SolarEdge CSS – OD

Battery Cabinet 102.4 kWh / Battery Inverter 50 kW

CSS-OU-20 / PCS050

COMMERCIAL STORAGE SYSTEM

Energy Storage Solution for Commercial and Industrial Sites

- **Easy Installation and Deployment**
  - Pre-assembled and factory-tested cabinet for quick setup
  - Compact cabinet that can be installed indoors or outdoors
  - Customize your AC-Coupled sites with up to 2 batteries per inverter, and scale by up to 1MWh*
- **Optimized Storage Savings**
  - Powered by the SolarEdge ONE optimization platform that constantly manages site energy production, storage and consumption
  - Supports multiple optimization modes such as Self-Consumption, Peak Shaving, and Tariff Optimization**
  - Supports microgrid applications***
- **Built-in Safety and Resilience**
  - Integrated fire detection and double fire suppression mechanism
  - Built-in safeguards: earth fault, leakage fault, and integrated DC & AC surge protection
  - Reverse polarity protection
  - Dual-cluster design for higher resiliency
  - Multi-sensor security: flood, door, and heat sensors
- **Single Trusted Vendor**
  - PV and storage system from a single vendor
  - One source for warranty, support, and training
  - 10-year product and performance warranty

* Pending a firmware update, the initial release shall support a single Battery Inverter and a single Battery Cabinet in on-grid applications. For backup applications, refer to the SolarEdge Commercial Backup Interface datasheet.

** Peak Shaving and Tariff Optimization coming soon.

*** Microgrid functionality requires the separately purchased SolarEdge Commercial Backup Interface. Available in selected countries only.

SolarEdge CSS – OD

Battery Cabinet 102.4 kWh

CSS-OU-20

BATTERY CABINET 102.4 kWh	CSS-OU-20	Units
TECHNICAL SPECIFICATIONS		
Cell Chemistry	LFP	
Total Battery Capacity	102.4	kWh
Usable Battery Capacity	97.28	kWh
Battery Module Total Capacity	5.12	kWh
Number of Modules(1)	10 + 10	
Maximum C-Rate (charge / discharge)	0.5	C-rate
Operating Voltage	456 – 576	Vdc
AC Auxiliary Input(2)	220±15% / 50 220±10% / 60	Vac / Hz
MECHANICAL SPECIFICATIONS		
Battery Cabinet Dimensions (W x D x H)	1100 x 930 x 2380	mm
Battery Cabinet Weight	1433	kg
IP Protection	IP54	
Corrosion Protection	C4	
Cooling Method	Built-in HVAC	
HVAC Refrigerant / Refrigerant Weight	R134a / 650	g
STANDARD COMPLIANCE		
Safety	IEC 62619 including 7.3.3	
Ingress Protection	IEC 60529	
Transportation	UN 38.3	
Emissions	EN / IEC 61000-3-3 EN / IEC 61000-6-2 EN / IEC 61000-6-4	
ENVIRONMENTAL SPECIFICATIONS		
Operating Temperature(3)	(-)20 – (+)45	°C
Operating Humidity	5 – 95 (non-condensing)	%
Maximum Operating Altitude	3000	
WARRANTY(4)		
System	10 years	
Performance	6000 cycles or 10 years up to 70% SoH	

(1) Structured in two clusters providing 1 + 1 redundancy topology.
(2) Required for Battery Cabinet HVAC operation.
(3) Power derating may apply in the range of (-)20 – (-)10 °C.
(4) For warranty details, conditions, and exclusions, refer to the SolarEdge Limited Product Warranty.

