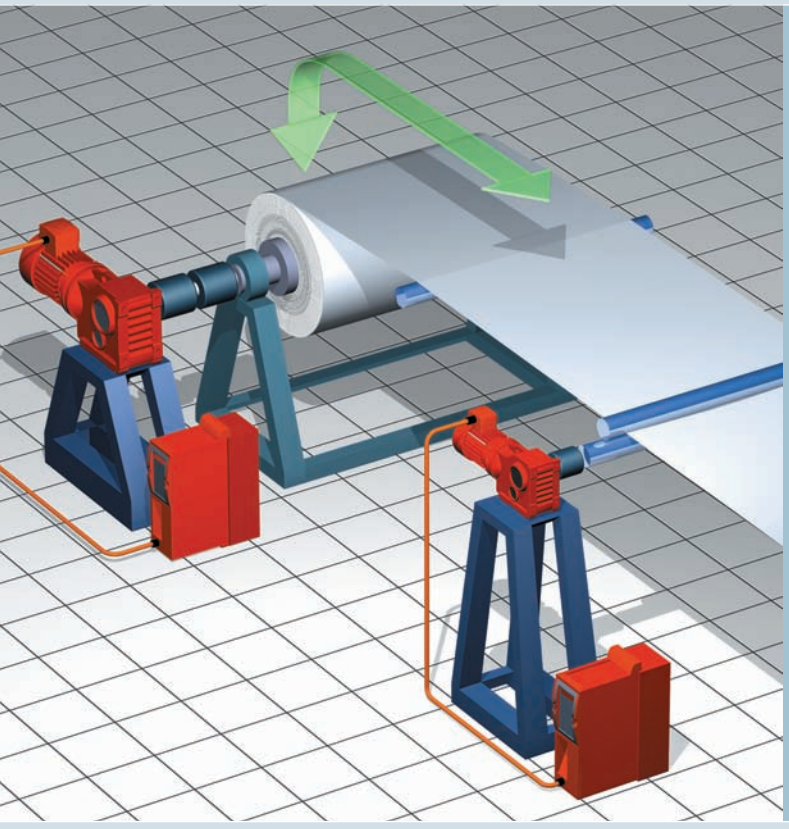
At startup, a relative target position that refers to the current actual position is specified. In addition, the digital input is monitored and when there is a positive change in the signal level, the position specified via the fieldbus is added to the position of the touch probe event as the offset value.

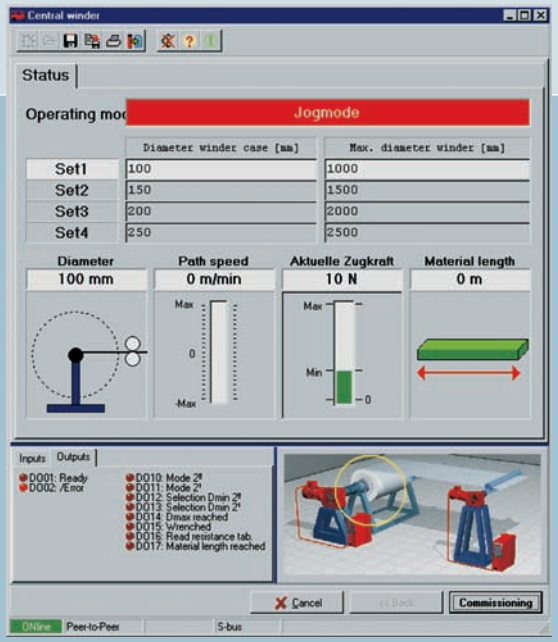
Drive application: Winding

In many branches of industry such as the paper, plastics, textile or sheet metal industries, endless material is unwound for further processing or rewound after processing.
To prevent the material from tearing, it must be wound without wrinkles or creases and the tension must be kept constant.

The following illustration shows an unwinder with one drive each for the winding roller and the pull-off roll. The pull-off roll usually operates with speed control. The material is unwound at a constant speed. The winder determines the tensile force, while the speed signal from the pull-off roll functions as a control signal. In many applications, a drive is not required for the pull-off roller. It can be replaced by a master encoder that delivers the master signal for the winder.

Constant tension central winder





Solving tasks using the MOVIDRIVE® technology version

Setting parameters instead of programming:
Use the application module "Central winder" (in the technology version of the MOVIDRIVE® operating software MOVITOOLS® MotionStudio). The user-friendly interface guides you through the process of entering the parameters. Only those parameters required for the specific application, such as fixed diameter and tension must be entered.
The application module uses this information to create the control program and loads it into the inverter. Ready!

Extensive range of functions
The functions of the "Central winder" application module can be divided into four sections:
– Calculation of the roller diameter
– Calculation of the tensile force
– Adjustable winding curve
– Either terminal or fieldbus control

Calculation of the roller diameter
Many winding machines measure the winding diameter to determine and set the correct winding speed. You do not have to take this measurement because the current diameter can be determined precisely by the IPOS$^{plus®}$ system in MOVIDRIVE®.

Calculation of the tensile force
The exact tensile force can be set by taking the following parameters into account:
– Current winding diameter
– Winding characteristics
– Friction coefficients of the mechanical components

Adjustable winding curve
The "Central winder" application module offers you the option of reducing the tensile force with an increasing winder diameter. You can set the winding characteristics in accordance with your requirements using a user-friendly editor.

Wide range of functions
However large the variety of applications for web handling systems, the wide range of functions provided by the application module has the right solution for every task:
– Choice of fieldbus or terminal control
– Web speed and current diameter display
– Material length counters
– Material tearing monitor

The functionality is realized with different operating modes:

Jog mode
Winding and unwinding via two input signals, for instance for threading the material in.

Determination of friction curve
The speed-dependent friction coefficients of the mechanism and the gear unit are ascertained during a teach-in run.

Automatic mode
– Constant tension:
  The material is wound at a constant tensile force. To achieve this, the tensile force of the winding machine is adjusted in relation to the winding diameter, the friction curve and the winding characteristics.
– Constant web speed:
  This mode is for applications required for rewinding material. The diameter changes, but the web speed remains the same.

