



# FRONIUS SYMO

Maximum flexibility for the applications of tomorrow



SnapInverter technology



Integrated data communication



Dynamic Peak Manager



Smart Grid Ready



SuperFlex Design



Zero feed-in



With power categories ranging from 3.0 to 20.0 kW, the transformerless Fronius Symo is the three-phase inverter for systems of every size. Owing to the SuperFlex Design, the Fronius Symo is the perfect answer to irregularly shaped or multi-oriented roofs.

The standard interface to the internet via WLAN or Ethernet and the ease of integration of third-party components make the Fronius Symo one of the most communicative inverters on the market. Furthermore, the meter interface permits dynamic feed-in management and a clear visualisation of the consumption overview.

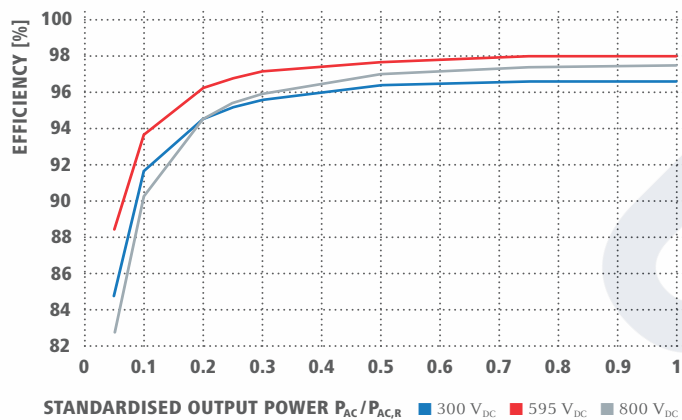
## TECHNICAL DATA FRONIUS SYMO (3.0-3-S, 3.7-3-S, 4.5-3-S, 3.0-3-M, 3.7-3-M, 4.5-3-M)

INPUT DATA	SYMO 3.0-3-S	SYMO 3.7-3-S	SYMO 4.5-3-S	SYMO 3.0-3-M	SYMO 3.7-3-M	SYMO 4.5-3-M
Number MPP trackers		1			2	
Max. input current ( $I_{dc \max 1} / I_{dc \max 2}^{2)}$ )		16.0 A			16.0 A / 16.0 A	
Max. array short circuit current MPP1/MPP2 <sup>3)</sup> ( $I_{sc \text{ pv}}^{**}$ )		31.0 A			31.0 A / 31.0 A	
DC input voltage range ( $U_{dc \min} - U_{dc \max}$ )				150 - 1000 V		
Feed-in start voltage ( $U_{dc \text{ start}}$ )				200 V		
Usable MPP voltage range				150 - 800 V		
Number of DC connections		3			2+2	
Max. PV generator output ( $P_{dc \max}$ )	6.0 kW <sub>peak</sub>	7.4 kW <sub>peak</sub>	9.0 kW <sub>peak</sub>	6.0 kW <sub>peak</sub>	7.4 kW <sub>peak</sub>	9.0 kW <sub>peak</sub>
OUTPUT DATA	SYMO 3.0-3-S	SYMO 3.7-3-S	SYMO 4.5-3-S	SYMO 3.0-3-M	SYMO 3.7-3-M	SYMO 4.5-3-M
AC nominal output ( $P_{ac,r}$ )	3,000 W	3,700 W	4,500 W	3,000 W	3,700 W	4,500 W
Max. output power / rated apparent power	3,000 VA	3,700 VA	4,500 VA	3,000 VA	3,700 VA	4,500 VA
AC output current ( $I_{ac \text{ nom}}$ )	4.3 A	5.3 A	6.5 A	4.3 A	5.3 A	6.5 A
Grid connection (voltage range)				3~NPE 400 V / 230 V or 3~NPE 380 V / 220 V (+20 % / -30 %)		
Frequency (Frequency range)				50 Hz / 60 Hz (45 - 65 Hz)		
Total harmonic distortion				< 3 %		
Power factor ( $\cos \phi_{ac,r}$ )		0.7 - 1 ind. / cap.			0.8 - 1 ind. / cap.	
GENERAL DATA	SYMO 3.0-3-S	SYMO 3.7-3-S	SYMO 4.5-3-S	SYMO 3.0-3-M	SYMO 3.7-3-M	SYMO 4.5-3-M
Dimensions (height x width x depth)			645 x 431 x 204 mm			
Weight		16.0 kg			19.9 kg	
Degree of protection				IP 65		
Protection class				1		
Overvoltage category (DC / AC) <sup>2)</sup>				2 / 3		
Night time consumption				< 1 W		
Inverter design				Transformerless		
Cooling				Regulated air cooling		
Installation				Indoor and outdoor installation		
Ambient temperature range				-25 - +60 °C		
Permitted humidity				0 - 100 %		
Max. altitude			2,000 m / 3,400 m (unrestricted / restricted voltage range)			
DC connection technology	3x DC+ and 3x DC- screw terminals 2.5 - 16 mm <sup>2</sup>			4x DC+ and 4x DC- screw terminals 2.5 - 16mm <sup>2</sup> <sup>3)</sup>		
AC connection technology	5-pole AC screw terminals 2.5 - 16 mm <sup>2</sup>			5-pole AC screw terminals 2.5 - 16mm <sup>2</sup> <sup>3)</sup>		
Certificates and compliance with standards	ÖVE / ÖNORM E 8001-4-712, DIN V VDE 0126-1-1/A1, VDE AR N 4105, IEC 62109-1/-2, IEC 62116, IEC 61727, AS 3100, AS 4777-2, AS 4777-3, CER 06-190, G98, G99, UNE 206007-1, SI 4777 <sup>1)</sup> , CEI 0-21 <sup>1)</sup> , NRS 097					
Country of manufacture	Austria					

