



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	N/A	N/A	325 V
		240 V	370 V	N/A	N/A	N/A
		480 V	N/A	675 V	685 V	N/A
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 %	98.1 %	98.1 %
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 %		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