CRT5001 operation manual

CRT5000 can measure 3-current & 4-Line voltage for 3-phase application. Wire signal output: Modubus RS-485, TCP/IP Wireless signal output : not yet. Micro SD card logging: yes Relay output : not yet



Setup method:

Please connect 3pcs of 30A to 500A clamp as the below photo.



Voltage cable wiring method:



RS-485 -> USB cable wiring method:



We have 6 models: better than 1% accuracy (5% to 95% of current sensor)

CRT5001(60A): 60A clamps: \$60 for 3pcs CRT5001(80A): 80A clamps: \$80 for 3pcs

CRT5001(120A): 120A clamps: \$120 for 3pcs CRT5001(200A): 200A clamps: \$150 for 3pcs

CRT5001(350A): 350A clamps: \$200 for 3pcs CRT5001(500A): 500A clamps: \$250 for 3pcs

AC power: N (neutral), R phase, S phase, P phase 4-wire connection RS-485 communication: You can use 31pcs of CRT5001 with supplied pc software. You can use option item: "485 -> usb" connector (\$20)

PC software: Please use the supplied software for Windows 10. (\$100) If you are using Windows 7, you must download the driver to your pc. 1)Please connect the power to the CRT5000

2)Please connect the "485-use" adapter to the CRT5000 and PC.

3)Please open the software on PC.

4)Please select the "Port" number.

5)Please click "Open" icon.

6)Palling interval: 2 seconds are default. You can choose from 2 to 200 seconds.

7)Please start to run by click the "Start" icon.

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Dat	e and Time: 2017-I	05-02 14:36:17 Time dur	ration: O hour O min, 45 sec,		
Port Connection				Device	
Port: COM7	Baudrate: 9600	✓ Open	Close	Slave ID 1	Last ID
Device Date 1			Poll count: 23	Power Data 2	
Power Data I					9917.00
Current, Phase A	0,52	Reactive Power, Phase A	-6, 75	WHA_PUS	2317,00
Current, Phase B	0,53	Reactive Power, Phase B	-6, 34	WHB_PUS	2485,00
Current, Phase C	0,52	Reactive Power, Phase C	-6,87	WHC_POS	2470,00
Current, 3-Phase Average	0,52	Power Factor A	0,60		
Voltane A-N	215 44	Power Factor B	0,60	VT_RMS	215,44
Voltage B-N	215 47	Power Factor C	0,60	PF_T	0,60
Voltage, C-N	215.43	Frequency	60.04		
Antice Decise Dhane A	67.97			VA_A	112,63
Active Power, Phase A	67.27	WATT_T3 Total	0,00	VA_B	114,08
Active Power, Phase B	67,96	VA_T3 Total	0,00	VA_C	112,46
Active Power, Phase C	67,61	VAR_T3 Total	0,00		
				WATT_T3	202,81
Temperature-Humidity		Polling Control		VA_T3	337,63
Temperature	2317.00			VAR_T3	-19,98
Humid	2485.00	Poll Interval 2	🜩 Sec.		
Tomporature/Humid)	2403,00				
remperature(numiu)	2470,00	Start	Stop	Slave ID 1	Once Bes

8)If you have 2 sets of CRT5000, you must memorize the Mudubus "ID" number. For this purpose, you must link the 2ND CRT5000 only by PC.

And click "Settings" and "Modubus" icon step by step.

