

Global No.1
Battery Solution Provider

Battery Performance Test Solution



WONIK PNE

We are making the future through
Freedom, Communication, Happiness

Global No.1 battery solution provider

Wonik pne is a company that has continuously grown since its founding, achieved through ongoing development in the battery field. With an extensive network both domestically and globally, we work tirelessly to enhance our competitiveness, aiming to provide our customers with improved productivity and increased satisfaction through ever-evolving battery technology.

We offer optimized solutions to cater to various needs, and every piece of equipment crafted by Wonik pne's executives and staff is a result of continuous research and development efforts. Our commitment to strict quality control, the pursuit of advanced technology that surpasses customer requirements, and an unwavering spirit of challenge in exploring new business horizons are integral to our identity.

We are committed to perpetual change and endeavor to be a company that customers can trust.

Mission We contribute to convenient and safe energy use through the provision of high-efficiency, high-reliability technology

Vision Battery solution global top frontier

Core value

Challenge & Innovation

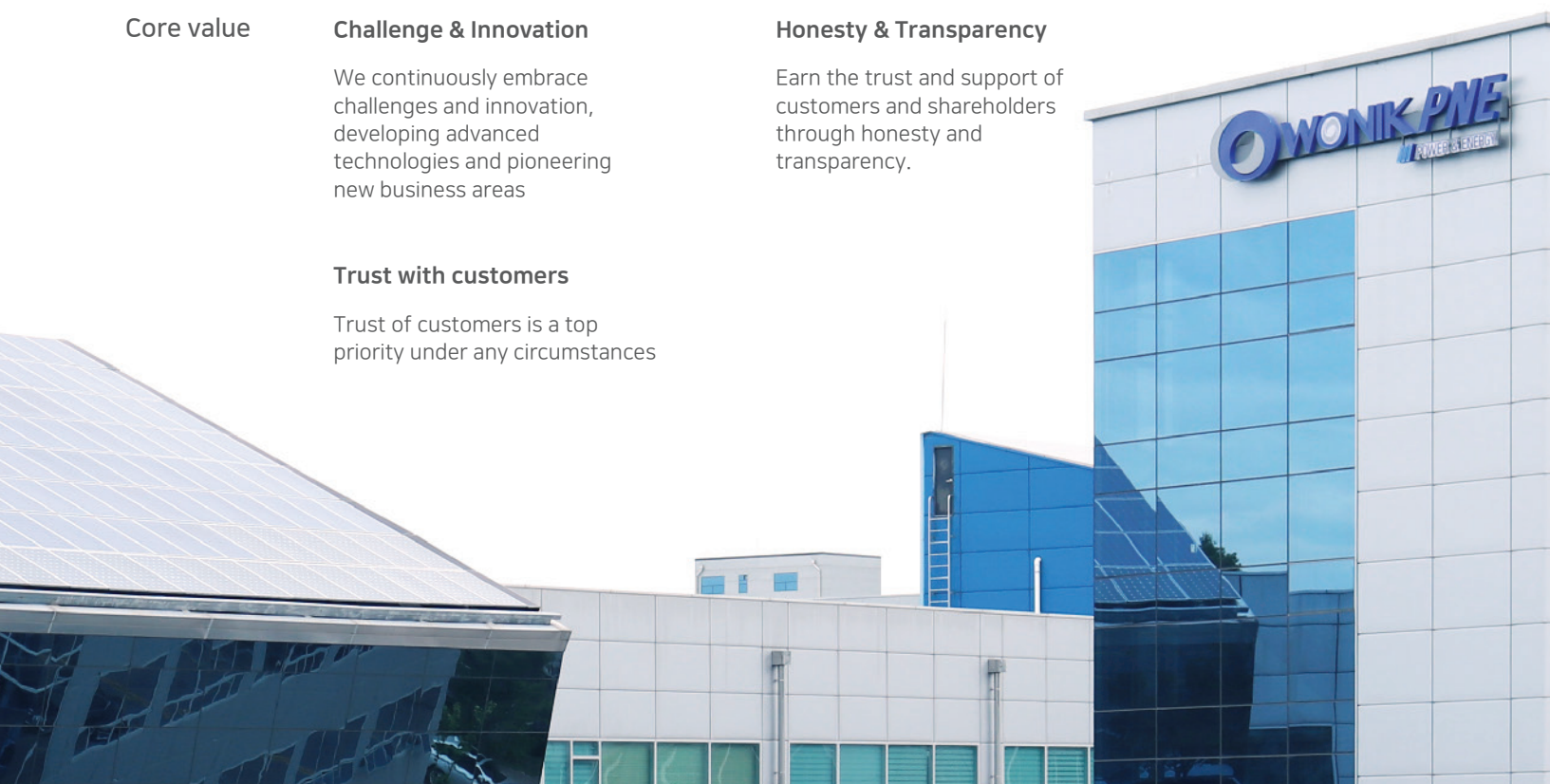
We continuously embrace challenges and innovation, developing advanced technologies and pioneering new business areas

Honesty & Transparency

Earn the trust and support of customers and shareholders through honesty and transparency.

Trust with customers

Trust of customers is a top priority under any circumstances





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Wonik pne battery test solution

Wonik pne is the No. 1 cycler company in Korea, we provide a variety of solutions for research and development equipment and post-production process equipment. We are known for offering the industry's best battery testing solutions, enabling performance tests on various components, including battery cells, modules, and packs.

Through the energy regeneration method, output current, voltage specifications, cycle life, etc. can be evaluated in various ways. Additionally, they enhance user convenience by designing and manufacturing customized jigs for different battery types.

Recently, with the growing interest in battery safety and the increasing demand for battery inspection equipment, there has also been a gradual rise in the need for cycler equipment.

The company holds a domestic market share of over 70% and is widely acknowledged for its technological expertise and excellence. In line with our strategic goals, we are exploring business diversification opportunities, including battery testing agency and battery characteristic evaluation service sectors.

