

AnyWay®

EV4000

V3.2

 **银河电气**
YINHE ELECTRIC

1	1
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6.1	EVWEB	6
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6.7		

1

EV4000

/

$\pm 1500V$

$\pm 1000A$

1500Vrms

707A

$\pm 10V$

400kHz 10Vp

GB/T 16318-1996

GB/T 29307-2012

GB/T 18488.2-2015

2

IEC61010-1/

1

JJF1559-2016

1

PC 1

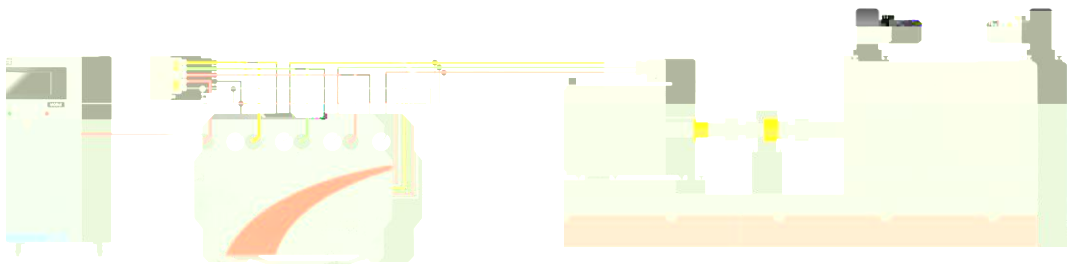
3

1

1

2

EV4000



DC

A B C

DC

DC

3

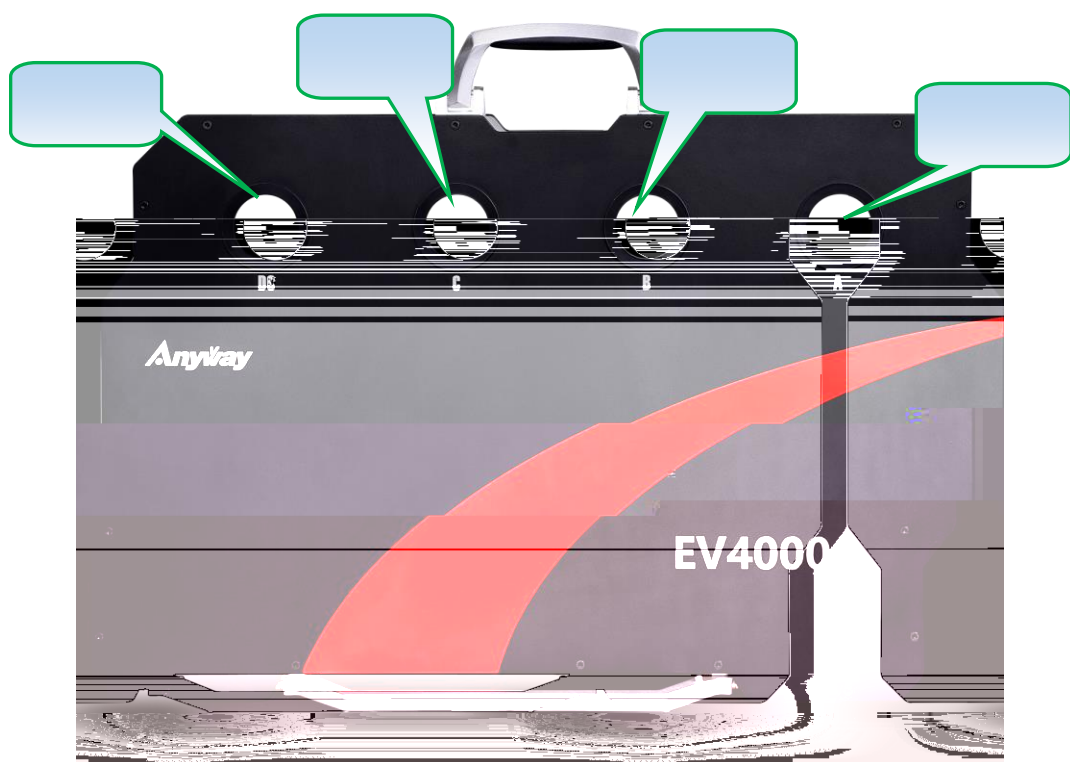


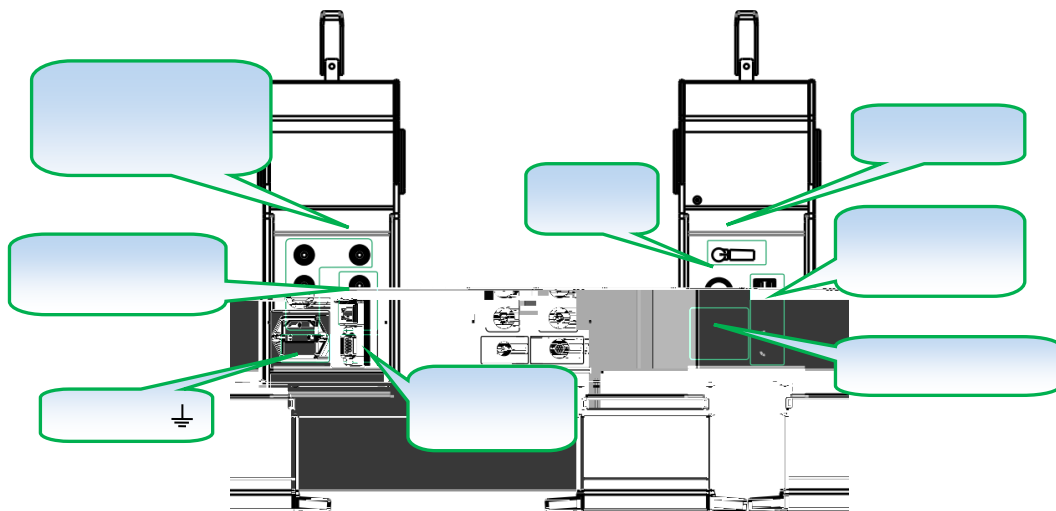
0.05

1

EV4000

DC





5

5.1

- CPU Intel I3
- DDRIII 4G
- 2G
-
- SSD

5.2

- IIS7.0 Win7 SP1 32 64 Win10 64
- Framework 4.5.2 VC++2015

6



13



13



6.1 EVWEB

EVWEB

EVWEB

6.2



6.1.1

U1		U2	
I1		I2	
P1		P2	
Uab	A B	Ia	A
Ubc	B C	Ib	B
Uca	C A	Ic	C

Pa	A	F	
Pb	B		
Pc	C	PF	
T		Eu	
N		Ei	
P3		Ep	

	U1 I1	avg	
		rms	
	P1	avg	
	U2 I2 Uab Ubc Uca Ia Ib Ic	rms	
		h01	
		mean	
		avg	
	P2	h01	
		avg	

