

# FRONIUS PRIMO

The communicative inverter for optimised energy management.



SnapINverter Technology



Integrated data communication



SuperFlex Design



Dynamic Peak Manager



Smart Grid Ready



Zero feed-in

The Fronius Primo in power categories from 3.0 to 8.2 kW perfectly completes the SnapINverter generation. This single-phase, transformerless device is the ideal inverter for private households.

Its innovative SuperFlex Design provides maximum flexibility in system design, while the SnapINverter mounting system makes installation and maintenance easier than ever before. The communication package included as standard, with WLAN, energy management, several interfaces and much more besides, makes the Fronius Primo a communicative inverter for owner-occupiers.

## TECHNICAL DATA FRONIUS PRIMO (3.0-1, 3.5-1, 3.6-1, 4.0-1, 4.6-1)

| INPUT DATA                                             | PRIMO 3.0-1                           | PRIMO 3.5-1            | PRIMO 3.6-1            | PRIMO 4.0-1            | PRIMO 4.6-1            |
|--------------------------------------------------------|---------------------------------------|------------------------|------------------------|------------------------|------------------------|
| Number of MPP trackers                                 | 2                                     |                        |                        |                        |                        |
| Max. input current ( $I_{dc \max 1} / I_{dc \max 2}$ ) | 12.0 A / 12.0 A                       |                        |                        |                        |                        |
| Max. array short circuit current (MPP1/MPP2)           | 18.0 A / 18.0 A                       |                        |                        |                        |                        |
| DC input voltage range ( $U_{dc \min} - U_{dc \max}$ ) | 80 - 1000 V                           |                        |                        |                        |                        |
| Feed-in start voltage ( $U_{dc \text{ start}}$ )       | 80 V                                  |                        |                        |                        |                        |
| Usable MPP voltage range                               | 80 - 800 V                            |                        |                        |                        |                        |
| Number of DC connections                               | 2 + 2                                 |                        |                        |                        |                        |
| Max. PV generator output ( $P_{dc \max}$ )             | 4.5 kW <sub>peak</sub>                | 5.3 kW <sub>peak</sub> | 5.5 kW <sub>peak</sub> | 6.0 kW <sub>peak</sub> | 6.9 kW <sub>peak</sub> |
| OUTPUT DATA                                            | PRIMO 3.0-1                           | PRIMO 3.5-1            | PRIMO 3.6-1            | PRIMO 4.0-1            | PRIMO 4.6-1            |
| AC nominal output ( $P_{ac,n}$ )                       | 3,000 W                               | 3,500 W                | 3,680 W                | 4,000 W                | 4,600 W                |
| Max. output power                                      | 3,000 VA                              | 3,500 VA               | 3,680 VA               | 4,000 VA               | 4,600 VA               |
| AC output current ( $I_{ac,nom}$ )                     | 13.0 A                                | 15.2 A                 | 16.0 A                 | 17.4 A                 | 20.0 A                 |
| Grid connection (voltage range)                        | 1 ~ NPE 220 V / 230 V (180 V - 270 V) |                        |                        |                        |                        |
| Frequency (frequency range)                            | 50 Hz / 60 Hz (45 - 65 Hz)            |                        |                        |                        |                        |
| Total harmonic distortion                              | < 5 %                                 |                        |                        |                        |                        |
| Power factor ( $\cos \phi_{ac,r}$ )                    | 0.85 - 1 ind. / cap.                  |                        |                        |                        |                        |

