



## COMBO MIL SINE WAVE INVERTER / CHARGER

### SERIES COMBO V / S / RS

#### One Unit – 3 functions: Charging, UPS, AC-Power

The ComboV/S/RS series are modular „building block“ sine wave inverter/chargers that can be used for both small and large power systems.

Each inverter/charger is a complete power conversion system - DC to AC inverter, battery charger and AC transfer switch.

Additional inverter/chargers can be connected at any time in either parallel or in three-phase 230Y400VAC configurations.

This allows a system to be tailored to meet the specific power conversion requirements of the application, both at the time of the installation and in the future.

The sine wave inverter is designed to survive harsh environments anywhere in the world. Combo RS Inverter/Charger is considered the most rugged design available on the market.

Conformal coated circuit boards, a powder coated die-cast aluminum chassis protects the unit's internal components from the environment, resisting water, dust and corrosion.



Pure  
Sinewave



Charger



Transfer  
switch



Stand-by  
Mode



Remote  
control port



Extended  
temperature  
range



Multiple  
electronic  
protection



Waterproof  
(S/RS - Version)



Programmable  
(optional)



Digital display  
(optional)

### APPLICATIONS

#### Combo V (Vented)

- MIL power
- Emergency Power Backup (UPS)

#### Combo S (Sealed)

- Marine & other demanding environments

#### Combo RS (Rugged. Sealed)

- All mobile MIL applications as tanks and trucks
- Shelters and other building equipment
- Ruggedized to meet parts of MIL STD 810 and MIL STD 1275D Wheeled & Tracked Profiles

### FEATURES

- Ruggedized / Tropicalized
- S and RS -Version waterproof IP61
- Bug-proof construction, all openings on Combo V unit are <math>< \varnothing 0.8\text{mm}</math> to keep out dirt
- Environmentally Tolerant
- Built-in intelligent Battery Charging System up to 100 A continuous charging current
- 5-Stage, intelligent charger (bulk, absorb, float, silent, manual EQ)
- Built-in automatic AC-Transferswitch (max. switch capacity 30A)
- Programmable AUX output
- Programmable generator start (Relaiscontact)
- Smooth, true sine wave AC output
- Inverter/chargers can be stacked from 2000VA up to 30000 VA of continuous AC power
- 3-Phase configuration possible
- Remote control optional available
- All relevant parameters programmable and stored in a non volatile memory

## SPECIFICATIONS

Inverter / Charger Model		ComboS 2012- 230/50 MIL	ComboS 2024- 230/50 MIL	ComboS 2348- 230/50 MIL	ComboV 3024- 230/50 MIL	ComboV 3048- 230/50 MIL	ComboRS 2024- 230/50 MIL
<b>Electrical Specifications Inverter</b>							
Nominal DC-Input Voltage	VDC	12	24	48	24	48	24
DC-Input Range (adjustable low battery cut-out)	VDC	10.5 - 17	21 - 34	42 - 68	21 - 34	42 - 68	21 - 34
Nominal AC-Output	VAC / Hz	230 / 50 (120 / 60 Version available)					
Output Voltage Regulation	%	+/- 2.5					
Continuous Power Rating at 25° C	VA	2000	2000	2300	3000	3000	2000
Overload (from 25° C start) 30min	VA	2500	3100	3100	3300	3300	3200
Overload (from 25° C start) 5 sec	VA	4300	5175	5175	5175	5175	4800
Overload (from 25° C start) surge 100 ms	VA	4600	5750	5750	5750	5750	5750
Continuous AC-Output	AAC RMS	8.7	8.7	10	13	13	8.7
Efficiency at 75% power & 25° C	%	> 90	92	93	92	93	92
Total Harmonic Distortion (typ/max)	%	2 / 5					
Idle Power (Sleep-<6VA)	VA	18 - 20	18 - 20	21 - 23	18 - 20	21 - 23	20
<b>Electrical Specifications Charger</b>							
AC-Input Voltage Range	VAC	170 - 290					160 - 300
AC-Input Frequency Range	Hz	45 - 55					44 - 56
AC-Input Current max (adjustable limits)	AAC	16					
Continuous Battery Charge Current (adjustable)	ADC	100	55	35	85	45	55
Charge Characteristics		5-stage (bulk, absorb, float, silent, manual EQ)					
<b>Specifications Transferswitch</b>							
Current capacity	AAC	30					
Transfer time	ms	4 - 6 max. 10					
<b>MIL Standards</b>							
MIL STD 461E		•	•	•	•	•	•
Meets portions of MIL STD 810 and MIL STD 1275 D Wheeled & Tracked Profiles							•
<b>Other Specifications</b>							
Fan		Load and temperature controlled (internal fan on Combo S and Combo RS)					
Operating temperature range	°C	- 40 to +60 derating 20VA for each degree C° above 25° C ambient temperature					
Sealed		•	•	•			•
Conformal coating		•	•	•	•	•	•
Basic ruggedizing		•	•	•	•	•	
Full ruggedizing							•
Connection DC		DC Clamps					
Connection AC		Round connector output CA 3GD and input CA 3GS (custom version available on request)					
Dimensons (LxWxH)	cm	44 x 21 x 34			44 x 21 x 34		44 x 21 x 34
Weight	Kg	29			29		29.5
Shipping weight	Kg	31.5			31.5		32.5

