

With **"Reliable Partners for Sustainable Development"** as the core concept, SDG Group is constantly developing ESG enterprises and creating a better environment for our next generation!



3+N System Solutions

Date: 27.10.2022

Hank Lan




- Introduction to 3+N System Solution
- Power Management Solution
High Power Integration and Management
- Building Automation Solution
KNX, DALI, HVDC solution
- Renewable Energy Solution
Energy Storage Application
- Configurable Power Solution

3+N System Solution

MEAN WELL has over 10,000 standard power supplies and Global Technical Service Teams to provide configurable System Power Solution

3+N
System solutions

MEAN WELL has over 10,000 standard power supply and global technical services teams providing customized configurable System solutions.



KNX Product DALI-2 Controller CMU2 Control and Monitor Unit

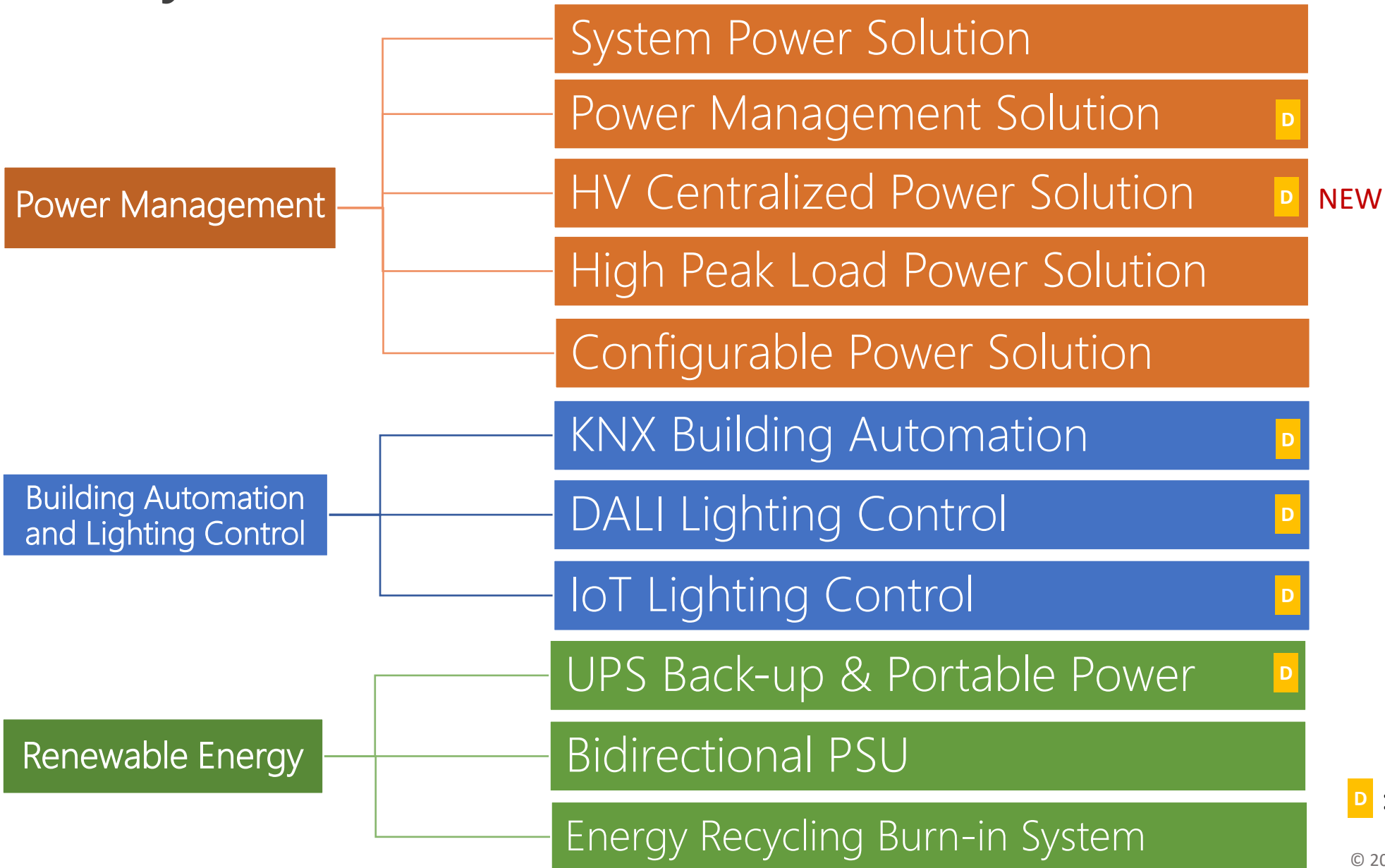
19" Rack Power Modular Power System Power

MEAN WELL's professional teams work with customers closely !

