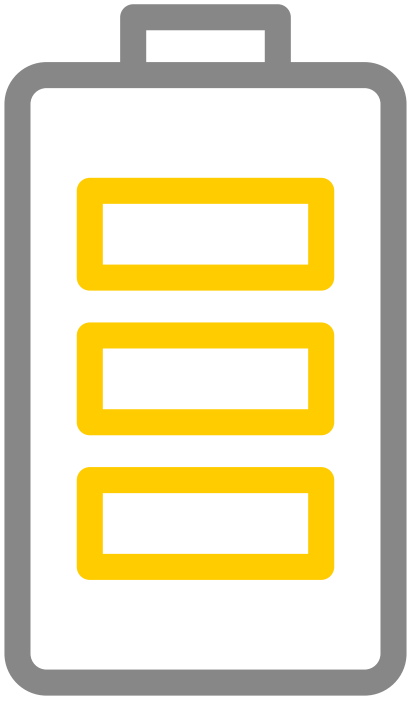
OVERVIEW

RESIDENTIAL STORAGE SYSTEMS



RESIDENTIAL
EMOBILITY
MOUNTING

krannich

Inverter manufacturer AXITEC

Storage inverter type		AXIhycon 5 / 6 / 8 / 10 H	AXIhycon 12 / 15 / 20 H	AXIhycon 29.9 / 40 / 50 H	AXIhycon One All-in-One 8 to 15 kW (selectable)
Max. PV system size (kWp)		DC: 8,0 to 16,0 AC: without restriction	DC: 19,2 to 32,0 AC: without restriction	DC: to 41,86 AC: without restriction	DC: 12,8 to 24,0 AC: without restriction
AC phases	1	○			
	3	●			
Surge Protection Device DC / AC		Type 2 / -			
Storage connection	AC (Bat.-Inv)	●			
	DC (Hybrid)	●			
Storage charging via separate PV inverter (AC coupling)		●			
Storage manufacturer		AXITEC			
Storage type		AXIstorage Li SV1 10.1 to 23.6	AXIstorage Li SV2 6.7 to 16.9	AXIstorage Li SV3 9.7 to 34	AXIstorage Li SV3 Energy-Pack 9.7 to 34
Number of storage units per unit (tower) / max. units (towers) in parallel		3 - 7 / 6	2 - 5 / 6	2 to 5 (inverter 5-10), to 6 (inverter 12-20), to 7 (inverter 29-50) / -	2 to 7 / -
max. system charging power		to be calculated according to the set / see table			
Usable capacity (kWh) per unit		10,1 to 23,6	6,7 to 16,9	9,7 to 34,0	9,7 to 34,0
Expansion window from commissioning		to 5 years			
Backup (emergency power) /implementation + accessories		● integrated Backup connection (selected loads < power inverter)			
Off-grid application possible (true island/off-grid system) /additional options		● direct generator connection possible (only AXIhycon 12H to 50H)			● direct generator connection possible
Active PV modules in backup mode/ system black-start capable		●			
Interfaces (heat pump + ripple control receiver)		Connection of the ripple control receiver and heat pump via DRM interfaces			Connection of ripple control receiver / heat pump via EMS Box (announced)
SMART charging features Dynamic electricity tariffs, fixed charging times, limitation by the utility according to EnWG §14a		fixed charging times; dynamic electricity tariffs (FW Update shortly); limitation by the utility (currently via external EMS, soon via integrated DRM contact)			fixed charging times; dynamic electricity tariffs; limitation by the utility (via integrated DRM contact)
System information		three-phase DC-coupled storage system; power classes to 10kW with 2 MPPT - 12 / 15 / 20 / 40 / 50 kW with 4 MPPT - 29,9 kW with 3 MPPT; UPS functionality (<10ms); integrated arc-fault detection; Peak-Shaving; up to 3 devices in paralll operation (only same inverter power classes and battery sizes, EPS outputs only for 40/50H synchronized); Use as a hybrid off-grid system (with / without generator) possible; control for external grid protection possible			All-in-One compact system; power freely selectable inverter output; Hybrid-inverter combined with AXIstorage Li SV3 storage modules; Use as a hybrid off-grid system (with / without generator) possible

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Inverter manufacturer BYD

Storage inverter type		**Power-Box** **TH 5 / 6 / 8 / 10 / 12 / 15 K**	
Max. PV system size (kWp)		DC: 12.8 to 24.0 AC: without restriction	
AC phases	**1**	○	
	3	●	
Surge Protection Device DC / AC		Typ 2 / Typ 2	
Storage connection	**AC** (Bat.-Inv)	●	
	DC (Hybrid)	●	
Storage charging via separate PV inverter (AC coupling)		●	
Storage manufacturer		BYD	
Storage type		B-Box HVB 5.9 to 29.6	B-Box HVE 5.9 to 29.6
Number of storage units per unit (tower) / max. units (towers) in parallel		2 - 10 / 3	2 - 10 / 3
max. system charging power		to be calculated per set / refer to table	
Usable capacity (kWh) per unit		5.94 to 29.69	5.94 to 29.69
Expansion window from commissioning		unlimited	
Backup (emergency power) /implementation + accessories		● integr. Backup connection (selective consumers < inverter power)	
Off-grid application possible (true island/off-grid system) /additional options		○	
Active PV modules in backup mode/ system black-start capable		●	
Interfaces (heat pump + ripple control receiver)		Connection of ripple control receiver and heat pump via DRM interfaces	
SMART charging features Dynamic electricity tariffs, fixed charging times, limitation by the utility according to EnWG §14a		fixed charging times; dynamic electricity tariffs; Limitation by utility (via integr. DRM contact)	
System information		All-in-One Compact System (with HVE storage); Optionally also with HVB storage usable; DC-coupled system; AC+DC SPD Type 2; AFCI arc detection	

Inverter manufacturer ENPHASE.

Storage inverter type		**Enphase Microinverter** **IQ8 / IQ9**
Max. PV system size (kWp)		AC: without restriction
AC phases	**1**	●
	3	●
Surge Protection Device DC / AC		- / -
Storage connection	**AC** (Bat.-Inv)	●
	DC (Hybrid)	○
Storage charging via separate PV inverter (AC coupling)		●
Storage manufacturer		ENPHASE.
Storage type		Enphase Energy AC Storage System 5P-3P Flex Phase
Number of storage units per unit (tower) / max. units (towers) in parallel		1 / unlimited
max. system charging power		to be calculated according to the set / see table
Usable capacity (kWh) per unit		5
Expansion window from commissioning		unlimited
Backup (emergency power) /implementation + accessories		● selective switchover with the Enphase IQ System Controller 3 INT
Off-grid application possible (true island/off-grid system) /additional options		○
Active PV modules in backup mode/ system black-start capable		●
Interfaces (heat pump + ripple control receiver)		Connection of the ripple control receiver via Envoy-S Gateway
SMART charging features Dynamic electricity tariffs, fixed charging times, limitation by the utility according to EnWG §14a		fixed charging times; dynamic electricity tariffs; limitation by the utility (via contact at the gateway)
System information		Module inverter with single-/three-phase AC-coupled storage system; backup power system with IQ8 / IQ9 series and IQ Controller

Inverter manufacturer		Fronius		
Storage inverter type		**PRIMO GEN24 SC / PRIMO GEN24 Plus SC 3.0 / 3.6 / 4.0 / 4.6 / 5.0 (not DE) / 6.0 (not DE)**		
Max. PV system size (kWp)		DC: 4,5 to 15,0 AC: without restriction		
AC phases	**1**	●		
	3	○		
Surge Protection Device DC / AC		Type 1+2 opt. / -		
Storage connection	**AC** (Bat.-Inv)	●		
	DC (Hybrid)	●		
Storage charging via separate PV inverter (AC coupling)		●		
Storage manufacturer		BYD		Fronius
Storage type		B-Box HVS / + 5.1 to 7.7	B-Box HVM / + 11 to 19.3	Reserva 6.3 / 9.5
Number of storage units per unit (tower) / max. units (towers) in parallel		2 - 3 / to 3	4 - 8 / to 3	2 - 3 / to 4
max. system charging power		to be calculated according to the set / see table		to be calculated according to the set / see table
Usable capacity (kWh) per unit		5,1 to 7,7	11,0 to 19,3	6,3 to 9,5
Expansion window from commissioning		unlimited	unlimited	to 2 years
Backup (emergency power) /implementation + accessories		● single-phase via integrated PV-Point, complete switchover with external Backup-Box (must be custom assembled)		
Off-grid application possible (true island/off-grid system) /additional options		○		
Active PV modules in backup mode/ system black-start capable		●		
Interfaces (heat pump + ripple control receiver)		Connection heat pump and ripple control receiver via 6 x DI / DO contact		
SMART charging features Dynamic electricity tariffs, fixed charging times, limitation by the utility according to EnWG §14a		fixed charging times; dynamic electricity tariffs (via Smart Meter IP + FW Update); limitation by the utility (integrated interface)		
System information		Single-phase hybrid unit with additional PV inverter via AC coupling Version GEN24 Plus SC: the GEN24 Plus SC series is delivered as usual as a hybrid with active battery connection; Version GEN24 SC: the GEN24 SC series is delivered with deactivated battery connection; this can be enabled with an additional activation code For power classes > 5.0 kW, selecting VDE-AR-N 4105 does not impose a 4.6 kVA limitation, therefore it cannot be used in Germany		

