

Koyosonic

SMART ENERGY FOR BETTER LIFE

PRODUCT CATALOG
2022

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On-grid Inverters

R1 Mini Series

1.1kW / 1.6kW / 2.2kW / 2.7kW / 3.3kW / 3.7kW

Single Phase, 1 MPPT



FEATURES



Natural cooling for mute operation



Compact design



Remote firmware upgrade



IP65 outdoor design



130% DC input oversizing



Built-in zero export function

R1 Mini Series

Model	R1-1K1-SS	R1-1K6-SS	R1-2K2-SS	R1-2K7-SS	R1-3K3-SS	R1-3K7-SS
PV Input Data						
Max. Recommended PV Power [Wp]	1400	2400	2800	3500	4200	4800
Max. PV Input Voltage [V]	500	500	500	550	550	550
MPPT Voltage Range [V]	50 ~ 500	50 ~ 500	50 ~ 500	50 ~ 550	50 ~ 550	50 ~ 550
Rated Input Voltage [V]	360					
Start-up Voltage [V]	70					
No. of MPP Trackers	1					
No. of Input Strings per Tracker	1					
Max. PV Input Current [A]	13.5	13.5	13.5	13.5	16	13.5
Max. Short-circuit Current per MPPT [A]	17	17	17	17	20	17
DC Switch	Optional					
AC Output Data						
Rated AC Power [W]	1100	1600	2200	2700	3300	3680
Max. Output Power [VA]	1100	1600	2200	2700	3300	3680
Max. AC Current [A]	4.8	7.2	9.6	12	14.4	16
Rated AC Voltage / Range [V]	220 / 230; 160 ~ 290					
Grid Frequency / Range [Hz]	50 / 60; ±5					
Adjustable Power Factor [cosφ]	0.8 leading ~ 0.8 lagging					
Output THDi (@Rated Output)	≤ 2%					
Efficiency						
Max. Efficiency	97.00%	97.10%	97.10%	97.30%	97.30%	97.30%
Euro Efficiency	96.50%	96.60%	96.60%	96.80%	96.80%	96.80%
General Data						
Size (Width * Height * Depth) [mm]	260 * 295 * 115					260 * 335 * 120
Weight [kg]	6.8	6.8	6.8	6.8	6.8	7.5
User Interface	LCD					
Communication	RS485 or Wifi or 4G (optional)					
Ambient Temperature Range [℃]	-25 ~ +60					
Relative Humidity	0 ~ 100%					
Operating Altitude [m]	≤ 4000					
Standby Self Consumption [W]	< 0.2					
Topology	Transformerless					
Cooling	Natural					
Enclosure	IP65					
Noise [dB]	< 30					
Warranty [years]	5 / 7 / 10					
Certifications & Standards						
Grid Regulation	VDE 0126-1-1, G98, EN 50549, C10 / 11, PEA, MEA, AS 4777, CEI 0-21, IEC 61727, IEC 62116, IEC 60068, IEC 61683					
Safety Regulation	IEC 62109-1, IEC 62109-2					
EMC	EN 61000-3-2, EN 61000-3-3, EN 61000-6-1, EN 61000-6-3, IEC 61000-4-16, IEC 61000-4-18, IEC 61000-4-29					
Protection						
	• DC Insulation Monitoring		• AC Overvoltage Protection		• Anti-island Protection	
	• Residual Current Monitoring		• AC Overcurrent Protection		• Over-heat Protection	
	• Input Reverse Polarity Protection		• AC Short-circuit Protection		• DC / AC Surge Protection	

On-grid Inverters

R1 Macro Series

4kW / 5kW / 6kW

Single Phase, 2 MPPTs



FEATURES



Natural cooling for mute operation



130% DC input oversizing



Remote firmware upgrade



IP65 outdoor design



Up to 97.8% max. efficiency



Built-in zero export function

Model	NAC4K-DS		NAC5K-DS	NAC6K-DS
PV Input Data				
Max. Recommended PV Power [Wp]	5200		6500	7800
Max. PV Power for Single MPPT [Wp]	4000		4000	4000
Max. PV Input Voltage [V]	600			
MPPT Voltage Range [V]	100 ~ 550			
Rated Input Voltage [V]	360			
Start-up Voltage [V]	120			
No. of MPP Trackers	2			
No. of Input Strings per Tracker	1 / 1	1 / 1	1 / 1	1 / 1
Max. PV Input Current [A]	16 / 16	16 / 16	16 / 16	16 / 16
Max. Short-circuit Current per MPPT [A]	20 / 20	20 / 20	20 / 20	20 / 20
DC Switch	Optional			
AC Output Data				
Rated AC Power [W]	4000		5000	6000
Max. Output Power [VA]	4400		5500	6600
Max. AC Current [A]	19.2		24	28.7
Rated AC Voltage / Range [V]	220 / 230; 160 ~ 290			
Grid Frequency / Range [Hz]	50 / 60; ±5			
Adjustable Power Factor [cosφ]	0.8 leading ~ 0.8 lagging			
Output THDi (@Rated Output)	≤ 2%			
Efficiency				
Max. Efficiency	97.80%		97.80%	97.80%
Euro Efficiency	97.20%		97.20%	97.20%
General Data				
Size (Width * Height * Depth) [mm]	330 * 395 * 185			
Weight [kg]	12			
User Interface	LCD			
Communication	RS485 or Wifi or 4G (optional)			
Ambient Temperature Range [°C]	-25 ~ +60			
Relative Humidity	0 ~ 100%			
Operating Altitude [m]	≤ 4000			
Standby Self Consumption [W]	< 0.2			
Topology	Transformerless			
Cooling	Natural			
Enclosure	IP65			
Noise [dB]	< 30			
Warranty [years]	5 / 7 / 10			
Certifications & Standards				
Grid Regulation	VDE 0126-1-1, C10 / 11, G99, PEA, MEA, AS 4777, EN 50549, CEI 0-21, IEC 61727, IEC 62116, IEC 60068, IEC 61683, ABNT NBR 16150			
Safety Regulation	IEC 62109-1, IEC 62109-2			
EMC	EN 61000-3-2, EN 61000-3-3, EN 61000-3-11, EN 61000-3-12, EN 61000-6-2, EN 61000-6-3, IEC 61000-4-16, IEC 61000-4-18, IEC 61000-4-29			
Protection				
	• DC Insulation Monitoring	• AC Overvoltage Protection	• Anti-island Protection	
	• Residual Current Monitoring	• AC Overcurrent Protection	• Over-heat Protection	
	• Input Reverse Polarity Protection	• AC Short-circuit Protection	• DC / AC Surge Protection	

