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BATTERY CYCLER

OVERVIEW

The battery cycler is a fully integrated test equipment designed to run battery or battery pack endurance tests / cycling tests. The equipment includes 18 isolated channels that can run the CV, CC, CR and CP charging and discharging tests with multiple charging and discharging sequences.

All it's channels voltage, current and resistance adjustable input and output parameters can be controlled by software via Ethernet TCP.

Each channel also includes high precision voltage and current measurement loggers with 18 wires sense lines. The measured values and accessible by software.

KEY FEATURES

- 18 independent and isolated charge / discharge channels.
- Extendable number of channels.
- Each channel has a software controlled adjustable voltage output from OV to 7V with a resolution of 1mV.
- Each channel has a current sourcing capability of 1A.
- Each channel has a software controlled electrical load adjustable from 4 Ω to 7k Ω.
- Constant Voltage Charge and Discharge. Constant Current
 Charge and Discharge. Constant Power Discharge.
- Constant Resistance Discharge.
- Integrated Voltage and current measurements loggers with Instant or average measurement modes.
- Integrated 4 wire sense lines for voltage drop compensation.
- Controllable by Ethernet TCP.
- Fixible battery fixture to fit to different battery. Allow to exchange the fixture for coin or other kind of battery.



DIMENSION

L*W*H = 600cm*800cm*709cm

OPERATING TEMPERATURE

-40 °C ~ +55 °C

POWER REQUIREMENT

DC Power Supply: 24 VDC, 1 A Working Voltage Range: 9 V - 36 V (Default 24 V)

DETAILED SPECIFICATIONS:

Charging Mode

Cell Voltage Output	Value	Unit
Range	0 to 7	V
Stability Precision	500	μV
Setting Precision	500	μV
Icolation Voltage	1500, Tested for 1 minute	V
Isolation Voltage	and 1mA max	V

Cell OutputCurrent	Value	Unit
Range	0 to 1	А
Precision	10	mA

Discharging mode CR mode

Resistance	Value	Unit
Range	4 to 7k	Ω
Resolution	1	Ω

<u>CC Mode</u>

Current	Value	Unit
Range	0 to 200	mA
Resolution	16bit	mA
Reading Precision	0.1	mA

CurrentValueUnitRange0 to 7VResolution16bitmVReading Precision1mV

DETAILED SPECIFICATIONS:

<u>CP Mode</u>

Current	Value	Unit
Range	0 to 7	W
Resolution	12	bit
Reading Precision	1	mW

Voltage and Current monitoring of each channel:

Channel Voltage Measurement	Value	Unit
Range	-7 to 7	V
Resolution	16	bit
Precision	400	μV

Low Channel Current Measurement	Value	Unit
Range	-1 to 1	mA
Resolution	16	bit
Precision	20	μΑ

High Channel Current Measurement	Value	Unit
Range	-1000 to 1000	mA
Resolution	16	bit
Precision	0.1	mA

Communication interface

Communication	Parameters
Ethernet	TCP/IP 10/100 Mbps

CONTROL SOFTWARE UI

We provide the Labview drive to control the equipment. Here's the example for charge and discharge.

(
Setup Discharge to Charge Test Discharge Mode	DischargeTime 0	EXIT
CellChannal Communication SetVolt(V) Discharge Time(s) 3 20 Discharge to Charge Ref. CC_DisCH6 CC_Range CC_DisCH6 CC_Range CC_LoadCurt(A) CC_CloadCurt(A) 0.01 CC_LoadCurt(A) 0.05 CC_Des_Slope(A/ms) 0.05 CC_Des_Slope(A/ms) 0.05 CC_Des_Slope(A/ms) 0.05 CC_Des_Slope(A/ms) 0.05 CD_Slope(A/ms) 0.05 CD_Slope(A/ms)	Step 1: is to select the desired charging and discharging channel CellChannal; Step 2: Set the charging voltage, discharging time, and constant current load parameters for charging and discharg Step 3; disk run, if communication is normal. Communication will light up.	9 *5

Charging And Discharging DEMO					
Setup Discharge to Charge Test	Discharge Mode	DischargeTime 20.057	2 Stop Discharge		EXI
Velt 1.210000 1.5 1 0.3 0 0 0 Curr 0.15 0.15 0 0.15 0 0.15 0 0.05 0 0 0 Power 0.226898 0.3 0.2 0.1 0 0 0		time, disch proce it sho low, d	argeTime will automatically display the discharge and the StopDischarge button can terminate the arge process in advance and switch to the charging	Display 0037555.0705,0038]#11_CAN=1,STD,0X11,0X810100121046605 0037555.0508,003811_CAN=1,STD,0X11,0X810100121046605 0037555.0508,003811_CAN=1,STD,0X11,0X80010017875505 0037555.0508,003811_CAN=1,STD,0X11,0X80010017875505 003755.0508,003811_CAN=1,STD,0X11,0X80010017875505 003755.0508,003811_CAN=1,STD,0X11,0X80010017875505 003755.0036,003811_CAN=1,STD,0X11,0X80010017875505 003755.0036,003811_CAN=1,STD,0X11,0X80010017875505 003754.0780,0038111_CAN=1,STD,0X11,0X8001001853405 003754.0780,0038111_CAN=1,STD,0X11,0X80010018534055 003754.0780,0038111_CAN=1,STD,0X11,0X80010018347055 003754.0780,0038111_CAN=1,STD,0X11,0X80010018347055 003754.0780,0038111_CAN=1,STD,0X11,0X80010018347055 003754.0780,0038111_CAN=1,STD,0X11,0X80010018347055 003754.0780,0038111_CAN=1,STD,0X11,0X80010018347055 003754.0780,0038111_CAN=1,STD,0X11,0X80010018347055 003754.0780,0038111_CAN=1,STD,0X11,0X80010018342055 003754.0780,0038111_CAN=1,STD,0X11,0X80010018342055 003753.0780,0038111_CAN=1,STD,0X11,0X8001001832055 003753.0780,0038111_CAN=1,STD,0X11,0X8001001832055 003753.0780,0038111_CAN=1,STD,0X11,0X8001001832055 003753.0780,0038111_CAN=1,STD,0X11,0X80010001832055 003753.0780,0038111_CAN=1,STD,0X11,0X800100018	6;000/27/19, 6;000

APLICATION EXAMPLE

Used to test battery performance parameters with configurable long operation charge and discharge cycles (various voltage, charge, discharge, modes and sequences).

Example: Test of a battery pack by using the battery cycler to run an endurance test with various voltage conditional charge modes enabeling in a single sequence several pre-charge conditions followed by full charge conditions and configurable discharge modes.

ENVIRONMENTAL

The Battery Cycler is intended for indoor use only but may be used outdoors if installed in a suitable enclosure. Refer to the manual for more information about meeting these specifications.

Operating temperature	-40°C+55°C
Storage temperature	-40°C+85°C
Ingress protection (IP code)	None
Operating humidity	10-90% RH non condensing
Storage humidity	5-95% RH non condensing

SUPPORT AND SERVICES

Calibration

ART logics measurement hardware is calibrated to ensure measurement accuracy and verify that the device meets its published specifications. To ensure the ongoing accuracy of the measurement hardware, ART logics offers basic or detailed recalibration service.



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