

edapta

ENERGY  
ADAPTED

# E-SERIES

Fully integrated micro-grid hybrid power station



# E-Series Edapta

## 40 Foot Containerised Solution

Power Conversion Container up to 5.6MW  
 Battery Energy Storage Container up to 2.4MWh  
 Combination Container up to 2.8MW/1.2MWh

## 20 Foot Containerised Solution

Power Conversion Container up to 2.8MW  
 Battery Energy Storage Container up to 1.2MWh  
 Combination Container up to 1.6MW/600MWh

The E-Series is a modular, scalable, rapidly deployable micro-grid hybrid power station. This system is engineered to cater for various energy needs, whether you're connected to the grid or operating off-grid. Designed to deliver a hassle-free, pre-commissioned, and integrated solution, capable of connecting seamlessly with renewable energy systems and various generators, including diesel, gas, and others.

## ATTRIBUTES & FEATURES:

### Applications

- + Spinning Reserve
- + Integration of Renewable Energy
- + Ancillary Services
- + Peak Shaving
- + Virtual Power Plants
- + Energy Storage
- + Microgrids
- + Backup/Islanded Power Supply
- + Remote Sites/Communities/Facilities
- + EV Charging
- + Disaster Deployment

### Control Modes

- + Grid Forming (Virtual Generator Mode)
- + Grid Following (Current Source Inverter Mode)
- + Built-in Local HMI, Remote/HMI/Control Compatible
- + Built-in Local SCADA Server (Remote Connection Available)

### Energy Storage

- + Lithium-ion cells
- + High Energy/Power/Cycle Life
- + Modelled in ETAP to verify that both the system and the enclosure meet the required fault-limiting level for the site, allowing for safer maintenance and improved heat dissipation
- + Modular in design and can be arranged to suit your storage needs
- + Individual rack-level fire suppression is implemented for enhanced safety
- + Up to 2C rating (continuous)

### Inverter - ABB PCS100 ESS

Powertech, a trained and certified ABB PCS100-ESS integration partner, has designed a fully compliant locally built inverter enclosure and PCE platform.

- + Modular design providing high reliability and short meantime to repair (MTTR)
- + Increased system availability as withdrawable inverter units can be individually isolated with the rest of the system available for service
- + Economical spare parts for a modular inverter system
- + Grid fault detection
- + Islanding and anti-islanding options
- + Ratings from 100 kVA to 4000 kVA and voltages from 150 Vac to 480 Vac
- + Allows a range of energy storage devices to be coupled to the grid
- + Dynamic real power control (P)
- + Dynamic reactive power control (Q)
- + Generator emulating control mode
- + Grid stabilisation features including synthetic inertia and active damping
- + Low voltage ride through (LVRT)
- + Voltage and frequency dynamic envelope/ regulation functions