Cell to Pack full coverage

5V~2000V (up to 1MWh)



Cell / Module cycler








All-in-one cycler
(Cycler and chamber)



Pack cycler
(~1Mwh)

Product line up

CELL	 Model SC	 Model CRC Regenerative	 Model BRC Regenerative	 AONE Regenerative
MODULE	 Model MC			
PACK	 Model PSC Regenerative	 Model FPSC Regenerative		

PNE's cyclers product guide

			1mA	100mA	1A	10A	30A	50A	100A	200A	300A	500A	600A	1000A	2000A	
Cell	Model SC	~5V	●	●	●											
	Model CRC					●	●									
	Model BRC								●	●	●	●	●	●	●	●
	Aone										●	●	●			
Module	Model MC	10~50V				●	●	●	●	●						
Pack	Model PSC	50~2000V							●	●	●	●	●			
Pack (fuel cell)	Model FPSC	50~100V						●	●	●	●	●	●	●	●	

Battery performance test solution

Cycler

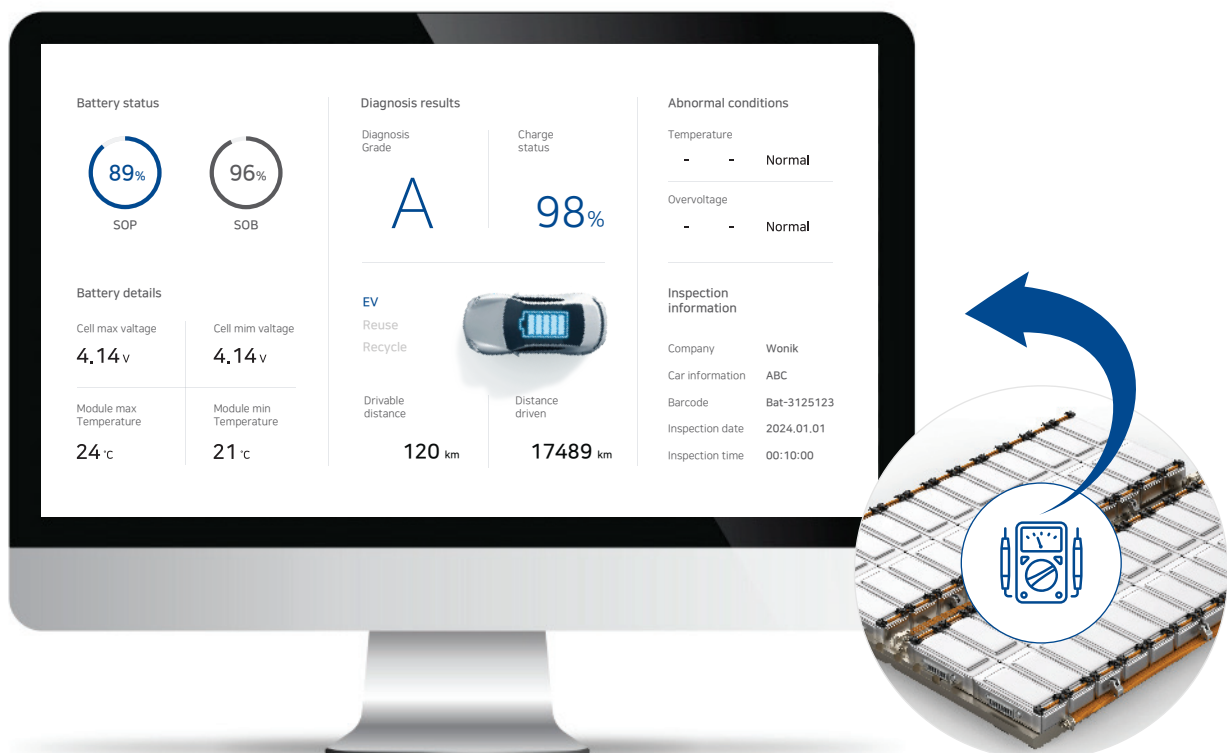
Battery test equipment for R&D

The cycler is a battery charging/discharging equipment for research and development (R&D). It helps to improve quality, including lifespan and performance evaluation. Parallel configuration is possible depending on the current range (100A~2,000A). A variety of step tests are available, including CV, CC, and CPCV tests. Additionally, you can lower energy costs with a regenerative battery cycler.

We provide equipment in various form factors, including prismatic, pouch and cylindrical type. Our offering features are high-density multi-channel configuration within the frame and the incorporation of various functions. We also specialize in custom models, tailoring them to meet specific customer requests.

Remote monitoring are allowed for precise and diverse evaluations of each device. Integration with a chamber maximizes space and efficiency. Furthermore, our commitment to innovation includes ongoing development of new technologies that leads industry trends, as well as the creation of new process facilities and the implementation of OPEX reduction technologies.

Wonik pne cycler is demonstrating advanced competitiveness by forming a network with over 300 companies, including battery companies, automobile OEM companies, and various certification organizations, and solidifying its position as industry leader.



Feature

High pressure/high current precision control

- Up to 24bit high-precision solution
 - High current solutions up to 1MWh
-

Power conversion technology know-how

- Energy recovery solution through regenerative
 - Equipment development through technological know-how (ex) Ultra-fast discharger, etc.
-

Advanced S/W technology

- Various functions and user-friendly interface
cell manufacturers, automobile OEMs
: driving situations, pattern recipe settings, etc.
 - Integrated remote monitoring system (PEMS)
: Real-time equipment integrated monitoring system
through protocol communication and cloud
 - Excellent process equipment precision (APC control, etc.)
-

Advanced design technology

- Compact design of equipment (footprint ↓ , efficiency ↑)
: All in one cyclor (Cycler + Chamber)
 - Improvement of equipment air conditioning system
(Heating value ↓ , energy efficiency ↑)
-

Application

Charge/discharge technology is the only way to check battery performance and can be used from R&D to reuse/recycling through Cycler. So we can meet the needs of all customers.

(Cell maker, OEM, Fabless, Reuse company, Recycling company, etc.)



R&D

- Battery development
- Defective battery inspection
- Battery characteristics test
- Etc.



Reuse / Recycling

- Development of used battery classification standards
- Development of reusable battery pack classification standards
- Ensure ESS pack stability
- Etc.

