INPUT DATA	Fronius Primo 4.0-1
Max. input current ($I_{dc\ max1}$ / $I_{dc\ max2}$)	12.0 A / 12.0 A
Max. array short circuit (MPP_1 / MPP_2)	18.0 A / 18.0 A
Min. input voltage ($U_{dc\ min}$)	80 V
Feed-in start voltage ($U_{dc\ start}$)	80 V
Nominal input voltage ($U_{dc,r}$)	710 V
Max. input voltage ($U_{dc\ max}$)	1,000 V
MPP voltage range ($U_{mpp\ min}$ – $U_{mpp\ max}$)	210 – 800 V
Number MPP trackers	2
Number of DC connections	2 + 2
Max. PV generator output ($P_{dc\ max}$)	6.0 kW_{peak}
OUTPUT DATA	
AC nominal output ($P_{ac,r}$)	4,000 W
Max. output power	4,000 VA
Max. output current ($I_{ac\ max}$)	17.4 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.
GENERAL DATA	
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)[1)]	2 / 3
Night time consumption	< 1 W
Inverter design	Transformerless
Cooling	Regulated air cooling
Installation	Indoor and outdoor installation
Ambient temperature range	-40°C to +55°C
Permitted humidity	0 – 100 %
Max. altitude	4,000 m
DC connection technology	4x DC+ and 4x DC- screw terminals 2.5 – 16 mm²
Mains connection technology	3-pole AC screw terminals 2.5 – 16 mm²
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	
Max. efficiency	98.0 %
European efficiency (ηEU)	97.0 %
η at 5 % $P_{ac,r}$[2)]	80.8 / 82.5 / 82.5 %
η at 10 % $P_{ac,r}$[2)]	86.6 / 93.9 / 92.2 %
η at 20 % $P_{ac,r}$[2)]	92.2 / 96.7 / 95.6 %
η at 25 % $P_{ac,r}$[2)]	93.2 / 97.2 / 96.1 %
η at 30 % $P_{ac,r}$[2)]	94.0 / 97.2 / 96.8 %
η at 50 % $P_{ac,r}$[2)]	95.2 / 97.8 / 97.4 %
η at 75 % $P_{ac,r}$[2)]	95.8 / 97.9 / 97.8 %
η at 100 % $P_{ac,r}$[2)]	95.9 / 98.0 / 97.9 %
MPP adaption efficiency	> 99.9 %
PROTECTIVE DEVICES	
DC insulation measurement	Yes
Overload behaviour	Operating point shift, power limitation

DC disconnector	Yes
Reverse polarity protection	Yes
INTERFACES	
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 (type A socket)[3)]	Datalogging, inverter update via USB flash drive
2 x RS422 (RJ45 socket) [3)]	Fronius Solar Net, Interface protocol
Signalling output [3)]	Energy management (floating relay output)
Datalogger and Webserver	Included
External input [3)]	S0 meter connection / Evaluation of overvoltage protection
RS485	Modbus RTU SunSpec or meter connection