On-grid Inverters

R1 Moto Series

8kW / 10kW / 10.5kW
Single Phase, 2 MPPTs



FEATURES



Wider MPPT voltage range
(100 ~ 550V)



150% DC input oversizing



Remote firmware upgrade



Up to 98.1% max. efficiency



IP65 outdoor design



Built-in zero export function

Model	R1-8K-DS	R1-10K-DS	R1-10K5-DS
PV Input Data			
Max. Recommended PV Power [Wp]	12000	15000	16000
Max. PV Power for Single MPPT [Wp]	7500 / 6000	7500 / 7500	7500 / 7500
Max. PV Input Voltage [V]	600		
MPPT Voltage Range [V]	100 ~ 550		
Rated Input Voltage [V]	360		
Start-up Voltage [V]	120		
No. of MPP Trackers	2		
No. of Input Strings per Tracker	2 / 1	2 / 2	2 / 2
Max. PV Input Current [A]	26 / 20	26 / 26	26 / 26
Max. Short-circuit Current per MPPT [A]	33 / 26	33 / 33	33 / 33
DC Switch	Optional		
AC Output Data			
Rated AC Power [W]	8000	10000	10440
Max. Output Power [VA]	8800	10000	9570@220V; 10005@230V; 10440@240V
Max. AC Current [A]	38.5	43.7	43.8
Rated AC Voltage / Range [V]	220 / 230; 160 ~ 290		
Grid Frequency / Range [Hz]	50 / 60; ±5		
Adjustable Power Factor [cosφ]	0.8 leading ~ 0.8 lagging		
Output THDi (@Rated Output)	≤ 2%		
Efficiency			
Max. Efficiency	97.80%	98.10%	98.10%
Euro Efficiency	97.20%	97.50%	97.50%
General Data			
Size (Width * Height * Depth) [mm]	395 * 330 * 185		
Weight [kg]	16		
User Interface	LCD		
Communication	RS485 or Wifi or 4G (optional)		
Ambient Temperature Range [°C]	-25 ~ +60		
Relative Humidity	0 ~ 100%		
Operating Altitude [m]	≤ 4000		
Standby Self Consumption [W]	< 0.2		
Topology	Transformerless		
Cooling	Natural	Fan	Fan
Enclosure	IP65		
Noise [dB]	< 30	< 40	< 40
Warranty [years]	5 / 7 / 10		
Certifications & Standards			
Grid Regulation	IEC 61727, IEC 62116, IEC 60068, IEC 61683, ABNT NBR 16150		
Safety Regulation	IEC 62109-1, IEC 62109-2		
EMC	EN 61000-3-2, EN 61000-3-3, EN 61000-3-11, EN 61000-3-12, EN 61000-6-2, EN 61000-6-3, IEC 61000-4-16, IEC 61000-4-18, IEC 61000-4-29		
Protection			
	• DC Insulation Monitoring	• AC Overvoltage Protection	• Anti-island Protection
	• Residual Current Monitoring	• AC Overcurrent Protection	• Over-heat Protection
	• Input Reverse Polarity Protection	• AC Short-circuit Protection	• DC / AC Surge Protection

On-grid Inverters

R3 Note Series

4kW / 5kW / 6kW / 8kW / 10kW / 12kW / 15kW

Three Phase, 2 MPPTs



FEATURES



Natural cooling for mute operation



150% DC input oversizing



Remote firmware upgrade



IP65 outdoor design



Wider MPPT voltage range
(140 ~ 950V)



Built-in zero export function

Model	R3-4K-DT	R3-5K-DT	R3-6K-DT	R3-8K-DT	R3-10K-DT	R3-12K-DT	R3-15K-DT
PV Input Data							
Max. Recommended PV Power [Wp]	6000	7500	9000	12000	15000	18000	22500
Max. PV Power for Single MPPT [Wp]	3000	3750	4500	6000	7500	9000	15000 / 7500
Max. PV Input Voltage [V]	1000						
MPPT Voltage Range [V]	140 ~ 950						
Rated Input Voltage [V]	630						
Start-up Voltage [V]	160						
No. of MPP Trackers	2						
No. of Input Strings per Tracker	1 / 1	1 / 1	1 / 1	1 / 1	1 / 1	1 / 1	2 / 1
Max. PV Input Current [A]	16 / 16	16 / 16	16 / 16	16 / 16	16 / 16	16 / 16	20 / 16
Max. Short-circuit Current per MPPT [A]	20 / 20	20 / 20	20 / 20	20 / 20	20 / 20	20 / 20	26 / 20
DC Switch	Integrated						
AC Output Data							
Rated AC Power [W]	4000	5000	6000	8000	10000	12000	15000
Max. Output Power [VA]	4400	5500	6600	8800	11000	13200	16500
Max. AC Current [A]	6.4	8	9.6	12.8	16	19.2	24
Rated AC Voltage / Range [V]	3 / N / PE, 380, 400; ± 20%						
Grid Frequency / Range [Hz]	50 / 60; ± 5						
Adjustable Power Factor [cosφ]	0.8 leading ~ 0.8 lagging						
Output THDi (@Rated Output)	< 3%						
Efficiency							
Max. Efficiency	98.40%	98.40%	98.40%	98.50%	98.50%	98.50%	98.50%
Euro Efficiency	97.80%	97.80%	97.80%	98.00%	98.00%	98.00%	98.00%
General Data							
Size (Width * Height * Depth) [mm]	455 * 390 * 160			455 * 390 * 175			455 * 390 * 190
Weight [kg]	16.3			18.3			21.6
User Interface	LCD						
Communication	RS485 or Wifi or 4G (optional)						
Ambient Temperature Range [°C]	-25 ~ +60						
Relative Humidity	0 ~ 100%						
Operating Altitude [m]	≤ 4000						
Standby Self Consumption [W]	< 0.2						
Topology	Transformerless						
Cooling	Natural						
Enclosure	IP65						
Noise [dB]	< 30						
Warranty [years]	5 / 7 / 10						
Certifications & Standards							
Grid Regulation	C10/11, PEA, MEA, G98, G99, EN 50549, CEI 0-21, CEI 0-16, IEC 61727, IEC 62116, IEC 60068, IEC 61683						
Safety Regulation	IEC 62109-1, IEC 62109-2						
EMC	EN 61000-3-2, EN 61000-3-3, EN 61000-6-2, EN 61000-6-3, EN 61000-3-11, EN 61000-3-12, IEC 61000-4-16, IEC 61000-4-18, IEC 61000-4-29						
Protection							
	• DC Insulation Monitoring		• AC Overvoltage Protection		• Anti-island Protection		
	• Residual Current Monitoring		• AC Overcurrent Protection		• Over-heat Protection		
	• Input Reverse Polarity Protection		• AC Short-circuit Protection		• DC / AC Surge Protection		

