



Since 1967
Quality and Reliability
made in Italy



Aton: the Inverter that takes care of you

- *Compatibility with each kind of storage system*
- *Compliance with the standards CEI 0-21, CEI 0-16, EN 50549-1, EN 50549-2, IEC 62116*
- *UPS mode*
- *PFC Charger from mains*
- *High reliability*
- *Insulation transformer in low frequency for all the range from 2 to 300 kW*
- *Only produces a small amount of harmonic distortion for mains (THD < 2% in accordance with the standard IEEE 929)*
- *IGBT Technology with a high commutation frequency*
- *Electric vehicles AC, CCS Combo 2, CHAdeMO (grid-to-vehicle (G2V) and vehicle-to-grid (V2G))*

The Aton series of storage bi-directional converters represents the state-of-the-art in quality and technology, accumulated by LAYER ELECTRONICS in more than 50 years of experience in the field of the stabilization and static conversion of the energy.

Layer Electronics, which is still aiming for continuous development, developed a project along with the CNR (Consiglio Nazionale delle Ricerche - National Research Council) and the DIEETCAM of the University of Palermo: a **bi-directional converter** completely controlled by DSP, fed by renewable energy sources (solar, wind, ...) and by a storage system (lead-acid, NiCd, Li-Ion, NaNiCl₂).

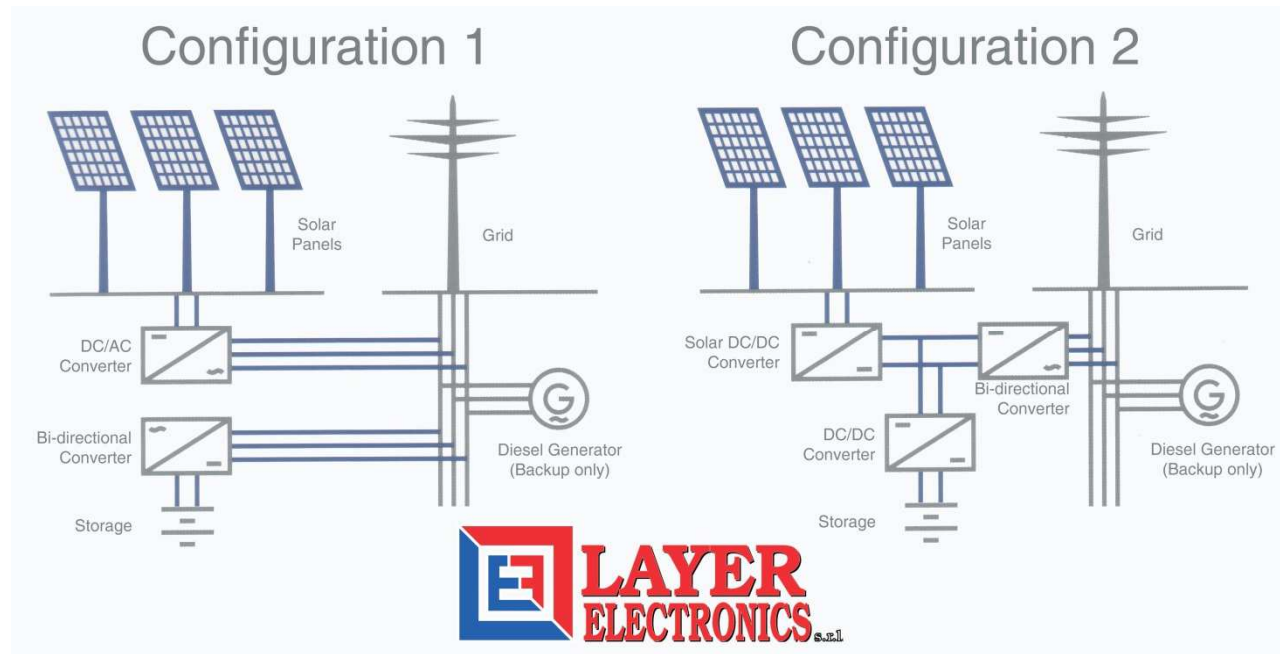
The conversion system is able to perform actions of local control, and to respond to remote control signals in order to:

- *Contribute to processes of regulation of the voltage and frequency of the electrical system in grid connection;*
- *Support the voltage and frequency, maintaining their values within predetermined ranges of variation in stand-alone;*



- Keep adequate power quality indices in all the operating conditions.

