Sigen Energy Controller

3.0 - 12.0 kW | Single Phase
5.0 - 30.0 kW | Three Phase
5.0 - 12.0 kW | Three Phase Low Voltage



- EMS-integrated intelligent management for precision control
- Max. 2.0 DC/AC ratio compatibility, higher energy utilization (Single Phase)
- Unbalanced 3-phase power output, ensuring efficient operation
- 200% peak output power in off-grid mode, instant high-power boost
- Up to 4 MPP trackers for maximum solar energy extraction

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Sigen Energy Controller 3.0-12.0 kW Single Phase [1]

SigenStor EC	3.0 SP	3.6 SP	4.0 SP	4.6 SP	5.0 SP	6.0 SP	8.0 SP	10.0 SP	12.0 SP	Units
DC Input (from PV)										
Max. PV power	6000	7360	8000	9200	10000	12000	16000	20000	24000	W
Max. DC input voltage [2]	600									V
Nominal DC input voltage	350									V
Start-up voltage	100									V
MPPT voltage range	50 ~ 550									V
Number of MPP. trackers	2						3	4	4	
Number of PV strings per MPPT	1									
Max. input current per MPPT	16									A
Max. short-circuit current per MPPT	20									A
AC Output (on-grid)										
Nominal output power	3000	3680	4000	4600	5000	6000	8000	10000	12000	W
Max. output apparent power	3300	3680	4400	5000	5500	6600	8800	11000	12000	VA
Nominal output current	13.6	16.0	18.2	20.9	22.7	27.3	36.4	45.5	54.6	A
Max. output current	15.0	16.0	20.0	22.7	25.0	30.0	40.0	50.0	54.6	A
Nominal output voltage	220 / 230 / 240						220 / 230			V
Nominal grid frequency	50 / 60									Hz
Power factor	0.8 leading ~ 0.8 lagging									
Total current harmonic distortion	THDi < 2%									
Efficiency										
Max. efficiency	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%	97.6%	97.6%	97.6%	
European efficiency	97.0%	97.1%	97.2%	97.3%	97.4%	97.4%	97.0%	97.0%	97.0%	
AC Output (backup)										
Peak output power (10 seconds) [3]	2 times of nominal output power									
Nominal output voltage	220 / 230 / 240						220 / 230			V
Nominal output frequency	50 / 60									Hz
Power factor	0.8 leading ~ 0.8 lagging									
Total voltage harmonic distortion	THDv < 2%									
Disruption time of backup switch [4]	0									ms
Battery Connection										
Battery module models	SigenStor BAT series									
Number of modules per controller	1 ~ 6									pcs
Battery module voltage range	300 ~ 600									V
Protection										
Safety protection feature	DC reverse polarity protection, Insulation monitoring, Residual current monitoring, Arc fault circuit interrupter [5], AC overcurrent/overvoltage/short-circuit protection. Type II DC/AC surge protection, Anti-islanding protection									
General Data										
Dimensions (W / H / D)	700 / 300 / 245						700 / 300 / 260			mm
Weight	18						36			kg
Storage temperature range	-40 ~ 70									°C
Operating temperature range	-30 ~ 60									°C
Relative humidity range	0% ~ 100%									
Max. operating altitude	4000									m
Cooling	Natural convection						Smart air cooling			
System ingress protection rating	IP66									
Communication	WLAN / Fast Ethernet / RS485 / Sigen CommMod (4G/3G/2G)									
Standard Compliance										
Standard [6]	IEC/EN 62109-1, IEC/EN 62109-2, IEC/EN 61000-6-1, IEC/EN 61000-6-2									

1. Sigen Energy Controller 8.0-12.0 kW Single Phase is only available in specific regions. Please contact Sigenergy or local distributors for details.
2. The inverter will initiate protection if the input voltage exceeds the MPPT operating voltage range.
3. Actual load starting performance depends on the load type and its characteristics; practical results may vary.
4. This refers to the load-side disruption time, to achieve this functionality Sigen Energy Gateway needs to be used together with Sigen Energy Controller and Sigen Battery. Test conditions: In the open-circuit state of the power grid, the nominal power of the Sigen Energy Controller is higher than the total power of the home loads.
5. This is an optional feature only supported in certain models, please contact Sigenergy for more information.
6. For all standards refer to the certificates category on the Sigenergy website.

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Sigen Energy Controller 5.0-30.0 kW Three Phase [1]

