

# ENERGY STORAGE SYSTEM

INVERTER  
AND BATTERY ACCUMULATION



# TCL

## ALL IN ONE SINGLE PHASE

BEST FOR  
RESIDENTIAL



### SAFE AND RELIABLE

- CATL LFP cells,  
long cycle life with proven performance
- Module, pack and system,  
3-level safety protection
- IP65 certification



### SIMPLE AND FLEXIBLE

- Modular battery design, combining up to 40.96kwh  
of storage(5.12kwh per battery)
- Support diesel generator control (DI/DO)
- Support 200% PV input, on&off grid parallel



### OUTAGE BACK UP

- Emergency energy use in the  
event of a grid failure



### INTELLIGENT MANAGEMENT

- Visualize energy flow
- Monitor and optimize energy use
- Easy to setup and connect



Battery Model		TCL-RL-B5K	
<b>Physical</b>			
Battery type	LFP (LiFePO4)	<b>Operation</b>	
Weight	54KG	Max. Charge/Discharge Current	50A/80A
Dimension (W x H x D)	540*490*240mm	Rated DC power	4096W
IP Protection	IP65	Max. Charge/Discharge Power	2825W/4096W
Warranty	5 Year Product Warranty, 10 Year Performance Warranty	Operating Temperature Range	0 to 50°C charging -10 to 50°C discharging
<b>Electrical</b>		Humidity	0-95% (No condensation)
Energy Capacity	5.12kWh	<b>BMS</b>	
Usable Capacity	4.6kWh	Modules Connection	Max. 4
Depth of Discharge (DoD)	90%	Capacity	100-400Ah
Nominal Voltage	51.2V	Power Consumption	<2W
DC Circuit Breaker	125A	Communication	CAN & RS485
Operating Voltage Range	44.8-56.5V	Monitoring Parameters	System voltage, current, cell voltage, cell temperature, PCBA temperature measurement
Internal Resistance	<20mΩ	<b>Certificate</b>	
Cycle Life	10000cycle	Safety(Cell)	Pack: IEC/EN 62619:UN38.3 Cell: IEC/EN 62619:UN38.3;UL 1973

Hybrid Inverter Model	TCL-RSL-3.68K	TCL-RSL-5K	TCL-RSL-6K
<b>PV String Input</b>			
Max. DC Voltage	580V	580V	580V
Nominal Voltage	400V	400V	400V
MPPT Voltage Range	80V-560V	80V-560V	80V-560V
Start Voltage	150V	150V	150V
Number of MPPT	2	2	2
Strings Per MPPT	1	1	1
Max. Input Current Per MPPT	15A	15A	15A
Max. Short-circuit Current Per MPPT	18A	18A	18A
<b>AC Output (Grid)</b>			
Nominal AC Output Power	3680W	5000W	6000W
Max. AC Apparent Power	7360VA(on grid)	7360VA(on grid)	7360VA(on grid)
Max. AC Output Power	3680W	5000W <sup>1</sup>	6000W
Nominal AC Voltage	230Vac	230Vac	230Vac
AC Grid Frequency Range	50 / 60Hz ± 5Hz	50 / 60Hz ± 5Hz	50 / 60Hz ± 5Hz
Max. Output Current	16A	22A <sup>2</sup>	25A
Max. Input Current	32A	32A	32A
Power Factor (cosφ)	0.8leading-0.8lagging	0.8leading-0.8lagging	0.8leading-0.8lagging
THDi	<3%	<3%	<3%
<b>Battery Input</b>			
Battery Type	LFP (LiFePO4)	LFP (LiFePO4)	LFP (LiFePO4)
Nominal Battery Voltage	48V	48V	48V
Charging Voltage Range	40-60V	40-60V	40-60V
Max. Charging Current	50A	100A	100A
Max. Discharging Current	80A	100A	100A
Battery Capacity	100-400Ah	100-400Ah	100-400Ah
Charging Strategy for Li-ion Battery	Depend on the BMS	Depend on the BMS	Depend on the BMS
<b>AC Output (Backup)</b>			
Max. Output Apparent Power	4000VA	5000VA	5000VA
Peak Output Apparent Power	6900VA 10sec	6900VA 10sec	6900VA 10sec
Max. Output Current	16A	20A	20A
Nominal Output Voltage	230V	230V	230V
Nominal Output Frequency	50/60Hz	50/60Hz	50/60Hz
Output THDv (@Linear Load)	<3% (Linear Load)	<3% (Linear Load)	<3% (Linear Load)
<b>Efficiency</b>			
Max. PV Efficiency	97.6%	97.6%	97.6%
Euro. PV Efficiency	97.0%	97.0%	97.0%
<b>Protection</b>			
DC Switch	Bipolar DC Switch (125A/Pole)	Bipolar DC Switch (125A/Pole)	Bipolar DC Switch (125A/Pole)
Anti-islanding Protection	Yes	Yes	Yes
Output Over Current	Yes	Yes	Yes
DC Reverse Polarity Protection	Yes	Yes	Yes
String Fault Detection	Yes	Yes	Yes
AC/DC Surge Protection	DC Type II;AC Type III	DC Type II;AC Type III	DC Type II;AC Type III
Insulation Detection	Yes	Yes	Yes
AC Short Circuit Protection	Yes	Yes	Yes
<b>General Specifications</b>			
Dimensions W x H x D	540*590*240mm		
Weight	32kg		
Operating Temperature Range	-25°C~+60°C		
Noise (dB)	<25		
Cooling Type	Natural Convection		
Max. Operation Altitude	2000m		
Operation Humidity	0-95% (No Condensation)		
IP Class	IP65		
Topology	Battery Isolation		
Communication	RS485/CAN2.0/WIFI/4G		
Display	LCD/APP		
Certification & Standard	IEC/EN 62109-1&2;IEC/EN61000-6-1;IEC/EN61000-6-2;EN61000-6-3; IEC/EN61000-6-4;IEC/EN61000-3-11; EN61000-3-12;IEC60529;IEC 60068;IEC61683;IEC62116;IEC61727;EN50549-1; AS 4777.2;NRS 097;VDE-AR-N-4105;CEI0-21;G98;G99;C10/C11		

