

# Kollmorgen Automation Suite

## Release Notes



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Valid for KAS Software Revision 2.10

Valid for AKD series drive firmware version: 1-14

Part Number: 959720

Keep all manuals as a product component during the life span of the product.  
Pass all manuals to future users / owners of the product.

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## 2 Introduction

Welcome to KAS v2.10! This release contains new features and many improvements. This document is intended to help existing users understand the differences between this and KAS v2.9. If you are new to KAS, we recommend that you start off with other documents, such as the Installation Guide.

This document has five sections:

- "Installation" (→ p. 6) — this section covers system requirements as well as provides firmware, software, and hardware information.
- "What's New" (→ p. 11) — an overview of new features.
- "What's Changed" (→ p. 15) — this section discusses how this release may affect some of your 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 — a list of issues addressed in this release.
- "Known Issues" (→ p. 19) — this section contains issues we are aware of, and methods for avoiding or working around them.

### NOTE




This document contains links to more complete descriptions in the online help. Wherever you find this icon , you may click it and go to the help topic on KDN. We point to KDN with absolute links so you can use this PDF from any directory.

### TIP

We recommend that you visit the [Kollmorgen Developer Network \("KDN"\)](http://kdn.kollmorgen.com). 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. Additionally, beta versions of the help are posted and are searchable. Stop by <http://kdn.kollmorgen.com>, take a look around, and don't forget to register.

## 3 Installation

### 3.1 System Requirements

Element	Description
<b>Operating System</b>	Microsoft® Windows® 7 SP1 (32 or 64-bit). For optimal performance, please be sure your operating system is fully updated with the latest patches.
<b>Processor type</b>	Intel® Pentium® M or equivalent processor at 1.5 GHz or greater.
<b>Memory</b>	1 GB RAM or greater (which is recommended for complex applications)
<b>Storage</b>	1 GB hard drive or compact flash space
<b>Display</b>	WXGA+ (1440 x 900) or higher-resolution monitor with 24-bit color. See Note #1 below.
<b>Connectivity</b>	1 Ethernet port, at either 100Mbps/s or 1Gbits/s. See Note #2 below.
<b>Web Browser</b>	A modern web browser is required to access the web server and online help. We recommend Internet Explorer (IE9 or later, see Note #3)  , Mozilla FireFox  , or Google Chrome  .



#### 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 AKDWorkBench AutoTuner and Scope both require 100Mb of bandwidth to function properly.
3. IE9 should be considered a minimum. Later versions of the browser are more compliant with web standards and afford better performance and compatibility.

### 3.2 Firmware & Software Requirements






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

#### 3.2.1 IDE, Controller, and Programmable Drive Software

Software Images	Recommended Version	Download
KAS IDE	2.10.0	n/a
PDMM & PCMM 800MHz Runtime Firmware	2.10.0	
PDMM & PCMM 1.2GHz Runtime Firmware	2.10.0	
PAC master image (Previous KVB 1.2 runtime pre-installed)	2012-04-30	n/a

### 3.2.2 AKD Drive Firmware Requirement

KAS is compatible with AKD-M (PDMM Drive), AKD-P (Motion Tasking Drive or Position Indexer), AKD-C, and AKD-N drives. The recommended firmware version is dependent upon your drive's model and revision. The operational image recommended with this release is 01-14-00-003.

AKD firmware to use with version 2.10		Download
PDMM Servo Drive Firmware	AKD-M-M1EC-V01-14-00-003.i00 AKD-M-MCEC-V01-14-00-003.i00	
AKD-C	AKD-C-CBEC-V01-14-00-003.i00	
AKD-N	AKD-N-xxEC-V01-14-00-003.i00	
AKD EtherCAT drive, up to r.8	AKD-P-NACC-V01-14-00-003.i00 AKD-P-NAEC-V01-14-00-003.i00	
AKD EtherCAT drive, r.9	AKD-P-NBCC-V01-14-00-003.i00 AKD-P-NBEC-V01-14-00-003.i00	
Resident image	R_00-00-54-000.i00	n/a
Resident image for AKD-C/N	R_00-00-55-000	n/a

#### TIP

Please be aware that you may get a F106 error after upgrading your 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.

#### TIP


FBUS . PARAM05 bit 5 should be set to 0, which is the default value. This will prevent 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.

#### 3.2.2.1 Mandatory Resident Firmware

The recommended resident firmware is v54 (R\_00-00-54-000). The recommended resident firmware for AKD-C and AKD-N is v55 (R\_00-00-55-000). To reliably support the EtherCAT Firmware Download, the resident firmware must be at least version 35. Please [contact Kollmorgen](#) for any AKD Drive with resident firmware lower than v35.

### 3.2.3 Kollmorgen Visualization Builder

Software Images	Recommended Version	Download
Kollmorgen Visualization Builder (KVB) master image	2.15	

The new installation package contains both the IDE and runtime for PAC. KVB runtime installation on the PAC requires that:

#### IMPORTANT

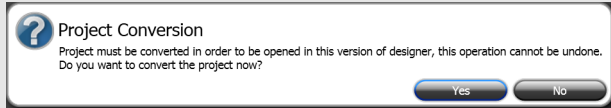
Windows firewall on the PAC should be disabled to allow this feature to work.