🚽 CRT-5000 PC Program_V1 - [CRT5000]						
File(F) Home(M) Setting(S) 보기(V) 도움말	(H)					
🟡 🎲 📕 🖉 Time Synchronization						
Device Setting	-05-02 14:38:09 Time dura	ion: 0 hour 2 min, 37				
Port Connect Configration						
Setup	0nen	Close				
Tcp IP Modbus		0036				
Database		Poll count: 79				
Power Data 1]					
Current, Phase A 0,65	Reactive Power, Phase A	-10,26				
Current, Phase B 0,65	Reactive Power, Phase B	-11,57				
Current, Phase C 0,64	Reactive Power, Phase C	-11.34				
Current, 3-Phase Average 0,65	Power Factor A	0.60				
Voltage, A-N 215,03	Power Factor B Power Factor C	0,61				
Voltage, B-N 215,05	Francisco	50.75				
Voltage, C-N 215,02	Frequency	53,75				
Active Power, Phase A 84,13	WATT_T3 Total	0,00				
Active Power, Phase D 04,25 Active Power Phase C 83.26	VA_T3 Total	0,00				
Active Fower, Filase C 00,20	VAR_T3 Total	0,00				
Temperature-Humidity	Polling Control					
Temperature 2319.00						
Humid 2487,00	Poll Interval 2	🗘 Sec.				
Temperature(Humid) 2456,00	Start	Stop				
noabus read: OK						
🚽 CRT-5000 PC Program_V1 - [C	RT5000]					
		D Dhain				
File(F) Home(M) Setting(S)	모기(V) 도급	5월(H)				
🟦 📗 🖳 Modbus			<u>200</u>		×	
					-	
						ID number change
Sloup ID 1					Ŭ	
Slave ID				RC-64		from 1 to 2
						19
Modbus Set		Modbus Data				
ID	1 🛋 🛶					
		ID	0			
COM port	1 🜲	COM port	0			
	Land Land	COMport	°,			
Baud Hate	4 ≑	Baud Rate	0			
Data Bit	8	Data Bit	0			
Data Dit	U 100	Data Dit	0			
Stop Bit	2	Stop Bit	0			
	· ·	Parity Bit	0			
Parity Bit	0 🖨	Flow	0			
Flaur	0 14	11010	0			
FIOW	0					
Do Write		Do Bead				
Do write		Doricad				
* Baud Rate Define	e					
4 (9600) 5 (14400)	6 (19200) 7 (28800)	8 (38400) 9 (57600) 10	0 (115200)			
. (0000) 0 (11400)	- (10200) 1 (20000)	- (
Ready						

9)For to see the several CRT5000 data, you must make modification of Device ID as follows: You can see the whole channel data on the PC now.



10)For to change the CRT5000 time and date, you need the following process. If not changing the time, you can see only factory setting time and date.

If you click the "Do Read" icon, you can see the factory setting time and date only.

Then please click "Do write" icon.

Then please click "Do Read" icon and you can see the computer real time and date under the "Read Date Time.

Then please click "Do Write" icon. Now you have saved the real time data on your CRT5000.

🔡 CRT-5000 P	C Program_V1 - [CRT5000]			
File(F) Hom	ne(M) Setting(S) 보기(V) 도움말(H)		
1 🏠 🗇 💂				
	🚽 Time Synchronization			
- Port F	Slave ID 1			
	Write DateTime	Read DateTime		
Pow	Current Time Synchronization	Year	0	
c		Month	0	
Č.		Day	0	
0		Hour	0	
C		Minite	0	
C		Second	0	
V				
Vi	Do Write	Do Read		

11) Micro SD card memory

Active Power, Phase B

V

A Ready

The above time setting process is very important when you are using the SD card memory.

SD card memorize energy data with time every day with a CSV file.

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You can use a SD card for one year continuously. For to download the data to PC, just pull and push the SD card several times without touch the power cord on CRT5000.

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VI

SD card logging the data every 1 minute interval and make a CSV file every day. You can make 30 files on a month.

1	A		В	С	D	E	F	G	Н	1	J	К	L	М	N
1	Count	저장	시간 Clock	전류R상	전류S상	전류T상	3상평균전류	상전압R상	상전압S상	상전압T상	유효전력R상	유효전력S상	유효전력T상	무효전력R	무효전력S
2		1 20	16-06-24 12:00	0.22	0.22	0.22	0.22	235.86	235.82	235.82	31.06	31.58	31.29	29.58	30.16
3		2 20	16-06-24 12:01	0.23	0.23	0.23	0.23	235.88	235.96	235.93	32.65	33.81	33.04	-2.46	-2.05
4		3 20	16-06-24 12:02	0.22	0.22	0.21	0.22	235.81	235.87	235.83	30.72	31.11	30.67	-1.79	-1.63
5		4 20	16-06-24 12:03	3 0.22	0.22	0.22	0.22	236.12	236.13	236.14	32.04	32.17	31.49	-2.04	-1.94
6		5 20	16-06-24 12:04	0.22	0.22	0.21	0.22	235.39	235.43	235.39	30.76	31.4	30.43	-2.16	-1.73
7		6 20	16-06-24 12:05	0.21	0.22	0.21	0.21	235.76	235.74	235.69	30.35	30.92	30.75	-1.99	-1.66
8		7 20	16-06-24 12:06	0.21	0.21	0.21	0.21	234.95	234.98	234.98	30.46	31.01	30.77	-1.57	-1.35
9		8 20	16-06-24 12:07	0.22	0.22	0.22	0.22	235.22	235.25	235.25	31.08	31.24	30.7	-2	-1.36
0		9 20	16-06-24 12:08	0.23	0.23	0.23	0.23	235.47	235.52	235.42	32.5	33.03	32.86	-2.27	-2.05
1		10 20	16-06-24 12:09	0.22	0.22	0.22	0.22	235.52	235.54	235.55	31.11	31.68	30.98	-2.15	-1.3
2		11 20	16-06-24 12:10	0.21	0.22	0.21	0.21	235.05	235.12	235.01	30.66	31.38	30.14	-1.58	-1.37
3		12 20	16-06-24 12:11	0.22	0.22	0.22	0.22	235.08	235.15	235.1	30.88	30.98	30.85	-1.67	-1.19
4		13 20	16-06-24 12:12	0.24	0.24	0.24	0.24	236.06	236.08	236.1	33.5	34.47	33.69	-2.52	-2.03