Proactive / Local Support / Accountability

3+N System Solution

N+ solutions






D : Demo kit available

Power Management Solutions

Overview of System Power Solution

- Propose suitable configurable System Power Products for the application
- System Power is capable of control, monitor and communicate
- MEAN WELL designs and offers the Rack kit or assemble the System Power
- Scalable design from 3200W to 128KW



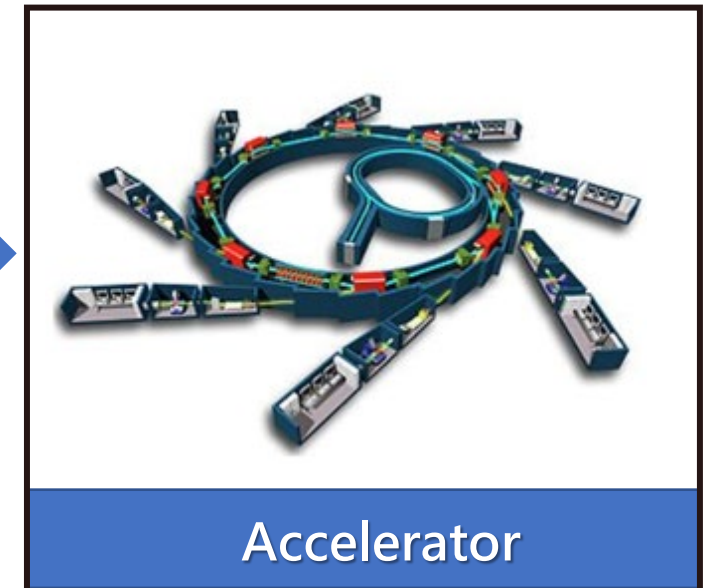
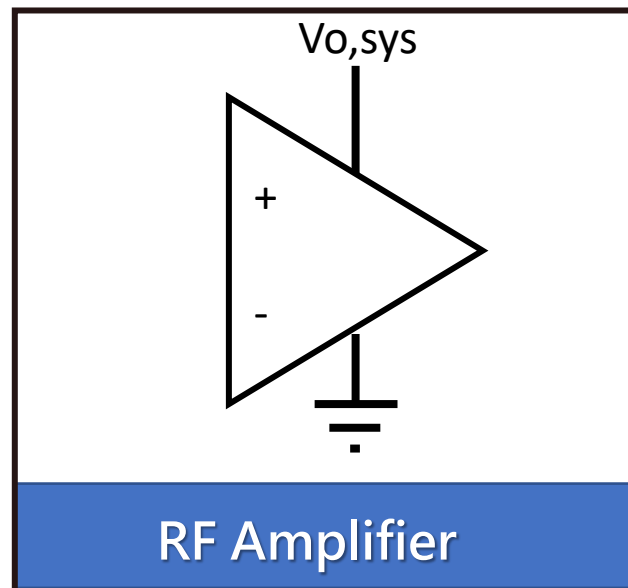
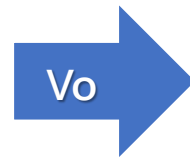
Model	Rack Shelf	Max. output power	Controller	Photo
RCP-1000	RCP-1U	3 Racks up to 9kW	RCP-MU	
RCx-1600	RHP-1U	3 Racks up to 24kW	CMU1	
RCP-2000	RKP-1U	3 Racks up to 18kW		
Dxx-3200	DHP-1U	10 Racks up to 128kW	CMU2	

*NCP-1600/3200 under development

*CMU2C has been tested with SHP-10K / NCP-3200 / RCP-1600 / RCP-2000 / PHP-3500 / DPU-3200 series
 Engineering samples are available for new project design-in test !*

Case study : Synchrotron Radiation Accelerator

- PSU : DRP-3200-48CAN * 240pcs
- Rack shelf : DHP-1UT * 64pcs
- Application voltage range: 42~56VDC
- Single System Power: 96,000W



Case study : Synchrotron Radiation Accelerator

Sync. Accelerator
Main Controller

CMU2C controls each
System Power

Modbus TCP/IP

CMU2C #1

CMU2C #2

CMU2C #7

CMU2C #8



...



CAN bus

CAN bus

CAN bus

CAN bus



System Power 1

System Power 2

System Power 7

System Power 8



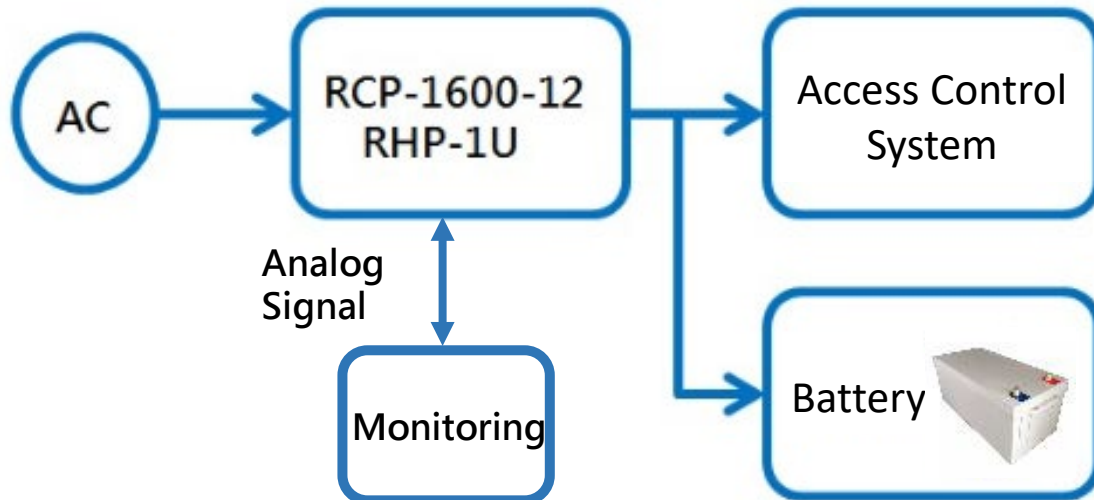
YHS-DLC02-01



[Youtube Video](#)

