

HYBO CABINET INVERTERS

INDOOR FAMILY

Innovative Hybrid Inverters for BESS Applications On and Off-Grid

100 kW – 500 kW

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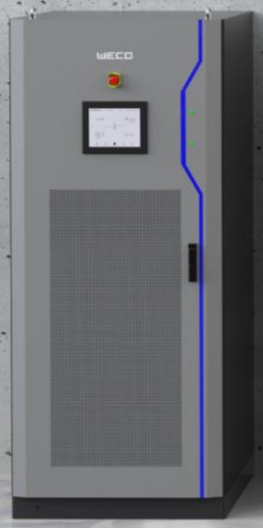
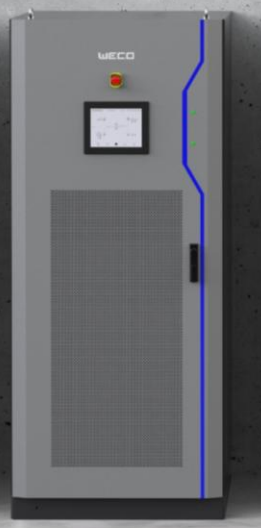
TL x10 SCALABILITY

HYBO TL PCS
Single Door



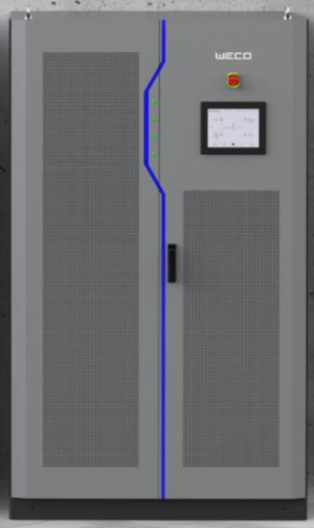
Scalable Up To :
3 MW PCS

HYBO TL HYBRID
Single Door



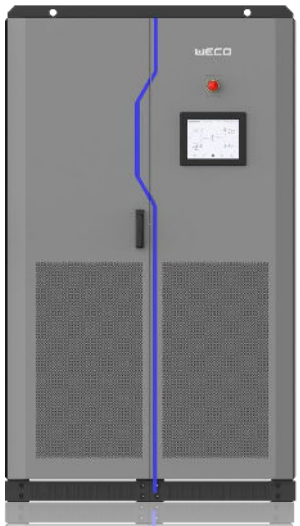
Scalable Up To:
1.2 MW PCS / 1.2MW PV
1.2 MW PCS / 1.8 MW PV