Diagnostics installed: During operation, the most important data is displayed on the monitor of the central winder.

Drive application: Flying saw

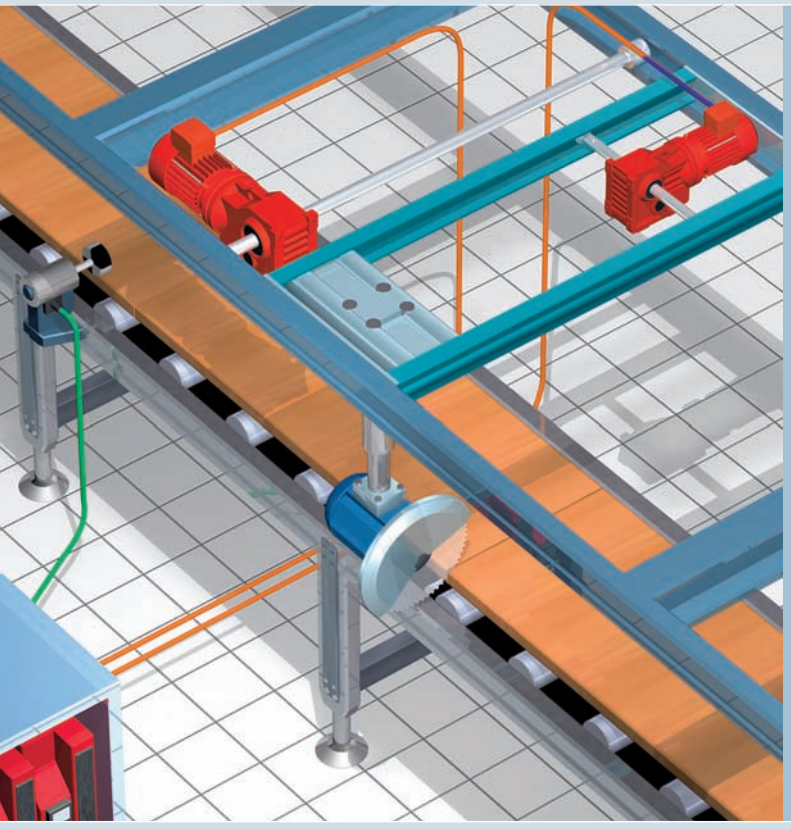
The classic job of the “Flying saw” is to cut endless material to length. Before the cutting process starts the saw must be synchronized, during the cutting process the saw must move synchronously with the material and, at the end, it must return to the start position to begin the cycle again. In this way, the synchronized motion can either be parallel (flying saw) or diagonal (diagonal saw) to the material.

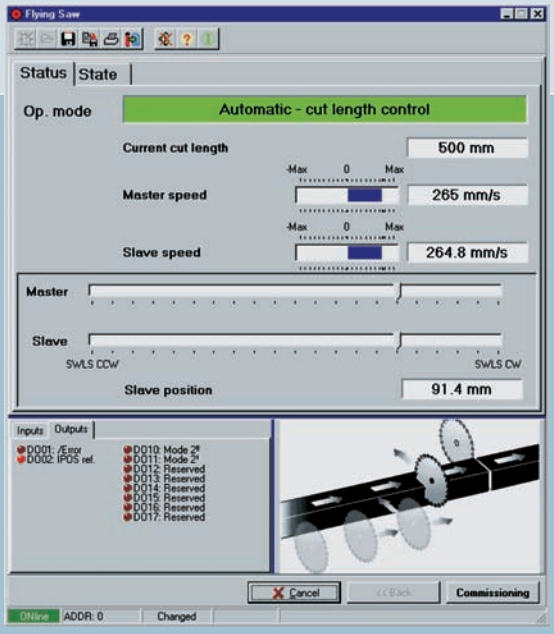
There are two ways of generating the start signal for synchronization:

– **Cut length control:**
  A master encoder on the material records the cut length. This information is processed by the inverter. There is no need to have any marks on the material.

– **Cut length control with label sensor:**
A sensor records the cutting marks that must be present on the material. This sensor signal is processed as an interrupt in the inverter and starts the cutting process.

Flying saw





“Flying saw” monitor:
During operation, all the most important data is displayed on the monitor. This includes:

– Current cutting length
– Material speed
– Saw drive speed

Solving tasks using the MOVIDRIVE® technology version

Setting parameters instead of programming:
SEW offers the application module "Flying saw" to solve this drive task simply and easily.
This application module is a component of the MOVIDRIVE® operating software MOVITOOLS® MotionStudio. The user-friendly interface guides you through the process of entering the parameters. Only those parameters required for the specific application, such as cutting lengths and engagement travel must be entered.

This constitutes a considerable time-saving factor for the startup process, and as every one knows: Time is money.
The application module uses this information to create the control program and loads it into the inverter. MOVIDRIVE® then takes over the entire motion control.

Wide range of functions
However large the variety of applications for the “Flying saw”, the wide range of functions provided by the application module has the right solution for every task:
- Choice of fieldbus or terminal control
- Specification of different cutting lengths via terminals or fieldbus
- Cut edge protection or singling using the "Draw gap" function.
- Immediate cut function by manual interrupt

The functionality is realized with different operating modes:

Jog mode
Drive is moved manually.

Referencing
Determine the reference point of the machine.

Positioning mode
Positioning: Move to the specified start/change position.

