

FRONIUS SYMO

/ Maximum flexibility for the applications of tomorrow.



/ PC board replacement process



/ Mounting system



/ WLAN interface



/ Open data communication



/ Smart Grid Ready



/ Boasting power categories ranging from 3.0 to 20.0 kW, the transformerless Fronius Symo is the three-phase inverter for systems of every size. The high system voltage, wide input voltage range and two MPP trackers ensure maximum flexibility in system design. 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.

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)

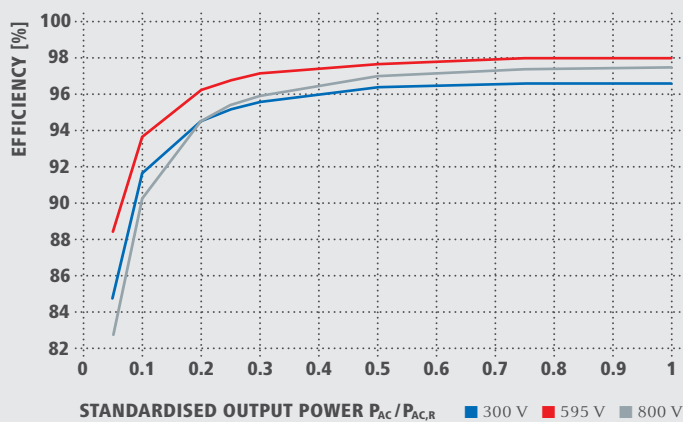
| INPUT DATA | SYMO 3.0-3-S | SYMO 3.7-3-S | SYMO 4.5-3-S | SYMO 3.0-3-M | SYMO 3.7-3-M | SYMO 4.5-3-M |
|--|--|----------------------|--------------|---|----------------------|--------------|
| Max. input current ($I_{dc\ max\ 1} / I_{dc\ max\ 2}^{1)}$) | | | | 16.0 A / 16.0 A | | |
| Max. array short circuit current (MPP ₁ /MPP ₂ ¹⁾) | | | | 24.0 A / 24.0 A | | |
| Min. input voltage ($U_{dc\ min}$) | | | | 150 V | | |
| Feed-in start voltage ($U_{dc\ start}$) | | | | 200 V | | |
| Nominal input voltage ($U_{dc,r}$) | | | | 595 V | | |
| Max. input voltage ($U_{dc\ max}$) | | | | 1,000 V | | |
| MPP voltage range ($U_{mpp\ min} - U_{mpp\ max}$) | 200 - 800 V | 250 - 800 V | 300 - 800 V | | 150 - 800 V | |
| Number MPP trackers | | 1 | | | 2 | |
| Number of DC connections | | 3 | | | 2+2 | |
| 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 | 3,000 VA | 3,700 VA | 4,500 VA | 3,000 VA | 3,700 VA | 4,500 VA |
| Max. output current ($I_{ac\ max}$) | | 9.0 A | | | 13.5 A | |
| Grid connection ($U_{ac,r}$) | | | | 3-NPE 400 V / 230 V or 3-NPE 380 V / 220 V | | |
| Min. output voltage ($U_{ac\ min}$) | | | | 260 / 150 V | | |
| Max. output voltage ($U_{ac\ max}$) | | | | 485 / 280 V | | |
| Frequency (f_r) | | | | 50 Hz / 60 Hz | | |
| Frequency range ($f_{min} - f_{max}$) | | | | 45 - 65 Hz | | |
| Total harmonic distortion | | | | < 3 % | | |
| Power factor ($\cos \varphi_{ac,r}$) | | 0.70 - 1 ind. / cap. | | | 0.85 - 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 55 | | |
| Protection class | | | | 1 | | |
| Overvoltage category (DC / AC) ²⁾ | | | | 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 % | | |
| DC connection technology | 3x DC+ and 3x DC- screw terminals 2.5 - 16 mm ² | | | 4x DC+ and 4x DC- screw terminals 2.5 - 16mm ² ³⁾ | | |
| Mains connection technology | 5-pole AC screw terminals 2.5 - 16 mm ² | | | 5-pole AC screw terminals 2.5 - 16mm ² ³⁾ | | |
| Certificates and compliance with standards | 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, G83/2, UNE 206007-1, SI 4777 ¹⁾ , CEI 0-21 ¹⁾ | | | | | |