On-grid Inverters

R3 LV Series

10kW / 12kW / 15kW
Three Phase, 2 MPPTs



FEATURES



Natural cooling for mute operation



150% DC input oversizing



Remote firmware upgrade



IP65 outdoor design



Support LVRT and OVRT



Built-in zero export function

Model	R3-10K-LV		R3-12K-LV	R3-15K-LV
PV Input Data				
Max. Recommended PV Power [Wp]	15000		18000	22500
Max. PV Power for Single MPPT [Wp]	7500		9000	11250
Max. PV Input Voltage [V]	800			
MPPT Voltage Range [V]	150 ~ 650			
Rated Input Voltage [V]	380			
Start-up Voltage [V]	165			
No. of MPP Trackers	2			
No. of Input Strings per Tracker	2 / 2	2 / 2	2 / 2	
Max. PV Input Current [A]	30 / 30	30 / 30	30 / 30	
Max. Short-circuit Current per MPPT [A]	39 / 39	39 / 39	39 / 39	
DC Switch	Integrated			
AC Output Data				
Rated AC Power [W]	9000@208 Vac 10000@220 Vac 11000@240 Vac	11000@208 Vac 12000@220 Vac 13000@240 Vac	14000@208 Vac 15000@220 Vac 16000@240 Vac	
Max. Output Power [VA]	11000	13000	16000	
Max. AC Current [A]	27.1	31.9	40	
Rated AC Voltage / Range [V]	150 ~ 300			
Grid Frequency / Range [Hz]	50 / 60; ±5			
Adjustable Power Factor [cosφ]	0.8 leading ~ 0.8 lagging			
Output THDi (@Rated Output)	< 3%			
Efficiency				
Max. Efficiency	98.40%	98.40%	98.50%	
Euro Efficiency	98.10%	98.20%	98.20%	
General Data				
Size (Width * Height * Depth) [mm]	506 * 386 * 185			
Weight [kg]	23			
User Interface	LCD			
Communication	RS485 or Wifi or 4G (optional)			
Ambient Temperature Range [°C]	-25 ~ +60			
Relative Humidity	0 ~ 100%			
Operating Altitude [m]	≤ 4000			
Standby Self Consumption [W]	< 0.2			
Topology	Transformerless			
Cooling	Fan			
Enclosure	IP65			
Noise [dB]	< 45			
Warranty [years]	5 / 7 / 10			
Certifications & Standards				
Safety Regulation	IEC 62109-1, IEC 62109-2			
EMC	EN 61000-1, EN 61000-2, EN 61000-3, EN 61000-4, EN 61000-4-16, EN 61000-4-18, EN 61000-4-29			
Protection				
	• DC Insulation Monitoring	• AC Overvoltage Protection	• Anti-island Protection	
	• Residual Current Monitoring	• AC Overcurrent Protection	• Over-heat Protection	
	• Input Reverse Polarity Protection	• AC Short-circuit Protection	• DC / AC Surge Protection	

On-grid Inverters

R3 Pre Series

10kW / 15kW / 17kW / 20kW / 25kW

Three Phase, 2 MPPTs



FEATURES



Compatible with 500W+ PV modules



Wider MPPT voltage range
(150 ~ 1000V)



Remote firmware upgrade



150% DC input oversizing



Maximum DC input voltage 1100V



Built-in zero export function

Model	R3-10K-G5	R3-15K-G5	R3-17K-G5	R3-20K-G5	R3-25K-G5	R3-25K-G5-P
PV Input Data						
Max. Recommended PV Power [Wp]	15000	22500	25500	30000	37500	37500
Max. PV Power for Single MPPT [Wp]	7500	13500 / 9000	12750	15000	18750	18750
Max. PV Input Voltage [V]	1100					
MPPT Voltage Range [V]	150 ~ 1000					
Rated Input Voltage [V]	630					
Start-up Voltage [V]	165					
No. of MPP Trackers	2					
No. of Input Strings per Tracker	1 / 1	2 / 1	2 / 2	2 / 2	2 / 2	2 / 2
Max. PV Input Current [A]	20 / 20	30 / 20	30 / 30	30 / 30	30 / 30	37.5 / 30
Max. Short-circuit Current per MPPT [A]	26 / 26	39 / 26	39 / 39	39 / 39	39 / 39	49 / 39
DC Switch	Integrated					
AC Output Data						
Rated AC Power [W]	10000	15000	17000	20000	25000	25000
Max. Output Power [VA]	11000	16500	18700	22000	27500	27500
Max. AC Current [A]	16	24	27.1	31.9	40	40
Rated AC Voltage / Range [V]	3 / N / PE, 380, 400; ±20%					
Grid Frequency / Range [Hz]	50 / 60; ±5					
Adjustable Power Factor [cosφ]	0.8 leading ~ 0.8 lagging					
Output THDi (@Rated Output)	< 3%					
Efficiency						
Max. Efficiency	98.30%	98.30%	98.40%	98.50%	98.50%	98.50%
Euro Efficiency	98.00%	98.00%	98.10%	98.20%	98.20%	98.20%
General Data						
Size (Width * Height * Depth) [mm]	506 * 386 * 185					
Weight [kg]	23					
User Interface	LCD					
Communication	RS485 or Wifi or 4G (optional)					
Ambient Temperature Range [°C]	-25 ~ +60					
Relative Humidity	0 ~ 100%					
Operating Altitude [m]	≤ 4000					
Standby Self Consumption [W]	< 0.2					
Topology	Transformerless					
Cooling	Natural	Natural	Fan	Fan	Fan	Fan
Enclosure	IP65					
Noise [dB]	< 30			< 45		
Warranty [years]	5 / 7 / 10					
Certifications & Standards						
Grid Regulation	IEC 61727, IEC 62116, IEC 60068, IEC 61683					
Safety Regulation	IEC 62109-1, IEC 62109-2					
EMC	EN 61000-3-2, EN 61000-3-3, EN 61000-6-2, EN 61000-6-3, EN 61000-3-11, EN 61000-3-12, IEC 61000-4-16, IEC 61000-4-18, IEC 61000-4-29					
Protection						
	• DC Insulation Monitoring		• AC Overvoltage Protection		• Anti-island Protection	
	• Residual Current Monitoring		• AC Overcurrent Protection		• Over-heat Protection	
	• Input Reverse Polarity Protection		• AC Short-circuit Protection		• DC / AC Surge Protection	

