Kollmorgen Automation Suite

Release Notes

Document Edition: T, June 2023
Valid for KAS Software Revision 4.00 R1
Valid for AKD Firmware Version: 01-22-00-000
Valid for AKD2G Firmware Version: 02-10-00-000
Part Number: 959720

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- U-Boot, a universal boot loader is used by the AKD PDMM and PCMM (distributed under the terms of the GNU General Public License). The U-Boot source files, copyright notice, and readme are available on the distribution disk that is included with the AKD PDMM and PCMM.
- Zlib software library

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3 Introduction

Welcome to KAS v4.00 R1! This release contains new features and many improvements. This document is intended to help existing users understand the differences between this and KAS v4.00. If you are new to KAS, we recommend you start with other documents, such as the Installation Guide.

This document has these sections:

- "Installation" (→ p. 5) — This covers system requirements as well as provides firmware, software, and hardware information.
- "What's New in KAS v4.00 R1" (→ p. 11) — This is an overview of new features.
- "What's Changed in KAS v4.00 R1" (→ p. 13) — This discusses how this release may affect some older projects.
  - It let's you know what to do when upgrading, especially if there is anything you need to be careful about.
- "What's Fixed in KAS v4.00 R1" (→ p. 14) — This is a list of issues addressed in this release.
- "Known Issues" (→ p. 15) — This contains issues we are aware of and may include methods for avoiding or working around them.

**TIP**

We recommend you visit Kollmorgen Developer Network ("KDN").
KDN is an online resource which includes a knowledge base, provides access to downloads, and has a user community where you can get answers from peers and Kollmorgen employees, and make feature suggestions for KAS.
Beta versions of the help are posted here and are searchable.

**NOTE**

This PDF contains links to the KAS help system and works best when read from within the KAS IDE installation directory.
The links to content do not work if the PDF is located somewhere other than (install directory) \Kollmorgen\Kollmorgen Automation Suite 4.00 R1.x.y\Help.
4 Installation

4.1 System Requirements

These are the minimum system requirements for the KAS IDE:

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System</td>
<td>Microsoft® Windows® 10 (32- or 64-bit). For optimal performance, verify the operating system is fully updated with the latest patches.</td>
</tr>
<tr>
<td>Processor Type</td>
<td>Intel® Pentium® M or equivalent processor at 1.5GHz or greater.</td>
</tr>
<tr>
<td>Memory</td>
<td>1GB RAM (for 32-bit) or 2GB RAM (for 64-bit) or greater (which is recommended for complex applications).</td>
</tr>
<tr>
<td>Storage</td>
<td>16GB (for 32-bit) or 20GB (for 64-bit) of free space on hard disk.</td>
</tr>
<tr>
<td>Display</td>
<td>WXGA+ (1440 x 900) or higher-resolution monitor with 24-bit color. See Note #1.</td>
</tr>
<tr>
<td>Connectivity</td>
<td>1 Ethernet port, at either 100MB or 1GB. See Note #2.</td>
</tr>
<tr>
<td>Web Browser</td>
<td>A modern web browser is required to access the web server and online help. We recommend Microsoft Edge, Google Chrome, Mozilla Firefox.</td>
</tr>
</tbody>
</table>

**NOTE**
1. Better results are achieved with OpenGL and 3D cards.
2. A 100Mb network is required in order to allow the IDE to Runtime communication to work in all conditions. The AKD WorkBench AutoTuner and Scope both require 100Mb of bandwidth to function properly.

**TIP**
See Connect Remotely for information about the ports used by the KAS IDE. The ports may need to be opened to support connecting from an external network.
4.2 Firmware and Software Requirements

KAS is comprised of several software components integrated together to provide a complete motion system. We recommend these component software versions for best performance and compatibility.

4.2.1 Computer Software

<table>
<thead>
<tr>
<th>Software Images</th>
<th>Recommended Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>KAS IDE</td>
<td>4.00 R1.0</td>
</tr>
</tbody>
</table>

4.2.2 Firmware Requirements

4.2.2.1 Controller Firmware

This is the controller firmware to use with KAS v4.00.