\*1. Nominal AC output power is 4999W for Australia and 4600W for Germany and South Africa.

\*2. Maximum output current is 21.7A for Australia and 20A for Germany and South Africa.

# TCL

## ALL IN ONE THREE PHASE

BEST FOR  
RESIDENTIAL



### SAFE AND RELIABLE

- CATL LFP cells, long cycle life with proven performance
- Module, pack and system, 3-level safety protection
- IP65 certification



### HIGH EFFICIENCY

- Modular battery design, combining up to 40.96kwh of storage(5.12kwh per battery)
- Support diesel generator control (DI/DO)
- Support 200% PV input, on&off grid parallel



### SIMPLE AND FLEXIBLE

- AC and DC coupling, working for new installation or retrofit
- Compact, easy to install



### OUTAGE BACK UP

- Emergency energy use in the event of a grid failure



### INTELLIGENT MANAGEMENT

- Visualize energy flow
- Monitor and optimize energy use
- Easy to setup and connect

**Battery Model** **TCL-RL-B5K**

<b>Physical</b>	
Battery type	LFP (LiFePO4)
Weight	54kg
Dimension (W x H x D)	540 x 490 x 240mm
IP Protection	IP65
Warranty	5 Years Product Warranty, 10 Years Performance Warranty
<b>Electrical</b>	
Energy Capacity	5.12kWh
Usable Capacity	4.6kWh
Depth of Discharge (DoD)	90%
Nominal Voltage	51.2V
DC Circuit Breaker	125A
Operating Voltage Range	44.8-56.5V
Internal Resistance	<20mΩ
Cycle Life	10000 cycles

<b>Operation</b>	
Max. Charge/Discharge Current	50A/80A
Rated DC power	4096W
Max. Charge/Discharge Power	2825W/4096W
Operating Temperature Range	-10°C to +50°C charging -10°C to +50°C discharging
Humidity	0-95% (No condensation)
<b>BMS</b>	
Modules Connection	Max.8,in parallel
Capacity	200/400/600/800Ah
Power Consumption	<2W
Communication	CAN & RS485
Monitoring Parameters	System voltage, current, cell voltage, cell temperature, PCBA temperature measurement
<b>Certificate</b>	
Safety(Cell)	Pack: IEC/EN 62619;UN38.3 Cell: IEC/EN 62619;UN38.3;UL1973

