Point of View SCADA/HMI

Quick Start Guide:

AutomationDirect Drivers

PV-ADCDRV-M

Notes:

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Notes:

Quick Start Guide for AutomationDirect Drivers

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Please include the Manual Number and the Manual Issue, both shown below, when communicating with Technical Support regarding this publication.

Manual Number:	**PV-ADCDRV-M**
Issue:	**1st Edition, Rev. E**
Issue Date:	**11/14**

Notes:

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GETTING STARTED

CHAPTER

1

In This Chapter...

Introduction

Purpose of this Manual

Thank you for purchasing the AutomationDirect Point of View Scada software. This quick start guide provides information that will help you set up and program your Point of View software for use with our ADC communication drivers.

About Getting Started

If you are familiar with SCADA in general, then following the simple steps in the following chapters may be all you require to start being productive using the Point of View software. After you have completed the steps, your Point of View software will be running a project that you programmed. If you are new to the world of SCADA software, be sure to also read the chapters in the software help file.

Online Help Files and Other Documentation

The Point of View Programming Software, POV-PGMSW, can be downloaded free from the AutomationDirect web site (link shown below under Technical Support). The free download is limited to 40 hrs. of use, but all features and functions are enabled. The Point of View Programming Software includes searchable online help topics covering all aspects of the software and object sets.

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Conventions Used

*When you see the "note pad" icon in the left-hand margin, the paragraph to its immediate right will be a special note. Notes represent information that may make your work quicker or more efficient. The word **NOTE:** in boldface will mark the beginning of the text.*

*Whenever the "lightbulb" is shown in the left-hand margin, the paragraph to its immediate right will provide a special tip. The word **TIP:** in boldface will mark the beginning of the text.*

Key Topics for Each Chapter

The beginning of each chapter will list the key topics that can be found in that chapter.

Getting Started!

Cʜᴀᴘᴛᴇʀ
1

In This Chapter...

Notes:

P3000 DRIVER

CHAPTER

2

In This Chapter...

P3000 Using Tag Integration

Using Point of View along with the P3000 communications driver allows you to easily import the PAC tag database into your POV project using tag integration. With tag integration, all the tags from the PAC can be browsed in the Object Finder, but individual tags are not added to your project tag database nor counted against the project's tag limit until you actually use it somewhere in your project.

In this example, we are going to cover how to read the clock seconds from a P3000 PAC via Ethernet.

NOTE: *An IP address will need to be setup in the PAC prior to starting this exercise.*

1.) Open the Productivity Suite Software and create a new project.

2.) Click on File > Save As > and name 'POV example'.

3.) Connect to the PAC, download the project and ensure the PAC is in RUN.

4.) Open the Point of View software.

5.) Click on the Application Menu button and select New.

6.) Enter 'P3000 Example' as the project name. Select the product type that is currently licensed on the USB key for the PC you are using, then hit OK. (Ignore if in Demo Mode)

Product type*:

Windows Professional (5000 tags)
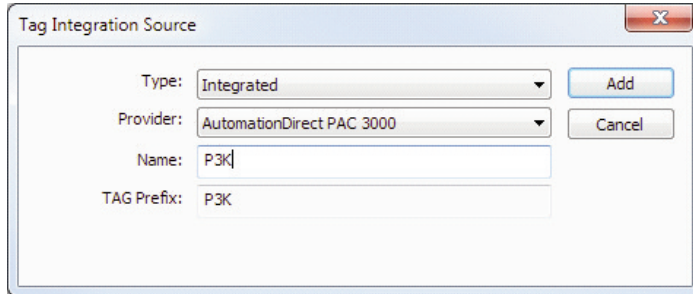Windows Standard (1000 tags)
Windows Lite (500 tags)

7.) The Project Wizard will open > Hit OK.
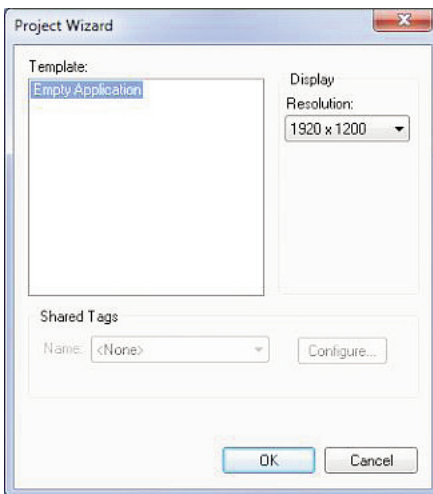
Next, we will use tag integration to setup the communications to the P3000:

8.) Click on the Project tab > select Communication on the ribbon bar.

9.) Under Tag Integration, click on Add.

10.) Select the drop down next to Provider, and choose AutomationDirect PAC 3000.

11.) In the Name field the default name is 'DEV', change this to 'P3K' > Click on Add.

12.) Next for PLC station, type in your PAC IP address.
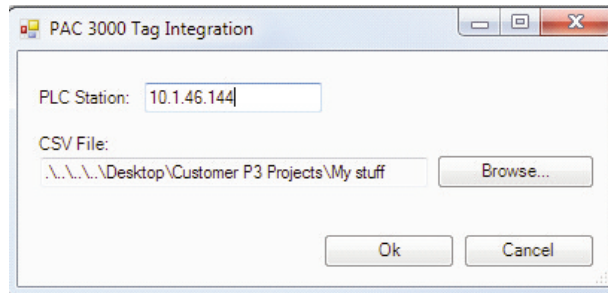
13.) Click on the Browse button > now browse for your PAC project .csv file we saved in step 2 'POV example'.