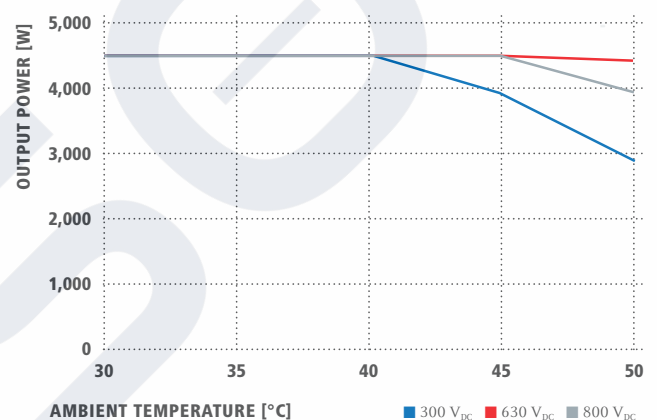
<sup>1)</sup> This applies to Fronius Symo 3.0-3-M, 3.7-3-M and 4.5-3-M. <sup>2)</sup> According to IEC 62109-1.

<sup>3)</sup> 16 mm<sup>2</sup> without wire end ferrules. <sup>\*\*</sup>  $I_{sc \text{ pv}} = I_{sc \max} \geq I_{sc} (\text{STC}) \times 1,25$  according to e.g. IEC 60364-7-712, NEC 2020, AS/NZS 5033:2021. Further information regarding the availability of the inverters in your country can be found at [www.fronius.com](http://www.fronius.com).

## FRONIUS SYMO 4.5-3-S EFFICIENCY CURVE



## FRONIUS SYMO 4.5-3-S TEMPERATURE DERATING



## TECHNICAL DATA FRONIUS SYMO (3.0-3-S, 3.7-3-S, 4.5-3-S, 3.0-3-M, 3.7-3-M, 4.5-3-M)

EFFICIENCY	SYMO 3.0-3-S	SYMO 3.7-3-S	SYMO 4.5-3-S	SYMO 3.0-3-M	SYMO 3.7-3-M	SYMO 4.5-3-M
Max. efficiency				98.0 %		
European efficiency ( $\eta_{EU}$ )	96.2 %	96.7 %	97.0 %	96.5 %	96.9 %	97.2 %
MPP adaptation efficiency	> 99.9 %					
PROTECTIVE DEVICES	SYMO 3.0-3-S	SYMO 3.7-3-S	SYMO 4.5-3-S	SYMO 3.0-3-M	SYMO 3.7-3-M	SYMO 4.5-3-M
DC insulation measurement				Yes		
Overload behaviour			Operating point shift, power limitation			
DC disconnect			Yes			
Reverse polarity protection			Yes			
RCMU			Yes			
INTERFACES	SYMO 3.0-3-S	SYMO 3.7-3-S	SYMO 4.5-3-S	SYMO 3.0-3-M	SYMO 3.7-3-M	SYMO 4.5-3-M
WLAN / Ethernet LAN			Fronius Solar.web, Modbus TCP SunSpec, Fronius Solar API (JSON)			
6 inputs and 4 digital in/out			Interface to ripple control receiver			
USB (A socket) <sup>1)</sup>			Datalogging, inverter update via USB flash drive			
2x RS422 (RJ45 socket) <sup>1)</sup>			Fronius Solar Net			
Signalling output <sup>1)</sup>			Energy management (potential-free relay output)			
Datalogger and Webserver			Included			
External input <sup>1)</sup>			S0-Meter Interface / Input for overvoltage protection			
RS485			Modbus RTU SunSpec or meter connection			

<sup>1)</sup> Also available in the light version.