Case study : UPS for Access Control System

- Application : UPS for Access Control System
- PSU/Model : RCP-1600-12 *3pcs
RHP-1U* 1pcs
- Voltage Req. : 12VDC



Case study : Electric Forklift Charging

- Application : Charging forklift or AGV
- PSU/Model : DPU-3200-48*3pcs
- Charge Volt : 52VDC
- Charge Current : 160A



Access Solutions



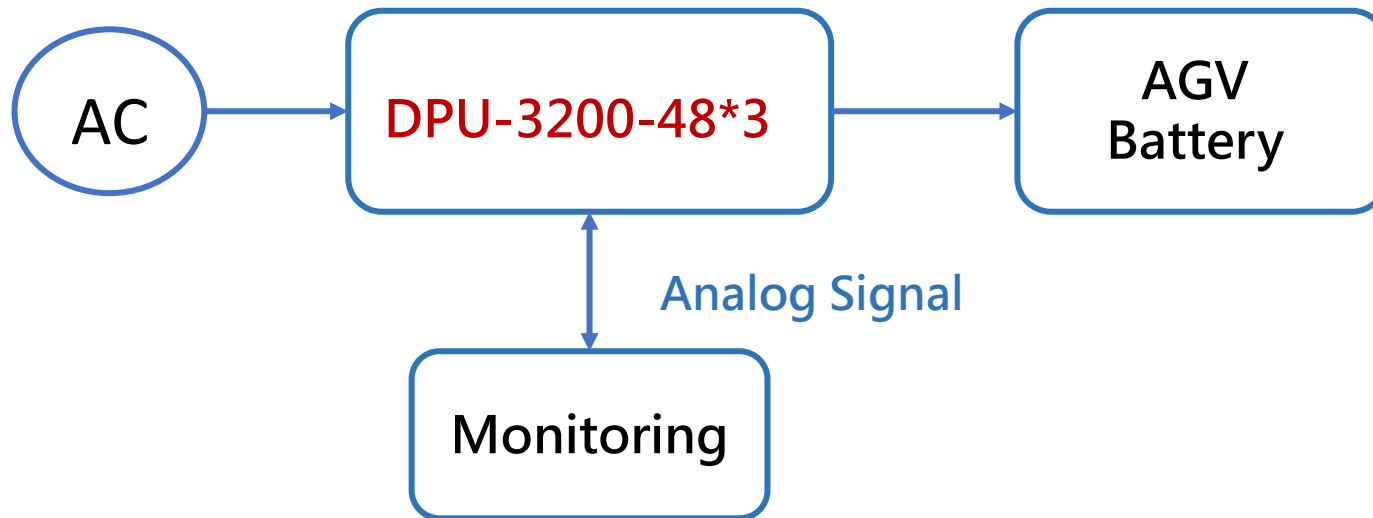
Refrigerated Trucks



Marine

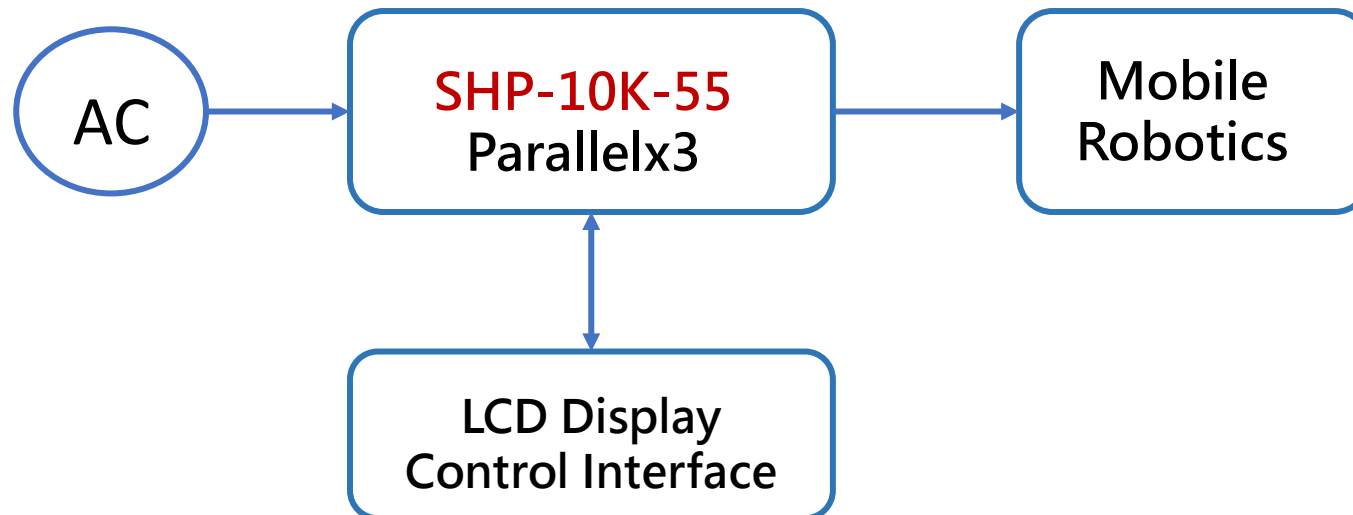


Forklifts, Reach Trucks and Pallet Jacks



Case study : Warehouse Robotic Charging

- Application : Warehouse Robotics Charger
- PSU/Model : SHP-10K-55*3pcs
- Charge Volt : 57.4VDC
- Charge Current : 330A (CANBus control)
- Control Interface : AC Ok, Enable signal, Aux Power



Building Automation and Lighting Control Solutions

Case study : Commercial Lighting with DLC-02

- DALI Controller : MEANWELL DLC-02*1pcs
- DALI input device: DALI-2 touch panel*1pcs
 DALI-2 modular panel*1pcs
- LED Driver : Lamp with built-in driver*90pcs
 EUCHIPS DALI6004*4pcs



Area	Group	Scene - Day	Scene - Cosy
Sales Area	1	100%	80%
VIP Room	2	90%	70%

sales area & VIP room light setting








Area	Group	Scene - 1	Scene - 2
RGB Wall	3	R: 254 G: 190 B: 0	R: 230 G: 98 B: 254

RGB Wall light setting

Case study : Commercial Lighting with DLC-02

Setting & Effect :

- Sales Area / VIP room / RGB wall light set to difference groups
- Sales Area lamp set 2 Scenes : Day & Cosy
- VIP room lamp set 2 Scenes : Day & Cosy
- RGB Wall LED strips set 10 Scenes : 10 color

Sales Area and RGB Wall	Description	
	Sales Area	
	Day	Short press  for 1 time
	Cosy	Short press  for 2 times
	Dim up	Long press 
	Dim down	Long press 
	OFF	Short press  for 1 time
	RGB Wall	
	Black light blue	Short press  for 1 time
	Excalibur Huracan	Short press  for 1 time
	Guideline Couleur RD Jaune	Short press  for 1 time
Guideline Couleur RD Rouge	Short press  for 1 time	
Minute Repeater Vert	Short press  for 1 time	
Pirelli Jaune	Short press  for 2 times	
Pirelli Orange	Short press  for 2 times	
Pirelli Rouge	Short press  for 2 times	
Pirelli Vert	Short press  for 2 times	
Pirelli Blue	Short press  for 2 times	
OFF	Long press 	
Lounge Area		
	Day	Short press  for 1 time
	Cosy	Short press  for 1 time
	OFF	Short press  for 1 time