14.) Click on the OK button > Click on the OK once again.

NOTE: *All the tags from the .csv have now been imported into your POV project.*

NOTE: *Integrated tags are not added to a Main or Standard driver worksheet, these tags are found using the Object Finder which is located in the Tags section of the Home ribbon. Open the Object Fnder and then expand the Devices.*

Next, we will create a text object to read the clock seconds:

15.) Click on the Graphics tab at the bottom of the Project Explorer pane.

16.) Now right click on Screens and select Insert > then select OK.
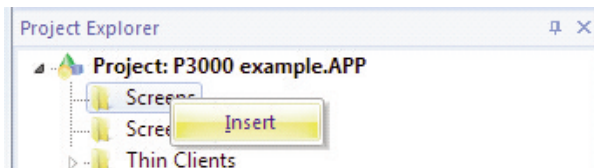
17.) On the ribbon bar under the Graphics tab select Active Objects > then Text. This will give you a cross-hair, left click and place anywhere on the screen work area.

18.) Now type in 'P3KSeconds: ##' > Hit Enter.

19.) Double left click on the above entry to open the properties.

20.) Click on 'Text data link'.

21.) At the end of the Tag/Expression field, click on the Browse button. [...]

22.) In the left hand column, you will see a P3K folder under Devices. Click on the P3K folder and in right hand window you will see all of the tags brought in during the Tag Integration process.
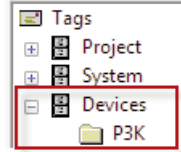

NOTE: *These tags are shown in grey indicating that you still need to select and Import the desired tags to be used in the project.*
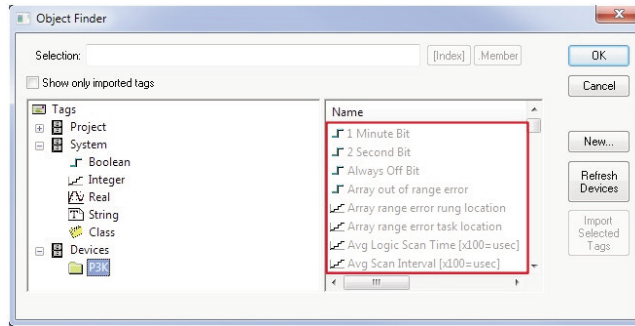
23.) Next type 'Clock Seconds' in the Selection Field, this will filter the tags listed.

24.) Left click on the Clock Seconds tag, the Import Selected Tags will now be highlighted for you to select.

25.) Select Yes on the next pop up > hit OK once successfully adding the tag > then select OK to close the object finder and apply this tag to your object.
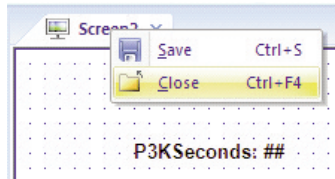
NOTE: *The Clock Seconds tag is now in black indicating the tag has been imported and can be used in your project. In addition, notice your tag count (bottom right hand corner) increased by one.*
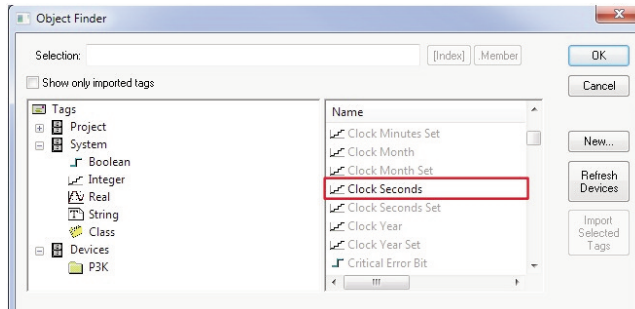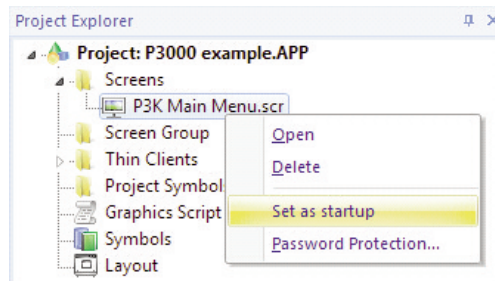

26.) Now you should see P3K.Clock_Seonds in the Tag/Expression Field.

27.) Close the Object Properties window.

28.) Right click on the current screen tab and select Close.

29.) On the pop up, select Yes to save changes.

30.) Change the file name to 'P3K Main Menu', then select Save.

31.) Under the screen folder > right click on our newly created screen > select 'Set as Startup'.

We will now run the project to verify communications between the PC and the PAC:

NOTE: Ensure your PC is connected to the P3000 PAC Ethernet port or switch prior to placing in Run.

32.) On the ribbon bar > under the 'Home' tab and Local Management > select the Run button.

33.) You should now see the seconds updating on your screen.
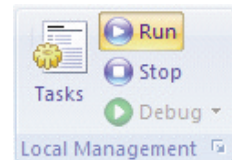
NOTE: If any part of the project doesn't work as expected (or to exit the runtime application), switch back to the development application (ALT+TAB) and then click Stop on the Home tab of the ribbon. Then if needed, begin troubleshooting.