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Inverter manufacturer Fronius

Storage inverter type		**SYMO GEN24 SC / SYMO GEN24 Plus SC 3.0 / 4.0 / 5.0 / 6.0 / 8.0 / 10.0 / 12.0**				**Verto Plus 15.0 / 17.5 / 20.0 / 25.0 / 30.0 / 33.0**
Max. PV system size (kWp)		DC: 22,5 to 50,0 AC: without restriction				DC: 22,5 to 50,0 AC: without restriction
AC phases	**1**	○				
	3	●				
Surge Protection Device DC / AC		Type 1+2 opt. / -				Type 1+2 / Type 2
Storage connection	**AC** (Bat.-Inv)	●				
	DC (Hybrid)	●				
Storage charging via separate PV inverter (AC coupling)		●				
Storage manufacturer		BYD			Fronius	
Storage type		B-Box HVS / + 5.1 to 12.8	B-Box HVM / + 11.0 to 22.1	B-Box HVB 11.8 to 29.6 (only Verto plus)	Reserva 6.3 / 9.5 / 12.6 / 15.8	Reserva PRO 12.0 / 16.0 / 20.0 / 24.0 / 28.0 / 32.0 (only GEN24 plus SC + Verto plus)
Number of storage units per unit (tower) / max. units (towers) in parallel		2 - 5 / to 3	4 - 8 / to 3 (19.3), 2 (22.1)	4 - 10 / to 3	2 - 5 / to 4	3 - 8 / to 4
max. system charging power		to be calculated according to the set / see table			to be calculated according to the set / see table	
Usable capacity (kWh) per unit		5,1 to 12,8	11,0 to 22,1	11.88 to 29.69	6,3 to 15,8	11,9 to 31,9
Expansion window from commissioning		unlimited			to 2 years	unlimited
Backup (emergency power) /implementation + accessories		● single-phase via integrated PV-Point, complete switchover with Fronius Backup Switch + Controller + external Backup-Box				●, complete switchover with Fronius Backup Switch + Controller + external Backup-Box
Off-grid application possible (true island/off-grid system) /additional options		○				○
Active PV modules in backup mode/ system black-start capable		●				
Interfaces (heat pump + ripple control receiver)		Connection heat pump and ripple control receiver via 6 x DI / DO contact				
SMART charging features Dynamic electricity tariffs, fixed charging times, limitation by the utility according to EnWG §14a		fixed charging times; dynamic electricity tariffs (via Smart Meter IP + FW Update); limitation by the utility (integrated interface)				
System information		three-phase hybrid unit with highr charging power and additional PV-inverter via AC coupling; control for external grid protection possible; Version GEN24 SC Plus + Verto plus: these series are, as usual, with active battery connection delivered as a hybrid; Version GEN24 SC: the GEN24 SC series is delivered with deactivated battery connection; this can be enabled with an additional activation code				

Inverter manufacturer GOODWE

Storage inverter type		GW ET plus + Hybrid 5KN / 6.5KN / 8KN / 10KN (16A) GW ET-20 G2 Hybrid 6000 / 8000 / 10K / 12K / 15K					
Max. PV system size (kWp)		DC: 6,5 to 13,0 AC: without restriction					
AC phases	**1**	○					
	3	●					
Surge Protection Device DC / AC		Type 2 / Type 2					
Storage connection	**AC** (Bat.-Inv)	●					
	DC (Hybrid)	●					
Storage charging via separate PV inverter (AC coupling)		●					
Storage manufacturer		BYD		PYLONTECH		AXITEC	
Storage type		B-Box HVS /+ 5.1 to 12.8 (+ only ET-20 G2)	B-Box HVM /+ 11 to 22.1 (+ only ET-20 G2)	Force-H1 13.5 to 23.6 (only ET-20 G2)	Force-H2 6.7 to 16.9 (only ET-20 G2)	AXIstorage Li SV1 13.5 to 23.6 (only ET-20 G2)	AXIstorage Li SV2 6.7 to 16.9 (only ET-20 G2)	AXIstorage Li SV3 9.7 to 24.3 (only ET-20 G2)
Number of storage units per unit (tower) / max. units (towers) in parallel		2 - 5 / to 3	4 - 8 / to 3	4 - 7 / 6	2 - 5 / 6	4 - 7 / 6	2 - 5 / 6	2 to 5 / -
max. system charging power		to be calculated according to the set / see table		to be calculated according to the set / see table		to be calculated according to the set / see table		
Usable capacity (kWh) per unit		5,1 to 12,8	11,0 to 22,1	13,5 to 23,6	6,7 to 16,9	13,5 to 23,6	6,7 to 16,9	9,7 to 24,3
Expansion window from commissioning		unlimited	unlimited	to 2 years		to 5 years		
Backup (emergency power) /implementation + accessories		● integrated Backup connection (selected loads < power inverter)						
Off-grid application possible (true island/off-grid system) /additional options		●						
Active PV modules in backup mode/ system black-start capable		● (only ET plus +)						
Interfaces (heat pump + ripple control receiver)		Connection heat pump via potential-free contact; Connection of the ripple control receiver via connection terminals						
SMART charging features Dynamic electricity tariffs, fixed charging times, limitation by the utility according to EnWG §14a		fixed charging times; dynamic electricity tariffs (via Goodwe HEMS EzManager3000) limitation by the utility (integrated interface / EzManager3000)						
System information		three-phase DC-coupled storage system; up to 10 devices in parallel operation (only hybrid) (SEC3000S Box required, DE+A: all EPS outputs active - not synchronized) ***						

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Inverter manufacturer		GOODWE		
Storage inverter type		**GW ET plus + Hybrid 5KN / 6.5KN / 8KN / 10KN (16A)** **GW ET-20 G2 Hybrid 6000 / 8000 / 10K / 12K / 15K**		
Max. PV system size (kWp)		DC: 6,5 to 13,0 AC: without restriction		
AC phases	**1**	○		
	3	●		
Surge Protection Device DC / AC		Type 2 / Type 2		
Storage connection	**AC** (Bat.-Inv)	●		
	DC (Hybrid)	●		
Storage charging via separate PV inverter (AC coupling)		●		
Storage manufacturer		GOODWE		ZYC ENERGY
Storage type		Lynx D 5.0 to 40.0	Lynx D G2 5.0 / 6.0 / 8.0 / 9.0 (up to 12 Module freely combinable)	SIMPO HV 6.4 to 28.8
Number of storage units per unit (tower) / max. units (towers) in parallel		1 - 8 / -	1 - 12 / -	2 - 9 / to 8
max. system charging power		to be calculated according to the set / see table	to be calculated according to the set / see table	to be calculated depending on the set / see table
Usable capacity (kWh) per unit		5,0 to 40,0	5,0 to 108,0	6,4 to 28,8
Expansion window from commissioning		unlimited	unlimited	unlimited
Backup (emergency power) /implementation + accessories		● integrated Backup connection (selected loads < power inverter)		
Off-grid application possible (true island/off-grid system) /additional options		●		
Active PV modules in backup mode/ system black-start capable		● (only ET plus +)		
Interfaces (heat pump + ripple control receiver)		Connection heat pump via potential-free contact; Connection of the ripple control receiver via connection terminals		
SMART charging features Dynamic electricity tariffs, fixed charging times, limitation by the utility according to EnWG §14a		fixed charging times; dynamic electricity tariffs (via Goodwe HEMS EzManager3000) limitation by the utility (integrated interface / EzManager3000)		
System information		three-phase DC-coupled storage system; up to 10 devices in parallel operation (only hybrid) (SEC3000S Box required, DE+A: all EPS outputs active - not synchronized) ***		