And you can make graph by using Excel software.



12)Energy data logging with pc software:

Please click "Home" and "CVS" icon.

And make directory on PC for to save the "CSV" file.

🚽 CRT-5000 PC Program_V1 - [CRT5000]

File(F) Home(M) Setti	ing(S) 보기(V) 도움	말(H)	
CVS			data on pc,
Port Connection	Date and Time: 2L	J17-05-02 14:50:20 Time at	please click the
Port: COM7	Baudrate: 9	9600 v Open	
Power Data 1			F
Current, Phase A	A 0,48	Reactive Power, Phase A	-5,0
Current, Phase E	3 0,49	Reactive Power, Phase B	-5,3
Current, Phase C	0,49	Reactive Power, Phase C	-5.7
Current 3-Phase	010 anoraul	Power Factor A	0.50

Į	폴더 찾아보기		
Port Co			
Port:			
Power (바탕 화면 Samsung Link > 6 OneDrive		
Curre	> 🤱 young hwa hong	Make directory for to save your enegy data file location.	
Curre	> 💻 내 PC 🗕 🗕	-	
Curre	> 📻 라이브러리	You can save X channel data on a file	
Curre	> 🔯 제어판		
Valta	🙆 휴지통		
Voltar	등고비	•	
Volta	휴지통		
Active			
Active			
Active			
Tompor			
T			
Temp			
Humi			

File saving by using pc software.

