



## HiQ Solar Mini Inverter Specifications

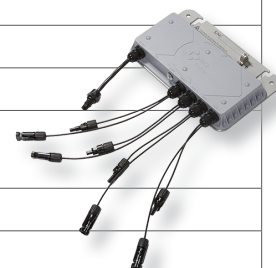


### Power System Specifications

#### Balancer Specifications, DC Input

The HiQ Solar Mini Inverter allows very flexible configuration, including fewer, higher power, modules per Balancer if desired. Initial table entries below describe operating specifications for different scenarios.

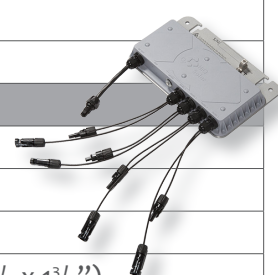
4 Modules per Balancer	Maximum open circuit voltage per module, $V_{OC}$	62 V
	Maximum Power Point Tracking (MPPT) voltage range, per module, $V_{MPP}$	14-48 V
	PV start voltage	15 V
	Typical recommended module power (STC) <sup>1</sup>	240 W
3 Modules per Balancer	Maximum open circuit voltage per module, $V_{OC}$	79 V
	Maximum Power Point Tracking (MPPT) voltage range, per module, $V_{MPP}$	19-64 V
	PV start voltage	20 V
	Typical recommended module power (STC) <sup>1</sup>	320 W
1 Module per Balancer <sup>2</sup>	Maximum open circuit voltage per module, $V_{OC}$	248 V
	Maximum Power Point Tracking (MPPT) voltage range, per module, $V_{MPP}$	56-192 V
	PV start voltage	60 V
	Typical recommended module power (STC) <sup>1</sup>	960 W
DC maximum input current, per DC input		10 A
Maximum short circuit current of DC source		30 A
DC maximum input source back feed current to input source		10 A
DC disconnect means		The DC connector has been evaluated and approved for use as the load-break disconnect required by the NEC




Note 1: Module power recommendations based on the total of all panels not significantly exceeding 3.7 kW<sub>DC</sub>. In addition, do not exceed 1 kW<sub>DC</sub> for each Balancer.

Note 2: Above 80V, a certified external AFCI device must be employed where jurisdictions require it.

Balancer Specifications, DC Output	
DC voltage output range	170-240 V
DC maximum output current	5 A
Balancer Specifications, Other	
MPP tracking, per module	99.6 %
Peak efficiency	99.17 %
CEC efficiency	99.01 %
Dimensions (W x H x D)	267 x 184 x 45 mm (10 <sup>1</sup> / <sub>2</sub> x 7 <sup>1</sup> / <sub>4</sub> x 1 <sup>3</sup> / <sub>4</sub> " )
Weight	1.3 kg (3 lbs)



Inverter Specifications, DC Input			
DC voltage input range		170-240 V	
DC maximum input current		5 A	
Inverter Specifications, AC Output			
AC maximum continuous total output power to +45 °C <sup>3</sup>		3.5 kW <sub>AC</sub> max	
AC de-rate with temperature, +45 to +65 °C		-35 W/°C	
AC maximum continuous output current, per phase		9.8 A	
AC maximum output fault current		18.5 A	
AC maximum output fault duration		<0.5 ms	
AC maximum OCPD rating		40A	
AC voltage range, phase to phase (min / nominal / max)		183 / 208 / 229 V	
AC voltage range, phase to neutral (min / nominal / max)		105.5 / 120 / 132 V	
AC output frequency range (min / nominal / max)		59.3 / 60 / 60.5 Hz	
Output waveform		True sine wave	
AC lower frequency trip limit	Default	59.3 Hz	+/- 0.1 Hz
	Adjustment	57-59.8 Hz in 0.1 Hz increments	
	Clearing time default	0.16 s	+/- 2 cycles
	Clearing time adjustment	0.16-300	
AC upper frequency trip limit	Default	60.5 Hz	+/- 0.1 Hz
	Adjustment	60.5-62.0 Hz in 0.1 Hz increments	
	Clearing time default	0.16 s	+/- 2 cycles
	Clearing time adjustment	0.16-300 s	
AC lower voltage trip limit	Default	106 V	+/- 2 %
	Adjustment	96-106 V	
	Clearing time default	2 s	+/- 2 cycles
	Clearing time adjustment	1-20 s	
AC upper voltage trip limit	Default	132 V	+/- 2 %
	Adjustment	132-134 V	
	Clearing time default	1 s	+/- 2 cycles
	Clearing time adjustment	1-20 s	