6.1.2

DC/C/B/A



EV4000



EV4000

6.3

EV4000

6.4

CSV

csv

200ms

6.5

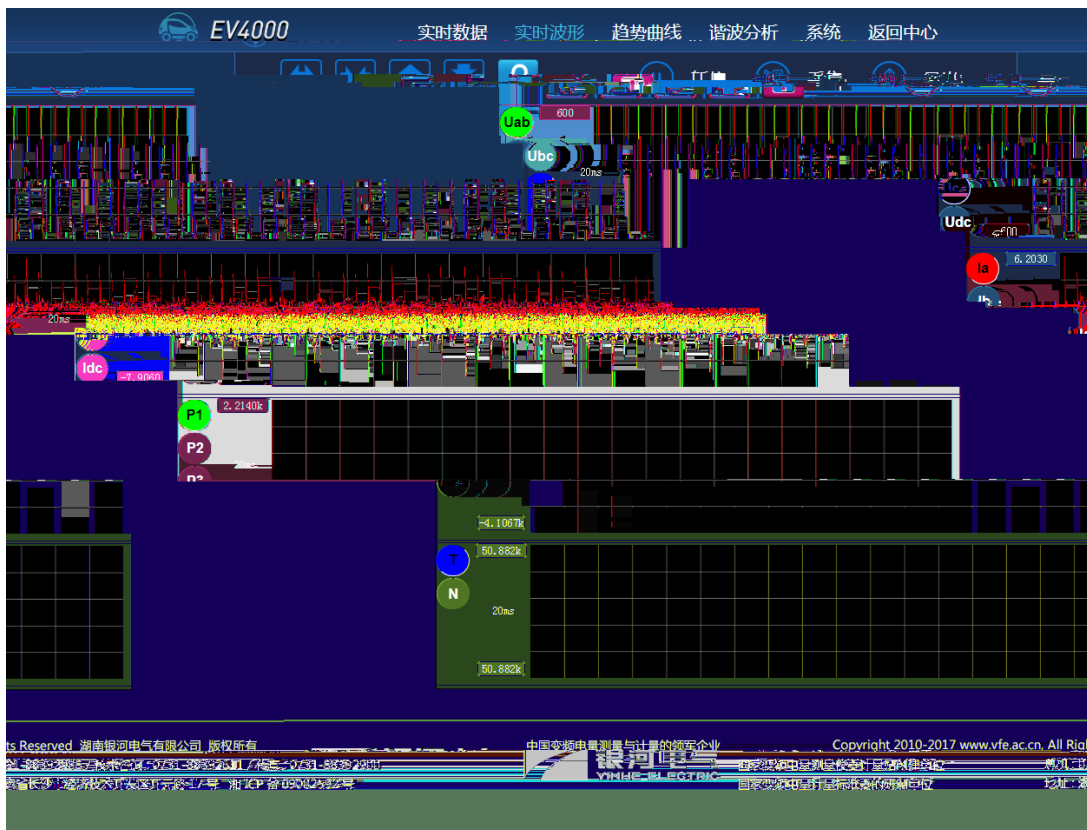


EV4000



EV4000

6.6



6.6.1

Uab /

6.6.2



Y

Y

6.6.3 X

50ms/ X 20 1 ;

X

X

6.6.4

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
1	17:20:57																			
2	-168.349																			
3	-168.165																			
4	-167.986																			
5	-167.972																			
6	-168.149																			
7	-167.734																			
8	-167.557																			
9	-167.963																			
10	-168.646																			
11	-169.056																			
12	-169.319																			
13	-168.991																			
14	-168.955																			
15	-169.405																			
16	-169.342																			
17	-168.864																			
18	-168.694																			
19	-169.19																			
20	-169.837																			
21	-170.136																			
22	-170.283																			
23	-169.794																			
24	-169.973																			
25	-170.649																			
26	-170.493																			
27	-170.083																			
28	-169.993																			
29	-170.339																			
30	-170.951																			
31	-171.411																			
32	-171.153																			
33	-170.729																			
34	-171.103																			
35	-171.739																			
36	-171.636																			
37	-171.265																			
38	-171.2																			
39	-171.593																			
40	-171.97																			
41	-172.313																			
42	-171.816																			
43	-171.667																			
44	-172.22																			
45	-172.751																			
46	-172.61																			
47	-172.475																			
48	-172.422																			
49	-172.789																			
50	-173.001																			
51	-173.266																			
52	-172.792																			
53	-172.566																			
54	-173.065																			
55	-173.694																			
56	-173.475																			
57	-173.614																			
58	-173.562																			
59	-173.099																			

6.7



- -

,P1/P2/P3/T/N

AVG

6.7.1

Uab /

6.7.2



Y

Y

6.7.3

-

6.7.4

6.7.5

DAT

CSV

名称	修改日期	类型	大小
ia.csv	2018/11/26 17:36	XLS 工作表	58 KB
ic.csv	2018/11/26 17:36	XLS 工作表	58 KB
id.csv	2018/11/26 17:36	XLS 工作表	58 KB
n.csv	2018/11/26 17:36	XLS 工作表	58 KB
p1.csv	2018/11/26 17:36	XLS 工作表	58 KB
p2.csv	2018/11/26 17:36	XLS 工作表	58 KB
p3.csv	2018/11/26 17:36	XLS 工作表	58 KB
t.csv	2018/11/26 17:36	XLS 工作表	65 KB
uab.csv	2018/11/26 17:36	XLS 工作表	66 KB
ubc.csv	2018/11/26 17:36	XLS 工作表	64 KB
uca.csv	2018/11/26 17:36	XLS 工作表	63 KB
udc.csv	2018/11/26 17:36	XLS 工作表	59 KB

