



SHIFTING THE LIMITS

FRONIUS SYMO



/ Field serviceable



/ SnapINverter mounting system



/ Wireless monitoring



/ Design flexibility



/ Arc Fault Circuit Interruption



Boasting power categories from 10 to 24 kW, the transformerless Fronius Symo is the ideal compact three-phase inverter for commercial applications. Its dual maximum power point tracking, high maximum system voltage, wide input voltage range and unrestricted use indoors and out, ensures maximum flexibility in PV system design. As a member of the new SnapINverter family, the Fronius Symo features the SnapINverter mounting system, allowing for secure and convenient installation and field servicing.

Industry-leading features now come standard with the Fronius Symo, including: arc fault protection, integrated wireless monitoring, and SunSpec Modbus interfaces for seamless monitoring and datalogging via Fronius' online and mobile platform, Fronius Solar.web. This makes the Fronius Symo one of the most communicative, efficient and streamlined inverters on the market.

TECHNICAL DATA FRONIUS SYMO, ALL SIZES

| GENERAL DATA | STANDARD WITH ALL FRONIUS SYMO MODELS |
|---|---|
| Dimensions (width x height x depth) | 20.1 x 28.5 x 8.9 in. / 51.1 x 72.4 x 22.6 cm |
| Degree of protection | NEMA 4X |
| Night time consumption | < 1 W |
| Inverter topology | Transformerless |
| Cooling | Variable speed fan |
| Installation | Indoor and outdoor installation |
| Ambient operating temperature range | -40 F to 140 F (-40 to 60 C) |
| Permitted humidity | 0 - 100 % (non-condensing) |
| DC connection terminals | 6 x DC+ and 6 x DC- screw terminals for copper (solid / stranded / fine stranded) or aluminum (solid / stranded) |
| AC connection terminals | Screw terminals 14-6 AWG |
| Certificates and compliance with standards (Except Symo 15.0 208 V) | UL 1741-2010, UL1998 (for functions: AFCI and isolation monitoring), IEEE 1547-2003, IEEE 1547.1-2008, ANSI/IEEE C62.41, FCC Part 15 A & B, NEC Article 690, C22. 2 No. 107.1-01 (September 2001), UL1699B Issue 2 -2013, CSA TIL M-07 Issue 1 -2013 |
| Certificates and compliance with standards (Symo 15.0 208 V) | UL 1741-2015, UL1998 (for functions: AFCI, RCMU and isolation monitoring), IEEE 1547-2003, IEEE 1547.1-2003, ANSI/IEEE C62.41, FCC Part 15 A & B, NEC 2014 Article 690, C22. 2 No. 107.1-01 (September 2001), UL1699B Issue 2 -2013, CSA TIL M-07 Issue 1 -2013 |

| PROTECTIVE DEVICES | STANDARD WITH ALL FRONIUS SYMO MODELS |
|--|---------------------------------------|
| AFCI & 2014 NEC Compliant | Yes |
| DC disconnect | Yes |
| DC reverse polarity protection | Yes |
| Ground Fault Protection with Isolation Monitor Interrupter | Yes |

| INTERFACES | AVAILABILITY | AVAILABLE WITH ALL FRONIUS SYMO MODELS |
|---|--------------|---|
| USB (A socket) | Standard | Datalogging and inverter update via USB |
| 2 x RS422 (RJ45 socket) | Standard | Fronius Solar Net, interface protocol |
| Wi-Fi/Ethernet/Serial/ Datalogger and webserver | Optional | Wireless standard 802.11 b/g/n / Fronius Solar.web, SunSpec Modbus TCP, JSON / SunSpec Modbus RTU |
| 6 inputs and 4 digital I/Os | Optional | Load management; signaling, multipurpose I/O |

TECHNICAL DATA FRONIUS SYMO (10.0-3 208/240, 12.0-3 208/240, 10.0-3 480, 12.5-3 480, 15.0-3 208)

| GENERAL DATA | 10.0-3 208/240 | 12.0-3 208/240 | 10.0-3 480 | 12.5-3 480 | 15.0-3 208 |
|--------------|---------------------|----------------|---------------------|------------|---------------------|
| Weight | 91.9 lbs. / 41.7 kg | | 76.7 lbs. / 34.8 kg | | 78.3 lbs. / 35.5 kg |

