

Solar String Optimizer

SSO 6 kW

String level optimization
with DC nanogrid
technology



- String-level voltage shutdown for installer and firefighter safety
- Microinverter flexibility with string inverter simplicity
- String-level monitoring and MPPT optimization
- State of the art efficiency (99 %)
- Fast installation with less cables

The new smarter way of building PV systems

The Solar String Optimizer brings a new flexible way of planning, installing and maintaining PV systems. Each optimizer has its' built in MPP tracker and safety functions so that an installation can be built with any number of strings with maximum safety and also expanded when the need grows. The optimizer is designed for interfacing to the DC nanogrid architecture that enables solar energy to be stored or used directly on the DC side for optimum flexibility and minimal losses.

Solar String Optimizer

7 & 14 kVA

ferroamp

	SSO - Solar String Optimizer
PV Input	
Rated DC input power	6 000 W
Absolute maximum input voltage, $V_{OC(max)}$ ¹⁾	1 000 V
Maximum MPP current, I_{MPPmax} ²⁾	9.5 A
MPPT operating range, V_{MPP} ^{3) 4)}	120 to 720 V
Starting voltage	140 V
PV connection	2-wire (top of string, bottom of string)
DC Output	
DC bus voltage, V_{DC}	760 V (nominal)
DC bus voltage range, V_{DC} ⁵⁾	740 - 780
Maximum DC bus output current, $I_{DC(max)}$	9 A
DC bus connection	3-wire (L+, L-, PE)
Max efficiency	99.0%
European efficiency	98.5%
System communication	Narrow band power line communication (PLC)
Physical	
Dimensions H x W x D	320 x 200 x 98 mm
Weight	4.0 kg
Color	Black
Installation	
Ambient temperature ⁶⁾	-25°C – 45°C
Humidity	0 – 100% RH
Degree of protection	IP 65
PV connector	Phoenix Contact Sunclix
DC bus output connector	Phoenix Contact PRC 3, screw terminal max 6 mm ²
System design	
Number of Solar String Optimizers per DC bus ⁷⁾	1 – 180
Maximum DC bus cable length ⁷⁾	1 200 m
Output voltage during fault, shut down or disconnected from DC-bus	0 V
Compliance	
LVD	EN 62109-1, EN 62109-2 (protective class I, overvoltage cat. III)
EMC	EN 61000-6-2, EN 61000-6-3
RoHS	Yes
Protection functions	PV polarity reversal, DC polarity reversal, DC bus short circuit, Overtemperature, Residual current breaker (30 mA), String insulation monitoring

- 1) The SSO may not start if powered on when string open circuit voltage exceeds 900 V, but will not be damaged.
- 2) Panels with I_{MPP} exceeding 9.5 A can be used but the SSO will limit current to 9.5 A.
- 3) Strings with V_{MPP} exceeding 720 V can be used but the SSO may not be able to track the MPP
- 4) For off-grid and back-up purposes string open circuit voltage must be limited to 720 V (required for full power throttling to 0)
- 5) Output power will be linearly derated above 780 V and reduced to zero at 800 V.
- 6) Output power may be derated if ambient temperature exceeds 30 °C
- 7) Consult Ferroamp for design guidelines for projects exceeding 40 SSOs or 100 m cable length
- 8) Items included in delivery are 1 x SSO Solar string optimizer, 2 x Sunclix PV string connectors, 1 x PRC 3 DC bus connector.