NOTE: If tag changes were made in the P3000 project, you must save the changes and then select "Refresh Devices" in the POV Object Finder window in order to update the window and reflect these changes.

Notes:

*DIRECT*LOGIC DRIVER

CHAPTER

3

In This Chapter...

*Direct*LOGIC Using Tag Integration

Using Point of View along with the Koyo DirectLogic communications driver, allows you to easily import the TagDB into your POV project using tag integration.

By using tag integration, all tags from the PLC can be browsed in the Object Finder, but an individual tag is not added to your project tags database nor counted against the project's tag limit until you actually use it somewhere in your project.

In this example, we are going to cover how to read the clock seconds from a Koyo D2-260 via Ethernet.

NOTE: An IP address will need to be setup in the H2-ECOM100 prior to starting this exercise.

1.) Open *Direct*SOFT Software and create a new project, name this project "POV Example".

2.) Click on Tools > Documentation Editor.

3.) Use shortcut Ctrl + F (Find), and type in V7766 > Hit enter.

4.) For V7766, under Nickname, type in "Clock Seconds".

5.) On rung 1, enter an END statement.

6.) Click on File > Save Project > To Disk.

7.) Download the project to the PLC.

8.) Now click on File > Export > Element Documentation > Save.

9.) Open Point of View software.

10.) Click on Application Menu button [POV] and select New.

11.) Enter a 'Koyo DirectLogic Example' as a project name, select your product type that is currently licensed on the USB key for the PC you are currently using > Then hit OK. (Ignore if in Demo Mode)
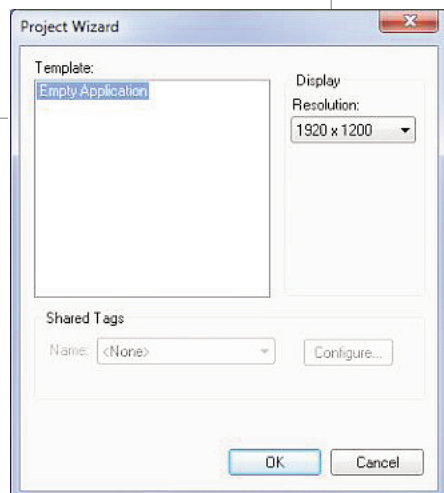
Product type*:

Windows Professional (5000 tags)
Windows Standard (1000 tags)
Windows Lite (500 tags)

12.) Project Wizard will open > Hit OK.

Next, we will use tag integration to setup the communications to the Koyo D2-260:

13.) Click on the Project tab > select Communication on the ribbon bar.

14.) Under Tag Integration, click on Add.

15.) Select the drop down next to Provider, and choose AutomationDirect Koyo.

Project Wizard

Template:
Empty Application

Display
Resolution:
1920 x 1200

Shared Tags
Name: <None>   Configure...

OK   Cancel
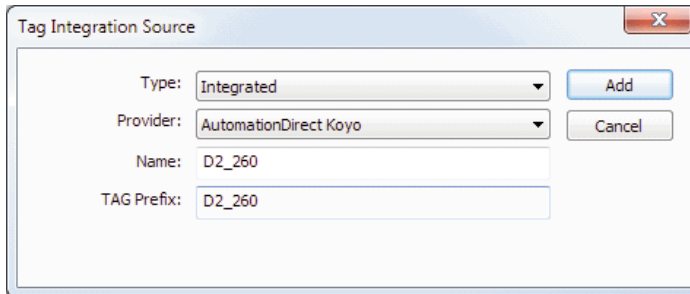
16.) In the Name field the default name is 'DEV', change this to 'DL' > Click on Add.
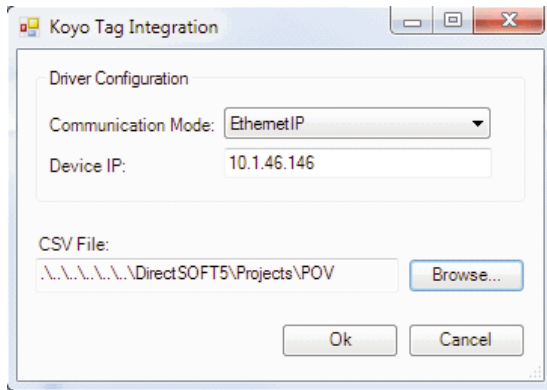
17.) Next for Communication Mode, select EthernetIP.

18.) Enter the IP address of your ECOM-100 into the Device IP field.

19.) Click on the Browse button > now browse for your DirectSoft project .csv file we exported in Step 8 "POV example".

20.) Click on the OK button > Click on the OK once again.

NOTE: *All the tags from the .csv have now been imported into your POV project.*

NOTE: *Integrated tags are not added to a Main or Standard driver worksheet, these tags are found using the Object Finder which is located in the Tags section of the Home ribbon. Open the Object Fnder and then expand the Devices.*

NOTE: *Integrated tags can not have an optional format modifier added. You will need to manually add the tag to a Main or Standard driver worksheet to used modifiers.*

Next, we will create a text object to read the clock seconds:

21.) Click on the Graphics tab at the bottom of the Project Explorer pane.

22.) Now right click on Screens and select Insert > then select OK.
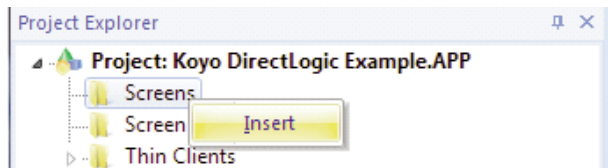
23.) On the ribbon bar under the Graphics tab select Active Objects > then Text. This will give you a cross-hair, left click and place anywhere on the screen work area.