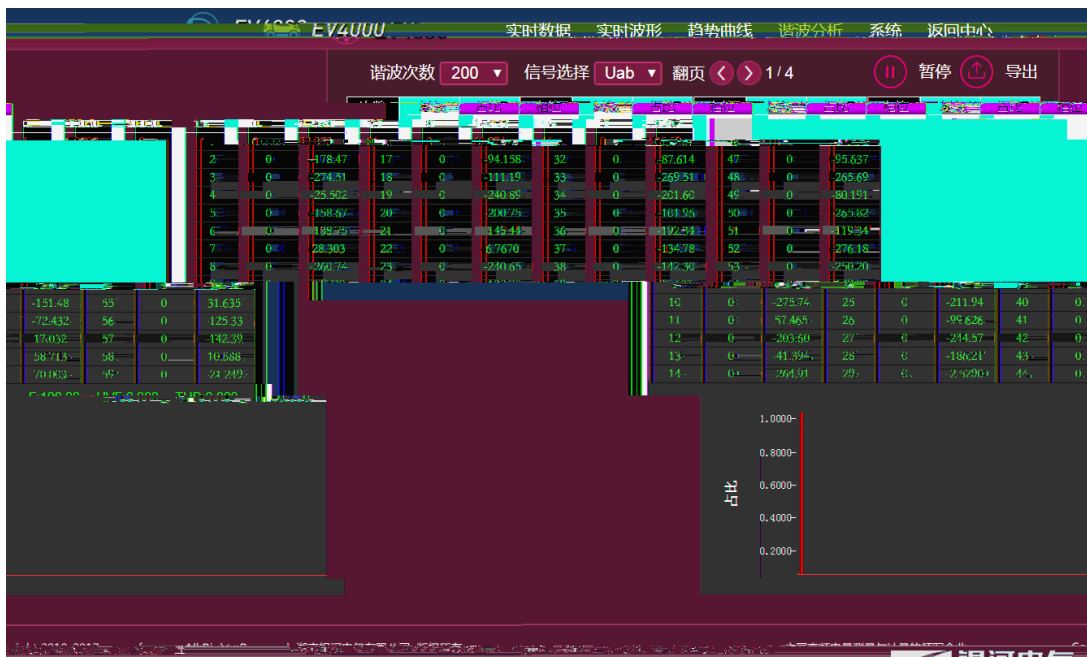
Uab.csv

A1	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
9:01:13																				
2	AVC	ROI	RMS	MEAN	MAX	MIN	THD	F	PHASE											
3	0.096	130.539	130.546	130.857	183.946	-183.876	0.011	50.027	0.1											
4	0.12	130.518	130.526	130.825	184.049	-183.909	0.011	50.018	0.103											
5	0.119	130.527	130.535	130.841	183.969	-183.784	0.011	50.027	0.109											
6	0.127	130.527	130.535	130.84	183.94	-183.862	0.011	50.018	0.112											
7	0.149	130.51	130.518	130.821	183.986	-183.929	0.011	50.018	0.118											
8	0.13	130.519	130.527	130.829	183.996	-183.852	0.011	50.019	0.125											
9	0.126	130.512	130.52	130.824	184.16	-184.022	0.011	50.017	0.134											
10	0.148	130.506	130.514	130.817	184.115	-183.907	0.011	50.019	0.14											
11	0.111	130.524	130.532	130.84	184.096	-183.973	0.011	50.027	0.141											
12	0.132	130.517	130.525	130.827	183.981	-183.768	0.011	50.018	0.143											
13	0.13	130.513	130.521	130.824	183.966	-183.737	0.011	50.019	0.15											
14	0.113	130.519	130.527	130.832	184.185	-183.924	0.011	50.026	0.156											
15	0.124	130.509	130.518	130.819	184.123	-183.951	0.011	50.018	0.163											
16	0.14	130.491	130.499	130.798	184.303	-183.835	0.011	50.019	0.176											
17	0.138	130.506	130.514	130.817	183.988	-183.857	0.011	50.018	0.184											
18	0.121	130.521	130.529	130.837	184.034	-183.869	0.011	50.025	0.186											
19	0.124	130.513	130.521	130.825	184.034	-183.751	0.011	50.019	0.188											
20	0.111	130.501	130.511	130.809	184.092	-183.909	0.012	50.01	0.201											
21	0.127	130.51	130.518	130.822	184.055	-183.847	0.011	50.018	0.213											
22	0.123	130.525	130.533	130.84	183.99	-183.805	0.011	50.027	0.213											
23	0.137	130.496	130.504	130.805	184.056	-183.82	0.011	50.016	0.217											
24	0.129	130.519	130.529	130.831	184.013	-183.837	0.012	50.011	0.227											
25	0.118	130.519	130.527	130.834	184.124	-183.761	0.011	50.018	0.236											
26	0.121	130.507	130.515	130.815	184.186	-183.785	0.012	50.01	0.246											
27	0.109	130.528	130.536	130.842	184.049	-183.961	0.011	50.018	0.255											
28	0.139	130.512	130.521	130.821	184.103	-183.897	0.012	50.017	0.265											
