

배터리 충전기 200kW 제작 사양

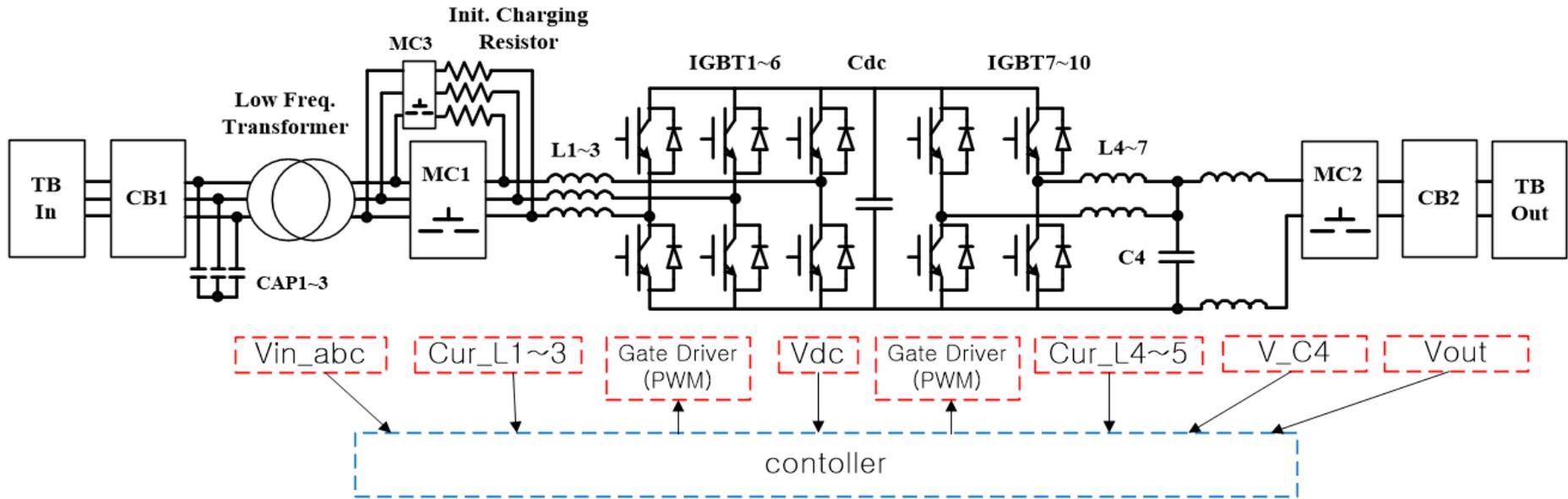
2024년 12월 09일

옥토파워솔루션
대표 주성탁

1. 사양

항목		사양	비고
입력	전압	3상 3선+접지, 선간 440Vac \pm 10%	396~484Vac
	전류	262.4Aac \pm 10%	236~289Aac
	주파수	50[Hz] \pm 3[Hz] 또는 60[Hz] \pm 3[Hz]	
	전력	210kW	
출력	전압	600~1000Vdc	
	전류	200~333Adc	
	전력	200kW	
	충전 모드	CC, CV, CP	정전류, 정전압, 정전력
효율	95% 이상		
냉각방식	강제 공냉식 (냉각팬)		
절연	저주파 변압기 방식		
인터페이스	7인치 터치 LCD		
	CAN 통신 2채널		외부 PC프로그램, BMS통신
	Digital Input 4ch, Digital Output 4ch		Emergency Input and etc.
보호동작	Over Temperature, Over Current, Over/Under Voltage		
배터리 연결 커넥터			협의 필요
크기 및 무게	1000W, 850D, 1950H (너비W, 깊이D, 높이H), 1500kg 이내		
동작 주위 온도	0~40°C, 10~90%RH, Non Condensing		