All in one cyclers (Aone)

Cycler + Chamber = All in one cycler

Aone

All in one solution
for next energy

MAX. 32%

Reduction of footprint



Features

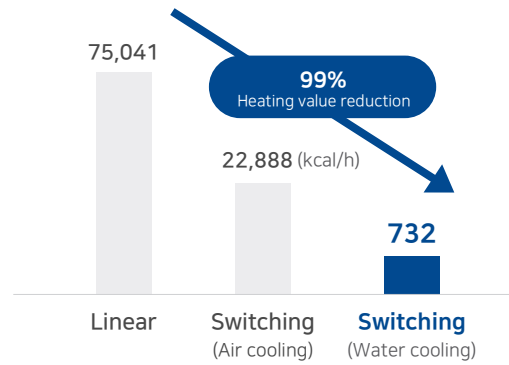
Footprint reduction

· MAX. 32% reduction of footprint



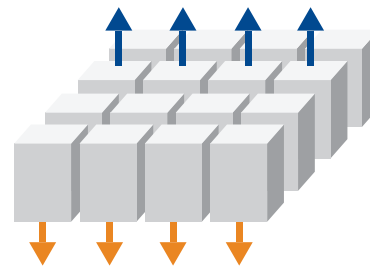
Advanced water cooling

- 99% Heating value reduction



HVAC free system

- Operating costs of HVAC reduced by over 30%.
- Without a separate HVAC system, it can maintain room temperature by utilizing idle cooling capacity.



Spec.

Function		Spec.
Type		Regenerative
Interface		IEEE 802.3(LAN)
Control mode		CC,CC/CV,CP,CR,CPCV,simulation
PC Software		CTS_PRO series
VOLT.	Measurement accuracy	± 0.05% F.S *
	Resolution	18 bit
CURRENT.	Measurement accuracy	± 0.1% F.S * (Option : Set value 0.1%)
	Resolution	18 bit
	Ripple	≤± 0.2% F.S
	Minimum (required)	± 0.1% F.S *
Number of current range per channel		Maximum 4 range
Control interval		100ms (Option: 10ms)
Current rising time		<10ms (Option : 5ms) *
Input power supply		220 or 380 or 400Vac, 3Phase, 50/60Hz Able to be changed depending on installation conditions

* The specification may change due to customer's requirements.

* The rising time is based on 10% → 90% (oscilloscope measurement) and performance is for Li-ion batteries only.

For cell

Model SC



Small cell cycler

The model SC is available in sizes of up to 256 test cells and can be customized based on each specification. The model SC is optimized for single cells (Li-Ion, NiMH, NiCd, Lead-Acid, EDLC). It is also available for testing all other batteries with a charging voltage below 5V.

Features

- For testing small-sized cells (Coin, Bluetooth, Wire type, etc.)
- 256 independent test channels per frame
- Current ranges : 1 mA ~1 A
- User-programmable capability for running a wide range of multi-step tests
- User-programmable capability for operating in CC, CV, and CC/CV modes
- 4 terminal method
- High precision, low ripple
- Battery material R&D test
- Optimized for small - sized cells
- Interlock with hot/cold chamber
- Cell temperature monitoring per channel
- Highly precise and stable control of time, voltage, current, etc.

Application battery type



Coin



Bluetooth



Wearable device



Spec.

Function		Spec.
Interface		IEEE 802.3 (LAN)
Control mode		CC, CC/CV, CP, CR, CP/CV, simulation
PC software		CTS_PRO series
VOLT.	Measurement accuracy	$\pm 0.05\%$ F.S *
	Resolution	16 bit
CURRENT.	Measurement accuracy	$\pm 0.1\%$
	Resolution	16 bit
	Ripple	$\leq \pm 0.2\%$ F.S
	Minimum (required)	$\pm 0.1\%$ F.S *
Number of current range per channel		Maximum 3 range
Control interval		100ms
Current rising time		< 10ms *
Input power supply		3Phase, 220Vac, 50/60HZ

* The general data can be adjusted to meet customer's specific requirements.

* The rising time is based on 10% → 90% (oscilloscope measurement) and performance is for Li-ion batteries only.

Model	Voltage	Current	Max. number of channels	Cabinet size (W*D*H/mm)
SC 05 - 0.01	0~5 V	10 / 5 / 1 mA	256	700*1200*2000
SC 05 - 0.02	0~5 V	20 / 10 / 2 mA	256	700*1200*2000
SC 05 - 0.1	0~5 V	100/ 50 / 10 mA	256	700*1200*2000
SC 05 - 0.2	0~5 V	200 / 100 / 20 mA	256	700*1200*2000
SC 05 - 0.5	0~5 V	500 / 250 / 50 mA	256	700*1200*2000
SC 05 - 01	0~5 V	1000 / 500 / 100 mA	256	700*1200*2000

For cell

Model CRC



Regenerative battery cycler

The model CRC is available in sizes from 64 to 128 test cells and can be custom-manufactured to meet customer-specific requirements. The model CRC is optimized for single cells (Li-Ion, NiMH, NiCd, Lead-Acid, EDLC). It is also available for testing all other batteries with a charging voltage below 5V.

Features

- Battery discharge energy regeneration
- Precise and high speed control of time, voltage, current, etc
- High efficiency, high PF (Power Factor), low THD
- Up to 3 current ranges
- Current ranges : 6~60 A
- Parallel function mode for higher current requirements
- User-programmable capability for running a wide range of multi-step tests, including pulse tests
- User-programmable capability for operating in CC, CV, CP, CR, CCP, CP/CV, and simulation
- Simulation of current & power profiles
- Interlock with hot/cold chamber
- High-density multi-channel configuration in a frame

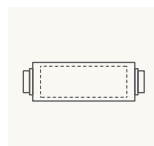
Application battery type



Cylindrical



Prismatic



Pouch



Spec.

Function		Spec.
Type		Regenerative
Interface		IEEE 802.3 (LAN)
Control mode		CC, CC/CV, CP, CR, CP/CV, simulation
PC software		CTS_PRO series
VOLT.	Measurement accuracy	$\pm 0.05\%$ F.S *
	Resolution	16 bit
CURRENT.	Measurement accuracy	$\pm 0.1\%$ F.S *
	Resolution	16 bit
	Ripple	$\leq \pm 0.2\%$ F.S
	Minimum (required)	$\pm 0.1\%$ F.S *
Number of current range per channel		Maximum 3 range
Control interval		100ms
Current rising time		< 10ms *
Input power supply		3 Phase, 220 or 380 or 400 Vac, 50/60 Hz Can be adjusted depending on installation conditions

* The specification may change due to customer's requirements.

* The rising time is based on 10% → 90% (oscilloscope measurement) and performance is for Li-ion batteries only.