## TECHNICAL DATA FRONIUS SYMO (5.0-3-M, 6.0-3-M, 7.0-3-M, 8.2-3-M)

INPUT DATA	SYMO 5.0-3-M	SYMO 6.0-3-M	SYMO 7.0-3-M	SYMO 8.2-3-M
Number MPP trackers			2	
Max. input current ( $I_{dc\ max\ 1} / I_{dc\ max\ 2}$ )			16.0 A / 16.0 A	
Max. array short circuit current MPP1/MPP2 ( $I_{sc\ pv}$ )*			31.0 A / 31.0 A	
DC input voltage range ( $U_{dc\ min} - U_{dc\ max}$ )			150 - 1000 V	
Feed-in start voltage ( $U_{dc\ start}$ )			200 V	
Usable MPP voltage range			150 - 800 V	
Number of DC connections			2+2	
Max. PV generator output ( $P_{dc\ max}$ )	10.0 kW <sub>peak</sub>	12.0 kW <sub>peak</sub>	14.0 kW <sub>peak</sub>	16.4 kW <sub>peak</sub>
OUTPUT DATA	SYMO 5.0-3-M	SYMO 6.0-3-M	SYMO 7.0-3-M	SYMO 8.2-3-M
AC nominal output ( $P_{ac,r}$ )	5,000 W	6,000 W	7,000 W	8,200 W
Max. output power / rated apparent power	5,000 VA	6,000 VA	7,000 VA	8,200 VA
AC output current ( $I_{ac,nom}$ )	7.2 A	8.7 A	10.1 A	11.8 A
Grid connection (voltage range)		3-NPE 400 V / 230 V or 3-NPE 380 V / 220 V (+20 % / -30 %)		
Frequency (Frequency range)		50 Hz / 60 Hz (45 - 65 Hz)		
Total harmonic distortion		< 3 %		
Power factor ( $\cos\ \phi_{ac,r}$ )		0.8 - 1 ind. / cap.		
GENERAL DATA	SYMO 5.0-3-M	SYMO 6.0-3-M	SYMO 7.0-3-M	SYMO 8.2-3-M
Dimensions (height x width x depth)		645 x 431 x 204 mm		
Weight		19.9 kg		21.9 kg
Degree of protection		IP 65		
Protection class		1		
Overvoltage category (DC / AC) <sup>1)</sup>		2 / 3		
Night time consumption		< 1 W		
Inverter design		Transformerless		
Cooling		Regulated air cooling		
Installation		Indoor and outdoor installation		
Ambient temperature range		-25 - +60 °C		
Permitted humidity		0 - 100 %		
Max. altitude		2,000 m / 3,400 m (unrestricted / restricted voltage range)		
DC connection technology		4x DC+ and 4x DC- Screw terminals 2.5 - 16mm <sup>2</sup> <sup>2)</sup>		
AC connection technology		5-pole AC Screw terminals 2.5 - 16mm <sup>2</sup> <sup>2)</sup>		
Certificates and compliance with standards		ÖVE / ÖNORM E 8001-4-712, DIN V VDE 0126-1-1/A1, VDE AR N 4105, IEC 62109-1/-2, IEC 62116, IEC 61727, AS 3100, AS 4777-2, AS 4777-3, CER 06-190, G98, G99, UNE 206007-1, SI 4777, CEI 0-21, NRS 097		
Country of manufacture		Austria		

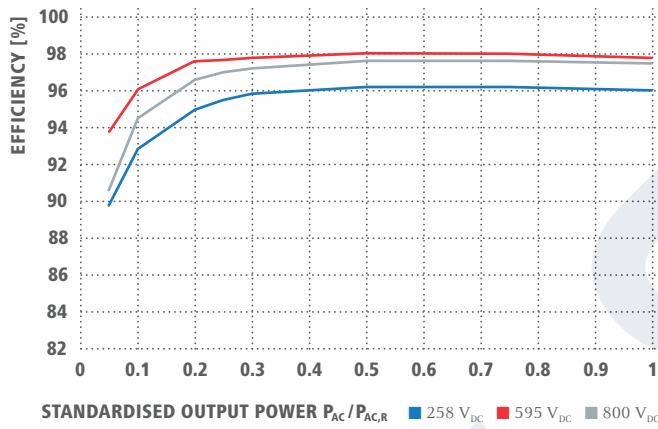
<sup>1)</sup> According to IEC 62109-1.