| INPUT DATA | 10.0-3 208/240 | 12.0-3 208/240 | 10.0-3 480 | 12.5-3 480 | 15.0-3 208 |
|---|---|----------------|---------------|-------------|-----------------------|
| Max. permitted PV power | 15.00 kW | 18.00 kW | 15.00 kW | 18.75 kW | 22.50 kW |
| Max. usable input current (MPPT 1/MPPT 2) | 25.0 A / 16.5 A | | | | 50.0 A |
| Max. usable input current total (MPPT 1 + MPPT 2) | 41.5 A | | | | 50.0 A |
| Max. admissible input current (MPPT 1/MPPT 2) | 37.5 A / 24.8 A | | | | 75.0 A |
| Max. admissible input current total (MPPT 1 + MPPT 2) | 62.2 A | 62.2 A | 62.2 A | 62.2 A | 75.0 A (1 MPPT) |
| Integrated DC string fuse holders <i>Must be specified when ordering</i> | None | None | None | None | Integrated: 6- and 6+ |
| MPP voltage range | 300 - 500 V | | 300 - 800 V | 350 - 800 V | 325 - 850 V |
| Operating voltage range | 200 - 600 V | | 200 - 1,000 V | | 325 - 1,000 V |
| Max. input voltage | 600 V | | 1,000 V | | |
| Nominal input voltage | 208 V | 350 V | 350 V | N/A | N/A |
| | 240 V | 370 V | 370 V | N/A | N/A |
| | 480 V | N/A | N/A | 675 V | 685 V |
| Admissible conductor size DC | AWG 14 - AWG 6 copper direct, AWG 6 aluminium direct, AWG 4 copper or aluminium with input combiner | | | | |
| Number of MPPT | 2 | | | | 1 |

| OUTPUT DATA | 10.0-3 208/240 | 12.0-3 208/240 | 10.0-3 480 | 12.5-3 480 | 15.0-3 208 |
|--------------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Max. output power | 208 V | 9,995 VA | 11,995 VA | N/A | N/A |
| | 240 V | 9,995 VA | 11,995 VA | N/A | N/A |
| | 480 V | N/A | N/A | 9,995 VA | 12,495 VA |
| Max. output fault current / Duration | 43.1 A RMS / 158.4 ms | 43.1 A RMS / 158.4 ms | 43.1 A RMS / 158.4 ms | 43.1 A RMS / 158.4 ms | 67.7 A RMS / 153.0 ms |
| Max. continuous output current | 208 V | 27.7 A | 33.3 A | N/A | N/A |
| | 240 V | 24.0 A | 28.9 A | N/A | N/A |
| | 480 V | N/A | N/A | 12.0 A | 15.0 A |
| Recommended OCPD/AC breaker size | 208 V | 35 A | 45 A | N/A | N/A |
| | 240 V | 30 A | 40 A | N/A | N/A |
| | 480 V | N/A | N/A | 15 A | 20 A |
| Max. efficiency | 97.0 % | | 97.0 % | | 97.3 % |
| CEC efficiency | 208 V | 96.5 % | 96.5 % | N/A | N/A |
| | 240 V | 96.5 % | 96.5 % | N/A | N/A |
| | 480 V | N/A | N/A | 96.5 % | 97.0 % |
| Admissible conductor size AC | AWG 14 - AWG 6 | | | | |
| Grid connection | 208 / 240 V | 208 / 240 V | 480 V Delta +N** | | 208 V |
| Frequency | 60 Hz | | | | |
| Total harmonic distortion | < 1.75 % | | | | < 3.5% |
| Power factor | 0 - 1 ind./cap. | | | | |

**+N for sensing purposes - no current carrying conductor.

TECHNICAL DATA FRONIUS SYMO (15.0-3 480, 17.5-3 480, 20.0-3 480, 22.7-3 480, 24.0-3 480)

