

/ Perfect Welding / Solar Energy / Perfect Charging



SHIFTING THE LIMITS

FRONIUS SYMO

/ Powering commercial projects that last. The Fronius Symo.



/ PC Board Replacement



/ SnapINverter Mounting System



/ Integrated Data Communication



/ Flexible Design



/ Smart Grid Ready



/ AFCI & NEC 2014 Compliant

/ Featuring ten models ranging from 10 kW to 24 kW, the transformerless Fronius Symo is the ideal compact three-phase inverter for all commercial applications. The high system voltage and wide input range ensure maximum flexibility in system design. With low roof loading, NEMA 4X and 1000 V DC rating, the Fronius Symo can be mounted in many different ways, including flat on a roof or on a pole. The modern design is equipped with the SnapINverter mounting system, allowing for lightweight, secure and convenient installation. Several industry-leading features are available with the Fronius Symo including Wi-Fi®* and SunSpec Modbus interfaces for seamless monitoring and data-logging, field proven Arc Fault Circuit Interruption (AFCI), NEC 2014 compliant, and Fronius' superb online and mobile monitoring platform Fronius Solar.web.

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)

| INPUT DATA | SYMO 10.0-3 208/240 | SYMO 12.0-3 208/240 | SYMO 10.0-3 480 | SYMO 12.5-3 480 | SYMO 15.0-3 208 |
|--------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|---------------------|-----------------|-----------------|-----------------|
| Recommended PV power (kWp) | 8.0 - 13.0 | 9.5 - 15.5 | 8.0 - 13.0 | 10.0 - 16.0 | 12.0 - 19.5 |
| Max. usable input current (MPPT1/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. array short circuit current (1.5 * Imax) MPPT 1/MPPT 2) | 37.5 A / 24.8 A | | | | 75.0 A |
| Integrated DC string fuse holders | NA | | | | 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 - 1000 V | | 325 - 1000 V |
| Max. input voltage | 600 V | | 1000 V | | |
| Nominal input voltage | 208 V | 350 V | 350 V | NA | 325 V |
| | 240 V | 370 V | 370 V | NA | NA |
| | 480 V | NA | NA | 675 V | 685 V |
| Admissible conductor size DC | AWG 14 - AWG 6 copper direct, AWG 6 aluminum direct, AWG 4 - AWG 2 copper or aluminum with input combiner | | | | |
| Number of MPPT | 2 | | | | 1 |

| OUTPUT DATA | SYMO 10.0-3 208/240 | SYMO 12.0-3 208/240 | SYMO 10.0-3 480 | SYMO 12.5-3 480 | SYMO 15.0-3 208 |
|----------------------------------|---------------------|---------------------|------------------|-----------------|-----------------------------------------|
| Max. output power | 208 V | 9995 VA | 11995 VA | NA | NA |
| | 240 V | 9995 VA | 11995 VA | NA | 15000 VA |
| | 480 V | NA | NA | 9995 VA | 12495 VA |
| Max. continuous output current | 208 V | 27.7 A | 33.3 A | NA | NA |
| | 240 V | 24.0 A | 28.9 A | NA | 41.6 A |
| | 480 V | NA | NA | 12.0 A | 15.0 A |
| Recommended OCPD/AC breaker size | 208 V | 35 A | 45 A | NA | NA |
| | 240 V | 30 A | 40 A | NA | 60 A |
| | 480 V | NA | NA | 15 A | 20 A |
| Max. Efficiency | 97.0 % | | 97.0 % | 98.1 % | 98.1 % |
| CEC Efficiency | 208 V | 96.5 % | 96.5 % | NA | NA |
| | 240 V | 96.5 % | 96.5 % | NA | 96.5% |
| | 480 V | NA | NA | 96.5 % | 97.0 % |
| Admissible conductor size AC | AWG 14 - AWG 6 | | | | AWG 6 direct, AWG 2 with input combiner |
| 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. | | | | |