HYBO TL HYBRID
Dual Door



Scalable Up To:
2.4 MW PV / 2.4 MW PCS

CS~TS x4 SCALABILITY



HYBO TS PCS
Dual Door

Scalable Up To:
2.4 MW PCS



HYBO CS HYBRID
Dual Door

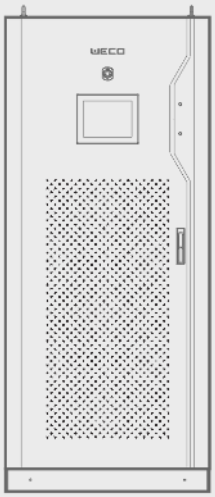
Scalable Up To:
2 MW PCS / 2.9 MW PV

HYBO TL PCS

TRANSFORMERLESS PCS INVERTER

	Specifications	120	180	240	300
BATTERY	Min. Battery Voltage	680 V			
	Min. Number Of Batteries In Series	15 Battery Modules			
	Max. Battery Voltage	1000 V			
	Max. Number Of Batteries In Series	17 Battery Modules			
	Battery Input Channels	4			
	Max. Charging / Discharging Power	120 kW	180 kW	240 kW	300 kW
AC SIDE	Grid Type	3L + N + GND			
	Rated Power AC Side	120 kW	180 kW	240 kW	300 kW
	Rated Current AC Side	172 A	258 A	344 A	430 A
	AC Breakers And Interruption Capacity	250 A / 70 kA	315 A / 70 kA	400 A / 70 kA	500 A / 70 kA
	Rated Voltage	400 Vac			
	Voltage Range	400 Vac ± 15 %			
	Rated Frequency (Hz)	50 Hz / 60 Hz			
	Frequency Range	± 3 Hz			
	Power Factor (Off Grid)	-0.8 ~ +0.8			
	Frequency Accuracy	0.2 Hz			
	Voltage Ripple	< 3 %			
	Current Ripple	< 2 %			
	Output Harmonic Wave	< 3 %			
	Phase Unbalance Load (Off-Grid W/STS Only)	100%			
BACKUP EPS (OPTIONAL)	STS For EPS (EPS Load Support)	Optional Accessory			N/A
	STS Switch Time ON To Off Grid	20 ms (Linear Load)			
	STS Switch Time OFF To ON Grid	30 ms			
	EPS Overload Support	0%			
	EPS Max. Power (Only With STS Installed)	100%			
	EPS Critical Load Support	EPS Output Can Support Individually Connected Loads Under Each Inverter			
	EPS Output AC Breaker Interruption Capacity	250 A / 70k A	315 A / 70 kA	400 A / 70 kA	N/A
SYSTEM	Reaction Time To External Commands	200 ms			
	Switch Time From Charge To Discharge	20 ms			
	Switch Time From Discharge To Charge	20 ms			
	System Start Up Capability Off-Grid	OFF Grid + Battery = Operation Granted			N/A
	Emergency Stop Intervention	600 ms			
ENVIRONMENT	IP Rating	IP20			
	Working Temperature	-20 °C ~ +55 °C (Over 45 °C Derating)			
	Humidity	0 % RH ~ 95 % RH, Non-condensing			
	Working Altitude	At 45 °C, 2000 m (No Derating), 2000 m ~ 4000 m Derating			
	Noise	< 75 Db			
INTERFACE	Communication	RS485, CAN, Wi-Fi (SUNSPEC)			
	Protocol	CAN, Modbus TCP/IP			
OTHERS	Installation	Indoor In Controlled Temperature Room			
	Maximum Efficiency	97%			
	Isolation	Transformer-less			
	Protection Class	Class I			
	Cooling Type	Forced Air			
	Dimensions (W x D x H) (mm)	1177 x 1000 x 2150			
	Weight	470 kg	500 kg	530 kg	530 kg





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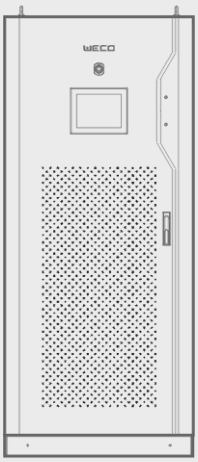
HYBO TL HYBRID