29	0.128	130.504	130.514	130.818	184.142	-183.986	0.012	50.01	0.281											
30	0.129	130.524	130.533	130.838	184.063	-183.792	0.011	50.018	0.295											
31	0.155	130.505	130.515	130.817	184.028	-183.864	0.012	50.009	0.309											
32	0.145	130.512	130.52	130.826	183.979	-183.802	0.011	50.019	0.32											
33	0.116	130.525	130.533	130.839	183.985	-183.84	0.011	50.017	0.327											
34	0.125	130.518	130.526	130.832	184.138	-183.793	0.011	50.018	0.337											
35	0.133	130.51	130.52	130.823	184.012	-183.749	0.013	50.01	0.352											
36	0.138	130.518	130.526	130.832	184.114	-183.761	0.011	50.018	0.367											
37	0.152	130.517	130.525	130.832	184.046	-183.887	0.011	50.017	0.374											
38	0.141	130.505	130.515	130.82	184.097	-183.822	0.012	50.01	0.385											
39	0.137	130.514	130.523	130.829	184.026	-183.904	0.012	50.009	0.399											
40	0.133	130.519	130.528	130.833	184.083	-183.936	0.012	50.009	0.413											
41	0.108	130.524	130.533	130.838	184.003	-183.838	0.012	50.009	0.426											
42	0.125	130.522	130.531	130.836	183.99	-183.823	0.012	50.009	0.439											
43	0.144	130.52	130.528	130.834	184.033	-183.775	0.012	50.016	0.451											
44	0.159	130.51	130.511	130.817	184.166	-183.741	0.013	50.002	0.473											
45	0.157	130.51	130.519	130.827	183.996	-183.836	0.012	50.009	0.507											
46	0.137	130.502	130.512	130.819	184.02	-183.871	0.012	50.009	0.524											
47	0.149	130.515	130.524	130.832	183.994	-183.811	0.012	50.009	0.541											
48	0.137	130.522	130.53	130.838	184.092	-183.946	0.011	50.009	0.555											
49	0.157	130.51	130.521	130.831	184.041	-183.786	0.013	50.008	0.569											
50	0.14	130.525	130.535	130.843	184.091	-183.873	0.012	50.01	0.587											
51	0.157	130.518	130.527	130.835	184.057	-183.909	0.012	50.009	0.6											
52	0.119	130.533	130.541	130.848	184.119	-183.997	0.011	50.009	0.612											
53	0.139	130.521	130.531	130.841	184.011	-183.856	0.012	50.009	0.622											
54	0.164	130.514	130.525	130.835	184.024	-183.804	0.013	50.001	0.642											
55	0.145	130.523	130.532	130.839	184.109	-183.871	0.012	50.009	0.659											
56	0.156	130.521	130.53	130.838	184.076	-183.76	0.012	50.008	0.673											