Inverter manufacturer		GOODWE				
Storage inverter type		**GW ET Hybrid** **15K / 20K / 25K / 29.9K**				
Max. PV system size (kWp)		DC: 22,5 to 44,85 AC: without restriction				
AC phases	**1**	○				
	3	●				
Surge Protection Device DC / AC		Type 2 / -				
Storage connection	**AC** (Bat.-Inv)	●				
	DC (Hybrid)	●				
Storage charging via separate PV inverter (AC coupling)		●				
Storage manufacturer		BYD		GOODWE		ZYC ENERGY
Storage type		B-Box HVS / + 5.1 to 12.8	B-Box HVM / + 11.0 to 22.1	Lynx D 5.0 to 40.0	Lynx D G2 5.0 / 6.0 / 8.0 / 9.0 (up to 12 Module freely combinable)	SIMPO HV 6.4 to 28.8
Number of storage units per unit (tower) / max. units (towers) in parallel		2 - 5 / to 3	4 - 8 / to 3	1 - 8 / -	1 - 12 / -	2 - 9 / to 8
max. system charging power		to be calculated according to the set / see table		set / table	set / table	set / table
Usable capacity (kWh) per unit		5,1 to 12,8	11,0 to 22,1	5,0 to 40,0	5,0 to 108,0	6,4 to 28,8
Expansion window from commissioning		unlimited		unlimited	unlimited	unlimited
Backup (emergency power) /implementation + accessories		● integrated Backup connection (selected loads < power inverter)				
Off-grid application possible (true island/off-grid system) /additional options		●				
Active PV modules in backup mode/ system black-start capable		●				
Interfaces (heat pump + ripple control receiver)		Connection heat pump via SG-Ready contact; Connection of the ripple control receiver via DRM connection				
SMART charging features Dynamic electricity tariffs, fixed charging times, limitation by the utility according to EnWG §14a		fixed charging times; dynamic electricity tariffs + limitation by the utility (via Goodwe EZmanager)				
System information		three-phase DC-coupled storage system; can be cascaded 3 times; no logger connection of PV inverter possible; UPS functionality (<10ms); Peak-Shaving; version 15K + 20K with 2 MPPT and 1 x battery; 25K + 29,9K with 3 MPPT and 2 x battery connection; high DC input currents with 15A / String; high charging currents with up to 2 x 50 A (Version 25K + 29,9K); optional with AFCI				

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Inverter manufacturer GOODWE

Storage inverter type		**GW ESA, All-in-One** **8K / 10K / 15K / 20K / 25K / 29.9K**
Max. PV system size (kWp)		DC: 16,0 to 60,0 AC: without restriction
AC phases	**1**	○
	3	●
Surge Protection Device DC / AC		Type 2 / Type 2 Type 1+2 / Type 1+2 (25+29.29K)
Storage connection	**AC** (Bat.-Inv)	unthe clarification
	DC (Hybrid)	●
Storage charging via separate PV inverter (AC coupling)		●
Storage manufacturer		GOODWE
Storage type		BAT-D 5.0 / 6.0 / 8.0 / 9.0 (up to 12 Module freely combinable)
Number of storage units per unit (tower) / max. units (towers) in parallel		1 - 12 / -
max. system charging power		to be calculated according to the set / see table
Usable capacity (kWh) per unit		5,0 to 108,0
Expansion window from commissioning		unlimited
Backup (emergency power) /implementation + accessories		● integrated Backup connection (selected loads < power inverter)
Off-grid application possible (true island/off-grid system) /additional options		● Control generator possible
Active PV modules in backup mode/ system black-start capable		●
Interfaces (heat pump + ripple control receiver)		heat pump via SG-Ready; ripple control receiver via DRM connection
SMART charging features Dynamic electricity tariffs, fixed charging times, limitation by the utility according to EnWG §14a		fixed charging times; dynamic electricity tariffs + limitation by the utility (via Goodwe EZmanager)
System information		three-phase DC-coupled storage system; 4 capacity sizes storage modules freely combinable; UPS functionality (<10ms); version 5K - 8K with 2 MPPT; 10K - 30,0K with 3 MPPT;

Inverter manufacturer

HUAWEI

Storage inverter type		**SUN2000-2 / 3 / 3.68 / 4 / 4.6 / 5* / 6* KT-L1**		**SUN2000-2 / 3 / 3.68 / 4 / 4.6 / 5* / 6* K-LB0**	
Max. PV system size (kWp)		DC: 3,0 to 9,0 AC: without restriction		DC: 4,5 to 9,0 AC: without restriction	
AC phases	**1**	●		●	
	3	○		○	
Surge Protection Device DC / AC		Type 2 / Type 2		Type 2 / Type 2	
Storage connection	**AC** (Bat.-Inv)	●		●	
	DC (Hybrid)	●		●	
Storage charging via separate PV inverter (AC coupling)		●		●	
Storage manufacturer		HUAWEI		HUAWEI	
Storage type		LUNA2000-5 / 10 / 15-S0	LUNA2000-5/-7/-10/-14/-15/-21-S1	LUNA2000-5 / 10 / 15-S0	LUNA2000-5/-7/-10/-14/-15/-21-S1
Number of storage units per unit (tower) / max. units (towers) in parallel		1 - 3 / to 2	1 - 3 / to 2	1 - 3 / to 2	1 - 3 / to 2
max. system charging power		to be calculated according to the set / see table		to be calculated according to the set / see table	
Usable capacity (kWh) per unit		5,0 to 15,0	5,0 to 21,0	5,0 to 15,0	5,0 to 21,0
Expansion window from commissioning		unlimited		unlimited	
Backup (emergency power) /implementation + accessories		● complete switchover single-phase with Smart Guard-63A-S0		● complete switchover single-phase with Smart Guard-63A-S0	
Off-grid application possible (true island/off-grid system) /additional options		●		●	
Active PV modules in backup mode/ system black-start capable		●		● single-phase with Smart Guard-63A-S0	
Interfaces (heat pump + ripple control receiver)		Connection heat pump (with SmartAssistant) + ripple control receiver via Huawei Smart Logger			
SMART charging features Dynamic electricity tariffs, fixed charging times, limitation by the utility according to EnWG §14a		fixed charging times; dynamic electricity tariffs (with SmartAssistant); limitation by the utility			
System information		Single-phase hybrid unit with additional PV inverter via AC coupling; optional use of Huawei optimizers possible; use as an off-grid system without grid connection possible		Single-phase hybrid unit with additional PV inverter via AC coupling; optional use of Huawei optimizers possible; use as an off-grid system without grid connection possible	

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Inverter manufacturer HUAWEI

Storage inverter type		**SUN2000- 3 / 4 / 5 / 6 / 8 / 10 KTL-M1** **SUN2000 5 / 6 / 8 / 10 / 12 K MAP0**		**SUN2000-12 / 15 / 17 / 20 / 25K-MB0**	
Max. PV system size (kWp)		DC: 4,5 to 22,0 AC: without restriction		DC: 18,0 to 37,5 AC: without restriction	
AC phases	**1**	○		○	
	3	●		●	
Surge Protection Device DC / AC		Type 2 / Type 2		Type 2 / Type 2	
Storage connection	**AC** (Bat.-Inv)	●		●	
	DC (Hybrid)	●		●	
Storage charging via separate PV inverter (AC coupling)		●		●	
Storage manufacturer		HUAWEI		HUAWEI	
Storage type		LUNA2000-5 / 10 / 15-S0	LUNA2000-5/-7/-10/-14/-15/-21-S1	LUNA2000-5 / 10 / 15-S0	LUNA2000-5/-7/-10/-14/-15/-21-S1
Number of storage units per unit (tower) / max. units (towers) in parallel		1 - 3 / to 2	1 - 3 / to 2	1 - 3 / 2 per input	1 - 3 / 2 per input
max. system charging power		to be calculated according to the set / see table		to be calculated according to the set / see table	
Usable capacity (kWh) per unit		5,0 to 15,0	5,0 to 21,0	5,0 to 15,0	5,0 to 21,0
Expansion window from commissioning		unlimited		unlimited	
Backup (emergency power) /implementation + accessories		● complete switchover M1 (only 1-ph) + MAP0 (3-ph) with Smart Guard-63A-T0		● complete switchover MB0 (only 1-ph) with Smart Guard-63A-T0	
Off-grid application possible (true island/off-grid system) /additional options		○		○	
Active PV modules in backup mode/ system black-start capable		●		●	
Interfaces (heat pump + ripple control receiver)		Connection heat pump (with SmartAssistant) + ripple control receiver via Huawei Smart Logger			
SMART charging features Dynamic electricity tariffs, fixed charging times, limitation by the utility according to EnWG §14a		fixed charging times; dynamic electricity tariffs (with SmartAssistant); limitation by the utility			
System information		three-phase DC-coupled system; optional use the Huawei Optimizer possible; up to 3 devices in paralll operation ***; backup operation for the M1 series only single-phase with Backup Box-B1; backup operation for the MAP0 series three-phase with Smart Guard-63A-T0 Box		Three-phase hybrid unit with additional PV inverter via AC coupling; optional use of Huawei optimizers possible; 2 separate battery connections; arc-fault detection	

Inverter manufacturer

KACO new energy.