	• I × ✓ ∱ 2017-01-09 11:52-48 AM																			
A	В	С	D	E	F	G	н	1	J	к	L	м	N	0	Р	Q	R	s	т	U
DEV II	DATETIME	CPR	CPS	CPT	C3PA	VRN	VSN	VTN	APPR	APPS	APPT	RPPR	RPPS	RPPT	PFR	PFS	PFT	HZ	TEMP	HUMID
1	11:52:04 AM	0.410507	0.412781	0.420495	0.414584	215.0215	213.999	215.0115	52.626	53.29442	54.30508	-4.01044	-3.44764	-2.07925	0.599083	0.596633	0.59678	60.01595	14.30641	1.67E+18
1	11:52:06 AM	0.397418	0.396817	0.401977	0.39937	215.0072	215.0114	215.0168	51.29242	51.86534	52.85025	-3.31246	-3.20578	-1.85901	0.596412	0.603988	0.60465	60.01595	14.30642	-38448
1	11:52:08 AM	0.414155	0.41513	0.421385	0.418178	215.149	215.151	215.1534	53.51973	53.84159	54.74387	-4.29368	-3.26096	-1.899	0.596775	0.596139	0.599884	60.01595	14.30642	7.41E+33
1	11:52:10 AM	0.414155	0.41513	0.421385	0.418178	215.149	215.151	215.1534	53.51973	53.84159	54.74387	-4.29368	-3.26096	-1.899	0.596775	0.596139	0.599884	60.01595	14.30642	7.41E+33
1	11:52:12 AM	0.439227	0.43941	0.446641	0.443702	215.0039	215.0159	215.0182	56.46906	56.85425	57.93033	-5.1949	-4.61648	-2.74598	0.595157	0.595952	0.596789	60.03679	14.30643	-4.59E-30
1	11:52:14 AM	0.410152	0.411311	0.418747	0.414691	213.9788	213.988	213.9745	53.26867	52.98005	54.15807	-4.51992	-3.51202	-2.41399	0.597389	0.599162	0.600501	60.03679	14.30644	1.26E-05
1	11:52:16 AM	0.410152	0.411311	0.418747	0.414691	213.9788	213.988	213.9745	53.26867	52.98005	54.15807	-4.51992	-3.51202	-2.41399	0.597389	0.599162	0.600501	60.03679	14.30644	1.26E-05
1	11:52:18 AM	0.383567	0.387311	0.391666	0.386205	213.9769	213.9702	213.9857	49.20779	49.98026	50.86112	-3.77226	-2.90966	-1.81532	0.595909	0.603296	0.597161	60.03679	14.30644	1.47E+23
1	11:52:20 AM	0.385079	0.389639	0.393459	0.389382	213.9924	213.966	213.9802	48.87949	50.23132	50.90723	-3.46971	-2.40755	-1.56933	0.589564	0.602723	0.600937	60.01595	14.30645	-7.62E-33
1	11:52:22 AM	0.385079	0.389639	0.393459	0.389382	213.9924	213.966	213.9802	48.87949	50.23132	50.90723	-3.46971	-2.40755	-1.56933	0.589564	0.602723	0.600937	60.01595	14.30645	-7.62E-33
1	11:52:24 AM	0.46384	0.467724	0.470062	0.465899	213.9911	213.9975	215.0033	60.2982	61.07712	61.14898	-5.33746	-4.8151	-3.20303	0.60077	0.60739	0.601107	60.01595	14.30646	4.27E-27
1	11:52:26 AM	0.38538	0.387858	0.399038	0.391399	213.9805	213.9645	213.9843	49.23354	50.82893	51.51772	-3.80445	-2.63654	-1.899	0.593376	0.606594	0.596651	60.01595	14.30646	162.2188

If you have problem with CRT5000 and pc software, please contact us.

13)Wattage Total calculation method:

T-5000 PC Program_V1 - [CRT50	00]	han			-	
) Home(M) Setting(S) 👱	.기(V) 도숨할	≦(H)				
Dat	e and Time: 201	17-05-02 14:36:17 Time du	ation: O hour O min, 45 sec,			
Port Connection				Device		For to clculate the KWh, we have 2 method:
Port: COM7	Baudrate: 96	000 V Open	Close	Slave ID 1	Last ID 1	
Power Data 1			Poll count: 23	Power Data 2		This data is increasing from zero to now
Fower Data 1					0017.00	Please check the starting time data (A)
Current, Phase A	0,52	Reactive Power, Phase A	-6, 75	WHA_POS	2317,00	Please check new data (R)
Current, Phase B	0,53	Reactive Power, Phase B	-6, 34	WHB_POS	2485,00	Thease check now data (b)
Current, Phase C	0,52	Reactive Power, Phase C	-6,87	WHC_POS	2470,00	P A = total anarray data during the terms in K
Current, 3-Phase Average	0,52	Power Factor A	0,60			b - A = total energy data during the terms in KY
Voltage A-N	215 44	Power Factor B	0,60	VT_RMS	215,44	
Voltage, A N	215.47	Power Factor C	0,60	PF_T	0,60	
Voltage, C-N	215,43	Frequency	60,04			
Activo Douvor, Dhoop A	67.07			VA_A	112,63	
Active Power, Phase A	07.00	WATT_T3 Total	0,00	VA_B	114,08	
Active Power, Phase B	67,96	VA_T3 Total	0,00	VA_C	112,46	
Active Power, Phase C	67.61	VAR_T3 Total	0,00	1		If you are using 3-phase application.
				WATT_T3	202,81	WATT T3 is realtime wattage in W or kW.
Temperature-Humidity		Polling Control		VA_T3	337,63	-
Temperature	2317,00			VAR_T3	-19,98	Please add all the WATT T3 during the terms
Humid	2485.00	Poll Interval 2	🗢 Sec.			by using data logging method at
Temperature(Humid)	2470.00					"Home" -> CVS -> saving data by csy file
(internet and (individually)	2410,00	Start	Stop	Slave ID 1	Once Read	Home > Cyb > saving data by csv life.

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