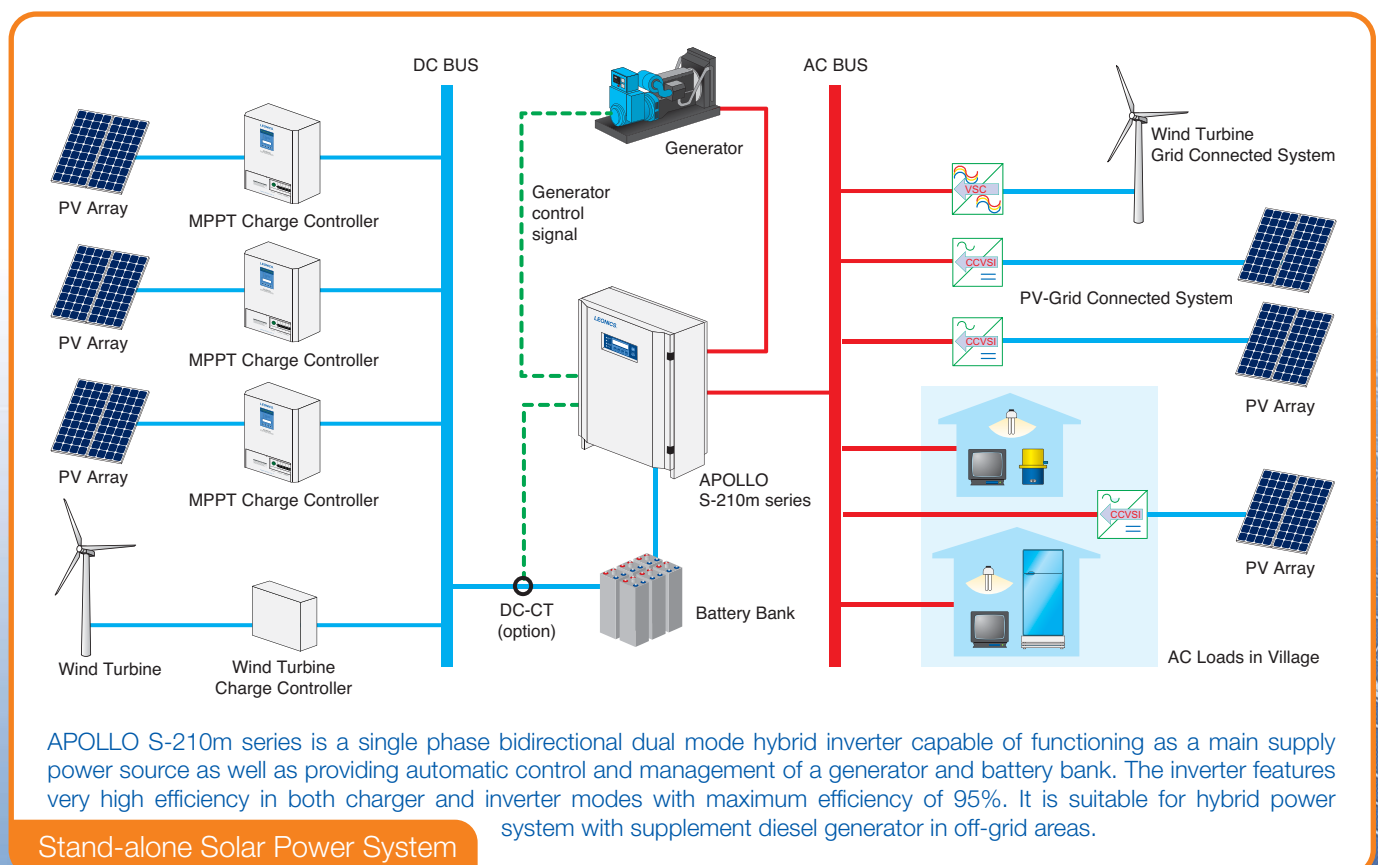




## APOLLO S-210m

### Single Phase Bidirectional Dual Mode Hybrid Inverter

- Single phase bidirectional inverter with built-in output transformer
- Low harmonic distortion (less than 3%)
- High efficiency > 95%
- High reliability design for remote area
- Capable to use with multiple renewable energy sources in both DC coupling and AC coupling such as solar (PV) panel, wind turbine generator and micro hydro generator
- Monitor energy available from the renewable energy (DC) sources and minimize the charging current from the diesel generator
- Separate DC Bus for multiple source charging
- Automatic battery equalization (option)
- Battery temperature compensation (Temperature sensor is not included)
- IP54 protection outdoor enclosure
- ISO 9001 and ISO 14001 certified factory