Storage inverter type		**Hybrid NH3 M3** **8.0 / 10.0 / 12.0**				
Max. PV system size (kWp)		DC: 16,0 to 24,0 kWp AC: without restrictions				
AC phases	**1**	○				
	3	●				
Surge Protection Device DC / AC		Type 2 / -				
Storage connection	**AC** (Bat.-Inv)	●				
	DC (Hybrid)	●				
Storage charging via separate PV inverter (AC coupling)		●				
Storage manufacturer		BYD		AXITEC		PYLONTECH
Storage type		B-Box HVS 5.1 to 12.8	B-Box HVM 8.3 to 22.1	AXIstorage Li SV1 10.1 to 23.6	AXIstorage Li SV2 6.7 to 16.9	Force-H1 10.1 to 23.6	Force-H2 6.7 to 16.9
Number of storage units per unit (tower) / max. units (towers) in parallel		2 - 5 / to 3	3 - 8 / to 3	3 - 7 / 6	2 - 5 / 6	3 - 7 / 6	2 - 5 / 6
max. system charging power		to be calculated according to the set / see table		to be calculated according to the set / see table		to be calculated according to the set / see table	
Usable capacity (kWh) per unit		5,1 to 12,8	8,3 to 22,1	10,1 to 23,6	6,7 to 16,9	10,1 to 23,6	6,7 to 16,9
Expansion window from commissioning		unlimited		to 5 years		to 2 years	
Backup (emergency power) /implementation + accessories		● integrated Backup connection (selected loads < power inverter)					
Off-grid application possible (true island/off-grid system) /additional options		○					
Active PV modules in backup mode/ system black-start capable		●					
Interfaces (heat pump + ripple control receiver)		Connection of the ripple control receiver via connection terminals					
SMART charging features Dynamic electricity tariffs, fixed charging times, limitation by the utility according to EnWG §14a		fixed charging times; dynamic electricity tariffs (via Kaco Leaflet HEMS); limitation by the utility (via Kaco Leaflet HEMS)					
System information		three-phase DC-coupled hybrid unit with additional PV inverter via AC coupling; 3 independent MPP trackers; also usable as a pure storage inverter; up to 3 devices in parallel operation (only same inverter power classes and battery sizes, EPS outputs not synchronized)					

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Inverter manufacturer

KOSTAL Solar Electric

Storage inverter type		**Plenticore Plus G2 3.0 / 4.2 / 5.5 / 7.0 / 8.5 / 10 (Plenticore Plus 3.0 with BYD HVM only 11.0)**	**Plenticore MP G3 S / M (power each according to Version and activation level)**	**Plenticore G3 S / M / L (power each according to version and activation level from 4,0 - 20,0 kW)**
Max. PV system size (kWp)		DC: 4,5 to 15,0 AC: without restriction	"DC: 4,5 to 10,5 (depending on the activation level) AC: without restriction	DC: 6,0 to 30,0 (depending on the activation level) AC: without restriction
AC phases	**1**	○	●	○
	3	●	○	●
Surge Protection Device DC / AC		- / -	Type 2 (opt.) / -	Type 2 (opt.) / -
Storage connection	**AC** (Bat.-Inv)	●	● (when connection is activated)	● (when connection is activated)
	DC (Hybrid)	●	● (when connection is activated)	● (when connection is activated)
Storage charging via separate PV inverter (AC coupling)		●		

Storage manufacturer	AXITEC		PYLONTECH		
Storage type	AXIstorage Li SV1 10.1 to 23.6	AXIstorage Li SV2 6.7 to 16.9	Force-H1 10.1 to 23.6	Force-H2 6.7 to 16.9	Force-H3 9.7 to 34
Number of storage units per unit (tower) / max. units (towers) in parallel	3 - 7 / 6	2 - 5 / 6	3 - 7 / 6	2 - 5 / 6	2 - 7 / 6
max. system charging power	to be calculated according to the set / see table		to be calculated according to the set / see table		
Usable capacity (kWh) per unit	10,1 to 23,6	6,7 to 16,9	10,1 to 23,6	6,7 to 16,9	9,69 to 34,01
Expansion window from commissioning	to 5 years		to 2 years		

Backup (emergency power) /implementation + accessories	○	● complete switchover manual with Kostal Backup Switch, automatic with the Enwitec Box
Off-grid application possible (true island/off-grid system) /additional options	○	○
Active PV modules in backup mode/ system black-start capable	○	●
Interfaces (heat pump + ripple control receiver)	Connection heat pump via SG Ready contact; Connection of the ripple control receiver via connection terminals	Connection heat pump via SG Ready contact; Connection of the ripple control receiver via connection terminals
SMART charging features Dynamic electricity tariffs, fixed charging times, limitation by the utility according to EnWG §14a	fixed charging times; dynamic electricity tariffs; limitation by the utility (via KSEM G2)	fixed charging times; dynamic electricity tariffs; limitation by the utility (via KSEM G2)

System information	three-phase PV / Hybrid- / storage-inverter with additional PV inverter via AC coupling; battery connection must be enabled via activation code;	single-phase AC / DC-coupled storage system (Hybrid / storage inverter) 2 versions (S / M) with up to 2 additional power levels; activation via activation code (Plenti-Coins);	three-phase AC / DC-coupled storage system (Hybrid / storage inverter); 3 versions (S / M / L) with each 2 additional power levels; activation via activation code (Plenti-Coins); three-phase PV / Hybrid- / storage-inverter with additional PV inverter via AC coupling; battery connection must be enabled via activation code;

Inverter manufacturer KOSTAL Solar Electric

Storage inverter type		**Plenticore Plus G2 3.0 / 4.2 / 5.5 / 7.0 / 8.5 / 10 (Plenticore Plus 3.0 with BYD HVM only 11.0)**			**Plenticore MP G3 S / M (power each according to Version and activation level)**		**Plenticore G3 S / M / L (power each according to version and activation level from 4,0 - 20,0 kW)**	
Max. PV system size (kWp)		DC: 4,5 to 15,0 AC: without restriction			DC: 4,5 to 10,5 (depending on the activation level) AC: without restriction		DC: 6,0 to 30,0 (depending on the activation level) AC: without restriction	
AC phases	**1**	○			●		○	
	3	●			○		●	
Surge Protection Device DC / AC		- / -			Type 2 (opt.) / -		Type 2 (opt.) / -	
Storage connection	**AC** (Bat.-Inv)	●			● (when connection is activated)		● (when connection is activated)	
	DC (Hybrid)	●			● (when connection is activated)		● (when connection is activated)	
Storage charging via separate PV inverter (AC coupling)		●						
Storage manufacturer		BYD			ZYC ENERGY	KOSTAL Solar Electric	VARTA	
Storage type		B-Box HVS /+ 5.1 to 12.8	B-Box HVM /+ 11.0 to 22.1	B-Box HVB 5.9 to 29.6	SIMPO HV 6.4 to 28.8	HELIVOR HV 6.4 to 28.8	VARTA.wall BM1 10.0 / 15.0 / 20.0 (cell chemistry NCA)	VARTA.wall BM2 9.0 / 13.5 / 18.0 (cell chemistry LFP)
Number of storage units per unit (tower) / max. units (towers) in parallel		2 - 5 / to 3	4 - 8 / to 3	2 - 10 / 3	2 - 9 / -	2 - 9 / -	2 - 4 / -	2 - 4 / -
max. system charging power		to be calculated according to the set / see table			set / table	set / table	to be calculated according to the set / see table	
Usable capacity (kWh) per unit		5,1 to 12,8	11,0 to 22,1	5,94 to 29,69	6,4 to 28,8	6,4 to 28,8	10,0 to 20,0	9,0 to 18,0
Expansion window from commissioning		unlimited	unlimited	unlimited	unlimited	unlimited	up to 1.5 years	to 2 years
Backup (emergency power) /implementation + accessories		○			● complete switchover manual with Kostal Backup Switch, automatic with the Enwitec Box			
Off-grid application possible (true island/off-grid system) /additional options		○			○			
Active PV modules in backup mode/ system black-start capable		○			●			
Interfaces (heat pump + ripple control receiver)		Connection heat pump via SG Ready contact; Connection of the ripple control receiver via connection terminals			Connection heat pump via SG Ready contact; Connection of the ripple control receiver via connection terminals			
SMART charging features Dynamic electricity tariffs, fixed charging times, limitation by the utility according to EnWG §14a		fixed charging times; dynamic electricity tariffs; limitation by the utility (via KSEM G2)			fixed charging times; dynamic electricity tariffs; limitation by the utility (via KSEM G2)			
System information		three-phase PV / Hybrid- / storage-inverter with additional PV inverter via AC coupling; battery connection must be enabled via activation code;			single-phase AC / DC-coupled storage system (Hybrid / storage inverter) 2 versions (S / M) with up to 2 additional power levels; activation via activation code (Plenti-Coins);		three-phase AC / DC-coupled storage system (Hybrid / storage inverter); 3 versions (S / M / L) with each 2 additional power levels; activation via activation code (Plenti-Coins); three-phase PV / Hybrid- / storage-inverter with additional PV inverter via AC coupling; battery connection must be enabled via activation code;	