¹⁾ This applies to Fronius Symo 3.0-3-M, 3.7-3-M and 4.5-3-M

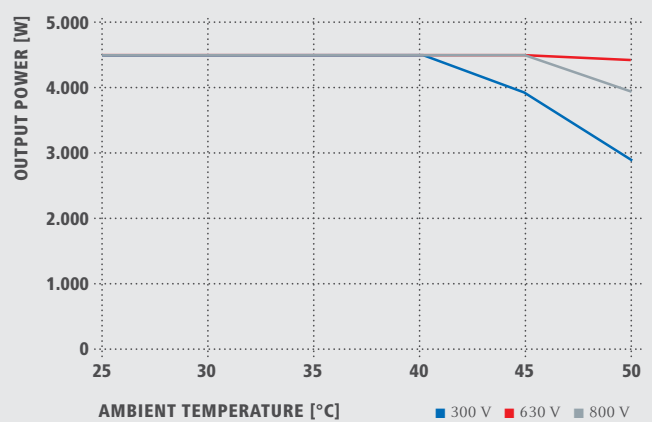
²⁾ according to IEC 62109-1.

³⁾ 16 mm² without wire end ferrules. Further information regarding the availability of the inverters in your country can be found at 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 (η_{EU}) | 96.2 % | 96.7 % | 97.0 % | 96.5 % | 96.9 % | 97.2 % |
| η at 5 % $P_{AC,r}$ ¹⁾ | 80.3 / 83.6 / 79.1 % | 83.4 / 86.4 / 80.6 % | 84.8 / 88.5 / 82.8 % | 79.8 / 85.1 / 80.8 % | 81.6 / 87.8 / 82.8 % | 83.4 / 90.3 / 85.0 % |
| η at 10 % $P_{AC,r}$ ¹⁾ | 87.8 / 91.0 / 86.2 % | 90.1 / 92.5 / 88.7 % | 91.7 / 93.7 / 90.3 % | 86.5 / 91.6 / 87.7 % | 87.9 / 93.6 / 90.5 % | 89.2 / 94.1 / 91.2 % |
| η at 20 % $P_{AC,r}$ ¹⁾ | 92.6 / 95.0 / 92.6 % | 93.7 / 95.7 / 93.6 % | 94.6 / 96.3 / 94.5 % | 90.8 / 95.3 / 93.0 % | 91.9 / 96.0 / 94.1 % | 92.8 / 96.5 / 95.1 % |
| η at 25 % $P_{AC,r}$ ¹⁾ | 93.4 / 95.6 / 93.8 % | 94.5 / 96.4 / 94.7 % | 95.2 / 96.8 / 95.4 % | 91.9 / 96.0 / 94.2 % | 92.9 / 96.6 / 95.2 % | 93.5 / 97.0 / 95.8 % |
| η at 30 % $P_{AC,r}$ ¹⁾ | 94.0 / 96.3 / 94.5 % | 95.0 / 96.7 / 95.4 % | 95.6 / 97.2 / 95.9 % | 92.8 / 96.5 / 95.1 % | 93.5 / 97.0 / 95.8 % | 94.2 / 97.3 / 96.3 % |
| η at 50 % $P_{AC,r}$ ¹⁾ | 95.2 / 97.3 / 96.3 % | 96.9 / 97.6 / 96.7 % | 96.4 / 97.7 / 97.0 % | 94.3 / 97.5 / 96.5 % | 94.6 / 97.7 / 96.8 % | 94.9 / 97.8 / 97.2 % |
| η at 75 % $P_{AC,r}$ ¹⁾ | 95.6 / 97.7 / 97.0 % | 96.2 / 97.8 / 97.3 % | 96.6 / 98.0 / 97.4 % | 94.9 / 97.8 / 97.2 % | 95.0 / 97.9 / 97.4 % | 95.1 / 98.0 / 97.5 % |
| η at 100 % $P_{AC,r}$ ¹⁾ | 95.6 / 97.9 / 97.3 % | 96.2 / 98.0 / 97.5 % | 96.6 / 98.0 / 97.5 % | 95.0 / 98.0 / 97.4 % | 95.1 / 98.0 / 97.5 % | 95.0 / 98.0 / 97.6 % |
| MPP adaptation efficiency | > 99.9 % | | | | | |

