EMERSON
Industrial Automation

Application Note
CTAN #353

This Application Note is pertinent to our Unidrive SP, Mentor/Quantum MP and Affinity Drive Families

Backing Up Critical Drive Setup Info Using CTSoft

Modern drives such as the Unidrive SP, Mentor/Quantum MP and Affinity contain in excess of 500 parameters permitting applications ranging from very simple to quite complex to be accomplished through basic parameter adjustments and selection settings. More complex applications may use in addition, a ladder logic program executed by the drives built-in PLC capability. To perform with optimum response characteristics, certain critical motor data and tuning information was derived during original commissioning.

Regardless of the complexity, this setup data defines the essence of the application and allows the drive to perform as it was intended for that application. Should it become necessary to replace a drive, without this critical data, the drive would be unable to perform as it was originally intended.

Control Techniques will be able to provide you with a replacement drive but we will not have the "*recipe*" (data) that was specific for your application. Therefore, **it is imperative** that the OEM, System Integrator, Field Engineer or Installer back up this critical information and leave a copy with the End User following the commissioning process. Failure to do so often results in unnecessary and costly machine downtime and End User customer frustration.

This application note will cover using the CTSoft as a method of "backing up" drive setup data.

Smart Card Method

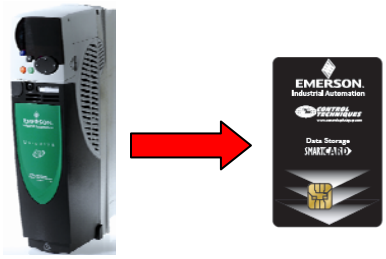
SmartCard

Regardless whether your intention is to back up the drive data using CTSoft (our PC software), **one should always utilize the SMART CARD** to provide another level of drive data backup.

Control Techniques provides a Smart Card with each drive. The Smart Card provides a convenient, quick, simple method of capturing and restoring drive setup data.

Unfortunately it is our experience that very few End Users are aware of this Smart Card or unable to find it during critical times or if they do find it, it is often unlabelled and blank. This is highly unfortunate because "re-commissioning" can take hours, even days, whereas a SmartCard could have the drive setup and back in operation in a minute.

The OEM, System Integrator, Field Engineer or Installer should instruct the End User customer on how to restore drive data from the Smart Card should it become necessary.



Consult **CTAN352** for
Smart Card Parameter Back Up Procedures

CTSoft

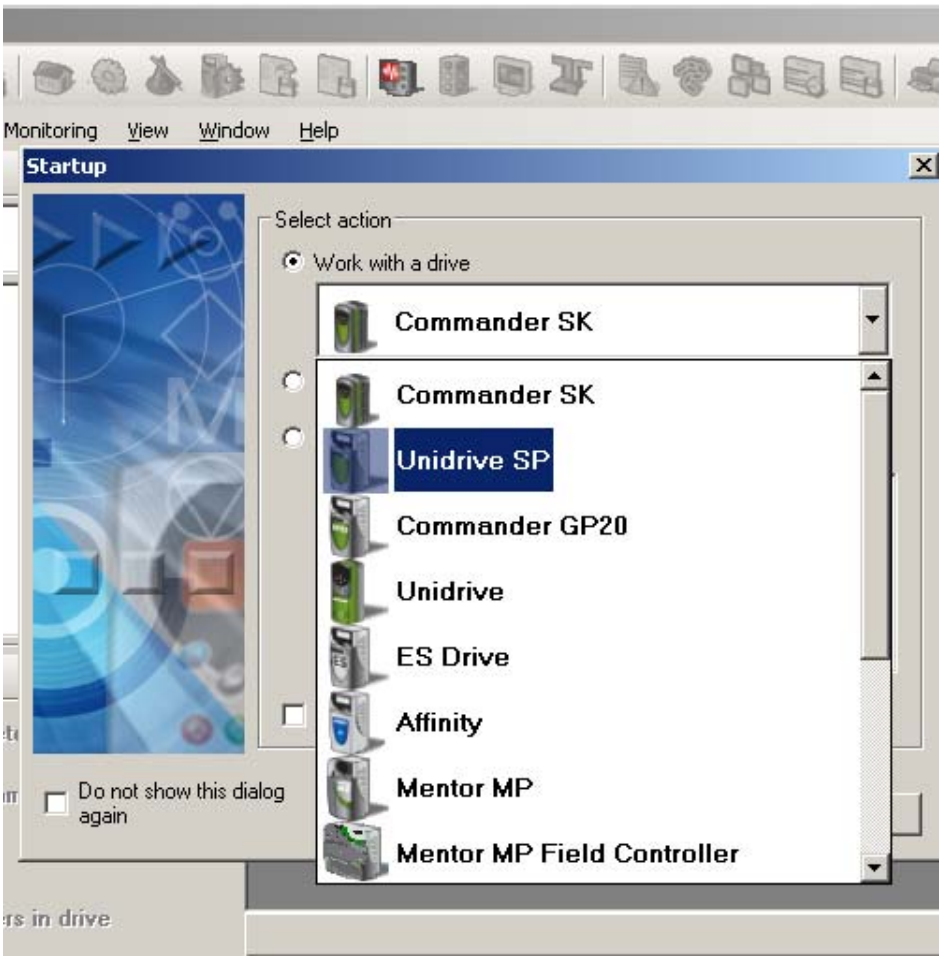
CTSoft is a drive configuration software tool for use with use with current Control Techniques drives. For more information on CTSoft and to obtain a free copy click on the link below:

CTSoft

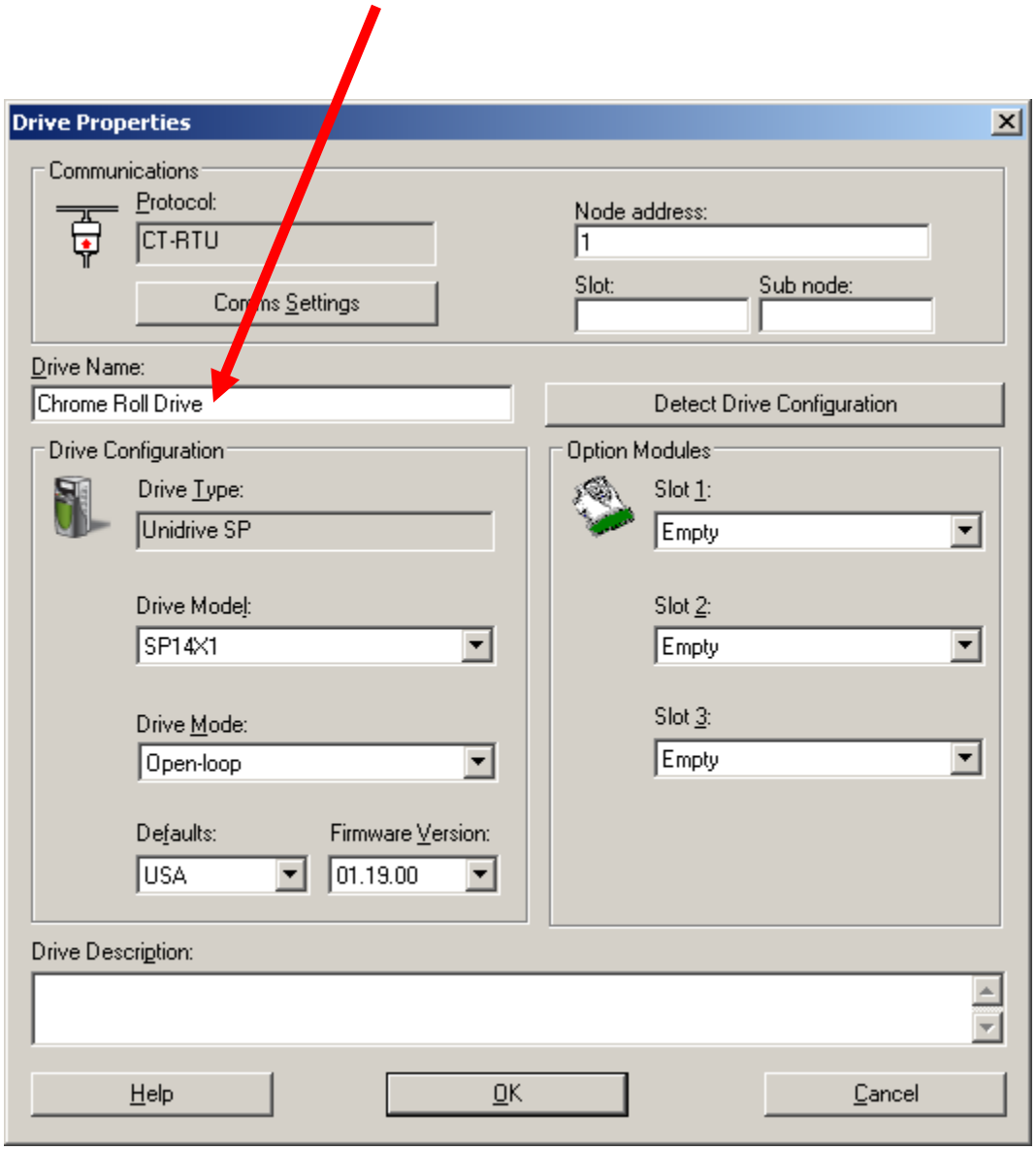
Computer Cables to utilize CTSoft

Saving Drive Parameters using CTSoft

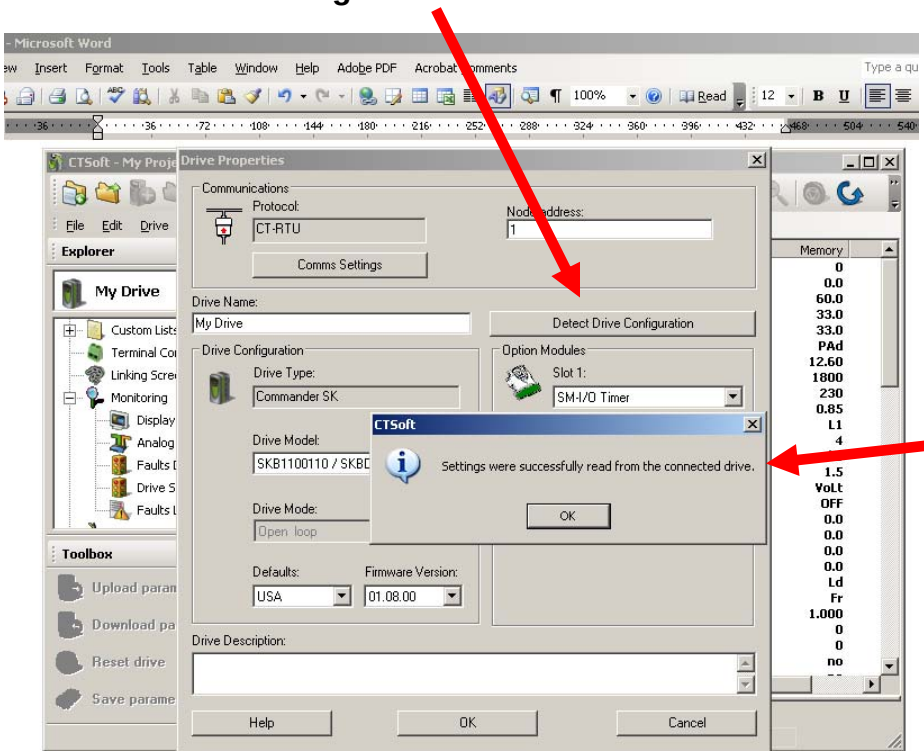
Upon opening CTSoft, select **Work with a Drive** then select the family type of drive you will be recording data for.



We would encourage you to include a descriptive name of the drive which is kept with this data file.

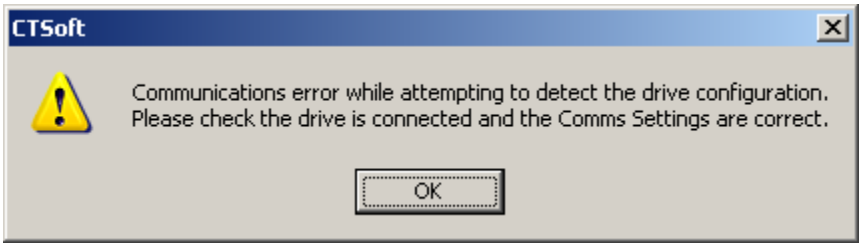


Then perform a quick verification that CTSoft is able to communicate with your drive by clicking on **Detect Drive Configuration**.