The KVB ZIP file contains two different installers:

Install Type	File	Notes
<b>New installation</b>	setup.exe	This is the complete package which will install all prerequisite components.
<b>KVB is already installed</b>	NeoSetup.msi	This package will update your current installation to v2.0

**NOTE**

The KAS IDE creates projects using KVB 2.0. When you open a version 2.0 project by double-clicking on it, KVB will upgrade the project to version 2.1.



**IMPORTANT**

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

**TIP**

If you have a KVB 1.2 project that needs to be updated in KVB 2.x, please contact Kollmorgen.

### 3.3 KAS Controls

KAS Runtime is compatible with, and has been verified with the following AKC hardware models:

Description	Model Number	Main Characteristics
Panel PAC	<a href="#">AKC-PNC-C1-224-10N-00-000</a>	Mono-core 1.2 GHz CPU, 2GB RAM, 10" display
Panel PAC	<a href="#">AKC-PNC-C1-224-15N-00-000</a>	Mono-core 1.2 GHz CPU, 2GB RAM, 15" display
Panel PAC	<a href="#">AKC-PNC-D1-224-15N-00-000</a>	Dual-core 1.86 GHz CPU, 2GB RAM, 15" display
Panel PAC	<a href="#">AKC-PNC-D1-224-17N-00-000</a>	Dual-core 1.86 GHz CPU, 2GB RAM, 17" display
Performance Box Controller	<a href="#">AKC-PLC-C1-224-00N-00-000</a>	Mono-core 1.2 GHz CPU, 2GB RAM
Performance Box Controller	<a href="#">AKC-PLC-D2-224-00N-00-000</a>	Dual-core 1.86 GHz CPU, 2GB RAM
Performance Box Controller	<a href="#">AKC-RMC-D2-224-00N-00-000</a>	Dual-core 1.86 GHz CPU, 2GB RAM
PDMM	<a href="#">various</a>	
PCMM	<a href="#">various</a>	

**NOTE**

KAS IDE and Simulator should not be installed on a PAC, PDMM, or PCMM.

**TIP**

In order to prevent CF card corruption when shutting down the PAC, we recommend using the Enhanced Write Filter (EWF). This filter redirects all the write operations in memory in order to avoid making physical write operations in the compact flash.

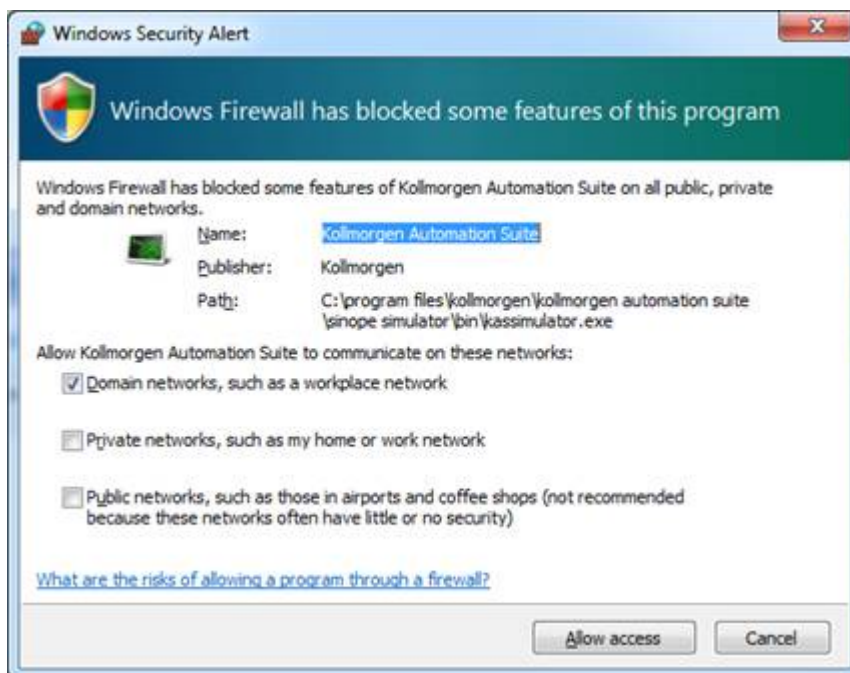
The filter should be activated on the PAC when it is fully set up, programmed, and will not change. In case of a significant change, such as a new KAS version or downloading a new application, the recommendation is to turn off the EWF, make the change, and then reactivate it. Please see the user help to learn how to use the EWF.





