

KREO HMI TUTORIAL Time based trend

Tutorial dedicated to the Time based Trend programming

Connect Ideas. Shape solutions.



Introduction

Timed Trends (t) are graphs representing the tag values time based. The memory buffer is programmed in the same way of datalogs. We can, indeed, say that it is exactly the same for both.

The sampling of these values can be based on time, command, events,... and at RUNTIME this buffer will be populated with the sampled values of the tags. The difference between DATALOG and TREND (t) is therefore in the graphical representation of these values: tabular the first, graphic the second.

How to do:

 We create the memory buffer of the samples for the TREND (t) made of 3 tags DL1, DL2, DL3.

kH	File Edit Action Tools Help												
B		Ŷ	ł	\downarrow	ſ	Ċ							
TESTMANUALE					List data logs × DataLog1 +								
					-								
EW	EW107BA6SP 🗸 🗸					+ + ×							
o	Configura	tion											
					_		γ	Name γ		Description γ		Tag γ	Header γ
	Pages			(8)		1		DL1				DL1	DL1
	Popups			(1)		2	ø	DL2				DL2	DL2
Ľ₽	Sequen	ces		(1)		3	ø	DL3				DL3	DL3
T	Tags			(109)		1							
A	Alarms			(6)		2							
8	Datalog	s		(1)		3							
	Recipes	;		(0)		4							
~						5							

- 2) Suppose you configure the following LOG buffer properties.
 - Sampling-tags in time (3 sec.)
 - Buffer-log memory size (sample no. =1000)
 - The complete log-buffer will be 3000sec. long (50min.)



- BUFFER-WARNING threshold = 75%. A DATALOG event will be raised as soon as the threshold will be reached. Other events are configurable such as 100% full DATALOG.
- Log-file enabled. This allows you to keep the log-samples after the device reboot.
- Sampling enabled at start-up
- Possibility to stop the sampling temporarily by the user and then reactivate it, through tags, buttons, events,...
- Data export table-LOG enabled (CSV/XML file) for all tags and any read quality

Below is an example:

Properties	»
Name	DataLog1
Description	
Strobe Type	OnTime ~
Strobe timer	000h 00m 03s 0d
Size (Samples)	1000
Size (Time)	000h 50m 00s 0d
Warning level (%)	75
Enable log file	
Enable at startup	
Can enabled/disabled	
Export file format	Date;Time;Value;Value;Valu
Print column width	10





3) You now can drag & drop the TREND (time based) widget to the page.

The PENS graphics property is defined as below:





