DUAK
Smart Energy Solution

Hybrid Solar Inverters

2.3 kW – 12.3 kW

On-Grid | Off-Grid | Hybrid

Intelligent Power. Reliable Energy.



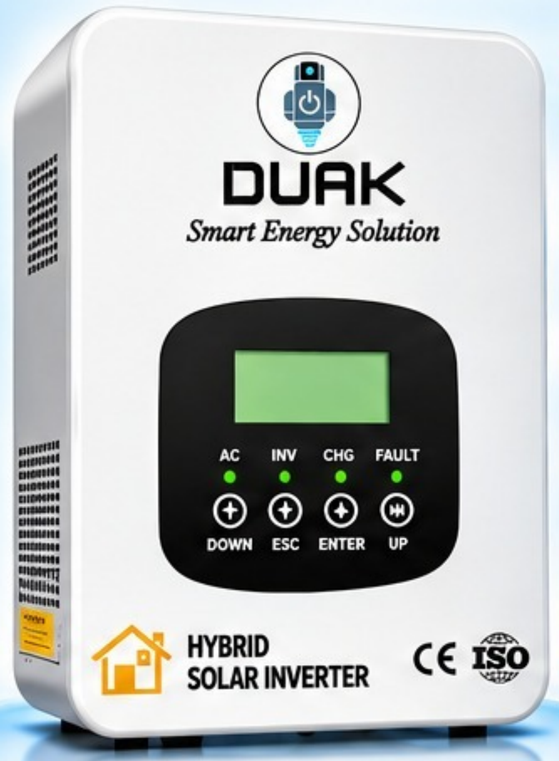
HFP23224	HFP33224	HFP43224	HFP50248	HFP63248	HFP83248	HFP103248	HFP123248
2.3 kW	3.3 kW	4.3 kW	5.0 kW	6.3 kW	8.3 kW	10.3 kW	12.3 kW

Solar Power Utilization | **Battery Backup** | **Grid Support** | **Uninterrupted Power**

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Hybrid Solar Inverter

KEY FEATURES | WORKING PRINCIPLE | APPLICATIONS | BENEFITS



Key Features

- **Built-in MPPT** — High Efficiency (≥99.9%)
- **Pure Sine Wave** — Stable & Safe Power Output
- **High Conversion Efficiency** — Up to ≥97%
- **Flexible Battery Support** — Lithium / Lead Acid
- **Communication Interface** — RS485 / Monitoring
- **Hybrid Operation** — Solar + Battery + Grid
- **Intelligent Charging** — (Solar + Grid + Battery)
- **Multiple Protections** — Overload, Short Circuit, Over/Under Voltage, Over Temperature
- **LCD Display** — Real-time Status & Settings
- **Compact & Wall Mount Design** — Easy Installation & Low Maintenance

Hybrid Working Principle



Applications



Residential Homes



Commercial Establishments

Benefits of DUAK Hybrid Inverter

- Lower Electricity Cost
- Reliable Power Backup
- Safe & Long Lasting
- Higher Return on Investment
- Easy Installation & Maintenance



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Hybrid Solar Inverter

Technical Specifications (2.3 kW – 5.0 kW)



Built-in MPPT | Pure Sine Wave | On-Grid / Off-Grid / Hybrid | 24 V / 48 V Battery Support | LCD Display | RS485 Monitoring | Multiple Protections