On-grid Inverters

R3 Navo Series

30kW / 36kW / 40kW / 50kW

Three Phase, 3 / 4 MPPTs



FEATURES



Compatible with 600W+ PV modules



150% DC input oversizing &
110% AC overloading



Remote firmware upgrade



Optional AFCI & Smart PID
recovery function



Low start-up voltage at 160V



Type II SPD for both DC and AC

Model	R3-30K	R3-36K	R3-40K	R3-50K
PV Input Data				
Max. Recommended PV Power [Wp]	45000	54000	60000	75000
Max. PV power for single MPPT [Wp]	15000	15000	15000	20000
Max. PV Input Voltage [V]	1100			
MPPT Voltage Range [V]	180 ~ 1000			
Rated Input Voltage [V]	600			
Start-up Voltage [V]	160			
No. of MPP Trackers	3	3	4	4
No. of Input Strings per Tracker	2 / 2 / 2	2 / 2 / 2	2 / 2 / 2 / 2	2 / 2 / 2 / 2
Max. PV Input Current [A]	40 / 40 / 40	40 / 40 / 40	40 / 40 / 40 / 40	40 / 40 / 40 / 40
Max. Short-circuit Current per MPPT [A]	50 / 50 / 50	50 / 50 / 50	50 / 50 / 50 / 50	50 / 50 / 50 / 50
DC Switch	Integrated			
AC Output Data				
Rated AC Power [W]	30000	36000	40000	50000
Max. Output Power [VA]	33000	39600	44000	55000
Max. AC Current [A]	50	60.1	66.6	83.3
Rated AC Voltage / Range [V]	3 / N / PE, 380, 400; ±20%; 3 / PE, 380, 400; ±20%			
Grid Frequency / Range [Hz]	50 / 60 ; ±5			
Adjustable Power Factor [cosφ]	0.8 leading ~ 0.8 lagging			
Output THDi (@Rated Output)	< 3%			
Efficiency				
Max. Efficiency	99.00%	99.00%	99.00%	99.00%
Euro Efficiency	98.50%	98.50%	98.50%	98.50%
Protection				
DC Insulation Monitoring	Integrated			
Input Reverse Polarity Protection	Integrated			
Anti-island Protection	Integrated			
Residual Current Monitoring	Integrated			
AC Overcurrent Protection	Integrated			
AC Short-circuit Protection	Integrated			
AFCI Protection	Optional			
Anti-PID function	Optional			
DC Surge Protection	Type II			
AC Surge Protection	Type II			
General Data				
Size (Width * Height * Depth) [mm]	585 * 480 * 220			
Weight [kg]	37			
User Interface	OLED + LCD			
Communication	RS485 and USB or Wifi or 4G (Optional)			
Ambient Temperature Range [°C]	-25 ~ +60			
Relative Humidity	0 ~ 100%			
Operating Altitude [m]	≤ 4000			
Standby Self Consumption [W]	< 0.2			
Topology	Transformerless			
Cooling	Fan			
Enclosure	IP65			
Noise [dB]	< 60			
Warranty [years]	5 / 7 / 10			
Certifications & Standards				
Grid Regulation	VDE-AR-N4105, EN 50549			
Safety Regulation	IEC 62109-1, IEC 62109-2			
EMC	IEC 61000-6-1, EN 61000-6-3			

On-grid Inverters

R3 Plus Series

60kW / 70kW / 75kW / 80kW

Three Phase, 3 / 4 MPPTs



FEATURES



150% DC input oversizing



IP65 outdoor design



String monitoring and shorter O&M time



110% AC overloading



Remote firmware upgrade



Remote active / reactive power limit control

Model	NAC60K	NAC70K	NAC75K	NAC80K
PV Input Data				
Max. Recommended PV Power [Wp]	90000	105000	112500	120000
Max. PV Input Voltage [V]	1100			
MPPT Voltage Range [V]	200 ~ 1000			
Rated Input Voltage [V]	620			
Start-up Voltage [V]	250			
No. of MPP Trackers	3	4	4	4
No. of Input Strings per Tracker	4 / 4 / 4	3 / 3 / 3 / 3	4 / 4 / 3 / 3	4 / 4 / 3 / 3
Max. PV Input Current [A]	44 / 44 / 44	35 / 35 / 35 / 35	44 / 44 / 35 / 35	44 / 44 / 35 / 35
Max. Short-circuit Current per MPPT [A]	46 / 46 / 46	46 / 46 / 46 / 46	60 / 60 / 46 / 46	60 / 60 / 46 / 46
DC Switch	Integrated			
AC Output Data				
Rated AC Power [W]	60000	70000	75000	80000
Max. Output Power [VA]	66000	77000	75000	88000
Max. AC Current [A]	95.3	111.1	109	127
Rated AC Voltage / Range [V]	3 / PE, 380, 400; ± 20%; 3 / N / PE, 380, 400; ± 20%			
Grid Frequency / Range [Hz]	50 / 60; ±5			
Adjustable Power Factor [cosφ]	0.8 leading ~ 0.8 lagging			
Output THDi (@Rated Output)	< 3%			
Efficiency				
Max. Efficiency	99.00%	99.00%	99.00%	99.00%
Euro Efficiency	98.37%	98.50%	98.50%	98.50%
General Data				
Size (Width * Height * Depth) [mm]	630 * 815 * 260	640 * 841 * 285		
Weight [kg]	63	76	79	79
User Interface	LCD			
Communication	RS485 or Wifi or 4G (optional)			
Ambient Temperature Range [°C]	-25 ~ +60			
Relative Humidity	0 ~ 100%			
Operating Altitude [m]	≤ 4000			
Standby Self Consumption [W]	< 1			
Topology	Transformerless			
Cooling	Fan			
Enclosure	IP65			
Noise [dB]	< 60			
Warranty [years]	5 / 7 / 10			
Certifications & Standards				
Grid Regulation	PEA, MEA, IEC 61727, IEC 62116			
Safety Regulation	IEC 62109-1, IEC 62109-2			
EMC	EN 61000-6-2, EN 61000-6-4			
Protection				
	• DC Insulation Monitoring	• AC Overvoltage Protection	• Anti-island Protection	
	• Residual Current Monitoring	• AC Overcurrent Protection	• Over-heat Protection	
	• Input Reverse Polarity Protection	• AC Short-circuit Protection	• DC / AC Surge Protection	