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Inverter manufacturer PYLONTECH

Storage inverter type		**Force H3X** **3.6 / 5 */ 6* / 8***	**Force H3X** **8 / 10 / 12 / 15**
Max. PV system size (kWp)		DC: 5,7 to 24,0 AC: without restriction	DC: 5,7 to 24,0 AC: without restriction
AC phases	**1**	●	○
	3	○	●
Surge Protection Device DC / AC		Type 2 / Type 2	
Storage connection	**AC** (Bat.-Inv)	●	
	DC (Hybrid)	●	
Storage charging via separate PV inverter (AC coupling)		●	
Storage manufacturer		PYLONTECH	
Storage type		Force H3X storage module	Force H3X storage module
Number of storage units per unit (tower) / max. units (towers) in parallel		1 - 4 / -	2 - 7 / -
max. system charging power		to be calculated according to the set / see table	
Usable capacity (kWh) per unit		4,85 to 19,4	9,69 to 34,01
Expansion window from commissioning		to 2 years	
Backup (emergency power) /implementation + accessories		● (single-phase) integrated Backup connection (selected loads < power inverter)	● (three-phase) integrated Backup connection (selected loads < power inverter)
Off-grid application possible (true island/off-grid system) /additional options		○	
Active PV modules in backup mode/ system black-start capable		●	
Interfaces (heat pump + ripple control receiver)		Ripple control receiver + heat pump with Pylontech Home EMS Box	
SMART charging features Dynamic electricity tariffs, fixed charging times, limitation by the utility according to EnWG §14a		Dynamic electricity tariffs + limitation by the utility with Pylontech Home EMS Box	
System information		1-/three-phase DC-coupled hybrid unit with additional PV inverter via AC coupling; compact All-in-One System with Force H3 storage; System can be cascaded up to 6 times	

Inverter manufacturer SIGENERGY

Storage inverter type		**SigenStor** **Sigen Energy Controller** **5.0TP / 6.0TP / 8.0TP / 10.0TP / 12.0TP / 15.0TP / 17.0TP / 20.0TP / 25.0TP / 30.0TP**	**Sigen Hybrid SP2 / TP2** **3.0TP2 / 4.0TP2 / 5.0TP2 / 6.0TP2 / 8.0TP2 / 10.0TP2 / 12.0TP2**
Max. PV system size (kWp)		DC: 8.0 to 48.0 AC: without restriction	DC: 6.0 to 24.0 AC: without restriction
AC phases	**1**	○	○
	3	●	●
Surge Protection Device DC / AC		Typ 2 / Typ 2	Typ 2 / Typ 2
Storage connection	**AC** (Bat.-Inv)	●	●
	DC (Hybrid)	●	●
Storage charging via separate PV inverter (AC coupling)		●	●
Storage manufacturer		SIGENERGY	SIGENERGY
Storage type		SiegenStor BAT 6.0 / SiegenStor BAT 10.0	SiegenStor BAT 6.0 / SiegenStor BAT 10.0
Number of storage units per unit (tower) / max. units (towers) in parallel		1 - 6 / -	1 - 6 / -
max. system charging power		to be calculated per set / refer to table	to be calculated per set / refer to table
Usable capacity (kWh) per unit		5.84 to 35.04 / 8.76 to 52.56	5.84 to 35.04 / 8.76 to 52.56
Expansion window from commissioning		unlimited	unlimited
Backup (emergency power) /implementation + accessories		● integr. Backup connection (selective consumers < inverter power)	● integr. Backup connection (selective consumers < inverter power)
Off-grid application possible (true island/off-grid system) /additional options		○	○
Active PV modules in backup mode/ system black-start capable		●	●
Interfaces (heat pump + ripple control receiver)			
SMART charging features Dynamic electricity tariffs, fixed charging times, limitation by the utility according to EnWG §14a			
System information		3-phase DC coupled hybrid device with additional PV-inverter via AC coupling; kompaktes All-in-One System with 2 Batterietypen; System up to 20-fach cascadable	3-phase DC coupled hybrid device with additional PV-inverter via AC coupling; 2 flexibel mischbare Batterietypen; additionals BAT Cover required

Inverter manufacturer		SMA					
Storage inverter type		**Sunny Island 6.0H / 8.0H**		**Sunny Boy Smart Energy 3.6 / 4.0 / 5.0* / 6.0***			
Max. PV system size (kWp)		AC: without restriction **		DC: 7,2 to 12,0 AC: without restriction			
AC phases	**1**	●		●			
	3	●		○			
Surge Protection Device DC / AC		/		/			
Storage connection	**AC** (Bat.-Inv)	●		●			
	DC (Hybrid)	○		●			
Storage charging via separate PV inverter (AC coupling)		●		●			
Storage manufacturer		BYD		BYD		SMA	
Storage type		B-Box LVS 4.0 to 24.0	B-Box LVL 15.4	B-Box HVS / + 5.1 to 10.2 ***	B-Box HVM / + 8.3 to 22.1 ***	B-Box HVB 11.8 to 29.6	Home Storage 3.2 to 13.1	"Storage M 12.3 to 28.7"
Number of storage units per unit (tower) / max. units (towers) in parallel		1 - 6 / to 16 (16.0)	1 / up to 64	"2 - 4 / to 3 (only HVS)"	"3 - 8 / to 3 (only HVM)"	4 - 10 / -	1 - 4 / -	3 - 7 / -
max. system charging power		to be calculated according to the set / see table		to be calculated according to the set / see table			set / table	
Usable capacity (kWh) per unit		4,0 to 24,0	15,4	5.1 to 10.2	8.3 to 22.1	11.88 to 29.69	3,28 to 13,12	12.28 to 28.65
Expansion window from commissioning		unlimited		unlimited				up to 2 years
Backup (emergency power) /implementation + accessories		● with external transfer switch		● integrated Backup connection (selected loads < power inverter)				
Off-grid application possible (true island/off-grid system) /additional options		● direct generator connection possible (only Off-Grid)		○				
Active PV modules in backup mode/ system black-start capable		● **		●				
Interfaces (heat pump + ripple control receiver)		connection of the ripple control receiver by the PV inverter dependent		heat pump via SG Ready contact				
SMART charging features Dynamic electricity tariffs, fixed charging times, limitation by the utility according to EnWG §14a		fixed charging times; dynamic electricity tariffs (via Home Manager 2.0); limitation by the utility (via Home Manager)		fixed charging times; dynamic electricity tariffs (via Home Manager 2.0); limitation by the utility (via Home Manager)				
System information		1-/three-phase AC-coupled storage system with matching PV-inverter; Use as pure off-grid system (PV + generator) possible;		Single-phase DC-coupled hybrid unit with additional PV inverter via AC coupling; 3 MPPT with low input voltage; AFCI integrated; ShadeFix shade management				

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Inverter manufacturer		SMA					
Storage inverter type		Sunny Tripower 5.0 / 6.0 / 8.0 / 10.0 Smart Energy					
Max. PV system size (kWp)		DC: 7,5 to 15,0 AC: without restriction					
AC phases	1	○					
	3	●					
Surge Protection Device DC / AC		Type 2 / Type 2					
Storage connection	**AC** (Bat.-Inv)	●					
	DC (Hybrid)	●					
Storage charging via separate PV inverter (AC coupling)		●					
Storage manufacturer		BYD			SMA	VARTA	
Storage type		B-Box HVS / + 5.1 to 12.8 ***	B-Box HVM / + 11.0 to 22.1 ***	B-Box HVB 11.8 to 29.6	Home Storage 6.5 to 16.4	VARTA.wall BM1 10.0 / 15.0 / 20.0 (cell chemistry NCA)	VARTA.wall BM2 9.0 / 13.5 / 18.0 (cell chemistry LFP)
Number of storage units per unit (tower) / max. units (towers) in parallel		2 - 5 / to 3 (only HVS)	4 - 8 / to 3 (only HVM)	4 - 10 / -	2 - 5 / -	2 - 4 / -	2 - 4 / -
max. system charging power		to be calculated according to the set / see table			set / table	to be calculated according to the set / see table	
Usable capacity (kWh) per unit		5.1 to 12.8	11.0 to 22.1	11.88 to 29.69	6,56 to 16,4	10,0 to 20,0	9,0 to 18,0
Expansion window from commissioning		unlimited				up to 1.5 years	to 2 years
Backup (emergency power) /implementation + accessories		● integrated Backup connection (selected loads < power inverter)					
Off-grid application possible (true island/off-grid system) /additional options		○					
Active PV modules in backup mode/ system black-start capable		●					
Interfaces (heat pump + ripple control receiver)		heat pump via SG Ready contact; connection of the ripple control receiver via 5 x DI contact					
SMART charging features Dynamic electricity tariffs, fixed charging times, limitation by the utility according to EnWG §14a		fixed charging times; dynamic electricity tariffs (via Home Manager 2.0); limitation by the utility (via Home Manager)					
System information		Three-phase DC-coupled hybrid unit with additional PV inverter via AC coupling; ShadeFix shade management					