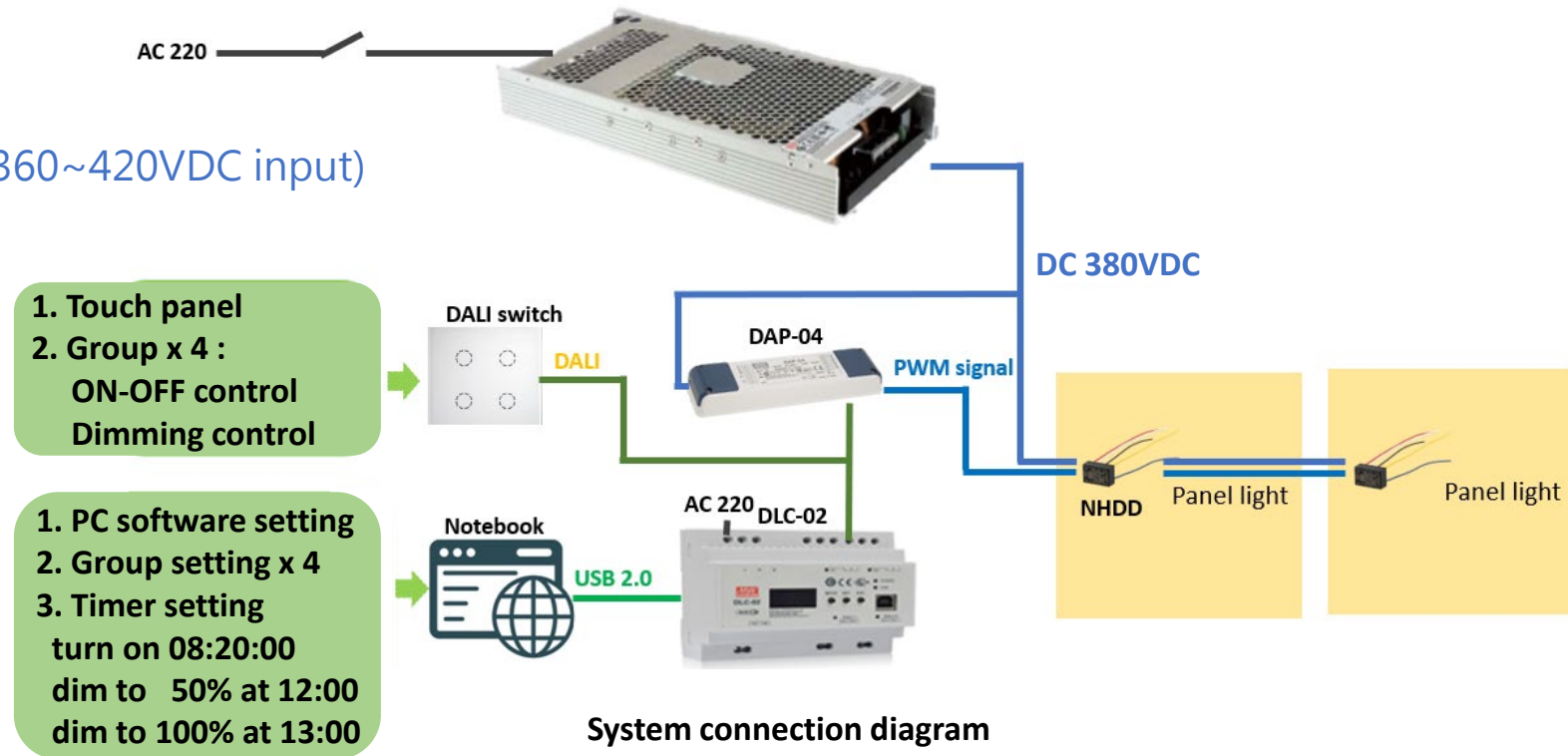


Case study : HVDC Bus Powered DALI Light System

- Centralized power, HVDC bus (380VDC) lighting system with DALI control
- Model :

DLC-02 + DAP-04

UHP-1500-380E + NHDD (360~420VDC input)



Building Automation and Lighting Control

DLC-02 Demo kit

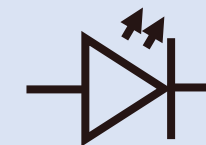
HVDC DC Bus Demo kit



Touch Panel



YHS-DLC02-01



Built-in CV/CC LED Set



[Youtube Video](#)



Web Interface



YHS-UHP-NHDD



Extremal Lamp Connection Port

Renewable Energy Solutions

BIC-2200 Bidirectional Power Supply