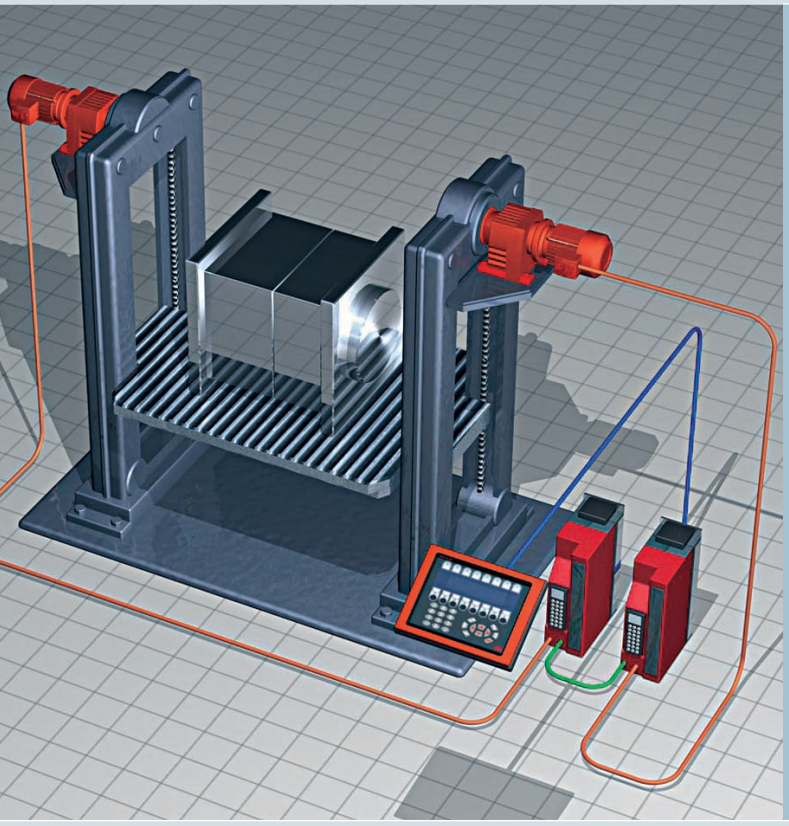
Automatic mode
- Automatic I: Synchronization by cut length control.
  Cut and return positioning in the start position.
- Automatic II: Synchronization by cut length control with label sensor.
  Cut and return positioning in the start position.

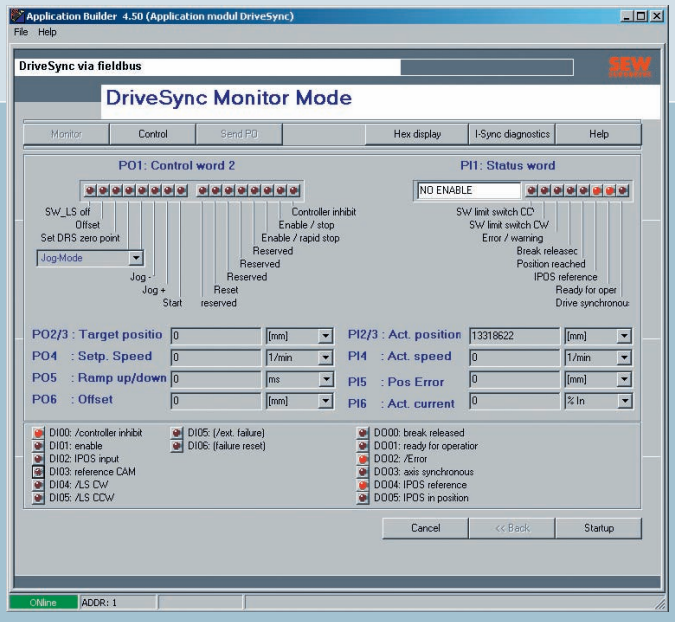
The “Flying saw” module can also be used to realize other applications with a similar cycle, for example, synchronous material transportation, filling stations or “Flying punches”.

Drive application: Synchronous operation DriveSync

For conveyor systems and machines whose drives sometimes have to be positioned synchronously this classic task is realized using „DriveSync“. The program can be used for the master drive and the slave drive. The master functions in the mode types “Jog mode” and “Positioning mode”, while the slave axes are operated in “synchronous operation”. These can be decoupled from the master in the operation modes “Jog mode” and “Positioning mode” and operated in free running mode. You can switch between positioning and synchronous operation at any time using the operating modes. You can use different signal types and sources of the master encoder.

Travel axis





DriveSync monitor:
During operation, all the most important data is displayed on the monitor. This includes, for example, the master/slave positioning difference, actual position, speed.

Solving tasks using the MOVIDRIVE® technology version

Setting parameters instead of programming:
SEW offers the "DriveSync" application module to solve the drive task simply and easily.
This application module is a component of the MOVIDRIVE® operating software MOVITOOLS® MotionStudio. The user-friendly interface guides you through the process of entering the parameters. Only those parameters required for the specific application, such as "Engaging condition via positive edge on DI02" must be entered.

This constitutes a considerable time-saving factor for the startup process, and as every one knows: Time is money. The application module uses this information to create the control program and loads it into the inverter. MOVIDRIVE® then takes over the entire motion control.

Wide range of functions
However large the variety of applications for "DriveSync", the wide range of functions provided by the application module has the right solution for every task:

Positioning and synchronous operation in one solution
- Control via fieldbus
- Synchronous angle setpoint processing in synchronous operation
- Optional positioning control for motor, external encoder

The functionality is realized with different operating modes:

Jog mode
Drive is moved manually.

Referencing mode
Determine the reference point of the machine.

Positioning mode
Positioning: Move to the specified start/change position.

Synchronous operation
- Decoupling conditions entered via parameters
- Offset machine entered via parameters
- Time/distance-controlled synchronization process

Other applications with a similar cycle, for example, synchronous material transportation or 2-column hoists can be realized using the "DriveSync" module.