6.8

FFT

FFT



6.8.1

6 100 200 500 1000 1500 2000

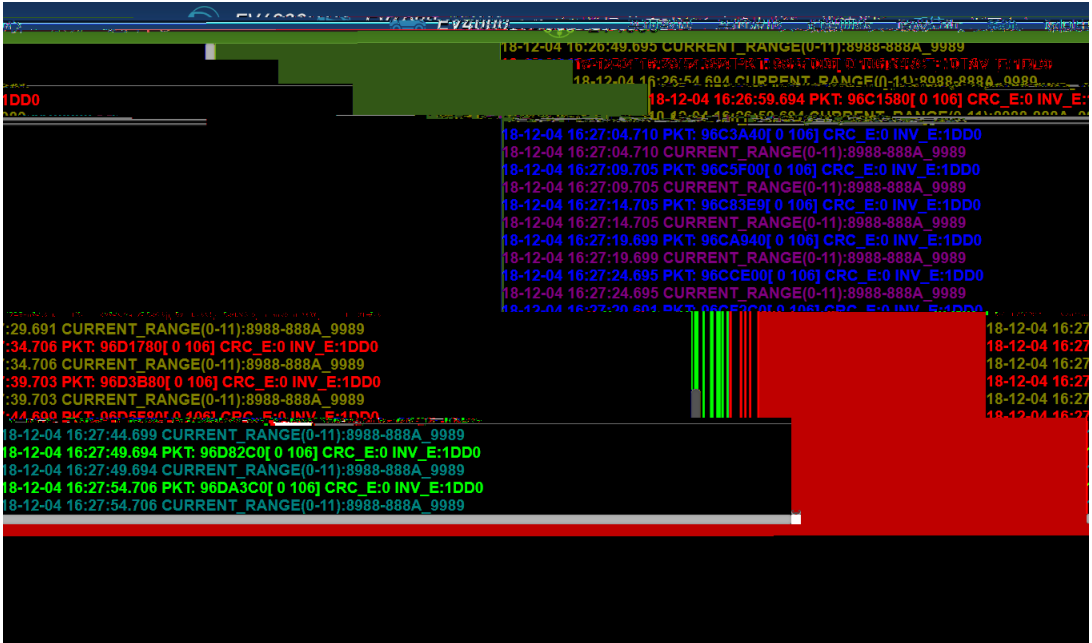
6.8.2

6.8.3 <>

100

6.9

6.9



6.9.2

:

The screenshot shows the EV4000 software interface. At the top, there are tabs for '实时数据' (Real-time Data), '实时波形' (Real-time Waveform), '趋势曲线' (Trend Curve), '谐波分析' (Harmonic Analysis), '系统' (System), and '返回中心' (Return Center). Below these is a '常规设置' (General Settings) panel with various configuration options:

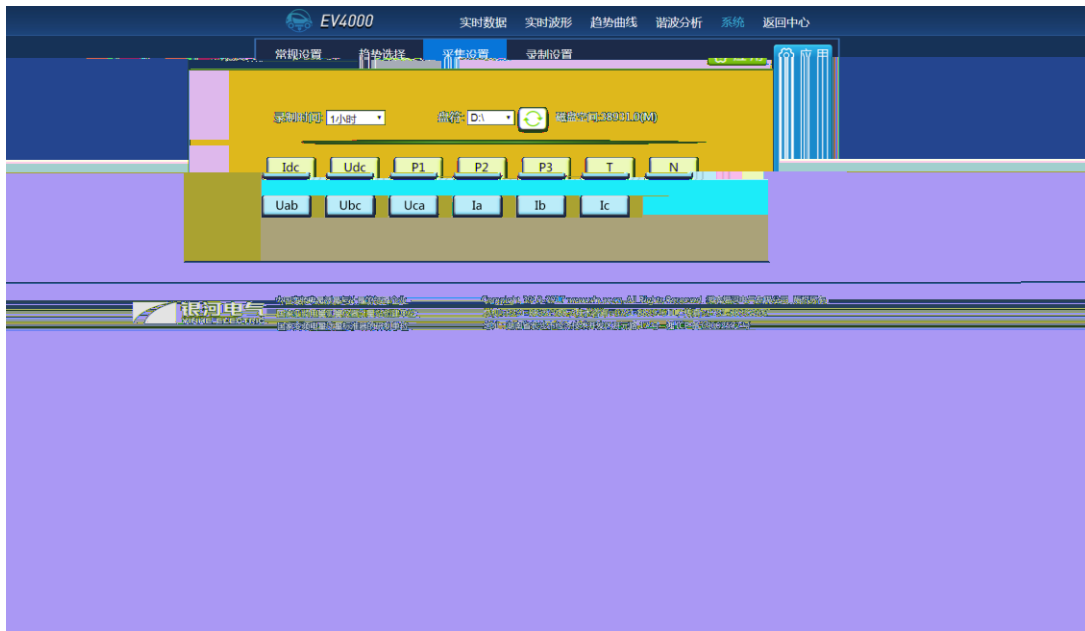
- 同步源: Uab
- 刷新周期/ms: 100
- 采样率: 200K
- 频率滤波器截止频率: 1000
- 频率上限: 500Hz
- 频率下限: 2.000Hz
- 转速变比: 100
- 转速零点: 0
- 扭矩变比: 100
- 扭矩零点: 0
- 特征值广播端口: 8888
- 滤波设置: Uab, Ubc, Uca, Ia, Ib, Ic

At the bottom, there are controls for '转速模式' (Speed Mode) and '扭矩模式' (Torque Mode), both set to '模拟量' (Analog). The '扭矩分辨率' (Torque Resolution) is set to '18分钟' (18 minutes).

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:



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6.9.3

EV4000 实时数据 实时波形 趋势曲线 谐波分析 系统 返回中心

协议说明：	
协议	udp
IP	主机ip (如：47.106.244.122)
端口	8888
发送数据指令	yinhezhuangouda_2018
接收数据格式	json
数据格式说明	参照特征值界面
注意：JSON格式数据在网页格式连接；持续刷新一分钟，如需持续接收，一分钟之内需再次发送指令。	
数据内容：	
<pre>[{"COS":0.8079165,"EI":123.7599965,"EP":246.03,"ETA1":268.86803,"E1":123.7599965,"E1A":0.000320978346,"EI":94.81,"T":49.9725151,"I1_AVG":1.85481679,"I1_RMS":2.048134,"I2_AVG":0.90444237,"I2_HDI":0.1030716,"I2_MEAN":1.08278469,"I2_RMS":1.15839683,"IA_AVG":0.997471533,"IA_HDI":0.18545413,"IA_MEAN":1.18453431,"IA_PHASE":2.102057,"IA_RMS":1.2712683,"I1_AVG":0.8830894,"I1_HDI":0.0578252677,"I1_MEAN":0.871749759,"I1_PHASE":1.20291141,"I1_RMS":0.9605851,"I2_AVG":1.03227878,"I2_HDI":0.06500502,"I2_MEAN":1.16207048,"I2_PHASE":0.8852483,"I3_AVG":0.91010909,"I3_HDI":0.059150624922,"I3_AVG":0.870244335,"I3_HDI":0.059150624922,"I3_MEAN":1.1224E+08,"I3_PHASE":2.73222778,"I3_RMS":2.738583,"I3_AVG":42.4003957,"I3_HDI":0.18443027,"I3_MEAN":7.88683556,"I3_RMS":7.74857473,"I3_PHASE":0.07145422,"I3_TIME":2018.12.07.16.53.20,"I1_AVG":469.186859,"I1_RMS":469.186324,"I2_AVG":934.186E+06,"I2_HDI":0.1222643927,"I2_MEAN":290.5122,"I2_RMS":2256.65967,"I2_PHASE":0.434748381,"I2_HDI":3.39463867,"I2_MEAN":3393.607,"I2_PHASE":2.9410387,"I3_AVG":3384.07042,"I3_HDI":1.91975141,"I3_MEAN":1245.32558,"I3_PHASE":0.299194485,"I3_RMS":1245.58108,"I3_PHASE":1.485083,"I3_HDI":2138.315,"I3_MEAN":2142.13623,"I3_PHASE":0.3013453,"I3_RMS":2138.50952}</pre>	

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6.9.4

EV4000

6.9.5



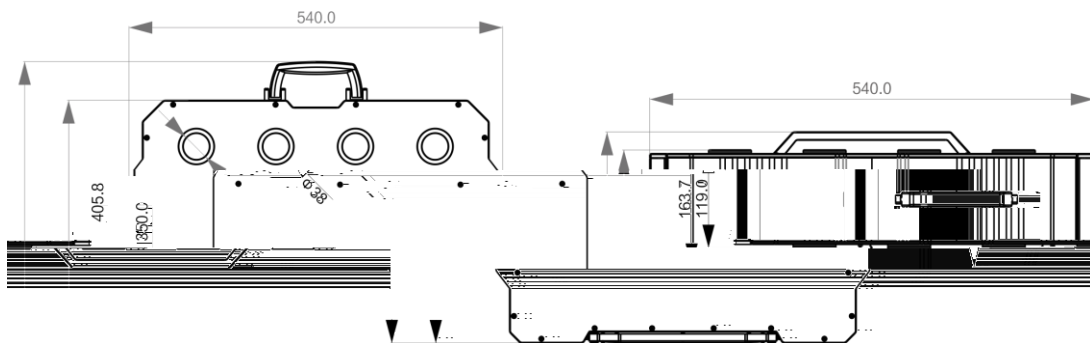
6.10

6.10.1

U1	Avg	7	avg	I1	Avg	12	avg
	rms	7	rms		rms	12	rms
Uab	Avg	17	avg	Ubc	Avg	18	avg
	H01	17	h01		H01	18	h01
	Rms	17	rms		Rms	18	rms
	Mean	17	Mean		Mean	18	Mean
Uca	Avg	19	avg	Ia	Avg	13	avg
	H01	19	h01		H01	13	h01
	Rms	19	rms		Rms	13	rms
	Mean	19	Mean		Mean	13	Mean
Ib	Avg	14	avg	Ic	Avg	15	avg

16	P1	$Ch7 * ch6 * A1$	$U1 * I1$
17	Uab	$ch1 + ch3 * -1$	$Ua \quad Ub$
18	Ubc	$ch3 + ch5 * -1$	$Ub \quad Uc$
19	Uca	$ch5 + ch1 * -1$	$Uc \quad Ua$
20	Pa	$Ch0 * ch1 * Aa$	$Ia * Ua$
21	Pb	$Ch2 * ch3 * Ab$	$Ib * Ub$
22	Pc	$Ch4 * ch5 * Ac$	$Ic * Uc$
23	P2	$Ch0 * ch1 * Aa + ch2 * ch3 * Ab + ch4 * ch5 * Ac$	$Pa + Pb + Pc$
24	T	$At * FDIVT * 1000000 * (1 / ch8) + At * Zt * -1$	$At * FDIVT * 1000000 / T_T \quad At * Zt$
25	N	$An * FDIVN * 1000000 * (1 / ch9) + An * Zn * -1$	$An * FDIVN * 1000000 / T_N - An * Zn$
26	P3	$Ch24 * ch25 * KP$	$T * N * KP$