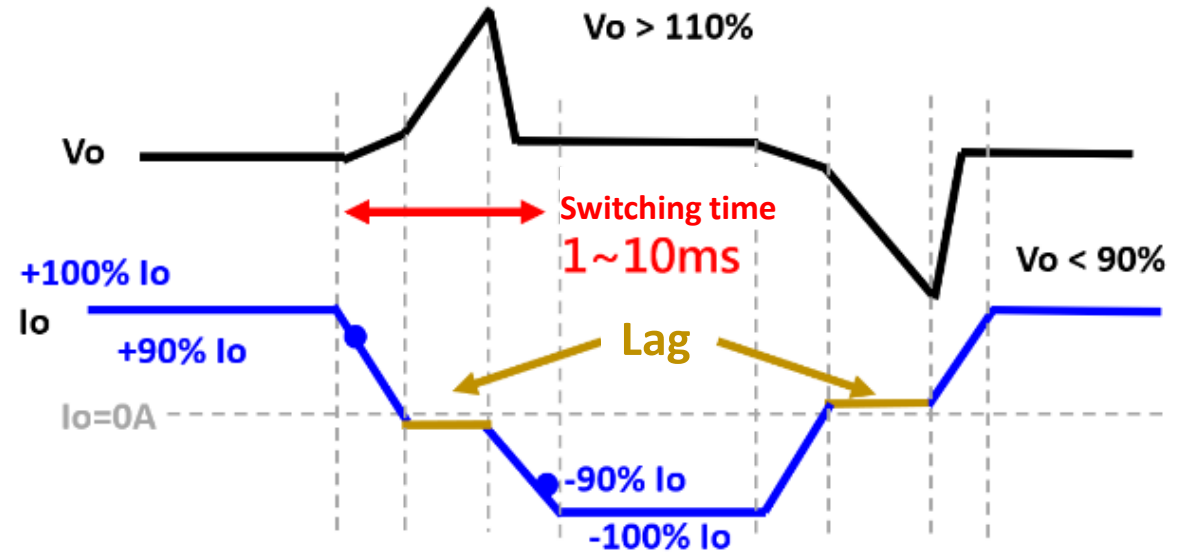
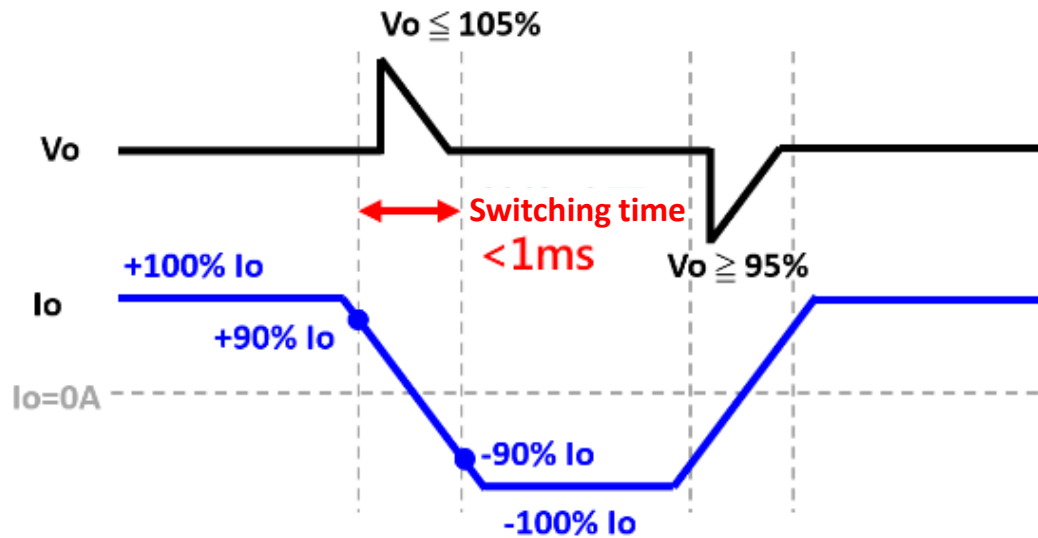
- AC/DC + DC/AC bi-directional power conversion with **93% high efficiency**
- 1U low profile, fully digital controlled
 - ✓ Built-in CANbus digital communication
 - ✓ 4+1 parallel connection up to 11kW
 - ✓ THD < 3%
- **Ultrafast switching time < 1ms**
- Forced charging/discharging mode (CANBus mode only)
- Complete protection : SCP/OLP/OVP/OTP/AC fail/Anti-islanding
- **TUV/UL 62368-1 approved ; Design refer to IEC 62477**
- 5-year warranty