Drive application: Rotational positioning

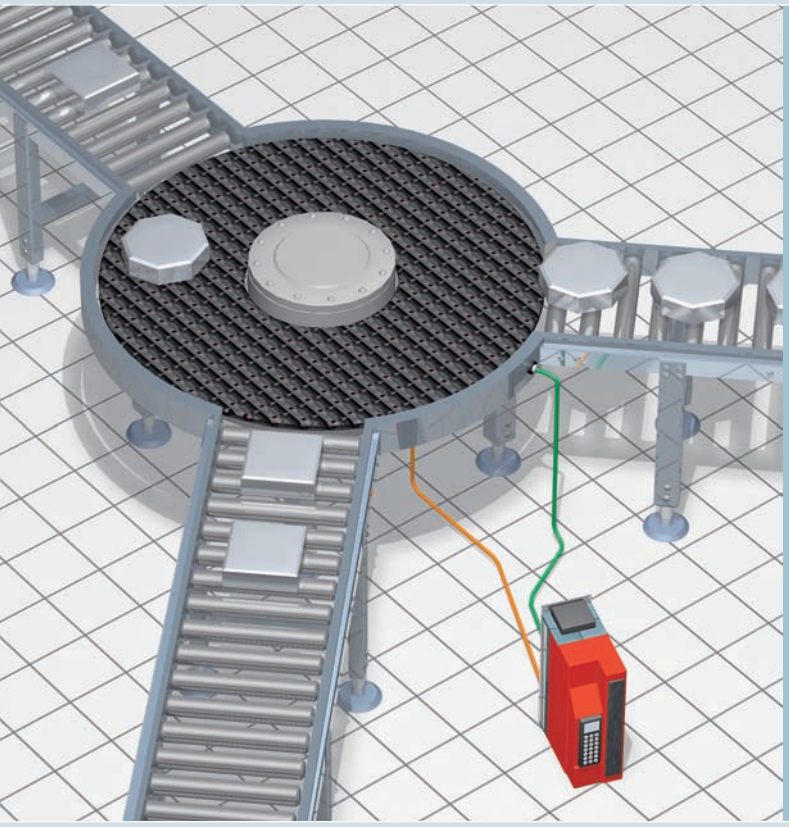
Whenever material is transported, for example, in conveyor or logistic applications, a number of motion sequences must be controlled. These are often stop/start rotary movements, for example with turntables or a rotary distributor. In the first example, the material is always rotated by a specified angle for further processing. Typically, the movement is only performed in one direction. Another example of a drive is a rotary distributor. In this case, the material is distributed among different positions. Often, positioning is required to determine the best route. The new position is always found on the shortest route.

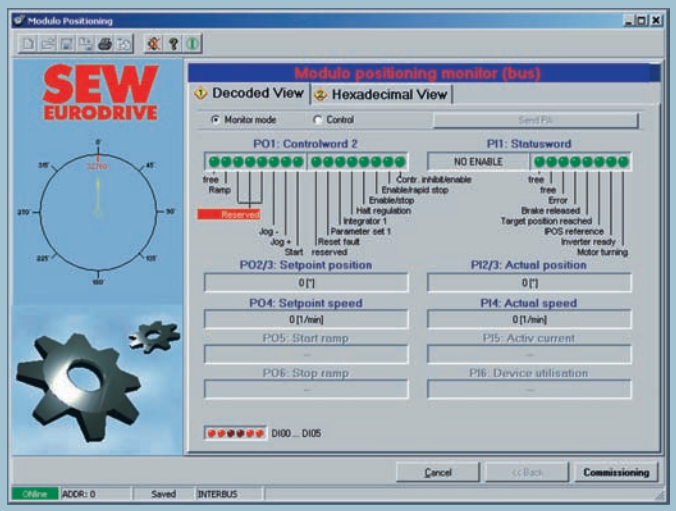
Solving tasks using the MOVIDRIVE® technology version

Setting parameters instead of programming: Use the application module "Module Positioning" (in the technology version of the MOVIDRIVE® operating software MOVITOOLS® MotionStudio). The user-friendly interface guides you through the process of entering the parameters.

Only those parameters required for the specific application, such as positions, ramps and speeds, must be entered. The application module uses this information to create the control program and loads it into the inverter.

Rotary indexing table





Wide range of functions
However large the variety of applications, the wide range of functions provided by the "Modulo Positioning" application module has the right solution for every task.

Control via terminals
- 16 target positions or step widths can be defined and selected.
- For each of the 16 target positions or step widths, you can set the travel speed and ramp separately.

Control via fieldbus
- Fieldbuses with 4 or 6 process data words are supported.
- Target positions are specified with 2 process data words.
- The travel speed can be specified as required.
- It is possible to select from two ramps in control via 4 process data items. In the 6 PD version, the acceleration or deceleration ramp can be specified as required using PD5 or 6.
- For a non-positive (= with slip) connection between the motor shaft and application, the position measurement can be taken via an external increment encoder or absolute encoder. In this case, the external encoder must be mounted without slip on the application.
- The "Modulo" function integrated in the operating system is used for incremental positioning; it only runs in one direction, even for non-ultimate gear unit reduction ratios.
- The application units can be defined as required
- Automatic calculation of position resolution and graphical position display.
- Guided, easy-to-follow startup procedure and diagnostics.

The functionality is realized with different operating modes:

Jog mode
CW/CCW operation via two input signals, two-speed selection also via input signal (fast speed, creep speed).

Teach mode
Movement to new positions occurs in jog mode and can be saved via the terminal control; that is, without a PC.

Referencing mode
The reference travel is started via the input signal – reference point is determined (no reference travel with the absolute encoder).

Automatic mode
Absolute positioning
- position optimization
- Clockwise
- Counterclockwise

Relative positioning
- (Cyclical operation) CW
- (Cyclical operation) CCW

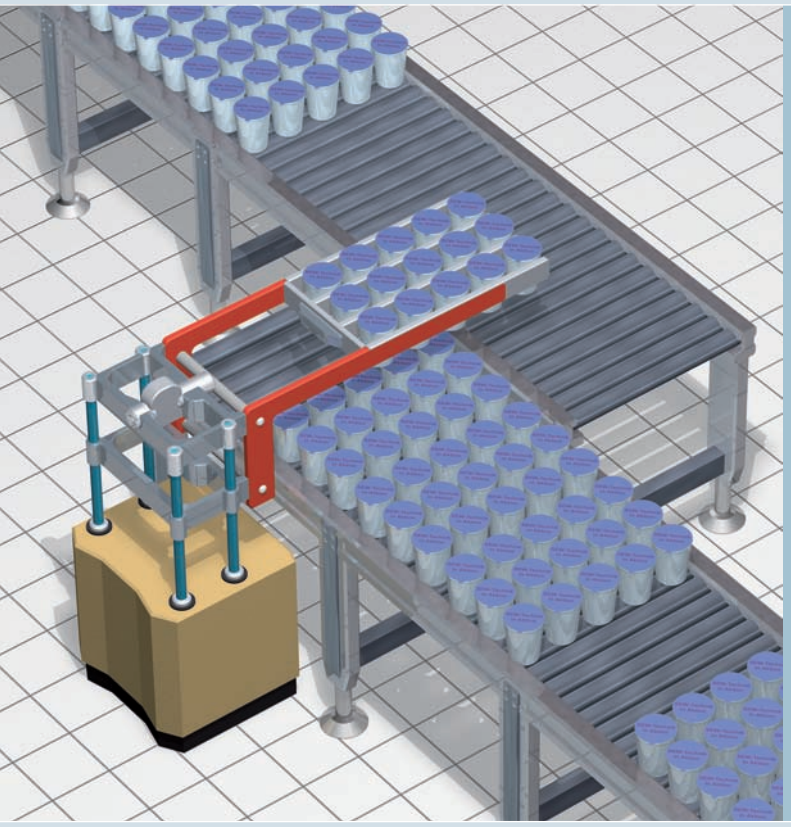
Other applications that can be realized using the "Modulo Positioning" application module:
- **Swiveling devices**
- **Crank drives**
- **General applications with non-positive connection between motor shaft and load**