Category	Parameters	HFP23224 (2.3 kW)	HFP33224 (3.3 kW)	HFP43224 (4.3 kW)	HFP50248 (5.0 kW)
PV INPUT (DC)	Maximum PV Input Power	3,000 W	5,000 W	5,000 W	6,000 W
	MPPT Voltage Range	120 – 450 V DC	120 – 450 V DC	120 – 450 V DC	120 – 450 V DC
	Rated PV Input Voltage	360 V DC	360 V DC	360 V DC	360 V DC
	Maximum PV Input Voltage (Voc)	500 V DC	500 V DC	500 V DC	500 V DC
	Maximum PV Input Current	10 A	15 A	15 A	15 A
	Number of MPPT	1	1	1	1
BATTERY	Battery Type	Lithium / Lead Acid	Lithium / Lead Acid	Lithium / Lead Acid	Lithium / Lead Acid
	Rated Battery Voltage	24 V DC	24 V DC	24 V DC	48 V DC
	Battery Voltage Range	21 – 30 V DC	21 – 30 V DC	21 – 30 V DC	42 – 60 V DC
	Maximum PV Charging Current	80 A	100 A	120 A	100 A
	Maximum AC Charging Current	60 A	80 A	100 A	100 A
	Maximum Charging Current (PV + AC)	120 A	160 A	180 A	180 A
ON-GRID OUTPUT (AC)	Rated Output Power	2,300 W	3,300 W	4,300 W	5,000 W
	Output Voltage	230 V AC, Single Phase	230 V AC, Single Phase	230 V AC, Single Phase	230 V AC, Single Phase
	Grid Voltage Range	170 – 280 V AC	170 – 280 V AC	170 – 280 V AC	170 – 280 V AC
	Grid Frequency	50 Hz	50 Hz	50 Hz	50 Hz
	Maximum Output Current	10 A	15 A	20 A	22 A
	Power Factor	≥ 0.99 (Adjustable)	≥ 0.99 (Adjustable)	≥ 0.99 (Adjustable)	≥ 0.99 (Adjustable)
OFF-GRID OUTPUT (AC)	Output Voltage	230 V AC, Single Phase	230 V AC, Single Phase	230 V AC, Single Phase	230 V AC, Single Phase
	Output Frequency	50 Hz	50 Hz	50 Hz	50 Hz
	Output Waveform	Pure Sine Wave	Pure Sine Wave	Pure Sine Wave	Pure Sine Wave
	Voltage Accuracy	±5%	±5%	±5%	±5%
	Rated Output Power	2,300 W	3,300 W	4,300 W	5,000 W
HYBRID (AC INPUT)	AC Input Voltage	170 – 280 V AC	170 – 280 V AC	170 – 280 V AC	170 – 280 V AC
	Input Frequency	50 Hz	50 Hz	50 Hz	50 Hz
	Transfer Time	≤ 10 ms	≤ 10 ms	≤ 10 ms	≤ 10 ms
	Operating Mode	On-Grid / Off-Grid / Hybrid	On-Grid / Off-Grid / Hybrid	On-Grid / Off-Grid / Hybrid	On-Grid / Off-Grid / Hybrid
PERFORMANCE	Conversion Efficiency	≥ 97%	≥ 97%	≥ 97%	≥ 97%
	MPPT Efficiency	≥ 99.9%	≥ 99.9%	≥ 99.9%	≥ 99.9%
PROTECTION	Low Voltage Alarm & Protection | Overload Protection | Short Circuit Protection | Over/Under Voltage Protection Over Temperature Protection (≥ 90°C) | Anti-Islanding Protection (≤ 2 s)				
GENERAL	Display	LCD (Real-time Monitoring)			
	Communication	RS485			
	Cooling	Intelligent Fan Cooling			
	Protection Class	IP20 (Indoor)			
	Installation	Wall Mount			
PHYSICAL	Product Dimensions (W × H × D)	360 × 465 × 130 mm	360 × 465 × 130 mm	360 × 465 × 130 mm	360 × 465 × 130 mm
	Package Dimensions (W × H × D)	455 × 555 × 210 mm	455 × 555 × 210 mm	455 × 555 × 210 mm	455 × 555 × 210 mm
	Net Weight	11.5 kg	12.5 kg	13.5 kg	14.5 kg
	Gross Weight	13.0 kg	14.0 kg	15.0 kg	16.0 kg

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Technical Specifications (6.3 kW – 12.3 kW)



Built-in MPPT | Pure Sine Wave | On-Grid / Off-Grid / Hybrid | 48 V Battery Support | LCD Display | RS485 Monitoring | Multiple Protections