<table>
<thead>
<tr>
<th>Description</th>
<th>Type</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCMM 800MHz</td>
<td>KAS Runtime</td>
<td>KAS Runtime Firmware for AKC-PCMM (KAS-PCMM-M-MCEC)</td>
</tr>
<tr>
<td>AKD PDMM 800MHz</td>
<td>KAS Runtime</td>
<td>KAS Runtime Firmware for AKD-PDMM (KAS-PDMM-M-MCEC, KAS-PDMM-M-KCEC)</td>
</tr>
<tr>
<td>PCMM 1.2GHz</td>
<td>KAS Runtime</td>
<td>KAS Runtime Firmware for AKC-PCMM (KAS-PCMM-M-M1EC)</td>
</tr>
<tr>
<td>PCMM 1.2GHz Dual-Core</td>
<td>KAS Runtime</td>
<td>KAS Runtime Firmware for AKC-PCMM (KAS-PCMM-M-M2EC)</td>
</tr>
<tr>
<td>AKD PDMM 1.2GHz</td>
<td>KAS Runtime</td>
<td>KAS Runtime Firmware for AKD-PDMM (KAS-PDMM-M-M1EC, KAS-PDMM-M-K1EC)</td>
</tr>
</tbody>
</table>

- Supported drives include:
  - AKD-M (AKD PDMM Drive)
  - AKD2G, AKD-P (Motion Tasking Drive or Position Indexer)
  - AKD-C/-N
  - MKD-C

- The recommended firmware version is dependent on the drive's model and revision.
- Controller firmware is available on KDN.
### 4.2.2.2 Drive Firmware

This is the drive firmware to use with KAS v4.00.

**NOTE**

AKD and AKD2G firmware is available on KDN.

<table>
<thead>
<tr>
<th>Description</th>
<th>Type</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firmware for drive built into AKD PDMM</td>
<td>800MHz</td>
<td>AKD PDMM Servo Drive Firmware</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• AKD-M-KCEC-01-22-00-000.i00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• AKD-M-MCEC-01-22-00-000.i00</td>
</tr>
<tr>
<td></td>
<td>1.2GHz</td>
<td>AKD PDMM Servo Drive Firmware</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• AKD-M-K1EC-01-22-00-000.i00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• AKD-M-M1EC-01-22-00-000.i00</td>
</tr>
<tr>
<td>AKD Drive Firmware</td>
<td>AKD-N</td>
<td>AKD-N-xxEC-V01-22-00-000.i00</td>
</tr>
<tr>
<td></td>
<td>AKD-P</td>
<td>AKD-P-NBxC-01-22-00-000.i00</td>
</tr>
<tr>
<td></td>
<td>Resident</td>
<td>R_00-00-68-000.i00</td>
</tr>
<tr>
<td>AKD2G Drive Firmware</td>
<td>Non-Safety (FS1)</td>
<td>AKD2G-S-(E)-A-02-10-00-000.i00</td>
</tr>
<tr>
<td></td>
<td>Safety Certified (FS2 &amp; FS3)</td>
<td>AKD2G-S-A-02-05-03-002.i00</td>
</tr>
</tbody>
</table>

### 4.2.2.3 Firmware Compatibility

**Tips**

Be aware that you may get an F106 error after upgrading the AKD firmware.

- This indicates that non-volatile parameters are not compatible between the two firmware versions.
- Resetting the drive to the default memory values using Parameter Load will fix this error.

**FBUS.PARAM05** bit 5 should be set to 0 (zero); this is the default value.

- This prevents an error E33 and EtherCAT not starting.
- If it is not set to the default, the rotary switch of the drive is used to set the EtherCAT Station Alias.
  - This can conflict with the address that KAS is writing.

### 4.2.2.4 Mandatory Resident Firmware for AKD

- The recommended resident firmware for all AKD family drives is R_00-00-68-000.
- To reliably support the EtherCAT firmware download, resident firmware must be at least v35.
  - Contact Kollmorgen for any AKD Drive with resident firmware lower than v35.
4.2.3 Kollmorgen Visualization Builder

<table>
<thead>
<tr>
<th>Software Images</th>
<th>Recommended Version</th>
<th>Download</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kollmorgen Visualization Builder (KVB)</td>
<td>2.40</td>
<td></td>
</tr>
</tbody>
</table>

The new installation package contains both the IDE and runtime for TxC panels. The KVB ZIP file contains two different installers:

<table>
<thead>
<tr>
<th>Install Type</th>
<th>File</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>New installation</td>
<td>setup.exe</td>
<td>This is the complete package which will install all prerequisite components.</td>
</tr>
<tr>
<td>Runtime</td>
<td>RuntimeSetup.exe</td>
<td>This package contains runtime software for TxC panels.</td>
</tr>
</tbody>
</table>

Supported by KVB 2.40

<table>
<thead>
<tr>
<th>Hardware / Software</th>
<th>Versions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Systems</td>
<td>Windows® 7, Windows 8, Windows 10</td>
</tr>
<tr>
<td>Controllers</td>
<td>PCMM, AKD PDMM</td>
</tr>
<tr>
<td>HMI</td>
<td>All Kollmorgen AKI panels</td>
</tr>
</tbody>
</table>

**NOTE**

The KAS IDE creates projects using KVB 2.0. When you open a v2.0 project by double-clicking on it, KVB upgrades the project to v2.40.

**IMPORTANT**

KVB 1.2 projects are not compatible with KVB 2.x. An attempt to open a v1.2 project with v2.x results in an alert message. If accessing v1.2 projects is important, we recommend keeping both versions installed on your system. New panels automatically use KVB 2.0.

**TIP**

Contact Kollmorgen if you have a KVB 1.2 project that needs to be updated in KVB 2.x.

4.2.4 BBH Safety Software

These BBH Safety software and firmware minimum versions are required to operate with the AKD2G, AKT2G-SDO-04-000, AKT2G-SDI-04-000, PCMM, AKD PDMM, and KAS IDE software.

Contact BBH for the latest software and firmware release information and details.

<table>
<thead>
<tr>
<th>Description</th>
<th>Type</th>
<th>Minimum Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCU-1-EC FSoE Master firmware.</td>
<td>Firmware</td>
<td>03.00.00.62</td>
</tr>
<tr>
<td>SafePLC2 safety programming software.</td>
<td>Software</td>
<td>1.7.1.8219</td>
</tr>
</tbody>
</table>
4.3 KAS Controls

KAS Runtime is verified compatible with these hardware models:

**List of KAS Controllers**

<table>
<thead>
<tr>
<th>Controller</th>
<th>Description</th>
<th>Model Number</th>
<th>Main Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCMM</td>
<td>1.2GHz dual core</td>
<td>AKC-PCM-M2-120-00N-00-000</td>
<td>High Performance Multi-Axis Controller</td>
</tr>
<tr>
<td>PCMM</td>
<td>1.2GHz single core</td>
<td>AKC-PCM-M1-120-00N-00-000</td>
<td>High Performance Multi-Axis Controller</td>
</tr>
<tr>
<td>PCMM</td>
<td>800MHz single core</td>
<td>AKC-PCM-MC-080-00N-00-000</td>
<td>Standard Multi-axis Controller</td>
</tr>
<tr>
<td>AKD PDMM</td>
<td>1.2GHz</td>
<td>AKD-M0xxxx-M1EC-0000</td>
<td>High Performance Drive Resident Controller</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AKD-M0xxxx-K1EC-0000</td>
<td></td>
</tr>
<tr>
<td>AKD PDMM</td>
<td>800MHz</td>
<td>AKD-M0xxxx-MCEC-0000</td>
<td>Standard Drive Resident Controller</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AKD-M0xxxx-KCEC-0000</td>
<td></td>
</tr>
</tbody>
</table>
4.4 Allow Simulator to Use HTTP Communication

The Simulator needs to open HTTP ports to allow communication.
The first time Simulator is run, Windows prompts you to block or unblock the KAS application.
Allow access to all of these requests to ensure correct behavior.

![Windows Security Alert]

The Simulator uses port 80 for the web server.
Simulator automatically assigns an available free port to the webserver to listen to the incoming HTTP requests if another service is using port 80.
See Start Simulator for more information.
5 What's New in KAS v4.00 R1

These new features have been implemented for this release.

5.1 Next Generation Controller Software

The KAS IDE and Runtimes have been expanded to support both AKD PDMM / PCMM controllers and the future release of next generation PCMM2G controllers.

