Plattform MX6
Software option S301
Motion Basic + SoftMotion + CNC

1 Identification

Identification	
Option ID	S301
Order number	S-05000403-0000
Short name	Motion Basic + SoftMotion + CNC + Robotics
Brief description	CODESYS Softmotion CNC + Robotics Extension to a CNC motion control with 3D interpolation for three-dimensional movements including forward and backward transformation for common kinematics. Extension for parameterization and movement of axis groups and robots. Soft Motion: With this software option it is possible to control drives via cyclic setpoints from the PLC (path calculation in the PLC). Motion Basic: This software option makes it possible to command and monitor drives via the PLC (path calculation in the drive).
Revision ID document	V3.0

2   System requirements and restrictions

System requirements and restrictions	
Supported platforms and devices	Berghof PLC devices of the MX6 platform (e.g.: MCs, CCs, DCs). Additional information regarding availability and compatibility can be found in options section of the product catalog.
Firmware	MX6-PLC from version 1.3.3, CODESYS from 3.5 SP5 Patch 4
Additional requirements	— EtherCAT fieldbus interface (recommend) — CANopen fieldbus interface
Restrictions	— When using CANopen, the sync should be generated in a slave. — The parallel use of the RS485 interface is not recommended due to the resulting system jitter

3   Product description

This software option activates the license for the CODESYS SoftMotion CNC + Robotics functionality for the device. SoftMotion CNC includes the functionality of SoftMotion and extends it by a G-Code interpreter and editor, which can be used to comfortably realize complex 3D paths. In addition, modules for the transformation of common kinematics are available. Robotics extends this for parameterization and movement of axis groups and robots according to PLCopen Motion Part 4.

The implementation of CNC or Robotics applications is supported by the libraries supplied and abstracted from the hardware used. With the help of virtual drives, project planning is also possible without drive hardware.

Further information and a list of supported drives can be found under:
https://www.codesys.com/products/codesys-motion-cnc-robotics/softmotion-cnc-robotics.html

A generic driver interface is also available for drives not listed. The drives must support the DS402 operating modes "cyclic synchronous position" (8), "cyclic synchronous velocity" (9) or "cyclic synchronous torque" (10).

For full documentation please check the CODESYS Online help under:
https://help.codesys.com/webapp/_sm_f_softmotion;product=codesys_softmotion;version=4.7.0.0

4   Technical data

Technical data	
Function Blocks	PLCopen MotionControl Part 1, PLCopen MotionControl Part 2
3D-CNC-Editor	PLCopen MotionControl Part 4
3D-CNC-Editor	DIN 66025

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