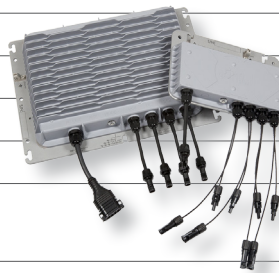


Note 3: For maximum continuous output power the Mini Inverter should be mounted vertically, bolted to metal racking

Inverter Specifications, AC Output, continued			
AC reset time	Default	5 minutes	+/- 1 s
	Adjustment	1 s -10 minutes	
AC synchronization in-rush current		0 A	
AC minimum wire gauge for grid connection		14 AWG	
AC disconnect means		The AC connector has been evaluated and approved for use as the load-break disconnect required by the NEC.	
Inverter Specifications, Other			
Peak efficiency		96.27%	
CEC efficiency		95.66%	
Power factor		≥ 0.98	
Dimensions		475 x 334 x 76 mm (18 3/4 x 13 1/8 x 3")	
Weight, Mini Inverter		9.5 kg (21 lbs)	



Balancer & Mini Inverter System Specifications	
Operating temperature range	-40 to +65 °C (-40 to 150 °F)
Power consumption standby/ night	<4.5 W / <4.5W
Cooling	Natural convection, no fan
Communication	Powerline
Environmental rating	Outdoor / rooftop, NEMA 6, IP67
Certification, Mini Inverter, Balancer	UL 1741 / IEEE 1547, FCC Part 15, Meets the requirements of NEC 690.11
Included warranty	15 Years, optionally extendable



## Communications Specifications

Gateway Specifications	
AC input voltage nominal, range	120 V (100-135 V)
AC frequency nominal, range	60 Hz (59.2-60.6 Hz)
Operating ambient temp range	-20 to +50 °C
Power consumption	1.5 W typical (4 W max)
Mounting, environmental rating	Indoor - NEMA 1
Memory card	SD compatible, 4-32GB tested, FAT32 formatted
Communication with HiQ Solar Mini Inverter	Proprietary Power Line Communication
LAN connection, Ethernet	10/100BASE, RJ45 8P8C modular plug
Limited warranty	15 years, optionally extendable
Certification, communications gateway	UL 60950-1, CSA C22.2 No. 60950-1, FCC Part 15
Weight	1.3 lbs



Ordering Guide		
Item	Part Number	Description
Sapphire system MC4 non-latching	SASYS1-A-MC4-111	<b>Sapphire System, 3.5kW, 208V 3-phase.</b> Sapphire Mini Inverter (1ea), AC Cable (1ea), Sapphire Balancer with MC4-non-latching connectors (4ea), Balancer to Mini Inverter Cable (4ea), AC Connector Tool (1ea). MPPT of 1, monitoring of 1 (per module). Includes 15 year limited warranty. Does not include Gateway.
Communications Gateway	HIQGTWY-A-11	<b>Communication Gateway.</b> 110V AC Gateway (1ea). Includes Ethernet Cable (1ea) and 110V AC power cable (1ea). Also includes memory card for logging and storage of results.
Warranty	SASYS1-US-WTY	<b>Sapphire System Warranty Extension to 25 years for 1 Mini Inverter.</b> Must be ordered at time of system purchase. Includes system Gateway(s).
Accessory extension cable	CBL-DC1A-12	<b>Sapphire Balancer to Mini Inverter Cable.</b> 12ft (1ea). May be used as replacement or extension cable (male connector at one end, female at the other). Same part as supplied with Balancers.