Category	Parameters	HFP63248 (6.3 kW)	HFP83248 (8.3 kW)	HFP103248 (10.3 kW)	HFP123248 (12.3 kW)
PV INPUT (DC)	Maximum PV Input Power	7,500 W	10,000 W	12,500 W	15,000 W
	MPPT Voltage Range	120 – 450 V DC	120 – 450 V DC	120 – 450 V DC	120 – 450 V DC
	Rated PV Input Voltage	360 V DC	360 V DC	360 V DC	360 V DC
	Maximum PV Input Voltage (Voc)	500 V DC	500 V DC	500 V DC	500 V DC
	Maximum PV Input Current	18 A	24 A	28 A	30 A
	Number of MPPT	2	2	2	2
BATTERY	Battery Type	Lithium / Lead Acid	Lithium / Lead Acid	Lithium / Lead Acid	Lithium / Lead Acid
	Rated Battery Voltage	48 V DC	48 V DC	48 V DC	48 V DC
	Battery Voltage Range	42 – 60 V DC	42 – 60 V DC	42 – 60 V DC	42 – 60 V DC
	Maximum PV Charging Current	120 A	160 A	200 A	240 A
	Maximum AC Charging Current	120 A	160 A	200 A	240 A
	Maximum Charging Current (PV + AC)	240 A	320 A	400 A	480 A
ON-GRID OUTPUT (AC)	Rated Output Power	6,300 W	8,300 W	10,300 W	12,300 W
	Output Voltage	230 V AC, Single Phase	230 V AC, Single Phase	230 V AC, Single Phase	230 V AC, Single Phase
	Grid Voltage Range	170 – 280 V AC	170 – 280 V AC	170 – 280 V AC	170 – 280 V AC
	Grid Frequency	50 Hz	50 Hz	50 Hz	50 Hz
	Maximum Output Current	27 A	36 A	45 A	54 A
	Power Factor	≥ 0.99 (Adjustable)	≥ 0.99 (Adjustable)	≥ 0.99 (Adjustable)	≥ 0.99 (Adjustable)
OFF-GRID OUTPUT (AC)	Output Voltage	230 V AC, Single Phase	230 V AC, Single Phase	230 V AC, Single Phase	230 V AC, Single Phase
	Output Frequency	50 Hz	50 Hz	50 Hz	50 Hz
	Output Waveform	Pure Sine Wave	Pure Sine Wave	Pure Sine Wave	Pure Sine Wave
	Voltage Accuracy	±5%	±5%	±5%	±5%
	Rated Output Power	6,300 W	8,300 W	10,300 W	12,300 W
HYBRID (AC INPUT)	AC Input Voltage	170 – 280 V AC	170 – 280 V AC	170 – 280 V AC	170 – 280 V AC
	Input Frequency	50 Hz	50 Hz	50 Hz	50 Hz
	Transfer Time	≤ 10 ms	≤ 10 ms	≤ 10 ms	≤ 10 ms
	Operating Mode	On-Grid / Off-Grid / Hybrid	On-Grid / Off-Grid / Hybrid	On-Grid / Off-Grid / Hybrid	On-Grid / Off-Grid / Hybrid
PERFORMANCE	Conversion Efficiency	≥ 97%	≥ 97%	≥ 97%	≥ 97%
	MPPT Efficiency	≥ 99.9%	≥ 99.9%	≥ 99.9%	≥ 99.9%
PROTECTION	Low Voltage Alarm & Protection | Overload Protection | Short Circuit Protection | Over/Under Voltage Protection Over Temperature Protection (≥ 90°C) | Anti-Islanding Protection (≤ 2 s)				
GENERAL	Display	LCD (Real-time Monitoring)			
	Communication	RS485			
	Cooling	Intelligent Fan Cooling			
	Protection Class	IP20 (Indoor)			
	Installation	Wall Mount			
PHYSICAL	Product Dimensions (W × H × D)	440 × 560 × 180 mm	440 × 560 × 180 mm	440 × 560 × 180 mm	440 × 560 × 180 mm
	Package Dimensions (W × H × D)	560 × 660 × 280 mm	560 × 660 × 280 mm	560 × 660 × 280 mm	560 × 660 × 280 mm
	Net Weight	20.5 kg	22.5 kg	25.5 kg	28.5 kg
	Gross Weight	23.5 kg	25.5 kg	28.5 kg	31.5 kg

DUAK®
Smart Energy Solution

Hybrid Solar Inverter

RELIABLE | EFFICIENT | SMART ENERGY SOLUTION



Powering Homes & Businesses with Smart, Reliable & Clean Solar Energy



- High Efficiency (≥ 97%)
- Safe & Reliable Operation
- Remote Monitoring (RS485)
- Low Maintenance
- Multiple Protections
- Made in Rajasthan (India)

About DUAK Energy Pvt. Ltd.

DUAK Energy Pvt. Ltd. is a Rajasthan-based renewable energy company manufacturing high-performance Solar Products, Lithium Batteries and Micro Inverters. We deliver reliable, efficient and sustainable energy solutions for residential, commercial and industrial sectors, contributing to a cleaner and greener India.

Our Product Range

- Solar Lithium Battery
- EV Lithium Battery
- Micro Inverters
- Solar Products
- Solar Street Lights
- Energy Storage Systems (ESS)

DUAK Energy Pvt. Ltd.
(A Rajasthan Based Renewable Energy Company)

Contact Us

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