BIC-2200 1ms fast switching

VS

Competitors: lag current and volt spike

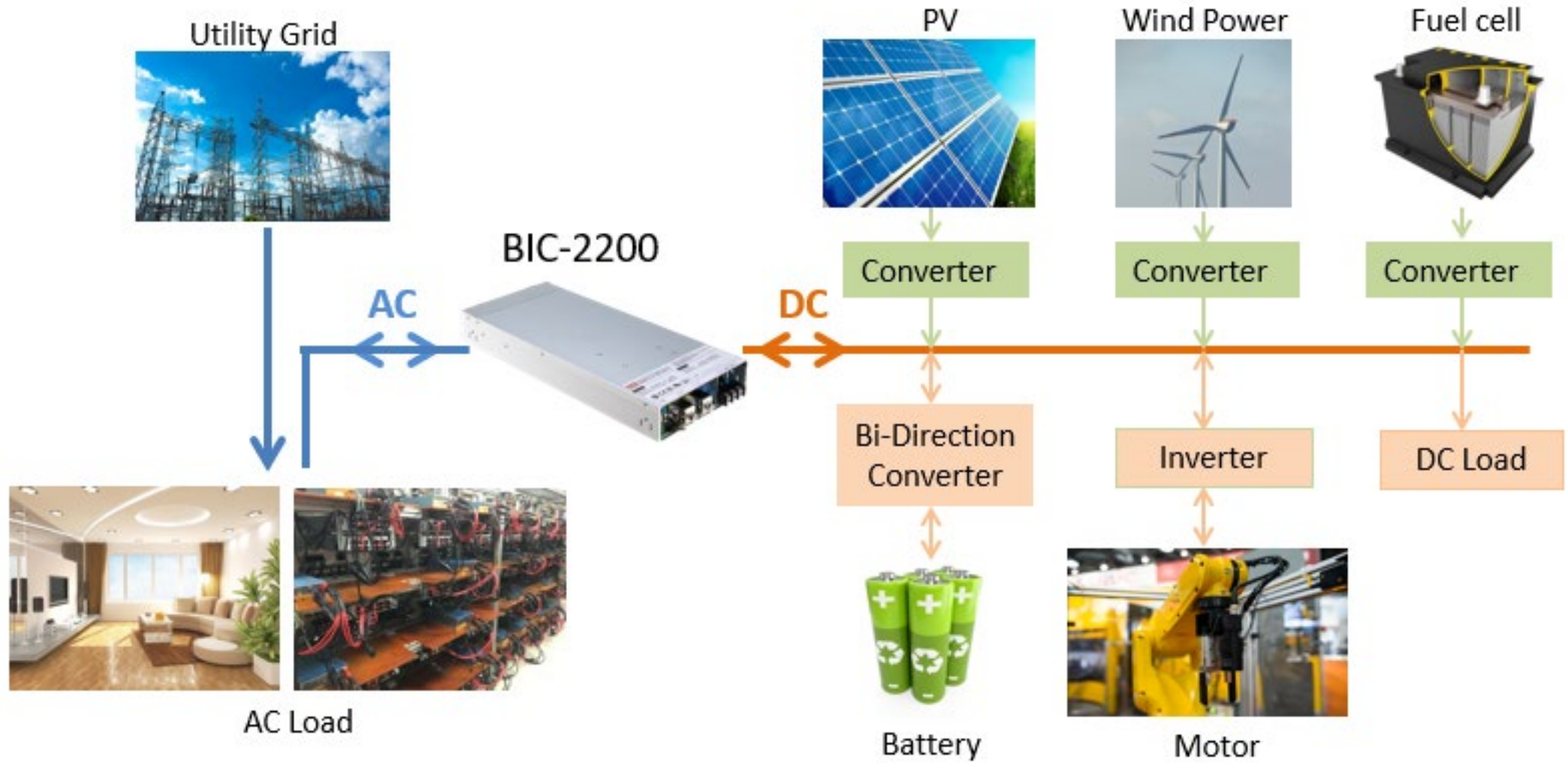


MEAN WELL BIC-2200

Voltage over/undershoot < 5%
Fast response for easy control
reduced design requirement
and cost