¹⁾ and at $U_{mpp\ min} / U_{dcr} / U_{mpp\ max}$

| 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 disconnecter | 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 / Fronius Solar.web, Modbus TCP, JSON | | | | | |
| 6 inputs or 4 digital in/out | Interface to ripple control receiver | | | | | |
| USB (A socket) ²⁾ | For USB sticks | | | | | |
| 2x RS422 (RJ45 socket) ²⁾ | Fronius Solar Net, interface protocol | | | | | |
| Signalling output ²⁾ | Energy management (potential-free relay output) | | | | | |
| Datalogger and Webservice | Included | | | | | |
| External input | SO-Meter Interface / Input for overvoltage protection | | | | | |

²⁾ 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 |
|--|-----------------|--------------|--------------|--------------|
| Max. input current ($I_{dc \max 1} / I_{dc \max 2}$) | 16.0 A / 16.0 A | | | |
| Max. array short circuit current (MPP ₁ /MPP ₂) | 24.0 A / 24.0 A | | | |
| Min. input voltage ($U_{dc \min}$) | 150 V | | | |
| Feed-in start voltage ($U_{dc \text{ start}}$) | 200 V | | | |
| Nominal input voltage ($U_{dc \text{ r}}$) | 595 V | | | |
| Max. input voltage ($U_{dc \text{ max}}$) | 1,000 V | | | |
| MPP voltage range ($U_{mpp \min} - U_{mpp \max}$) | 163 – 800 V | 195 - 800 V | 228 – 800 V | 267 – 800 V |
| Number MPP trackers | 2 | | | |
| Number of DC connections | 2 + 2 | | | |

| 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 ($P_{ac \text{ r}}$) | 5,000 W | 6,000 W | 7,000 W | 8,200 W |
| Max. output power | 5,000 VA | 6,000 VA | 7,000 VA | 8,200 VA |
| Max. output current ($I_{ac \text{ max}}$) | 13.5 A | | | |
| Grid connection ($U_{ac \text{ r}}$) | 3-NPE 400 V / 230 V or 3-NPE 380 V / 220 V | | | |
| Min. output voltage ($U_{ac \text{ min}}$) | 260 / 150 V | | | |
| Max. output voltage ($U_{ac \text{ max}}$) | 485 / 280 V | | | |
| Frequency (f_r) | 50 Hz / 60 Hz | | | |
| Frequency range ($f_{\min} - f_{\max}$) | 45 - 65 Hz | | | |
| Total harmonic distortion | < 3 % | | | |
| Power factor ($\cos \varphi_{ac \text{ r}}$) | 0.85 - 1 ind. / cap. | | | |

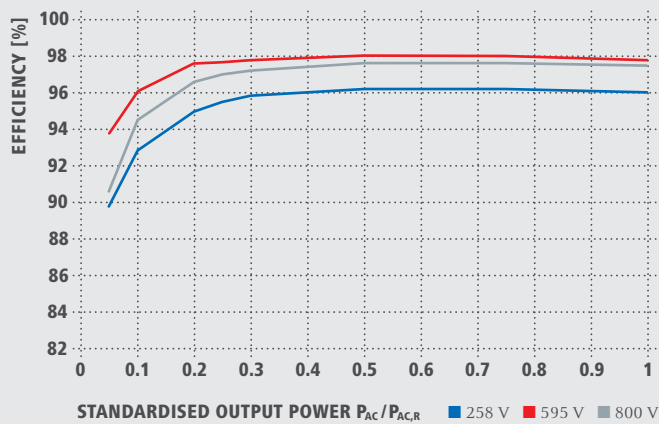
| GENERAL DATA | SYMO 5.0-3-M | SYMO 6.0-3-M | SYMO 7.0-3-M | SYMO 8.2-3-M |
|--|---|--------------|--------------|--------------|
| Dimensions (height x width x depth) | 645 x 431 x 204 mm | | | |
| Weight | 19.9 kg | | | 21.9 kg |
| Degree of protection | IP 55 | | | |
| Protection class | 1 | | | |
| Overvoltage category (DC / AC) ¹⁾ | 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 % | | | |
| DC connection technology | 4x DC+ and 4x DC- Screw terminals 2.5 - 16mm ^{2 2)} | | | |
| Mains connection technology | 5-pole AC Screw terminals 2.5 - 16mm ^{2 2)} | | | |
| Certificates and compliance with standards | 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, G83/2, UNE 206007-1, SI 4777, CEI 0-21 | | | |

¹⁾ according to IEC 62109-1.