24.) Now type in 'DLSeconds: ##' > Hit Enter.

25.) Double left click on the above entry to open the properties.

26.) Click on 'Text data link'.

27.) At the end of the Tag/Expression field, click on the Browse button. [...]

28.) In the left hand column, you will see a DL folder under Devices. Click on the DL folder and in right hand window you will see all of the tags brought in during the Tag Integration process.

NOTE: *These tags are shown in grey indicating that you still need to select and Import the desired tags to be used in the project.*
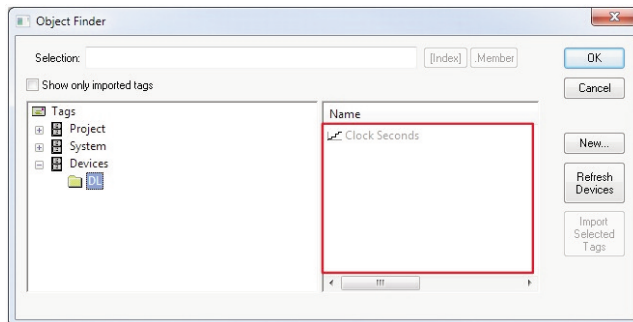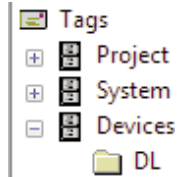
29.) Left click on the Clock Seconds tag, the Import Selected Tags will now be highlighted for you to select.

30.) Select Yes on the next pop up > then hit OK once successfully adding the tag.

NOTE: *The Clock Seconds tag is now in black indicating the tag has been imported and can be used in your project. In addition, notice your tag count (bottom right hand corner) increased by one.*
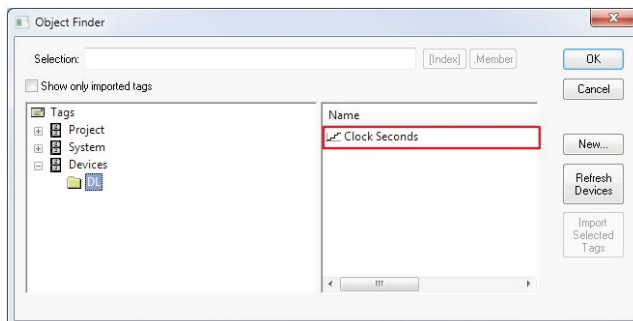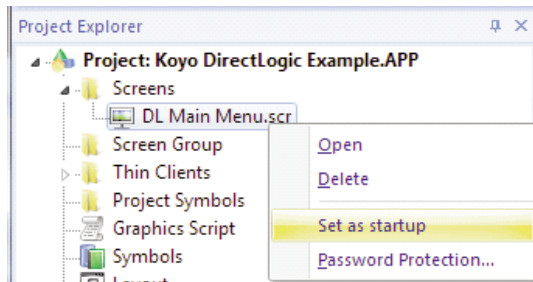
31.) Click the OK button > you should see DL.Clock_Seonds in the Tag/Expression Field.

32.) Close the Object Properties window.

33.) Right click on the current screen tab and select Close.
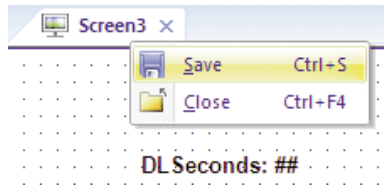
34.) On the pop up, select Yes to save changes.

35.) Change the file name to 'DL Main Menu', then select Save.

36.) Under the screen folder > right click on our newly created screen > select 'Set as Startup'

We will now run the project to verify communications between the PC and the D2-260:

NOTE: Ensure your PC is connected to the H2-ECOM100 Ethernet port or switch prior to placing in Run.

37.) On the ribbon bar > under the 'Home' tab and Local Management > select the Run button.

38.) You should now see the seconds updating on your screen.
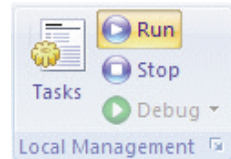
NOTE: If any part of the project doesn't work as expected (or to exit the runtime application), switch back to the development application (ALT+TAB) and then click Stop on the Home tab of the ribbon. Then if needed, begin troubleshooting.

*Direct*LOGIC Addressing in Point of View

*Direct*Logic POV Addressing for Koyo Driver

Data Types	*Direct*Logic Address	POV Address	Data Format	Read/Write
X	X0	X:0	BOOL	Read
Y	Y0	Y:0	BOOL	Read/Write
C	C0	C:0	BOOL	Read/Write
S	S0	S:0	BOOL	Read/Write
SP	SP0	SP:0	VARIES	Varies
T	T0	T:0	BOOL	Read/Write
CT	CT0	CT:0	BOOL	Read/Write
V	V2000 (bit of word)	V:2000.0	INTEGER	Read/Write
V	V2000 (unsigned)	V:2000	INTEGER	Read/Write
V	V2000 (signed)	V:2000:S	INTEGER	Read/Write
V	V2000 (BCD)	V:2000:B	INTEGER	Read/Write
V	V2000 (BCD double word)	V:2000:LB	INTEGER	Read/Write
V	V2000 (unsigned double word)	V:2000:D	INTEGER	Read/Write
V	V2000 (signed double word)	V:2000:SD	INTEGER	Read/Write
V	V2000 (floating point)	V:2000:F	REAL	Read/Write
V	V2000 (ASCII string)	V:2000:A.#*	STRING	Read/Write