Electronic cam disc “CAM”

Previously, mechanical cam discs were used whenever complex sequences of motion had to be coordinated in cyclical machines, for example, in the packaging or timber industries or in conveyor, handling or printing machine technology.

To be able to meet today’s requirements for modern production and processing plants concerning
– Greater functionality and flexibility
– Smooth running
– Maximum acceleration and
– Vibration tendencies,
mechanical cam discs are increasingly being replaced by electronically-controlled drives, the so called electronic cam discs.

The following example demonstrates a typical use for the “Electronic cam disc CAM”. At the end of a conveyor belt, freshly filled yogurt pots are transferred to an adjacent conveyor belt for further processing. The tines of the rake are inserted between the yogurt pots, lifting and transferring them.



The “Electronic cam disc CAM” can be used to realize a sequence of motion to ensure the pots can be lifted smoothly. MOVITOOLS® MotionStudio supports the user during the startup of the application. The “CAM Editor” software assistant in MOVITOOLS® MotionStudio offers a number of distributors.
– Optimize curving route (speed, acceleration and smoothness)
– Import option for curve data
– Monitor mode for optimum diagnosis
– Virtual encoder can be used as the master encoder
– Either terminal or fieldbus control
– Devices can be linked with the standard system bus

Electronic cam disc CAM

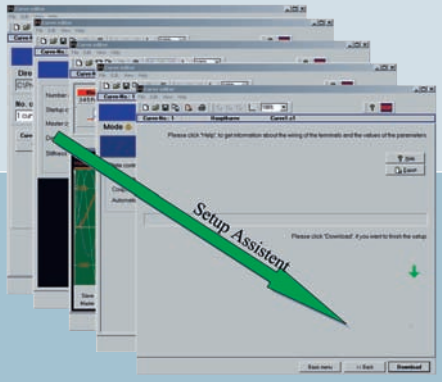
Solving tasks using the MOVIDRIVE® technology version

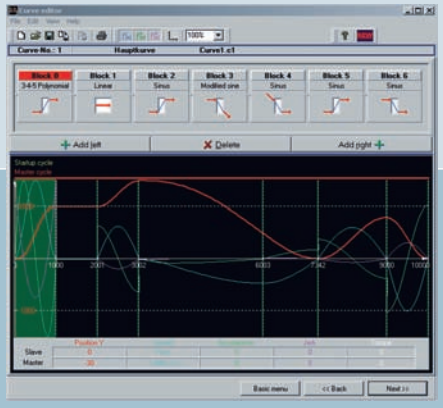
The “CAM Editor” guides you through the startup process for your application step-by-step.
The following factors can be defined or displayed to ensure optimization is straightforward:
– Number of curve points
– Startup cycle process
– Main and startup curves
– Acceleration and jolting

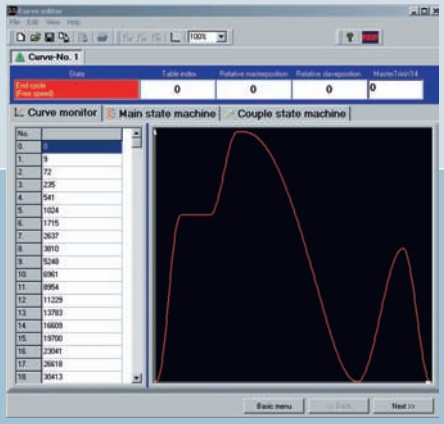
After the “Wizard” has guided you through startup, all the data is loaded into the drive and a detailed diagnostic screen appears.

The curve designer in particular offers a number of options to create and test the curving route. The typical curve forms, such as sinuide, spline, polinom, parabel and so on are offered to you so that the curve can be created step-by-step.

The diagnostic monitor now displays information on the application’s current status. The position within the curve is displayed graphically and numerically.







Wide range of functions
Coupled with the optimal supporting software.
– 6 curves per drive inverter (switch between terminals, fieldbus or application program)
– Start/stop cycle mode control with its own curve
– Broad selection of curve forms
– Route, speed, acceleration and jolting displayed
– Online monitor with graphical and numerical display of curve positions

Other applications, such as a labeling machine or rotary blade can be realized using the “Electronic cam disc CAM” technology function.