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

| GENERAL DATA | STANDARD WITH ALL FRONIUS SYMO MODELS |
|---------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dimensions (width x height x depth) | 20.1 x 28.5 x 8.9 inches |
| 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 - + 140 °F (-40 - +60 °C) |
| Permitted humidity | 0 - 100 % (non-condensing) |
| DC connection terminals | 6x DC+ and 6x 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 |

| GENERAL DATA | SYMO 10.0-3 208/240 | SYMO 12.0-3 208/240 | SYMO 10.0-3 480 | SYMO 12.5-3 480 | SYMO 15.0-3 208 |
|--------------|---------------------|---------------------|-----------------|-----------------|-----------------|
| Weight | 91.9 lbs. | | 76.7 lbs. | | 78.3 lbs. |

| 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 | AVAILABLE WITH ALL FRONIUS SYMO MODELS |
|-----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| USB (A socket) | Datalogging and inverter update possible via USB |
| 2x RS422 (RJ45 socket) | Fronius Solar Net, interface protocol |
| AVAILABLE WITH THE FRONIUS DATAMANAGER 2.0 CARD (ONLY ONE CARD REQUIRED FOR UP TO 100 INVERTERS) | |
| Wi-Fi/Ethernet/Serial/ Datalogger and webservice | Wireless standard 802.11 b/g/n / Fronius Solar.web, SunSpec Modbus TCP, JSON / SunSpec Modbus RTU |
| 6 inputs and 4 digital I/Os | Load management; signaling, multipurpose I/O |

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

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

| INPUT DATA | SYMO 15.0-3 480 | SYMO 17.5-3 480 | SYMO 20.0-3 480 | SYMO 22.7-3 480 | SYMO 24.0-3 480 |
|---------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|-----------------|-----------------|-----------------|-----------------|
| Recommended PV power (kWp) | 12.0 - 19.5 | 14.0 - 23.0 | 16.0 - 26.0 | 18.0 - 29.5 | 19.0 - 31.0 |
| Max. usable input current (MPPT1/MPPT 2) | 33.0 A / 25.0 A | | | | |
| Max. usable input current total (MPPT 1 + MPPT 2) | 51 A | | | | |
| Max. array short circuit current (1.5 * I _{max}) MPPT 1/MPPT 2) | 49.5 A / 37.5 A | | | | |
| Integrated DC string fuse holders | 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 - 1000 V | | | | |
| Max. input voltage | 1000 V | | | | |
| Nominal input voltage | 208 V | NA | NA | NA | NA |
| | 240 V | NA | NA | NA | NA |
| | 480 V | 685 V | 695 V | 710 V | 720 V |
| Admissible conductor size DC | AWG 14 - AWG 6 copper direct, AWG 6 aluminum direct, AWG 4 - AWG 2 copper or aluminum with input combiner | | | | |
| Number of MPPT | 2 | | | | |

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

| OUTPUT DATA | | SYMO 15.0-3 480 | SYMO 17.5-3 480 | SYMO 20.0-3 480 | SYMO 22.7-3 480 | SYMO 24.0-3 480 |
|----------------------------------|-------|-----------------|-----------------|------------------|-----------------|-----------------|
| Max. output power | 208 V | NA | NA | NA | NA | NA |
| | 240 V | NA | NA | NA | NA | NA |
| | 480 V | 14995 VA | 17495 VA | 19995 VA | 22727 VA | 23995 VA |
| Max. continuous output current | 208 V | NA | NA | NA | NA | NA |
| | 240 V | NA | NA | NA | NA | NA |
| | 480 V | 18.0 A | 21.0 A | 24.0 A | 27.3 A | 28.9 A |
| Recommended OCPD/AC breaker size | 208 V | NA | NA | NA | NA | NA |
| | 240 V | NA | NA | NA | NA | NA |
| | 480 V | 25 A | 30 A | 30 A | 35 A | 40 A |
| Max. Efficiency | | 98.0 % | | 98.0 % | | |
| CEC Efficiency | 208 V | NA | NA | NA | NA | NA |
| | 240 V | NA | NA | NA | NA | NA |
| | 480 V | 97.0 % | 97.5 % | 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.

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

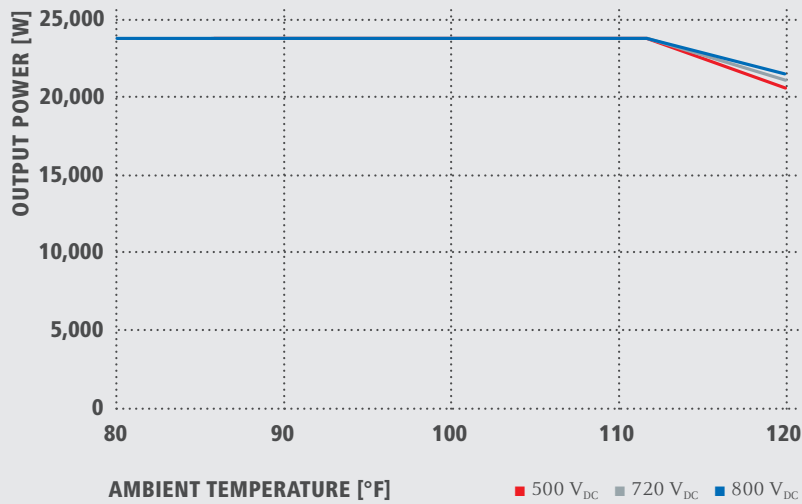
| GENERAL DATA | STANDARD WITH ALL FRONIUS SYMO MODELS |
|--------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dimensions (width x height x depth) | 20.1 x 28.5 x 8.9 inches |
| 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 - +140 °F (-40 - +60 °C) |
| Permitted humidity | 0 - 100 % (non-condensing) |
| DC connection terminals | 6x DC+ and 6x 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 | 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 |