	Н МІ	× +				0	- 0 ×
	нмі	naster/master_w.html					🖈 😩 E
	localnoscaulau				DA	ATALOG - TREND (t)	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $			22	24	45		
TimeADL1DL2DL315:12:4045233415:12:4645563415:12:4945563415:12:5545566715:12:5545566715:12:5878566715:13:0178896715:13:0178899815:13:1078899815:13:1623899815:13:2523344515:13:2623344515:13:2723344515:13:2823344515:13:2823344515:13:2823344515:13:3123344515:13:3123344515:13:3123344515:13:3123344515:13:3123344515:13:3123344515:13:3123344515:13:3123344515:13:3223344515:13:3123344515:13:3123344515:13:3123344515:13:3123344515:13:3223344515:13:3123344515:13:3123344515:13:3123344515:13:32<			23	34	45		
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		Time	∆ DL1	DL2	DL3		
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		15:12:40	45	23	54	Buffer-log RESET	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		15:12:43	45	56	34		
15:12:49 45 56 34 15:12:52 45 56 67 15:12:55 45 56 67 15:12:58 78 56 67 15:13:01 78 89 67 15:13:04 78 89 67 15:13:07 78 89 98 15:13:10 78 89 98 15:13:10 78 89 98 15:13:10 78 89 98 15:13:10 78 89 98 15:13:10 78 89 98 15:13:10 78 89 98 15:13:22 23 34 45 15:13:28 23 34 45 15:13:28 23 34 45 15:13:28 23 34 45 15:13:10 23 34 45 15:13:28 23 34 45 15:12:02 15:12:02 15:13:02 15:13:02 15:12:02 15:12:02 15:13:02<		15:12:46	45	56	34	100	1
15:12:52 45 56 67 15:12:55 45 56 67 15:12:58 78 56 67 15:13:01 78 89 67 15:13:04 78 89 67 15:13:07 78 89 98 15:13:10 78 89 98 15:13:13 78 89 98 15:13:16 23 89 98 15:13:22 23 34 45 15:13:25 23 34 45 15:13:28 23 34 45 15:13:1 23 34 45 15:13:10 78 9 15:12:02 15:12:42 15:13:40 15:13:22 15:13:28 23 34 45 15:13:20 15:13:20 15:13:20 15:13:20 15:13:20 15:13:20 15:13:20 15:13:20 15:13:20 15:13:20 15:13:20 15:13:20 15:13:20 15:13:20 15:13:20 15:13:20 15:13:20 15:13:20 15:13:20 15:13:20 15:13:20 <td< td=""><td></td><td>15:12:49</td><td>45</td><td>56</td><td>34</td><td></td><td></td></td<>		15:12:49	45	56	34		
15:12:55 45 56 67 15:12:58 78 56 67 15:13:01 78 89 67 15:13:04 78 89 67 15:13:07 78 89 98 15:13:10 78 89 98 15:13:13 78 89 98 15:13:16 23 89 98 15:13:22 23 34 45 15:13:25 23 34 45 15:13:28 23 34 45 15:13:1 23 34 45 15:13:10 78 9 15:12:02 15:12:42 15:13:04 15:13:28 23 34 45 15:12:22 15:12:42 15:13:02 15:13:22 15:13:10 23 34 45 15:13:28 15:13:26 15:13:26 15:13:26 15:13:26 15:13:26 15:15:10 23 34 45 15:13:28 15:13:26 15:13:28 15:13:26 15:13:26 15:15:10 23 34		15:12:52	45	56	67		
15:12:58 78 56 67 15:13:01 78 89 67 15:13:04 78 89 67 15:13:07 78 89 98 15:13:10 78 89 98 15:13:10 78 89 98 15:13:16 23 89 98 15:13:22 23 34 45 15:13:28 23 34 45 15:13:11 23 34 45 15:13:12 23 34 45 15:13:28 23 34 45 15:13:10 23 34 45 15:13:10 23 34 45		15:12:55	45	56	67	83	
15:13:01 78 89 67 15:13:04 78 89 67 15:13:07 78 89 98 15:13:10 78 89 98 15:13:13 78 89 98 15:13:16 23 89 98 15:13:19 23 34 45 15:13:28 23 34 45 15:13:13 23 34 45 15:13:10 78 89 98 15:13:10 78 89 15:13:28 23 34 45 15:13:10 23 34 45 15:13:10 23 34 45		15:12:58	78	56	67		
15:13:04 78 89 67 15:13:07 78 89 98 15:13:10 78 89 98 15:13:13 78 89 98 15:13:16 23 89 98 15:13:22 23 34 45 15:13:28 23 34 45 15:13:13 23 34 45 15:13:20 23 34 45 15:13:21 23 34 45 15:13:24 23 34 45 15:13:24 23 34 45 15:13:24 23 34 45		15:13:01	78	89	67	67	
15:13:07 78 89 98 15:13:10 78 89 98 15:13:13 78 89 98 15:13:16 23 89 98 15:13:19 23 34 45 15:13:28 23 34 45 15:13:13 23 34 45 15:13:10 23 34 45 15:13:28 23 34 45 15:13:10 23 34 45		15:13:04	78	89	67		
15:13:10 78 89 98 15:13:13 78 89 98 15:13:16 23 89 98 15:13:19 23 34 98 15:13:25 23 34 45 15:13:28 23 34 45 15:13:13 23 34 45 15:13:28 23 34 45 15:13:21 23 34 45		15:13:07	78	89	98	50	
15:13:13 78 89 98 15:13:16 23 89 98 15:13:19 23 34 98 15:13:22 23 34 45 15:13:25 23 34 45 15:13:21 23 34 45 15:13:21 23 34 45 15:13:24 23 34 45		15:13:10	78	89	98		
15:13:16 23 89 98 15:13:19 23 34 98 15:13:22 23 34 45 15:13:25 23 34 45 15:13:21 23 34 45 15:13:31 23 34 45		15:13:13	78	89	98	33	
15:13:19 23 34 98 15:13:22 23 34 45 15:13:25 23 34 45 15:13:31 23 34 45 15:13:31 23 34 45		15:13:16	23	89	98		
15:13:22 23 34 45 15:13:25 23 34 45 15:13:28 23 34 45 15:13:31 23 34 45		15:13:19	23	34	98	17	
15:13:25 23 34 45 15:13:28 23 34 45 15:13:31 23 34 45		15:13:22	23	34	45	r f-4	
15:13:28 23 34 45 15:13:31 23 34 45 15:10:44 23 34 45		15:13:25	23	34	45		
		15:13:28	23	34	45	15:12:02 15:12:22 15:12:42 15:13:02 15:13:22	
		15:13:31	23	34	45	15:13:34:827 DL2 DL3 15:13:34:827 34 45	
15.15.34 25 54 45		15:13:34	23	34	45		

4) At RUNTIME you will see the graph draw the trend pens.

NOTE: Remember that the memory buffer always samples in FIFO mode

5) Some integrated commands are available at RUNTIME via the trend chart toolbar (t).





Some specific icons are available for the commands described below:

- ZOOM: ZOOMs the trend to full screen
- PENS: runtime handles tracks dynamically (ON/OFF, color,)
- GRAPH-MODE: track display in points, lines, areas, digital,...
- PAUSE: pauses the TREND and restarts it
- CROSSHAIR: highlights the tag values at a precise point in the basetimeframe
- RESET: Reset the TREND view to the default values (time base, scale).
- 6) Some predefined FUNCTIONS and EVENTS are available in order to manage the functionality:

File Home Visualizza					📮			
ie	DL1	DL2	DL3	Buff	er-log RESET			
				On				
				+ × 1 Functio	n 🕂		Parameters	
				1 Sar	mplesReset ge veline	^	Datalog	DataLog1
				 ◇ Pro ◇ Rec ◇ San 	oject cipes mples	1		
				Sar Sar Sar	mplesAcquire mplesDisable mplesEnable			
				Sar Sar Sar	mplesExport mplesExportDatabase mplesFlush mplesPoset			
10	1월 1920 × 108	10 pixel 🗟		Jan Jan	npieskeset			200 % 🕞 📃

Default FUNCTIONS Table

- 0 ×



Log EVENTS table:

Events	
OnSamplesFull	None
OnSamplesWarning	None
OnSamplesEnabled	None
OnSamplesDisabled	None
OnSamplesReset	None
OnSamplesStart	None
OnSamplesComplete	None
OnSamplesSuccess	None
OnSamplesError	None
OnSamplesExportStar	None
OnSamplesExportCorr	None
OnSamplesPrintStart	None
OnSamplesPrintComp	None



Connect ideas. shape solutions.

ESA S.p.A. | www.esa-automation.com |