**Hybrid Inverter Model** **TCL-RTL-8K** **TCL-RTL-10K** **TCL-RTL-12K**

<b>PV String Input</b>	<b>TCL-RTL-8K</b>	<b>TCL-RTL-10K</b>	<b>TCL-RTL-12K</b>
Max. Continuous PV Input Power	16kW	20kW	20kW
Max. DC Voltage		1100V	
Nominal Voltage		720V	
MPPT Voltage Range		140V-1000V	
MPPT Voltage Range (Full Load)	380V-850V	420V-850V	480V-850V
Start Voltage <sup>1</sup>		200V	
Number of MPPT		2	
Strings Per MPPT		1	
Max. Input Current Per MPPT		15A	
Max. Short-circuit Current Per MPPT		20A	
<b>AC Output (Grid)</b>			
Nominal AC Output Power	8kW	10kW	12kW
Max. AC Apparent Power	8.8kVA(on grid)	11kVA(on grid)	13.2kVA(on grid)
Nominal AC Voltage		400Vac	
AC Grid Frequency Range		50 / 60Hz ± 5Hz	
Nominal Output Current	11.6A	14.5A	17.4A
Max. Output Current	12.8A	16A	19.2A
Power Factor (cos φ)		0.8leading-0.8lagging *	
THDi		<3%	
<b>Battery Input</b>			
Battery Type		LFP (LiFePO4)	
Nominal Battery Voltage	51.2V	51.2V	51.2V
Charging Voltage Range		44-58V	
Max. Charging Current	160A	160A	160A
Max. Discharging Current	160A	200A	200A
Battery Capacity		200/400/600/800Ah	
<b>AC Output (Backup)</b>			
Nominal AC Output Power	7.36kW	9.2kW	9.2kW
Max. AC Output Power	8kVA	10kVA	10kVA
Nominal Output Current	10.7A	13.3A	13.3A
Max. Output Current	11.6A	14.5A	14.5A
Nominal Output Voltage		400V	
Nominal Output Frequency		50/60Hz	
Output THDv (@Linear Load)		<2% ( Linear Load )	
<b>Efficiency</b>			
Max. PV Efficiency		97.60%	
Euro. PV Efficiency		97.00%	
<b>Protection</b>			
Anti-islanding Protection		Yes	
Output Over Current Protection		Yes	
DC Reverse Polarity Protection		Yes	
String Fault Detection		Yes	
AC/DC Surge Protection		DC Type II;AC Type III	
Insulation Detection		Yes	
AC Short Circuit Protection		Yes	
<b>General Specifications</b>			
Dimensions W x H x D		540*980*240mm	
Weight		49kg	
Operating Temperature Range		-25°C~+60°C	
Cooling Type		Natural Convection	
Max. Operation Altitude		2000m	
Operation Humidity		0-95% (No Condensation)	
IP Class		IP65	
Topology		Battery Isolation	
Communication		RS485/CAN2.0/WIFI/4G	
Display		LCD/APP	

\* 0.95leading-0.95lagging for Germany. 1. Minimum voltage for inverter to start power output.

**TCL**

**THREE PHASE  
HIGH-VOLTAGE**

BEST FOR  
RESIDENTIAL





## SAFETY

- Overheating protection
- IP65 certification



## HIGH EFFICIENCY

- Modular battery design
- Up to 4 inverters in parallel



## EASY TO INSTALL

- Compact design
- Easy to setup



## FLEXIBLE

- Hybrid system
- AC and DC coupling



## INTELLIGENT MANAGEMENT

- Visualize energy flow
- Monitor and optimize energy use
- Easy to setup and connect





Battery Model	TCL-R2-H2	TCL-R2-H3	TCL-R2-H4	TCL-R2-H5	TCL-R2-H6	TCL-R2-H7
---------------	-----------	-----------	-----------	-----------	-----------	-----------

**ELECTRICAL CHARACTERISTICS**

Battery Type	LiFePO4 Prismatic Cell					
Battery Module	1*TCL-R2-B2.8M 1*TCL-R2-B2.8S	1*TCL-R2-B2.8M 2*TCL-R2-B2.8S	1*TCL-R2-B2.8M 3*TCL-R2-B2.8S	1*TCL-R2-B2.8M 4*TCL-R2-B2.8S	1*TCL-R2-B2.8M 5*TCL-R2-B2.8S	1*TCL-R2-B2.8M 6*TCL-R2-B2.8S
Nominal Capacity[Wh]	5760	8640	11520	14400	17280	20160
Nominal Voltage [V]	115.2	172.8	230.4	288	345.6	403.2
Operating Voltage[V]	97.2 ~ 131.4	145.8 ~ 197.1	194.4 ~ 262.8	243 ~ 328.5	291.6 ~ 394.2	340.2 ~ 459.9
Recommend Discharge Current [A]	25					
Max.Charge/Discharge Current [A]	50					
Peak Discharge Current [A]	65 @30sec					
Battery Pack Round-Trip Efficiency [%]	>95					
Depth of discharge [%]	90					
Cycle Life *1	≥6000					
Communication	CAN, RS485					
Display	CS: LED*1, CM: LED*6					
Scalability	Max. 7 Modules in Series					

**OPERATING CONDITIONS**

Installation Location	Outdoor/ Indoor (Stand)
Operating Temperature [°C]*2	Charge: 0°C ~ +55°C Discharge: -10°C ~ +55°C
Storage Temperature [°C]	-20°C ~ +55°C
Cooling method	Natural Convection
Humidity [%]	5 ~ 95 (No Condensing)
Altitude [m]	Max. 2,000

**Mechanical Characteristics**

Dimensions (W*H*D) [mm]	570*350*380	570*470*380	570*590*380	570*710*380	570*830*380	570*950*380
Weight [kg]	67.1	99.5	131.9	164.3	196.7	229.1

**Certificates**

Safety	IEC 62619
EMC	EN IEC 61000-6-1/2/3/4
Transportation	UN38.3
Ingress Protection	IP65

\*1, 25°C, @90% DOD, 0.5C charging/discharging.

