

# FRONIUS PRIMO

/ Optimised energy management.



/ SnapINverter Technology



/ Integrated data communication



/ SuperFlex Design



/ Dynamic Peak Manager



/ Smart Grid Ready



/ The Fronius Primo in power categories from 3.0 to 8.2 kW perfectly completes the new SnapINverter generation. This single-phase device is the ideal inverter for residential systems. Its innovative SuperFlex Design provides maximum flexibility in system design, while the SnapINverter mounting system makes installation and maintenance easier than ever before. The included communication package, with WLAN, energy management, several interfaces and much more, allows the Fronius Primo to communicate with the user, the PV system and the grid.

## 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 <sup>1)</sup> | PRIMO 4.0-1 | PRIMO 4.6-1 <sup>1)</sup> |
|--|-------------|-------------|---------------------------|-------------|---------------------------|
| Max. input current ( $I_{dc \max 1} / I_{dc \max 2}$ )               |             |             | 12.0 A / 12.0 A           |             |                           |
| Max. array short circuit current ( $MPP_1/MPP_2$ )                   |             |             | 18.0 A / 18.0 A           |             |                           |
| Min. input voltage ( $U_{dc \min}$ )                                 |             |             | 80 V                      |             |                           |
| Feed-in start voltage ( $U_{dc \text{ start}}$ )                     |             |             | 80 V                      |             |                           |
| Nominal input voltage ( $U_{dc,r}$ )                                 |             |             | 700 V                     |             |                           |
| Max. input voltage ( $U_{dc \max}$ )                                 |             |             | 1,000 V                   |             |                           |
| Usable MPP voltage range ( $U_{mpp \min} - U_{mpp \max}$ )           |             |             | 80 V - 800 V              |             |                           |
| MPP voltage range at nominal power ( $U_{mpp \min} - U_{mpp \max}$ ) |             | 200 - 800 V |                           | 210 - 800 V | 240 - 800 V               |
| Number of MPP trackers   |             |             | 2                         |             |                           |
| Number of DC connections   |             |             | 2 + 2                     |             |                           |

| OUTPUT DATA                                | PRIMO 3.0-1                           | PRIMO 3.5-1 | PRIMO 3.6-1 <sup>1)</sup> | PRIMO 4.0-1 | PRIMO 4.6-1 <sup>1)</sup> |
|--|---------------------------------------|-------------|---------------------------|-------------|---------------------------|
| AC nominal output ( $P_{ac,r}$ )           | 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 ( $I_{ac \text{ nom}}$ ) | 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 ( $\cos \varphi_{ac,r}$ )     | 0.85 - 1 ind. / cap.                  |             |                           |             |                           |

<sup>1)</sup> Available upon request, conditions apply.

## 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 <sup>1)</sup> | PRIMO 4.0-1 | PRIMO 4.6-1 <sup>1)</sup> |
|--|--|-------------|---------------------------|-------------|---------------------------|
| 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>2)</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                     | 2x DC+1, 2x DC+2 and 4x DC- screw terminals 2.5 - 16 mm <sup>2</sup>   |             |                           |             |                           |
| Mains 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 3100, AS 4777-2, AS 4777-3, G83/2, G59/3, CEI 0-21 |             |                           |             |                           |

| EFFICIENCY                          | PRIMO 3.0-1 | PRIMO 3.5-1 | PRIMO 3.6-1 <sup>1)</sup> | PRIMO 4.0-1 | PRIMO 4.6-1 <sup>1)</sup> |
|-------------------------------------|-------------|-------------|---------------------------|-------------|---------------------------|
| Max. efficiency                     | 97.6 %      | 97.7 %      | 97.7 %                    | 97.7 %      | 97.8 %                    |
| European efficiency ( $\eta_{EU}$ ) | 95.2 %      | 95.6 %      | 95.7 %                    | 96.0 %      | 96.3 %                    |
| MPP adaptation efficiency           | > 99.9 %    |             |                           |             |                           |

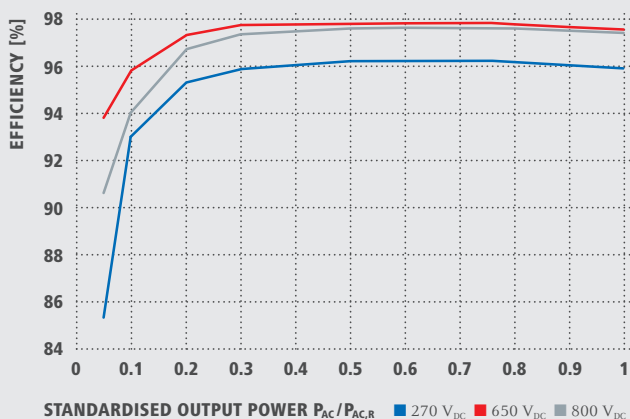
| PROTECTIVE DEVICES        | PRIMO 3.0-1                             | PRIMO 3.5-1 | PRIMO 3.6-1 <sup>1)</sup> | PRIMO 4.0-1 | PRIMO 4.6-1 <sup>1)</sup> |
|---------------------------|---|-------------|---------------------------|-------------|---------------------------|
| DC insulation measurement | Yes                                     |             |                           |             |                           |
| Overload behaviour        | Operating point shift. Power limitation |             |                           |             |                           |
| DC disconnecter           | Yes                                     |             |                           |             |                           |