TRANSFORMERLESS HYBRID INVERTER

Specifications

		120/120	120/180
PV INPUT	MPPT Max. Voltage Input	650 V	
	MPPT Max. Current Input	200 A	
	MPPT Max. Power Output	60 kW x 2	60 kW x 3
	PV Max. Design Power Input	84 kW x 2	84 kW x 3
	MPPT Input Terminals	2 x 70 mm²	3x 70 mm²
	MPPT Start Up Voltage	200 V	
	MPPT Low Voltage Cut Off	130 V	
	MPPT Operative Working Range	200-650 V	
	MPPT Input Breaker And Capacity	2 x 250 A	3 x 250 A
	MPPT Input Protection Breaker	Automatic Over Current Protection / 20 kA Interruption Capacity	
PV COMBINER BOX	Combiner Box Strings Inputs Per MPPT	12 Strings 6 mm² per input	
	Number Of Combiner Box Per Each HYBO	2	3
	PV String Max. Current Per Channel	16 A	
	Anti Reverse Connection Protection Per Channel	Yes	
	Max. PV Input Design Power Per Channel	7000 W	
	Max. Voltage Input	650 V	
	Combiner Output Per MPPT	70 mm² (1x Positive 1x Negative)	
	Input String Protection Fuse	1 x Channel 20 A (Positive Line)	
	PV Combiner Box IP Rating	IP65	
	PV Combiner Communication Mode	RS485	
	Combiner Box Remote Controlled Breaker	250 A	
	Remote Emergency Button	Yes (Integrated With The Inverter Emergency Function)	
BATTERY	Min. Battery Voltage	680 V	
	Min. Number Of Batteries In Series	15 Battery Modules	
	Max. Battery Voltage	1000 V	
	Max. Number Of Batteries In Series	17 Battery Modules	
	Battery Input Channels	4	
	Max. Charging / Discharging Power	120/120 kW	180/120 kW
AC SIDE	Grid Type	3L + N + GND	
	Rated Power Output AC Side	120 kW	120 kW
	Rated Current	172 A	172 A
	AC Breakers And Interruption Capacity	250 A / 50 kA	250 A / 50 kA
	Rated Voltage	400 VAC	
	Voltage Range	400 VAC ± 15 %	
	Rated Frequency (Hz)	50 Hz / 60 Hz	
	Frequency Range	± 3 Hz	
	Power Factor (Off Grid)	-0.8 ~ +0.8	
	Frequency Accuracy	0.2 Hz	
	Voltage Ripple	< 3 %	
	Current Ripple	< 2 %	
	Output Harmonic Wave	< 3 %	
	Phase Unbalance Load (Off-Grid w/STS Only)	100%	
BACKUP (Optional)	STS For EPS	Optional Accessory	
	STS Switch Time On To Off Grid	20 ms (Linear Load)	
	STS Switch Time OFF To ON Grid	30 ms	
	EPS Overload Support	0%	
	EPS Max Power (Only With STS installed)	Support 100% of the Inverter Full Power	
	EPS Output AC Breaker Interruption Capacity	250 A / 50 kA	250 A / 50 kA
AC AUXILIARY INPUT	AC Generator Input Voltage	400 V 3P + N + GND	
	AC Input Voltage Range	400 V +/- 15%	
	AC Input Voltage Protection Breaker	250 A / 40 kA	250 A / 40 kA
SYSTEM	Reaction Time To External Commands	200 ms	
	Switch Time From Charge To Discharge	20 ms	
	Switch Time From Discharge To Charge	20 ms	
	Operation Mode PV + Grid Only (No Battery)	Supported	
	System Start Up Capability ON Grid (No Battery)	PV + Grid = Operation Granted	
	System Start Up Capability OFF Grid	Battery Only = Operation Granted	
ENVIRONMENT	Emergency Stop Intervention	600 ms	
	IP rating	IP20	
	Working Temperature	-20 °C ~ 55 °C (Derating T > 45 °C)	
	Humidity	0 % RH ~ 95 % RH, Non-condensing	
	Working Altitude	T < 45 °C: 2000 m (No Derating), 2000 m ~ 4000 m Derating	
INTERFACE	Noise	< 75 dB	
	Communication	RS485, CAN, Wi-Fi (SUNSPEC)	
OTHERS	Protocol	CAN, ModBus TCP/IP	
	Installation	Indoor In Controlled Temperature Room	
	Maximum Efficiency	97%	
	Isolation	Transformer-less	
	Protection Class	Class I	
	Cooling Type	Forced Air	
	Dimensions (W x D x H) (mm)	1077 x 1000 x 2150	
	Weight	570 kg	600 kg





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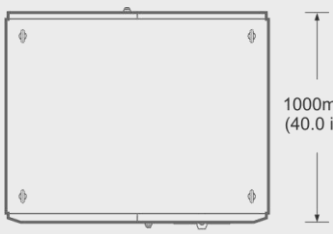
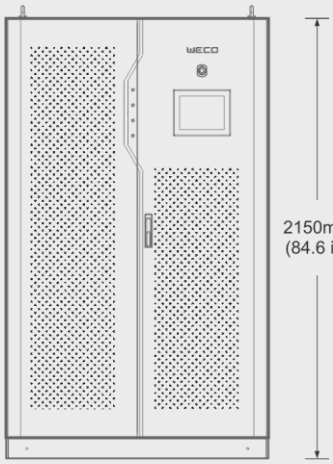
HYBO TL HYBRID