Model	Voltage	Current	Max. number of channels	Cabinet size (W*D*H/mm)
CRC2 05 - 06	0~5 V	6 / 3 / 1 A	256	920*1250*2100
CRC2 05 - 10	0~5 V	10 / 5 / 1 A	256	920*1250*2100
CRC2 05 - 20	0~5 V	20 / 10 / 2 A	128	1600*2000*1200
CRC2 05 - 30	0~5 V	30 / 15 / 3 A	128	1600*2000*1200
CRC2 05 - 60	0~5 V	60 / 30 / 6 A	64	1600*2000*1200

* It can be configured with a wide range of voltage and current ranges and can be fitted with optional hardware to provide a number of additional features and capabilities.



Regenerative battery cycler

The model BRC is available in sizes from 8 to 32 test cells and can be custom-manufactured to meet customer-specific requirements. The model BRC is optimized for single cells (Li-Ion, NiMH, NiCd, Lead-Acid, EDLC). It is also available for testing all other batteries with a charging voltage below 5V.

Features

- Battery discharge energy regeneration
- Precise and high speed control of time, voltage, current, etc
- High efficiency, high PF (Power Factor), low THD
- Up to 4 current ranges
- Current ranges : 100 ~ 2000 A
- Parallel function mode for higher current requirements
- User-programmable capability for running a wide range of multi-step tests, including pulse tests
- User-programmable capability for operating in CC, CV, CP, CR, CCP, CP/CV, and simulation
- Simulation of current & power profiles
- Interlock with hot/cold chamber
- High-density multi - channel configuration in a frame

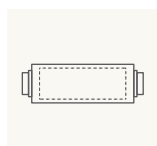
Application battery type



Cylindrical



Prismatic



Pouch



Spec.

Function		Spec.
Type		Regenerative
Interface		IEEE 802.3 (LAN)
Control mode		CC, CC/CV, CP, CR, CPCV, simulation
PC software		CTS_PRO series
VOLT.	Measurement accuracy	$\pm 0.03\%$ F.S *
	Resolution	18 bit
CURRENT.	Measurement accuracy	$\pm 0.05\%$ F.S * (Option : Set value 0.1%)
	Resolution	18 bit
	Ripple	$\leq \pm 0.2\%$ F.S
	Minimum (required)	$\pm 0.1\%$ F.S *
Number of current range per channel		Maximum 4 range
Control interval		100ms (Option: 10ms)
Current rising time		< 10ms (Option : 5ms) *
Input power supply		220 or 380 or 400Vac, 3Phase, 50/60Hz Able to be changed depending on installation Conditions

* The specification may change due to customer's requirements.

* The rising time is based on 10% → 90% (oscilloscope measurement) and performance is for Li-ion batteries only.

Model	Voltage	Current	Max. number of channels	Cabinet size (W*D*H/mm)
BRC2 05 - 100	0~5 V	100 / 50 / 10 A	32	1000*1300*2100
BRC2 05 - 200	0~5 V	200 / 100 / 20 / 10 A*	32	1000*1300*2100
BRC2 05 - 300	0~5 V	300 / 150 / 30 / 10 A*	32	1000*1500*2100
BRC2 05 - 400	0~5 V	400 / 200 / 40 / 10 A*	16	1000*1300*2100
BRC2 05 - 500	0~5 V	500 / 250 / 50 / 10 A*	16	1000*1500*2100
BRC2 05 - 600	0~5 V	600 / 300 / 60 / 10 A*	16	1000*1500*2100
BRC2 05 - 800	0~5 V	800 / 400 / 80 / 10 A*	8	1000*1500*2100
BRC2 05 - 1000	0~5 V	1000 / 500 / 100 / 10 A*	8	1000*1500*2100
BRC2 05 - 1200	0~5 V	1200 / 600 / 120 / 10 A*	8	1000*1500*2100
BRC2 05 - 1500	0~5 V	1500 / 750 / 150 / 10 A*	8	1000*1500*2100
BRC2 05 - 1800	0~5 V	1800 / 900 / 180 / 10 A*	4	1400*1200*1600
BRC2 05 - 2000	0~5 V	2000 / 1000 / 200 / 10 A*	4	1400*1200*1600

* It can be configured with a wide range of voltage and current ranges and can be fitted with optional hardware to provide a number of additional features and capabilities.



Battery module cycler

The model MC is available in sizes from 1 to 10 test battery modules and packs. It can be custom-manufactured to meet customer-specific requirements and configured with a wide range of voltage and current. Additionally, optional hardware can be fitted to provide a variety of additional features and capabilities.

Features

- For life cycle tests of battery modules and battery systems
- Up to 3 current ranges
- Parallel function mode for higher current requirement
- Quality control in production lines
- Cell temperature monitoring per channel
- User-programmable capability for running a wide range of multi-step tests, including pulse tests
- User-programmable capability for operating in CC, CV, CP, CR, CCP, and simulation
- Interlock with hot/cold chamber
- Simulation of current & power profiles
- Precise and high speed control of time, voltage, current, etc.

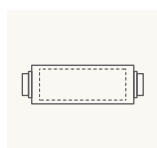
Application battery type



Cylindrical



Prismatic



Pouch



Spec.

Function		Spec.
Interface		IEEE 802.3 (LAN)
Control mode		CC, CC/CV, CP, CR, CP/CV, simulation
PC software		CTS_PRO series
VOLT.	Measurement accuracy	$\pm 0.05\%$ F.S *
	Resolution	16 bit
CURRENT.	Measurement accuracy	$\pm 0.1\%$
	Resolution	16 bit
	Ripple	$\leq \pm 0.2\%$ F.S
	Minimum (required)	$\pm 0.1\%$ F.S *
Number of current range per channel		Maximum 3 range
Control interval		100ms
Current rising time		< 10ms *
Input power supply		3Phase, 220Vac, 50/60Hz

* The specification may change due to customer's requirements.

* The rising time is based on 10% → 90% (oscilloscope measurement) and performance is for Li-ion batteries only.

Model	Voltage	Current	Max. number of channels	Cabinet size (W*D*H/mm)
MC 18-100	18 V	100 / 30 A	4	800*1200*2000
MC 20-20	20 V	20 / 15 / 10 A	10	800*1200*2000
MC 20-150	20 V	150 / 75 / 15 A	4	800*1200*2000
MC 20-250	20 V	250 / 125 / 50 A	2	800*1200*2000
MC 30-20	30 V	20 / 15 / 10 A	10	800*1200*2000
MC 50-50	50 V	50 A	8	800*1200*2000

* It can be configured with a wide range of voltage and current ranges and can be fitted with optional hardware to provide a number of additional features and capabilities.