2. 전력 변환 토폴로지



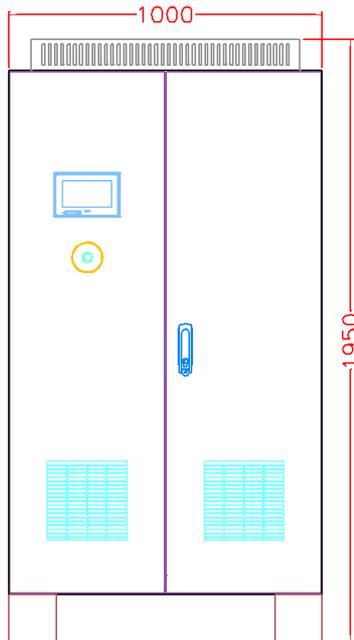
- 입력 차단기 CB1 : ABN403c-350A
- 출력 차단기 CB2 : TS400N DC1000V 400A
- 저주파 절연 변압기 : 440V(Y):440V(D) 200kVA
- IGBT : 1700V 600A
- 스위칭 주파수 : 20kHz
- DC-Link 전압 : 1100V
- 입력 전압 : 3상 440Vac
- 출력 전압 : 600~1000Vdc
- 출력 전력 : 200kW
- 제어 보드 : TMS320F28P650 32bit Dsp Process with 16bit ADC

3. 외형 및 내부구조

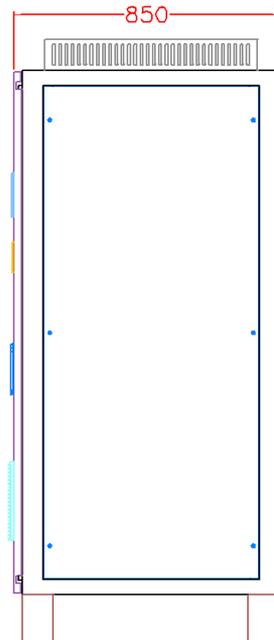
TOP VIEW



FRONT VIEW



SIDE VIEW



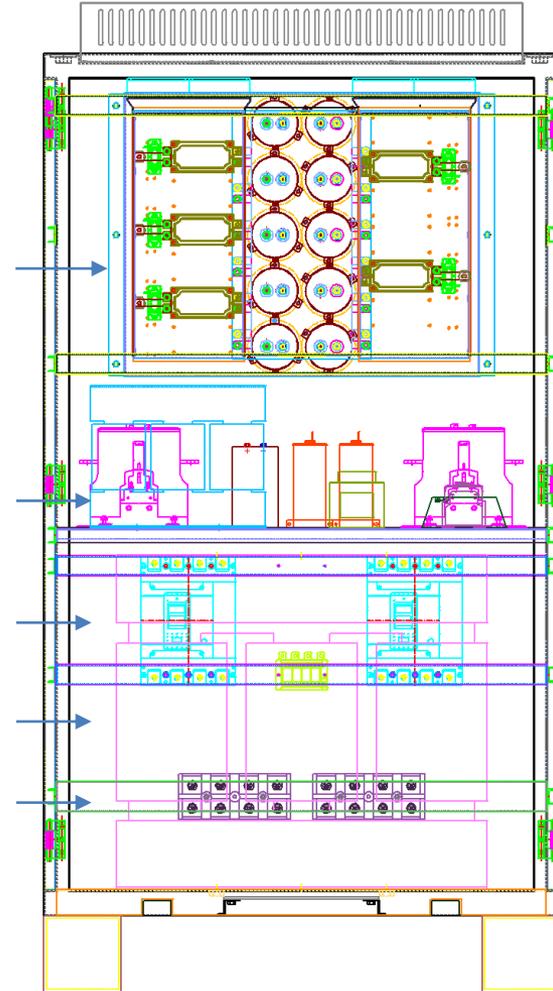
방열판, IGBT, DC캐패시터, 냉각팬

필터 인덕터 & 캐패시터 & MC

입출력 차단기

저주파 절연 변압기

입출력 터미널블럭



4. 제품 사진 및 PC 소프트웨어(충방전/프로파일 시험, 데이터 로깅)

