KPA Motion Control Development Kit

KPA Motion Control Development Kit (MoDK) enables the development of linear and coordinated motion applications for a hardware class on a specific OS.

Introduction

Library for single- and multiple-axes control applicable in CNC solutions in terms of PLCopen Motion Control standard.

KPA Motion Control integration package (MoIP)

- MDK included (see MDK flyer for details)
- KPA Motion Control "C/C++ API"
- Operation System Abstraction Layer (OSAL) (optionally in source code)
- Process filed bus Abstraction Layer (BUSAL) supporting CiA402, SERCOS, V-REP and simulation (optionally in source code)
- More than 20 samples in source code and documents:
  - KPA Motion Control architecture, white paper
  - MoDK manuals, programmers guide
  - API (Application Programming Interface) help

KPA Motion Control Runtime package (MoRT) with licenses

- Binaries and user manuals (development manuals included in MoIP)
- 2x KPA EtherCAT Master Standard Licenses (ETG 1500 "class A" master); 1x CoM and 10x LiM each
- 1x KPA EtherCAT Master Full (ETG 1500 "class A" including all FP and Extensions); 1x CoM and 10x LiM
KPA EtherCAT Studio executables

- KPA EtherCAT Studio Premium run-time including all plug-ins and user manuals for configuration and diagnostics of EtherCAT® networks
- KPA Motion Configuration Utility
- 1x KPA EtherCAT Studio license

MDK/MoDK Tutorials

- How to use KPA EtherCAT Master for selected OS
- How to use KPA EtherCAT Studio with Master for selected OS
- How to configure EtherCAT network, DC, modules and other specifics

Simulation V-REP

Virtual robot experimentation platform

- V-REP Viewer
- V-REP few sample models (further models are offered as service)

Support and Maintenance (S&M)

- Technical support and updates of KPA Motion Control and KPA EtherCAT Master/Studio for selected OS with access to Build Portal and Ticket System for one year
- Prolongation on annual base upon request

Runtime Software

KPA Motion Control Libraries

- Trajectory generated online in one cycle
- Instantaneous reaction on events
- Jerk limited using spline interpolation
- No transition (blending) window
- Cyclic synchronous position mode (no stop)
- Feed forward control of velocity and torque

Linear Motion (LiM)

Applications: single axis drive control, e.g. pressing, drilling. Functionality:

- Linear Movement of single axis
- Program Coordinate System (PCS)
- Requirement: KPA EtherCAT Master Standard 1.6 or higher

Coordinated Motion (CoM)

Applications examples: bending, welding, drilling, milling. Functionality:

- All LiM functionalities
- Multi-axes servo drive control with coordinated X, Y, Z axes
- Instantaneous transformations between PCS, MCS and ACS for 2D, 3D applications
• Coordinated motion in cylinder and polar coordinates
• Circular and helical motions

Requirement: KPA EtherCAT Master Standard 1.6 or higher

KPA Motion Configuration Utility

Plugin to KPA EtherCAT Studio with two function groups:

• Offline configuring
  Grouping of axes, selection of drive profiles, setting of parameters, and mapping to process image.
• Online test
  Controls with command and status for moving, homing and jogging.

Requirement: KPA EtherCAT Studio Premium Version 2.0 or higher.

Comparison of MoDK and MoDK trial

<table>
<thead>
<tr>
<th>Item</th>
<th>Criteria</th>
<th>MoDK</th>
<th>MoDK trial</th>
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<tbody>
<tr>
<td>1</td>
<td>Motion Control Integration Package (MoIP)</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>MoDK Tutorials</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>3</td>
<td>Runtime licenses (MoRT)</td>
<td>3[1]</td>
<td>Trial[2]</td>
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<tr>
<td>4</td>
<td>KPA EtherCAT Studio License</td>
<td>Premium unlimited</td>
<td>Premium 3 months</td>
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<tr>
<td>5</td>
<td>Support &amp; Maintenance[3]</td>
<td>1 year</td>
<td>Startup support</td>
</tr>
<tr>
<td>6</td>
<td>Optional Build portal for OS</td>
<td>1 year</td>
<td>3 months</td>
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1^x Full license and 2x Standard license.
2 Trial Master works for one hour in OPERATIONAL and cannot be licensed.
3 S&M-conditions you can find at our customer portal area.

MoDK and MoDK Trial are available through Customer portal and by contacting Sales: sales@koenig-pa.de.