Competitors

Voltage variation > 10%
OVP+UVP circuit and external capacitors
needed. Increase design complexity, cost
and space requirement



Battery Test Equipment

- Battery Tester
- Battery Cell Simulator

Battery Production (Energy Recycling)

- Battery (dis-)charging
- Battery reliability test

Energy Storage Battery Management

- Battery Module balancing

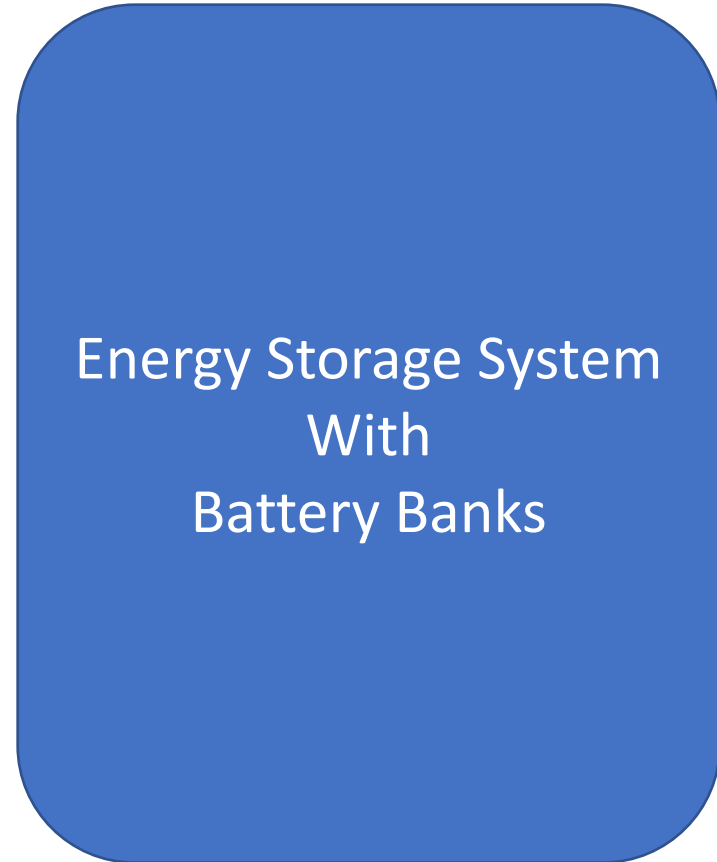
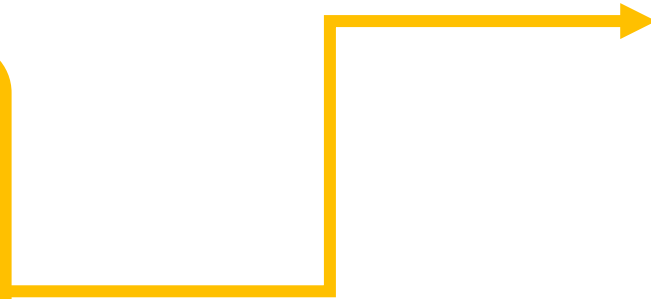
Home Energy Storage

- Emergency power system
- Peak load shaving & valley filling

Case study : Battery Module Balancing Unit in ESS

When batteries are overcharged,
BIC-2200 can feed energy to AC network

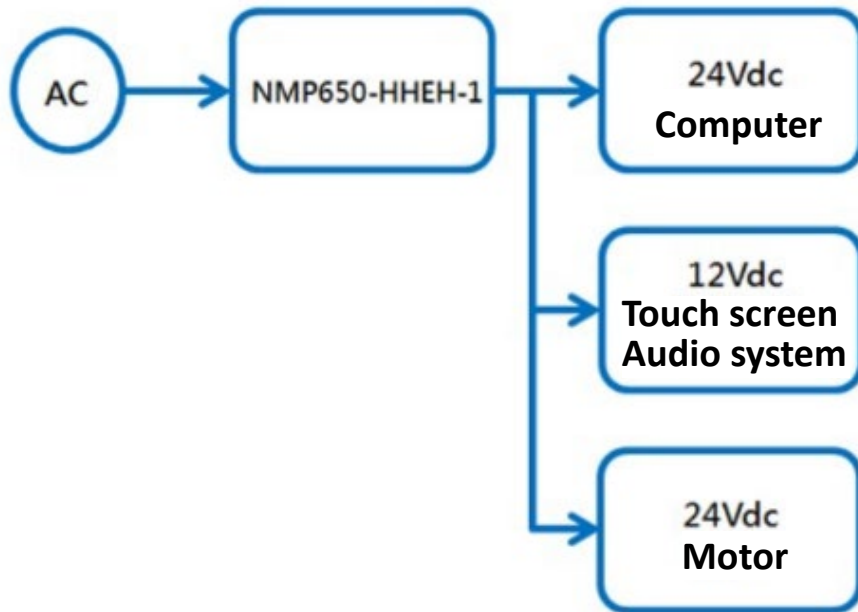
When batteries are low,
BIC-2200 can perform maintenance charging



Configurable Power Solutions

Case study : Airport Kiosk

- Application : Airport Kiosk
- Model : NMP650-HHEH-1
- Voltage Req. : 12VDC/24VDC



Configurable Power NMP Selection Tool




[NMP Selection Tool](#)

NMP Selection Tool

Start Select Number of Output

No. 1.