## APOLLO S-210m series Single Phase Bidirectional Dual Mode Hybrid Inverter

| MODEL                                 |                                    | S-219Cm                                                                                                                                                                                                                                                                                                                                                                                                                                  | S-2110Cm                | S-2111Cm             |
|---------------------------------------|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|----------------------|
| RATED POWER                           | At 25°C cos $\phi$ = 1             | 5 kVA / 5 kW                                                                                                                                                                                                                                                                                                                                                                                                                             | 6 kVA / 6 kW            | 7.5 kVA / 7.5 kW     |
| AC POWER                              | At 25°C for 30 min / 5 min / 3 sec | 5.3 kW / 7.3 kW / 10 kW                                                                                                                                                                                                                                                                                                                                                                                                                  | 6.4 kW / 8.8 kW / 12 kW | 8 kW / 11 kW / 15 kW |
| BATTERY                               | Nominal voltage                    | 48 Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                   |                         |                      |
|                                       | Voltage range                      | 40 - 58 Vdc                                                                                                                                                                                                                                                                                                                                                                                                                              |                         |                      |
|                                       | Maximum charging current           | 70 A                                                                                                                                                                                                                                                                                                                                                                                                                                     | 84 A                    | 105 A                |
|                                       | Maximum battery current            | 167 A                                                                                                                                                                                                                                                                                                                                                                                                                                    | 200 A                   | 250 A                |
| AC SOURCE<br>(GRID LINE OR GENERATOR) | Recommended generator power        | 10 kVA                                                                                                                                                                                                                                                                                                                                                                                                                                   | 12 kVA                  | 15 kVA               |
|                                       | Voltage                            | 220 / 230 / 240 Vac (L-N)                                                                                                                                                                                                                                                                                                                                                                                                                |                         |                      |
|                                       | Phase                              | Single phase                                                                                                                                                                                                                                                                                                                                                                                                                             |                         |                      |
|                                       | Frequency                          | 50 / 60 Hz $\pm$ 3 Hz                                                                                                                                                                                                                                                                                                                                                                                                                    |                         |                      |
|                                       | Maximum AC current                 | 30 A                                                                                                                                                                                                                                                                                                                                                                                                                                     | 37 A                    | 46 A                 |
|                                       | Start / stop generator             | Relay dry contact 10 A (ACC contact)                                                                                                                                                                                                                                                                                                                                                                                                     |                         |                      |
| AC OUTPUT                             | Voltage                            | 220 / 230 / 240 Vac (L-N)                                                                                                                                                                                                                                                                                                                                                                                                                |                         |                      |
|                                       | Voltage regulation                 | $\pm$ 3% (steady load), < 7% at 100% step load within 0.1 sec.                                                                                                                                                                                                                                                                                                                                                                           |                         |                      |
|                                       | Phase                              | Single phase                                                                                                                                                                                                                                                                                                                                                                                                                             |                         |                      |
|                                       | Frequency                          | 50 / 60 Hz $\pm$ 0.1% (auto sensing)                                                                                                                                                                                                                                                                                                                                                                                                     |                         |                      |
|                                       | Wave form                          | Pure sine wave                                                                                                                                                                                                                                                                                                                                                                                                                           |                         |                      |
|                                       | Total harmonic distortion          | total < 3%                                                                                                                                                                                                                                                                                                                                                                                                                               |                         |                      |
|                                       | Maximum surge current              | 200%                                                                                                                                                                                                                                                                                                                                                                                                                                     |                         |                      |
|                                       | Maximum AC current                 | 22.7 A                                                                                                                                                                                                                                                                                                                                                                                                                                   | 27.3 A                  | 34 A                 |
| ISOLATION                             | Galvanic isolation                 | yes                                                                                                                                                                                                                                                                                                                                                                                                                                      |                         |                      |
| EFFICIENCY                            | Inverter peak efficiency           | > 95%                                                                                                                                                                                                                                                                                                                                                                                                                                    |                         |                      |
| PROTECTION                            |                                    | Over current, over load, short circuit, over temperature, over voltage, under voltage                                                                                                                                                                                                                                                                                                                                                    |                         |                      |
| FEATURES                              | Battery temperature sensor         | option                                                                                                                                                                                                                                                                                                                                                                                                                                   |                         |                      |
|                                       | External DC interface              | DC-CT (option)                                                                                                                                                                                                                                                                                                                                                                                                                           |                         |                      |
|                                       | Manual bypass selector switch      | yes                                                                                                                                                                                                                                                                                                                                                                                                                                      |                         |                      |
| INDICATOR                             | LED                                | Stand by/Run, AC, Full battery/Low battery, Alarm                                                                                                                                                                                                                                                                                                                                                                                        |                         |                      |
|                                       | LCD display                        | Inverter (voltage, current, frequency, power, reactive power), Load (voltage, frequency), Battery (voltage, current, state of charge (%)), Equalization charge date, Battery temperature (option), Today AC inverter energy (input / output), Today DC inverter energy (input / output), Accumulated AC inverter energy (input / output), Accumulated DC inverter energy (input / output), System status, Time, Date, Data and Event log |                         |                      |
| AUDIBLE ALARM                         | Buzzer                             | Low battery, inverter fault, overload, short circuit, over temperature                                                                                                                                                                                                                                                                                                                                                                   |                         |                      |
| COOLING                               |                                    | Automatic cooling fan                                                                                                                                                                                                                                                                                                                                                                                                                    |                         |                      |
| ENVIRONMENT                           | Temperature                        | 0 - 45°C                                                                                                                                                                                                                                                                                                                                                                                                                                 |                         |                      |
|                                       | Relative humidity                  | 0 - 95 % (Non - condensing)                                                                                                                                                                                                                                                                                                                                                                                                              |                         |                      |
| DESIGN                                | Standard                           | AS/NZ 3100:2002, IEC 61683 (for efficiency test)                                                                                                                                                                                                                                                                                                                                                                                         |                         |                      |
| REGULATION                            | Enclosure                          | IP54                                                                                                                                                                                                                                                                                                                                                                                                                                     |                         |                      |
| DIMENSION                             | W x H x D in cm.                   | 53.9 x 72.3 x 34                                                                                                                                                                                                                                                                                                                                                                                                                         | 60 x 86.5 x 40          |                      |
| WEIGHT                                | Approximate in kg                  | 70 kg                                                                                                                                                                                                                                                                                                                                                                                                                                    | 75 kg                   | 85 kg                |

Continuous product development is our commitment. In that manner, the above specifications may be changed without prior notice.

Authorized Distributor

LEO ELECTRONICS CO.,LTD.

27, 29 Soi Bangna-Trad Rd 34, Bangna Tai, Bangna, Bangkok 10260 THAILAND  
Tel. 0-2746-9500 Fax. 0-2746-8712 e-mail : RNE@leonics.com

▪ www.leonics.com ▪

Authorized Dealer