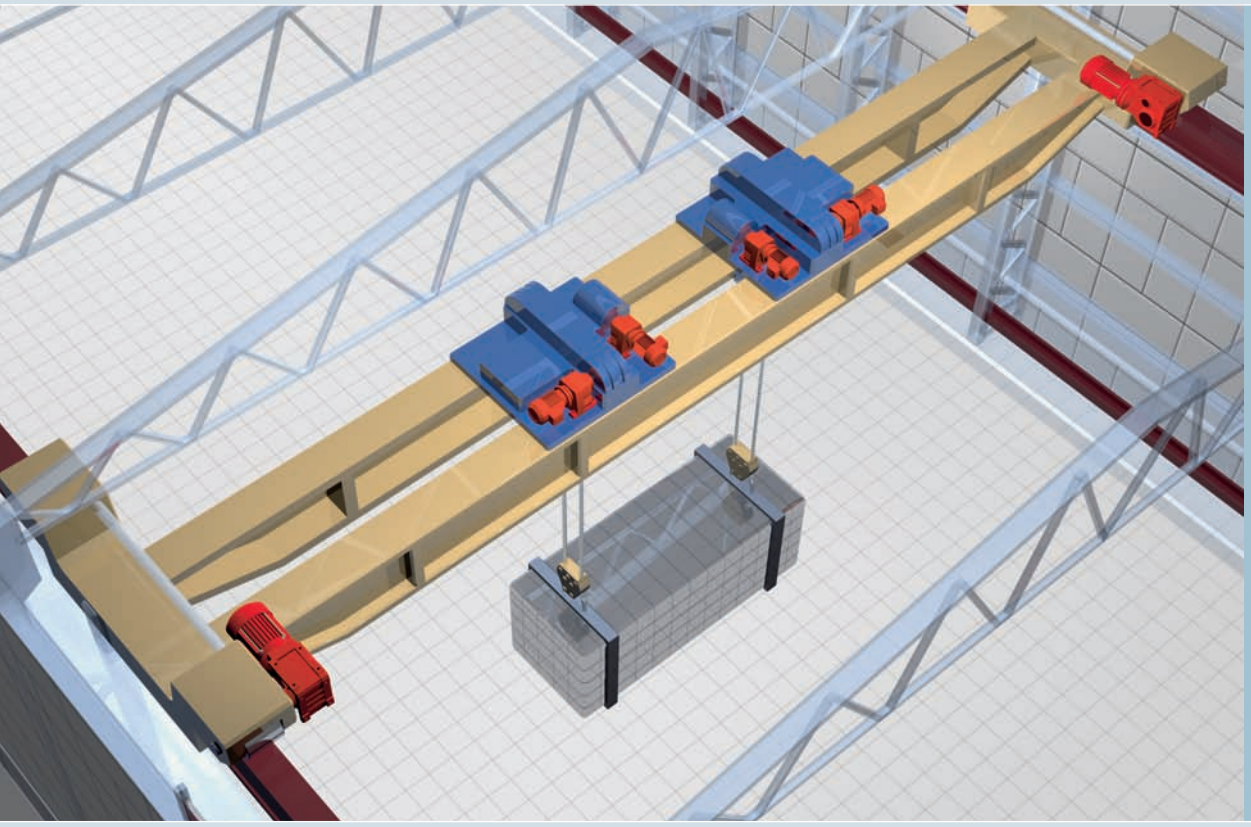
Internal synchronous operation “I-SYNC”

Flexibility and fast and simple methods to convert systems to suit different products is becoming increasingly important. Increasingly, individual drives are being implemented for each drive axis, especially for applications with several drives whose speed and position data has to be synchronized with one another. This simplifies the mechanical components and increases the flexibility of the system.

The following example demonstrates the application of a gantry crane that was implemented in longitudinal, transverse and hoisting direction, with two drives for each direction of movement. This solutions enables the machine to move in each direction, either synchronously or individually.

MOVIDRIVE® and the “I-SYNC” technology function develop new solutions for the application:

- Greater functionality and flexibility as individual settings can be made for each drive
- Use of different master encoders
- Can select the operating mode, such as “synchronous operation” or “positioning”
- The individual drives can be offset by using the offset control

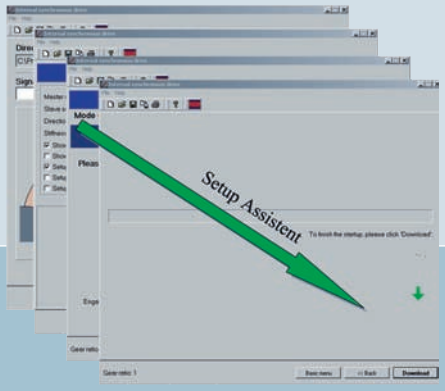


Solving tasks using the MOVIDRIVE® technology version

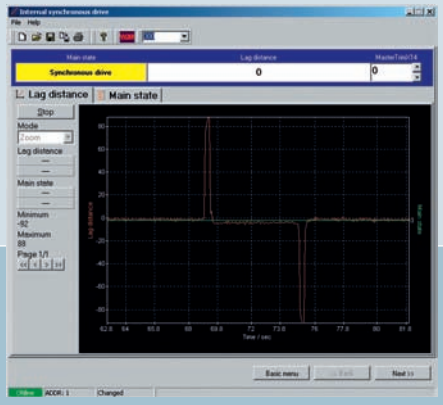
MOVITOOLS® MotionStudio supports the user during the startup of the application. The "I-SYNC Editor" integrated in MOVITOOLS® MotionStudio offers a number of benefits, and guides you step-by-step through the startup of the application.

This process includes:
- Specifying the signal source and signal type of the master encoder
- Determining the startup cycle process
- Displaying and setting the control parameters
- Setting the scaling factors between the master and slave drives.

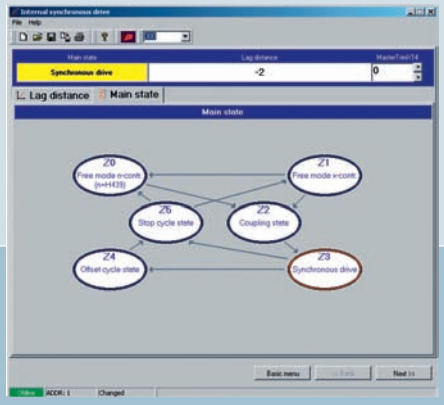
After the startup assistant has guided you through startup, all the data is loaded into the drive and a detailed diagnostic screen appears. The diagnostic monitor now displays information on the application's current status. Important process values, such as the lag distance between the master and slave drive, and the current status of the synchronous operation are displayed graphically and numerically.



Graphical representation of the lag distance between master and slave drives:



Representation of the "state graph" of the "I-SYNC" technology function



Wide range of functions

Coupled with the optimal supporting software. However large the variety of applications for "I-SYNC", the wide range of functions provided by the technology function has the right solution for every task:
- Startup assistant to adapt system to the application
- Start/stop and offset control with different modes
- Different signal sources and signal types of the master encoder
- Online monitor with graphical and numerical display of lag distance and the current status of the synchronous operation.