Application programs written or upgraded to v4.00 (or later) can be compiled for either generation 1 or 2 controllers. The PCMM2G controllers will have multiple-core CPUs. Follow the Programming a Dual Core Controller guidelines for forwards compatibility to next generation controllers.

- Compatible with AKD PDMM and PCMM (1st Generation Controllers)
- 64-bit Runtime (2nd Generation Controllers)

5.2 AKD2G Modular Device Profile (MDP) I/O

KAS IDE supports AKD2G models with various IO configurations for X22 and X23 using the AKD2G Modular Device Profiles (MDP).

- The EtherCAT device I/O view and PDO objects automatically adapt to the AKD2G model specific I/O tables when the device is discovered or when MDP modules are manually added/deleted from the project tree.
- This feature is available with the AKD2G firmware version 02-09-01-000 (or later).
- Earlier versions include all possible I/O, requiring a manual configuration based on the AKD2G hardware manuals.

5.3 New Kollmorgen Drive Models

Added support for these -ND, -K, and -ES models of the AKD family drives:

<table>
<thead>
<tr>
<th>Drive</th>
<th>More Information Link</th>
</tr>
</thead>
<tbody>
<tr>
<td>AKD-M-xxxxx-KCEC, K1EC</td>
<td>AKD-M &quot;Kx&quot; PDMM Controller / Drive Variant</td>
</tr>
<tr>
<td>AKD-N-xxxxx-ESEC</td>
<td>AKD-N &quot;ES&quot; Drive Variant</td>
</tr>
<tr>
<td>AKD-P-xxxxx-NDEC</td>
<td>AKD-P &quot;ND&quot; Drive Variant</td>
</tr>
<tr>
<td>MKD-Cxxxxxx-NDEC</td>
<td>MKD-C &quot;ND&quot; Central Power Supply Variant</td>
</tr>
</tbody>
</table>

5.4 New Functions

5.4.1 PLC Standard and Advanced Libraries

These functions have been added to the PLC Standard and Advanced libraries:

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTCurDateTime</td>
<td>Get the present date and time stamp.</td>
</tr>
<tr>
<td>ISINF, ISINFL</td>
<td>Checks if the input value is infinite.</td>
</tr>
<tr>
<td>ISNAN, ISNANL</td>
<td>Checks if the input value is not a number.</td>
</tr>
<tr>
<td>SWAB</td>
<td>Swap the bytes of an integer.</td>
</tr>
</tbody>
</table>
5.4.2 Real-Time Clock (RTC)

These functions have been added to support the Real-Time Clock (RTC) for the PCMM2G and Simulator.

**NOTE**

AKD PDMM and PCMM do not support RTC because they do not have Real-Time Clock hardware.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTGetNTPServer</td>
<td>Read the NTP server address.</td>
</tr>
<tr>
<td>DTGetNTPSync</td>
<td>Read the NTP synchronization enable state.</td>
</tr>
<tr>
<td>DTGetTimeZone</td>
<td>Read the Time Zone.</td>
</tr>
<tr>
<td>DTListTimeZones</td>
<td>List the time zones available on the controller.</td>
</tr>
<tr>
<td>DTSetDateTime</td>
<td>Sets the local date and time.</td>
</tr>
<tr>
<td>DTSetNTPServer</td>
<td>Set the NTP server address.</td>
</tr>
<tr>
<td>DTSetNTPSync</td>
<td>Set the NTP synchronization enable state.</td>
</tr>
<tr>
<td>DTSetTimeZone</td>
<td>Set the time zone.</td>
</tr>
</tbody>
</table>
6 What's Changed in KAS v4.00 R1

These changes have been implemented for this release.

- Arrays are no longer limited to 64k elements.
- "C" style comments /* ... */ are now supported.
- FFLD editor includes row and column numbers.
- MIN and MAX accept variable number of inputs.
- Bit Field data types support up to 64-bit integers.
- SFC Macro and Macro Body button have been removed from the IDE because the SFC Macro functionality is no longer supported.
  The compiler supports SFC Macro steps from programs created with v3.07, and earlier, for backwards compatibility.
- Earlier versions allowed improper usage of function block return statements in the same way as function return values. This could result in undefined behavior.
- In v4.00 and later, the compiler generates an **Unexpected complex data in expression** error for non-compliant syntax.
  - See Compiler Errors for more information.