### 3.4 Allow Simulator to Use HTTP Communication

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




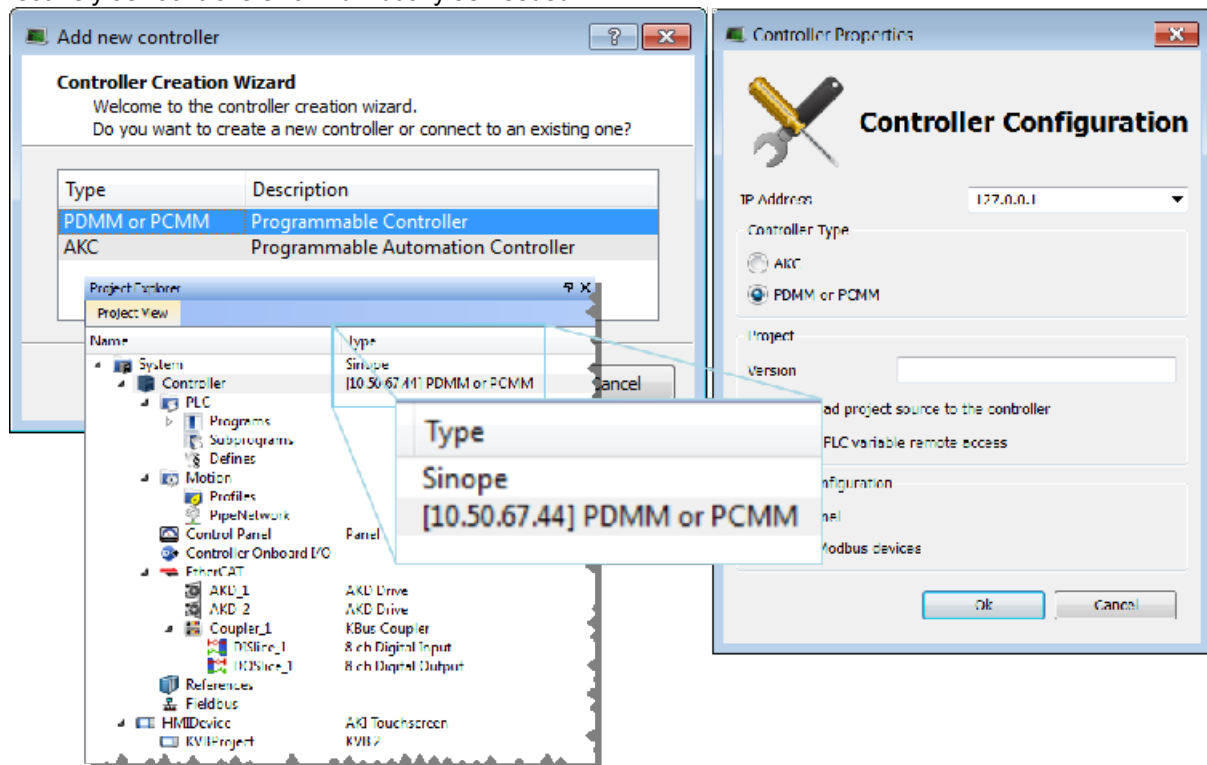
The Simulator uses port 80 for the web server. This communication channel is mandatory for Simulator to work properly. So please close any application, such as VOIP, that may use port 80 before starting Simulator.

For more information see Start KAS Simulator in the online help. 

## 4 What's New

### 4.1 Support for PCMM

The PCMM is a PDMM without an internal drive control board or power board. The KAS IDE and web server have been updated to include full support for the PCMM controller. The interface includes references to both the PDMM and PCMM in most cases. The documentation may refer to the devices collectively as "controllers" or individually as needed. 



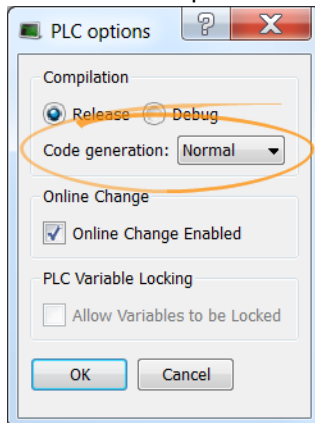
Controller Model	File Name
PCMM 800MHz	KAS-PCMM-M- <b>M</b> CEC-x.x.x.xxxxx.img
PCMM 1.2GHz	KAS-PCMM-M- <b>M1</b> EC-x.x.x.xxxxx.img

#### NOTE

The naming convention for web server log files remains unchanged for backward compatibility. Both PDMM and PCMM are labelled as "PDMM\_Log\_xxxxxxxx".

## 4.2 Fast PLC (Optimized Code)

The KAS IDE has two options for code compilation, Normal and Optimized. Normal is the default, and recommended option as it allows for all of the PLC features in the KAS IDE and KAS Runtime.

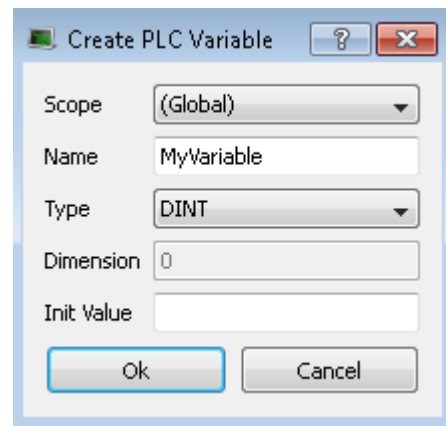


Optimized code is more efficient, producing less CPU load than the Normal option. This additional performance comes at the cost of debugging features, PLC Online Change being disabled, and WAIT / WAIT\_TIME are not supported.

## 4.3 Mapping of PLC Array Variables

The KAS IDE now supports mapping PLC array variables to PDOs and to I/O (Onboard I/O, AKD I/O, and Slice I/O). PLC variables may be mapped via drag-and-drop from the Dictionary, or by right-clicking on the PDO in the **PDO Selection/Mapping** tab, and selecting **Map**.

The **Create PLC Variable** dialog automatically creates an array and sets the dimension if a single variable size is smaller than the object's data size. The **Create PLC Variable** dialog's start bit configuration does not apply to arrays.



### Limitations:

- Mapping to arrays of BOOL data types are not supported.
- Mapping PLC variables to PDO objects with REAL data types is not supported.
- Mapping to arrays always starts with element index 0. Offsets are not supported

## 4.4 V1.14 Firmware

The KAS Runtime and KAS IDE have been tested with the latest firmware.