SigenStor EC	5.0 TP	6.0 TP	8.0 TP	10.0 TP	12.0 TP	15.0 TP	17.0 TP	20.0 TP	25.0 TP	30.0 TP	Units
DC Input (from PV)											
Max. PV power	8000	9600	12800	16000	19200	24000	27200	32000	40000	48000	W
Max. DC input voltage [2]	1100										V
Nominal DC input voltage	600										V
Start-up voltage	180										V
MPPT voltage range	160 ~ 1000										V
Number of MPP. trackers	2			3			4				
Number of PV strings per MPPT	1										
Max. input current per MPPT	16										A
Max. short-circuit current per MPPT	20										A
AC Output (on-grid)											
Nominal output power	5000	6000	8000	10000	12000	15000	17000	20000	25000	30000	W
Max. output apparent power	5500	6600	8800	11000	13200	16500	18700	22000	27500	33000	VA
Nominal output current	7.6	9.1	12.2	15.2	18.2	22.8	25.8	30.4	38.0	45.5	A
Max. output current	8.4	10.0	13.4	16.7	20.1	25.1	28.4	33.4	41.8	50.0	A
Nominal output voltage	380 / 400, 3W+N+PE										V
Nominal grid frequency	50 / 60										Hz
Power factor	0.8 leading ~ 0.8 lagging										
Total current harmonic distortion	THDi < 2%										
Efficiency											
Max. efficiency	98.1%	98.2%	98.3%	98.3%	98.3%	98.3%	98.3%	98.3%	98.3%	98.4%	
European efficiency	96.1%	96.6%	97.1%	97.5%	97.7%	97.9%	97.9%	97.9%	98.0%	98.0%	
AC Output (backup)											
Peak output power (10 seconds) [3]	2 times of nominal output power										
Nominal output voltage	380 / 400, 3W+N+PE										V
Nominal output frequency	50 / 60										Hz
Power factor	0.8 leading ~ 0.8 lagging										
Total voltage harmonic distortion	THDv < 2%										
Disruption time of backup switch [4]	0										ms
Battery Connection											
Battery module models	SigenStor BAT series										
Number of modules per controller	1 ~ 6										pcs
Battery module voltage range	600 ~ 900										V
Protection											
Safety protection feature	DC reverse polarity protection, Insulation monitoring, Residual current monitoring, Arc fault circuit interrupter [5], AC overcurrent/overvoltage/short-circuit protection. Type II DC/AC surge protection, Anti-islanding protection										
General Data											
Dimensions (W / H / D)	700 / 300 / 260										mm
Weight	36										kg
Storage temperature range	-40 ~ 70										°C
Operating temperature range	-30 ~ 60										°C
Relative humidity range	0% ~ 100%										
Max. operating altitude	4000										m
Cooling	Smart air cooling										
System ingress protection rating	IP66										
Communication	WLAN / Fast Ethernet / RS485 / Sigen CommMod (4G/3G/2G)										
Standard Compliance											
Standard [6]	IEC/EN 62109-1, IEC/EN 62109-2, IEC/EN 61000-6-1, IEC/EN 61000-6-2										

1. Sigen Energy Controller 30.0 kW Three Phase is only available in specific regions. Please contact Sigenergy or local distributors for details.
2. The inverter will initiate protection if the input voltage exceeds the MPPT operating voltage range.
3. Actual load starting performance depends on the load type and its characteristics; practical results may vary.
4. This refers to the load-side disruption time, to achieve this functionality Sigen Energy Gateway needs to be used together with Sigen Energy Controller and Sigen Battery. Test conditions: In the open-circuit state of the power grid, the nominal power of the Sigen Energy Controller is higher than the total power of the home loads.
5. This is an optional feature only supported in certain models, please contact Sigenergy for more information.
6. For all standards refer to the certificates category on the Sigenergy website.

Sigen Energy Controller 5.0-12.0 kW Three Phase Low Voltage [1]

SigenStor EC	5.0 TPLV	6.0 TPLV	8.0 TPLV	10.0 TPLV	12.0 TPLV	Units
DC Input (from PV)						
Max. PV power	8000	9600	12800	16000	19200	W
Max. DC input voltage [2]	600					V
Nominal DC input voltage	360					V
Start-up voltage	100					V
MPPT voltage range	50 ~ 550					V
Number of MPP. trackers	2	2	3	3	4	
Number of PV strings per MPPT	1					
Max. input current per MPPT	16					A
Max. short-circuit current per MPPT	20					A
AC Output (on-grid)						
Nominal output power	5000	6000	8000	10000	12000	W
Max. output apparent power	5500	6600	8800	11000	13200	VA
Nominal output current	13.2	15.8	21.0	26.2	31.5	A
Max. output current	14.5	17.4	23.1	28.9	34.7	A
Nominal output voltage	220 / 230					V
Nominal grid frequency	50 / 60					Hz
Power factor	0.8 leading ~ 0.8 lagging					
Total current harmonic distortion	THDi < 2%					
Efficiency						
Max. efficiency	98%					
European efficiency	97.3%	97.5%	97.7%	97.8%	97.8%	
Battery Connection						
Battery module models	SigenStor BAT series					
Number of modules per controller	1 ~ 6					pcs
Battery module voltage range	300 ~ 600					V
Protection						
Safety protection feature	DC reverse polarity protection, Insulation monitoring, Residual current monitoring, Arc fault circuit interrupter [3], AC overcurrent/overvoltage/short-circuit protection, Type II DC/AC surge protection, Anti-islanding protection					
General Data						
Dimensions (W / H / D)	700 / 300 / 260					mm
Weight	36					kg
Storage temperature range	-40 ~ 70					°C
Operating temperature range	-30 ~ 60					°C
Relative humidity range	0% ~ 100%					
Max. operating altitude	4000					m
Cooling	Smart air cooling					
System ingress protection rating	IP66					
Communication	WLAN / Fast Ethernet / RS485 / Sigen CommMod (4G/3G/2G)					
Standard Compliance						
Standard [4]	IEC/EN 62109-1, IEC/EN 62109-2, IEC/EN 61000-6-1, IEC/EN 61000-6-2					

1. Sigen Energy Controller Three Phase Low Voltage is only available in specific regions. Please contact Sigenergy or local distributors for details.
2. The inverter will initiate protection if the input voltage exceeds the MPPT operating voltage range.
3. This is an optional feature only supported in certain models, please contact Sigenergy for more information.
4. For all standards refer to the certificates category on the Sigenergy website.

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