## TECHNICAL DATA FRONIUS PRIMO (3.0-1, 3.5-1, 3.6-1, 4.0-1, 4.6-1)

| GENERAL DATA                                 | PRIMO 3.0-1                                                                                                              | PRIMO 3.5-1 | PRIMO 3.6-1 | PRIMO 4.0-1 | PRIMO 4.6-1 |
|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|-------------|-------------|-------------|-------------|
| Dimensions (height x width x depth)          | 645 x 431 x 204 mm                                                                                                       |             |             |             |             |
| Weight                                       | 21.5 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                    | -40 - +55 °C                                                                                                             |             |             |             |             |
| Permitted humidity                           | 0 - 100 %                                                                                                                |             |             |             |             |
| Max. altitude                                | 4,000 m                                                                                                                  |             |             |             |             |
| DC connection technology                     | 4x DC+ and 4x DC- screw terminals 2.5 - 16 mm <sup>2</sup>                                                               |             |             |             |             |
| AC connection technology                     | 3-pole AC screw terminals 2.5 - 16 mm <sup>2</sup>                                                                       |             |             |             |             |
| Certificates and compliance with standards   | DIN V VDE 0126-1-1/A1, IEC 62109-1/-2, IEC 62116, IEC 61727, AS 4777-2, AS 4777-3, G83/2, G59/3, CEI 0-21, VDE AR N 4105 |             |             |             |             |

| EFFICIENCY                             | PRIMO 3.0-1 | PRIMO 3.5-1 | PRIMO 3.6-1 | PRIMO 4.0-1 | PRIMO 4.6-1 |
|----------------------------------------|-------------|-------------|-------------|-------------|-------------|
| Max. efficiency                        | 98.0 %      | 98.0 %      | 98.0 %      | 98.1 %      | 98.1 %      |
| European efficiency (η <sub>EU</sub> ) | 96.1 %      | 96.8 %      | 96.8 %      | 97.0 %      | 97.0 %      |
| MPP adaptation efficiency              | > 99.9 %    |             |             |             |             |

| PROTECTIVE DEVICES          | PRIMO 3.0-1                             | PRIMO 3.5-1 | PRIMO 3.6-1 | PRIMO 4.0-1 | PRIMO 4.6-1 |
|-----------------------------|-----------------------------------------|-------------|-------------|-------------|-------------|
| DC insulation measurement   | Yes                                     |             |             |             |             |
| Overload behaviour          | Operating point shift. Power limitation |             |             |             |             |
| DC disconnecter             | Yes                                     |             |             |             |             |
| Reverse polarity protection | Yes                                     |             |             |             |             |
| RCMU                        | Yes                                     |             |             |             |             |

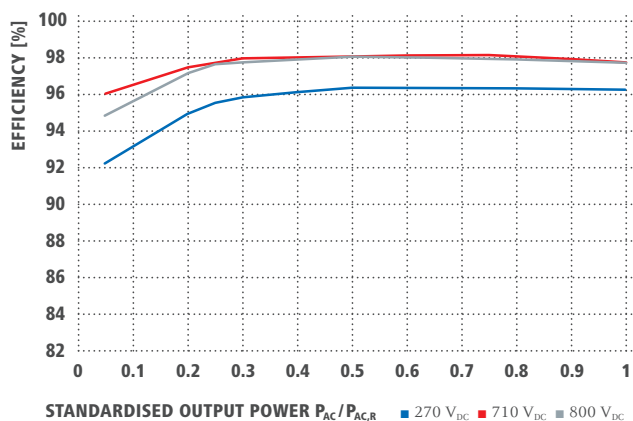
| INTERFACES                           | PRIMO 3.0-1                                                     | PRIMO 3.5-1 | PRIMO 3.6-1 | PRIMO 4.0-1 | PRIMO 4.6-1 |
|--------------------------------------|-----------------------------------------------------------------|-------------|-------------|-------------|-------------|
| 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>2)</sup>         | Datalogging, inverter update via USB flash drive                |             |             |             |             |
| 2x RS422 (RJ45 socket) <sup>2)</sup> | Fronius Solar Net                                               |             |             |             |             |
| Signalling output <sup>2)</sup>      | Energy management (potential-free relay output)                 |             |             |             |             |
| Datalogger and Webserver             | Included                                                        |             |             |             |             |
| External input <sup>2)</sup>         | S0-Meter Interface / Input for overvoltage protection           |             |             |             |             |
| RS485                                | Modbus RTU SunSpec or meter connection                          |             |             |             |             |