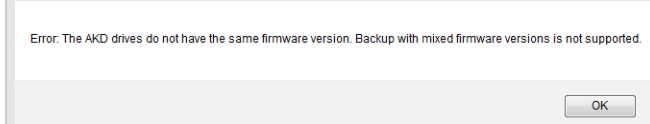
Device	FW Version	Notes
<b>AKD-C</b>	operational: 01-14-00-003 resident: R_00-00-55-000	The KAS IDE has been updated to support the new "dual-string" AKD-C EtherCAT Product Number in the AKD-C v1-14 firmware. Upgrading to AKD-C firmware v1-14 will automatically change the Product Number, requiring the devices to be re-scanned and discovered.
<b>AKD-N</b>	operational: 01-14-00-003 resident: R_00-00-55-000	The KAS IDE now supports the AKD-N single file firmware for multiple AKD-N models (AKD-N-xxEC-Vxx-xx-xx-xxx). Multiple AKD-N models can be selected and upgraded from the single file firmware simultaneously. For more details, see the EtherCAT devices view documentation.



Device	FW Version	Notes
<b>AKD-P</b>	operational:	The 01-14-00-002 and 01-14-00-003 versions for AKD-M and AKD-P have identical functionality. The KAS IDE and Runtime support both versions. If your application uses AKD-C/N with 01-14-00-003, then we recommend also using 01-14-00-003 with AKD-M and AKD-P.
<b>AKD-M</b>	01-14-00-002 or 01-14-00-003	
	resident: R_00-00-54-000	

**! IMPORTANT**

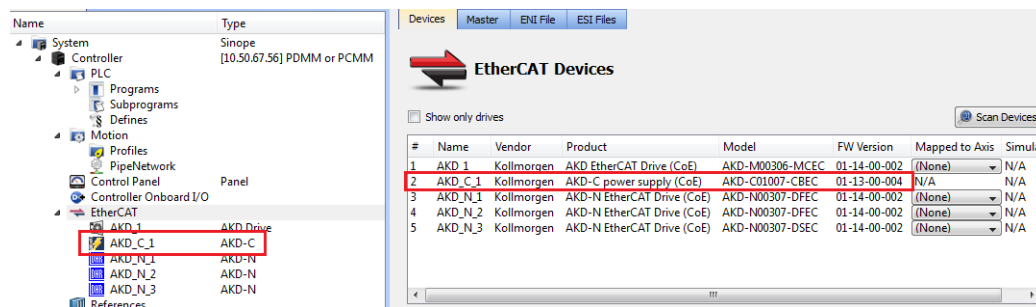
If your application uses the **Backup and Restore** feature for EtherCAT devices, all of the Kollmorgen AKD-series drives on the EtherCAT network must have the same drive firmware version. If the firmware versions do not match, the Backup will fail with the following message:



V01-14-00-002 is available for AKD-M and AKD-P. V01-14-00-003 is available for AKD-M, AKD-P, AKD-C, and AKD-N. If the EtherCAT network contains AKD-C/N, then use AKD firmware version v01-14-00-003 with all AKD-series drives.

### 4.4.1 AKD-C

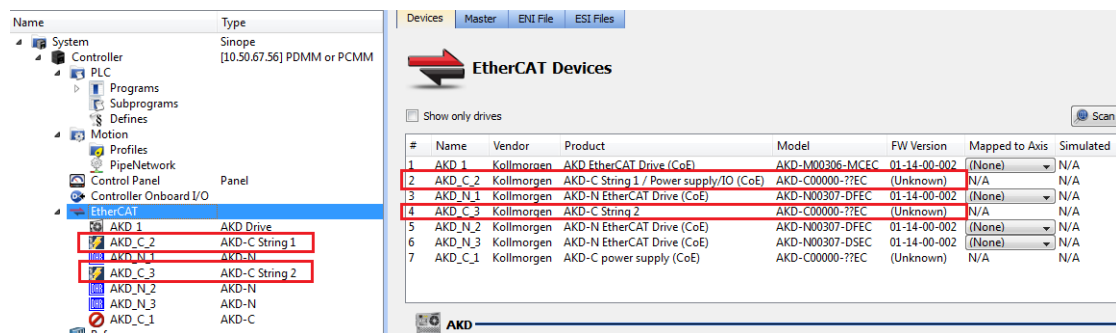
An AKD-C with v1-13 firmware will be discovered as an “AKD-C” product type, with a single string:



Because the Product Type will change during the upgrade to v1-14 any AKD-C EtherCAT configurations (PDOs, PLC variable maps, etc.) will be lost. Use the following procedure for upgrading.

1. Upgrade AKD-N drives
2. Upgrade AKD-C devices
3. Re-scan the EtherCAT network
4. Proceed with the reconfiguration

After upgrading to v1-14, the AKD-C is discovered as an “AKD-C String 1” product type. If there are AKD-Ns connected to both ports on the AKD-C, then an “AKD-C String 2” product type will also be discovered:



**! IMPORTANT**

AKD-C firmware v1-14-00-003 (or higher) is not compatible with KAS v2.9 (or lower). The KAS IDE will not

recognize the AKD-C drive with version 1-14-00-003 (or higher) and will not support AKD-C drive firmware download.

Either upgrade KAS to version 2.10 (or higher) or downgrade the AKD-C firmware to v1-13-00-004 (or lower) using Workbench via the drive's Service port (TCP/IP).

