Classification	ISaGRAF Engli	sh FAQ-0	57				
Author	Chun Tsai	Version	1.0.0	Date	Oct. 2010	Page	1 / 16
How to record the ISaGRAF P is 1 to 10 minu diagram by M	AC? The samputes. Then PC	oling rate	e is one re	cord ever	y 0.01 seco nd display it	nd. The rea t as a trend	cord period
Note: The WinCo	on-8xx7 has beei	n phased o	out, it's reco	mmended	to use XP-8x3	7-CE6.	
Visit to the follov Demo:	ving webpage to	o downloa	d files.				
http://www.icpd ISaGRAF FAQ:						1=&model=	&kw=isagraf
http://www.icpd Driver:	as.com/en/faq/	index.php	?kind=280#3	751 (FAQ-0	57)		
http://www.icpd	as.com/en/dow	nload/shc	w.php?num	i=368&nati	on=US&kind1	=&model=&	kw=isagraf
The "Whmi_13.p HMI in this demo and 5 of the ISaG http://www.icpd	o, the Web HMI GRAF user manua	codes resi al.	des at the 'w	vebhmi_de	mo' folder. Plo	ease refer to	Chapter 3, 4
If new c-function visit to the Driver ISaGRAF c-function	r page to downlo	oad I/O lib	raries. Then	run "setup	.exe" inside it	-	-
We use "Variable FAQ-039 for mor	•		•		ction 2.6 of the	e ISaGRAF u	ser manual or

Classification	ISaGRAF Engli	ISaGRAF English FAQ-057					
Author	Chun Tsai	Version	1.0.0	Date	Oct. 2010	Page	2 / 16

How to test this demo?

The following steps is only for using Web HMI as Human-Machine-Interface. If you are using VB 6.0 – "Demo_5" as HMI, please run it (Demo_5.exe) in your PC and only do procedure listed in step 1, step 3 and step 6.

1. Please plug one I-8024 in W-8xx7's Slot 2, one I-8017H in Slot 3. Then connect Ch1. to Ch.4 voltage output of I-8024 to Ch1. to Ch.4 of I-8017H. Then power up Wincon, Check "Enable Web HMI" option as below. For demo purpose, please Do Not check "Enable Account Security".

	Security Settings	OK ×		
	Account Modbus List IP Setting			
Wincon-8037/8337/8737/8	Enable Account Security			
Setting Web About Options Fnable Web HMI Disable FTP Serveice Disable Telnet Serveice To set up advanced security, o Settings	Priority Low User Name Password Priority Middle User Name Pssword Priority High User Name Priority High User Name Password *****	Edit		
 Copy all files of Web HMI's Demo_13 by ftp utility (For example, run ftp://1 	•	ash\Temp\	10:15 AM 🞯 HTTP\WebHMI\ fo	lder
Web HMI codes "whim 13" resides at th		·	file.	

http://www.icpdas.com/en/download/show.php?num=1005&nation=US&kind1=&model=&kw=isagraf

There are 7 files plus 2 folder should be copied to WinCon's \CompactFlash\Temp\HTTP\WebHMI\

Main.htm, menu.htm, index.htm, login.htm, main.dll, login.dll, whim_filter.dll "img" & "msg" folder

Classification	ISaGRAF Englis	sh FAQ-0	57							
Author	Chun Tsai	Version	1.0.0	Date	Oct. 2	010	Page	3 / 16		
							3			
 Download ISaGRAF project "whim_13" to W-8xx7. (If using Web HMI as HMI, please finish procedure listed in step 2 first, then do step 3) The "Whmi_13.pia" resides at the 'webhmi_demo' folder in the zip file. http://www.icpdas.com/en/download/show.php?num=1005&nation=US&kind1=&model=&kw=isagraf PC run Internet Explorer (I.E. version shoulde be 5.0 or later version). Enter W-8xx7 IP. 										
					310117. L		/ 0/// 11 .			
ii connecting V	well, click on "En	ilei .								
	ft Internet Explorer		Stan av							
檔案(E) 編輯(E)	檢視(♥) 我的最愛(組	~	說明(<u>H</u>)		1					
🕒 上一頁 🔹 🕑	🔄 🛃 🛃 🏠	▶ 搜尋	💦 我的最愛 🚱	🖾 • 👹	• •		2 33			
網址① 10.0.0.1	03							移至 連結 >>		
MAdobe Y!	• 2 •			- 💽 登入	💫 網頁	翻譯 🗸 🛙	➡→分字書籤 - 💈	< 「信箱 → >>		
								<u> </u>		
	· · · · ·							-		
			IC	P D	<mark>AS</mark>					
			Wincon	- The V	Veb P	AC				
			Please clic	k on Ent	er to lo	ogin				
				Enter						
								-		
, ② 完成							💿 網際網路	å <u>//</u> .		
	nter proper "Inte o store one reco please click on "	rd every 1	.0 ms. The "Per	iod" is th	ne time	period	to record. I	Jnit is		