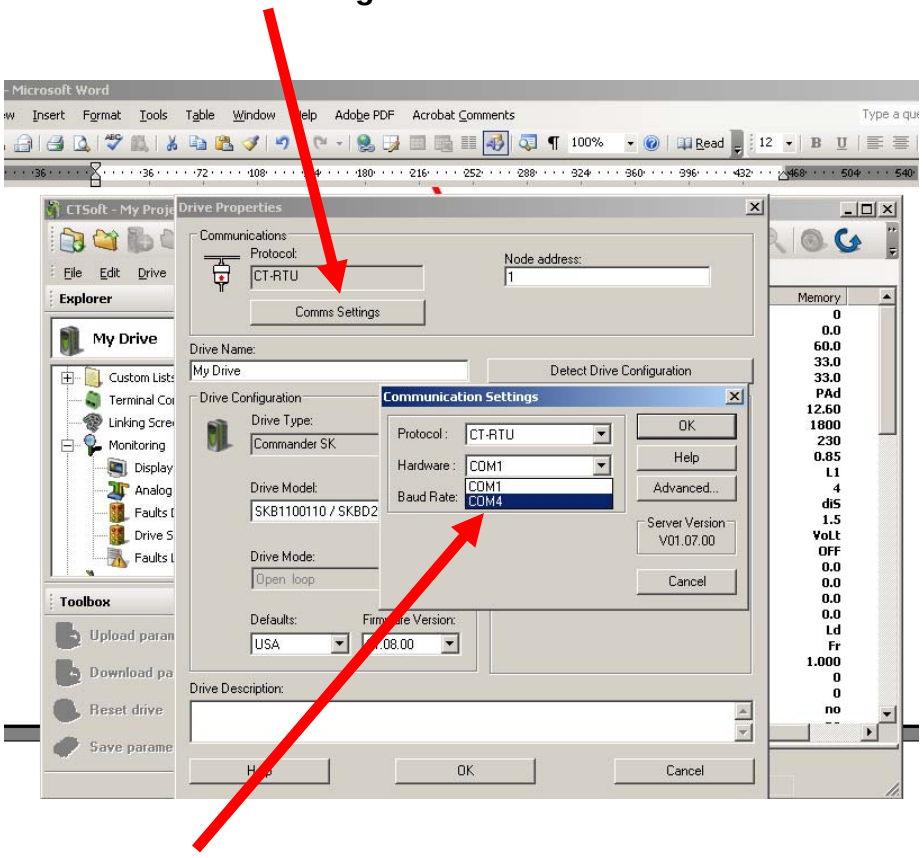


If communication is established a verification message should be displayed.

If communications fail and this dialog box appears;

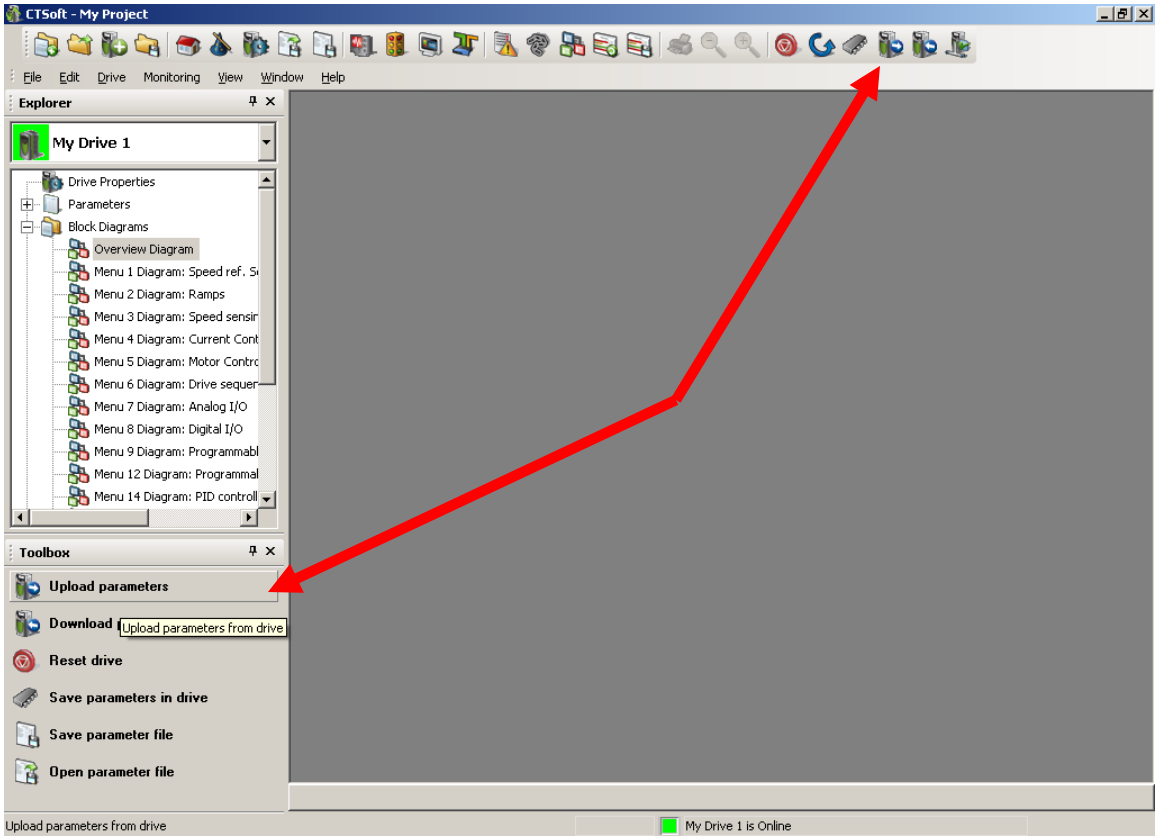


Click **OK** and click on **Comm Settings**.