Regenerative battery pack cycler

Performance test equipment of battery packs for xEV, E-bike or ESS model PSC can perform HIL simulation tests and be operated in an independent or parallel mode by an energy regeneration method.

Feature

- Performance tests of battery packs or modules
- Interlock with hot /cold chamber
- BMS-CAN communication
- Cell temperature & voltage monitoring by auxiliary sensors
- Voltage range : 5 ~ 2,000 V
- Current range : 50 ~ 2,000 A (in parallel)



Parallel



LI-ION



Regenerative

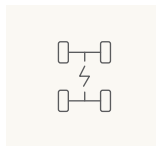


HIL Simulation



High power

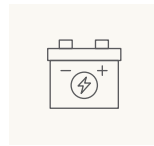
Application



EV battery pack



Energy storage system



Battery module system



Options

Function		Spec.
AUX volt measuring	Reading range	0~5V
	Reading accuracy	± 0.1%
	Channel range	8CH
	Channel max range	128CH
Temperature measurement	Sensor type	K-type
	Reading range	-50°C ~ + 200°C (K- type)
	Reading accuracy	± 1°C
	Channel range	10CH
	Channel max range	100CH

*It can measure cell voltage and temperature in the battery pack using auxiliary sensors.

Spec.

Functions		Spec.	Remarks
Response time	Rising time	≤ 5ms ~ ≤ 10ms (Non overshoot)	
	Falling time	≤ 5ms ~ ≤ 10ms (Non overshoot)	
Accuracy & Resolution	V / I accuracy	± 0.1% *	± 0.05% possible
	V / I resolution	16 bits	
	I ripple	≤ ± 0.3% F.S	
AC power quality	Power factor	≥ 0.98 (Rated power)	
	Ithd	≤ 5% (Rated power)	
BMS communication		CAN,CAN FD RS-485, Ethernet, SMBUS, I2C, LIN, FlexRay, Uart	
AC input		3 Phase, 220 or 380 or 440 Vac, 50/60 Hz Able to be changed depending on installation conditions	
Option		DAQ : Voltage, temperature logging, chamber control, chiller control, cell balancing	

* The specification may change due to customer's requirements.

Standard products

Model	Voltage	Current	Max. Ch	Max. no of parallel	Max pow. of Ch	Options
PSC 100	10~100Vdc	0~600Adc	4	4	60kW (PA 240kW)	Option (-)100~600V
PSC 150	15~150Vdc	0~600Adc	4	4	90kW (PA 360kW)	
PSC 200	20~200Vdc	0~600Adc	4	4	120kW (PA 480kW)	
PSC 250	25~250Vdc	0~300Adc	4	4	75kW (PA 300kW)	
PSC 500	50~500Vdc	0~300Adc	4	4	150kW (PA 600kW)	
PSC 600	60~600Vdc	0~300Adc	4	4	150kW (PA 600kW)	
PSC 1000	100~1000Vdc	0~1000Adc	2	2	400kW (PA 800kW)	
PSC 1200	120~1200Vdc	0~1000Adc	2	2	400kW (PA 800kW)	
PSC 1500	150~1500Vdc	0~1000Adc	2	2	400kW (PA 800kW)	
PSC 2000	200~2000Vdc	0~300Adc	2	2	400kW (PA 800kW)	

* As a list of standard models, performance is guaranteed up to 10% of the minimum voltage based on the rated maximum voltage. (PSC 100 : 10~100V)

* It can be manufactured in parallel with a capacity of up to 1MW, and performance is guaranteed with a capacity limit rate of up to 33%. (PSC 1500 : 1500V 1000A 2CH PA 1MW → Capacity limit rate approximately 33.33%)

For pack

Model FPSC



Performance test equipment for fuel cells of redox flow batteries

Performance test equipment of Fuel cells, Flow stack or Redox flow batteries Model FPSC can perform high capacity dynamic simulation and be operated in an independent or parallel mode by an energy regeneration method.

Feature

- Performance tests of Fuel cells, Flow stacks or Redox flow batteries
- Interlock with hot / cold chamber
- BMS - CAN communication
- Cell temperature & voltage monitoring by auxiliary sensors
- Voltage range : 5~100 V
- Current range : 50~2,000 A (in parallel)



High accuracy



Regenerative



Parallel



Fuel / Redox



High dynamic regulation



High power

Others

Battery simulation tester

Simulation tester for battery which is used in inverter and motor of EV

Feature

- Application : Motor, Inverter
- Voltage range : 100~800 Vdc
- Current range : Independent: 50, 100, 200, 300, 400 Adc



Spec.

Functions		Spec.
Response time	Rising time	$\leq 5 \text{ ms} \sim \leq 10 \text{ ms}$ (Non overshoot)
	Falling time	$\leq 5 \text{ ms} \sim \leq 10 \text{ ms}$ (Non overshoot)
Accuracy & Resolution	V / I accuracy	$\pm 0.1 \%$
	V / I resolution	16 bits
	I ripple	$\leq \pm 0.3 \%$ F.S
AC power quality	Power factor	≥ 0.98 (Rated power)
	Ithd	$\leq 5 \%$ (Rated power)
BMS communication		CAN,CAN FD RS-485, Ethernet, SMBUS, I2C, LIN, FlexRay, Uart
AC input		3 Phase, 220 or 380 or 440 Vac, 50/60 Hz Able to be changed depending on installation conditions
Option		DAQ : voltage, temperature logging, chamber control, chiller control, cell balancing

* The specification may change due to customer's requirements.

Spec.