#### 4.4.2 Backup & Restore EtherCAT Devices, AKD-C Firmware Version Compatibility

Backup FW Version	Replacement FW Version	Compatible?
v13 (or lower)	v13 (or lower)	Yes
v14 (or higher)	v14 (or higher)	Yes
v13	v14	No, see "Solution" below
v14	v13	No, see "Solution" below


##### **Solution:**

Use Workbench to make the drive the same firmware version as the backup file. Download AKD-C firmware to make the drive firmware version compatible with the backup.


## 5 What's Changed

This section discusses changes in products that you should be aware of.

### 5.1 Retain Variables

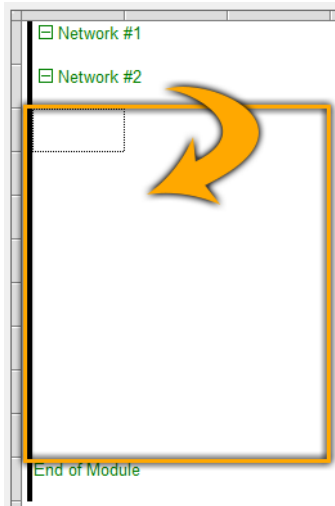
Retain variables were reset to their configured init values in earlier versions of KAS if a new retain variable was added, or an existing retain variable was removed or modified. Modifying a retain variable no longer automatically forces a reset. See the help for more information. 

### 5.2 MC\_TouchProbe with Secondary Encoder

The function block MC\_TouchProbe supports both time-based and position based capture with the secondary feedback device interface available with AKDs. To select time vs. position based capture, the TRIGGER\_REF structure contains a Mode (0 for time-based, 1 for position). 

### 5.3 FFLD Editor

To make adding items easier, the Insert Network command now adds eight (8) rows in the network.

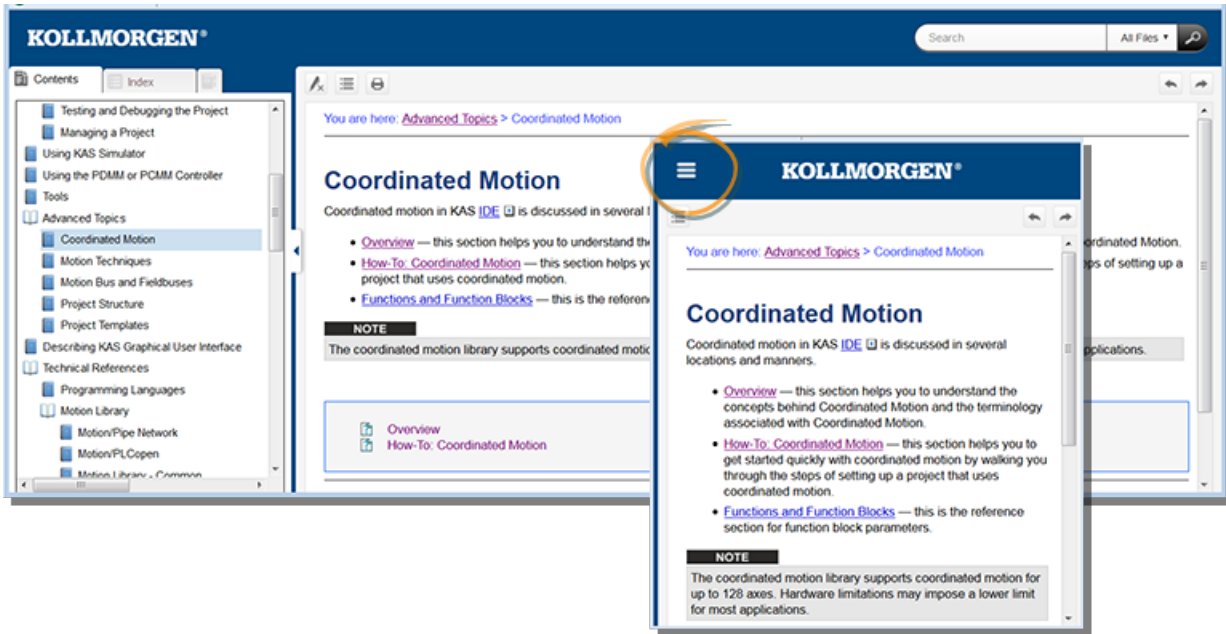


### 5.4 Online Help

The help system has been upgraded to [HTML5](#). It includes the following changes: 

- The presentation size scales with the media device. So, the viewing experience is better on a smaller device (tablet, phone, etc.)
- Improved search:
  - Results include a paragraph excerpt.
  - Partial word search.
  - Searchable Index & Glossary
- Online Help is now available on KDN: <http://kdn.kollmorgen.com/webhelp/kas/>

The built-in Online Help viewer uses the version of Internet Explorer installed on the PC. To support HTML5, Internet Explorer 9 (or higher) is required.





## 6 What's Fixed

Following are the issues corrected by this release.