Inverter manufacturer SMA

Storage inverter type		**Sunny Tripower Hybrid X 5 / 6 / 8 / 10 / 12 / 15 -60**			**Sunny Tripower Hybrid X 20 / 25 / 30 -70**	
Max. PV system size (kWp)		DC: 7.5 to 22.5 AC: without restriction			DC: 30.0 to 45.0 AC: without restriction	
AC phases	**1**	○				
	3	●				
Surge Protection Device DC / AC		Typ 1+2 / Typ 2				
Storage connection	**AC** (Bat.-Inv)	●				
	DC (Hybrid)	●				
Storage charging via separate PV inverter (AC coupling)		●				
Storage manufacturer		BYD			SMA	
Storage type		B-Box HVS+	B-Box HVM+	B-Box HVB	Home Storage 6.5 to 16.4	"Storage M 12.3 to 49.1"
Number of storage units per unit (tower) / max. units (towers) in parallel		under review	under review	under review	2 - 5 / -	3 - 9 / announced (5-15 kW) 3 - 12 / announced (20-30 kW)
max. system charging power		to be calculated per set / refer to table			to be calculated per set / refer to table	
Usable capacity (kWh) per unit		under review	under review	under review	6.56 to 16.4	12.28 to 36.84 (5-15 kW) 12.28 to 49.12 (20-30 kW)"
Expansion window from commissioning		unlimited				up to 2 years
Backup (emergency power) /implementation + accessories		● Direct connection for Outlet / house connection with SMA Backup Box / Backup Kit				
Off-grid application possible (true island/off-grid system) /additional options		○				
Active PV modules in backup mode/ system black-start capable		●				
Interfaces (heat pump + ripple control receiver)		WP via SG Ready contact; connection FRE via 6 x DI contact				
SMART charging features Dynamic electricity tariffs, fixed charging times, limitation by the utility according to EnWG §14a		fixed charging times; dynamic electricity tariffs, Limitation by utility				
System information		3-phase DC-coupled hybrid device with additional PV-inverter via AC coupling; 3 / 4 MPP Tracker; up to 5 devices samer power class parallel (Backup only 3 WR); integrierter System Manager; AFCI; Ueberspannungsschutz; ShadeFix shade management; I/V-Generatordiagnose				

Inverter manufacturer		SOFAR
Storage inverter type		ESI 5 / 6,5 / 8 / 10 / 12K T1
Max. PV system size (kWp)		DC: 10,0 to 24,0 AC: without restriction
AC phases	1	○
	3	●
Surge Protection Device DC / AC		Type 2 / Type 2
Storage connection	**AC** (Bat.-Inv)	●
	DC (Hybrid)	●
Storage charging via separate PV inverter (AC coupling)		●
Storage manufacturer		SOFAR
Storage type		BTS-5K
Number of storage units per unit (tower) / max. units (towers) in parallel		1 - 6 / -
max. system charging power		to be calculated according to the set / see table
Usable capacity (kWh) per unit		5,12 to 30,72
Expansion window from commissioning		unlimited
Backup (emergency power) /implementation + accessories		● integrated Backup connection (selected loads < power inverter)
Off-grid application possible (true island/off-grid system) /additional options		●
Active PV modules in backup mode/ system black-start capable		●
Interfaces (heat pump + ripple control receiver)		Control heat pump possible; connection of the ripple control receiver via connection terminals
SMART charging features Dynamic electricity tariffs, fixed charging times, limitation by the utility according to EnWG §14a		fixed charging times; dynamic electricity tariffs (via Sofar EMS Box); limitation by the utility
System information		Three-phase DC- or AC-coupled All-in-One hybrid unit with additional PV inverter via AC coupling; 1 battery connection; use as an off-grid system (with / without generator) possible; control for external grid protection possible

Inverter manufacturer SOFAR

Storage inverter type		HYD 5 / 6 / 8 / 10 / 15 / 20 KTL					
Max. PV system size (kWp)		DC: 7,5 to 20,0 AC: without restriction					
AC phases	1	○					
	3	●					
Surge Protection Device DC / AC		Type 2 / Type 2					
Storage connection	**AC** (Bat.-Inv)	●					
	DC (Hybrid)	●					
Storage charging via separate PV inverter (AC coupling)		●					
Storage manufacturer		PYLONTECH			SOFAR	AXITEC	
Storage type		Force-H1 13.5 to 23.6	Force-H2 10.1 to 16.9	Force-H3 9.7 to 34	BTS-D5 E5 to E20	AXIstorage Li SV1 13.5 to 23.6	AXIstorage Li SV2 6.7 to 16.9	AXIstorage Li SV3 9.7 to 34
Number of storage units per unit (tower) / max. units (towers) in parallel		4 - 7 / 6	2 - 5 / 6	2 - 7 / 6	1 - 4 / to 2 (only HYD 10-20)	4 - 7 / 6	2 - 5 / 6	2 - 7 / 6
max. system charging power		to be calculated according to the set / see table			set / table	to be calculated according to the set / see table		
Usable capacity (kWh) per unit		13,5 to 23,6	6,7 to 16,9	9,69 to 34,01	4,75 to 19,0	13,5 to 23,6	6,7 to 16,9	9,69 to 34,01
Expansion window from commissioning		to 2 years			unlimited	to 5 years		
Backup (emergency power) /implementation + accessories		● integrated Backup connection (selected loads < power inverter)						
Off-grid application possible (true island/off-grid system) /additional options		● integrated Backup connection (selected loads < power inverter)						
Active PV modules in backup mode/ system black-start capable		●						
Interfaces (heat pump + ripple control receiver)		Control heat pump possible; connection of the ripple control receiver via connection terminals						
SMART charging features Dynamic electricity tariffs, fixed charging times, limitation by the utility according to EnWG §14a		fixed charging times; dynamic electricity tariffs (via Sofar EMS Box); limitation by the utility						
System information		Three-phase DC- or AC-coupled hybrid unit with additional PV inverter via AC coupling; 1 battery connection; up to 10 devices possible in grid-connected parallel operation (VDE 4110 available); in backup operation only 6 devices can operate in parallel; use as an off-grid system (with / without generator) possible; control for external grid protection possible						

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Inverter manufacturer

Storage inverter type		**RWB Home Hub Inverter*** SE3000H / SE3680H / SE4000H / SE5000H* / SE6000H***	**RWS StorEdge Hybrid 5 / 7 / 8 / 10**	
Max. PV system size (kWp)		DC: 10,0 to 15,0 AC: without restriction	DC: 6,5 to 13,5 AC: without restriction	
AC phases	**1**	●	○	
	3	○	●	
Surge Protection Device DC / AC		- / -	- / -	
Storage connection	**AC** (Bat.-Inv)	●	●	
	DC (Hybrid)	●	●	
Storage charging via separate PV inverter (AC coupling)		●	●	
Storage manufacturer		solaredge	BYD	solaredge
Storage type		Home Battery HV	B-Box LVS 4.0 to 24.0	Home Battery LV 4.6 to 23.0
Number of storage units per unit (tower) / max. units (towers) in parallel		1 / to 3	1 - 6 / -	1 - 5 / -
max. system charging power		to be calculated according to the set / see table	to be calculated according to the set / see table	to be calculated according to the set / see table
Usable capacity (kWh) per unit		9,7	4,0 to 24,0	4,85 to 24,25
Expansion window from commissioning		unlimited	unlimited, only 1 tower	unlimited
Backup (emergency power) /implementation + accessories		○	○	
Off-grid application possible (true island/off-grid system) /additional options		○		
Active PV modules in backup mode/ system black-start capable		●	○	
Interfaces (heat pump + ripple control receiver)		Connection heat pump via SE Smart Home components;		
SMART charging features Dynamic electricity tariffs, fixed charging times, limitation by the utility according to EnWG §14a		fixed charging times; dynamic electricity tariffs (with SolarEdge ONE); limitation by the utility (with dem SolarEdge ONE Controller)		
System information			three-phase DC or AC-coupled hybrid unit; up to 3 devices in paralll operation ***,; with additional PV inverter via AC coupling	