| GENERAL DATA | SYMO 15.0-3 480 | SYMO 17.5-3 480 | SYMO 20.0-3 480 | SYMO 22.7-3 480 | SYMO 24.0-3 480 |
|--------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Weight | | | | | 95.7 lbs. |

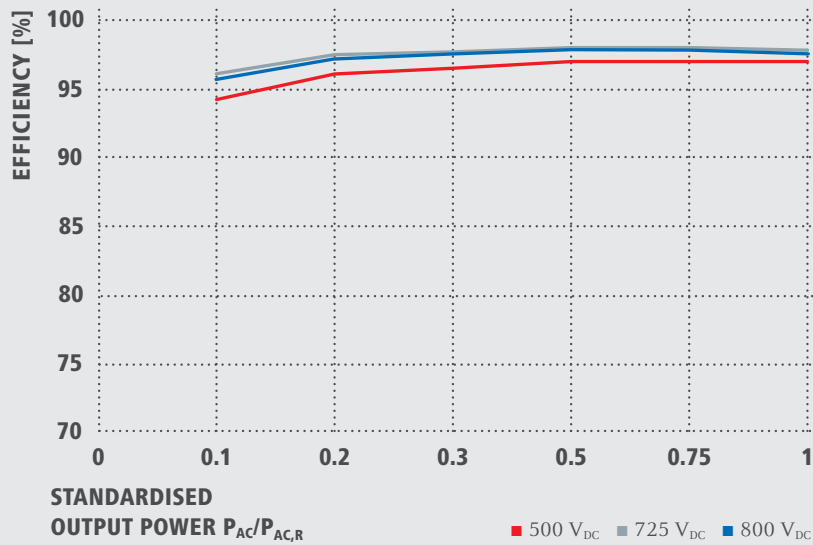
| PROTECTIVE DEVICES | STANDARD WITH ALL FRONIUS SYMO MODELS |
|------------------------------------------------------------|---------------------------------------|
| AFCI & 2014 NEC Compliant | Yes |
| DC disconnect | Yes |
| DC reverse polarity protection | Yes |
| Ground Fault Protection with Isolation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

| INTERFACES | AVAILABLE WITH ALL FRONIUS SYMO MODELS |
|----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| USB (A socket) | Datalogging and inverter update possible via USB |
| 2x RS422 (RJ45 socket) | Fronius Solar Net, interface protocol |
| AVAILABLE WITH THE FRONIUS DATAMANAGER 2.0 CARD (ONLY ONE CARD REQUIRED FOR UP TO 100 INVERTERS) | |
| Wi-Fi/Ethernet/Serial/ Datalogger and webservice | Wireless standard 802.11 b/g/n / Fronius Solar.web, SunSpec Modbus TCP, JSON / SunSpec Modbus RTU |
| 6 inputs and 4 digital I/Os | Load management; signaling, multipurpose I/O |

FRONIUS SYMO 24.0-3 480 TEMPERATURE DERATING CURVE



FRONIUS SYMO 24.0-3 480 CEC EFFICIENCY CURVE



Fronius USA LLC
 6797 Fronius Drive
 Portage, IN 46368
 USA
 pv-support-usa@fronius.com
 www.fronius-usa.com

/ Perfect Welding / Solar Energy / Perfect Charging

WE HAVE THREE DIVISIONS AND ONE PASSION: SHIFTING THE LIMITS OF POSSIBILITY.

/ Whether welding technology, photovoltaics or battery charging technology – our goal is clearly defined: to be the innovation leader. With around 3,000 employees worldwide, we shift the limits of what's possible - our record of over 1,000 granted patents is testimony to this. While others progress step by step, we innovate in leaps and bounds. Just as we've always done. The responsible use of our resources forms the basis of our corporate policy.

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