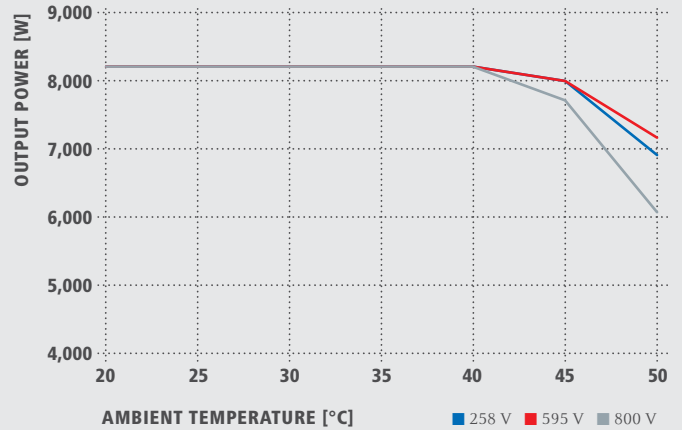
²⁾ 16 mm² without wire end ferrules

Further information regarding the availability of the inverters in your country can be found at 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 (η_{EU}) | 97.0 % | 97.2 % | 97.3 % | 97.5 % |
| η at 5 % $P_{AC,r}$ ¹⁾ | 84.9 / 91.2 / 85.9 % | 87.8 / 92.6 / 87.8 % | 88.7 / 93.1 / 89.0 % | 89.8 / 93.8 / 90.6 % |
| η at 10 % $P_{AC,r}$ ¹⁾ | 89.9 / 94.6 / 91.7 % | 91.3 / 95.6 / 93.0 % | 92.0 / 95.9 / 94.7 % | 92.8 / 96.1 / 94.5 % |
| η at 20 % $P_{AC,r}$ ¹⁾ | 93.2 / 96.7 / 95.4 % | 94.1 / 97.1 / 95.9 % | 94.5 / 97.3 / 96.3 % | 95.0 / 97.6 / 96.6 % |
| η at 25 % $P_{AC,r}$ ¹⁾ | 93.9 / 97.2 / 96.0 % | 94.7 / 97.5 / 96.5 % | 95.1 / 97.6 / 96.7 % | 95.5 / 97.7 / 97.0 % |
| η at 30 % $P_{AC,r}$ ¹⁾ | 94.5 / 97.4 / 96.5 % | 95.1 / 97.7 / 96.8 % | 95.4 / 97.7 / 97.0 % | 95.8 / 97.8 / 97.2 % |
| η at 50 % $P_{AC,r}$ ¹⁾ | 95.2 / 97.9 / 97.3 % | 95.7 / 98.0 / 97.5 % | 95.9 / 98.0 / 97.5 % | 96.2 / 98.0 / 97.6 % |
| η at 75 % $P_{AC,r}$ ¹⁾ | 95.3 / 98.0 / 97.5 % | 95.7 / 98.0 / 97.6 % | 95.9 / 98.0 / 97.6 % | 96.2 / 98.0 / 97.6 % |
| η at 100 % $P_{AC,r}$ ¹⁾ | 95.2 / 98.0 / 97.6 % | 95.7 / 97.9 / 97.6 % | 95.8 / 97.9 / 97.5 % | 96.0 / 97.8 / 97.5 % |
| MPP adaptation efficiency | > 99.9 % | | | |