* [# is equal to the length of the string]

*Direct*Logic POV Addressing for Modbus

Data Types	*Direct*Logic Address	POV Address	Data Format	Read/Write
X	X0	1X:2049	BOOL	Read
Y	Y0	0X:2049	BOOL	Read/Write
C	C0	0X:3073	BOOL	Read/Write
V	V2000 (bit of word)	4X:1025.0	INTEGER	Read/Write
V	V2000 (unsigned)	4x:1025	INTEGER	Read/Write
V	V2000 (signed)	4X:S1025	INTEGER	Read/Write
V	V2000 (BCD)	BCD:1025	INTEGER	Read/Write
V	V2000 (BCD double word)	BCDDW:1025	INTEGER	Read/Write
V	V2000 (BCD double word w byte swap)	BCDDWS:1025	INTEGER	Read/Write
V	V2000 (double word)	DW:1025	INTEGER	Read/Write
V	V2000 (double word w byte swap)	DWS:1025	INTEGER	Read/Write
V	V2000 (floating point)	FP:1025	REAL	Read/Write
V	V2000 (floating point with byte swap)	FPS:1025	REAL	Read/Write
V	V2000 (string)	ST:1025:#*	STRING	Read/Write
V	V2000 (string with byte swap)	STS:1025:#*	STRING	Read/Write

* [# is equal to the length of the string]

CLICK DRIVER

CHAPTER

4

In This Chapter...

CLICK Using Driver Worksheet

The CLICK PLC has two communications ports (RS-232 or RS-485) available that may be used to communicate to a PC running Point of View software.

In this example, we are going to read the clock seconds from the CLICK PLC using port 2 (RS-232).

NOTE: *You must have a CLICK with a Real Time Clock / Calendar to start this exercise.*

1.) Open the Point of View software.

2.) Click on the Application Menu button and select New.

3.) Enter 'CLICK Example' as the project name. Select the product type that is currently licensed on the USB key for the PC you are using, then hit OK. (Ignore if in Demo Mode)
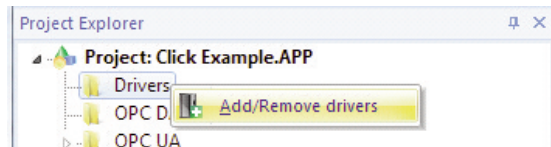
Product type*:

Windows Professional (5000 tags)
Windows Standard (1000 tags)
Windows Lite (500 tags)

4.) The Project Wizard will open > Hit OK.
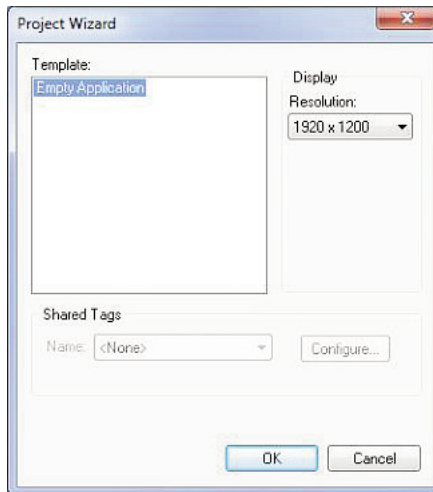
Next, we will set up the driver communications to the CLICK:

5.) Select the Comm tab at the bottom of the Project Explorer pane.

6.) Right click on Drivers and select Add/Remove drivers.

7.) Scroll down in the list of available drivers and select the MODBU 'Modbus Protocol RTU/ASCII'.

8.) Click on the Select button, this will move the driver down to the selected drivers list.

9.) Now select OK and a new MODBU driver sheet will be created.

10.) Under the Drivers folder > right click on MODBU folder > select Settings.

