10 Technical data

10.1 INVERTER

	3TL 8	3TL 10	3TL 13	3TL 17	3TL 20	3TL 23-MV
Item no.	867R008 867C008	867R010 867C010	867R013 867C013	867R017 867C017	867R020 867C020	867R023
DC data						
Recommended max. PV power (kW)	9.9	12	15.6	20.4	24	27.6
MPPT range (V)	370-850	410-850	480-850	460-850	490-850	575-850
DC start voltage (V)	350					
Max. DC voltage (V) (U_{SC_PV})	1000*					
Max. DC current (A)	23	25	31.1	38.3	41.8	41
MPP tracker	1					
Number of DC connections	3		4	6		
DC disconnection switch	Yes					
Max. total short circuit current of the PV plant (I_{SC_PV}) (A)	50					
AC data						
Rated AC power (kW)	8.25	10	13	17	20	23
Max. AC apparent output (kVA)	8.25	10	13	17	20	23
AC grid connection	L1, L2, L3, N, PE					
Rated power factor/range	1 / 0.8i … 0/8c					
Rated voltage AC (V)	400					460
Voltage range AC (V)	320-460					368-529
Rated frequency/frequency range (Hz)	50, 60 / 45…65					
Max. AC current (A)	3 x 12	3 x 16	3 x 21	3 x 29.2		
Max. distortion factor THD	2.5%			1.8%		
Max. efficiency	98.1%			98.2%		98.3%
Feed-in starting at (W)	50					
Internal consumption in night operation (W)	< 0.5*					
Max. AC fall protection (A)	35					

	3TL 8	3TL 10	3TL 13	3TL 17	3TL 20	3TL 23-MV
Item no.	867R008 867C008	867R010 867C010	867R013 867C013	867R017 867C017	867R020 867C020	867R023
Switch on current (A) / duration (ms)	< 5 / < 40					
PROTECTION, ENVIRONMENTAL CONDITIONS						
Cooling	Natural convection					
Ambient temperature (°C)	-25 … +55					
Storage temperature (°C)	-25 … +55 (according to IEC 60721-3-1 1K4)					
Transport temperature (°C)	-25 … +70 (according to IEC 60721-3-2 2K3)					
Relative ambient humidity (%)	0 … 100					
Site altitude (m above NN)	4000**					
Noise level (dBA)	< 45					
Internal overvoltage protection (EN 61643-11)	Type 3					
Protection class (IEC 62103)	I					
Overvoltage protection (EN 60664-1)	DC: II, AC: III					
Environmental classes (IEC 721-3-4)	4K4H					
Degree of pollution (IEC 72162109-1)	III					
Certification	Current certificates can be found at advanced-energy.com/3TLCerts					
SZS or grid protection	according to DIN VDE V 0126-1-1					
GENERAL DATA						
Interfaces	Ethernet, RS485, irradiation and temperature sensor					
Protection class (IEC 60529)	IP65					
Dimensions W x H x D (mm)	535 x 601 x 277					
Dimensions with packaging W x H x D (mm)	595 x 636 x 292					
Device weight (kg)	38.4					
Weight with packaging (kg)	43.5***					

* In Concentrator devices due to the constant availability <20 W

** Note derating of max. DC voltage:

Amount over NN.	Max. DC voltage
Up to 2600 m	1000 V
Up to 3000 m	950 V
Up to 3500 m	900 V
Up to 4000 m	850 V

*** +0.3 Kg at 867C ...

10.2 SENSOR

TYPE	Si-13TC-T-K
GENERAL	
Shunt resistor	0.10 Ω (TK = 22 ppm/K)
Working temperature	-20 °C to +70 °C
Power supply	12 to 24 VDC
Current draw	0.3 mA
Connecting cable	4 x 0.14 mm², 3 m (UV-resistant)
Cell dimension	50 mm x 34 mm
Exterior Dimensions Length / Width / Height	145 mm x 81 mm x 40 mm
Weight	340 g
INSOLATION	
Measuring range	0 to 1,300 W/m²
Output signal	0 to 10 V
Measuring accuracy	±5% of final value
MODULE TEMPERATURE	
Measuring range	-20° C to +90° C
Output signal	2.268V + T [°C]* 86.9 mV/°C
Measuring accuracy	±1.5% at 25 °C
Non-linearity	0.5 °C
Max. deviation	2 °C
PIN ASSIGNMENT	
Orange	Measurement signal for insolation (0 to 10 V)
Red	Supply voltage (12 - 24 VDC)
Black	GND
Brown	Measurement signal for temperature (0 - 10 V)

TYPE	Si-13TC-T-K
Power supply	Temperature and radiation sensor or Power cap