Inverter manufacturer solaredge

Storage inverter type		**RWB48 Home Hub Inverter 5 / 8 / 10**		**Nexis NX20K (Multi-Range 8-20 kW)**
Max. PV system size (kWp)		DC: 10,0 to 15,0 AC: without restriction		DC: 16,0 to 40,0 AC: without restriction
AC phases	**1**	○		○
	3	●		●
Surge Protection Device DC / AC		- / -		- / -
Storage connection	**AC** (Bat.-Inv)	●		in clarification
	DC (Hybrid)	●		●
Storage charging via separate PV inverter (AC coupling)		●		in clarification
Storage manufacturer		solaredge		
Storage type		Home Battery LV 4.6 to 23.0	Home Battery LV (W) 4.85 to 19.4 ***	Nexis Battery Stack 5 to 20
Number of storage units per unit (tower) / max. units (towers) in parallel		1 - 5 / -	1 - 4 / -	1 - 4 / 1 - 4***
max. system charging power		to be calculated according to the set / see table		
Usable capacity (kWh) per unit		4,85 to 24,25	4,85 to 19,4	4,65 to 18,6
Expansion window from commissioning		unlimited	unlimited	unlimited
Backup (emergency power) /implementation + accessories		● complete switchover with Home Backup Interface 3P		● complete switchover with Home Backup Interface 3P
Off-grid application possible (true island/off-grid system) /additional options		○		
Active PV modules in backup mode/ system black-start capable		●		●
Interfaces (heat pump + ripple control receiver)		Connection heat pump via SE Smart Home components;		
SMART charging features Dynamic electricity tariffs, fixed charging times, limitation by the utility according to EnWG §14a		fixed charging times; dynamic electricity tariffs (with SolarEdge ONE); limitation by the utility (with dem SolarEdge ONE Controller)		
System information		three-phase DC or AC-coupled hybrid unit; up to 3 devices in paralll operation (only the master inverter active in backup mode) ***		three-phase DC or AC-coupled hybrid unit; variable power class from 8 to 20 kW; integrated backup connection

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Please note the instructions at the end of the document.

Inverter manufacturer		SOLAX POWER		
Storage inverter type		**X3-HYBRID G4.2 (Version D)** **5.0-D / 6.0-D / 8.0-D / 10.0-D / 12.0-D / 15.0-D** **X3-Hybrid-G4 PRO** **5.0-P / 6.0-P / 8.0-P / 10.0-P / 12.0-P / 15.0-P**		
Max. PV system size (kWp)		DC: 8,0 to 30,0 AC: without restriction		
AC phases	**1**	○		
	3	●		
Surge Protection Device DC / AC		Type 2 / Type 2 (only PRO Version)		
Storage connection	**AC** (Bat.-Inv)	●		
	DC (Hybrid)	●		
Storage charging via separate PV inverter (AC coupling)		●		
Storage manufacturer		SOLAX POWER		
Storage type		T-BAT HV-S 2.5 7.5 to 32.5	T-BAT HV-S 3.6 7.2 to 46.8	T-BAT-HV-S5.1-O 15.3 to 66.5
Number of storage units per unit (tower) / max. units (towers) in parallel		3 - 13 (Pro Series) / 3 4 - 13 (D Series) / 3	3 - 13 (Pro Series) / 3 4 - 13 (D Series) / 3	3 - 13 (Pro Series) / 3 4 - 13 (D Series) / 3
max. system charging power		to be calculated according to the set / see table		
Usable capacity (kWh) per unit		6,9 to 29,9	6,5 to 43,1	13,7 to 59,8
Expansion window from commissioning		unlimited		
Backup (emergency power) /implementation + accessories		● integrated Backup connection (selected loads < power inverter) complete switchover with X3-Matebox + X3-EPS-Box		
Off-grid application possible (true island/off-grid system) /additional options		● Connection generator via external ATS Box		
Active PV modules in backup mode/ system black-start capable		●		
Interfaces (heat pump + ripple control receiver)		Connection heat pump (via Solax Adapterbox G2); Connection of the ripple control receiver via Solax Xhub		
SMART charging features Dynamic electricity tariffs, fixed charging times, limitation by the utility according to EnWG §14a		fixed charging times; dynamic electricity tariffs; limitation by the utility (integrated terminals / Solax Xhub)		
System information		X3-Hybrid: 2 MPPT + 1 battery connection each; X3-Hybrid-G4 Pro: depending on power class, up to 3 MPPT + 2 battery connections each; Three-phase DC- or AC-coupled storage system with additional PV inverter via AC coupling; use as an off-grid system (with / without generator) possible; hybrid system with up to 10 devices in parallel operation (for backup operation, X3-EPS Parallel Box required; only same inverter power classes and battery sizes; EPS outputs synchronized)		

Inverter manufacturer SOLAX POWER

Storage inverter type		**X3-IES compact system 5K / 6K / 8K / 10K / 12K / 12K**		**X3-Ultra Hybrid 15K / 19.9K / 20K / 25K / 30K**		
Max. PV system size (kWp)		DC: 10,0 to 30,0 AC: without restriction		DC: 30,0 to 60,0 kWp AC: unlimited		
AC phases	**1**	○		○		
	3	●		●		
Surge Protection Device DC / AC		○		Type 2 / Type 2		
Storage connection	**AC** (Bat.-Inv)	●		●		
	DC (Hybrid)	●		●		
Storage charging via separate PV inverter (AC coupling)		●		●		
Storage manufacturer		SOLAX POWER		SOLAX POWER		
Storage type		T-BAT HV-S 2.5 7.5 to 32.5	T-BAT-HS50E 10.2 to 30.6	T-BAT HV-S 2.5 7.5 to 32.5	T-BAT HV-S 3.6 7.2 to 46.8	T-BAT-HV-S 5.1-O 15.3 to 66.5
Number of storage units per unit (tower) / max. units (towers) in parallel		3 - 13 / 3	3 - 6 / -	3 - 13 / 2	2 - 13 / -	3 - 13 / 2
max. system charging power		to be calculated according to the set / see table		to be calculated according to the set / see table		
Usable capacity (kWh) per unit		6,9 to 29,9	9,2 to 27,6	6,9 to 29,9	6,5 to 43,1	13,7 to 59,8
Expansion window from commissioning		unlimited		unlimited		
Backup (emergency power) /implementation + accessories		●, integrated Backup connection (selected loads < power inverter) complete switchover with X3-Matebox + X3-EPS-Box		● integrated Backup connection (selected loads < power inverter) complete switchover with X3-Matebox + X3-EPS-Box		
Off-grid application possible (true island/off-grid system) /additional options		● Connection generator via external ATS Box		● Connection generator via external ATS Box		
Active PV modules in backup mode/ system black-start capable		●		●		
Interfaces (heat pump + ripple control receiver)		Connection heat pump (via Solax Adapterbox G2); Connection of the ripple control receiver via 5 x DI		Connection heat pump (via Solax Adapterbox G2); Connection of the ripple control receiver via 5 x DI		
SMART charging features Dynamic electricity tariffs, fixed charging times, limitation by the utility according to EnWG §14a		fixed charging times; dynamic electricity tariffs; limitation by the utility (integrated terminals / Solax Xhub)		fixed charging times; dynamic electricity tariffs; limitation by the utility (integrated terminals / Solax Xhub)		
System information		three-phase DC-coupled storage system; Use as a hybrid off-grid system (with / without generator) possible; devices in paralll operation;		Three-phase DC-coupled storage system in compact design; up to 10 devices in parallel operation; version 15K - 20K with 2 MPPT and 2 batteries; 25K + 30K with 3 MPPT and 2 battery connections; when both battery connections are used, the same capacity (tower height) is mandatory		

*In Germany limited to 4.6 kW in single-phase operation (VDE-AR-N 4105) // **With suitable PV inverter // ***Availability /Release according to manufacturer's specification // All information without guarantee and subject to reservation according to manufacturer's approval.

Please note the instructions at the end of the document.

Inverter manufacturer SUNGROW Clean power for all

Storage inverter type		**SH 5.0 / 6.0 / 8.0 / 10.0 RT-20**			
Max. PV system size (kWp)		DC: 5,0 to 15,0 AC: without restriction			
AC phases	1	○			
	3	●			
Surge Protection Device DC / AC		Type 2 / Type 2			
Storage connection	**AC** (Bat.-Inv)	●			
	DC (Hybrid)	●			
Storage charging via separate PV inverter (AC coupling)		●			
Storage manufacturer		BYD		PYLONTECH	
Storage type		B-Box HVS 5.1 to 12.8 (only with SH-RT-20)	B-Box HVM 11.0 to 22.1 (only with SH-RT-20)	Force-H1 13.5 to 23.6 (only with SH-RT-20)	Force-H2 6.7 to 16.9 (only with SH-RT-20)
Number of storage units per unit (tower) / max. units (towers) in parallel		2 - 5 / to 3	4 - 8 / to 3	4 - 7 / 6	2 - 5 / 6
max. system charging power		to be calculated according to the set / see table		to be calculated according to the set / see table	
Usable capacity (kWh) per unit		5,1 to 12,8	11,0 to 22,1	13,5 to 23,6	6,7 to 16,9
Expansion window from commissioning		unlimited		to 2 years	
Backup (emergency power) /implementation + accessories		● integrated Backup connection (selected loads < power inverter)			
Off-grid application possible (true island/off-grid system) /additional options		○			
Active PV modules in backup mode/ system black-start capable		●			
Interfaces (heat pump + ripple control receiver)		connection heat pump via DO contact; connection FRE via 4 x DI contact			
SMART charging features Dynamic electricity tariffs, fixed charging times, limitation by the utility according to EnWG §14a		fixed charging times, dynamic electricity tariffs (via iHomeManager) Limitation by utility (via integrateden Steuerkontakt)			
System information		3-phase DC-coupled storage system with additional PV-inverter via AC coupling; up to 2 devices in parallel operation; (Auflagen to FRE connection and grid- and systems-Schutz in DE beeighten; only same inverter power classes possible)			