Functions		Spec.
AC input		3 Phase, 220 or 380 or 440 Vac, 50/60 Hz
Accuracy & resolution	V / I accuracy	$\leq \pm 0.1 \%$ F.S
	V / I resolution	16 bits
	I ripple	$\leq \pm 0.1 \%$ F.S
AC power quality	Power factor	≥ 0.98 (Rated power)
	Ithd	$\leq 3 \%$ (Rated power)
Communication		CAN, RS-485, Ethernet

S/W solution

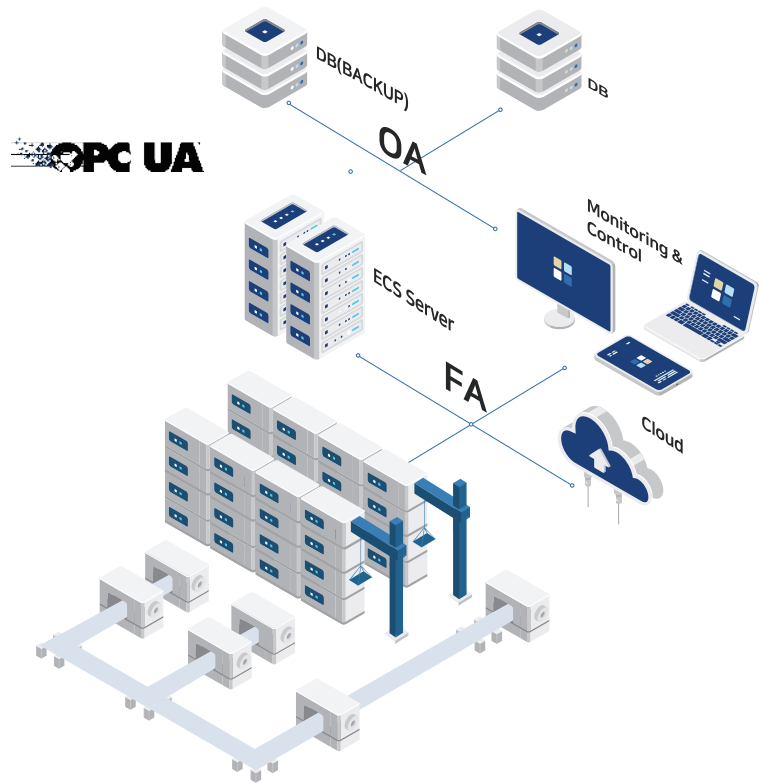
PEMS WONIK PNE Equipment Monitoring System

Integrated monitoring system

PEMS is an integrated equipment monitoring system which can monitor data and the status of each equipment in real time. It is configured according to OPC Unified Architecture (OPC UA), a machine to machine communication protocol for industrial automation and digital transformation.

Additionally, it is designed to store operation and test data for each equipment using cloud or legacy servers and can be monitored by various devices such as pc, tablet pc, smartphone and etc.

We offer secure management solutions, providing real time notifications, such as emails and sms, to registered users for any events that might occur during testing.



S/W coverage



Test equipment

Battery data analysis and control

Battery data monitoring
Test receipt edit
Safety function

Test labs

Integrated monitoring & control

Operation status
Management remote
S/W & F/W update

Factories

API Integration

MES integration
IMS integration

Smart factory

Big data analysis (Under development)

Early fault detection

Key fixture

Advanced software system

Integrated monitoring system

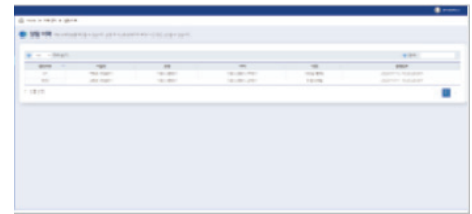
Solution that enables real time monitoring and control of each equipment



Integrated monitoring system

Safety functions for effective testing

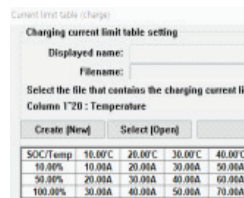
Quality assurance by providing safety functions such as data loss prevention, safety limit settings, and real-time anomaly notifications



Realtime anomaly notifications

Various functions for battery development

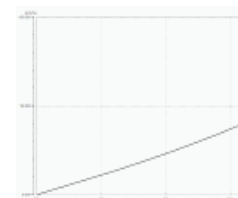
Management solutions including various functions such as soc tracking, non- stop testing, cell capacity estimation, swelling force, etc.



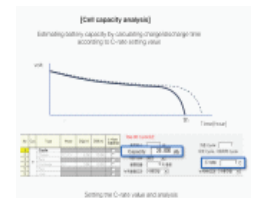
Non- stop testing



Swelling force



SoC tracking



Cell capacity estimation

Battery fixture

(Connector)

Battery fixture for user's convenient

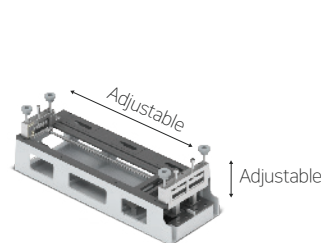
Enhance user convenience with a one-touch system that employs a toggle clamp for precise mechanical distance control while offering one-touch functionality for cell fixation and pressure control

Universal battery fixture

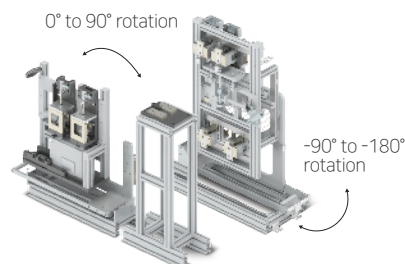
The design is adjustable to accommodate the length and thickness of the battery cell, offering a universal option for both one-sided and bi-directional battery terminal

Applicable to all battery types

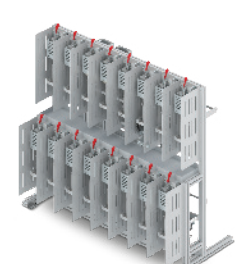
Various cell type such as pouch, cylindrical, prismatic, etc.