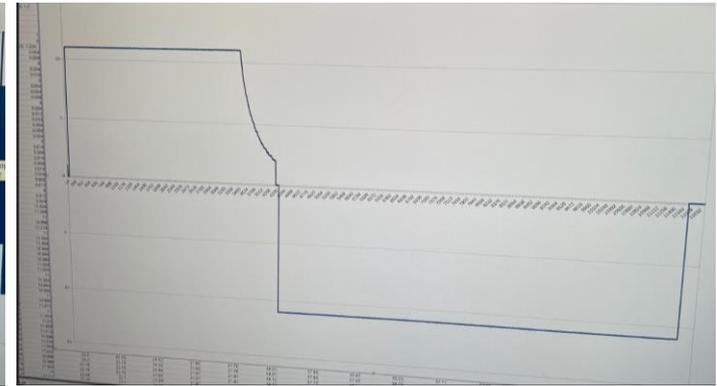
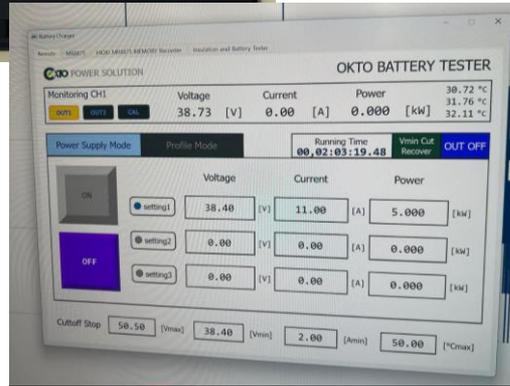
<제품 외관>