TRANSFORMERLESS HYBRID INVERTER

Specifications		180/120	180/180	180/240	240/180	240/240
PV INPUT	MPPT Max. Voltage Input	650 V				
	MPPT Max. Current Input	200 A				
	MPPT Max. Power Output	60 kW x 2	60 kW x 3	60 kW x 3	60 kW x 4	60 kW x 4
	PV Max. Design Power Input	84 kW x 2	84 kW x 3	84 kW x 3	84 kW x 4	84 kW x 4
	MPPT Input Terminals	2*70 mm²	3x 70 mm²	3x 70 mm²	4x 70 mm²	4x 70 mm²
	MPPT Start Up Voltage	200 V				
	MPPT Low Voltage Cut Off	130 V				
	MPPT Operative Working Range	200-650 V				
	MPPT Input Breaker And Capacity	2 x 250 A	3 x 250 A	4 x 250 A	3 x 250 A	4 x250 A
	MPPT Input Protection Breaker	Automatic Over Current Protection / 20 kA Interruption Capacity				
PV COMBINER BOX	Combiner Box Strings Inputs Per MPPT	12 Strings 6 mm² per input				
	Number Of Combiner Box Per Each HYBO	2	3	4	3	4
	PV String Max. Current Per Channel	16 A				
	Anti Reverse Connection Protection Per Channel	Yes				
	Max. PV Input Design Power Per Channel	7000 W				
	Max. Voltage Input	680 V				
	Combiner Output Per MPPT	70 mm² (1x Positive 1x Negative)				
	Input String Protection Fuse	1 x Channel 20 A (Positive Line)				
	PV Combiner Box IP Rating	IP65				
	PV Combiner Communication Mode	RS485				
	Combiner Box Remote Controlled Breaker	250 A				
	Remote Shut Down	Yes (Integrated With The Inverter Emergency Function)				
BATTERY	Min. Battery Voltage	680 V				
	Min. Number Of Batteries In Series	15 Battery Modules				
	Max. Battery Voltage	1000 V				
	Max. Number Of Batteries In Series	17 Battery Modules				
	Battery Input Channels	4				
	Max. Charging / Discharging Power	180/180 kW	180/180 kW	240 kW/180 kW	240 kW/240 kW	240 kW/240 kW
AC SIDE	Grid Type	3L + N + GND				
	Rated Power Output AC Side	180 kW	180 kW	180 kW	240 kW	240 kW
	Rated Current	258 A	258 A	258 A	344 A	344 A
	AC Breakers And Interruption Capacity	315 A / 70 kA	315 A / 70 kA	315 A / 70 kA	400 A / 70 kA	400 A / 70 kA
	Rated Voltage	400 Vac				
	Voltage Range	400 Vac ± 15 %				
	Rated Frequency (Hz)	50 Hz / 60 Hz				
	Frequency Range	± 3 Hz				
	Power Factor (Off Grid)	-0.8 ~ +0.8				
	Frequency Accuracy	0.2 Hz				
	Voltage Ripple	< 3 %				
	Current Ripple	< 2 %				
	Output Harmonic Wave	< 3 %				
	Phase Unbalance Load (Off-grid With STS Only)	100%				
BACKUP EPS (OPTIONAL)	STS For EPS	Optional				
	STS Switch Time On To Off Grid	20 ms (Linear Load)				
	STS Switch Time OFF To ON Grid	30 ms				
	EPS Overload Support	0%				
	EPS Max Power (Only With STS Installed)	100%				
	EPS Output AC Breaker Interruption Capacity	315 A / 70 kA	315 A / 70 kA	315 A / 70 kA	400 A / 70 kA	400 A / 70 kA
AC AUXILIARY INPUT	AC Generator Input Voltage	400 V 3P + N + GND				
	AC Input Voltage Range	400 V +/- 15%				
	AC Input Voltage Protection Breaker	315 A / 70 kA	315 A / 70 kA	315 A / 70 kA	400 A / 70 kA	400 A / 70 kA
SYSTEM	Reaction Time To External Commands	200 ms				
	Switch Time From Charge To Discharge	20 ms				
	Switch Time From Discharge To Charge	20 ms				
	Operation Mode PV + Grid Only (No Battery)	Supported				
	System Start Up Capability ON Grid (No Battery)	PV + Grid = Operation Granted				
	System Start Up Capability OFF Grid	Battery Only = Operation Granted				
	Emergency Stop Intervention	600 ms				
ENVIRONMENT	IP rating	IP20				
	Working Temperature	-20 °C ~ +55 °C (Derating T > 45 °C)				
	Humidity	0 % RH ~ 95 % RH, Non-condensing				
	Working Altitude	T < 45 °C: 2000 m (No Derating), 2000 m ~ 4000 m Derating				
	Noise	< 75 dB				
INTERFACE	Communication	RS485, CAN, Wi-Fi (SUNSPEC)				
	Protocol	CAN, ModBus TCP/IP				
OTHERS	Installation	Indoor In Controlled Temperature Room				
	Maximum Efficiency	97%				
	Isolation	Transformer-less				
	Protection Class	Class I				
	Cooling Type	Forced Air				
	Dimensions (W x D x H) (mm)	1430 x 1000 x 2150				
	Weight	720 kg	750 kg	780 kg	780 kg	800 kg





