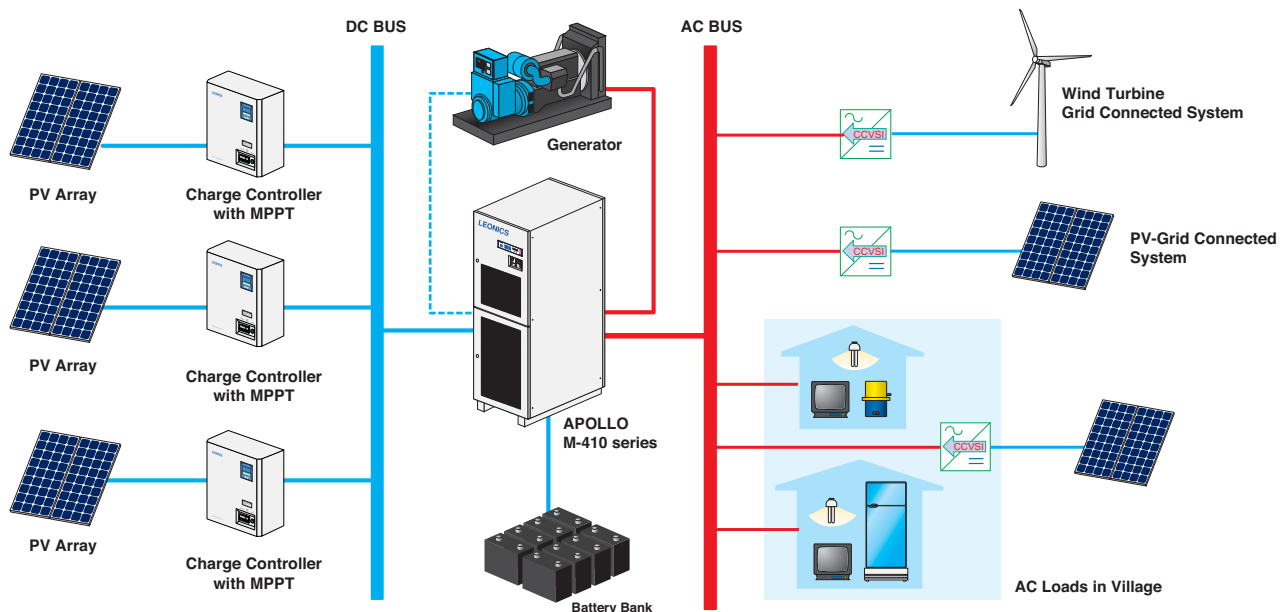


APOLLO M-410



SINGLE PHASE BIDIRECTIONAL DUAL MODE HYBRID INVERTER FOR MINI-GRID SYSTEM

- Pure sine wave power output
- Single phase configuration
- Low harmonic distortion (less than 4%)
- High efficiency more than 94%
- Automatic / Manual generator control
- DC external charge control
- Battery temperature compensation (option)
- Dual control, bi-directional inverter operate in two modes; VCVSI –Voltage Control Voltage Source Inverter and CCVSI – Current Control Voltage Source Inverter.
- Capable to use multiple renewable energy source in both DC coupling and AC coupling such as solar panel, wind turbine generator and micro hydro generator
- Seperate DC Bus for multiple source charging
- Monitor energy available from the renewable energy (DC) sources and minimize the charging current from the diesel generator.
- Intelligent Battery Management for charging and discharging
- Automatic battery equalization (option) to prevent battery capacity loss and to prolong battery life.
- ISO 9001:2008 and ISO 14001 certified factory



The APOLLO M-410 series is a single phase bidirectional dual mode inverter capable of functioning as a main supply source as well as providing automatic control and management of a generator and a battery bank. The inverter features very high efficiency in both charging and inverting modes with maximum efficiency of 94%

APOLLO M-410 series SINGLE PHASE BIDIRECTIONAL DUAL MODE HYBRID INVERTER FOR MINI-GRID SYSTEM

SPECIFICATIONS

MODEL		M-412E	M-413E	M-414F	M-415F	M-416F	M-417G	M-418G	
RATED POWER		5 kW	7.5 kW	10 kW	15 kW	20 kW	25 kW	30 kW	
BATTERY	Nominal voltage	120 Vdc			240 Vdc			360 Vdc	
	Maximum charging current	28 A	42 A	28 A	42 A	56 A	46 A	56 A	
EXTERNAL DC CHARGER	Nominal Voltage	120 Vdc			240 Vdc			360 Vdc	
	Maximum current	40 A	60 A	40 A	60 A	60 A	60 A	80 A	
	DC charge control	Relay dry contact signal 5A (for over charge protection)							
AC INPUT FROM GENERATOR	Recommended generator power rating	> 10 kW	> 15kW	> 20 kW	> 30 kW	> 40 kW	> 50 kW	> 60 kW	
	Voltage	220 / 230 / 240 Vac Vrms ± 10%							
	Phase	Single phase							
	Frequency	50 / 60 Hz ± 3 Hz							
	Automatic start/stop	Relay dry contact 10 A (ACC on and start pluse)							
AC OUTPUT	Voltage	220 / 230 / 240 Vac Vrms							
	Voltage regulation	± 1% (steady load), < 4% at 100% step load within 0.1 sec.							
	Phase	Single phase							
	Frequency	50 / 60 Hz ± 0.1% (auto sensing)							
	Wave form	Pure sine wave							
	Total harmonic distortion	total < 4%, each < 3 %							
	Maximum surge current	200%							
ISOLATION	Galvanic isolation	yes							
EFFICIENCY	Inverter peak efficiency	92%						94%	
PROTECTION		Over current, Over load, Short circuit, Over temperature, Over voltage, Under voltage							
INDICATOR	LED on display	External DC Charging, Bypass Status, Generator Running, Generator Failure, Standby / Run, Inverter, Charging, Load on Inverter, Overload, Low Battery, High temperature, Fault							
	LED on control panel	Battery Correct Polarity, Battery Reverse Polarity, Generator MC Status, Inverter MC Status, Float Charge, Boost Charge, Equalize Charge							
	LCD display	Inverter voltage, Inverter current, Inverter frequency, Inverter power, Generator voltage, Generator current, Generator frequency, Generator power, Load voltage, Load current, Load power, Battery voltage, Battery current, Battery state of charge(%), Internal charging current, External DC charging current, Battery temperature (option), Equalizatiton Date, Today Energy (Inverter, Generator, Battery), Accumulated energy (Inverter, Generator, Battery), System status, Time, Date, Heat sink temperature, Data Log							
AUDIABLE ALARM		Low battery, Inverter fault, High temperature							
COOLING		Automatic cooling fan							
ENVIRONMENT	Temperature	0 - 45°C							
	Relative humidity	0 - 95 % (Non - condensing)							
DESIGN STANDARD		AS/NZ 3100:2002							
DIMENSION	W x H x D (approx. in cm.)	60 x 86.5 x 46.3			60 x 148 x 105		60 x 188 x 100		90 x 205 x 100
WEIGHT	Approximate in kg.	137	270	273	275	510	600	690	

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, Bangkok 10260 THAILAND
Tel. 0-2746-9500, 0-27468708 Fax. 0-2746-8712 e-mail : RNE@leonics.com

▪ www.leonics.com ▪

Authorized Dealer