| GENERAL DATA | | 15.0-3 480 | 17.5-3 480 | 20.0-3 480 | 22.7-3 480 | 24.0-3 480 |
|---|--|---|-----------------------|-----------------------|-----------------------|-----------------------|
| Weight | | 95.7 lbs. / 43.4 kg | | | | |
| INPUT DATA | | 15.0-3 480 | 17.5-3 480 | 20.0-3 480 | 22.7-3 480 | 24.0-3 480 |
| Max. permitted PV power | | 22.50 kW | 26.25 kW | 30.00 kW | 34.09 kW | 36.00 kW |
| Max. usable input current (MPPT 1/MPPT 2) | | 33.0 A / 25.0 A | | | | |
| Max. usable input current total (MPPT 1 + MPPT 2) | | 51 A | | | | |
| Max. admissible input current (MPPT 1/MPPT 2) | | 49.5 A / 37.5 A | | | | |
| Max. admissible input current total (MPPT 1 + MPPT 2) | | 76.5 A | 76.5 A | 76.5 A | 76.5 A | 76.5 A |
| Integrated DC string fuse holders <i>Must be specified when ordering</i> | | Optional: 6- and 6+ | Optional: 6- and 6+ | Optional: 6- and 6+ | Optional: 6- and 6+ | Optional: 6- and 6+ |
| MPP voltage range | | 350 - 800 V | 400 - 800 V | 450 - 800 V | 500 - 800 V | 500 - 800 V |
| Operating voltage range | | 200 - 1,000 V | | | | |
| Max. input voltage | | 1,000 V | | | | |
| Nominal input voltage | | 208 V | N/A | N/A | N/A | N/A |
| | | 240 V | N/A | N/A | N/A | N/A |
| | | 480 V | 685 V | 695 V | 710 V | 720 V |
| Admissible conductor size DC | | AWG 14 - AWG 6 copper direct, AWG 6 aluminium direct, AWG 4 copper or aluminium with input combiner | | | | |
| Number of MPPT | | 2 | | | | |
| OUTPUT DATA | | 15.0-3 480 | 17.5-3 480 | 20.0-3 480 | 22.7-3 480 | 24.0-3 480 |
| Max. output power | | 208 V | N/A | N/A | N/A | N/A |
| | | 240 V | N/A | N/A | N/A | N/A |
| | | 480 V | 14,995 VA | 17,495 VA | 19,995 VA | 23,995 VA |
| Max. output fault current / Duration | | 30.9 A RMS / 150.4 ms | 30.9 A RMS / 150.4 ms | 30.9 A RMS / 150.4 ms | 30.9 A RMS / 150.4 ms | 30.9 A RMS / 150.4 ms |
| Max. continuous output current | | 208 V | N/A | N/A | N/A | N/A |
| | | 240 V | N/A | N/A | N/A | N/A |
| | | 480 V | 18.0 A | 21.0 A | 24.0 A | 28.9 A |
| Recommended OCPD/AC breaker size | | 208 V | N/A | N/A | N/A | N/A |
| | | 240 V | N/A | N/A | N/A | N/A |
| | | 480 V | 25 A | 30 A | 30 A | 40 A |
| Max. efficiency | | 98.0 % | | | | |
| CEC efficiency | | 208 V | N/A | N/A | N/A | N/A |
| | | 240 V | N/A | N/A | N/A | N/A |
| | | 480 V | 97.0 % | 97.5 % | 97.5 % | 97.5 % |
| Admissible conductor size AC | | AWG 14 - AWG 6 | | | | |
| Grid connection | | 480 V Delta +N** | | | | |
| Frequency | | 60 Hz | | | | |
| Total harmonic distortion | | < 1.75 % | | | | |
| Power factor | | 0 - 1 ind./cap. | | | | |

**+N for sensing purposes - no current carrying conductor.

E-HOUSING SOLUTIONS FOR COMMERCIAL PV SYSTEMS

Anvil Crawler manufactures pre-fabricated inverter rooms that ship directly to site and can be customized to meet system requirements. They come equipped with 250 kw or 500 kw of Fronius inverters pre-wired to a terminal strip located on the outside of the container. In addition, ventilation, lighting, receptacles, and heating are included.

This is the most cost effective way to install a large quantity of string inverters - they are connected, pre-tested, commissioned and ready to energize as soon as the array installation is complete!

Using a pre-fabricated e-house saves you money by:

- trimming required engineering and on-site consultation as e-housings are ESA approved, and ready for grid connection upon completion of array installation
- eliminating on-site handling and storage costs for goods with single shipment of the inverter room
- eliminating risks of weather-related delays
- cutting hotel, fuel and labour costs for electrical tradespersons.



250 KW E-HOUSE

- Dimension: 8' wide x 20' long x 9.5' tall
- Includes: lighting, heating, ventilation, receptacles and a smoke detector roughed in
- 11 x Fronius Symo 22.7 kW inverters
- 1 x Fronius weather station and monitoring (modem is customer supplied)
- 1 x 400 amp AC recombinder panel
- 1 x 400 amp non-fuseable disconnect switch with visi-window
- 1 x metering cabinet
- 1 x 400 amp fuseable disconnect switch, outdoor rated with visi-window
- 1 x transformer (10 kva) and a lighting panel
- Utility / commercial SCADA solutions available



(Top) Inside a finished Anvil Crawler inverter house. (Bottom left) Pre-installed and wired Fronius weather station and monitoring. (Bottom right) Pre-wired inverter DC terminal strip.



500 KW E-HOUSE

- Dimensions: 8' wide x 40' long x 9.5' tall
- Includes: lighting, heating, ventilation, receptacles and a smoke detector roughed in
- 22 x Fronius Symo 22.7 kW inverters
- 1 x Fronius weather station and monitoring (modem is customer supplied)
- 1 x 800 amp AC recombinder panel
- 1 x 800 amp non-fuseable disconnect switch with visi-window
- 1 x metering cabinet
- 1 x 800 amp fuseable disconnect switch, outdoor rated with visi-window
- 1 x transformer (10 kva) and a lighting panel
- Utility / commercial SCADA solutions available