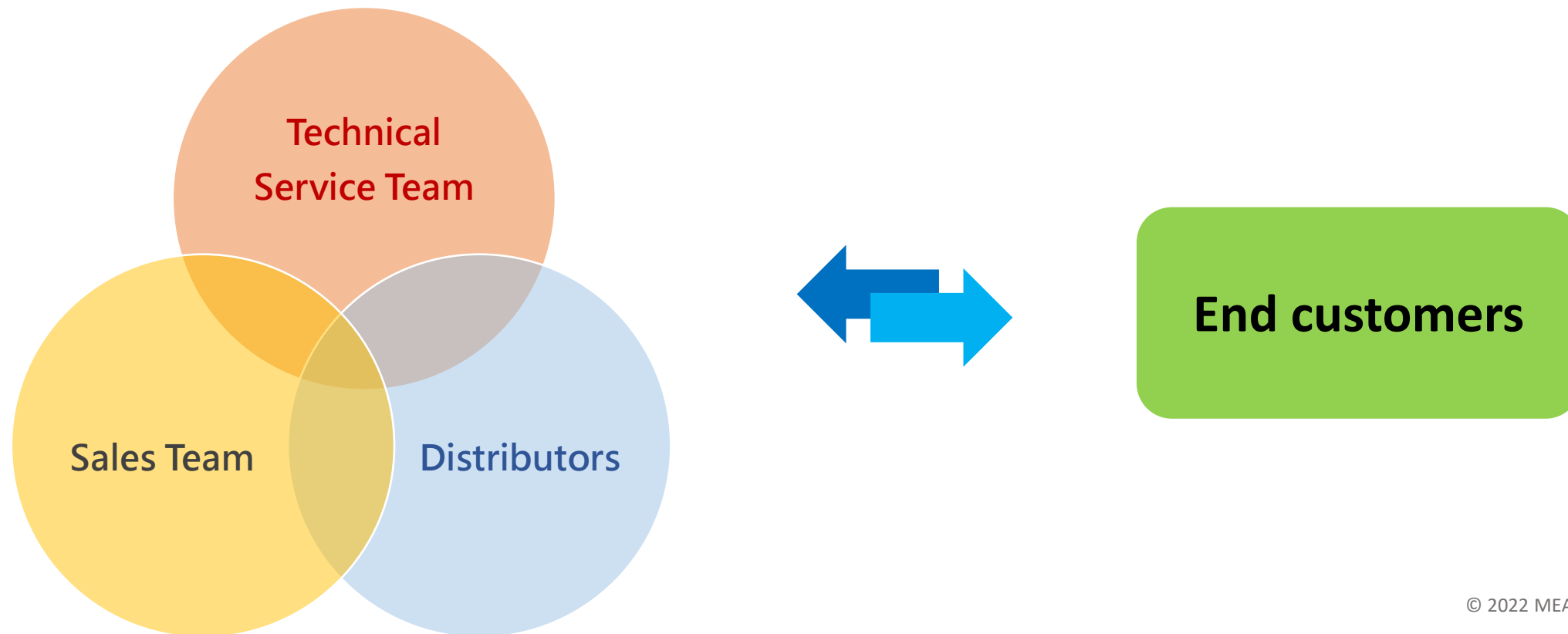


Product Summary

- Product No.:	<input type="text"/>
- Rated Output Power (W):	<input type="text"/>
- No. of Output:	<input type="text" value="1"/>
- Total Output Power (W):	<input type="text"/>
- Warranty:	<input type="text" value="5 years"/>
- Unit Weight:	<input type="text"/>
- Dimension (LxWxH):	<input type="text"/>

Conclusion

- ✓ MEAN WELL teams work with customers closely – meeting and through discussion on technical proposal for critical projects
Please send us [Power Inquiry Form](#)



Conclusion

✓ Case studies and technical information/solutions sharing for 3+N projects

on MEAN WELL Virtual Expo

Cases & Media Center



Please contact our Technical Service department if you have any technical question about successful cases.

PSU & Control Lighting & BA Energy Recycling & Green Energy

Case No.	Topic
1	【PDF】 System Power Management
2	【PDF】 DC High Voltage Centralized Power system



MEAN WELL Expo



SHP-10K Series — 3 ψ 3W High Output DC Voltage Switching Power Supply

SHP-10K is a 3 ψ 3W high output DC voltage switching power supply. According to the cooling method of power supply, it can be categorized into two types. Forced air cooling and water cooling. Each model suits in different applications, such as telecom, industrial automation, EV charging, and other related industrial cases.

[More information](#)