# 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
- 150% peak output power in off-grid mode, instant high-power boost
- Up to 4 MPP trackers for maximum solar energy extraction

## **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 | 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) | 4500 | 5520 | 6000 | 6900 | 7500 | 9000 | 12000 | 15000 | 15000 | W |
| 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 [2] | 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 [3], 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 [4] | 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. 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.
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.

## **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 | 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) | 7500 | 9000 | 12000 | 15000 | 18000 | 22500 | 25500 | 30000 | 30000 | 36000 | W |
| 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 [2] | 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 [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 30.0 kW Three Phase is only available in specific regions. Please contact Sigenergy or local distributors for details.
2. 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.
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.

## **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 | 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 [2], 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 [3] | 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. This is an optional feature only supported in certain models, please contact Sigenergy for more information.
3. For all standards refer to the certificates category on the Sigenergy website.

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Distributeur: VDH Solar Groothandel B.V.
Finlandlaan 1, 2391 PV Hazerswoude-Dorp, Holland | +31 (0)172 235 990 | info@vdh-solar.nl | www.vdh-solar.nl