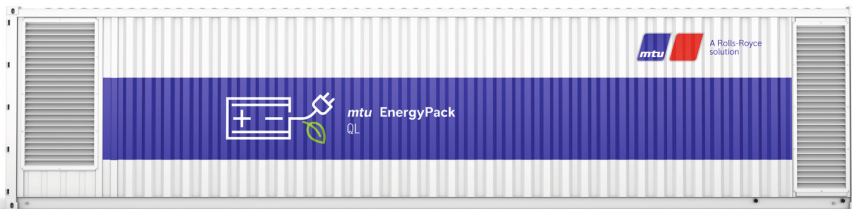




Battery Energy Storage System

mtu ENERGYPACK QL



Optional equipment shown. Standard equipment may vary.

Product highlights

Benefits

- Factory tested plug-and-play design
- Optimized system integration ability
- Highest power density
- Complete system within 40ft HC container
- High safety & reliability
 - Floodable with extinguishing water
 - Aeration in case of gas detection
- Black start capability
- Grid-supporting & grid-forming mode
- Controlled switching between modes
- Supervision of the point of common coupling
 - Control of the external mains switch
 - Detection of power outages
 - Re-synchronization after grid recovery
- Various applications in combination with **mtu** Microgrid Controller
- Easy integration into Rolls-Royce Microgrid Solutions

Support

- Global product support offered

Standards

- Battery storage is designed and manufactured in facilities certified to standards ISO 2015:14001, ISO 2015:9001 and ISO 2018:45001
- AS/NSZ on request

System configurations

- Power and capacity can be widely adjusted according to customer and project needs. Please see graph below and consult your local distributor for your individual configuration.

Options

- 50°C ambient temperature*
- Fire suppression system
- 50% overload capacity*
- Redundant cooling*
- Internal* or external transformer
- Customer branding
- ...and many more

* for selected configurations

Certifications

- CE conformity certification

Battery energy storage systems

mtu - a Rolls-Royce solution - offers a wide portfolio of battery energy storage systems. As integral part of flexible energy systems, energy from various distributed electricity sources can be stored in our battery energy storage systems. The **mtu** EnergyPacks are designed to improve reliability, quality and profitability of your individual energy system. For more information and solution consulting please contact your local distributor.

Technical data - **mtu** EnergyPack QL ¹

Sections	Value	Sign	Unit	mtu EnergyPack QL
Battery	Cell chemistry			NCM
	Nominal capacity QL		kWh	up to 2,200
Cooling	Max. ambient temperature	T_{max}	°C	40 (50°)
	Min. ambient temperature	T_{min}	°C	-20
Electrical	Nominal apparent power QL	S_{nom}	kVA	up to 2,000
	AC short circuit capability		kA	50
	Grid frequency	f	Hz	50 (60)
	Max apparent power (1 min)	S_{peak}	%	110% (150%) of S_{nom}
	Nominal voltage	U_{nom}	V	450 V (400 V with internal transformer) ²
	Power factor range	$\cos \phi$		0 ind. ...1 ... 0 cap
	Black start capability			yes
Housing	Corrosion protection			C3 (C5)
	Height	H	mm	2,896
	Length	L	mm	12,192
	Width	W	mm	2,438
	Protection class battery room			IP56
Interface	Supported communication protocol			Modbus-IP (Modbus-RTU, IEC 60870-5-104, IEC 61850, DNP3)
	Supported communication channels			3G / 4G 100MB/s CAT 5
System	Humidity	ϕ_{rel}	%	100% condensing
	Max. operation altitude	H_{max}	m	2,000
	Nominal round trip efficiency ³ (w/o HVAC)			up to 90%
	Weight	m	kg	up to 38,000

Note: Values in parentheses () are optional and might have an impact on derating.

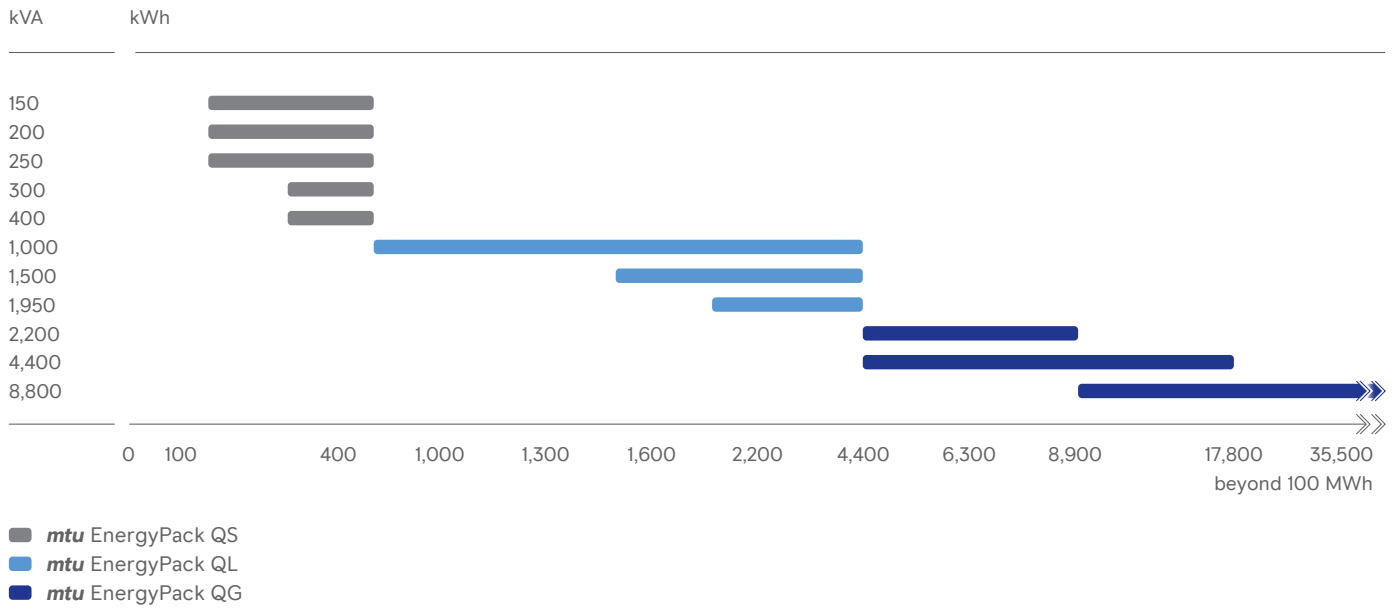
1) Weights and dimensions are estimates only. Please consult the factory for accurate weights and dimensions for your specific battery storage container.

2) Other voltage levels available on request

3) At nominal power, excluding losses of transformer and external cabling. Depending on configuration and C-Rate.

Power capacities

Our BESS cover a wide range of power nodes – QS up to 550 kWh, QL from 1,000 kWh to 2,000 kWh and QG scalable up to 100 MWh and more



Sound data

– Consult your local distributor for sound data.

Warranty and performance guarantee

– Consult your local distributor for information about warranty and performance guarantee.

Materials and specifications are subject to change without notice. Please consult your local distributor for further product information.

Rolls-Royce Group
www.mtu-solutions.com/powergen

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