If user has finished procedure listed in step 1 – "connect Ch1. to Ch.4 voltage output to Ch1. to Ch.4 of I-8017H", the I-8017H Ch1. to Ch.4 's voltage input will also change during this period. And they will be recorded.

lassification	ISaGRAF Englis	sh FAQ-05	57				
uthor	Chun Tsai	Version	1.0.0	Date	Oct. 2010	Page	4 / 16
∰ Welcome Micr 檔案 (E) 編輯 (E) 報 報報)	osoft Internet Explorer 減(V) 我的最愛(A) 工具(ご ご 公 少 搜尋 2.104/login.dll Wincon Web HMII Do Rcord 4-Ch Voltage Then PC can downlo Note: 1. Please download ISa 2. Please plug i-8024 at i-8017H's Ch. 1 to 4	D 說明任) t	ee and then save to M.S. Excel to draw a - "whmi_13" to Wincor	•	Sal\curvel.js" file in or W-8337/8737 utput Ch. 1 to 4 to	v ₩incon .	4 / 16
	Total record number : Current record number Please Enter "Interval" ; Interval (10 to 1000 Period (1 to 10) minu	and "Period" va 0) mili-second	dow Sav	rnload it to yo ing stste:	ished, you may click our DC and save it 12000 / 12000 d i-8017H's Ch.1 to C Go Stop	Download rec	

During the recording period, the "**Current record number**" value will count up. If it reaches the value of "**Total record number**", it means recording is finished. Then the ISaGRAF program will store these records to a RAM file automatically. You can see the progress in "**Saving state**".

If all done, please click on "Download record File" to download this record file to your PC.

	王下載 - 安全性警告	
是	·否要開啓或儲存這個檔案?	
(名稱: curve1.js 類型: JScript Script File,65.6 KB 來自: 10.0.0.103	
	開啓(2) 儲存(2) 取消	
(雖然來自網際網路的檔案可能是有用的,但是這個檔案類型 有可能會傷害您的電腦。如果您不信任其來源,諸不要開啓 或儲存這個軟體。 <u>有什麼樣的風險?</u>	
	ICP DAS Co., Ltd. Technical Document	

Classification	ISaGRAF Engli						
Author	Chun Tsai	Version	1.0.0	Date	Oct. 2010	Page	5 / 16

6. Then please open this record file - "curver1.js" on M.S. Excel.

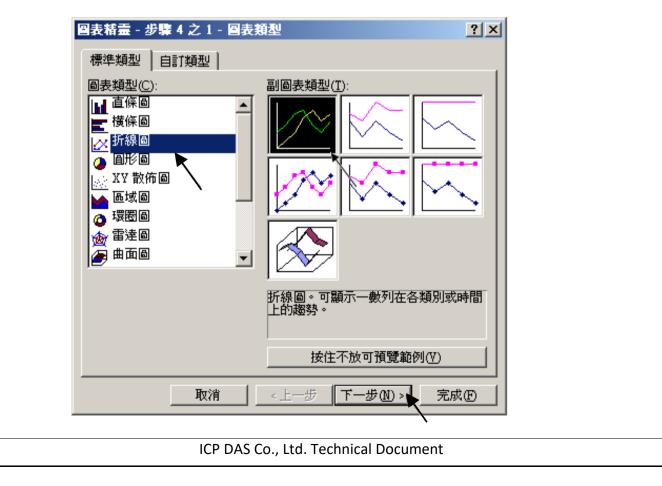
📧 Micro	soft Excel - Book	1					×
📳 檔案	案(E) 編輯(E) 檢	湖(♡) 插入①	格式(0) 工具(<u>T</u>)	資料(D)	視窗(₩)	說明(H)	
÷ 🗋	開新檔案(N)		Ctrl+N			- 6	
1 🛍 🔁	開啓舊檔(○)		Ctrl+O	F 🗏 🗐	• a •	🄕 - <u>A</u> -	•• ₹
	關閉檔案(<u>C</u>)						
			Ctrl+S	E	F	G	
1	另存新檔(A)						
2 🙀	另存成網頁(<u>G</u>)						
3 📆	檔案搜尋(H)						
4	 櫂限(<u>M</u>)		•				<u> </u>
5							-
6	版面設定(U)						+
7	利印範圍(T)		•				Ţ
	∑147載留(1) 預覽列印(V)		,			•	
就緒 🚄	TALLED (D)		Ctrl+P				1.