\*2, Charge derating will occur between 0°C and +15°C.

Hybrid Inverter Model	TCL-RTH-8K TCL-RTHC-8K	TCL-RTH-10K TCL-RTHC-10K	TCL-RTH-12K
<b>INPUT PV (only for hybrid)</b>			
Max. Input Power [W]	A:8000 B:5000	A:8000 B:5000	A:9000 B:6000
Max. Input Voltage [V]	1000		
Start-up Input Voltage [V]	160		
Rated Input Voltage [V]	720		
MPPT Operating Voltage Range [V]	160 ~ 950		
Max. Input Current [A]	26/14	26/14	26/14
Max. Short-circuit Current [A]	32/16	32/16	32/16
No. of Independent MPP Trackers	2		
No. of Strings per MPP Tracker	2/1	2/1	2/1
<b>BATTERY CONNECTION</b>			
Battery Type	Lithium Battery (LFP)		
Battery Voltage Range [V]	180 ~ 600 [1]		
Max. Charge/Discharge Current [A]	26.0		
Communication Interface	CAN(Communicate with inverter), RS485 (Upgrade BMS)		
<b>AC INPUT AND OUTPUT (GRID)</b>			
Max. AC Input Power [VA]	16000	16000	16000
Max. AC Input Current (per phase) [A]	24.2	24.2	24.2
Rated Output Power [W]	8000	10000	12000
Max. Output Apparent Power [VA]	8800	11000	13200
Rated Output Current (per phase) [A]	11.6	14.5	17.4
Max. Output Current (per phase) [A]	14.1	17.6	21.2
Rated Grid Voltage [V]	3L/N/PE 380/220; 400/230; 415/240		
Rated Grid Frequency [Hz]	50/60		
Power Factor	1 ( Adjustable from 0.8 leading to 0.8 lagging )		
THDI [%]	<3 @Rated Power		
<b>EPS OUTPUT</b>			
Max. Output Apparent Power [VA]	8000	10000	12000
Peak Output Apparent Power (60s) [VA]	14000	15000	15000
Max. Current (per phase) [A]	11.6	14.5	17.4
Rated Output Voltage [V]	3L/N/PE 400/230		
Rated Output Frequency [Hz]	50/60		
Power Factor	1 ( Adjustable from 0.8 leading to 0.8 lagging )		
THDv ( linear Load) [%]	<3 @Rated Power		
Switch time [ms]	<20		
<b>EFFICIENCY</b>			
Max. Efficiency [%]	98.00		
Euro Efficiency [%]	97.30		
Max. Battery Charge Efficiency (PV to BAT) (@full load) [%]	98.50		
Max. Battery Discharge Efficiency (BAT to AC) (@full load) [%]	97.00		
<b>PROTECTION</b>			
Insulation Monitoring	YES		
Residual Current Monitoring	YES		
DC Reverse Polarity Protection	YES		
Anti-islanding Protection	YES		
AC Short-circuit Protection	YES		
AC Overcurrent/Overvoltage Protection	YES		
DC Switch	YES		
SPD	DC: Type II, /AC: Type II		
AFCI	Optional		
<b>GENERAL DATA</b>			
Dimensions (WxHxD) [mm]	449 x 519 x 198		
Weight [kg]	28		
Installation	Wall-Mounted		
Topology	Transformerless		
Cooling Method	Natural		FAN Cooling
Noise Emission [db]	35		45
Max. Operating Altitude [m]	2000		
Operating Temperature Range [°C ]	-25 ~ 60		
Humidity ( No Condensation ) [%]	0 ~ 100		
Protection Degree	IP65		
Standby consumption [W ]	< 15		
Monitoring Module	WiFi, LAN, 4G, GPRS (Optional)		
Communication	2*RS485, DRM, Ripple Control, USB		
Display	LCD, App, Website		
<b>STANDARD COMPLIANCE (MORE AVAILABLE UPON REQUEST)</b>			
Safety	EN 62109-1, EN 62109-2, EN 62477-1		
EMC	IEC 61000-6-1, IEC 61000-6-3		
Grid Regulation	EN50549-1, C10/11, VDE-AR-N 4105, G98, CEI 0-21		

\* More technical characteristics are available on demand and customized.

[1] Minimum operation battery voltage is 150V.