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

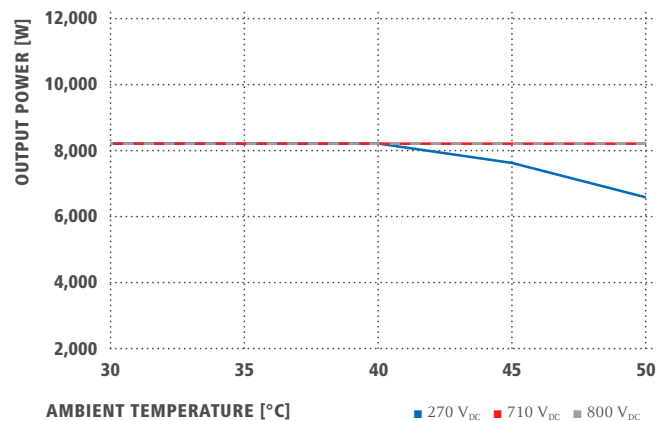
<sup>2)</sup> Also available in the light version.

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

## FRONIUS PRIMO 8.2-1 EFFICIENCY CURVE



## FRONIUS PRIMO 8.2-1 TEMPERATURE DERATING



## TECHNICAL DATA FRONIUS PRIMO (5.0-1, 5.0-1 AUS, 6.0-1, 8.2-1)

| INPUT DATA                                                             | PRIMO 5.0-1            | PRIMO 5.0-1 AUS        | PRIMO 6.0-1            | PRIMO 8.2-1             |
|------------------------------------------------------------------------|------------------------|------------------------|------------------------|-------------------------|
| Number of MPP trackers                                                 | 2                      |                        |                        |                         |
| Max. input current ( $I_{dc \max 1} / I_{dc \max 2}$ )                 | 12.0 A / 12.0 A        |                        | 18.0 A / 18.0 A        |                         |
| Max. array short circuit current (MPP <sub>1</sub> /MPP <sub>2</sub> ) | 18.0 A / 18.0 A        |                        | 27.0 A / 27.0 A        |                         |
| DC input voltage range ( $U_{dc \min} - U_{dc \max}$ )                 | 80 - 1,000 V           |                        |                        |                         |
| Feed-in start voltage ( $U_{dc \text{ start}}$ )                       | 80 V                   |                        |                        |                         |
| Usable MPP voltage range                                               | 80 - 800 V             |                        |                        |                         |
| Number of DC connections                                               | 2 + 2                  |                        |                        |                         |
| Max. PV generator output ( $P_{dc \max}$ )                             | 7.5 kW <sub>peak</sub> | 7.5 kW <sub>peak</sub> | 9.0 kW <sub>peak</sub> | 12.3 kW <sub>peak</sub> |

| OUTPUT DATA                                | PRIMO 5.0-1                           | PRIMO 5.0-1 AUS | PRIMO 6.0-1 | PRIMO 8.2-1 |
|--------------------------------------------|---------------------------------------|-----------------|-------------|-------------|
| AC nominal output ( $P_{ac,r}$ )           | 5,000 W                               | 4,600 W         | 6,000 W     | 8,200 W     |
| Max. output power                          | 5,000 VA                              | 5,000 VA        | 6,000 VA    | 8,200 VA    |
| AC output current ( $I_{ac \text{ nom}}$ ) | 21.7 A                                | 21.7 A          | 26.1 A      | 35.7 A      |
| Grid connection (voltage range)            | 1 ~ NPE 220 V / 230 V (180 V - 270 V) |                 |             |             |
| Frequency (frequency range)                | 50 Hz / 60 Hz (45 - 65 Hz)            |                 |             |             |
| Total harmonic distortion                  | < 5 %                                 |                 |             |             |
| Power factor ( $\cos \phi_{ac,r}$ )        | 0.85 - 1 ind. / cap.                  |                 |             |             |

