

ZESS HIGH POWR™ PECC

Better Technology For Energy Storage Products and Systems

ZBB's patent-pending ZESS POWR™ PECC (Power & Energy Control Center) electrical distribution solution is a modular & configurable architecture that connects multiple AC & DC power sources directly to DC energy storage units with various AC & DC power load outputs sharing grid-tied, grid-independent and off-grid capable inverters with both active & reactive power control.



With Our ZESS POWR™ Alliance Members



System Sizes

- 125 to 2000kW AC and/or DC loads
- 500 to 8000kWH energy storage capacity

ZESS 500™ Units

- Bi-directional Power Control
- Discharge at 125kW per String
- Charge at 82.5 kW per String
- 1 to 16 Units (500kWH to 8MWH)

Inverter Sizes

- Can be placed in parallel for higher outputs, scalable growth and redundant operations

Point-of-Connection

- 50- or 60-Hz
- Dry-type transformers or Liquid-filled

AC Line Type	Voltage	Power Rating
Three-phase	208—277—480—575—MV	125, 250, 500, 750, 1000, 1250, 1500, 1750 & 2000kW

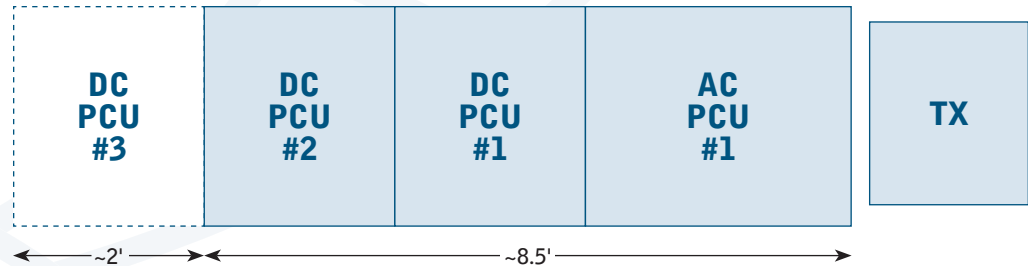
Standard Control Features

- Grid-connect Reactive Power (kVar)
- Grid-connect Inverter Power (kW)
- Off-grid Inverter Voltage & Frequency
- DC Voltage Control (Load & Battery)
- Renewable Generation Source Inputs
- Conventional Generation Source Inputs
- Remote / Onsite Communications & Alarms

ZESS HIGH POWER™ PECC

“Top-down” Typical Layout

Order of units can be interchanged and expanded, but inverter PCU is always the “right-most” structure. Doors swing out from left; min of 36" of side & rear access required



Environmental & Dimensions

For AC inverter & DC converter PCU (power conversion unit) sections

	NEMA 1	NEMA 3R
DC PCU: Input/Bi-directional Converters	24"W x 28"D x 92"H	27"W x 28"D x 96"H
AC PCU: 125 kW Inverters Bi-directional	36"W x 28"D x 92"H	39"W x 28"D x 96"H
AC PCU: 250 kW Inverters Bi-directional	42"W x 28"D x 92"H	45"W x 28"D x 96"H



DC Power Inputs

- PV / Solar up to 125kW per connection
400 to 600VDC w/ Max Power Point Tracking
- Fuel Cells up to 125kW*
400 to 690VDC
- Wind Turbines up to 250kW per connection
400 to 600VDC w/ Max Power Point Tracking

*Larger connection sizes available

DC Power Outputs

- Uni-directional outputs only
- 400V = 125kW* per connection
- 600V = 125kW*

*Other voltages & power ratings available

DC Energy Storage

- Bi-directional/charge
- 300-600V DC discharge controller

AC Power Inputs

- Wind Turbines up to 100kW
220/230/240VAC, 1-phase
- Wind Turbines up to 125 & 250kW
440/460/480VAC 3-phase
W/ Max Power Point Tracking
- Diesel Gen sets up to 100kW*
220/230/240VAC, 1-phase
- Diesel Gen Sets up to 125 & 250kW*
440/460/480VAC, 3-phase
W/ Run, stop / start idle controls

*Manual / Auto-bypass of POWR PECC of Gen set output as option available