7



8

- -5 60
- 20% 85%

● -20 80

9

9.1

12

1

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2

3

4

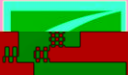
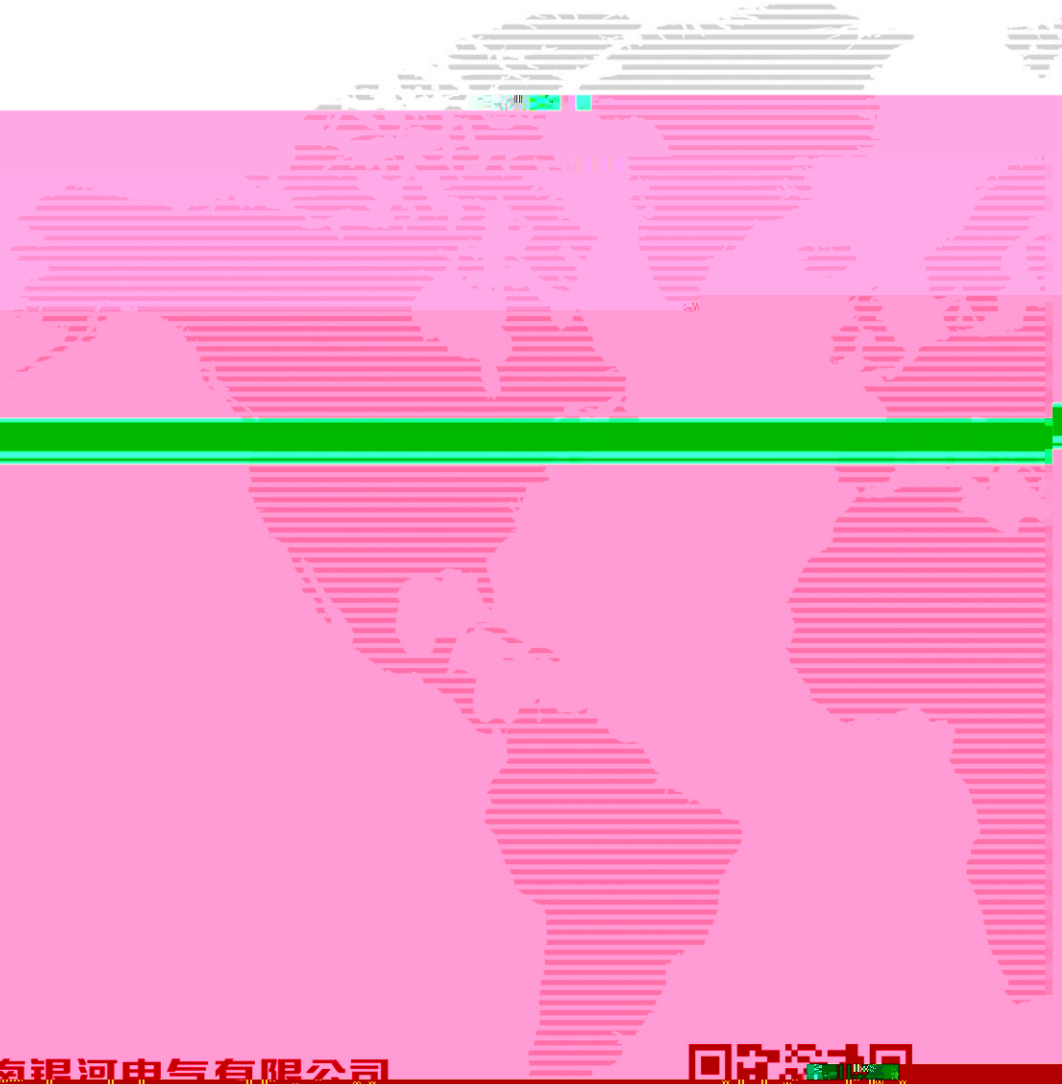
5

9.2

1

2

www.vfe.ac.cn

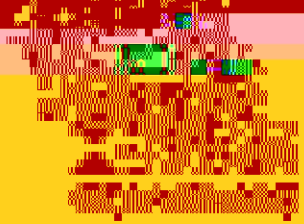


湖南银河电气有限公司

湖南银河电气有限公司
HUNAN YINHE SHI ELECTRIC CO., LTD.



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HUNAN YINHE SHI ELECTRIC CO., LTD.



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