

# Sigen Energy Controller

3.0 – 12.0 kW

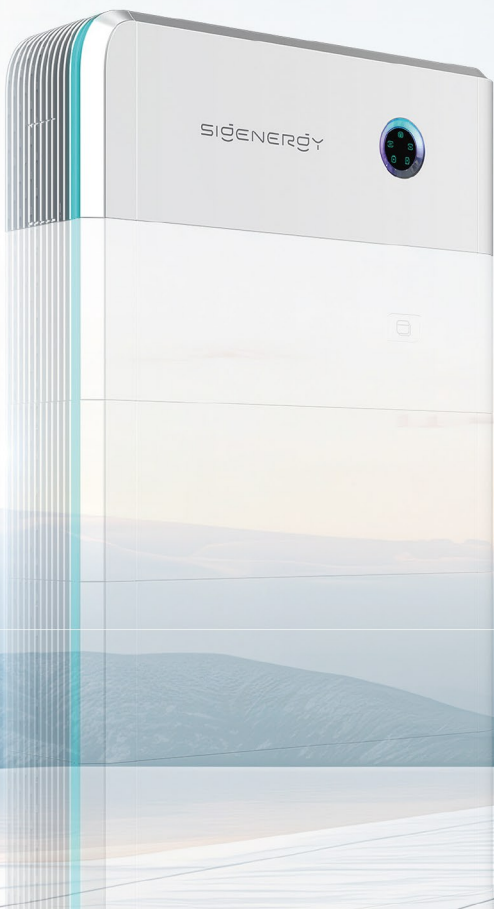
5.0 – 30.0 kW

5.0 – 12.0 kW

Single Phase

Three Phase

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 <sup>1</sup>

| 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 <sup>2</sup>            |                                                                                                                                                                                                                                                 |        |        |        | 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 <sup>3</sup> |                                                                                                                                                                                                                                                 |        |        |        | 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 <sup>4</sup> , AC overcurrent/overvoltage/short-circuit protection, Type II DC/AC surge protection, Anti-islanding protection |        |        |        |                           |        |           |         |         |       |

DC reverse polarity protection, Insulation monitoring, Residual current monitoring, Arc fault circuit interrupter <sup>4</sup>, 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 <sup>5</sup>            | IEC/EN 62109-1, IEC/EN 62109-2, IEC/EN 61000-6-1, IEC/EN 61000-6-2 |  |                    |

- <sup>1</sup> Sigen Energy Controller 8.0-12.0 kW Single Phase is only available in specific regions. Please contact Sigenergy or local distributors for details.
- <sup>2</sup> The inverter will initiate protection if the input voltage exceeds the MPPT operating voltage range.
- <sup>3</sup> 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.
- <sup>4</sup> This is an optional feature only supported in certain models, please contact Sigenergy for more information.
- <sup>5</sup> For all standards refer to the certificates category on the Sigenergy website.

## Sigen Energy Controller 5.0–30.0 kW Three Phase <sup>1</sup>

| 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 <sup>2</sup>            |        |        |        |         |                           | 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 <sup>3</sup> |        |        |        |         | 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                                    |        |        |        |         |                           |            |         |         |         |         |       |     |

| 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 <sup>5</sup>            | IEC/EN 62109-1, IEC/EN 62109-2, IEC/EN 61000-6-1, IEC/EN 61000-6-2 |    |

- <sup>1</sup> Sigen Energy Controller 30.0 kW Three Phase is only available in specific regions. Please contact Sigenergy or local distributors for details.
- <sup>2</sup> The inverter will initiate protection if the input voltage exceeds the MPPT operating voltage range.
- <sup>3</sup> This refers to the load-side disruption time, to achieve this functionality Sigen Energy Gateway