<sup>2)</sup> 16 mm<sup>2</sup> without wire end ferrules.

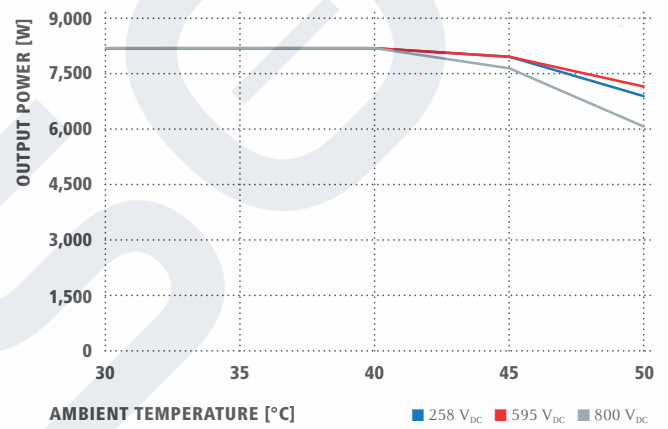
\*  $I_{sc\ pv} = I_{sc\ max} \geq I_{sc} (STC) \times 1,25$  according to e.g. IEC 60364-7-712, NEC 2020, AS/NZS 5033:2021.

Further information regarding the availability of the inverters in your country can be found at [www.fronius.com](http://www.fronius.com).

## FRONIUS SYMO 8.2-3-M EFFICIENCY CURVE



## FRONIUS SYMO 8.2-3-M TEMPERATURE DERATING



## TECHNICAL DATA FRONIUS SYMO (5.0-3-M, 6.0-3-M, 7.0-3-M, 8.2-3-M)

EFFICIENCY	SYMO 5.0-3-M	SYMO 6.0-3-M	SYMO 7.0-3-M	SYMO 8.2-3-M
Max. efficiency			98.0 %	
European efficiency ( $\eta_{EU}$ )	97.3 %	97.5 %	97.6 %	97.7 %
MPP adaptation efficiency			> 99.9 %	
PROTECTIVE DEVICES	SYMO 5.0-3-M	SYMO 6.0-3-M	SYMO 7.0-3-M	SYMO 8.2-3-M
DC insulation measurement			Yes	
Overload behaviour		Operating point shift, power limitation		
DC disconnect			Yes	
Reverse polarity protection			Yes	
RCMU			Yes	
INTERFACES	SYMO 5.0-3-M	SYMO 6.0-3-M	SYMO 7.0-3-M	SYMO 8.2-3-M
WLAN / Ethernet LAN		Fronius Solar.web, Modbus TCP SunSpec, Fronius Solar API (JSON)		
6 inputs and 4 digital in/out		Interface to ripple control receiver		
USB (A socket) <sup>1)</sup>		Datalogging, inverter update via USB flash drive		
2x RS422 (RJ45 socket) <sup>1)</sup>		Fronius Solar Net		
Signalling output <sup>1)</sup>		Energy management (potential-free relay output)		
Datalogger and Webserver		Included		
External input <sup>1)</sup>		S0-Meter Interface / Input for overvoltage protection		
RS485		Modbus RTU SunSpec or meter connection		

<sup>1)</sup> Also available in the light version.