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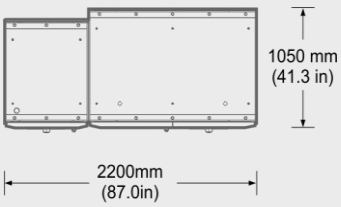
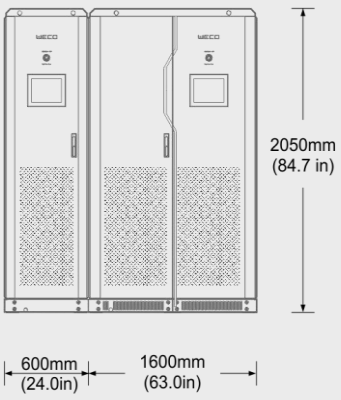
HYBO CS

TRANSFORMER BASED HYBRID INVERTER

Specifications		100 + MPPT	150 + MPPT	250 + MPPT	500 + MPPT
PV INPUT	MPPT Max. Voltage Input	650 V			
	MPPT Max. Power Output	120/180/240kW	120/180/240kW	300/360kW	600/660/720kW
	Number Of MPPT	2/3/4	2/3/4	5/6	10/11/12
	MPPT Max. Current Input	200 A			
	PV Max. Design Power Input	84 kW each			
	MPPT Max. Power Output	60 kW each			
	MPPT Input Terminals	70 mm² each			
	MPPT Start Up Voltage	250 V			
	MPPT Low Voltage Cut Off	150 V			
	MPPT Operative Working Range	250-650 V			
	MPPT Input Breaker And Capacity	250 A / 20 kA---Each			
PV COMBINER BOX	MPPT Input Protection Breaker	Automatic Over Current Protection / 20 kA Interruption Capacity			
	Combiner Box Strings Inputs Per MPPT	12 Strings Inputs 6 mm² each MPPT			
	Combiner Box Output Cables	70 mm² each			
	Numbers Of Combiners Per Each HYBO	2/3/4	2/3/4	5/6	10/11/12
	PV String Max. Current Per Channel	16A			
	Max. PV Input Design Power Per Channel	7000 W			
	Max. Voltage Input	650 V			
	String Output To Inverter	70 mm²			
	String Protection Fuse	1 x Channel 20 A			
	PV Combiner Box IP Rating	IP65			
	PV Combiner Communication Mode	RS485			
	Combiner Box Remote Controlled Breaker	250 A			
	Remote Emergency Button	Yes			
BATTERY	Min. Battery Voltage	680V			
	Number Of Batteries In Series	15			
	Max. Battery Voltage	850 V			
	Battery Input Channels (*2)	1			
	Max. Charging	120/180/240 kW	150/180/240 kW	300/360 kW	600/660/720 kW
AC SIDE	Max. Discharging Power	100 kW	150 kW	250 kW	500 kW
	Grid Type	3L + N + GND			
	Rated Power Output AC Side	100 kW	150 kW	250 kW	500 kW
	Rated Current	144 A	216 A	361 A	722 A
	AC Breakers And Interruption Capacity	200 A/25 kA	250 A /25 kA	600 A/35 kA	1250 A/50 kA
	Rated Voltage	400 VAC / 208 VAC (*3)			
	Voltage Range	400 VAC ± 15 % / 208 VAC ± 15 % (*3)			
	Rated Frequency (Hz)	50 Hz / 60 Hz			
	Frequency Range	± 3 Hz			
	Power Factor (Off-Grid)	-1 ~ +1			
	Frequency Accuracy	0.2 Hz			