Pouch type



Prismatic type



Cylindrical type
(46Ø Fixture)

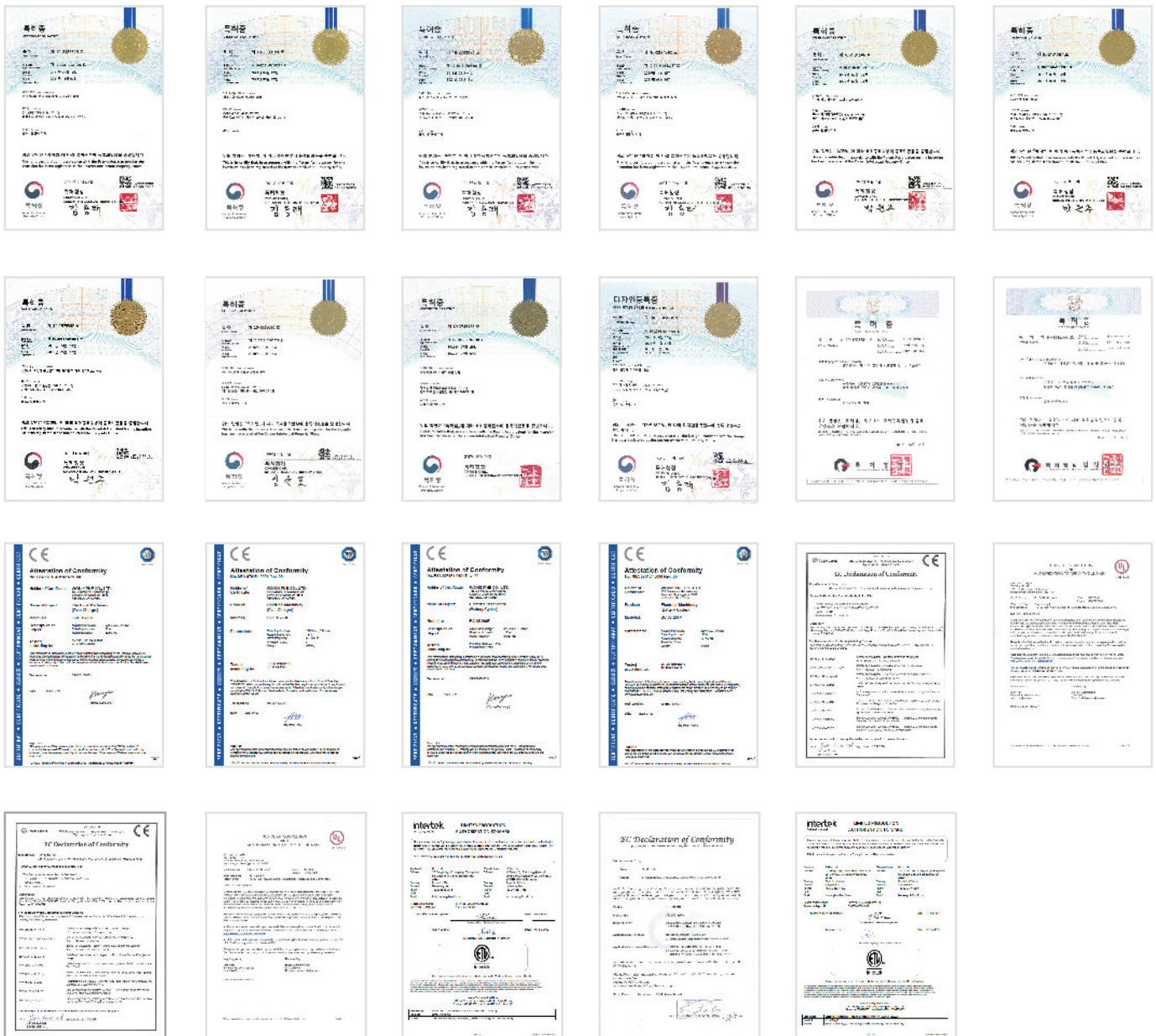
Battery solution technology



We conduct research and development for the next generation battery solutions.

Equipment manufactured under international standards




























- Acquired various international certificates such as CE, UL, and ISO9001
- Acquired various IP rights of original technologies



Global partnership

We offer world leading, highly innovative technologies to global battery manufacturers. Furthermore, we establish partnerships with prominent leaders in battery industry to deliver world class solutions and services.

We maintain long lasting partnerships with more than 300 global customers, including automotive OEMs and major battery manufacturers.

Cell maker					
Certification					
OEM					
Etc.					
					
					
					

Global network

We maintain long-lasting partnerships with over 300 global customers, including automotive OEMs and major battery manufacturers.

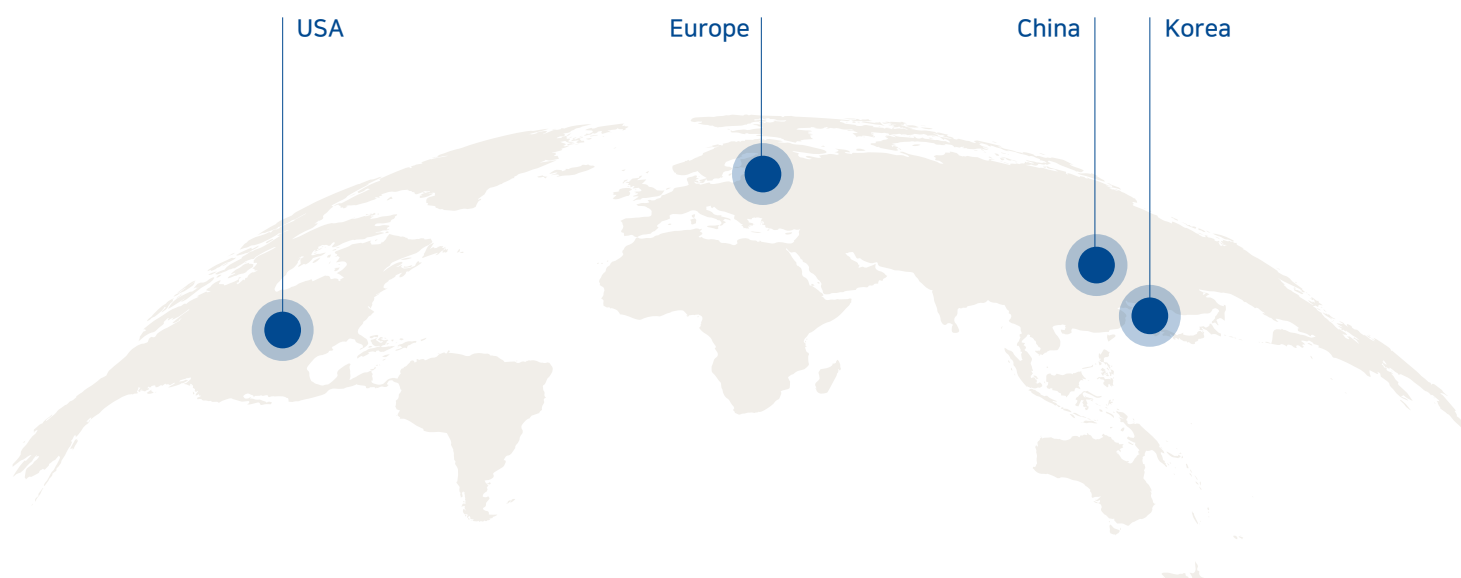
Additionally, we have established a global infrastructure in the US, China, Europe, and other regions. Looking ahead, we aim to further strengthen our position as a global company by diversifying our export destinations and expanding our manufacturing sites worldwide.