11.) Verify these settings match your CLICK settings and that the correct communications port is selected.
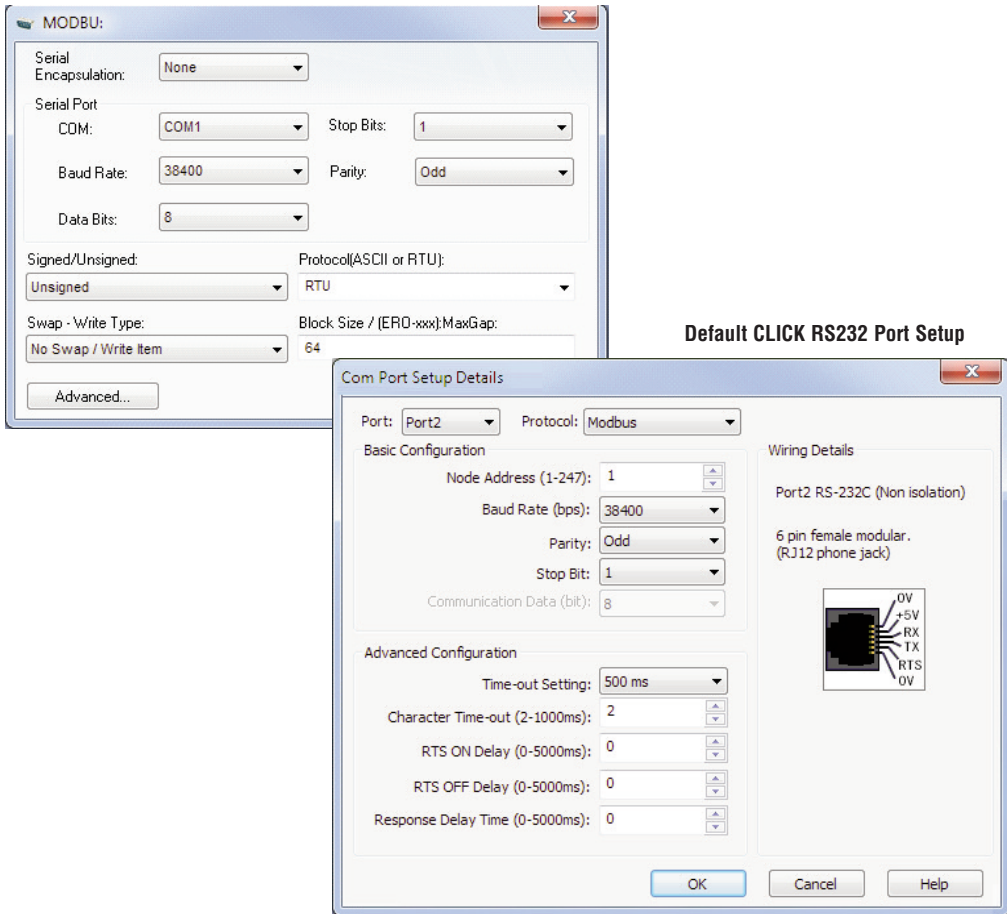
Default CLICK RS232 Port Setup

Setup of tag in driver worksheet to read from the CLICK:

12.) Click on the Comm tab at the bottom of the Project Explorer pane.

13.) Open the Driver folder > select MODBU > double left click on Main Driver Sheet.
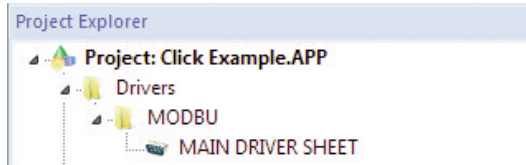
NOTE: *You can refer to the MODBU driver help file by selecting Help from the ribbon bar, then selecting 'Communications Drivers'.*

14.) Under Tag Name, type in 'CSeconds' and hit Enter.

15.) On the pop up window select Yes, leave settings at default and hit OK.

16.) For the Station entry, type in the node address. For our example enter '1'.

17.) Under I/O Address, enter '4X:61466'

	Tag Name	Station	I/O Address
	🔍 Filter text	🔍 Filter text	🔍 Filter text
1	CSeconds	1	4X:61466

NOTE: *You can find a list of assigned Modbus address in the CLICK by using the Address picker and selecting 'Display Modbus Addresses.'*

18.) Close the worksheet, select 'Yes' to save changes.

Next, we will create a text object to read the clock seconds:

19.) Click on the Graphics tab at the bottom of the Project Explorer pane.

20.) Now right click on Screens and select Insert > then select OK.
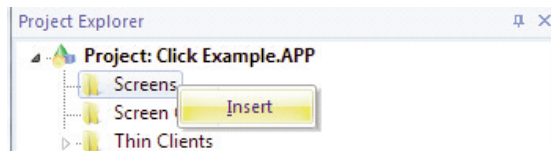
21.) On the ribbon bar under the Graphics tab select Active Objects > then Text. This will give you a cross-hair, left click and place anywhere on the screen work area.

22.) Now type in 'CSeconds: ##' > Hit Enter.

23.) Double left click on the above entry to open the properties.

24.) Click on 'Text data link'.

25.) In the Tag/Expression field, enter the tag we created back in step 14 'CSeconds'.

NOTE: *You can enter a tag manually by double left clicking in the tag field, or by clicking on the Browse button.*

26.) Close the Object Properties window.

27.) Right click on the current screen tab and select Close.
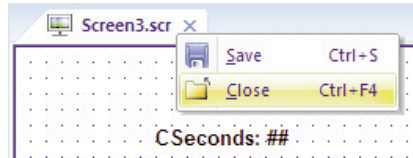
28.) On the pop up, select Yes to save changes.

29.) Change the file name to 'CLICK Main Menu', then select Save.

30.) Under the screen folder > right click on our newly created screen > select 'Set as Startup'
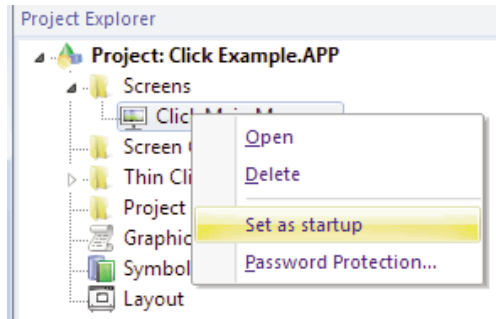
We will now run the project to verify communications between the PC and the CLICK:

NOTE: Ensure your PC is connected to the CLICK PLC port 2 prior to placing in Run.

31.) On the ribbon bar > under the 'Home' tab and Local Management > select the Run button.

32.) You should now see the seconds updating on your screen.
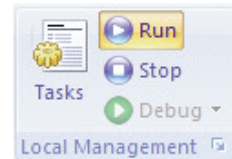
NOTE: If any part of the project doesn't work as expected (or to exit the runtime application), switch back to the development application (ALT+TAB) and then click Stop on the Home tab of the ribbon. Then if needed, begin troubleshooting.