**Examples**

**IEC 61131-3 Non-Compliant Syntax**

```plaintext
If inst_functionBlock(myVar1) = True Then
  // ...
End_If;
```

**IEC 61131-3 Compliant Syntax**

```plaintext
inst_functionBlock(myVar1);
If inst_functionBlock.q = True Then
  // ...
End_If;
```

**WARNING**

UDFBs and libraries can have improper syntax.

These Kollmorgen UDFBs have been corrected and can be re-imported into the application code.

See Re-import Kollmorgen UDFBs for more information.

- FB_AKDFltRpt
- FB_AxisPlsPosModulo
- FB_AxisPlsPosNoModulo
- FB_S700FltRpt
- MCFB_AKDFault
- MCFB_DriveFault
- MCFB_Jog
- MCFB_StepAbsSwitchFastInput
- MCFB_StepLimitSwitchFastInput
- MLFB_DriveFault
- MLFB_PlisPosFw
- MLFB_PlisPosFwBw
- MLFB_PlisTimeFw
## 7 What's Fixed in KAS v4.00 R1

These issues have been fixed for this release.

<table>
<thead>
<tr>
<th>Defect</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ-11240</td>
<td>EtherCAT network with AKT2G-AT-410 does not reach op-mode.</td>
</tr>
<tr>
<td>BZ-11234</td>
<td>IDE fails to load ESI files from ESI library if FIPS security policy is enabled.</td>
</tr>
<tr>
<td>BZ-11233</td>
<td>PLC error 76 (calling FB twice in same VM cycle) is returned incorrectly with PCMM dual-core.</td>
</tr>
<tr>
<td>BZ-11231</td>
<td>Kollmorgen EtherCAT device DC configuration set to default at scan / discovery.</td>
</tr>
<tr>
<td>BZ-11222</td>
<td>EtherCAT op-mode delayed with AKD2G firmware v02-10-04 (or later).</td>
</tr>
<tr>
<td>BZ-11196</td>
<td>PROFINET IO Device is sending wrong VLAN-ID.</td>
</tr>
<tr>
<td>BZ-11188</td>
<td>Changing rollover param, followed by MC_SetPos causes incorrect final position for MC_MoveAbsolute.</td>
</tr>
<tr>
<td>BZ-11186</td>
<td>&gt;64 byte PDOs not supported w/ 3rd party EtherCAT device.</td>
</tr>
<tr>
<td>BZ-11185</td>
<td>E21 during EtherCAT communication failure.</td>
</tr>
<tr>
<td>BZ-11184</td>
<td>Multiple AKT2G-SDI-004-000 and/or AKT2G-SDO-004-000 may prevent EtherCAT operation.</td>
</tr>
<tr>
<td>BZ-11176</td>
<td>3rd Party EtherCAT device PDO outputs not working.</td>
</tr>
<tr>
<td>BZ-11172</td>
<td>KAS Simulator crashes randomly when stopping the PLCopen application.</td>
</tr>
<tr>
<td>BZ-11170</td>
<td>Reinstate PROFINET drivers in the KAS installer.</td>
</tr>
<tr>
<td>BZ-11162</td>
<td><strong>MC_CamResumePos</strong> returns incorrect position after camming has stopped.</td>
</tr>
<tr>
<td>BZ-11161</td>
<td>EtherCAT does not start with CoE Init commands for AKD2G outputs that don't exist.</td>
</tr>
<tr>
<td>BZ-11156</td>
<td>WorkBench Setup Wizard always disabled in Online Configuration Mode.</td>
</tr>
<tr>
<td>BZ-11153</td>
<td>Multiple <strong>MC_MoveAbsolute</strong> calls with blending buffer mode does not decelerate correctly.</td>
</tr>
<tr>
<td>BZ-11084</td>
<td>IDE Crash w/ IDE-WB Scope views during Ethernet connection loss.</td>
</tr>
</tbody>
</table>
## 8 Known Issues

These are the known issues for this release.