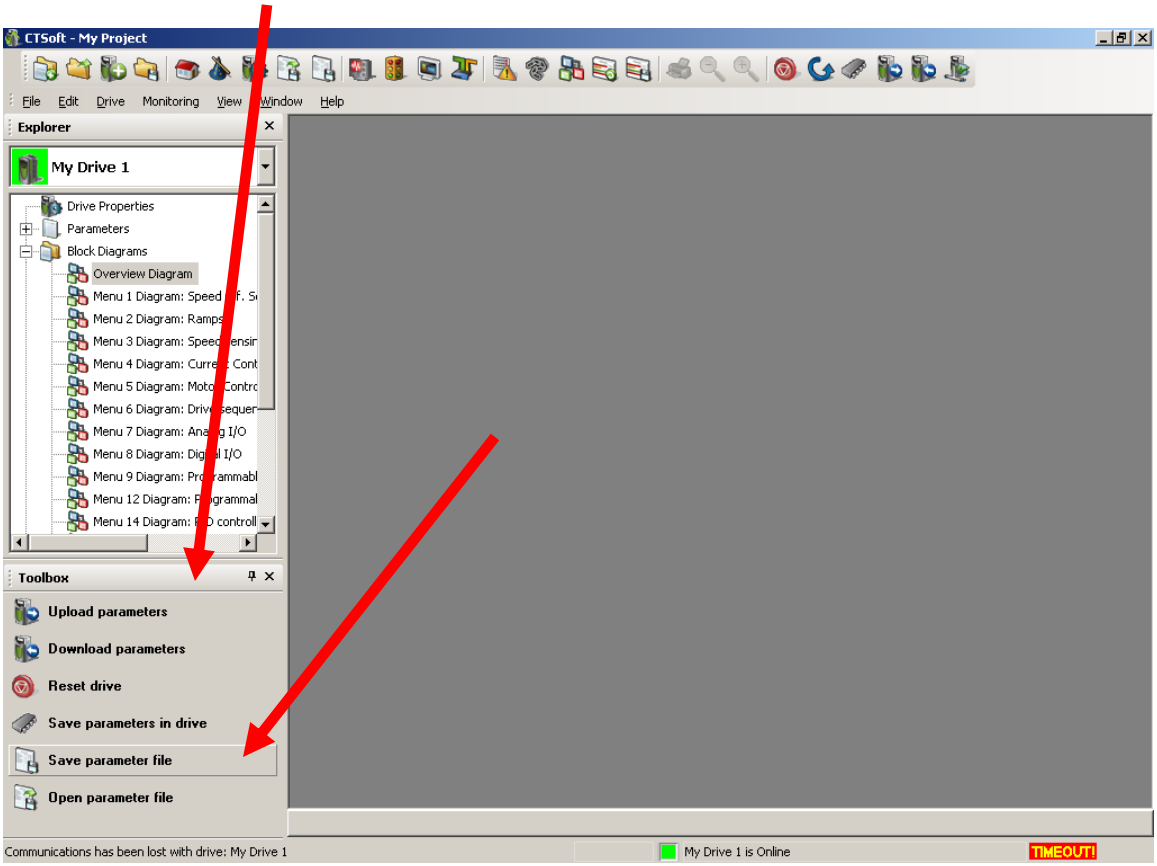
Try an alternate Comm port. Make sure protocol and Node address are correct and re-try.

In order to capture all the drive setup data using CTSoft, one should use the **UPLOAD** function.

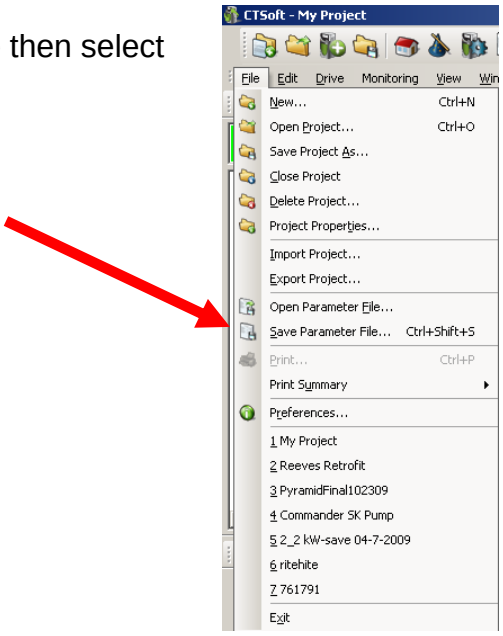


This will ensure that CTSoft has copied all the drive parameter changes into it's RAM memory area.

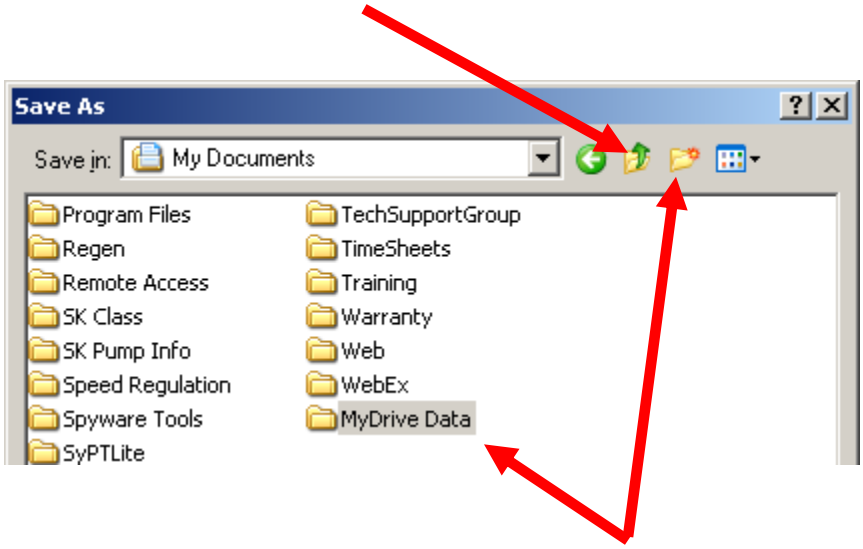
Then you need to **Save Parameter File**. It is easiest to simply click on the ICON located in the Toolbox.