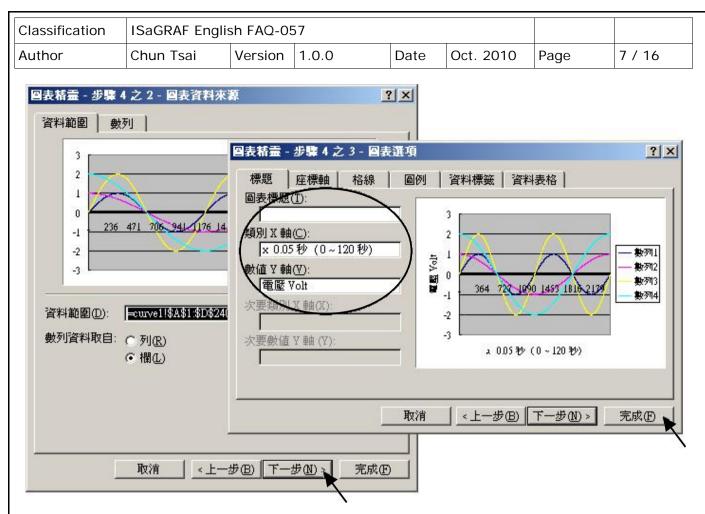
Please click on the first data at the left-top position. Then press and hold in "Shift", and at the same time press "Ctrl" – "End". You will see all data been selected.

	icrosoft Excel -		4 7 3		∃ anns ⊐∂radist an			×
9	檔案(F) 編輯(E) 檢視(V)	插入①	格式(() 工具	具(I) 資料(I	〕) 視窗(₩)	說明(<u>H</u>) _ ச	×
1	; 新細明體		• 12 •	BIU		- <u>-</u>	🔕 • <u>A</u> •	•• ₹
	A1	-	fx ().005				
	A	В	С	D	Е	F	G	
1	0.005	0.997	0.011	1.995				
2	0.009	0.997	0.02	1.995				
3	0.015	0.995	0.027	1.996				
4	0.02	0.997	0.042	1.994				
5	0.027	1.001	0.053	1.996				
6	0.025	0.997	0.063	1.996				
7	0.034	0.999	0.079	1.996				
8	0.042	0.998	0.085	1.994				
9	0.058	0.995	0.084	1.995				
10	0.053	0.997	0.105	1.996				
11	0.056	0.995	0.114	1.995				-
I •	► ► \ <u>curve1</u> /				1	1	Þ	Г
就緒								/

