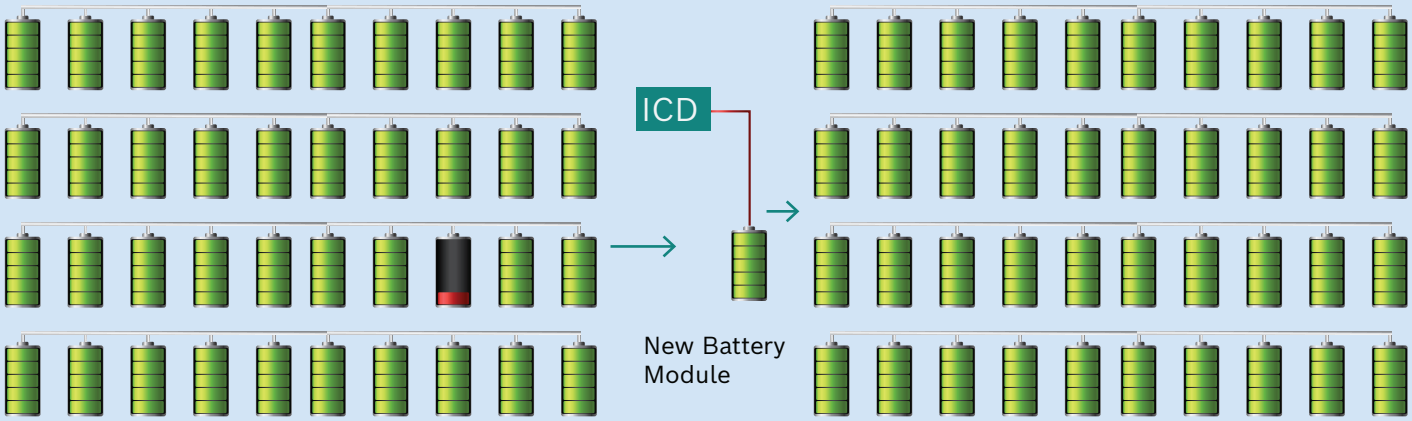
BOSCH

Invented for life

Integrated Charger Discharger (ICD) for ESS Battery Packs

ESS Battery Packs are designed with the use of several battery modules, each operating at lower voltages, typically ranging from 40 to 80 volts per module, that are interconnected in a series configuration. However, the presence of a faulty module in large battery packs can pose significant challenges, requiring its replacement.

To mitigate this issue, our innovative solution, the Integrated Charger Discharger, comes into play. This solution ensures that the new battery module being introduced is precisely matched in terms of State of Charge (SoC) and voltage to the remaining modules within the battery pack. By seamlessly integrating the charging and discharging functionalities, our solution provides a comprehensive remedy to effectively address the aforementioned problem, ensuring optimal performance and reliability of the battery pack.

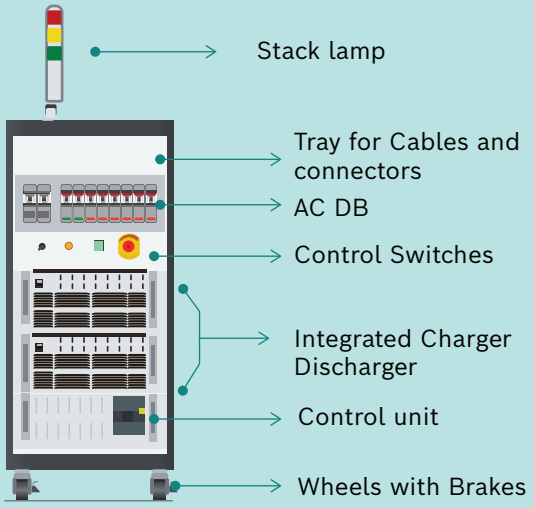


ICD Features

A unique charge discharge equipment that is meant to equivalize a new Li-Ion battery module before integration with the battery pack.

- Charge and discharge currents up to 100A.
- Battery module V range: up to 80V / 100V.
- Mobile equipment with wheels.
- On screen configuration display.
- Status LED indications.
- Accurate voltage and Current readings.
- Electrical and thermal protections.
- Customizable as per requirement.
- Compatible with both LFP and NMC chemistries.

ICD as a product



Technical Specifications

Parameter		Specification
Rated Value (0 to 50°C)	Output Voltage	0 ~ 80V / 0 ~ 100V
	Output Current	-150 ~ 150A
	Output Power	-5 ~ 5kW / -6 ~ 6kW
	Output Resistance	0 ~ 0.533Ω
Line Regulation	Voltage	≤0.05%FS
	Current	≤0.2%FS
Load Regulation	Voltage	≤0.1%FS
	Current	≤0.2%FS
Accuracy (within 12 months, 25℃±5℃)±(%of Output + Offset)	Voltage	≤0.02% +0.02%FS
	Current	≤0.1% + 0.1%FS
	Power	≤0.5% + 0.5%FS
	Resistance	≤1% + 1%FS
Ripple (20Hz - 20MHz)	Voltage	≤120mVpp(MAX:≤200mVpp)
	Current	≤0.1%FS RMS
AC Input	Voltage (Three phase four-wire)	342V~528V, 198V~264V (Derating 50%)
	Maximum Input Current	L1, L2/17A; L3/0A
	Maximum Input Apparent Power	5.7kVA / 6.7lVA
	Frequency	47Hz~63Hz
Efficiency	~90%	
Power Factor	0.99	
Storage Temperature	-10℃~70℃	
Operating Temperature	0~50℃	
Protective Function	OVP, OCP, OPP, UVP, UCP, OTP, Vsense, Reverse polarity	
Communication Interface	USB, CAN, LAN, VCP	
Safety Standards	IEC 61010-1:2010+A1:2016	
Compliance Information	Electromagnetic Compatibility (EMC) Directive 2014/30/EU Low-Voltage Directive (Safety) 2014/35/EU	

CONTACT

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