Or if you'd rather, click on **File** then select **Save Parameter File**.

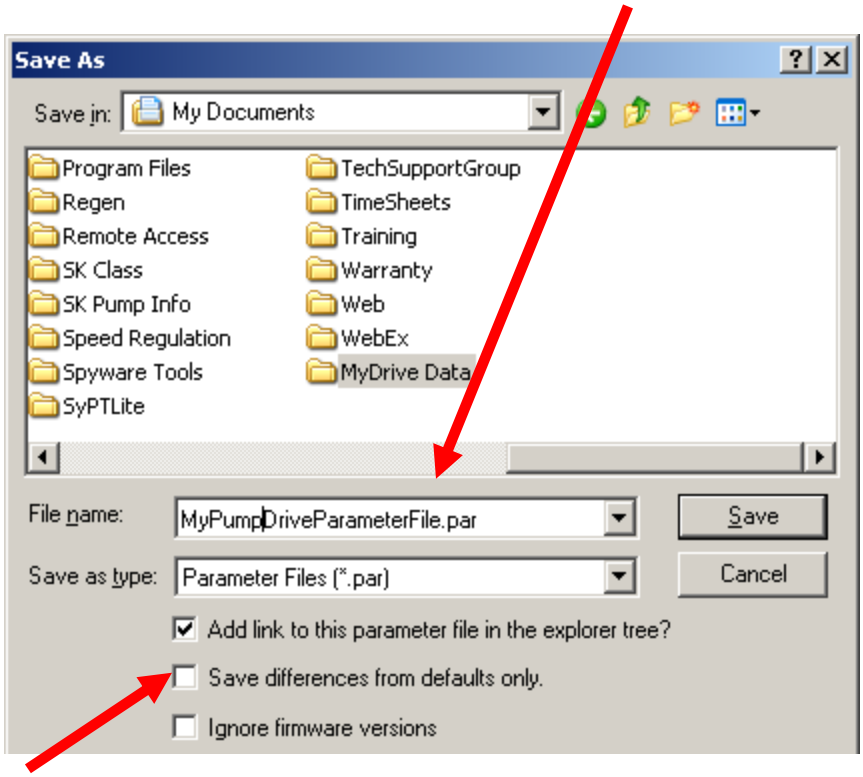


Then use the **Folder Selection** Icon to select a location to place your drive file(s).



You may need or want to place all your drive files into a Folder for better organization. To do this, click the **Create New Folder** icon and give that folder a name.