More operating comfort in each application: IPOS[plus®] and MOVITOOLS® MotionStudio

IPOS[plus®]

User programs	– Assembler or high-level language programming – Three independent subroutines, tasks 1, 2 and 3 – Comprehensive test functions, e.g. individual step or breakpoint functions
PLC functions	– Solving all necessary digital or analog control and information tasks for MOVIDRIVE® with all options with a comprehensive set of commands – Interrupt response, e.g. in case of an interference or terminal signal
Positioning functions	– Comprehensive set of commands – Freely selectable processing speed – Positioning ramp linear, sine or square – Jerk-limited acceleration – 128 non-volatile variables – 8 types of reference travel for incremental encoder setup – Optional absolute encoder – Endless positioning
Monitoring	– Hardware limit switch – Software limit switch – Continuous tracking error monitoring – Speed monitoring to recognize mechanical blockage and protect machines

MOVITOOLS® MotionStudio

Tool	Functionality
Parameter tree	Uniform editor for parameter setting of different unit types
Startup	Configuration and startup: To adapt the inverter to the connected motor and optimize current, speed and position controllers.
PLC editor	Programming of the MOVI-PLC® controller series by means of application programs that can be used for all units.
Scope	Diagnosis by using an oscilloscope program for all SEW-EURODRIVE inverters
SEW Communication Server	Communication via a server: – free selection of communication paths – decentralized or central storage of project data – diagnostics and engineering – use of modern remote maintenance technologies
Application Builder	Visualization: Editor for creating user-specific visualizations and application-specific diagnostics. Visualization is connected via data download with the inverter program IPOS and the parameter settings.

The revelation of intelligence: MOVIDRIVE® technical data

MOVIDRIVE® 400/500 V / 0.55 ... 11.0 kW

Size	0S	0M	1	2S	2
Supply voltage [V_{AC}]	3 x 380 ... 500 ± 10 %				
Mains frequency [Hz]	50 ... 60 ± 5 %				
Output frequency [Hz]	0 ... 400				
Recommended motor power [kW] with overload reserve 1,5 x I_N	0.55 ... 0.75	1.1 ... 1.5	1.5 ... 4.0	5.5 ... 7.5	11.0
Output current [A] at 400 V	2.0 ... 2.4	3.1 ... 4.0	4.0 ... 9.5	12.5 ... 16.0	24.0
Recommended motor power [kW] without overload reserve	0.75 ... 1.1	1.5 ... 2.2	2.2 ... 5.5	7.5 ... 11.0	15.0
Output current [A] at 400 V	2.5 ... 3.0	3.8 ... 5.0	5.0 ... 11.9	15.6 ... 20.0	30.0
Motor control process	VFC, CFC				
Dimensions in mm W x H x D	45 x 317 x 260	67.5 x 317 x 260	105 x 314 x 234	105 x 335 x 294	135 x 315 x 285

MOVIDRIVE® 400/500 V / 15.0 ... 132.0 kW

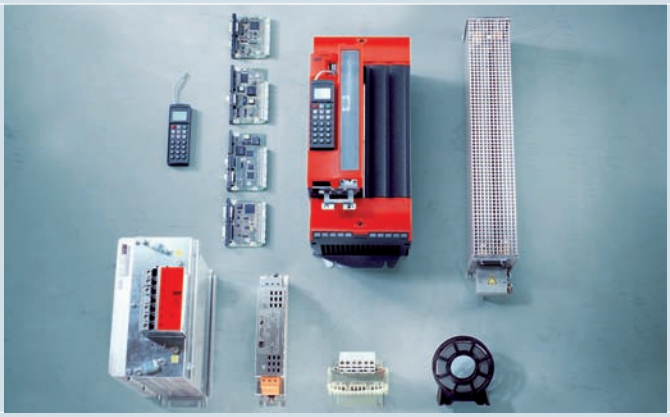
Size	3	4	5	6
Supply voltage [V_{AC}]	3 x 380 ... 500 ± 10 %			
Mains frequency [Hz]	50 ... 60 ± 5 %			
Output frequency [Hz]	0 ... 400			
Recommended motor power [kW] with overload reserve 1,5 x I_N	15.0 ... 30.0	37.0 ... 45.0	55.0 ... 75.0	90.0 ... 132.0
Output current [A] at 400 V	32.0 ... 60.0	73.0 ... 89.0	105.0 ... 130.0	170.0 ... 250.0
Recommended motor power [kW without overload reserve	22.0 ... 37.0	45.0 ... 55.0	75.0 ... 90.0	110.0 ... 160.0
Output current [A] at 400 V	40.0 ... 75.0	91.0 ... 111.0	131.0 ... 162.0	212.0 ... 312.0
Motor control process	VFC, CFC			
Dimensions in mm W x H x D	200 x 465 x 308	280 x 522 x 307	280 x 610 x 330	280 x 1.000 x 382

MOVIDRIVE® 200/240 V / 1.5 ... 30.0 kW

Size	1	2	3	4
Supply voltage [V_{AC}]	3 x 200 ... 240 ± 10 %			
Mains frequency [Hz]	50 ... 60 ± 5 %			
Output frequency [Hz]	0 ... 400			
Recommended motor power [kW] with overload reserve 1,5 x I_N	1.5 ... 3.7	5.5 ... 7.5	11.0 ... 15.0	22.0 ... 30.0
Output current [A] at 400 V	7.3 ... 5.8	22.0 ... 29.0	42.0 ... 54.0	80.0 ... 95.0
Recommended motor power [kW] without overload reserve	2.2 ... 5.0	7.5 ... 11.0	15.0 ... 22.0	30.0 ... 37.0
Output current [A] at 400 V	9.1 ... 18.1	27.5 ... 36.3	52.5 ... 67.5	100.0 ... 118.0
Motor control process	VFC, CFC			
Dimensions in mm W x H x D	105 x 314 x 234	135 x 315 x 285	200 x 465 x 308	280 x 522 x 307

