Conext Core XC ES series central inverters for grid-tie energy storage systems (ESS)

Flexibility and high availability from a provider you can trust

The Conext™ Core XC ES series is a new line of central inverters designed for advanced battery-based energy storage applications. The Conext Core XC ES Series has peak efficiencies of 99.1% and its flexibility allows the inverter to be configured with voltage and power outputs up to 680 kVA. The Conext Core XC ES Series has been designed for integration into a battery-based energy storage solution.

The Conext Core XC ES can be part of a containerized (ES Box) solution.

Why choose Conext Core XC ES?

True bankability

- Warranty from a trusted partner with 180 years of experience
- World leader in industrial power drives, UPS and electrical distribution
- Strong service infrastructure worldwide to support your global needs

Higher return on investment

- Best in class efficiency with 99.1% peak, 98.5% weighted EU
- Increased uptime due to high reliability and comprehensive global service network

Designed for reliability

- Robust design through rigorous Custom Reliability Testing

Flexible

- Primary reserve functions: inertia emulation, P(f) drooping, Q(V) drooping.
- Secondary and tertiary reserve functions: PQ/PV dispatch mode, fast and accurate response to utility dispatch commands.
- Grid support functions: (e.g. frequency regulation) renewable power smoothing, dP/dt slew rate control, energy shifting.
- Active support in clearing grid fault conditions: LVRT, HVRT, FRT
- Compatible operation with most types of battery chemistries

Easy to service

- Integrated switchgear using Masterpact NW air circuit breakers
- Full suite of alarms and troubleshooting tools allow for remote diagnostics

Easy to install

- Compact footprint for easy integration into compact enclosures
- Integrated AC and DC switchgear standard

Product applications

Ancillary Services

Renewable Energy Shifting and/or Smoothing

End User Energy Optimization & MicroGrids

Diesel Offset

Device short name	XC 540 ES	XC 630 ES	XC 680 ES
Electrical specifications			
Number of output phases	3	3	3
Nominal phase-to-phase AC voltage (VAC)	300 V_{rms}	350 V_{rms}	380 V_{rms}
Max. AC output current	1040 A_{rms}	1040 A_{rms}	1040 A_{rms}
Nominal AC frequency (f)	50 Hz; 60 Hz	50 Hz; 60 Hz	50 Hz; 60 Hz
Reactive power range (Q)	+/- 540 kVAr	+/- 630 kVAr	+/- 680 kVAr
Power factor range(PQ dispatch)	0 to 1 (leading and lagging)	0 to 1 (leading and lagging)	0 to 1 (leading and lagging)
AC output current distortion @ rated power	<3% THD (total harmonic distortion)	<3% THD (total harmonic distortion)	<3% THD (total harmonic distortion)
Output power (S)	540 kVA	630 kVA	680 kVA
Max. DC operating current	1280 A	1280 A	1280 A
DC operating voltage range	440* to 850 V	510* to 850 V	550* to 850 V
Max. battery prospective short circuit element	65 kA	65 kA	65 kA
Battery current ripple factor	<1%	<1%	<1%
Transient time for mode reversal (sinking/sourcing)	<5 ms	<5 ms	<5 m sec
Paralleling	DC permitted	DC permitted	DC permitted
Max. external auxiliary supply power required	2000 VA	2000 VA	2000 VA
Efficiency			
Maximum (@ 50Hz)	98.6%	98.7%	99.1%
European (IEC61683) method	98.4%	98.5%	98.5%
CEC method	98.3%	98.7%	98.5%
Rectifying (full load)	>98.0%	>98.0%	>98.0%
General specifications			
Standby loss	< 100 W	< 100 W	< 100 W
IP degree of protection	IP20	IP20	IP20
Enclosure material	Steel	Steel	Steel
Seismic	IEEE-693-2005 High performance level**, ICC-ES AC156-2012***		
Product weight	1590.0 kg (3505.0 lb)	1590.0 kg (3505.0 lb)	1590.0 kg (3505.0 lb)
Product dimensions (H x W x D)	208.5 x 240.0 x 66.0 cm (82.0 x 94.5 x 26.0 in) ****	208.5 x 240.0 x 66.0 cm (82.0 x 94.5 x 26.0 in) ****	208.5 x 240.0 x 66.0 cm (82.0 x 94.5 x 26.0 in) ****
Ambient air temperature for operation	-10°C to 45°C (14ºF to 113ºF) full power. Power derating to 50°C		
Operating altitude	1000 m, derating for higher altitudes, maximum of 2400 m		
Relative humidity	0 to 95% non-condensing		
Features and options			
Type of cooling	Forced convection cooling		
Display type	LCD multifunction removable display standard		
Communication interface	RS485/Modbus standard		
AC/DC disconnect	Load break rated DC disconnect and AC circuit breaker standard		
Ground fault detection/interruption	Optional isolation monitoring relay		
Battery combiner	Optional external combiners with various quantities and trip ratings		
Regulatory approvals			
Conext Core XC ES Series are CE marked for the EMC Directive (EN61000-6-2 and EN61000-6-4) and Low Voltage Directive (EN50178)			
Conext Core XC ES Series complies	IEC 62116:2008/EN 62116-2011, French order of April 23, 2008, IEC 61727, PO 12.3 (Spain), US-MV (FERC 661/661A, FRCC, WECC, NERC PRC-024-1), BDEW (Germany), RD1663/200 (Spain), RD661/2007 (Spain), CEI-016 (Italy), ANRE Order 30/2013 (Romania), PEA (Thailand)		

Specifications are subject to change without notice. Other input voltage windows and power outputs available. *Valid for power factor = 1 (Q = 0). Low limit of DC range is dynamically adjustable based on nominal phase-to-phase AC voltage based on: V dc min= 15 V+ √ 2 x (VAC [V]) 2 + 3 x f [Hz] x Q [kVAr] if Q>0 and V dc min= 15 V+ √ 2 x (VAC [V]) 2 + 1 x f [Hz] x Q [kVAr] if Q<0. **ZPA=1.0 g 2% damping. ***Seismic demand spectrum (SDS) of 1.78 g and z/h of Ip=1.5 (ground mounted equipment) ****For design purposes, please refer to dimensions in Installation Manual.