

# BATTERY EMULATOR & CYCLER



Water-cooled configuration.  
Many configurations available.

## EV Propulsion and Battery Labs

Develop your next generation EV propulsion systems and battery packs using a Unico Battery Emulator & Cyclier. Configured as an EV battery emulator (sometimes also called a battery simulator) it comes standard with programmable voltage and current controls for internal resistance simulation, so you can quickly test and view results for hundreds of different battery designs and environmental effects on your complete powertrain performance. As an EV battery cyclier, it is designed for battery cycling (charging and discharging), periods of high current draw and fast recharging, energy regeneration, characterizing battery performance and degradation, acquiring internal resistance data for battery emulation modes and supporting your own custom test profiles.

# APPLICATIONS

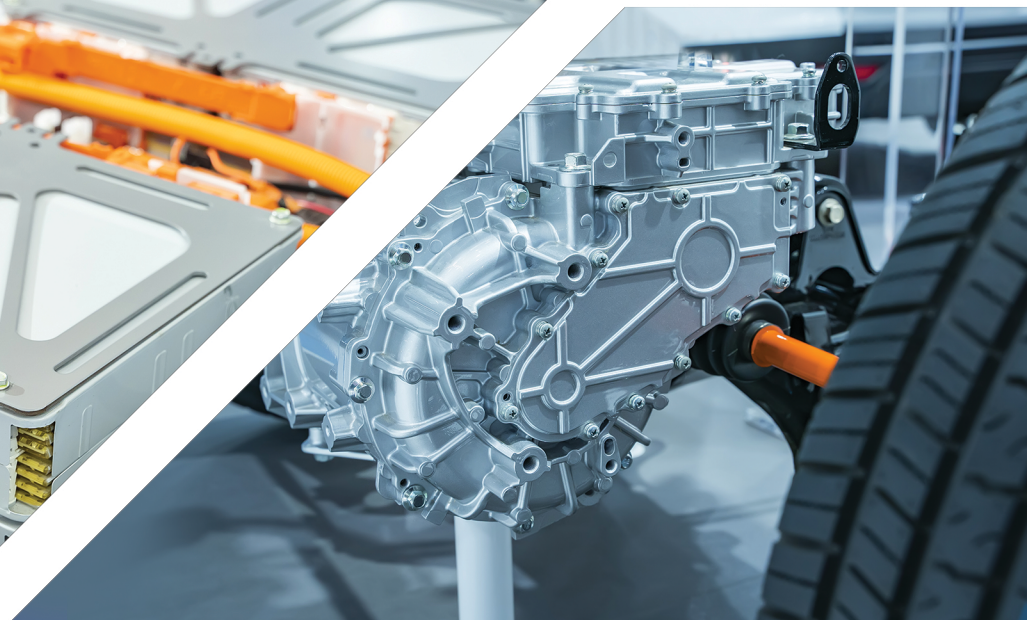
- Charge, discharge and life cycle testing of battery packs and modules
- Emulate high voltage battery packs for EV propulsion testbeds including high dynamic testing
- e-Motor, inverter, e-axle testing
- Fuel cell testing
- Super capacitor testing
- Energy storage conversion for grid applications
- Test to Global Standards (LV123, ISO26262, and more)

# FEATURES

- High-efficiency, fully regenerative current source and sink capability
- Seamless zero crossing
- Common DC bus architecture allows for Add-on dynamometer controls sections
- Optimized output filter based on the application
- Numerous power sizes to chose from including high voltage (up to 1500V) in a single system
- Supports most industry standard communication protocol, making it versatile to work with any available automation system platform
- Multiple programmable and preset safety features
- Higher voltage and current possible by connecting units in series and parallel (call to discuss)
- Optional ripple generator (inject AC wave on top of DC output) for specialized testing
- Half bridge and full bridge configurations available depending on low (<50VDC) or 0-volt operation and performance requirements

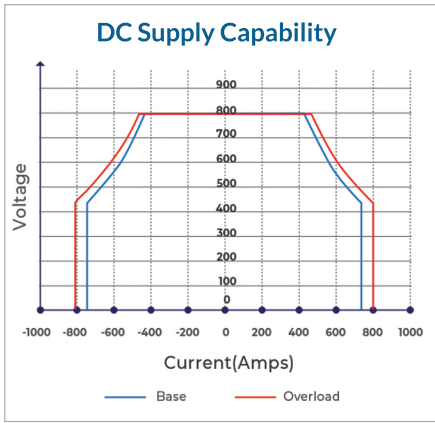


Air Cooled Configuration

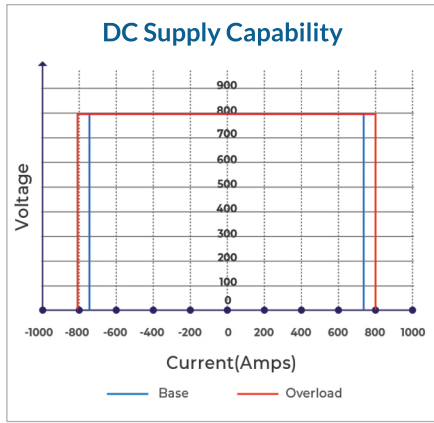


# MODEL EXAMPLES

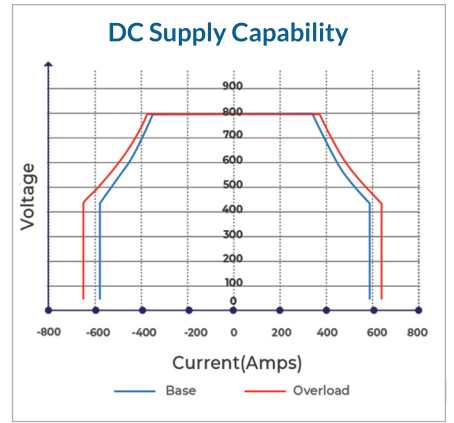
Additional Standard and Custom Configurations Available - Contact for Details