	Voltage Ripple	< 3 %			
	Current Ripple	< 2 %			
BACKUP (OPTIONAL)	Output Harmonic Wave	< 3 %			
	Phase Unbalance Load (Off-Grid w/STS Only)	100%			
	STS For EPS	Optional Accessory			
	STS Switch Time ON To Off Grid	20 ms (Linear Load)			
	STS Switch Time OFF To ON Grid	30 ms			
	EPS Overload Support	110% Continuous			
	EPS Max. Power (Only With STS Installed)	100%			
	EPS Output AC Breaker Interruption Capacity	200 A / 25 kA	250 A / 25 Ka	600 A / 35 kA	1250 A / 50 kA
	AC Generator Input Voltage (*1)	400 V 3P + N + GND / 208 V 3P + N + GND (*3)			
AC AUXILIARY INPUT	AC Input Voltage Range	400 V +/- 15% / 400 V +/- 15% (*3)			
	AC Input Voltage Protection Breaker	200 A / 25 kA	250 A / 25 kA	600 A / 35 kA	1250 A / 50 kA
	Reaction Time To External Commands	200 ms			
SYSTEM	Switch Time From Charge To Discharge	20 ms			
	Switch Time From Discharge To Charge	20 ms			
	Operation Mode PV + Grid Only (No Battery)	Not Supported			
	System Start Capability Off-Grid	Battery = Operation Granted			
	Emergency Stop Intervention	600 ms			
	IP Rating	IP20			
	Working Temperature	-20 °C ~ +60 °C (Over 50 °C Derating)			
ENVIRONMENT	Relatively Humidity	0 % RH ~ 95 % RH, Non-condensing			
	Working Altitude	At 45 °C, 2000 m (No Derating), 2000 m ~ 4000 m Derating			
	Noise	< 70 dB			
INTERFACE	Communication	RS485, CAN, Wi-Fi (SUNSPEC)			
	Protocol	CAN, ModBus TCP, ModBus RTU			
OTHER	Installation	Indoor, In Controlled Temperature Room			
	Maximum Efficiency	97%			
	Isolation	Transformer-less			
	Protection Class	Class I			
	Cooling Type	Forced Air			
	Dimensions (W x D x H) (mm)	1200 x 800 x 2050	1200 x 800 x 2050	600 x 720 x 2050 + 1200 x 800 x 2050	600 x D720 x 2050 + 1600 x 1050 x 2050
	Weight	1120/1150/1180 kg	1250/1280/1310 kg	1980/2010 kg	3265/3295/3325 kg

(*1) The cabinet has one AC input interface only; to connect both the generator and the grid please install an external ATS
(*2) The cabinet has one BAT Power input interface; to connect more than 1 battery pack, use the BAT Power Combiner accessory
(*3) Available upon request