<table>
<thead>
<tr>
<th>Defect</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ-11143</td>
<td>IDE has long delay when mapping variables to Safety PDOs.</td>
</tr>
<tr>
<td>BZ-11139</td>
<td>IDE PLCopen digitizing axis w/ multi-turn has incorrect user units</td>
</tr>
<tr>
<td>BZ-10458</td>
<td>PLC Variable Creation Wizard don’t show the mapping.</td>
</tr>
<tr>
<td>BZ-10451</td>
<td>Cannot start application with direct Ethernet connection.</td>
</tr>
<tr>
<td>BZ-10419</td>
<td>Drag-n-drop variable from UDFB instance to watch window does not display the value.</td>
</tr>
<tr>
<td>BZ-10275</td>
<td>PxMM controller bus time not synchronized with DC master time.</td>
</tr>
<tr>
<td>BZ-9928</td>
<td>ESI file list not updated when good and bad ESI files added at the same time.</td>
</tr>
<tr>
<td>BZ-9835</td>
<td>Non-ASCII characters in projects not handled properly in the IDE.</td>
</tr>
<tr>
<td>BZ-9834</td>
<td>Import/export from/to non-ASCII file names does not work correctly.</td>
</tr>
<tr>
<td>BZ-9496</td>
<td>AKD-N firmware download fails if 4x drives are selected.</td>
</tr>
<tr>
<td>BZ-9359</td>
<td>PDO objects not defined in the object dictionary (or 24-bit size) will not work properly with MLSmpXxxx(…) functions.</td>
</tr>
<tr>
<td>BZ-8659</td>
<td>PLCopen move blending with jerk. If the blending move is commanded with an unreachable velocity, the move may abruptly decelerate to the final position within one sample, exceeding the specified deceleration rate.</td>
</tr>
<tr>
<td>BZ-8645</td>
<td>Adding ESI file after scanning results in no selected PDOs.</td>
</tr>
<tr>
<td>BZ-8644</td>
<td>PLCopen S-Curve move may not reach target with small jerk.</td>
</tr>
<tr>
<td>BZ-8643</td>
<td>EtherCAT scan fails after a AKD drive firmware download failure with a wrong EtherCAT topology.</td>
</tr>
<tr>
<td>BZ-8636</td>
<td>Recovered projects don’t recover imported libraries (.kal files).</td>
</tr>
<tr>
<td>BZ-8608</td>
<td>IDE views do not scale if Windows text scaling is &gt; 100%.</td>
</tr>
<tr>
<td>BZ-8605</td>
<td>MLInitTrig does not configure the AKD Capture engine correctly for a negative edge trigger.</td>
</tr>
<tr>
<td>BZ-8588</td>
<td>EtherCAT network restore fails to recover from drive FW download failure.</td>
</tr>
<tr>
<td>BZ-8508</td>
<td>PDOs need padding to meet byte boundary requirement.</td>
</tr>
<tr>
<td></td>
<td>• The IDE PDO Editor does not automatically pad PDOs on non-byte boundaries.</td>
</tr>
<tr>
<td></td>
<td>• The problem can be avoided by manually adding dummy objects to pad the PDO size to line-up on byte boundaries.</td>
</tr>
<tr>
<td></td>
<td>• See this article on KDN: <a href="#">How do I Insert PDO Padding in the KAS PDO Editor?</a> for more information.</td>
</tr>
<tr>
<td>BZ-8212</td>
<td>Modified cam file is not downloaded when forcing an Online Change.</td>
</tr>
<tr>
<td>BZ-8138</td>
<td>WebBrowser component not working for TxB panels.</td>
</tr>
<tr>
<td>BZ-7985</td>
<td>IDE disconnects from the controller after several days.</td>
</tr>
<tr>
<td>BZ-7759</td>
<td>Breakpoint with For(…) loop, increases VM load significantly.</td>
</tr>
<tr>
<td>BZ-7728</td>
<td>IDE animation with non-matching project versions.</td>
</tr>
<tr>
<td>BZ-6240</td>
<td>IDE always reports the project has been modified.</td>
</tr>
</tbody>
</table>
9 Known Limitations

- KAS IDE drive status bar cannot detect if AKD2G is active or inactive in pre-op mode.
- RGM is not supported.
- The undo action is not possible for all operations.
- Find/Search/Replace function:
  - Search & Replace function is not supported in Pipe Network.
  - Search & Replace for HMI are supported only with local CTRL+F.