| GENERAL DATA                                 | PRIMO 5.0-1                                                                                                                            | PRIMO 5.0-1 AUS | PRIMO 6.0-1 | PRIMO 8.2-1 |
|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------|-------------|
| Dimensions (height x width x depth)          | 645 x 431 x 204 mm                                                                                                                     |                 |             |             |
| Weight                                       | 21.5 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                    | -40 - +55 °C                                                                                                                           |                 |             |             |
| Permitted humidity                           | 0 - 100 %                                                                                                                              |                 |             |             |
| Max. altitude                                | 4,000 m                                                                                                                                |                 |             |             |
| DC connection technology                     | 4x DC+ and 4x DC- screw terminals 2.5 - 16 mm <sup>2</sup>                                                                             |                 |             |             |
| AC connection technology                     | 3-pole AC screw terminals 2.5 - 16 mm <sup>2</sup>                                                                                     |                 |             |             |
| Certificates and compliance with standards   | DIN V VDE 0126-1-1/A1, IEC 62109-1/-2, IEC 62116, IEC 61727, AS 4777-2, AS 4777-3, G83/2, G59/3, CEI 0-21, VDE AR N 4105 <sup>2)</sup> |                 |             |             |

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

<sup>2)</sup> Fronius Primo 5.0-1, Fronius Primo 6.0-1 and Fronius Primo 8.2-1 are not fully compliant with VDE AR N 4105.

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

| EFFICIENCY                             | PRIMO 5.0-1 | PRIMO 5.0-1 AUS | PRIMO 6.0-1 | PRIMO 8.2-1 |
|----------------------------------------|-------------|-----------------|-------------|-------------|
| Max. efficiency                        | 98.1 %      | 98.1 %          | 98.1 %      | 98.1 %      |
| European efficiency (η <sub>EU</sub> ) | 97.1 %      | 97.1 %          | 97.3 %      | 97.5 %      |
| MPP adaptation efficiency              | > 99.9 %    |                 |             |             |

| PROTECTIVE DEVICES          | PRIMO 5.0-1                             | PRIMO 5.0-1 AUS | PRIMO 6.0-1 | PRIMO 8.2-1 |
|-----------------------------|-----------------------------------------|-----------------|-------------|-------------|
| DC insulation measurement   | Yes                                     |                 |             |             |
| Overload behaviour          | Operating point shift, power limitation |                 |             |             |
| DC disconnect               | Yes                                     |                 |             |             |
| Reverse polarity protection | Yes                                     |                 |             |             |
| RCMU                        | Yes                                     |                 |             |             |

| INTERFACES                           | PRIMO 5.0-1                                                     | PRIMO 5.0-1 AUS | PRIMO 6.0-1 | PRIMO 8.2-1 |
|--------------------------------------|-----------------------------------------------------------------|-----------------|-------------|-------------|
| 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.

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 4,760 employees worldwide and 1,253 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)

**Fronius India Private Limited**  
GAT no 312, Nanekarwadi  
Chakan, Taluka - Khed District  
Pune 410501  
India  
[pv-sales-india@fronius.com](mailto:pv-sales-india@fronius.com)  
[www.fronius.in](http://www.fronius.in)

**Fronius Australia Pty Ltd.**  
90-92 Lambeck Drive  
Tullamarine VIC 3043  
Australia  
[pv-sales-australia@fronius.com](mailto:pv-sales-australia@fronius.com)  
[www.fronius.com.au](http://www.fronius.com.au)

**Fronius UK Limited**  
Maidstone Road, Kingston  
Milton Keynes, MK10 0BD  
United Kingdom  
[pv-sales-uk@fronius.com](mailto:pv-sales-uk@fronius.com)  
[www.fronius.co.uk](http://www.fronius.co.uk)

**Fronius International GmbH**  
Froniusplatz 1  
4600 Wels  
Austria  
[pv-sales@fronius.com](mailto:pv-sales@fronius.com)  
[www.fronius.com](http://www.fronius.com)