Inverter manufacturer SUNGROW Clean power for all

Storage inverter type		**SH 5 / 6 / 8 / 10 / 12 / 15 / 20 / 25 T**			
Max. PV system size (kWp)		DC: 10.0 to 50.0 AC: without restriction			
AC phases	**1**	○			
	3	●			
Surge Protection Device DC / AC		Type 2 / Type 2			
Storage connection	**AC** (Bat.-Inv)	●			
	DC (Hybrid)	●			
Storage charging via separate PV inverter (AC coupling)		●			
Storage manufacturer		AXITEC		SUNGROW Clean power for all	
Storage type		AXIstorage Li SV1 13.5 to 23.6 (only with SH-RT-20)	AXIstorage Li SV2 6.7 to 16.9 (only with SH-RT-20)	SBH 100*** / 150 / 200 / 250 / 300 / 350 / 400 (100 only with SH-T)	SBR 064*** / 096 / 128 / 160 / 192 / 224 / 256 (064 only with SH-RT-20)
Number of storage units per unit (tower) / max. units (towers) in parallel		4 - 7 / 6	2 - 5 / 6	2*** - 8 / to 2	2*** - 8 / -
max. system charging power		to be calculated according to the set / see table		to be calculated per set / refer to table	
Usable capacity (kWh) per unit		13,5 to 23,6	6,7 to 16,9	10.0 to 40.0	6.4 to 25.6
Expansion window from commissioning		to 5 years		unlimited	
Backup (emergency power) /implementation + accessories		● integr. Backup connection (komplette switching to 63 A)			
Off-grid application possible (true island/off-grid system) /additional options		○			
Active PV modules in backup mode/ system black-start capable		●			
Interfaces (heat pump + ripple control receiver)		connection heat pump via DO contact; connection FRE via 4 x DI contact			
SMART charging features Dynamic electricity tariffs, fixed charging times, limitation by the utility according to EnWG §14a		fixed charging times, dynamic electricity tariffs (via iHomeManager); Limitation by utility (via integrateden Steuerkontakt)			
System information		3-phase DC-coupled storage system with additional PV-Wechselrichtern via AC coupling (up to 5 WR the CX Series); up to 4 devices in parallel operation; (Auflagen to FRE connection and grid- and systems-Schutz in DE beeighten; only same inverter power classes possible)			

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Inverter manufacturer

SUNWODA ENERGY

Storage inverter type		**SunESS** **SW 8 / 10 / 12 / 15 KH3UT**
Max. PV system size (kWp)		DC: 12,0 to 22,5 AC: without restriction
AC phases	**1**	○
	3	●
Surge Protection Device DC / AC		Type 2 / Type 2
Storage connection	**AC** (Bat.-Inv)	○
	DC (Hybrid)	●
Storage charging via separate PV inverter (AC coupling)		○
Storage manufacturer		SUNWODA ENERGY
Storage type		SunESS 5.0 / 10.0 / 15.0 / 20.0 / 25.0 / 30.0 / 35.0 / 40.0
Number of storage units per unit (tower) / max. units (towers) in parallel		1 - 8 / -
max. system charging power		to be calculated according to the set / see table
Usable capacity (kWh) per unit		5,0 to 40,0
Expansion window from commissioning		unlimited
Backup (emergency power) /implementation + accessories		● integrated Backup connection (selected loads < power inverter)
Off-grid application possible (true island/off-grid system) /additional options		○
Active PV modules in backup mode/ system black-start capable		●
Interfaces (heat pump + ripple control receiver)		Connection heat pump via DRM contact; connection of the ripple control receiver via 4 x DRM contacte
SMART charging features Dynamic electricity tariffs, fixed charging times, limitation by the utility according to EnWG §14a		via external HEMS (third-party provider)
System information		three-phase hybrid unit with additional PV inverter via AC coupling; must always be installed as a complete system including storage; currently no cascading approved

Inverter manufacturer

Storage inverter type		**VARTA.hybrid** **6-3-2 / 10-3-2 / 10-3-4**	
Max. PV system size (kWp)		DC: 12,0 to 15,0 AC: without restriction	
AC phases	**1**	○	
	3	●	
Surge Protection Device DC / AC		Type 2 / -	
Storage connection	**AC** (Bat.-Inv)	●	
	DC (Hybrid)	●	
Storage charging via separate PV inverter (AC coupling)		●	
Storage manufacturer		VARTA	
Storage type		VARTA.wall 5.0 / 10.0 / 15.0 / 20.0 (cell chemistry NCA)	VARTA.wall 4.5 / 9.0 / 13.5 / 18.0 (cell chemistry LFP)
Number of storage units per unit (tower) / max. units (towers) in parallel		1 - 4 / -	
max. system charging power		to be calculated according to the set / see table	
Usable capacity (kWh) per unit		5,0 to 20,0	4,5 to 18,0
Expansion window from commissioning		up to 1.5 years	to 2 years
Backup (emergency power) /implementation + accessories		● with VARTA.backupswitch (announced)	
Off-grid application possible (true island/off-grid system) /additional options		○	
Active PV modules in backup mode/ system black-start capable		●	
Interfaces (heat pump + ripple control receiver)		"Connection heat pump via VARTA.iq Meter; connection of the ripple control receiver via VARTA.iq or VARTA.energymeter"	
SMART charging features Dynamic electricity tariffs, fixed charging times, limitation by the utility according to EnWG §14a		fixed charging times, dynamic electricity tariffs (via VARTA.iq Meter); limitation by the utility (via VARTA.iq or VARTA.energymeter)	
System information		Three-phase DC-coupled hybrid unit with additional PV inverter via AC coupling; besides the VARTA.energymeter, the VARTA.ip link is also available for features such as integration of dynamic electricity tariffs, bidirectional charging, cascading of multiple systems, and integration of more than 700 compatible devices in the smart home	

Explanation of The specifications		Description
Storage inverter type		Name inverter series and power classes
Max. PV system size (kWp)		DC System size according to manufacturer's specifications *
AC phases	**1**	1-phase grid connection
	3	3-phase grid connection
Surge Protection Device DC / AC		Specification of integrated overvoltage protection, if applicable also as an additional option
Bat.-coupling	**AC (Bat.-Inv)**	Definition of battery coupling via AC: Inverter is designed as pure AC-coupled device (e.g. SMA Sunny Island) or can also be used as hybrid inverter without connection of PV modules as bat inverter.
	DC (Hybrid)	Definition of battery coupling via DC: The inverter is designed as a hybrid device and can charge the battery via DC coupling from the directly connected PV modules.
Bat. charging via separate PV inverter (AC-coupling)		Use of a second inverter (same or different manufacturer) for charging the battery storage via AC coupling
Manufacturer storage		Manufacturer storage
Storage type		Name storage types (Compatible variants) Battery sets compatible with this storage system
Number of storages per unit (tower) / Max. Units (towers) parallel		Number of battery modules in individual setups / max. parallel setups Setups
Max. charging power System		maximum charge / discharge power in the respective unit combination *
Usable capacity (kWh) per unit		Usable capacity according to storage manufacturer *
Time window for expansion from commissioning		Possibility of a battery expansion as well as the time window for this from the time of commissioning
Emergency power (separate AC clamp)		Definition: Separate clamp at inverter for external socket(s), which is fed from battery and if possible by solar power.
Battery backup light (backup connection inverter, i.n. transfer switch)		Definition: direct supply of few defined circuits via backup connection at the inverter, if necessary also with switching by backup box (no complete house load)
Full battery backup (automatic transfer switch)		Definition: by means of automatic transfer switch in central main line (according to local regulations) supply of all/defined circuits takes place
Active PV-modules in backup mode		Recharge option in case of grid failure
Interfaces (Heat pump + FRE)		Information on interfaces for heat pumps and FRE cell chemistry
SMART Charging Features Dynamic electricity tariffs, fixed charging times, Limitation by EVU according to EnWG §14a		Additional charging modes of the storage system (in addition to PV surplus) with fixed charging times or via external control based on stock market prices, energy supply company specifications, etc.
System information		Additional information on the products

* The respective columns for the appliance series contain different performance classes, therefore all information refers to the smallest and largest appliance in each case, as well as a storage tower/unit. Detailed information can be found in the data sheet.

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