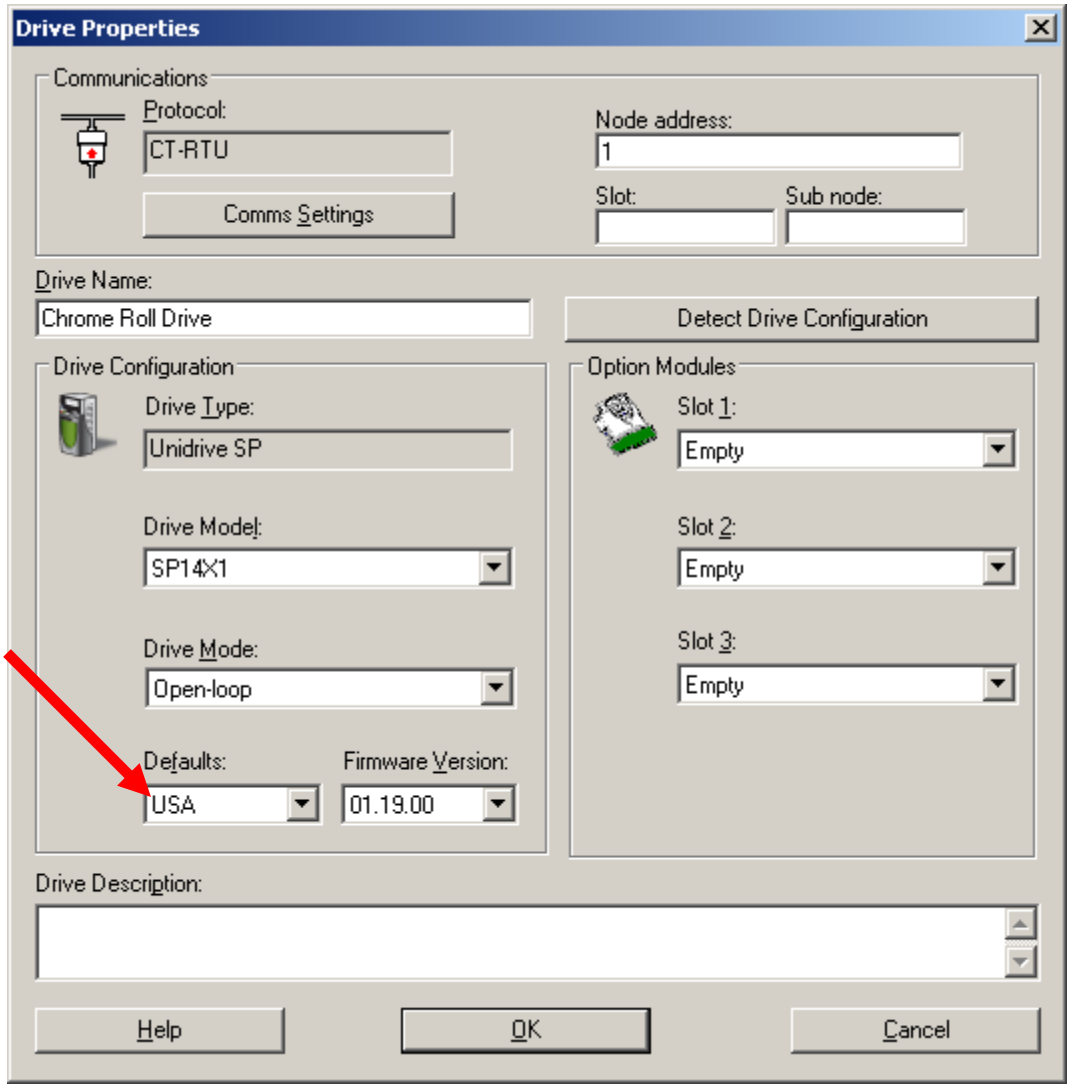
Then you need to provide a file name for the actual drive data file



An option you may wish to consider

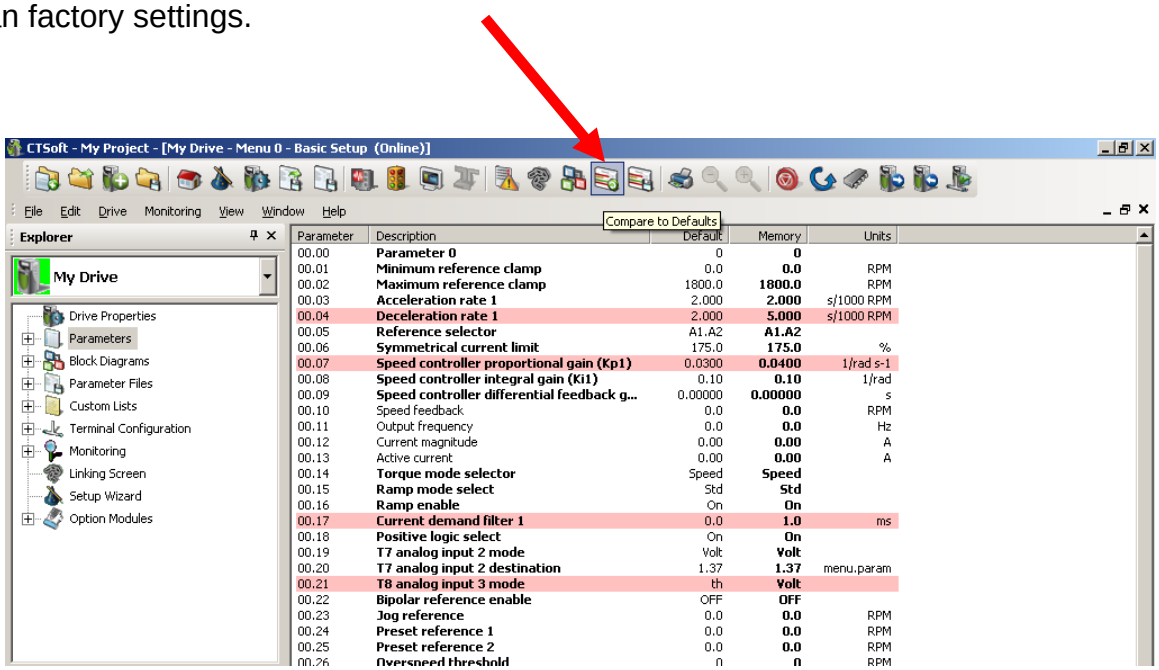
Another good step toward backing up Drive Configuration information would be to provide a concise hard copy print out list of the drive parameter settings that are unique to your particular application.