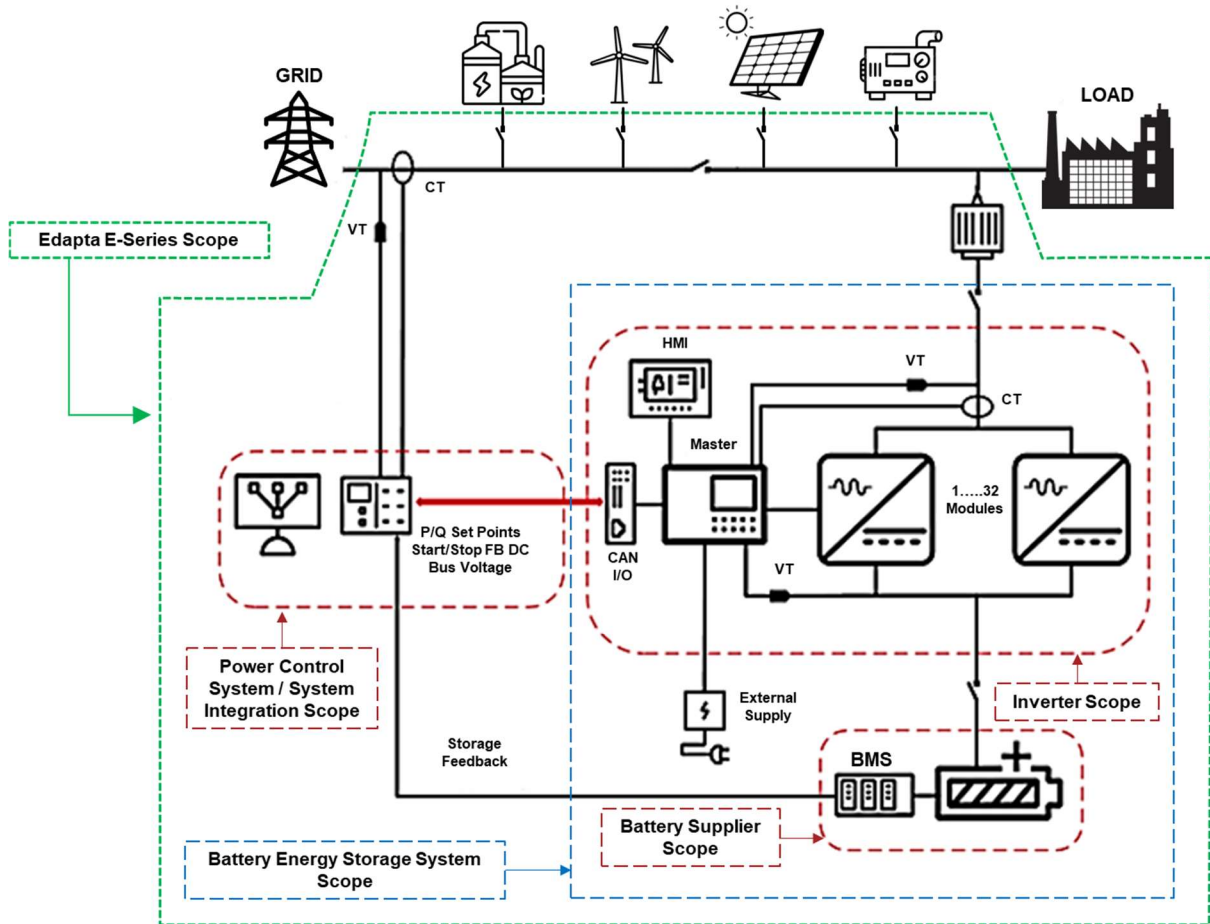
### Main Enclosure

- + HVAC and Cooling Systems
- + Fire/Smoke/Heat Detection
- + Fire Resistance – fully welded steel exterior (XFLAM)
- + TUV IEC62619 Certification
- + ISO 9001 Quality Certification
- + ISO Certification 45001
- + Steel enclosure with container twist lock mounts certified for Road, Rail and sea transport
- + Ingress Protection – IP55 as standard