On-grid Inverters

R3 Max Series

120kW / 150kW

Three Phase, 10 / 12 MPPTs



FEATURES



150% DC input oversizing



IP66 outdoor design



String monitoring and shorter O&M time



Up to 10 / 12 MPPTs



Remote firmware upgrade



Remote active / reactive power limit control

Model	R3-120K	R3-150K-HV	
PV Input Data			
Max. Recommended PV Power [Wp]	180000	225000	
Max. PV Input Voltage [V]	1100		
MPPT Voltage Range [V]	180 ~ 1000		
Rated Input Voltage [V]	620	780	
Start-up Voltage [V]	250		
No. of MPP Trackers	10	12	
No. of Input Strings per Tracker	2	2	
Max. PV Input Current [A]	30	30	
Max. Short-circuit Current per MPPT [A]	40	40	
DC Switch	Integrated		
AC Output Data			
Rated AC Power [kW]	120@25°C, 110@45°C, 100@50°C	150@25°C, 136@40°C, 120@50°C	
Max. Output Power [VA]	121000	150000	
Max. AC Current [A]	176.4	174.5	
Rated AC Voltage / Range [V]	3 / N / PE, 230 / 400Vac; 320 ~ 480V	3 / PE, 500Vac; 400 ~ 621V	
Grid Frequency / Range [Hz]	50 / 60; ±5		
Adjustable Power Factor [cosφ]	0.8 leading ~ 0.8 lagging		
Output THDi (@Rated Output)	< 3%		
Efficiency			
Max. Efficiency	99.00%	99.00%	
Euro Efficiency	98.50%	98.50%	
General Data			
Size (Width * Height * Depth) [mm]	1055 * 700 * 336		
Weight [kg]	93	110	
User Interface	LED		
Communication	RS485 or Wifi or 4G (optional)		
Ambient Temperature Range [°C]	-25 ~ +60		
Relative Humidity	0 ~ 100%		
Operating Altitude [m]	≤ 4000		
Standby Self Consumption [W]	< 15		
Topology	Transformerless		
Cooling	Fan		
Enclosure	IP66		
Noise [dB]	≤ 60	≤ 70	
Warranty [years]	5 / 7 / 10		
Certifications & Standards			
Grid Regulation	IEC 61727, IEC 62116		
Safety Regulation	IEC 62109-1, IEC 62109-2		
EMC	EN 61000-6-2, EN 61000-6-4		
Protection			
	• DC Insulation Monitoring	• AC Overvoltage Protection	• Anti-island Protection
	• Residual Current Monitoring	• AC Overcurrent Protection	• Over-heat Protection
	• Input Reverse Polarity Protection	• AC Short-circuit Protection	• DC / AC Surge Protection

Energy Storage Products

N1 HV Series

3kW / 3.68kW / 5kW / 6kW

Single Phase, 2 MPPTs

High Voltage Hybrid Inverter



FEATURES



150% DC input oversizing



Charging / discharging
efficiency >97%



Support VPP / FFR function



Up to 6000W charging /
discharging rate



Remote firmware upgrade
& work mode setting



EU standard certified by TÜV
Rheinland

Model	N1-HV-3.0	N1-HV-3.68	N1-HV-5.0	N1-HV-6.0
PV Input Data				
Max. Recommended PV Power [Wp]	4500	5500	7500	9000
Max. PV Input Voltage [V]	600			
MPPT Voltage Range [V]	120 ~ 550			
Rated PV Input Voltage [V]	360			
Start-up Voltage [V]	150			
No. of MPP Trackers	2			
No. of Input Strings per Tracker	1			
Max. PV Input Current [A]	13.5 / 13.5			
Max. Short-circuit Current per MPPT [A]	17 / 17			
DC Switch	Integrated			
AC Input / Output Data (On-grid)				
Rated AC Power [W]	3000	3680	5000 ^[1]	6000
Rated AC Current [A]	13	16	21.7 ^[1]	26.1
Rated AC Voltage / Range [V]	220 / 230; 160 ~ 290			
Grid Frequency / Range [Hz]	50 / 60; ±5			
Adjustable Power Factor [cosφ]	0.8 leading ~ 0.8 lagging			
Output THDi (@Rated Output)	< 2%			
Battery Data				
Battery Type	Lithium			
Battery Voltage Range [V]	80 ~ 450			
Max. Charging / Discharging Current [A]	25			
Max. Charging / Discharging Power [W]	4500 / 3000	5500 / 3680	6000 / 5000	6000 / 6000
Communication Interface	CAN			
EPS Output Data (With Battery)				
EPS Rated Power [W]	3000	3680	5000	6000
EPS Rated Voltage [V]	220 / 230			
EPS Rated Frequency [Hz]	50 / 60			
EPS Rated Current [A]	13	16	21.7	26.1
Output THDi (@Rated Output)	< 2%			
Automatic Switch Time [s]	< 0.5			
Peak Apparent Power, Duration [VA, s]	3600, 600	4416, 600	6000, 600	7200, 600
Efficiency				
Max. Efficiency	97.42%	97.45%	97.50%	97.50%
Euro Efficiency	97.15%	97.17%	97.20%	97.20%
Battery Charge / Discharge Efficiency	97.15%	97.17%	97.20%	97.20%
Protection				
DC Insulation Monitoring	Integrated			
Input Reverse Polarity Protection	Integrated			
Anti-island Protection	Integrated			
Residual Current Monitoring	Integrated			
Over-heat Protection	Integrated			
AC Overcurrent Protection	Integrated			
AC Short-circuit Protection	Integrated			
AC Overvoltage Protection	Integrated			
DC Surge Protection	Integrated (Type III)			
AC Surge Protection	Integrated (Type III)			
General Data				
Size (Width * Height * Depth) [mm]	506 * 386 * 170			
Weight [kg]	20			
User Interface	LED + OLED			
Communication	RS485 and USB or Wifi or 4G (Optional)			
Ambient Temperature Range [°C]	-30 ~ +60			
Relative Humidity	0 ~ 95%			
Operating Altitude [m]	≤ 2000			
Standby Self Consumption [W]	< 15 for hot standby, < 3 for cold standby			
Topology	Transformerless			
Cooling	Natural			
Enclosure	IP65			
Noise [dB]	< 35			
Warranty [years]	5 / 7 / 10			
Certifications & Standards				
Grid Regulation	AS 4777, EN 50549, IEC 61727, CEI 0-21, IEC 62116, IEC 60068, IEC 61683			
Safety Regulation	IEC 62109-1, IEC 62109-2, IEC 62040, EN 61000-6-2, EN 61000-6-3			
EMC	EN 61000-4-16, EN 61000-4-18, EN 61000-4-29			