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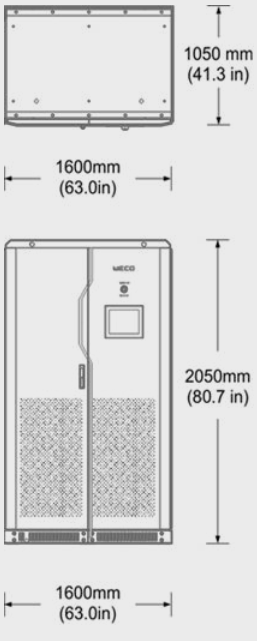
HYBO TS

TRANSFORMER BASED PCS INVERTER

	Specifications	100	150	250	500
BATTERY	Min. Battery Voltage	450 V			500 V
	Min. Number Of Batteries In Series	10			11
	Max. Battery Voltage	850 V			
	Max. Number Of Batteries In Series	15 Battery Modules			
	Battery Input Channels	1			
	Max. Charging Current	270 A	405 A	670 A	1120 A
	Max. Charging / Discharging Power	100 kW	150 kW	250 kW	500 kW
AC SIDE	Grid Type	3L + N + GND			
	Rated Power Output AC Side	100 kW	150 kW	250 kW	500 kW
	Rated Current	145 A	215 A	360 A	720 A
	AC Breakers And Interruption Capacity	200 A/25 kA	250 A /25 kA	600 A/35 kA	1250 A/50 kA
	Rated Voltage	400 Vac			
	Voltage Range	400 Vac ± 15 %			
	Rated Frequency (Hz)	50 Hz / 60 Hz			
	Frequency Range	± 3 Hz			
	Power Factor (Off Grid)	-1~ +1			
	Frequency Accuracy	0.2 Hz			
	Voltage Ripple	< 3 %			
	Current Ripple	< 2 %			
	Output Harmonic Wave	< 3 %			
	Phase Unbalance Load (Off-Grid With STS Only)	100%			
BACKUP EPS (OPTIONAL)	STS For EPS	Built In			
	STS Switch Time ON To Off Grid	20 ms (Linear Load)			
	STS Switch Time OFF To ON Grid	30 ms			
	EPS Overload Support	110%			
	EPS Critical Load Support	EPS output ports can be paralleled between inverters (max. 4 inverters in parallel)			
	EPS Output AC Breaker Interruption Capacity	200 A/25 kA	250 A /25 kA	600 A/35 kA	1250 A/50 kA
SYSTEM	Reaction Time To External Commands	200 ms			
	Switch Time From Charge To Discharge	20 ms			
	Switch Time From Discharge To Charge	20 ms			
	System Start Capability OFF Grid	OFF Grid + Battery = Operation Granted			
	Emergency Stop Intervention	600 ms			
ENVIRONMENT	IP Rating	IP20			
	Working Temperature	-20 °C ~ +55 °C (Over 45 °C Derating)			
	Humidity	0 % RH ~ 95 % RH, Non-condensing			
	Working Altitude	At 45 °C, 2000 m (No Derating), 2000 m ~ 4000m Derating			
	Noise	< 70 dB			
INTERFACE	Communication	RS485, CAN, Wi-Fi (SUNSPEC)			
	Protocol	CAN, ModBus TCP, ModBus RTU			
OTHERS	Installation	Indoor In Controlled Temperature Room			
	Maximum Efficiency	97%			
	Isolation	Isolation Transformer (Built-In)			
	Protection Class	Class I			
	Cooling Type	Forced Air			
	Dimensions (W x D x H) (mm)	800 x 800 x 2050	800 x 800 x 2050	1200 x 800 x 2050	1600 x 1050 x 2050
STANDARDS	IEC And Grid Codes	CE LVD EN62109-1/-2, EN62447-1, EN61000-6-2, EN61000-6-4, CGC NSR097 (South Africa)			





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HYBO CS

HYBRID INVERTERS



The Next Generation **BESS INVERTER** is here and it's WeCo.

Hybo Hybrid Indoor Inverters encompass economic, environmental, and operational benefits, making them a compelling choice for those seeking a sustainable and reliable energy solution for indoor spaces.

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WeCo Smart Platform

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