To facilitate creation of this list, CTSoft provides a function that will list out only those parameters that are different than factory settings. Before using this function one needs to ensure that CTSoft is set per the region that a replacement drive would be expected to be supplied from. For example, if a customer machine made in Italy is installed in the USA, should a drive replacement become necessary, CT-USA would most likely provide the replacement drive. In this case the replacement drive would be set for USA factory default settings. Therefore, CTSoft would best be set for USA defaults prior to using the following procedure.



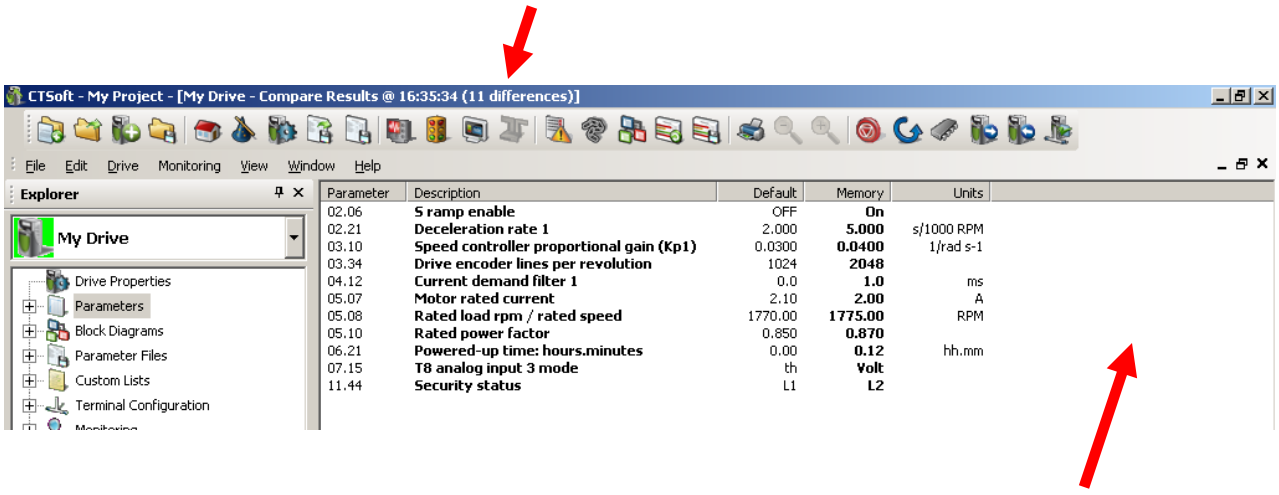
Creating a “Different from Default” Parameter List

CTSoft provides a function that will list out only those parameters that are different than factory settings.



Clicking on this function creates a concise list of parameter differences for your application vs the settings as it leaves the factory.

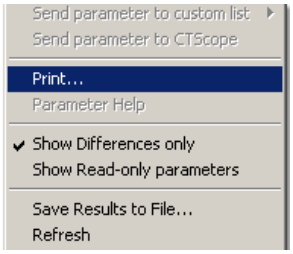
In this particular case there were 11 differences



To create a formatted hard copy print out, simply ‘**right click**’ on the white space in the area pointed to above.

Creating a Hard Copy Printout

After right clicking you would click on Print



The print facility will list the possible printers to send the file to or offer other printing options such as creating an Adobe Acrobat™ .pdf file or Microsoft™ Document Writer file.

Shown below is the formatted .pdf file.

Parameter Comparison Listing
Project: My Project : RMcGranor

Drive Name: Chrome Roll Drive (Unidrive SP)
Drive Mode: Closed loop vector
Drive Address: 1

Parameter	Description	Default	Memory	Units
02.06	S ramp enable	OFF	On	
02.21	Deceleration rate 1	2.000	5.000	s/1000 RPM
03.10	Speed controller proportional gain (Kp1)	0.0300	0.0400	1/rad s-1
03.34	Drive encoder lines per revolution	1024	2048	
04.12	Current demand filter 1	0.0	1.0	ms
05.07	Motor rated current	2.10	2.00	A
05.08	Rated load rpm / rated speed	1770.00	1775.00	RPM
05.10	Rated power factor	0.850	0.870	
06.21	Powered-up time: hours.minutes	0.00	0.12	hh.mm
07.15	T8 analog input 3 mode	th	Volt	
11.44	Security status	L1	L2	

Factory Settings

With such a print-out a customer could at the very least “hand enter” those parameters that define his/her application should a replacement become necessary.

We would suggest that one keeps a hard copy of this print out with the drive should one need to know what parameters have been altered for the application.

Questions ?? Ask the Author:

Author: **Ray McGranor** **e-mail :** mailto:ray.mcgranor@emerson.com
(716)-774-1193 x121