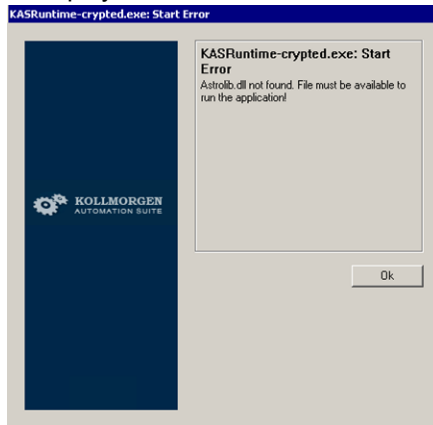
<b>DT-3022</b>	Intermittent connection issue
<b>DT-3241</b>	Profinet connection failing with TIA13 is connected to the siemens PLC.
<b>DT-3248</b>	KVB Recipe values with decimals truncated
<b>DT-3254</b>	Watch Window 'Remove All Variables' function will lock up KAS
<b>DT-3296</b>	Clean-up KAS project files with inactive HMI projects
<b>DT-3305</b>	Retain variables being reset
<b>DT-3306</b>	Compare projects feature not working with Ladder editor
<b>DT-3310</b>	CoE init commands with ENUM of BOOL datatypes
<b>DT-3311</b>	CoE sub objects with Enum datatypes may have wrong RO   RW flags
<b>DT-3312</b>	Cannot scan MDP modules on devices that have large ECAT mailboxes (ex Festo)
<b>DT-3314</b>	AKD digital output don't work if added to a different PDO
<b>DT-3317</b>	MLMotionRstErr not working in KAS v2.9.
<b>DT-3318</b>	Converter Reads NAN when connected to sampler
<b>DT-3323</b>	Capture position not accurate at higher velocities using CAPx.MODE 2 (DC). See KDN for details to set the Sensor Delay axis parameter for accurate time-based capture. <a href="http://kdn.kollmorgen.com/content/mctouchprobe-and-time-based-capture">http://kdn.kollmorgen.com/content/mctouchprobe-and-time-based-capture</a>
<b>DT-3324</b>	MC_GearInPos slave not accelerating correct with master rollover
<b>DT-3325</b>	PDMM as a Profinet controller crashes with E21 if more than 7 slots are used
<b>DT-3331</b>	Controller type changing with 2.10 beta release
<b>DT-3332</b>	Program import/export issue with 2.10 RC
<b>DT-3340</b>	<p>Motion Jerk when MC_CAMIn is recalled. To fix this problem with virtual masters in previous KAS releases, set the 'Velocity Compensation Factor' (parameter number 1009) to zero for the slave axis.</p> <p>Details - The axis parameters 'Velocity Compensation Factor' and 'Velocity Compensation Filter' (parameter numbers 1009 and 1010 respectively) were changed to be properties of master axes instead of slave axes. This change was made because these properties address physical attributes of master axes. The default value of 'Velocity Compensation Factor' (parameter number 1009) was changed for virtual axes to be zero since virtual masters do not require velocity compensation. In order to maintain the same behavior for camming and gearing when updating an application from KAS 2.9 or earlier, calls to MC_WriteParam for 'Velocity Compensation Factor' and 'Velocity Compensation Filter' must be applied to the master axis instead the slave axis. If neither parameter was changed by an application, the behavior will be the same.</p>
<b>DT-2860</b>	Addressed an issue where EtherCAT would not detect a cable being disconnected between the PDMM and the first node.
<b>DT-3332</b>	Program import/export issue with 2.10 RC
<b>DT-3333</b>	Addressed an issue where mapping to I/O did not work when I/O CoE objects are contained in multiple PDOs.
<b>DT-3349</b>	MC_SetPos does not reset the recorded position for the triggered axis when MC_TouchProbe is configured for position capture.
<b>DT-3350</b>	Sampler clock does not update EtherCAT data with a Drive fault.
<b>DT-3352</b>	Addressed an issue where the KAS IDE could crash when deleting or renaming an EtherCAT device from the Project Explorer.

<b>DT-3358</b>	Crash When MDP Module is Renamed After Other Module is Deleted
<b>DT-3365</b>	AKD Firmware download does not work for M1EC model (AKD in 1.2GHz PDMM)

## 7 Known Issues

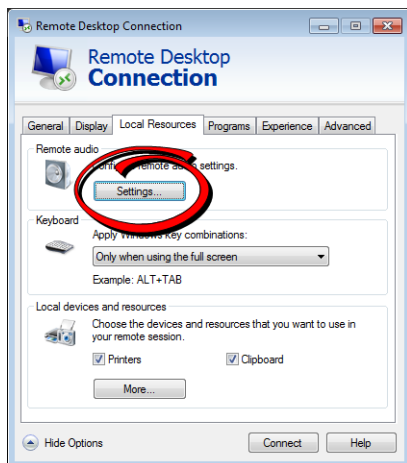
### 7.1 KAS Runtime Fails to Start on the PAC over Remote Desktop

**Symptom:** When accessing the PAC via Remote Desktop, KASRuntime fails to start. Instead, this pop-up is displayed:

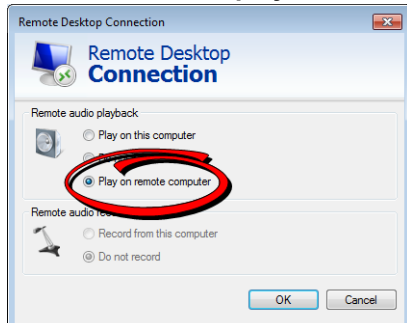


**Workaround:** Set the Remote Desktop “Remote audio playback” setting to “Play on remote computer”:

1. In Remote Desktop, before connecting to the PAC, click on the **Show Options** arrow.
2. Click on the **Local Resources** tab and click **Settings...**



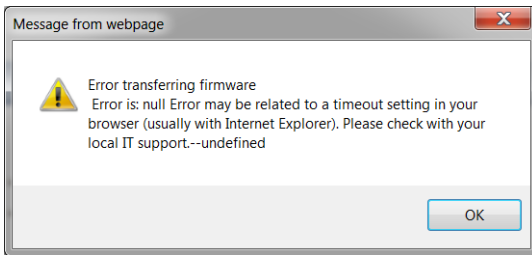
3. Set **Remote audio playback** to **Play on remote computer**.