¹⁾ and at $U_{mpp, min} / U_{dc,r} / U_{mpp, max}$

| 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 disconnecter | 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 / Fronius Solar.web, Modbus TCP, JSON | | | |
| 6 inputs or 4 digital in/out | Interface to ripple control receiver | | | |
| USB (A socket) ²⁾ | For USB-Sticks | | | |
| 2x RS422 (RJ45 socket) ²⁾ | Fronius Solar Net, Interface Protokoll | | | |
| Signalling output ²⁾ | Energy management (potential-free relay output) | | | |
| Datalogger and Webservice | Included | | | |
| External input | S0-Meter Interface / Input for overvoltage protection | | | |

²⁾ also available in the light version

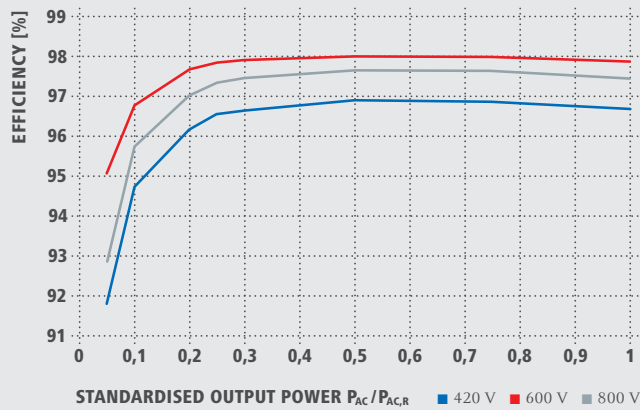
TECHNICAL DATA FRONIUS SYMO (10.0-3-M, 12.5-3-M, 15.0-3-M, 17.5-3-M, 20.0-3-M)

| 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 |
|--|--|---------------|-----------------|---------------|---------------|
| Max. input current ($I_{dc\ max\ 1} / I_{dc\ max\ 2}$) | 27.0 A / 16.5 A | | 33.0 A / 27.0 A | | |
| Max. array short circuit current (MPP ₁ /MPP ₂) | 40.5 A / 24.8 A | | 49.5 A / 40.5 A | | |
| Min. input voltage ($U_{dc\ min}$) | | | 200 V | | |
| Feed-in start voltage ($U_{dc\ start}$) | | | 200 V | | |
| Nominal input voltage ($U_{dc,r}$) | | | 600 V | | |
| Max. input voltage ($U_{dc\ max}$) | | | 1,000 V | | |
| MPP voltage range ($U_{mpp\ min} - U_{mpp\ max}$) | 270 - 800 V | 320 - 800 V | | 370 - 800 V | 420 - 800 V |
| Number MPP trackers | 2 | | | | |
| Number of DC connections | 3+3 | | | | |
| 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 | 10,000 VA | 12,500 VA | 15,000 VA | 17,500 VA | 20,000 VA |
| Max. output current ($I_{ac\ max}$) | 20 A | | 32 A | | |
| Grid connection ($U_{ac,r}$) | 3-NPE 400 V / 230 V or 3-NPE 380 V / 220 V | | | | |
| Min. output voltage ($U_{ac\ min}$) | 260 / 150 V | | | | |
| Max. output voltage ($U_{ac\ max}$) | 485 / 280 V | | | | |
| Frequency (f_r) | 50 Hz / 60 Hz | | | | |
| Frequency range ($f_{min} - f_{max}$) | 45 - 65 Hz | | | | |
| Total harmonic distortion | < 2 % | | | | |
| Power factor ($\cos\ \varphi_{ac,r}$) | 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 | | | | |
| Overvoltage category (DC / AC) ¹⁾ | 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 % | | | | |
| DC connection technology | 6x DC+ and 6x DC- screw terminals 2.5 - 16 mm ² | | | | |
| Mains connection technology | 5-pole AC screw terminals 2.5 - 16 mm ² | | | | |
| Certificates and compliance with standards | 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, G83/2, G59/3, UNE 206007-1, SI 4777, CEI 0-16, CEI 0-21 | | | | |

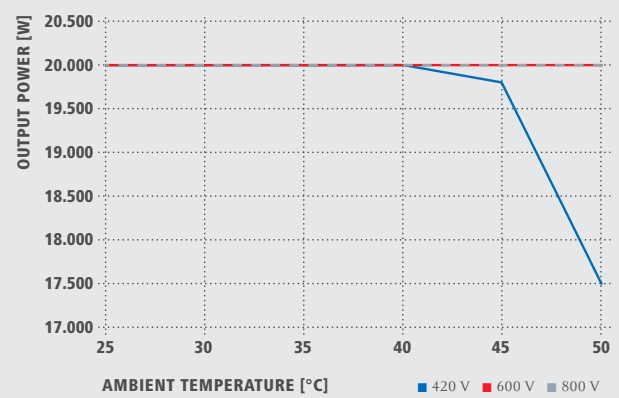
¹⁾ according to IEC 62109-1. DIN rail for optional overvoltage protection (type 2) is included.