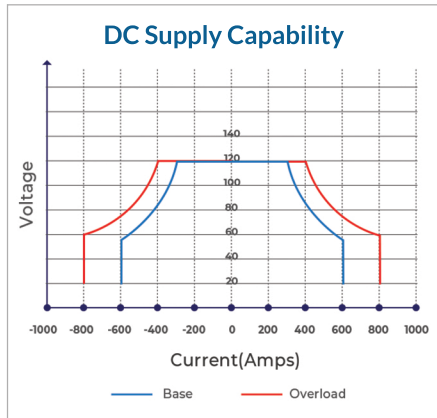
Max Voltage	V	800	800
Min Voltage	V	0	0
Power max	KW	330	363
Current supply	A	725	797
Current sink	A	-725	-797



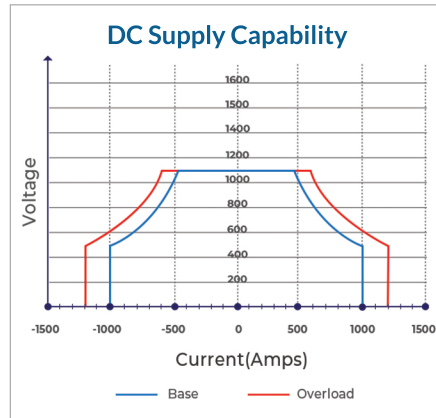
Max Voltage	V	800	800
Min Voltage	V	0	0
Power max	KW	570	627
Current supply	A	725	797
Current sink	A	-725	-797



Max Voltage	V	800	800
Min Voltage	V	40	40
Power max	KW	330	363
Current supply	A	580	638
Current sink	A	-580	-638

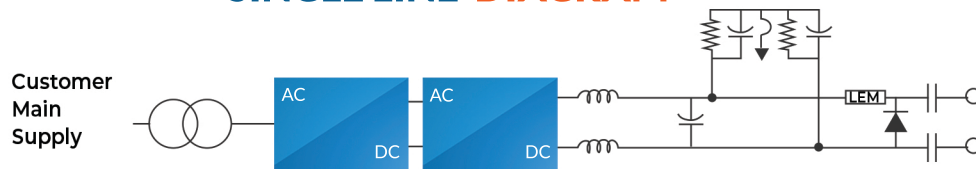


Max voltage	V	120	120
Min Voltage	V	20	20
Power max	kW	33	50
Current supply	A	600	804
Current sink	A	-600	-804

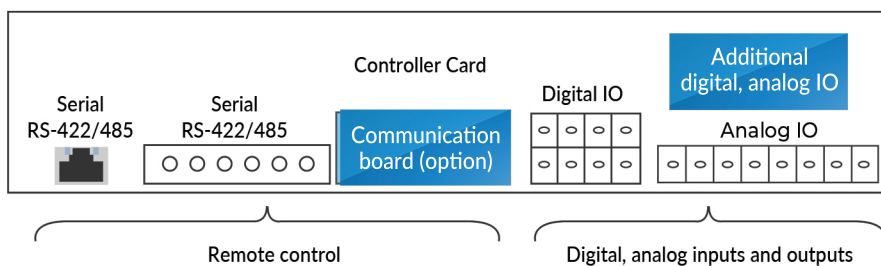


Max voltage	V	1100	1100
Min Voltage	V	0	0
Power max	kW	500	600
Current supply	A	1000	1200
Current sink	A	-1000	-1200

## SINGLE LINE DIAGRAM



## CONTROLLER DETAILS



# GENERAL SPECIFICATIONS

## SPECIFICATIONS

AC Input	480VAC, 3Ph, 50/60Hz (other voltages available on request)
Ambient	Up to 40°C, max 1000m above sea level, 95% RH non-condensing enclosure
Enclosure	NEMA 1 (other options available upon request)
Cooling	Air cooled (water cooled or air conditioned cabinets upon request)
Cabinet Paint	RAL 7035 rough semi-gloss, poly powder finish
Certification Compliance	UL (other certifications available)
Control modes	Constant current, constant voltage, constant power
Control	Local and remote
Built in remote interface Safety and control interlocks	Analog as well as RS-422, RS-485, two ports (other interfaces and protocols, see options below)
Data logging	Data sampler through UEdit®
Measurement accuracy	0.05% (system calibration required)
Voltage ripple	0.1%
Current ripple	0.1%

## OPTIONS

Isolation transformer	Various size as required
Insulation Monitoring	Available
Remote Voltage Sensing	Available
Additional analog and digital input, output	Technical discussion required
Cabinet paint finish	Customer specific
Protection class	NEMA 12
External communication interface	CANopen    CC-Link    ControlNet    DeviceNet Ethernet    EtherCAT (async)    EtherCAT (sync)    Interbus LonWorks    Modbus Plus    Profibus DPV1    Profibus Master



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