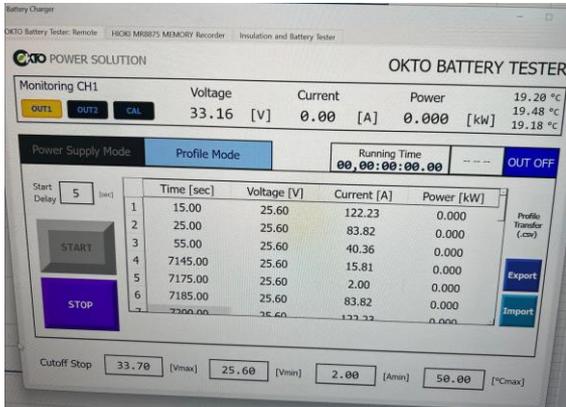
<터치LCD>



<외부 원격 제어 PC 소프트웨어 - 충방전시험, 데이터 로깅>



< 외부 원격 제어 PC 소프트웨어 - 프로파일모드 시험, 데이터 로깅 >



No.	State	Date	Time	Elapsed Time	Voltage [V]	Current [A]	Power [kW]	Temp1	Temp2	Temp3	Temp4	Temp5	Capacity [Ah]	Energy [kWh]
1	Rest	*****	43:14	00:00	59.583	33.595	0	0	19.81	19.43	19.53	19.34	19.11	0
2	Rest	*****	43:18.4	00:02.9	33.59	0.016	0.0005	19.81	19.41	19.52	19.33	19.11	0	0
3	Rest	*****	43:18.4	00:02.9	33.59	0.016	0.0005	19.81	19.41	19.52	19.33	19.11	0	0
4	Rest	*****	43:19.4	00:03.9	33.594	0.024	0.0008	19.8	19.4	19.48	19.3	19.1	0	0
5	Rest	*****	43:20.4	00:04.9	33.587	-0.024	-0.0008	19.8	19.4	19.48	19.3	19.1	0	0
6	Rest	*****	43:21.4	00:06.0	33.59	0.024	0.0008	19.8	19.43	19.51	19.33	19.1	0	0
7	Rest	*****	43:22.5	00:07.0	33.595	0.024	0.0008	19.8	19.43	19.51	19.33	19.1	0	0
8	Rest	*****	43:23.5	00:08.0	33.586	-0.016	-0.0005	19.81	19.4	19.54	19.35	19.1	0	0
9	Rest	*****	43:24.5	00:09.0	31.061	-63.36	-1.968	19.81	19.4	19.54	19.35	19.1	-0.0179	-0.0006
10	CC DChg	*****	43:25.5	00:00.0	28.762	-124.312	-3.5755	19.83	19.46	19.55	19.36	19.15	0	0
11	CC DChg	*****	43:26.5	00:01.0	28.563	-124.024	-3.5425	19.83	19.46	19.55	19.36	19.15	-0.0349	-0.001
12	CC DChg	*****	43:27.5	00:02.0	28.538	-123.696	-3.53	19.83	19.46	19.53	19.36	19.14	-0.0694	-0.002
13	CC DChg	*****	43:28.5	00:03.0	28.469	-123.264	-3.5092	19.83	19.46	19.53	19.36	19.14	-0.1039	-0.003
14	CC DChg	*****	43:29.5	00:04.0	28.413	-123.072	-3.4968	19.81	19.43	19.49	19.32	19.12	-0.1383	-0.0039
15	CC DChg	*****	43:30.5	00:05.0	28.365	-122.944	-3.4873	19.81	19.43	19.49	19.32	19.12	-0.1724	-0.0049
16	CC DChg	*****	43:31.5	00:06.0	28.32	-122.776	-3.477	19.8	19.41	19.5	19.31	19.11	-0.2065	-0.0059
17	CC DChg	*****	43:32.6	00:07.0	28.278	-122.688	-3.4694	19.8	19.41	19.5	19.31	19.11	-0.2409	-0.0068
18	CC DChg	*****	43:33.6	00:08.0	28.242	-122.6	-3.4625	19.81	19.44	19.52	19.32	19.11	-0.2752	-0.0078
19	CC DChg	*****	43:34.6	00:09.0	28.21	-122.536	-3.4567	19.81	19.44	19.52	19.32	19.11	-0.3093	-0.0088
20	CC DChg	*****	43:35.6	00:10.0	28.184	-122.464	-3.4515	19.79	19.44	19.5	19.31	19.11	-0.3433	-0.0097
21	CC DChg	*****	43:36.6	00:11.0	28.15	-122.448	-3.4469	19.79	19.44	19.5	19.31	19.11	-0.3773	-0.0107
22	CC DChg	*****	43:37.6	00:12.0	28.12	-122.392	-3.4417	19.8	19.43	19.49	19.31	19.1	-0.4111	-0.0116
23	CC DChg	*****	43:38.6	00:13.0	28.099	-122.376	-3.4386	19.8	19.43	19.49	19.31	19.1	-0.4449	-0.0126
24	CC DChg	*****	43:39.5	00:14.0	28.099	-116.384	-3.2916	19.8	19.41	19.52	19.32	19.08	-0.4777	-0.0135
25	CC DChg	*****	43:40.5	00:15.0	29.437	-83.36	-2.4539	19.8	19.41	19.52	19.32	19.08	-0.5001	-0.0142
26	CC DChg	*****	43:41.5	00:16.0	29.446	-83.384	-2.4553	19.84	19.46	19.55	19.37	19.13	-0.5232	-0.0149
27	CC DChg	*****	43:42.5	00:17.0	29.438	-83.424	-2.4558	19.84	19.46	19.55	19.37	19.13	-0.5464	-0.0155
28	CC DChg	*****	43:43.5	00:18.0	29.432	-83.552	-2.4591	19.81	19.44	19.51	19.32	19.14	-0.5684	-0.0162
29	CC DChg	*****	43:44.5	00:19.0	29.418	-83.608	-2.4596	19.81	19.44	19.51	19.32	19.14	-0.5923	-0.0169
30	CC DChg	*****	43:45.5	00:20.0	29.422	-83.648	-2.4611	19.78	19.42	19.48	19.29	19.1	-0.6156	-0.0176
31	CC DChg	*****	43:46.5	00:21.0	29.413	-83.688	-2.4615	19.78	19.42	19.48	19.29	19.1	-0.6387	-0.0183