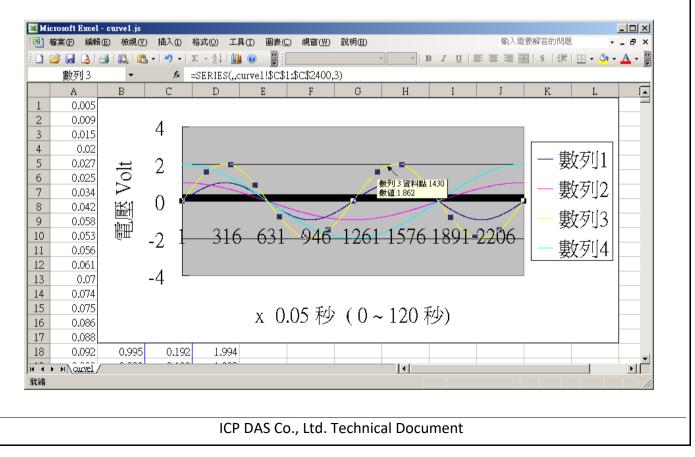
Classif	ication	ISaGRAF	English	FAQ-05	57						
Author	~	Chun Tsa	ai V	ersion	1.0.0		Date	Oct. 2010	Page	6 / 16)
Fhen click on											
	osoft Excel - c				an Similar as	-8	n Stelle		5755574755888		
「「「「」」「「」」「「」」」「「」」」」「「」」」」「「」」」「「」」」	案(E) 編輯(E)		-	し。 (0) 工具		- 視窗(<u>)</u> 10			需要解答的問題		- 8 ×
P 🖬 🗁	· 🛃 👌 🎒			細明體 05	•	12 -	BI	ਸ਼∣≣ ≣ ≣	3 第 7 第	🗄 + 🖄 +	<u>A</u> -];
	A1		★ 0.00 回表精靈							-	_
	A	B		D	E	F		G H	I	J	-
2390	-0.054	0.995	-0.106	1.998							
2391	-0.047	0.997	-0.094	1.992							
2392	-0.044	0.998	-0.086	1.996							
2393	-0.045	0.998	-0.073	1.994							
2394	-0.033	0.997	-0.063	1.996							
2395	-0.028	0.997	-0.052	1.996							
2396	-0.023	0.997	-0.042	1.996							
2397	-0.019	0.998	-0.03	1.995							
2398	-0.012	0.998	-0.02	1.995							
2399	-0.01	0.997	-0.012	1.982							
2400	0.001	0.997	0.002	1.996							
2401	0.001	0.001	0.000	1.000							-
	N <u>curve1</u>				I		•		1		
就緒							加	總=-3.693			

Please select the correct diagram on the left-hand side. And check the left-top type on the right-hand side. Then go Next .



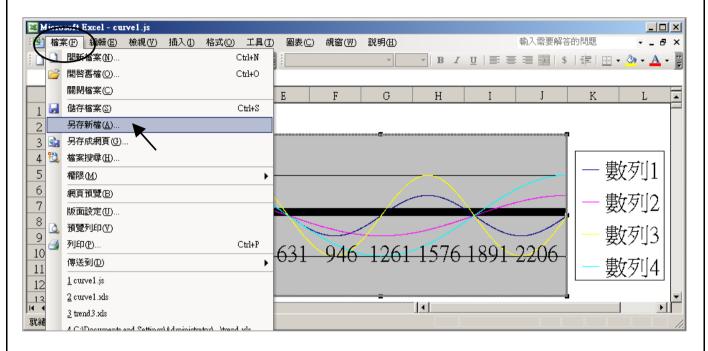


By the procedure, you will get the trend curve as the below window. You can modify its size, or check at any trend line. If you move your mouse to point at some position at the trend line, the related data is shown.



Classification	ISaGRAF Engli						
Author	Chun Tsai	Version	1.0.0	Date	Oct. 2010	Page	8 / 16

Please save this trend curve diagram as a "Microsoft Office Excel (*.xls)" format. Then at any later time, you can open it to display the trend curve directly.



另存	新宿			<u>? ×</u>
1	諸存位置①:	🛅 Temp	💌 💿 - 🔰 🔍 🗙 📑 🎫 - 工具心 -	
-		ि⊇ 8xx7 ि⊇ adbe7.08 ि⊇ Chinese_manu	☐ UPL_Zh ☐ VB.NET_Demo ☐ Virtual_CE_Pro in standard CD	
戎	最近的文件	🛅 dcon_utility	👝 XG	
		Dlite EG	Definition1.txt ETCP.txt	
	桌面	EKANviaTCP 10_12_06 Eric		
		C mitr_new ModView		
	我的電腦	XML 試算表 XML 資料 ()	fice Excel 活貞薄 (*.xls)	
		単一檔案網 檔案名稱(N): 網頁(*htm; 範本(*.xlt)	頁 (*.mht: *.mhtml)	