[1]: The AC output power for VDE-AR-N 4105, VDE0126 and NRS097-2-1 is limited to 4600VA&20A, for AS/NZS 4777.2 is limited to 4999VA & 21.7A.

Energy Storage Products

N3 HV Series

5kW / 6kW / 8kW / 10kW

Three Phase, 2 MPPTs

High Voltage Hybrid Inverter



FEATURES



Compatible with high power PV modules with 18A



Support 100% unbalanced loads



< 10ms UPS-level switching



Support up to 10 units parallel connections



Remote firmware upgrade & work mode setting



Support VPP / FFR function

Model	N3-HV-5.0	N3-HV-6.0	N3-HV-8.0	N3-HV-10.0
PV Input Data				
Max. Recommended PV Power [Wp]	7500	9000	12000	15000
Max. PV Input Voltage [V]	1000			
MPPT Voltage Range [V]	180 ~ 960			
Rated PV Input voltage [V]	600			
Start-up Voltage [V]	160			
No. of MPP Trackers	2			
No. of Input Strings per Tracker	1			
Max. PV Input Current [A]	18 / 18			
Max. Short-circult Current per MPPT [A]	23			
DC Switch	Integrated			
AC Input / Output Data				
Rated AC Power [W]	5000	6000	8000	10000
Max. AC Power Output to Grid [VA]	5500	6600	8800	11000
Max. AC Power from Grid [VA]	10000	12000	16000	20000
Rated AC Current [A]	7.6	9.1	12.2	15.2
Rated AC Voltage / Range [V]	3 / N / PE, 220 / 380, 230 / 400			
Grid Frequency / Range [Hz]	50 / 60			
Ajustable Power Factor [cosφ]	0.8 leading ~ 0.8 lagging			
Output THDi (@Rated Output)	< 3%			
Battery Data				
Battery Type	Lithium			
Battery Voltage Range [V]	160 ~ 700			
Max. Charging / Discharging Current [A]	30			
Communication Interface	CAN			
EPS Output Data (With Battery)				
EPS Rated Power [W]	5000	6000	8000	10000
EPS Rated Voltage [V]	3 / N / PE, 220 / 380, 230 / 400			
EPS Rated Frequency [Hz]	50 / 60			
EPS Rated Current [A]	7.6	9.1	12.2	15.2
Output THDi (@Rated Output)	< 3%			
Automatic Switch Time [ms]	< 10			
Peak Apparent Power, Duration [VA, s]	7500, 60	9000, 60	12000, 60	15000, 60
Efficiency				
Max. Efficiency	98.00%	98.00%	98.00%	98.00%
Euro Efficiency	97.70%	97.70%	97.70%	97.70%
Max. Battery Charge / Discharge Efficiency	97.60%	97.60%	97.60%	97.60%
Protection				
DC Insulation Monitoring	Integrated			
Input Reverse Polarity Protection	Integrated			
Anti-island Protection	Integrated			
Residual Current Monitoring	Integrated			
Over-heat Protection	Integrated			
AC Overcurrent Protection	Integrated			
AC Short-circuit Protection	Integrated			
AC Overvoltage Protection	Integrated			
DC Surge Protection	Type II			
AC Surge Protection	Type II			
General Data				
Size (Width * Height * Depth) [mm]	520 * 412 * 186			
Weight [kg]	27			
User Interface	LED + OLED			
Communication	RS485 and USB or Wifi or 4G (Optional)			
Operating Temperature Range [°C]	-25 ~ +60			
Relative Humidity	0 ~ 100%			
Operating Altitude [m]	≤ 4000			
Standby Self Consumption [W]	< 15			
Topology	Transformerless			
Cooling	Natural			
Enclosure	IP65			
Noise [dB]	< 35			
Warranty [years]	5			
Certifications & Standards				
Grid Regulation	VDE-AR-N 4105, EN 50549-1, VDE 0126, CEI 0-21, EN 50549-PL, ÖVE/ÖNORM E 8001-4-712, EN50549-CZ			
Safety Regulation	IEC 62109-1, IEC 62109-2			
EMC	IEC 61000-6-1, IEC 61000-6-3			

Energy Storage Products

N1 HL Series

3kW / 3.68kW / 5kW

Single Phase, 2 MPPTs

Low Voltage Hybrid Inverter



FEATURES



Compatible with lithium & lead-acid battery (48V)