**E-SERIES – SCOPE & CAPABILITY**

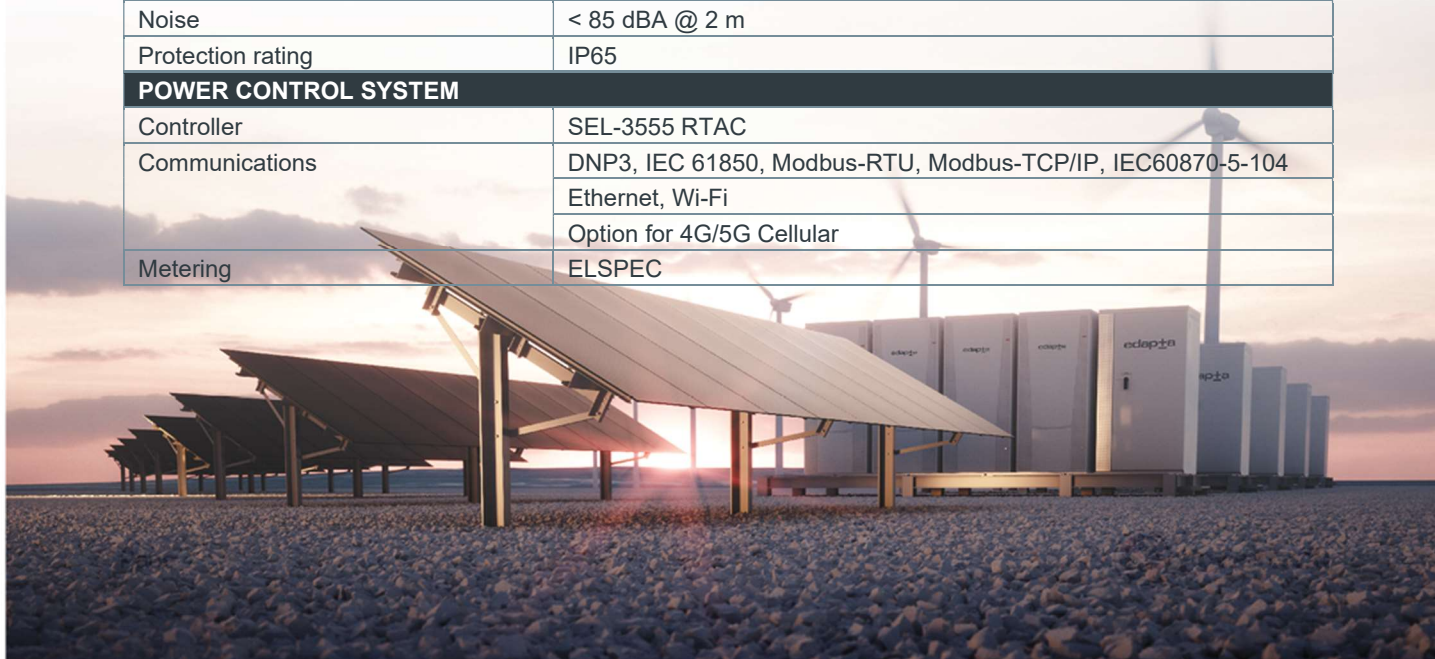
**Operational Diagram**

Unlike other suppliers that may only offer components within the red or blue scope depicted below, Edapta is exclusively designed and backed by Powertech. Edapta delivers a comprehensive solution, encompassing all the elements illustrated in the green scope line. With Edapta, you can reduce the time spent on concerns about integrating your product into your site and instead focus more on optimising your plant's processes.



## TECHNICAL DATA

AC POWER	
Inverters	ABB Modular PCS-100
AC Rating continuous	100 / 200 / 300 / 400 kVA (configurable)
Overload capability	200 % for 2 seconds
	150 % for 30 seconds
	120 % for 600 seconds
Rated voltage	150 - 480 V +/- 10%
Nominal frequency	50 Hz or 60 Hz +/- 5%
Power System	3-phase centre ground referenced (TN-S) with isolation transformer
Overvoltage category	III – 4kV (IEC 60664)
Fault capacity	25 kA (cabinet), 65 kA (rack)
Achievable efficiency	98%
Circuit protection	Motorised circuit breaker
Voltage harmonic compatibility	IEC 61000-2-4 Class 2 (Utility THDv < 8%)
Voltage harmonic distortion	THDv < 2.5% for linear loads
ENERGY STORAGE	
Batteries Rack	High Power Lithium Ion
Energy Capacity	200 / 400 kWh (configurable)
Rated voltage	845-1090 V
Supply earth referencing	DC centre referenced
Overvoltage category	II (IEC 60664) 6kV
Maximum voltage to ground	+/- 600Vdc
Circuit protection	Circuit breaker
ENVIRONMENTAL	
Operating temperature range	0 °C to 45 °C
Temperature derating	Above 40 °C, derate at 2 % load per °C
Operating altitude	< 1000 m without derating
Capacity derating with altitude	1 % every 100 m above 1000 m, 2000 m maximum
Inverter cooling	Forced air Cooling
Battery Cooling	Forced air Cooling
Humidity	< 95 %, non-condensing
Pollution degree rating	2
Noise	< 85 dBA @ 2 m
Protection rating	IP65
POWER CONTROL SYSTEM	
Controller	SEL-3555 RTAC
Communications	DNP3, IEC 61850, Modbus-RTU, Modbus-TCP/IP, IEC60870-5-104
	Ethernet, Wi-Fi
	Option for 4G/5G Cellular
Metering	ELSPEC





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