

# 4KW 1P HYBRID SOLAR POWER TRAINER

## MODEL: RE-103-S-GC4K

The 4KW 1P Hybrid Solar Power Trainer is an advanced educational system designed for in-depth training in off-grid solar energy solutions. Featuring a 4-kilowatt solar panel array, battery storage, and power management components, this trainer allows users to gain hands-on experience in solar energy generation, storage, and system integration. It includes monitoring tools for performance analysis and energy management, making it ideal for students, educators, and professionals seeking to understand off-grid solar technologies and their practical applications in renewable energy systems.

### Able to learn : -

- Characteristic of Solar PV module
- Understand the solar off grid system diagram and connection
- Analysis, size and installation of solar PV module
- Temperature, tilt angle and isolation effect on solar power output
- Use of hybrid solar inverter
- PV power output depend on the angle of incidence of the light source
- Simulation power output of a solar PV module depending on the position of the sun
- Series & parallel connection of solar PV module
- DC to AC conversion by inverter
- Integration of outdoor solar module
- Use of Diesel Generator
- Automatic bypass switch
- Battery management

### Required Item : -

• 4KW PV free standing training structure	• 10KVA Diesel Generator
• Battery rack	• 4mm DC cable
• Bi-directional energy meter	• Mc4 connector
• DC combiner set	• Mc4 tool kit
• AC combiner set	• Irradiance meter
• Hybrid Solar Inverter	• ACDC Multimeter
• 48V 200Ah SLA battery bank	• Computer laptop
• PV IV Curve Tracer	



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## Technical Specification :-

No	Component	Qty
1	500W Solar Module	8
2	Free Standing Solar Structure	1
3	Hybrid Solar Inverter	1
4	250A 48V Battery Bank	1
5	Battery storage structure	1
6	10KVA Diesel Generator	1
7	DC Combiner Box	1
8	AC Combiner Box	1
9	Bi-directional Energy Meter	1

No	Component	Qty
10	Irradiance Measurement Sensor	1
11	4mm Solar DC Cable (1M)	200
12	MC4 Connector	100
13	Solar Tool Kit	1
14	Automatic Transfer Switch	1
15	AC DC Multimeter	1
16	PV IV Curve Tracer	1
17	Earth Chamber	2