Factories **11 +**

Sales/CS **11 +**

Country **6 +**

Gwh/year **160 +**



Overseas

Europe

WONIK PNE Hungary kft ————— WONIK PNE Hungary kft : 1063 Budapest, Bajnokutca 12. fszt. 1.

WONIK PNE SWEDEN AB ————— Voltmätargatan 4 (Nr14) 72137 Västerås Sweden

WONIK PNE Representative Office — 20140 Gerenzano VA, Italy

China

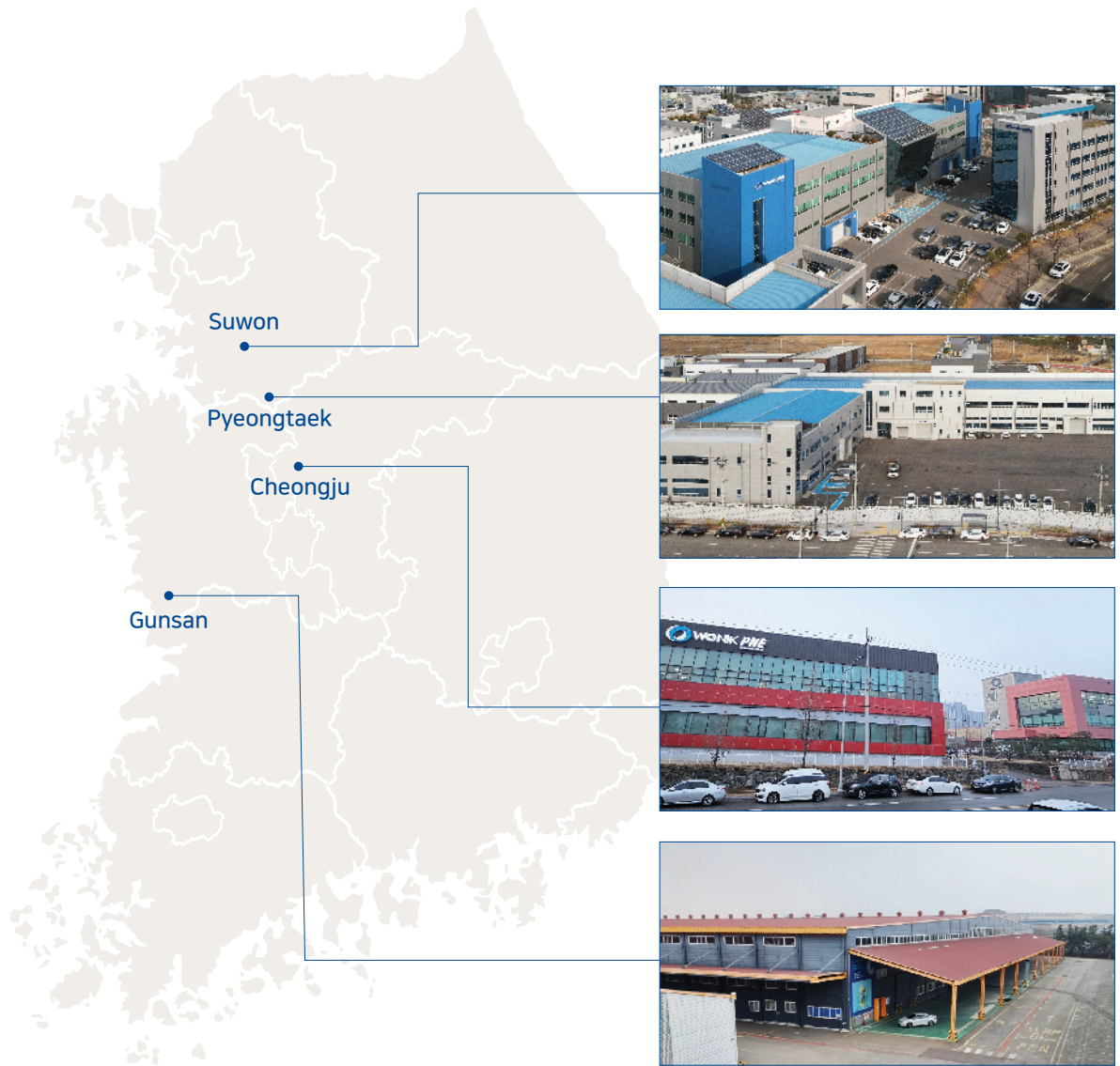
WONIK PNE New Energy Co.,Ltd ——— 111, Minjiang-ro, Economic and Technological Development Zone, Zhenghu District, Yancheng

DH - PNE (JV) ————— 210, Beiping Room, Building 15, No. 5 Xueyuan Road, Haidian District, Beijing

USA

WONIK PNE USA ————— 3775 VENTURE DR BLDG E, DULUTH, GA, 30096, USA

Korea



Company location

Korea	
Headquarters & R&D center	185 Saneop-ro, Gwonseon-gu, Suwon-si
Suwon factory	88-60, Saneop-ro 156beon-gil, Gwonseon-gu, Suwon-si
Pyeongtaek factory (#1)	162 Dreamsandan-ro, Cheongbuk-eup, Pyeongtaek-si
Pyeongtaek factory (#2)	519 Cheongbuk-ro, Cheongbuk-eup, Pyeongtaek-si
Pyeongtaek factory (#3)	52-1 Eoyeon-gil, Cheongbuk-eup, Pyeongtaek-si
Pyeongtaek factory (#4)	110 Dreamsandan 3-ro, Cheongbuk-eup, Pyeongtaek-si
Cheongju factory (#1)	221 Yangcheongsongdae-gil, Ochang-eup, Cheongwon-gu, Cheongju-si
Cheongju factory (#2)	16, Ochang-gajwa 4-gil, Ochang-eup, Cheongwon-gu, Cheongju-si
Gunsan office	1592 Soryong-dong, Gunsan-si



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or performance characteristics which may vary in actual cases.