/ 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	NA	325 V
	240 V	370 V	370 V	NA	NA	NA
	480 V	NA	NA	675 V	685 V	NA
Admissable 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	15000 VA
	240 V	9995 VA	11995 VA	NA	NA	NA
	480 V	NA	NA	9995 VA	12495 VA	NA
Max. continuous output current	208 V	27.7 A	33.3 A	NA	NA	41.6 A
	240 V	24.0 A	28.9 A	NA	NA	NA
	480 V	NA	NA	12.0 A	15.0 A	NA
Recommended OCPD/AC breaker size	208 V	35 A	45 A	NA	NA	60 A
	240 V	30 A	40 A	NA	NA	NA
	480 V	NA	NA	15 A	20 A	NA
Max. Efficiency		97.0 %	97.0 %	98.1 %	98.1 %	97.3%
CEC Efficiency	208 V	96.5 %	96.5 %	NA	NA	96.5%
	240 V	96.5 %	96.5 %	NA	NA	NA
	480 V	NA	NA	96.5 %	97.0 %	NA
Admissable 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		< 1.5 %	< 1.75 %	< 1.75 %	< 1.5 %	< 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 webserver	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 * Imax) MPPT 1/MPPT 2)		49.5 A / 37.5 A				
Integrated DC string fuse holders		NA	NA	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	NA
	240 V	NA	NA	NA	NA	NA
	480 V	685 V	695 V	710 V	720 V	720 V
Admissable 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 %
Admissable conductor size AC		AWG 14 - AWG 6				
Grid connection		480 V Delta +N**				
Frequency		60 Hz				
Total harmonic distortion		< 1.5 %	< 1.25 %	< 1.0 %	<1.25 %	< 1.0 %
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)

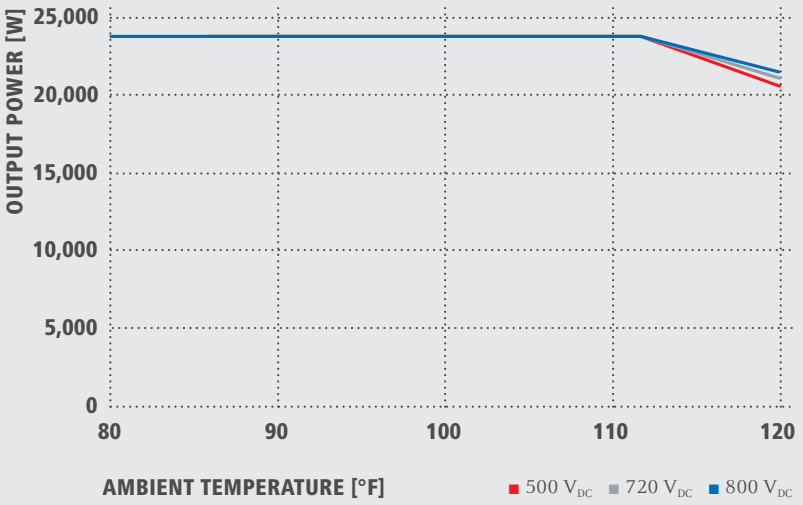
GENERAL DATA	STANDARD WITH ALL FRONIUS SYMO MODELS
Dimensions (width x height x depth)	20.1 x 28.5 x 8.9 inches
Degree of protection	NEMA 4X
Night time consumption	< 1 W
Inverter topology	Transformerless
Cooling	Variable speed fan
Installation	Indoor and outdoor installation
Ambient operating temperature 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.				

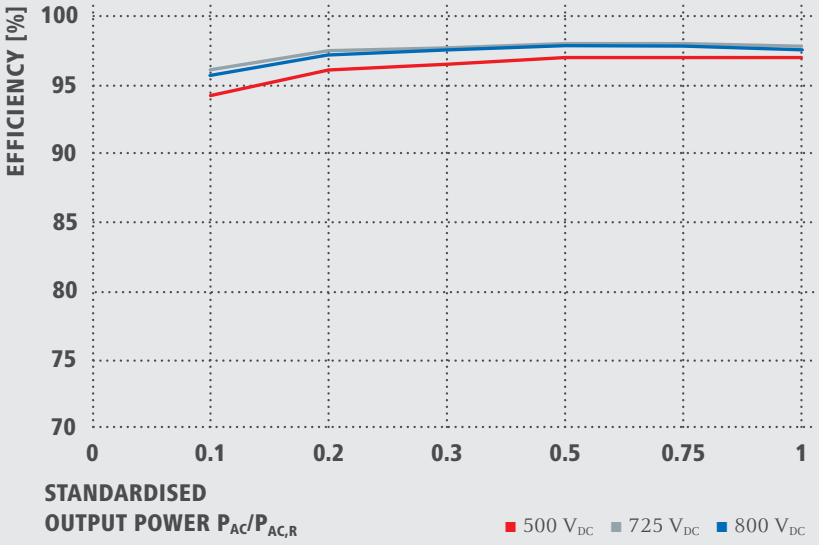
PROTECTIVE DEVICES	STANDARD WITH ALL FRONIUS SYMO MODELS
AFCI & 2014 NEC Compliant	Yes
DC disconnect	Yes
DC reverse polarity protection	Yes
Ground Fault Protection with Isolation Monitor Interrupter	Yes

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 webserver	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



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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 3,300 employees worldwide, we shift the limits of what's possible - our record of over 900 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.

Further information about all Fronius products and our global sales partners and representatives can be found at **www.fronius.com**

v05 May 2015 EN

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REV. 1.15.16