4. Click **OK** and connect as usual.

## 7.2 PDMM/PCMM Firmware Download Fails with Internet Explorer

Depending on your IE configuration the following error message may occur when trying to update the PDMM Runtime.





If you receive this error you may have to have to work with your IT department to resolve.

### Check if Websense is installed:

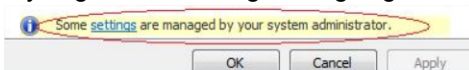
1. Go to Control Panel, Programs and Features.
2. If Websense is installed, contact your IT department to remove.

### Reset Internet Explorer settings

1. Close all Internet Explorer and Windows Explorer windows that are currently open.
2. Open Internet Explorer by clicking the Start button . In the search box, type Internet Explorer, and then, in the list of results, click Internet Explorer.
3. Click the Tools button , and then click Internet options.
4. Click the Advanced tab, and then click Reset.  
Select the Delete personal settings check box if you would also like to remove browsing history, search providers, Accelerators, home pages, Tracking Protection, and ActiveX Filtering data.
5. In the Reset Internet Explorer Settings dialog box, click Reset.
6. When Internet Explorer finishes applying default settings, click Close, and then click OK.
7. Close Internet Explorer.

Your changes will take effect the next time you open Internet Explorer.

If you get the following when going into advanced options:



In this case you will not be able to perform the reset above. You should either work with your IT department to resolve, try using a different Web browser (Firefox, Chrome, etc.), or to update your existing web browser.

### 7.3 Miscellaneous Known Issues

<b>DT-3364</b>	E33 Error on PDMM when AutoStart is enabled with AKD-C and AKD-N drives in the network.
<b>DT-3363</b>	AKD-C DOut does not work with a mapped PLC variable
<b>DT-3361</b>	MC_GrpReadActPos reads the individual axis positions (not the group axis positions)
<b>DT-3356</b>	Watch window with AKD variable value does not update. This occurs when the same AKD parameter is added to multiple watch windows and one (or more) of the watch windows are removed. To avoid the problem, remove all the variables before removing the watch window.
<b>DT-3353</b>	ECATWrite/ReadSDO will not accept index values greater than 32767. To work around, use any_to_int(...) to convert the unsigned index value to a signed integer.
<b>DT-3328</b>	PipeNetwork Trigger block inaccuracies due to 6 sample latency
<b>DT-3307</b>	Data Exchange Direction parameter in KVB tag setup is being erased
<b>DT-3294</b>	Help button in "PROFINET IO device" view is broken.
<b>DT-3290</b>	PDOs need padding to meet byte boundary requirement. The IDE PDO Editor does not automatically pad PDOs on non-byte boundaries. The problem can be avoided by manually adding dummy objects to pad the PDO size to line-up on byte boundaries. For more details, see the article on KDN ( <a href="http://kdn.kollmorgen.com/content/how-do-i-insert-pdo-padding-kas-pdo-editor">http://kdn.kollmorgen.com/content/how-do-i-insert-pdo-padding-kas-pdo-editor</a> )
<b>DT-3287</b>	KL3314 Operation. Temperature values are not calibrated properly to the thermocouple. To work-around the problem, use <b>ECATWriteData</b> to setup the control word (16xE0) and send value (16x2006) to Register R32 and a second <b>ECATWriteData</b> to write zero(0) to the control word to set up the continual output of the temperature.
<b>DT-3284</b>	Edit CoE Init-Command Dialog Box Initialized with Wrong CoE Object. To avoid this problem, manually re-enter the object index and subindex when editing a CoE Init-Command.
<b>DT-3281</b>	KVB unhandled exception error. To work around the problem: <ol style="list-style-type: none"> <li>1. Open "Configure Text" and activate only the tag.</li> <li>2. Close the configure window and reopen the "Configure Text" again.</li> <li>3. Set your conditions and press OK.</li> </ol>
<b>DT-3276</b>	PLCOpen: negative UserUnits prevents MC_GearInPos working. To avoid this problem, only use positive values for UserUnits, negative values are not supported.
<b>DT-3274</b>	Cannot replace ESI files. This problem may be avoided by using the IDE to <b>Delete</b> the existing ESI file from the ESI Files tab and then <b>Add</b> the replacement ESI file.
<b>DT-3271</b>	IDE lock-up after ECAT scan with MDP device.
<b>DT-3265</b>	Modbus renumber address does not work with String variables. In the Fieldbus Editor Modbus configurator, if you right click input registers and choose the renumber address option, it will make the addresses overlap.
<b>DT-3211</b>	Application download could fail from time to time
<b>DT-3155</b>	If a hub is in bt a PAC and the EtherCAT slave, if the cable between the slave and the hub is unplugged, the controller doesn't stop the motion, the axis is not shown in fault. It turns to fault state only when the cable is plugged back in
<b>DT-3066</b>	Opening a KAS project with a device and associated ESI file that are not already imported in the local cache resets the device configuration.

