



CODESYS SoftMotion Light

CODESYS SoftMotion Light extends the functional range of CODESYS Control SL systems from pure logic to motion control.

Product description

CODESYS SoftMotion Light allows to command CiA 402 compatible drives for single axis movements (not synchronized).

In contrast to SoftMotion Axes and SoftMotion Axis Groups/CNC Interpolators, the calculation of the axis movements is not done within the controller. With SoftMotion Light movements of the drive are just commanded and supervised (status) by the PLC and executed by the drive. The trajectory calculation is done in the drive.

SoftMotion Light is suitable for applications with multiple axes for single axes movements and for controller tasks requiring a low bus and computing load (CPU).

Scope of the SoftMotion Light library

- MC_MoveAbsolute / MC_MoveRelative
- MC_MoveVelocity
- MC_Stop / MC_Halt
- MC_Home
- MC_Power / MC_Reset / MC_ReadStatus
- SML_ReinitAxis / SML_ChangeAxisConfig
- Visualization templates (analogue to SoftMotion)
- Commissioning assistance (SML_StartupDrive)

Configuration and commissioning of the drives is described in detail in CODESYS online help (chapter "SoftMotionLight").

CODESYS SoftMotion Light.project - CODESYS

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Devices

- CODESYS SoftMotion Light
 - Device (CODESYS Control Win V3)
 - PLC Logic
 - Application
 - Library Manager
 - PLC_PRG (PRG)
 - Task Configuration
 - EtherCAT_Master
 - MainTask
 - EtherCAT_Master (EtherCAT Master)
 - Accelnet (Accelnet EtherCAT Drive (CoE))
 - SML_Drive_ETC_GenericDSP402 (SML_Drive_ETC_GenericDSP402)

SML_Drive_ETC_GenericDSP402: I/O Mapping Status Information

SoftMotionLight

General settings

Module Finite

Velocity ramp type

Trapezoid Sin²

Scaling

Invert direction

16#10000 increments <=> motor turns

1 motor turns <=> gear output turns

1 gear output turns <=> units in application

Mapping

Automatic mapping

Inputs:

| Cyclic object | Object number | Address | Type |
|---------------------------------------|---------------|---------|--------|
| status word (dsp402vars.wStatus) | 16#6041:16#00 | '%&IW0' | 'UINT' |
| actual position (diActPosition) | 16#6064:16#00 | " | " |
| Actual Mode of Operation (eActOpmode) | 16#6061:16#00 | " | " |
| actual position (diActPosition) | 16#6063:16#00 | " | " |

Outputs:

| Cyclic object | Object number | Address | Type |
|---|---------------|---------|--------|
| ControlWord (dsp402vars.wControl) | 16#6040:16#00 | '%QW0' | 'UINT' |
| Mode of Operation (eSetOpmode) | 16#6060:16#00 | " | " |
| Target position/distance (fTargetPosDist) | 16#607A:16#00 | " | " |
| Target velocity (fTargetVelocity) | 16#60FF:16#00 | " | " |

Online

Status:

Communication:

FB Error:

uiDriveInterfaceError:

strDriveInterfaceError:

Last build: 0 0 0 Precompile: ✓ Current user: (nobody)

CODESYS SoftMotion Light.project - CODESYS

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Accelnet: EtherCAT I/O Mapping Status Information

Slave Process Data Startup parameters EtherCAT I/O Mapping Status Information

Select the outputs

| Name | Type | Index |
|---|-------------------------|-----------------|
| <input checked="" type="checkbox"/> 16#1600 Receive PDO 0 | Control word | UINT 16#6040:00 |
| <input type="checkbox"/> 16#1601 Receive PDO 1 | Control word | UINT 16#6040:00 |
| <input type="checkbox"/> 16#1602 Receive PDO 2 | Modes of operation | SINT 16#6060:00 |
| <input type="checkbox"/> 16#1603 Receive PDO 3 | Control word | UINT 16#6040:00 |
| <input type="checkbox"/> 16#1604 Receive PDO 4 | Profile target position | DINT 16#607A:00 |
| <input type="checkbox"/> 16#1605 Receive PDO 5 | Control word | UINT 16#6040:00 |
| <input type="checkbox"/> 16#1606 Receive PDO 6 | Control word | UINT 16#6040:00 |
| <input type="checkbox"/> 16#1607 Receive PDO 7 | Control word | UINT 16#6040:00 |
| | Target velocity | DINT 16#60FF:00 |
| | Target Torque | INT 16#6071:00 |
| | Modes of operation | SINT 16#6060:00 |