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SolarEdge CSS – OD

Battery Inverter 50 kW

PCS050

BATTERY INVERTER 50 kW[5]	PCS050	Units
AC SPECIFICATIONS (ON GRID / BACK UP[6])		
Rated AC Active Power Output	50	kW
Maximum AC Apparent Output Power	55	kVA
Maximum Continuous Output Current (per phase)	80	Aac
Maximum Inverter Efficiency	97.5%	
AC Output Voltage – Line to Line / Line to Neutral (Nominal)	400 / 230	Vac
AC Output Voltage – Line to Line / Line to Neutral (Range)[7]	340 – 440	Vac
AC Frequency	50 / 60 ± 5	Hz
AC Line[8]	3W + PE / 4W + PE	
Total Harmonic Distortion	<3	%
Power Factor Range	-1 to 1 / leading, lagging	
On-Grid to Off-Grid Maximum Switchover Time (in backup mode)	< 20	mS
Overall Response Time [9]	≤ ~1.2 – 1.5	S
DC SPECIFICATIONS		
Maximum DC Input Power	55	kW
Maximum DC Current	55 x 2	Adc
Number of DC Input Interfaces	2	
Maximum Paralleled Battery Cabinets on Battery Inverter[10][11]	2	
SAFETY FEATURES		
Reverse Polarity Protection	Yes	
Grid Monitoring	Yes	
Earth Fault Protection	Yes	
Earth Leakage Protection	Yes	
DC Surge Protection	Type II integrated	
AC Surge Protection	Type III integrated	
COMMUNICATION		
Communication Ports	RS-485 / CAN	
MECHANICAL SPECIFICATIONS		
Inverter Dimensions (W x D x H)	650 x 324 x 715	mm
Inverter Weight	68	kg
IP Protection	IP65	
Cooling Method	Air Cooling	
AC Input Cable Cross Section[12][13] / Lugs Size	25 – 35 mm^2 / M6	
STANDARD COMPLIANCE		
Safety	IEC 62109-1, IEC 62109-2	
Emissions	IEC 61000-6-4, IEC 61000-3-11, EN/IEC 61000-3, CISPR 11	
Grid Connection	VDE AR-N-4105, VDE AR-N 4110, TOR A, CEI-016, CEI 0-21 EN/IEC 50549-1/10, RfG, NC RfG, PTPiREE, UNE 217001, UNE 217002 NTS631V2.1 SEPE; TED/749/2020, NTS631V1.1 SENP; TED/749/2020 G99 Type A and Type B, NRS 097-2-1:2017 Edition 2.1, NRS 097-2-1:2024 Edition 3	
ENVIRONMENTAL SPECIFICATIONS		
Operating Temperature	(-)20 – (+)45	°C
Operating Humidity	5 – 95 (non-condensing)	%
Maximum Operating Altitude	3000	m
WARRANTY[14][15]		
System	10 years	

(5) It is required to have an AC coupled SolarEdge PV system in the site.
(6) Backup is available with the complementary SolarEdge Commercial Backup Interface in selected countries only. For more details, contact your SolarEdge sales representative.
(7) This range is applicable only to on-grid mode. During backup, the output voltage is 400V.
(8) Compatible both with Delta/WYE grid types. When connected in a backup topology with the SolarEdge Commercial Backup Interface, only 3W + PE are used.
(9) Dependent on set-up: 1x Battery Inverter & 1-2x Battery Cabinets, overall response time is≤~1.2S. Multiple Battery Inverters coupled with Multiple Battery Cabinets, overall response time is≤~1.5S.
(10) When paralleling two Battery Cabinets on a single Battery Inverter, it is required to order a cabling extension kit, CSS-O1-C-B01-XX, without which the second Battery Cabinet installation cannot be completed.
(11) It is recommended to maintain a consistent ratio of 1:1 or 2:1 of Battery Cabinets to Battery Inverter within the site to ensure optimal performance. For sites requiring discharge over 2 hours (<0.5C), uneven battery cabinet distribution affects efficiency of the site policy application (i.e., MSC), as inverters coupled with single battery cabinets stop production after ~2 hours.
(12) Only copper cables should be used.
(13) It is recommended to use flexible conductors: multi-stranded, class 6.
(14) For warranty details, conditions, and exclusions, refer to the SolarEdge Limited Product Warranty.
(15) The Battery inverter cannot be directly used to connect life support equipment and medical equipment.

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