## TECHNICAL DATA FRONIUS SYMO (10.0-3-M, 12.5-3-M, 15.0-3-M, 17.5-3-M, 20.0-3-M)

INPUT DATA	SYMO 10.0-3-M	SYMO 12.5-3-M	SYMO 15.0-3-M	SYMO 17.5-3-M	SYMO 20.0-3-M
Number MPP trackers			2		
Max. input current ( $I_{dc\ max\ 1} / I_{dc\ max\ 2}$ )	27.0 A / 16.5 A <sup>1)</sup>		33.0 A / 27.0 A		
Max. usable input current total ( $I_{dc\ max\ 1} + I_{dc\ max\ 2}$ )	43.5 A		51.0 A		
Max. array short circuit current MPP1/MPP2 ( $I_{sc\ pv}$ ) <sup>*</sup>	56 A / 34 A		68 A / 56 A		
DC input voltage range ( $U_{dc\ min} - U_{dc\ max}$ )			200 - 1000 V		
Feed-in start voltage ( $U_{dc\ start}$ )			200 V		
Usable MPP voltage range			200 - 800 V		
Number of DC connections			3+3		
Max. PV generator output ( $P_{dc\ max}$ )	15.0 kW <sub>peak</sub>	18.8 kW <sub>peak</sub>	22.5 kW <sub>peak</sub>	26.3 kW <sub>peak</sub>	30.0 kW <sub>peak</sub>
OUTPUT DATA	SYMO 10.0-3-M	SYMO 12.5-3-M	SYMO 15.0-3-M	SYMO 17.5-3-M	SYMO 20.0-3-M
AC nominal output ( $P_{ac,r}$ )	10,000 W	12,500 W	15,000 W	17,500 W	20,000 W
Max. output power / rated apparent power	10,000 VA	12,500 VA	15,000 VA	17,500 VA	20,000 VA
AC output current ( $I_{ac\ nom}$ )	14.4 A	18.0 A	21.7 A	25.3 A	28.9 A
Grid connection (voltage range)	3-NPE 400 V / 230 V or 3-NPE 380 V / 220 V (+20 % / -30 %)				
Frequency (Frequency range)	50 Hz / 60 Hz (45 - 65 Hz)				
Total harmonic distortion	1.8 %	2.0 %	1.5 %	1.5 %	1.3 %
Power factor ( $\cos\ \phi_{ac,r}$ )	0 - 1 ind. / cap.				
GENERAL DATA	SYMO 10.0-3-M	SYMO 12.5-3-M	SYMO 15.0-3-M	SYMO 17.5-3-M	SYMO 20.0-3-M
Dimensions (height x width x depth)			725 x 510 x 225 mm		
Weight	34.8 kg		43.4 kg		
Degree of protection			IP 66		
Protection class			1		
Overtoltage category (DC / AC) <sup>2)</sup>			2 / 3		
Night time consumption			< 1 W		
Inverter design			Transformerless		
Cooling			Regulated air cooling		
Installation (DIN rail)			Indoor and outdoor installation (106 x 90 x 66 mm)		
Ambient temperature range			-40 - +60 °C		
Permitted humidity			0 - 100 %		
Max. altitude			2,000 m / 3,400 m (unrestricted / restricted voltage range)		
DC connection technology			6x DC+ and 6x DC- screw terminals 2.5 - 16 mm <sup>2</sup>		
AC connection technology			5-pole AC screw terminals 2.5 - 16 mm <sup>2</sup>		
Certificates and compliance with standards	ÖVE / ÖNORM E 8001-4-712, DIN V VDE 0126-1-1/A1, VDE AR N 4105, IEC 62109-1/-2, IEC 62116, IEC 61727, AS 3100, AS 4777-2, AS 4777-3, CER 06-190, G98, G99, UNE 206007-1, SI 4777, CEI 0-16, CEI 0-21, NRS 097				
Country of manufacture	Austria				

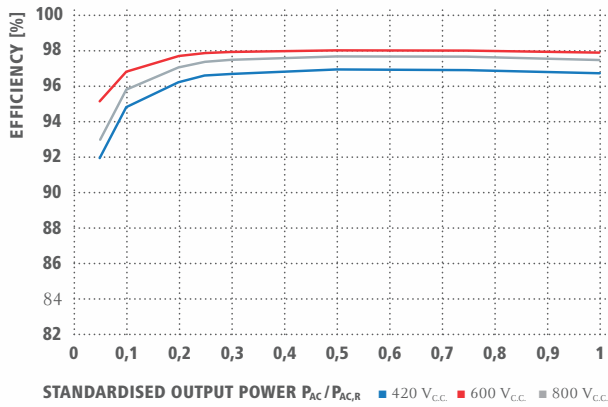
<sup>1)</sup> 14.0 A for voltages < 420 V

<sup>2)</sup> According to IEC 62109-1. DIN rail for optional type 1 + 2 or type 2 surge protection device available.