- In SFC programs, breakpoints can only be set on transitions (i.e., in First Level diagram) and not in steps or conditions.
  - With a breakpoint set on transition, you can debug cycle by cycle.

- SFC programs are limited to 64k byte size due to the bytecode engine.
  - If the SFC program exceeds 64k bytes, the compiler generates a warning message:
    **Warning: limit is 64KB!**

- Plugging the EtherCAT cable to the OUT port is not detected and is not reported as an error.
- PLC Variable mapping: Each PLC variable can be mapped to an EtherCAT IO and exclusively to either:
  - Modbus for an HMI
  - PDMM Onboard IO
  - External driver

  Example: A PLC variable cannot be mapped to Modbus and Onboard PDMM IO at the same time.

9.1 EtherCAT Limitations

- **Cabling**: Plugging the EtherCAT cable to the OUT port is not detected and is not reported as an error.
- **External EtherCAT Configuration**: If an external EtherCAT XML file needs to be used, the file AKD-for-KAS.xml should be used as the ESI file for AKD. This ensures proper operation with KAS.
  - The file is located here:
    C:\Users\<user.name>\AppData\Local\Kollmorgen\KAS\Astrolabe\ESI\.

9.2 FFLD Animation Limitation

The animation of FFLDs defined as UDFBs has a limitation where connected rails are not being animated.

This is not the case when FFLDs are defined as programs or subprograms.
10 AKD Firmware Notes

- The AKD Firmware v1-16 (and later) supports a new drive parameter, ECAT.LEGACYREV, to enable a backwards compatibility RevisionNo (0x2). By default, AKD-Series drives ships with the latest production release firmware, with ECAT.LEGACYREV = 1, for backwards compatibility.
- The AKD Firmware v1-16 (and later) supports a 3rd FMMU if the ECAT.LEGACYREV = 0. The advantage of using a 3rd FMMU is 30% performance improvement with the KAS IDE embedded Workbench communication.
- EtherCAT RevisionNo: EtherCAT provides an optional field to identify a vendor specific RevisionNo for a device and a field to specify the logic to CheckRevisionNo for device compatibility.
  - The KAS IDE and Runtime supports multiple RevisionNos for the same Vendor/ProductID.
  - In previous KAS versions, the EtherCAT initialization would generate a device mismatch error, if the device's RevisionNo and the project's RevisionNo did not match.
  - If the device's ESI file does not specify the CheckRevisionNo logic then, by default, the KAS Runtime allows any RevisionNo at EtherCAT initialization.
  - The IDE allows you to map physical devices to project devices with different RevisionNos and keep the project device configurations.

- Limitation: The CheckRevisionNo options equal or greater than (EQ_OR_G, LW_EQ_HW_EQ_OR_G, and HW_EQ_LW_EQ_OR_G) are not supported. They are evaluated as equal (EQ).
11 Third Party EtherCAT Device Support

This section summarizes the known capabilities and limitations with KAS support for third-party EtherCAT devices.

See:
- Add and Configure Third Party Devices in the online help for directions on integration.
- Set Up FSoE Master and an AKD2G with SafeMotion Monitor if integrating a different third-party FSoE master into a KAS system.

11.1 Requirements

- All third-party devices must have an ESI file containing the device information, features, and settings.
- MDP devices must support automatic module discovery at EtherCAT network scan.

11.2 Limitations

- The KAS IDE does not support third-party drives.
  - Contact your local Kollmorgen representative for details.
- MDP fieldbus gateway devices that require MDP gateway profiles, implemented to the ETG 5001.3 specification, may not be discovered.
  - This includes gateway protocols: CAN, CANopen, DeviceNet, Interbus, and IO Link.
- PDO upload is not supported.
- Manual slot configuration is not supported with MDP devices.
- 3rd-party drivers for network gateway devices are not included.
12 Support and Services

About KOLLMORGEN

Kollmorgen is a leading provider of motion systems and components for machine builders. Through world-class knowledge in motion, industry-leading quality and deep expertise in linking and integrating standard and custom products, Kollmorgen delivers breakthrough solutions that are unmatched in performance, reliability and ease-of-use, giving machine builders an irrefutable marketplace advantage.

Join the Kollmorgen Developer Network for product support. Ask the community questions, search the knowledge base for answers, get downloads, and suggest improvements.

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