CLICK Modbus Addressing in Point of View

CLICK Data Types and Modbus Addresses

Data Types	CLICK Address	Modbus Address	POV Address	Data Format	Read/Write
X	X1	100001	1X:1	BOOL	Read
Y	Y1	8193	0X:8193	BOOL	Read/Write
C	C1	16385	0X:16385	BOOL	Read/Write
T	T1	145057	1X:45057	BOOL	Read
CT	CT1	149153	1X:49153	BOOL	Read
SC	SC1	161441	1X:61441	BOOL	Read
DS	DS1	400001	4X:1	INTEGER	Read/Write
DD	DD1	416385	DW:16385	INT (double word)	Read/Write
DH	DH1	424577	4X:24577	HEX	Read/Write
DF	DF1	428673	FP:28673	REAL	Read/Write
XD	XD0	357345	3X:57345	HEX	Read
YD	YD0	457857	4X:57857	HEX	Read/Write
TD	TD1	345057	3X:45057	INTEGER	Read/Write
CTD	CTD1	349153	DW3:49153	INT (double word)	Read/Write
SD	SD1	361441	3X:61441	INTEGER	Varies
TXT	TXT1	436865	STS:36865:5*	STRING	Read/Write

* [String prefix : Modbus address : length]

Modbus I/O Address Prefix Syntax Table for Point of View

Register Type	Description	Read/Write
0X:	Coil Status (Function code 1, 5, 15)	Read/Write
1X:	Input Status (Function code 2)	Read
3X:	Input Register (Function code 4)	Read
4X:	Holding Register (Function code 3, 6, 16)	Read/Write
STA:	Exception Status (Function code 7)	Read
FP:	Floating Point	Read/Write
FPS:	Floating Point (byte swap)	Read/Write
FP3:	Floating Point Read Only	Read
FP3S:	Floating Point Read (byte swap)	Read
DW:	Double Word	Read/Write
DWS:	Double Word (byte swap)	Read/Write
DW3:	Double Word Read Only	Read
DW3S:	Double Word Read (byte swap)	Read
BCD:	BCD (Function code 3, 6, 16)	Read/Write
BCD3:	BCD Read Only (Function code 4)	Read
BCDDW:	BCD Double Word	Read/Write
BCDDWS:	BCD Double Word (byte swap)	Read/Write
BCDDW3:	BCD Double Word Read Only	Read
BCDDW3S:	BCD Double Word Read (byte swap)	Read
ID:	Report Slave ID (Function code 17)	Read
ST:	String	Read/Write
STS:	String (byte swap)	Read/Write

DO-MORE DRIVER

CHAPTER
5

In This Chapter...

Do-more Using Tag Integration

Using Point of View along with the Do-more communications driver allows you to easily import the Do-more addressing (Built-in memory, Heap, Structures, Nicknames) into your POV project using tag integration. By using tag integration, all tags from the PLC can be browsed in the Object Finder, but an individual tag is not added to your project tags database nor counted against the project's tag limit until you actually use it somewhere in your project.

In this example, we are going to cover how to read the clock seconds from a Do-more PLC via Ethernet.

> **NOTE:** *Any time that the memory configuration in the Do-more Designer software is changed in a project, the memory version is changed and will be loaded into the PLC on project transfer. Performing "File>Export>Element Documentation" will create the CSV file that POV uses and will also contain this memory version.*

During run time, the .csv version is compared to the PLC version to make sure that they match. If there is a mismatch between versions, only tags referencing Heap, Nicknames, user defined blocks in a SDS or MDS, or any object referencing a tag integration tag will cause invalid data ???? for those tags and you will get an 'Out-of-Sync: The version of the CSV file does not match with the PLC' error. This can be verified by turning on the Protocol Analyzer option in the Output Window:

Steps to recover an 'Out-of Sync:' Error caused by Do-more project download:

1. Update .csv file that POV is referencing to match the Do-more PLC version.
2. Stop the POV project runtime.
3. Click Run to start the runtime project.

> **NOTE:** *You can alternatively download the previous Do-more project file that matches the POV version to recover from the error.*

> **NOTE:** *An IP address will need to be set up in the Do-more using either a H2-DM1E, T1H-DM1E or H2-DM1 with a H2-ECOM100 (with firmware version 4.0.1808 or higher) installed prior to starting this exercise.*
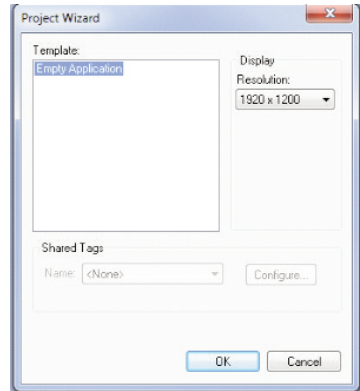
1) Open the Do-more Designer Software and create a new project.
2) Download the project to the Do-more PLC.
3) Click on File > Export > Element Documentation.

4) Choose 'Cmore Do-more driver format' (non-plus version) > save this to a location on your PC as 'POV example'.

5) Open Point of View software.

6) Click on Application Menu button and select New.

Menu Button

7) Enter 'Do-more Example' as a project name, select your product type that is currently licensed on the USB key for the PC you are currently using > select OK. (Ignore if in Demo Mode.)