Classification		nglish FAQ										
Author	Chun Tsai	Versio	n 1.0.0 Date Oct. 2010 Page 9 / 16									
SaGRAF project	architecture	:										
	- ISaGRAF	- WHMI_13 -	- Programs									
			De <u>b</u> ug Options <u>H</u> elp									
	🖹 🖩 🕹											
	Begin:	💌 ST1 💌 Sim										
	Begin: ST1 (Structured Text)											
/ariables :												
Name	Туре	Attribute	Description									
Go1	Boolean	Internl	Set as True to start, addr defined as 21 (Hex. is 15)									
Stop1	Boolean	Internal	Set as True to stop, addr defined as 22 (Hex. is 16)									
тмр	Boolean	Internal	Internal use									
INIT	Boolean	Internal	Init as True									
Save_file1	Boolean	Internal	The IsaGRAF program will set this value to True to store records to a RAM Disk File									
мим_сн	Integer	Constant	How many chanels in I-8017H to record ? We use 4 channels in this demo (Ch.1 to 4)									
File1	Integer	Internal	File ID									
STEP1	Integer	Internal	Recording state. 0:No action , 1:recording , 2:finished									
Period1	Integer	Internal	How long to record ? unit is minute, addr as 3									
Interval1	Integer	Internal	How long to save a record ? unit is ms, addr as 1									
Total_record1	Integer	Internal	How many records in this recording action? This value is calculated by the IsaGRAF program automatically. addr declared as 5									
Record_cnt1	Integer	Internal	Current finished record count. addr declared as 7									
ii & ii2	Integer	Internal	To use in "for" loops									
i8017H[07]	Integer	Input	Variable array, Dim as 8. link to I-8017H 's Ch1 to Ch. 8									
Volt1[07]	REAL	Internal	Variable array, Dim declared as 8. The voltage value converted from "i8017H[07]"									
i8024[03]	Integer	Output	Variable array, Dim declared as 4. link to I-8024 's Ch1 to Ch. 4									
Save_cnt1	Integer	Internal	Current saving record amount in the RAM disk File, addr declared as 9									
TMP_v	Integer	Internal	Internal use									
		ICP DA	AS Co., Ltd. Technical Document									

Classification	ISaGRAF Englis						
Author	Chun Tsai	Version	1.0.0	Date	Oct. 2010	Page	10 / 16

T1	Timer	Internal	For counting time						
T1_next	Timer	Internal	The time to get and save next record						
T1_Interval	Timer	Internal	The interval time between two record						
File_name1	Message	Internal	File name, Len is 64, init as \Web_Data1\curve1.js Web HMI support only RAM Disk File in \Web_Data1 If the file is in CompactFlash File, Web HMI support only in \CompactFlash\Temp\HTTP\Data\ (Please refer to section 11.2 of ISaGRAF user manual - Whmi_08 demo)						
Msg1	Message	Internal	Operation state message, Len is 255, init as "No Action now", addr as 41 (Hex. is 29)						
Str1	Message	Intenal	Len is 255, internal use						

IO connection:

ISaGRAF - WHMI_12 - I/O connection	- U ×
<u>File Edit Tools Options H</u> elp	
🖴 📼 🗟 🎾 💼 🗘 🤑 🕞 🛣 🖴	
0 ► ref = 8024	
CH1_rang = 33	
2 ⊨ i_8024 · · • CH2_rang = 33	
3 ⊨ i_8017h ~ + ™ CH3_rang = 33	
4 CH4_rang = 33	
5 1 № i8024[0]	
6 2 S i8024[1]	
7 3 S i8024[2]	
8 4 18024[3]	
9	
10	

Classification	ISaGRAF Englis	sh FAQ-057					
Author	Chun Tsai		.0.0	Date	Oct. 2010	Page	11 / 16
						5	
	ISaGRAF - WHMI	_12 - I/O conn	ection			>	4
Fi	le <u>E</u> dit <u>T</u> ools <u>O</u> pti	ons <u>H</u> elp					
Ó	🛓 📼 🗟 🖄 🍵	<u> </u>	Χ 🛎				
	0	_) ▶ :::: ref = 8	017			
	1		BBBB CH1_I	ang = 8			
	2 🖿 i_8024	~~ →	38885 CH2_1	•			
	3 📼 i_8017h	~ •	CH3_I	-			
	4			ang = 8			
	5 6		:**** CH5_1 :**** CH5_1	•			
	7			ang = 0 ang = 8			
	8		:::::: CH8	-			
	9			-	Max = 32766		
	10		3880 Noise	_Filter_N	/in = -32767		
	11		see Samp	_			
	12				variable array, Din		
	13		=		variable array, Din variable array, Din		
	14 15				variable array, Din variable array, Din		
	16				variable array, Din		
	17				variable array, Din		
	18				variable array, Din		
	19		8 🔊 i80	17H[7] (*	variable array, Din	n=8 *)	
	20						
	21	•					