MOVIDRIVE® options

- MOVI-PLC® basic DHP11B control card and MOVI-PLC® advanced DHx41B
- PROFIBUS DPV1 fieldbus interface
- PROFIsafe fieldbus interface
- INTERBUS fieldbus interface
- INTERBUS fieldbus interface with fiber optic cable
- DeviceNet fieldbus interface
- CAN fieldbus interface
- CANopen fieldbus interface
- ETHERNET, Modbus-TCP, PROFINET IO, EtherNet/IP, EtherCAT fieldbus interfaces
- Input/output extension
- Encoder interface (sin/cos, TTL, HTL or HIPERFACE®)
- Resolver encoder interface
- SSI encoder interface
- Phase-synchronous operation
- Keypad



MOVIDRIVE® accessories

- USB operator interface for PC connection
- Braking resistor
- Line filter
- Line choke
- Output filter
- Output choke
- Operator panels

1160 5812 / 1107

How we're driving the world

SEW-EURODRIVE
Driving the world

SEW-EURODRIVE is right there for you:

Argentina
Phone +54 3327 4572-84
Fax +54 3327 4572-21
sewar@sew-eurodrive.com.ar

Australia
Phone +61 3 9933-1000
Fax +61 3 9933-1003
enquires@sew-eurodrive.com.au

Austria
Phone +43 1 617 55 00-0
Fax +43 1 617 55 00-30
sew@sew-eurodrive.at

Belarus
Phone +375 17 298 38 50
Fax +375 17 298 1898
sales@sew.by

Belgium
Phone +32 10 231-311
Fax +32 10 231-336
info@sew.be

Brazil
Phone +55 11 6489-9133
Fax +55 11 6480-3328
sew@sew.com.br

Canada
Phone +1 905 791-1553
Fax +1 905 791-2999
marketing@sew-eurodrive.ca

Chile
Phone +56 2 75770-00
Fax +56 2 75770-01
ventas@sew-eurodrive.cl

China
Phone +86 22 25322612
Fax +86 22 25322611
gm-tianjin@sew-eurodrive.cn

Colombia
Phone +57 1 54750-50
Fax +57 1 54750-44
sewcol@sew-eurodrive.com.co

Czech Republic
Phone +420 220121234
Fax +420 220121237
sew@sew-eurodrive.cz

Denmark
Phone +45 43 9585-00
Fax +45 43 9585-09
sew@sew-eurodrive.dk

Finland
Phone +358 201 589 300
Fax +358 3 7806-211
sew@sew.fi

France
Phone +33 3 88 73 67 00
Fax +33 3 88 73 66 00
sew@usocome.com

Great Britain
Phone +44 1924 893-855
Fax +44 1924 893-702
info@sew-eurodrive.co.uk

Hong Kong
Phone +852 2 7960477
Fax +852 2 7959129
contact@sew-eurodrive.hk

Hungary
Phone +36 1 437 06-58
Fax +36 1 437 06-50
office@sew-eurodrive.hu

India
Phone +91 265 2831086
Fax +91 265 2831087
mdoffice@seweurodriveindia.com

Italy
Phone +39 02 96 9801
Fax +39 02 96 799781
sewit@sew-eurodrive.it

Japan
Phone +81 538 373811
Fax +81 538 373814
sewjapan@sew-eurodrive.co.jp

Malaysia
Phone +60 7 3549409
Fax +60 7 3541404
sales@sew-eurodrive.com.my

Mexico
Phone +52 442 1030-300
Fax +52 442 1030-301
scmexico@seweurodrive.com.mx

Netherlands
Phone +31 10 4463-700
Fax +31 10 4155-552
info@vector.nu

New Zealand
Phone +64 9 2745627
Fax +64 9 2740165
sales@sew-eurodrive.co.nz

Norway
Phone +47 69 241-020
Fax +47 69 241-040
sew@sew-eurodrive.no

Peru
Phone +51 1 3495280
Fax +51 1 3493002
sewperu@sew-eurodrive.com.pe

Poland
Phone +48 42 67710-90
Fax +48 42 67710-99
sew@sew-eurodrive.pl

Portugal
Phone +351 231 20 9670
Fax +351 231 20 3685
infosew@sew-eurodrive.pt

Russia
Phone +7 812 3332522
Fax +7 812 3332523
sew@sew-eurodrive.ru

Singapore
Phone +65 68621701
Fax +65 68612827
sewsingapore@sew-eurodrive.com

Slovakia
Phone +421 2 49595201
Fax +421 2 49595200
sew@sew-eurodrive.sk

South Africa
Phone +27 11 248-7000
Fax +27 11 494-3104
dross@sew.co.za

South Korea
Phone +82 31 492-8051
Fax +82 31 492-8056
master@sew-korea.co.kr

Spain
Phone +34 94 4318470
Fax +34 94 4318471
sew.spain@sew-eurodrive.es

Sweden
Phone +46 36 3442-00
Fax +46 36 3442-80
info@sew-eurodrive.se

Switzerland
Phone +41 61 41717-17
Fax +41 61 41717-00
info@imhof-sew.ch

Thailand
Phone +66 38 454281
Fax +66 38 454288
sewthailand@sew-eurodrive.com

Turkey
Phone +90 216 4419163
Fax +90 216 3055867
sew@sew-eurodrive.com.tr

Ukraine
Phone +380 56 370 3211
Fax +380 56 372 2078
sew@sew-eurodrive.ua

Uruguay
Phone +598 2 90181-89
Fax +598 2 90181-88
sewuy@sew-eurodrive.com.uy

USA
Phone +1 864 439-7537
Fax +1 864 439-0566
cslyman@seweurodrive.com

Venezuela
Phone +58 241 832-9804
Fax +58 241 838-6275
ventas@sew-eurodrive.com.ve

SEW EURODRIVE

SEW-EURODRIVE GmbH & Co KG
P.O.Box 30 23
D-76642 Bruchsal/Germany
Phone +49 7251 75-0
Fax +49 7251 75-1970
sew@sew-eurodrive.com

→ **www.sew-eurodrive.com**