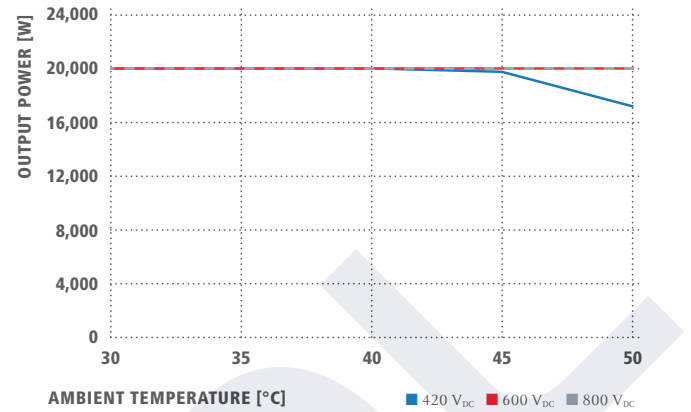
\*  $I_{sc\ pv} = I_{sc\ max} \geq I_{sc\ (STC)} \times 1,25$  according to e.g. IEC 60364-7-712, NEC 2020, AS/NZS 5033:2021.

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## FRONIUS SYMO 20.0-3-M EFFICIENCY CURVE



## FRONIUS SYMO 20.0-3-M TEMPERATURE DERATING



## TECHNICAL DATA FRONIUS SYMO (10.0-3-M, 12.5-3-M, 15.0-3-M, 17.5-3-M, 20.0-3-M)

EFFICIENCY	SYMO 10.0-3-M	SYMO 12.5-3-M	SYMO 15.0-3-M	SYMO 17.5-3-M	SYMO 20.0-3-M
Max. efficiency	98.0 %			98.1 %	
European efficiency (η <sub>EU</sub> )	97.4 %	97.6 %	97.8 %	97.8 %	97.9 %
MPP adaptation efficiency	> 99.9 %				
PROTECTIVE DEVICES	SYMO 10.0-3-M	SYMO 12.5-3-M	SYMO 15.0-3-M	SYMO 17.5-3-M	SYMO 20.0-3-M
DC insulation measurement			Yes		
Overload behaviour			Operating point shift, power limitation		
DC disconnecter			Yes		
Reverse polarity protection			Yes		
RCMU			Yes		
INTERFACES	SYMO 10.0-3-M	SYMO 12.5-3-M	SYMO 15.0-3-M	SYMO 17.5-3-M	SYMO 20.0-3-M
WLAN / Ethernet LAN			Fronius Solar.web, Modbus TCP SunSpec, Fronius Solar API (JSON)		
6 inputs and 4 digital inputs/outputs			Interface to ripple control receiver		
USB (A socket) <sup>1)</sup>			Datalogging, inverter update via USB flash drive		
2x RS422 (RJ45-socket) <sup>1)</sup>			Fronius Solar Net		
Signalling output <sup>1)</sup>			Energy management (potential-free relay output)		
Datalogger and Webserver			Included		
External input <sup>1)</sup>			S0-Meter Interface / Input for overvoltage protection		
RS485			Modbus RTU SunSpec or meter connection		

<sup>1)</sup> Also available in the light version.

Further information and technical data can be found at [www.fronius.com](http://www.fronius.com).

/ Perfect Welding / Solar Energy / Perfect Charging

### THREE BUSINESS UNITS, ONE GOAL: TO SET THE STANDARD THROUGH TECHNOLOGICAL ADVANCEMENT.

What began in 1945 as a one-man operation now sets technological standards in the fields of welding technology, photovoltaics and battery charging. Today, the company has around 5,660 employees worldwide and 1,321 patents for product development show the innovative spirit within the company. Sustainable development means for us to implement environmentally relevant and social aspects equally with economic factors. Our goal has remained constant throughout: to be the innovation leader.

Further information about all Fronius products and our global sales partners and representatives can be found at [www.fronius.com](http://www.fronius.com)

# SOLSOL

SOLSOL s.r.o.  
Technická 3029, 616 00, Brno, CZ  
sales@solsol.cz  
www.solsol.cz

Fronius India Private Limited  
Plot no BG-71/2/B,  
Pimpri Industrial Area,  
MIDC- Bhosari,  
Pune- 411026, India  
pv-sales-india@fronius.com  
www.fronius.in

Fronius Australia Pty Ltd.  
90-92 Lambeck Drive  
Tullamarine VIC 3043  
Australia  
pv-sales-australia@fronius.com  
www.fronius.com.au

Fronius UK Limited  
Maidstone Road, Kingston  
Milton Keynes, MK10 0BD  
United Kingdom  
pv-sales-uk@fronius.com  
www.fronius.co.uk

Fronius International GmbH  
Froniusplatz 1  
4600 Wels  
Austria  
pv-sales@fronius.com  
www.fronius.com