Classification	ISaGRAF Englis						
Author	Chun Tsai	Version	1.0.0	Date	Oct. 2010	Page	12 / 16

ST program – Sim_out

```
(* Output I-8024 's Ch1 to Ch4 as different voltage curve *)
(* 2 * Pi * T1 / 60000 = T1 * 1.047197E-4 *)
(* 2 * Pi * T1 / 120000 = T1 * 5.235985E-5 *)
i8024[0] := ANA( sin(REAL(T1) * 1.047197E-4) * 3276.8 );
i8024[1] := ANA( cos(REAL(T1) * 5.235985E-5) * 3276.8 );
i8024[2] := ANA( sin(REAL(T1) * 1.047197E-4) * 6553.6 );
i8024[3] := ANA( cos(REAL(T1) * 5.235985E-5) * 6553.6 );
```

ST program – ST1

```
(* W-8xx7 can have max. speed of 100Hz to record data (minimum sample interval is 10 ms) *)
```

- (* This example assume max. 8-Ch. , so 1 second will record 100 x 8 REAL value *)
- (* 1 minute will record 100 x 8 x 60 = 48,000 REAL value *)
- (* If period is set as 10 minute, we need 48,000 x 10 = 480,000 REAL value memory = 480,000 x 4 = 1,920,000 bytes *)

if INIT then

INIT := False ;

(* Allocate 500,000 integer (or 32-bit REAL) space to store records up to 10 minutes. total 500,000 x 4 = 2,000,000 bytes , W-8xx7 support only No.1 Arcreate() up to 3,000,000 integer space, that is 12,000,000 bytes. The first parameter in ARcreate() should be 1, it doesn't support 1st parameter as 0, 2, 3, ... , 15 *)

(* Arcreate() can be called only once in the ISaGRAF program *)

```
TMP_v := ARcreate(1, 500000);
```

```
if TMP_v <> 1 then
```