Emergency power supply



Remote work mode setting



IP65 outdoor design



EMS integrated



Support VPP / FFR function

Model	ESC3000-DS	ESC3680-DS	ESC5000-DS
PV Input Data			
Max. Recommended PV Power [Wp]	6600	6600	8000
Max. PV Input Voltage [V]		580	
MPPT Voltage Range [V]		100 ~ 550	
Start-up Voltage [V]		110	
No. of MPP Trackers		2	
No. of Input Strings per Tracker		1	
Max. PV Input Current [A]		13.5 / 13.5	
Max. Short-circuit Current per MPPT [A]		17 / 17	
DC Switch		Integrated	
AC Output Data (On-grid)			
Rated AC Power [W]	3000	3680	5000 ^[1]
Max. Output Power [VA]	3000	3680	5000 ^[1]
Max. AC Current [A]	13	16	21.7
Rated AC Voltage / Range [V]		220 / 230; 180 ~ 270	
Grid Frequency / Range [Hz]		50 / 60; ±5	
Adjustable Power Factor [cosφ]		0.8 leading ~ 0.8 lagging	
Output THDi (@Rated Output)		< 3%	
Battery Data			
Battery Type		Lithium / Lead-acid	
Recommended Battery Voltage [V]		48	
Battery Voltage Range [V]		40 ~ 60	
Max. Charging / Discharging Power [W]		3000	
Max. Charging / Discharging Current [A]		60	
Communication Interface		CAN	
EPS Output Data (With Battery)			
EPS Rated Power [W]		3000	
EPS Rated Voltage [V]		220 / 230	
EPS Rated Frequency [Hz]		50 / 60	
EPS Rated Current [A]		13	
Output THDi (@Rated Output)		< 3%	
Automatic Switch Time [s]		< 5	
PeakPower, Duration [VA,s]		4500, 10	
Efficiency			
Max. Efficiency	97.60%	97.60%	97.60%
Euro Efficiency	97.00%	97.00%	97.00%
Battery Charge / Discharge Efficiency	94.00%	94.00%	94.00%
General Data			
Size (Width * Height * Depth) [mm]		528 * 526 * 193	
Weight [kg]		29.5	
User Interface		LCD	
Communication		RS485 or Wifi or 4G (optional)	
Ambient Temperature Range [°C]		-25 ~ +60	
Relative Humidity		0 ~ 100%	
Operating Altitude [m]		≤ 4000	
Standby Self Consumption [W]		< 1	
Topology		Transformerless	
Cooling		Natural	
Enclosure		IP65	
Noise [dB]		< 35	
Warranty [years]		5 / 7 / 10	
Certifications & Standards			
Grid Regulation	G98, G99, NRS-097, MEA, PEA, AS 4777, EN 50438, CEI - 021, EN 50549, IEC 61727, IEC 62116, IEC 60068, IEC 61683, C10 / 11		
Safety Regulation	IEC 62109-1, IEC 62109-2, IEC 62040		
EMC	EN 61000-6-2, EN 61000-6-3, EN 61000-4-16, EN 61000-4-18, EN 61000-4-29		
Protection			
	• DC Insulation Monitoring	• AC Overvoltage Protection	• Anti-island Protection
	• Residual Current Monitoring	• AC Overcurrent Protection	• Over-heat Protection
	• Input Reverse Polarity Protection	• AC Short-circuit Protection	• DC / AC Surge Protection

Energy Storage Products

01 HF Series

3.6kW / 5kW

Single Phase, 1 MPPT

Off-grid Inverter



FEATURES



Compatible with lithium and lead-acid batteries



Support up to 6 units parallel connections



Work with or without batteries



MPPT charge controller and AC charger integrated



Double rating of surge power suitable for motor loads



UPS-level switching

Model	O1-HF-3.6		O1-HF-5.0	
Battery				
Nominal Battery Voltage [V]	48			
Battery Voltage Range [V]	40 ~ 60			
Battery Type	Lithium / Lead-acid			
Solar Charger				
Max. PV Input Power [Wp]	4500		6000	
Max. PV Input Power [V]	450			
Max. PV Input Current [A]	18			
MPPT Range [V]	120 ~ 430			
MPP Trackers / String per Tracker	1 / 1			
Max Charging Current [A]	80		100	
Max. Efficiency	93%		93%	
AC Charger				
Nominal AC Input Voltage [V]	220 / 230 / 240			
Max. AC Charge Current [A]	60		80	
AC Voltage Range [V]	180 ~ 275			
Frequency Range [Hz]	50 / 60; ±5			
Inverter Output				
Rated Output Power [W / VA]	3600 / 3600		5000 / 5000	
Parallel Capacity	NA		Up to 6	
Nominal Output Voltage [V]	220 / 230 / 240			
Nominal Output Frequency [Hz]	50 / 60			
Surge Power [W]	7200		10000	
Max. Efficiency	93%			
THDi	5%			
Automatic Switch Time	10ms (For Personal Computers); 20ms (For Home Appliances)			
General Parameters				
Protection Degree	IP20			
Size (Width * Height * Depth) [mm]	330 * 485 * 135			
Weight [kg]	11.5		12	
Ambient Temperature Range [°C]	0 ~ +50			
Storage Temperature Range [°C]	-15 ~ +60			
Communication	Wifi or 4G (optional)			

A1 HV Series

Model	A1-HV-3.0		A1-HV-3.68		A1-HV-5.0		A1-HV-6.0	
PV Input Data								
Max. Recommended PV Power [Wp]	4500		5500		7500		9000	
Max. PV Input Voltage [V]	600							
MPPT Voltage Range [V]	120 ~ 550							
Start-up Voltage [V]	150							
No. of MPP Trackers	2							
No. of Input Strings per Tracker	1							
Max. PV Input Current [A]	13.5 / 13.5							
Max. Short-circuit Current per MPPT [A]	17 / 17							
DC Switch	Integrated							
Battery Data								
Battery Type	LiFePO ₄							
Recommended Battery Voltage [V]	300							
Battery Voltage Range [V]	85 ~ 450							
Max. Charging / Discharging Power [W]	4500 / 3000		5500 / 3680		6000 / 5000		6000 / 6000	
Max. Charging / Discharging Current [A]	25							
Communication Interface	CAN, RS485							
AC Input / Output Data								
Rated AC Power [W]	3000		3680		4600		6000	
Max. Output Power [VA]	3000		3680		5000		6000	
Max. AC Current [A]	13		16		21.7		26.1	
Rated AC Voltage / Range [V]	220 / 230; 180 ~ 270							
Grid Frequency / Range [Hz]	50 / 60; ±5							
Adjustable Power Factor [cosφ]	0.8 leading ~ 0.8 lagging							
Output THDi (@Rated Output)	< 2%							
EPS Output Data (With Battery)								
EPS Rated Power [VA]	3000		3680		5000		6000	
EPS Rated Voltage [V]	220 / 230							
EPS Rated Frequency [Hz]	50 / 60							
Max. Output Current [A]	13		16		21.7		26.1	
Output THDi (@Rated Output)	< 2%							
Automatic Switch Time [s]	< 0.5							
Peak Power, Duration [VA,s]	120% Overload, 600							
Efficiency								
Max. Efficiency	97.42%		97.45%		97.50%		97.50%	
Euro Efficiency	97.15%		97.17%		97.20%		97.20%	
Max. Battery Discharge Efficiency (BAT to AC)	97.15%		97.17%		97.20%		97.20%	
General Data								
Size (Width * Height * Depth) [mm]	561 * (855 + N * 325) * 237 (N ^[1] = 1 ~ 4)							
Weight [kg]	33 + N * 38.7 (N = 1 ~ 4)							
User Interface	LCD							
Communication	RS485 or Wifi or 4G (optional)							
Ambient Temperature Range ^[2] [°C]	-10 ~ +50							
Relative Humidity	0 ~ 100%							
Operating Altitude [m]	≤ 2000							
Standby Self Consumption [W]	< 1							
Topology	Transformerless							
Cooling	Natural							
Enclosure	IP65							
Noise [dB]	< 35							
Warranty [years]	5 / 7 / 10							
Certifications & Standards								
Grid Regulation	AS 4777, EN 50549, IEC 61727, CEI 0-21, IEC 62116, IEC 60068, IEC 61683							
Safety Regulation	IEC 62109-1, IEC 62109-2, IEC 62040, IEC 62619							
EMC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4, EN 61000-4-16, EN 61000-4-18, EN 61000-4-29							
Protection								
	• DC Insulation Monitoring		• AC Overvoltage Protection		• Anti-island Protection			
	• Residual Current Monitoring		• AC Overcurrent Protection		• Over-heat Protection			
	• Input Reverse Polarity Protection		• AC Short-circuit Protection		• DC / AC Surge Protection			