The following picture shows two possible configurations:



According to the needs, the **Aton storage converter** will work as:

- a **grid connected inverter** from a storage system (lead-acid, NiCd, Li-Ion, NaNiCl₂);
- an **off-grid inverter** from a storage system (lead-acid, NiCd, Li-Ion, NaNiCl₂) to supply loads during a blackout (the so-called “**UPS mode**”);
- a Power Factor Correction (**PFC**) **charger** from mains to recharge the storage system (lead-acid, NiCd, Li-Ion, NaNiCl₂).

Technical Data ATON series 1-Ph

MODEL	GCA-500	GCA-502	GCA-504	GCA-506	GCA-508	GCA-510	GCA-512
Power - kW	2	3	4	6	8	10	12
Input (Battery side)							
Type	Sealed lead-acid / NiCd / Li-Ion / NaNiCl ₂ (Optional)						
MPPT voltage range	On request						
Number of MPPT	1						
Output (Grid side)							
Wave-form	SINE WAVE						
Harmonic distortion	< 2%						
Phases	1-Ph						
Voltage	220 / 230 / 240 V (grid connection mode), ± 1% (UPS mode) (100 / 110 / 115 / 120 / 127 V on request)						
Frequency	50 / 60 Hz (grid connection mode), ± 0.05% (UPS mode)						
Current	8.7 A	13 A	17.4 A	26 A	35 A	43 A	52 A
Short-circuit current	13 A	20 A	26 A	39 A	52 A	65 A	78 A
Stand-by consumption	< 10 W		< 20 W		< 40 W		
Power factor	0.7 ind ÷ 0.7 cap						
European efficiency	94-95%						
CEC weighted efficiency	97-98%						
Earth fault detection	Yes						
Protections	Overload, overtemperature, min/max battery voltage, min/max inverter voltage						
Mains voltage	220 / 230 / 240 V ± 15% (grid connection mode), ± 1% (UPS mode) (100 / 110 / 115 / 120 / 127 V on request)						
Mains frequency	50 / 60 Hz -5% +3% (grid connection mode), ± 0.05% (UPS mode)						
Overload	125% for 10 min., 150% for 1 min., 200% for 0.1 sec.						
Earth fault detection	> 30 mA						
Against input overvoltages	Yes						
Signals							
Led	Input, Inverter, Grid						
Display	Standard						
External communication	RS232 - RS485 - SNMP - CAN (Optional)						
DC Connection	Terminal block						
Environmental							
Temperature	-10°C ÷ 55°C						
Non-condensing humidity	0% ÷ 95%						
Noise (at 1 m)	< 50 dBA						
Cooling	Forced						
Protection rating	IP20						
Dimensions							
W x D x H - mm	480 x 270 x 580		480 x 320 x 650		800 x 600 x 1300		
Weight - kg	43	46	57	68	100	110	120
CE Marking	2014/30/EU; 2014/35/EU						
Compliance with the standards	EN 62109-1, EN 62109-2, IEC 62477-1; EN 55011, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8, EN 61000-4-34, EN 61000-3-11, EN 61000-3-12, EN 61000-6-2; CEI 0-21: 2022-03; CEI 0-21;V1: 2022-11; EN 50549-1: 2019-02; EN 50549-10: 2022-10; IEC 62116: 2014-02						