Msg1 := 'Parameter error or can not allocate memory by ARcreate() function!'; end_if ;

```
TMP := PLC_mode(-1) ; (* Set W-8xx7 ISaGRAF driver running at fatest mode *)
end_if ;
```

```
Classification
                ISaGRAF English FAQ-057
                                                         Date
Author
                 Chun Tsai
                                Version
                                         1.0.0
                                                                 Oct. 2010
                                                                               Page
                                                                                           13 / 16
   (* If stop command is gived *)
   if Stop1 then
     Stop1 := False ;
     STEP1 := 0 ; (* 0: no action *)
     TStop(T1); (* stop T1 *)
     T1 := T#0s ;
     Msg1 := 'User stop recording !' ;
     save cnt1 := 0;
   end_if ;
   (* If start command is gived *)
   if Go1 then
       Go1 := False ;
       (* STEP1 : 0: no action, 1: recording, 2: recond finished *)
       if STEP1=1 then
           (* It is still recording now *)
           Msg1 := 'It is still recording now ... Please wait' ;
       else
           (* Check interval valid or not *)
           (* we assume 10 to 10000 ms is valid in this example *)
           (* If your average PLC scan time is larger, for example, near 10 ms,
              Please use Interval larger than 10 ms. Or the record time won't be correct *)
           if (Interval1 < 10) or (Interval1 > 10000) then
              Msg1 := 'Wrong Interval value, it should be in 10 to 10000 milli-second !';
           (* Check period valid or not *)
           (* we assume 1 to 10 minute is valid in this example *)
           elsif (Period1 < 1) or (Period1 > 10) then
              Msg1 := 'Wrong Period value, it should be in 1 to 10 minute !';
           else
```

```
Classification
                ISaGRAF English FAQ-057
                               Version
                                        1.0.0
                                                       Date
Author
                Chun Tsai
                                                               Oct. 2010
                                                                            Page
                                                                                        14 / 16
             (* parameter is correct, start recording *)
             total_record1 := (Period1 * 60000) / Interval1; (* calculate total record number *)
             record cnt1 := 0; (* reset current record count as 0 *)
             STEP1 := 1 ;
                                 (* set step as 1:recording *)
             Msg1 := 'Recording now ... Please wait' ;
             (* start ticking T1 from 0 second *)
             T1 := T#0s;
             T1 Interval := TMR(Interval1);
             T1 next := T1 + T1 Interval ;
             TStart(T1); (* ticking now *)
             save cnt1 := 0 ;
           end_if;
      end if;
   end_if;
   (* in reconrding state *)
   if STEP1 = 1 then
     (* store one record *)
     if T1 >= T1_next then
       (* Re-calculate next T1 *)
       T1 next := T1 next + T1 Interval ;
       (* T1 will be overflow after T#23h59m59s999ms, so reset it at T#20h *)
       if T1 >= T#20h then
          T1 := T#0s ;
          T1_next := T1 + T1_Interval ;
       end_if;
       (* record data *)
       for ii := 0 to NUM_CH-1 do
           Volt1[ii] := Real(i8017H[ii]) * 0.000305176 ; (* convert to voltage *)
```

```
Classification
                ISaGRAF English FAQ-057
                                                                              Page
Author
                Chun Tsai
                                Version
                                         1.0.0
                                                        Date
                                                                 Oct. 2010
                                                                                          15 / 16
   (* using Real int() to map REAL value to become integer value & then store it by ARwrite() *)
           TMP_v := ARwrite(1, NUM_CH * record_cnt1 + ii , Real_int(Volt1[ii]));
           (* check if ARwrite() correct *)
           if TMP v <> 1 then
               Msg1 := 'Can not operate ARwrite() !';
               STEP1 := 0 ; (* 0: no action *)
               TStop(T1); (* stop T1 *)
               T1 := T#0s;
           end if;
        end_for;
        (* Check if record number reach the end *)
                                              (* current record count plus 1 *)
        record cnt1 := record cnt1+1;
        if (record_cnt1 >= total_record1)
                                              then
    (* record is finished, prepare to save records to a RAM disk file in serval separate PLC scans *)
                        (* set step as 0 at the beginning of saving *)
          STEP1 := 0;
          Tstop(T1);
          T1 := T#0s ;
          (* Create a new file *)
          File1 := F creat(File name1);
             File1 = 0 then
          if
              (* Can not create file *)
              Msg1 := 'Create File ' + 'File_nam1 Error !!!';
          else
             (* Because saving lots of data to file take lots of PLC scan time, we are not going to
                 save all data in a single PLC scan. We will save it in serval separate PLC scans *)
             Msg1 := ' Please wait ...
                                       Saving data to file : ' + File_name1 + ' ...';
             save_file1 := True ; (* set as True to start saving RAM disk file *)
             save_cnt1 := 0; (* from 0 to total record1-1 *)
          end_if;
        end_if;
     end_if;
   end_if;
```

```
Classification
                ISaGRAF English FAQ-057
                                Version
                                        1.0.0
                                                       Date
Author
                Chun Tsai
                                                                Oct. 2010
                                                                             Page
                                                                                         16 / 16
  (* Because saving lots of data to file take lots of PLC scan time, we are not going to
     save all data in a single PLC scan. We will save it in serval separate PLC scans *)
  (* save records to a RAM disk file in serval separate PLC scans *)
  if save file1 then
      for ii2 := 0 to 50 do
                                     (* we limit one PLC scan can save max. 50 records *)
          if save cnt1 < total record1 then
             str1 := "; (* init str1 as empty string *)
             for ii := 0 to NUM CH-1 do
         (* delimiter is <TAB> character *)
             str1 := str1 + Rea Str2( Int real(ARread(1, NUM CH * save cnt1 + ii)), 3 ) + '$09';
             end_for;
             str1 := str1 + '$0D$0A' ; (* add <CR> <LF> at the end of each row *)
             TMP := F writ s(File1, str1);
             save_cnt1 := save_cnt1 + 1 ;
          else
             (* saving is finished *)
             save file1 := False ;
             TMP := F_close(File1); (* Close file *)
                                          (* 2: recond finished *)
             STEP1 := 2 ;
             Msg1 := 'Record is finished ! You may download the record file to your PC now !';
          end if;
      end_for;
  end if;
```

Click the link for more ISaGRAF FAQ: http://www.icpdas.com/en/faq/index.php?kind=280#751