| INTERFACES                           | PRIMO 3.0-1   | PRIMO 3.5-1 | PRIMO 3.6-1 <sup>1)</sup> | PRIMO 4.0-1 | PRIMO 4.6-1 <sup>1)</sup> |
|--------------------------------------|---|-------------|---------------------------|-------------|---------------------------|
| 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>3)</sup>         | Datalogging, inverter update via USB flash drive                |             |                           |             |                           |
| 2x RS422 (RJ45 socket) <sup>3)</sup> | Fronius Solar Net   |             |                           |             |                           |
| Signalling output <sup>3)</sup>      | Energy management (potential-free relay output)                 |             |                           |             |                           |
| Datalogger and Webserver             | Included  |             |                           |             |                           |
| External input <sup>3)</sup>         | S0-Meter Interface / Input for overvoltage protection           |             |                           |             |                           |
| RS485                                | Modbus RTU SunSpec or meter connection                          |             |                           |             |                           |

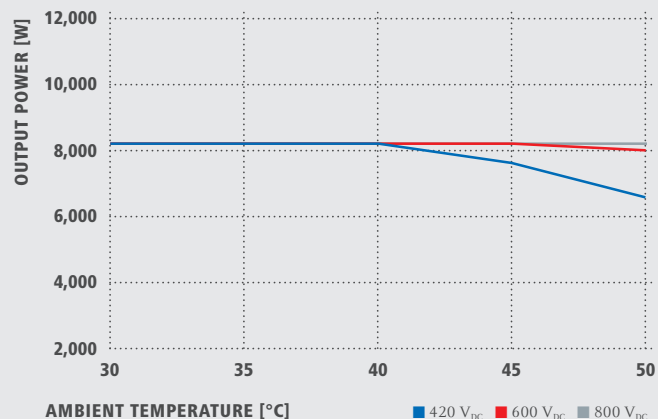
<sup>1)</sup> Available upon request, conditions apply. <sup>2)</sup> According to IEC 62109-1. <sup>3)</sup> Also available in the light version.

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 <sup>1)</sup> | PRIMO 5.0-1 AUS | PRIMO 6.0-1  | PRIMO 8.2-1 |
|--|---------------------------|-----------------|--|-------------|
| 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  |             |
| Min. input voltage ( $U_{dc\ min}$ )                                   |                           |                 | 80 V   |             |
| Feed-in start voltage ( $U_{dc\ start}$ )                              |                           |                 | 80 V   |             |
| Nominal input voltage ( $U_{dc,t}$ )                                   |                           |                 | 700 V  |             |
| Max. input voltage ( $U_{dc\ max}$ )                                   |                           |                 | 1,000 V  |             |
| Usable MPP voltage range ( $U_{mpp\ min} - U_{mpp\ max}$ )             |                           |                 | 80 V - 800 V   |             |
| MPP voltage range at nominal power ( $U_{mpp\ min} - U_{mpp\ max}$ )   |                           | 240 - 800 V     |  | 270 - 800 V |
| Number of MPP trackers   |                           | 2               |  |             |
| Number of DC connections   |                           | 2 + 2           |  |             |
| OUTPUT DATA  | PRIMO 5.0-1 <sup>1)</sup> | PRIMO 5.0-1 AUS | PRIMO 6.0-1  | PRIMO 8.2-1 |
| AC nominal output ( $P_{ac,t}$ )                                       | 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 ( $I_{ac\ nom}$ )                                    | 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 ( $\cos\ \varphi_{ac,t}$ )                                |                           |                 | 0.85 - 1 ind. / cap.   |             |
| GENERAL DATA   | PRIMO 5.0-1 <sup>1)</sup> | 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>2)</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   |                           |                 | 2x DC+1, 2x DC+2 and 4x DC- screw terminals 2.5 - 16 mm <sup>2</sup>   |             |
| Mains 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 3100, AS 4777-2, AS 4777-3, G83/2, G59/3, CEI 0-21 |             |

<sup>1)</sup> Available upon request, conditions apply. <sup>2)</sup> According to IEC 62109-1. 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                     | 97.8 %      | 97.8 %          | 97.8 %      | 97.8 %      |
| European efficiency ( $\eta_{EU}$ ) | 96.4 %      | 96.4 %          | 96.7 %      | 97.2 %      |
| 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 disconnecter           | 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.

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