Technical Data ATON series 3-Ph

MODEL	GCA-534	GCA-536	GCA-537	GCA-538	GCA-540	GCA-542
Power - kW	12.5	20	25	33	40	50
Input (Battery side)						
Type	Sealed lead-acid / NiCd / Li-Ion / NaNiCl ₂ (Optional)					
MPPT voltage range	On request					
Number of MPPT	1					
Output (Grid side)						
Wave-form	SINE WAVE					
Harmonic distortion	< 2%					
Phases	3-Ph + N					
Voltage	380 / 400 / 415 V (grid connection mode), $\pm 1\%$ (UPS mode) (200 / 208 / 220 / 440 / 480 V on request)					
Frequency	50 / 60 Hz (grid connection mode), $\pm 0.05\%$ (UPS mode)					
Current	18 A	30 A	36 A	48 A	58 A	72 A
Short-circuit current	27 A	43 A	54 A	72 A	87 A	108 A
Stand-by consumption	< 40 W					
Power factor	0.7 ind $\div$ 0.7 cap					
European efficiency	94-95%					
CEC weighted efficiency	97-98%					
Earth fault detection	Yes					
Protections	Overload, overtemperature, min/max battery voltage, min/max inverter voltage					
Mains voltage	380 / 400 / 415 V $\pm 15\%$ (grid connection mode), $\pm 1\%$ (UPS mode) (200 / 208 / 220 / 440 / 480 V on request)					
Mains frequency	50 / 60 Hz -5% +3% (grid connection mode), $\pm 0.05\%$ (UPS mode)					
Overload	125% for 10 min., 150% for 1 min., 200% for 0.1 sec.					
Earth fault detection	> 30 mA					
Against input overvoltages	Yes					
Signals						
Led	Input, Inverter, Grid					
Display	Standard					
External communication	RS232 - RS485 - SNMP - CAN (Optional)					
DC Connection	Terminal block					
Environmental						
Temperature	-10°C $\div$ 55°C					
Non-condensing humidity	0% $\div$ 95%					
Noise (at 1 m)	< 50 dBA					
Cooling	Forced					
Protection rating	IP20					
Dimensions						
W x D x H - mm	800 x 600 x 1300			800 x 800 x 1300		
Weight - kg	150	170	180	200	220	250
CE Marking	2014/30/EU; 2014/35/EU					
Compliance with the standards	EN 62109-1, EN 62109-2, IEC 62477-1; EN 55011, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8, EN 61000-4-34, EN 61000-3-11, EN 61000-3-12, EN 61000-6-2; CEI 0-21:2022-03; CEI 0-21;V1: 2022-11; CEI 0-16: 2022-03; CEI 0-16;V1: 2022-11; EN 50549-1: 2019-02; EN 50549-2: 2019-02; EN 50549-10: 2022-10; IEC 62116: 2014-02					

Technical Data ATON series 3-Ph

MODEL	GCA-544	GCA-546	GCA-548	GCA-550	GCA-552	GCA-554	GCA-556
Power - kW	60	75	110	160	200	250	300
Input (Battery side)							
Type	Sealed lead-acid / NiCd / Li-Ion / NaNiCl ₂ (Optional)						
MPPT voltage range	On request						
Number of MPPT	1						
Output (Grid side)							
Wave-form	SINE WAVE						
Harmonic distortion	< 2%						
Phases	3-Ph + N						
Voltage	380 / 400 / 415 V (grid connection mode), $\pm 1\%$ (UPS mode) (200 / 208 / 220 / 440 / 480 V on request)						
Frequency	50 / 60 Hz (grid connection mode), $\pm 0.05\%$ (UPS mode)						
Current	87 A	108 A	160 A	230 A	290 A	360 A	433 A
Short-circuit current	130 A	162 A	240 A	345 A	435 A	540 A	650 A
Stand-by consumption	< 40 W						
Power factor	0.7 ind $\div$ 0.7 cap						
European efficiency	94-95%						
CEC weighted efficiency	97-98%						
Earth fault detection	Yes						
Protections	Overload, overtemperature, min/max battery voltage, min/max inverter voltage						
Mains voltage	380 / 400 / 415 V $\pm 15\%$ (grid connection mode), $\pm 1\%$ (UPS mode) (200 / 208 / 220 / 440 / 480 V on request)						
Mains frequency	50 / 60 Hz -5% +3% (grid connection mode), $\pm 0.05\%$ (UPS mode)						
Overload	125% for 10 min., 150% for 1 min., 200% for 0.1 sec.						
Earth fault detection	> 30 mA						
Against input overvoltages	Yes						
Signals							
Led	Input, Inverter, Grid						
Display	Standard						
External communication	RS232 - RS485 - SNMP - CAN (Optional)						
DC Connection	Terminal block						
Environmental							
Temperature	-10°C $\div$ 55°C						
Non-condensing humidity	0% $\div$ 95%						
Noise (at 1 m)	< 50 dBA						
Cooling	Forced						
Protection rating	IP20						
Dimensions							
W x D x H - mm	800 x 800 x 1700		1200 x 1100 x 1900		1400 x 1100 x 1900		1700 x 1300 x 1900
Weight - kg	500	550	700	2200	1500	1700	2200
CE Marking	2014/30/EU; 2014/35/EU						
Compliance with the standards	EN 62109-1, EN 62109-2, IEC 62477-1; EN 55011, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8, EN 61000-4-34, EN 61000-3-11, EN 61000-3-12, EN 61000-6-2; CEI 0-21:2022-03; CEI 0-21;V1: 2022-11; CEI 0-16: 2022-03; CEI 0-16;V1: 2022-11; EN 50549-1: 2019-02; EN 50549-2: 2019-02; EN 50549-10: 2022-10; IEC 62116: 2014-02						