Leading Conversion Technology for Power Resilience

Hybrid Sierra System - 48 Vdc

AS4777 Grid Interactive Power Conversion

Reliable, compact and flexible grid interactive systems to best meet your needs.
Smart topology and fast battery charging for increased availability.

Telecom | Datacom | Mass transport | Industry | Power Utilities | Renewable

AC In 3x400 Vac + N

DC 48 Vdc

AC Out 3x400 Vac + N

Power 18 to 90 kVA

Description

Hybrid Sierra System - 48 Vdc is a compact and modular grid interactive 3 phase input / output solution. It provides a pure sine wave with **96%** conversion efficiency. Our technology offers a **0 ms transfer time** (from grid to batteries), integrates the **static switch function** with **Short Circuit boost** capability (to trigger downstream breakers while protecting upstream ones) and is **easy to maintain** (hot-swappable modules).

Always Powered

Hybrid Sierra Systems operate **without master/slave** configuration, includes a **reduntant communication** BUS and are AS4777.2:2020 certified. These systems are always ready to secure loads, thanks to efficient and intelligent **battery management**.

Flexibility

Hybrid Sierra Systems are extremely flexible. These systems can easily be tuned to your 3 phase power requirements by adding or removing **hot-swappable** inverter modules in steps of 3 kVA. Cabinets can be **customised** on-demand, modules can be integrated into **third-party cabinets** or the existing cabinets can be reused.

Applications

Hybrid Sierra Systems can be used in many applications to **protect critical loads** while **increasing revenue** by being able to provide **Grid auxiliary services** at the same time. Hybrid Sierra Systems are suitable for **industrial**, **renewables**, **oil and gas**, **power utilities** and **harsh environment**.

Compatible battery chemistries: Lead-Acid, Lithium and Self-managed Lithium.

Key features:

- Flexibility
- 96% conversion efficiency
- Pure sine guaranteed
- Battery management
- Industrial design
- Easy to maintain
- Compact and light-weight

Illustrations are non-binding and may include customized fittings.

Hybrid Sierra System - 48 Vdc

System Model	18 kVA	27 kVA	36 kVA	45 kVA	54 kVA	63 kVA	72 kVA	81 kVA	90 kVA
General									
Efficiency (MAX) AC to AC (EPC) / DC to AC / AC to DC	96% / 93.7% / 93.7%								
Operating T° and relative humidity	-20 to 40°C and 95% non-condensing								
Storage T°	-40 to 70 °C								
Cooling	Forced air (required 200 mm clearance from rear to wall)								
Altitude above sea without de-rating	Max. 2000 m / de-rating – 0.8 % per 100 m								
Cable entrance	Top cable entrance								
Cabinet Material / Ingress protection	RAL7024 powder coated steel / IP20								
Modules									
Model	Sierra 25 - 48/277								
Power converter type	Modular inverter (with AC and DC input)								
Nominal power	3 kVA / 2.4 kW								
Number of modules	6	9	12	15	18	21	24	27	30
Power									
AC stand-alone port									
Nominal voltage (selectable)	3 x 230/400 + N								
Nominal power (kVA / kW)	18.0 / 14.4	27.0 / 21.6	36.0 / 28.8	45.0 / 36.0	54.0 / 43.2	63.0 / 50.4	72.0 / 57.6	81.0 / 64.8	90.0 / 72.0
Nominal current at 3x230/400VAC (A)	26.1	39.1	52.2	65.2	78.3	91.3	104.3	117.4	130.4
Inrush current (A)	Max 110 %								
Overload capacity	125% for 15 seconds								
Maximum output over current protection	150%								
Admissible load power factor	Full power rating from 0 inductive to 0 capacitive								
Frequency / Range	50 Hz / (45 - 55) Hz								
Total harmonic distortion (resistive load)	< 1.5 %								
Turn on delay	20 s to 40 s depending on the number of modules installed								
Crest factor at nominal power @ 0.7 Load PF (with short circuit management and protection)	3:01								
Short circuit capacity	8.2 x In during 20 ms while mains is available at AC input port 2.1 x In during 15 s and 1.5 x In after 15 s while mains is not available								
Distribution (standard configuration / option)	Ready-to-install MCBs (MCB not included) / Bulk AC out on breaker or terminals								
AC Grid interactive port									
Nominal voltage (range)	3 x 230/400 Vac + N (150 Vac - 293 Vac L-N)								
Frequency (range)	50 Hz (45 – 55 Hz)								
Nominal power (kVA / kW)	14.4	21.6	28.8	36.0	43.2	50.4	57.6	64.8	72.0
Nominal current at 230Vac (A)	20.9	31.3	41.7	52.2	62.6	73.0	83.5	93.9	104.3
Inrush current (A)	Max 125 %								
Power factor	> 0.99 (above 50% load)								
Short circuit capacity	Maximum 105% of nominal power								
Surge arrestor	Not included								
RCD - Type B, Max (mA)	180	270	360	450	540	630	720	810	900

Energy storage port									
Voltage range	32 – 63 Vdc								
Nominal charging current at 48Vdc (A)	300	450	600	750	900	1050	1200	1350	1500
Maximum discharging current at 48Vdc (A)	326	490	653	816	979	1142	1306	1469	1632
Short circuit capacity	Maximum 105% of nominal power								
DC input connection	Single DC feed per cabinet								
Storage type	Batteries								
Compatible battery chemistries	Lead-Acid, Lithium and Self managed Lithium								
Source Transfer Performance									
Voltage deviation and duration	0 V, 0 s (no interruption)								
Performance (EN62040-3)	VFI-SS-111								
Monitoring (Communications)									
Monitoring	Synoptic LEDs on module and touchscreen with Inview X								
Alarms output	3 Dry contacts (Major, Minor, Auxiliary)								
Safety & EMC									
Safety	IEC62109-1, IEC62109-2, IEC62477-1								
Grid code	AS4777.2:2020 (Australia Zone A, B, C)								
Active anti-islanding method	Slip frequency method								
Protective class / Over voltage	I / OVC II								
Vibration	GR63 office vibration: 0 to 100 Hz - 0.1 g / transport vibration: 5 to 100 Hz - 0.5 g, 100 to 500 Hz -1.5 g								
EMC immunity	EN 61000-4-2 / EN 61000-4-3 / EN 61000-4-4 / EN 61000-4-5 / EN 61000-4-6 / EN 61000-4-8								
EMC emission (class)	EN 55022 (A)								
Electrical isolation / Topology	Doubled isolation DC/AC 4,3 kV / Multi-mode type-Isolated								
RoHS	Compliant RoHS 6 / REACH								
System Dimensions (W x D x H mm)	600 x 600 x 1800 mm								
System weight without modules	210 kg								
System weight with modules (kg)	240	255	270	285	300	315	330	345	360
Country of Origin:	BELGIUM / INDIA / CHINA								

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