Select the inputs

| Name | Type | Index |
|--|----------------------------|------------------|
| <input type="checkbox"/> 16#1A00 Transmit PDO 0 | Status word | UINT 16#6041:00 |
| <input type="checkbox"/> 16#1A01 Transmit PDO 1 | Status word | UINT 16#6041:00 |
| <input type="checkbox"/> 16#1A02 Transmit PDO 2 | Modes of operation display | SINT 16#6061:00 |
| <input checked="" type="checkbox"/> 16#1A02 Transmit PDO 2 | Status word | UINT 16#6041:00 |
| <input type="checkbox"/> 16#1A03 Transmit PDO 3 | Actual motor position | DINT 16#6064:00 |
| <input type="checkbox"/> 16#1A03 Transmit PDO 3 | Status word | UINT 16#6041:00 |
| <input type="checkbox"/> 16#1A04 Transmit PDO 4 | Actual motor velocity | DINT 16#606C:00 |
| <input type="checkbox"/> 16#1A04 Transmit PDO 4 | Status word | UINT 16#6041:00 |
| <input type="checkbox"/> 16#1A05 Transmit PDO 5 | Torque actual value | INT 16#6077:00 |
| <input type="checkbox"/> 16#1A05 Transmit PDO 5 | Status word | UINT 16#6041:00 |
| <input type="checkbox"/> 16#1A06 Transmit PDO 6 | Status word | UINT 16#6041:00 |
| <input type="checkbox"/> 16#1A06 Transmit PDO 6 | Digital input line status | UDINT 16#60FD:00 |
| <input type="checkbox"/> 16#1A07 Transmit PDO 7 | | |

Last build: 0 0 0 Precompile: ✓ Current user: (nobody)

General information

Supplier:

CODESYS GmbH
 Memminger Strasse 151
 87439 Kempten
 Germany

Support:

Technical support is not included with this product. To receive technical support, please purchase a CODESYS Support Ticket.

<https://support.codesys.com>

Item:

CODESYS SoftMotion Light

Item number:

2305000002

Sales/Source of supply:

CODESYS Store
<https://store.codesys.com>

Included in delivery:

- CODESYS package with SoftMotion functionality
- License key

System requirements and restrictions

| | |
|-------------------------------------|--|
| Programming System | CODESYS Development System V3.5.19.10 or higher |
| Runtime System | CODESYS Control Version 3.5.19.0 or higher |
| Supported Platforms/ Devices | All supported by CODESYS: <ul style="list-style-type: none"> • Real-time capable operating system platforms • CPU platforms with available FPU (Floating Point Unit) • Devices with integrated fieldbus (EtherCAT, CAN/ CANopen, or Sercos) |
| Additional Requirements | WIBU Codemeter Support

SoftMotion Light works with CiA 402 compatible drives with CANopen or EtherCAT. Compatibility can be checked with the test project <i>SML_CompatibilityCheck_DS402.project</i> |
| Restrictions | - |

Licensing

Single device license: The license can be used on the target device/PLC on which the CODESYS runtime system is installed.

Licenses are activated on a software-based license container (soft container), which is permanently connected to the controller. Alternatively, the license can be stored on a CODESYS Key (USB dongle). By replugging the CODESYS Key, the license can be used on any other controller.

Required Accessories

Optional: CODESYS Key

Note: Technical specifications are subject to change. Errors and omissions excepted. The content of the current online version of this document applies.

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