Further information regarding the availability of the inverters in your country can be found at www.fronius.com.

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_{EU}) | 97.5 % | 97.6 % | 97.8 % | 97.8 % | 97.9 % |
| η at 5 % $P_{AC,R}$ ²⁾ | 87.9 / 92.5 / 89.2 % | 88.7 / 93.1 / 90.1 % | 91.2 / 94.8 / 92.3 % | 91.6 / 95.0 / 92.7 % | 91.9 / 95.2 / 93.0 % |
| η at 10 % $P_{AC,R}$ ²⁾ | 91.2 / 94.9 / 92.8 % | 92.9 / 96.1 / 94.6 % | 93.4 / 96.0 / 94.4 % | 94.0 / 96.4 / 95.0 % | 94.8 / 96.9 / 95.8 % |
| η at 20 % $P_{AC,R}$ ²⁾ | 94.6 / 97.1 / 96.1 % | 95.4 / 97.3 / 96.6 % | 95.9 / 97.4 / 96.7 % | 96.1 / 97.6 / 96.9 % | 96.3 / 97.8 / 97.1 % |
| η at 25 % $P_{AC,R}$ ²⁾ | 95.4 / 97.3 / 96.6 % | 95.6 / 97.6 / 97.0 % | 96.2 / 97.6 / 97.0 % | 96.4 / 97.8 / 97.2 % | 96.7 / 97.9 / 97.4 % |
| η at 30 % $P_{AC,R}$ ²⁾ | 95.6 / 97.5 / 96.9 % | 95.9 / 97.7 / 97.2 % | 96.5 / 97.8 / 97.3 % | 96.6 / 97.9 / 97.4 % | 96.8 / 98.0 / 97.6 % |
| η at 50 % $P_{AC,R}$ ²⁾ | 96.3 / 97.9 / 97.4 % | 96.4 / 98.0 / 97.5 % | 96.9 / 98.1 / 97.7 % | 97.0 / 98.1 / 97.7 % | 97.0 / 98.1 / 97.8 % |
| η at 75 % $P_{AC,R}$ ²⁾ | 96.5 / 98.0 / 97.6 % | 96.5 / 98.0 / 97.6 % | 97.0 / 98.1 / 97.8 % | 97.0 / 98.1 / 97.8 % | 97.0 / 98.1 / 97.7 % |
| η at 100 % $P_{AC,R}$ ²⁾ | 96.5 / 98.0 / 97.6 % | 96.5 / 97.8 / 97.6 % | 97.0 / 98.1 / 97.7 % | 96.9 / 98.1 / 97.6 % | 96.8 / 98.0 / 97.6 % |
| 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 | | | | |
| 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 / Fronius Solar.web, Modbus TCP, JSON | | | | |
| 6 inputs or 4 digital inputs/outputs | Interface to ripple control receiver | | | | |
| USB (A socket ³⁾) | For USB-Sticks | | | | |
| 2x RS422 (RJ45-socket ³⁾) | Fronius Solar Net, interface protocol | | | | |
| Signalling output ³⁾ | Energy management (potential-free relay output) | | | | |
| Datalogger und Webserver | Included | | | | |
| External input | S0-Meter Interface / Input for overvoltage protection | | | | |

²⁾ and at $U_{mpp\ min} / U_{dcr} / U_{mpp\ max}$ ³⁾ also available in the light version

/ Perfect Welding / Solar Energy / Perfect Charging

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 3,000 employees worldwide, we shift the limits of what's possible - our more than 850 active patents are 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



v02 Feb 2014 EN

Fronius India Private Limited
GAT no 312, Nanekarwadi
Chakan, Taluka - Khed District
Pune 410501
India
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