## 7.4 Known Limitations

### 7.4.1 IDE Limitations

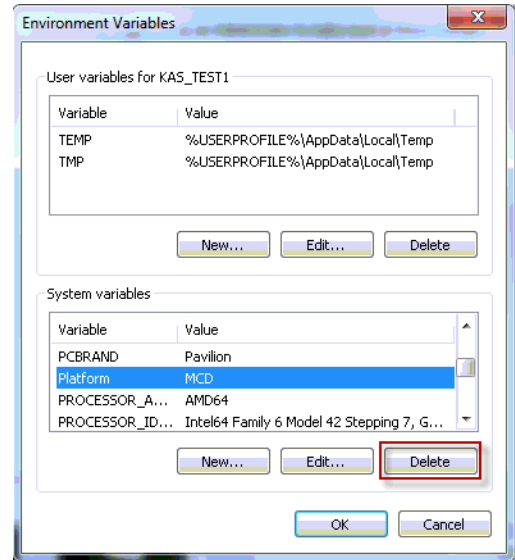
- **Undo:** The Undo action is not supported for AKD GUI views, control panel, or the EtherCAT view.
- **Softscope:** Heavily loaded applications using all 8 channels plugged with derivatives can lose connection with the IDE. This is unusual but if you experience this, please contact Support.
- **Find/Search/Replace function limitations:**
  - Search & Replace function is not supported in Pipe Network.
  - Search & Replace for HMI are supported only with using CTRL+F
- **SFC programs**
  - **Intellisense:** Intellisense is not active in Sequential Function Chart (SFC) programs.
  - **Breakpoints:** In SFC programs, breakpoints can only be set on transitions (i.e. in First Level diagram), and not in steps or conditions. If a breakpoint is set on a transition, you can debug cycle by cycle.
- **PLC Variable mapping:** each PLC variable can be mapped to an EtherCAT IO and exclusively to:
  - Modbus for an HMI
  - Or to an PDMM onboard IO
  - Or to an external driver like Profibus

For example we cannot map the same PLC variable to Modbus and Onboard PDMM IO, but this is possible with a regular EtherCAT IO.

- **Online Change:** Modified cam profiles are detected by the IDE but will not be updated to the controller, even if you choose to force the update. (DT-3013)
- **Downloading Project to a Controller:** If the Ethernet cable is disconnected when downloading a KAS project to a controller, the IDE will freeze for 2-3 minutes. Re-downloading the application will not work. To recover from this condition, restart the KAS Runtime on the controller or power-off/on the controller and restart the IDE. (DT-3011)
- **Upgrading 17+ AKD drives firmware:** If selecting 17 (or more) drives to upgrade firmware, the first 16 drives will be upgraded properly, but the 17th (and higher) drives will not be upgraded. No errors will be reported in the IDE. (DT-2968)
- **Analog Input Slice Offset Parameter:** The offset parameter for Kollmorgen analog input slices is not supported. Changes the offset parameter will have no effect. The gain parameter is working properly. (DT-2935)

### 7.4.2 KVB Limitations

- **Variables:** The Modbus variables are imported to KVB when KVB is opened. They are not updated cyclically after opening. If other variables are exported in the IDE, KVB should be closed and reopened.
- **Alarm stops updating a tag value:** It's not advised to modify in the AlarmServer action on the same tag as the one used to trigger it. A different variable should be used.
- **Running KVB with Simulator:** There is a known issue when using Simulator on some PCs running Windows 7 Home Premium Edition. To workaround this issue, delete the *Platform* system variable:
- **Autostart:** When a KVB project is sent to an AKC (PAC) using the Download feature, the project may not Autostart. The workaround is to start the project manually from `C:\Documents and Settings\All Users\Documents\Kollmorgen Corporation\Kollmorgen Visualization Builder™ 2\ProjectName`.
- **Web Browser for AKI-CDB-xxx panels:** While a web browser component may be added to a AKI-CDB-xxx panel, this component on the CDB panels is fairly limited. For example, KAS web server controller cannot be displayed.



### 7.4.3 EtherCAT Limitations

- **Cabling:** Plugging the EtherCAT cable from an OUT port to an OUT port is not detected and not reported as an error.
- **Cabling:** The following pertains to cases where an Ethernet hub is present between the PAC and the first EtherCAT device. If the cable between the hub and the EtherCAT device is disconnected, the controller will not stop the motion and the axis will not be shown as being in fault. The axis will only display the fault state after the cable is reconnected. To recover from this situation the PAC must be power cycled.
- **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. It can be found at `C:\Users\<user.name>\AppData\Local\Kollmorgen\KAS\Astrolabe\ESI\`.

### 7.4.4 PAC Limitations

- **A38 Alarm:** On the PAC High Range, at 4Khz, user may experience a A38 alarm when having roughly 20 or more drives. This issue means the ECAT frame does not return back to the controller within the same EtherCAT cycle.

## 8 Third Party EtherCAT Device Support

This section summarizes the known capabilities and limitations with KASsupport for 3rd party EtherCAT devices:

### 8.1 Requirements

- All 3rd 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.

### 8.2 Limitations

- KAS may not discover MDP fieldbus gateway devices that require MDP gateway profiles, implemented to the ETG 5001.3 specification. This includes gateway protocols: CAN, CANopen, DeviceNet, Profibus, Interbus, and IO Link.
- 3rd party drives are not supported by the motion engine. Mapping axes to 3rd party drive is not supported.
- PDO upload is not supported.
- Manual slot configuration is not supported with MDP devices.



## 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.



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