[1] Number of battery modules.

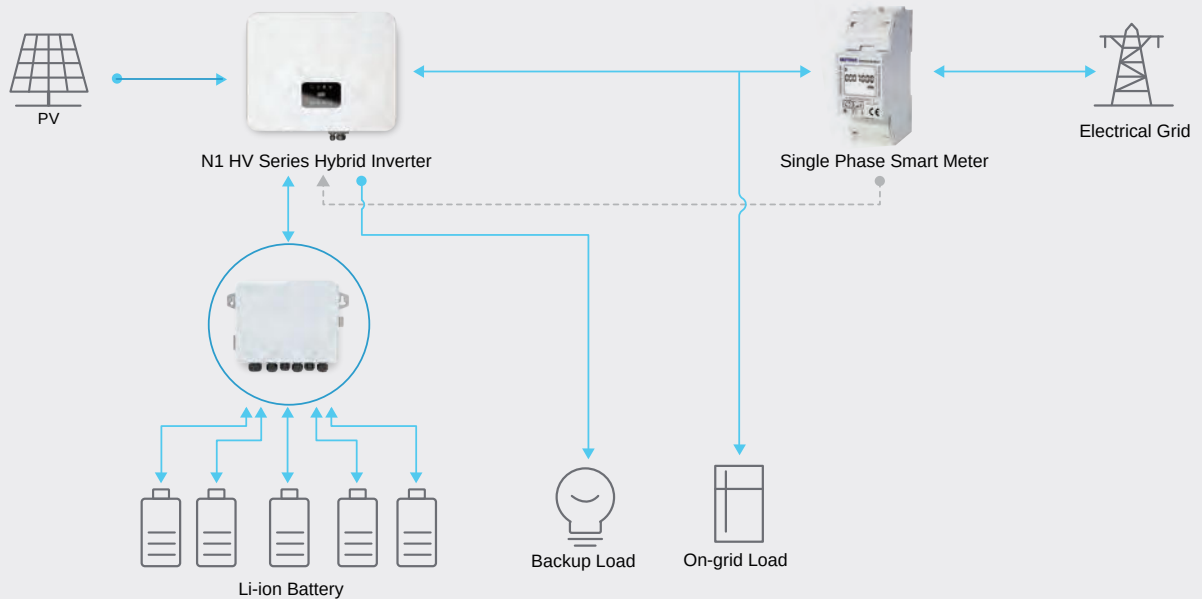
[2] Operating temperature range: charging (0 ~ +40°C), discharging (-10 ~ +50°C)



Combiner box

- Koyosonic Combiner box is an accessory to supports up to 5 Turbo H1 battery sets in parallel.
- It integrates one contactor which is 5-in and 1-out wiring, providing simple connection for customers. Meanwhile, the Combiner box simplifies operation and improves system security.

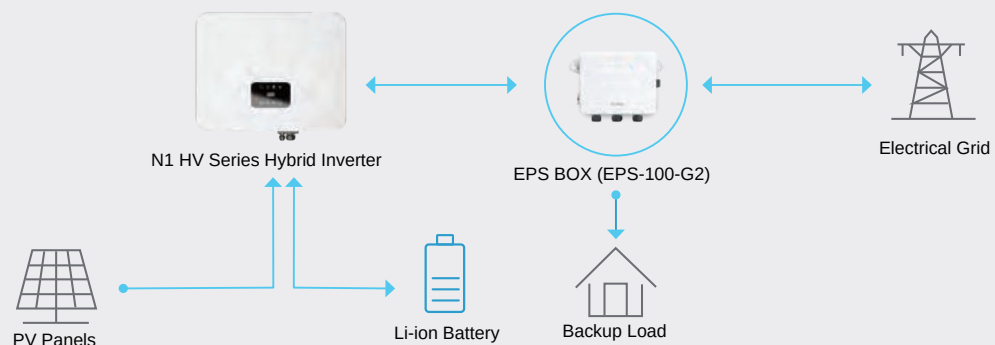
Application System Schematic Diagram



EPS BOX (EPS-100-G2)

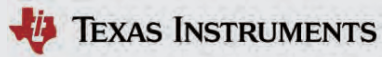
- Koyosonic EPS box is an accessory to manage EPS output of hybrid inverters.
- It integrates one contactor and provides simple connection for customers by connecting 9 wires between inverter and EPS box. Meanwhile, the EPS simplifies operation and improves system security.

Application System Schematic Diagram



WORLD-CLASS COMPONENTS SUPPLIERS

Main CPU America



IGBT Germany / America



ON Semiconductor®



DC Switch Netherlands



Capactor Japan



MOV Japan



Mosfet Germany / America



Cooling Fan Japan



Relay Japan / Germany



DC Connector

Switzerland / America



Current Sensor

Germany / Switzerland



GLOBAL SERVICE NETWORK