Product type*:

Windows Professional (5000 tags)
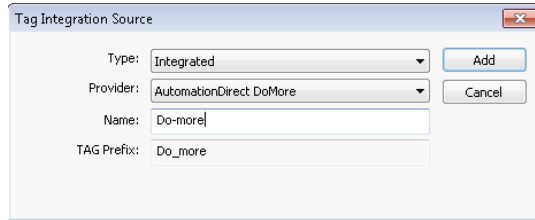Windows Standard (1000 tags)
Windows Lite (500 tags)

8) Project Wizard will open > select OK (seen on right).

Next we will use tag integration to setup the communications to the Do-more:

9) Click on Project tab > then select Communication on the ribbon bar.

10) Under Tag Integration, click on Add.

11) Select the drop down next to Provider, and choose AutomationDirect DoMore.

12) In the Name field the default name is "DEV", change this to "Do-more" > click on Add.

13) Next, for IP address type in your Do-more IP address.

14) Optional: Change port number (default 28784) and enter a password if needed.

15) Click on the Browse button > then browse for your Do-more project .csv file we saved in step 2 "POV example".
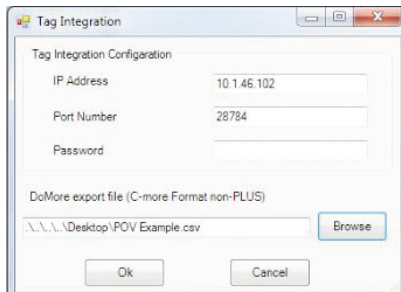
16) Click on the OK button > then click on OK once again.

All the tags from the .csv have now been imported into your POV project. In the next steps, we will create a text object to read the clock seconds.

17) Click on the Graphics tab at the bottom of the Project Explorer pane.

18) Now right click on Screens and select Insert > then select OK.

19) On the ribbon bar under the 'Graphics' tab > select 'Active Objects' > select Text.
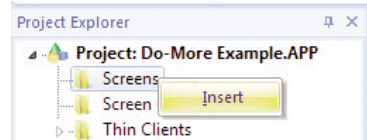
20) This will give you a cross-hair, left click and place anywhere on the screen work area.

21) Now type in 'Do-more Seconds: ##' and select Enter.

22) Double left click on the above entry to open the properties.

23) Click on 'Text data link'.

24) At the end of the Tag/Expression field, click on the browse button

25) In the left-hand column, you will see a Do-more folder under Devices.
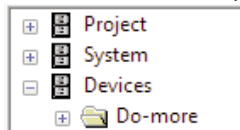
Expand the Do-more folder > click on Memory Blocks > then select any folder to see the tags listed on the right that were brought in during the Tag Integration process.
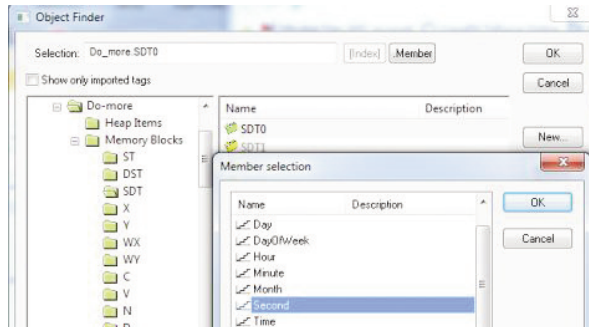
NOTE: *These tags are shown in gray indicating that you still need to select and Import the selected tags to be used in the project.*

26) Next, select SDT folder> SDT0 Class tag > select member and choose Second > select OK.

**NOTE:** *Make sure 'show only imported tags' is unchecked.*

27) In the selection field it will show 'Do_more.SDT0.Second' > select OK >.

NOTE: *Snce the SDT0 class tag is a Structure, it is now in black indicating that all members of that Structure have been imported and can be used in your project. In addition, notice your tag count (bottom right hand corner) has increased by nine.*

28) Click the OK button > you should see Do_more.SDT0.Second in the Tag/Expression Field.

29) Close the Object Properties window.

30) Right click on the current screen tab and select Close.
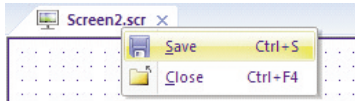
31) On the pop up, select Yes to save changes.

32) Change the file name to 'Do-more Main Menu', then select Save.

33) Under the screen folder right-click on our newly created screen > select 'Set as Startup'.
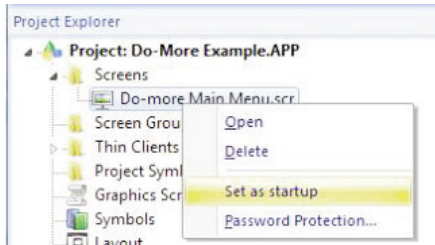
We will now run the project to verify communications between the PC and the Do-more:

NOTE: *Make sure the Do-more is in Run mode. Also make sure your PC is connected to the Do-more Ethernet port or switch prior to placing the project in Run.*

34) On the ribbon bar > 'Home' tab > Local management > select the Run button.
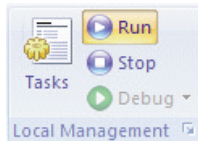
35) You should now see the seconds updating on your screen.

NOTE: *If any part of the project doe not work as expected, switch back to the development application (ALT+TAB) and then click Stop on the Home tab of the ribbon. Begin troubleshooting.*

Notes: