

XW MPPT 80 600

High-Voltage MPPT Solar Charge Controller
January 2012

Agenda

- Product Introduction, Features, and Benefits
- The XW MPPT 80 600 Harvests More Energy
- The XW MPPT 80 600 Requires Less BoS Hardware
- Typical System Configuration
- Application Examples
 - PV Array Configurations up to 6 kW
 - BoS - PV Array Input Disconnect, DC Output Circuit Breaker
- Summary
- Specifications

Key Features and benefits

- **XW MPPT 80 600 Solar Charge Control**

- 600 Vdc maximum input
- 80 Amps dc output, for 24 V or 48 V battery systems
- Shade Tolerant Fast Sweep™ MPPT Technology
- CE Marked, 5 Year Warranty

- **Reduces Installed System Costs**

- Integrates with XW family, reduces design and installation time
- Purchase only one, instead of two controllers, for arrays up to 6kw
- Eliminate combiner boxes, and circuit breakers
- Integrated PV ground fault protection
- Use less expensive smaller AWG wire and less conduit

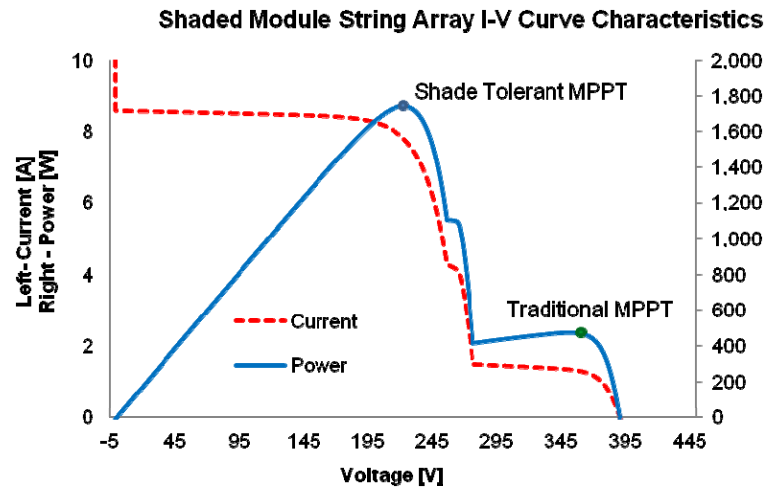
- **Flexible Installation Options**

- Locate PV array far from SCC using long low-loss DC run
- Utilize long PV strings to optimize PV module configuration and performance
- Use any brand of PV module, regardless of grounding method
- On board Xanbus network power for use in stand-alone applicationon

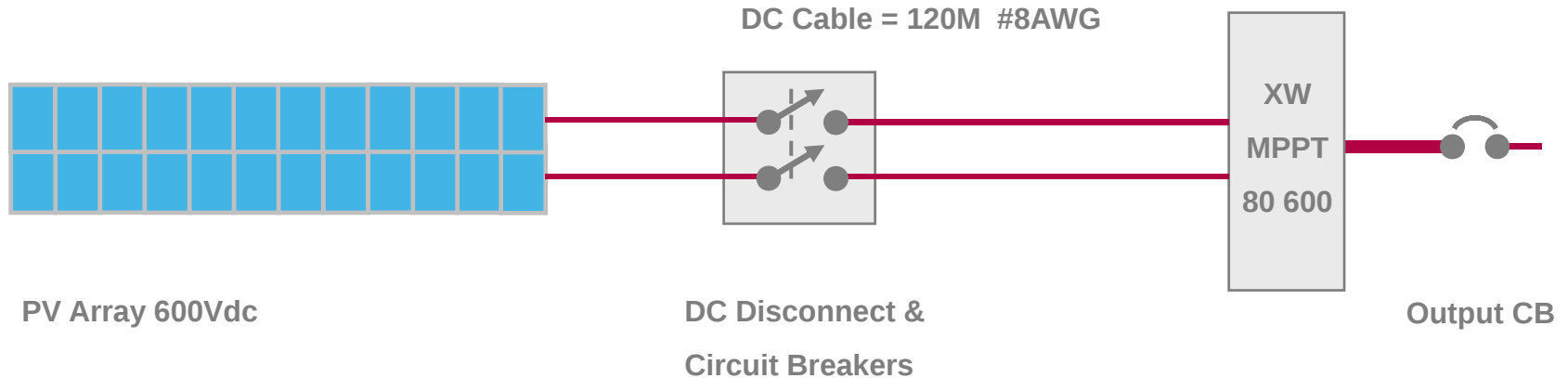
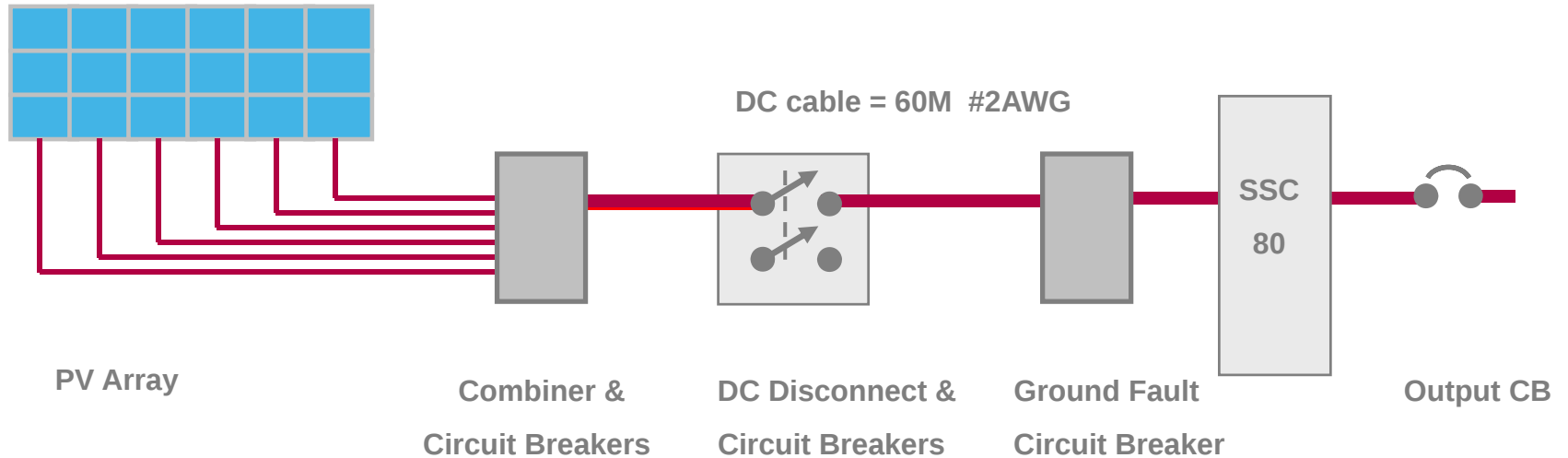


Shade Tolerant Fast Sweep

- Repeatedly fast searches the entire MPPT voltage window dynamically tracking changing global power peaks with no significant decrease in traditional static and dynamic tracking and increasing overall harvest efficiency.
- Shade Tolerant Fast Sweep™ MPPT Technology will consistently deliver better energy harvesting than traditional MPPT charge controller algorithms

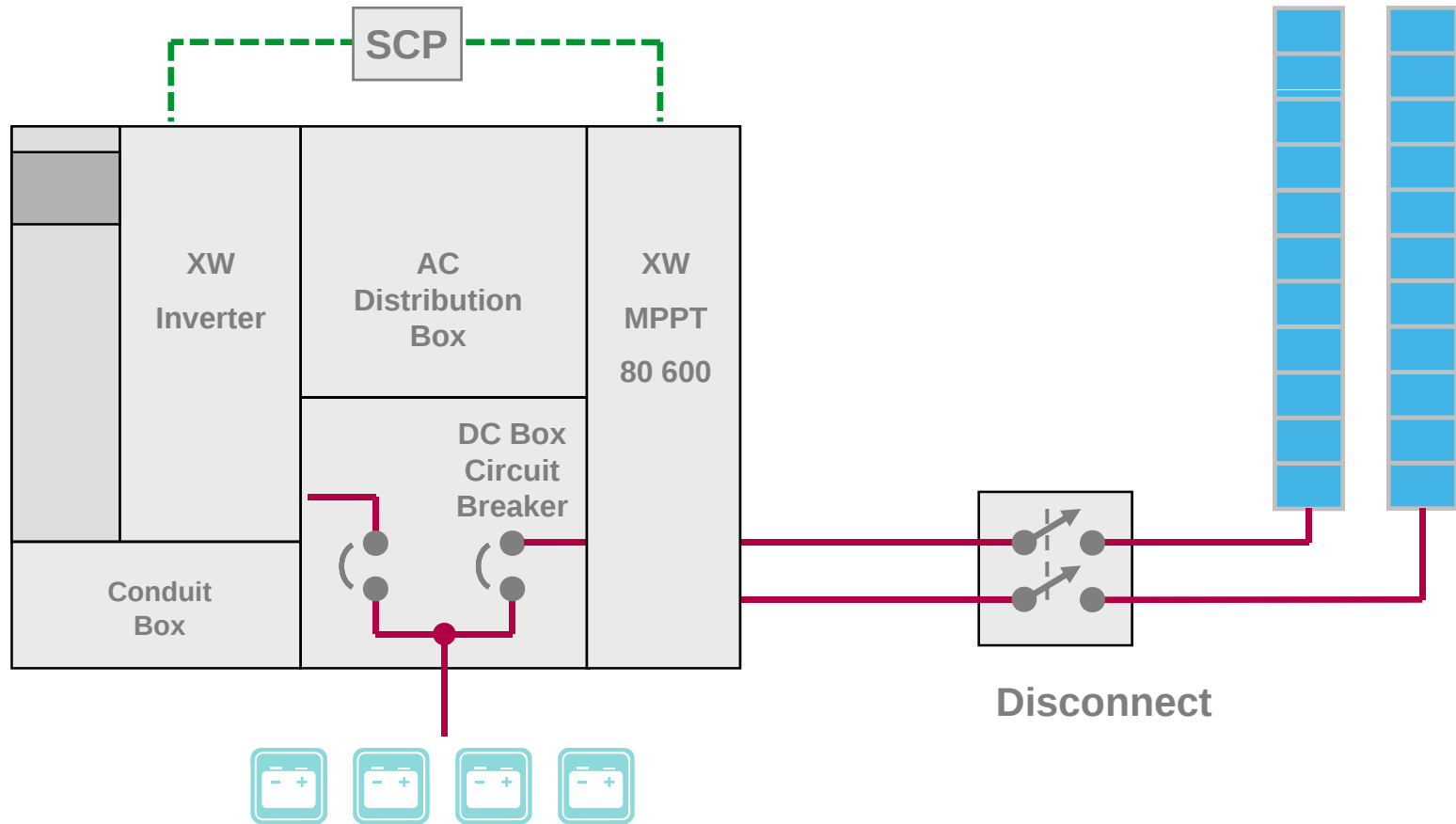


Less BoS Hardware required



Note: Cable efficiency loss for XW MPPT 80 600 is less than competitive install, even at double the length and less than half the size

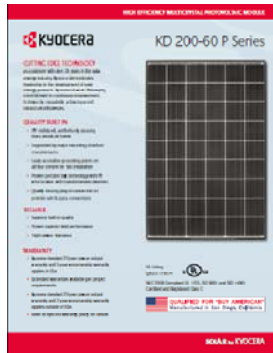
Typical System configuration



Typical PV array:

- 200 W – 250 W modules, 10-12 modules per string
- 6,000 W STC max for 48 V systems (2 strings)
- 3,000 W max for 24 V systems (1 string)

PV Module brands & application examples



Brand

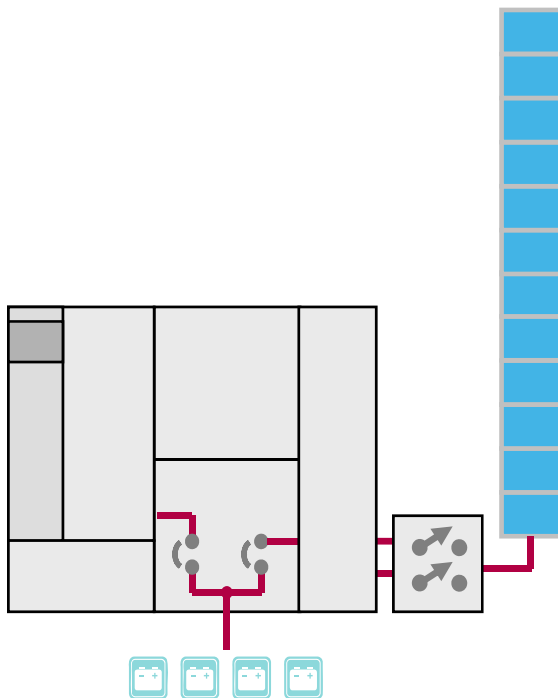
- Kyocera
- REC
- Sanyo
- Sharp
- SolarWorld

Application Example

- 2,880 W STC, 24 V
- 2,880 W STC, 48 V
- 2,400 W STC, 24 V
- 4,800 W STC, 48 V
- 6,000 W STC, 48 V

*MPPT 80 600 works with any PV Module Brand – Above are examples only.

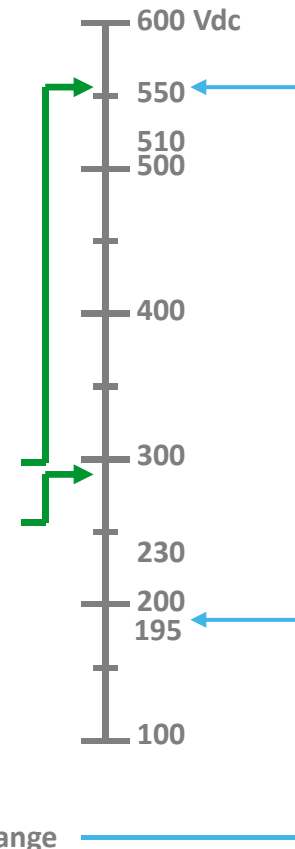
Kyocera Application example (24V)



2,880 W STC
1 PV String

	Module Specs (STC)	12 x 1 Array Specs
Power	240 W	2,880 W
Voc (V)	36.9	442.8
Vmp (V)	29.8	357.6
Isc (A)	8.59	8.59
Imp (A)	8.06	8.06
Voc w/ 125% TCF		553.5
V hot array (80% Vmp)		286.1
NEC Max Current		10.74

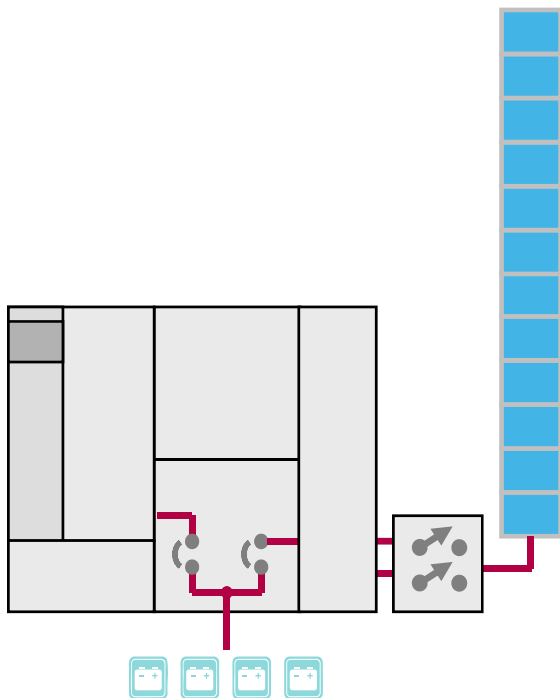
KD240GX-LPB



Notes:

- 1) Assumes typical hot PV array power reduction of ~15%
- 2) SCC output current limited to 80 Adc

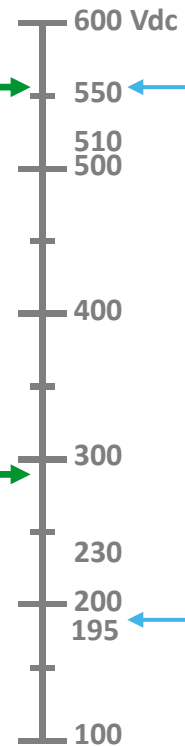
REC Application example (48V)



2,880 W STC
1 PV String

	Module Specs (STC)	12 x 1 Array Specs
Power	240 W	2,880 W
Voc (V)	37.7	452.4
Vmp (V)	30.4	364.8
Isc (A)	8.4	8.4
Imp (A)	7.9	7.9
Voc w/ 125% TCF		565.5
V hot array (80% Vmp)		291.9
NEC Max Current		10.5

REC 240-PE

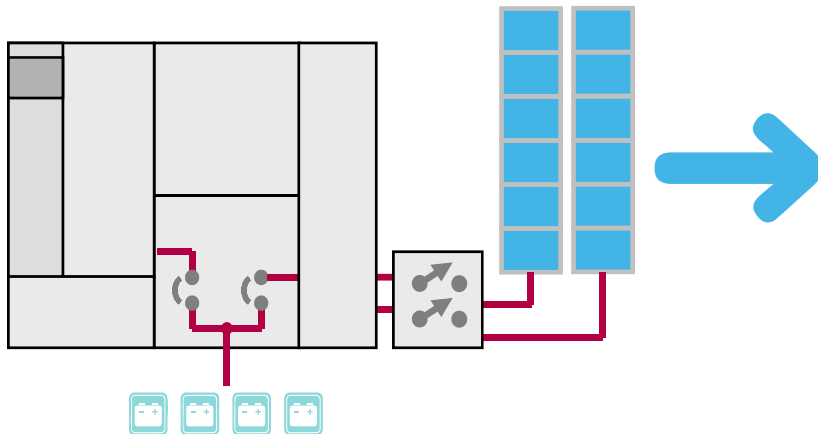


Operating Range

Notes:

1) Assumes typical hot PV array power reduction of ~15%

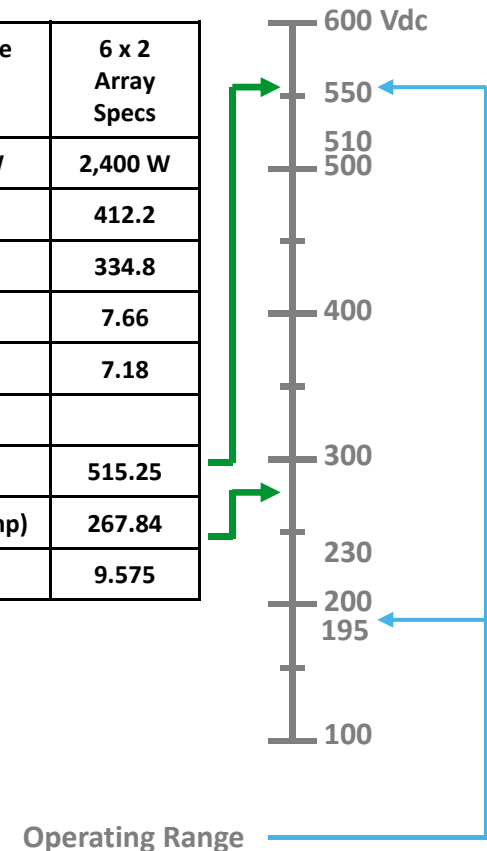
Sanyo HIT Application example (24V)



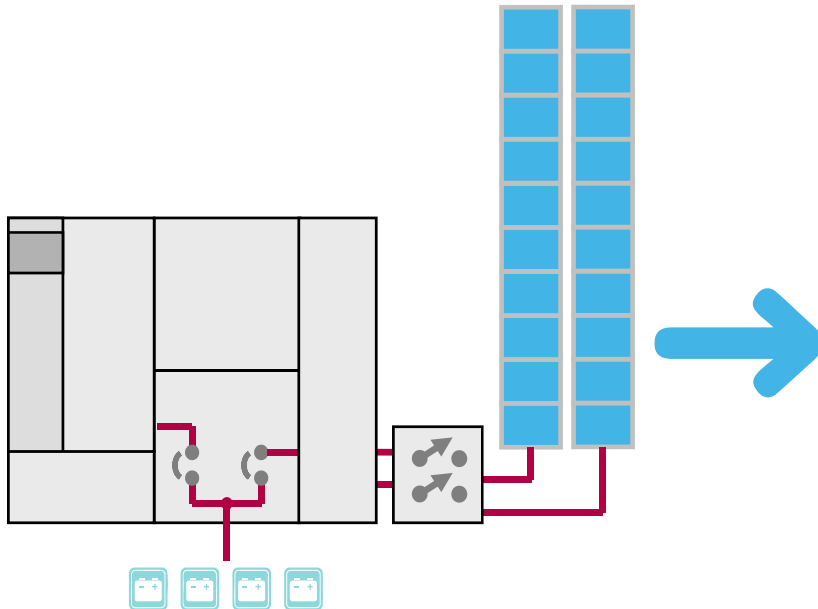
2,400 W STC
2 PV Strings

	Module Specs (STC)	6 x 2 Array Specs
Power	200 W	2,400 W
Voc (V)	68.7	412.2
Vmp (V)	55.8	334.8
Isc (A)	3.83	7.66
Imp (A)	3.59	7.18
Voc w/ 125% TCF		515.25
V hot array (80% Vmp)		267.84
NEC Max Current		9.575

HIT Power 200



Sharp Application example (48V)



4,800 W STC 2 PV Strings

	Module Specs (STC)	10 x 2 Array Specs
Power	240 W	4,800 W
Voc (V)	37.4	374
Vmp (V)	30.1	301
Isc (A)	8.65	17.3
Imp (A)	7.98	15.96
Voc w/ 125% TCF		467.5
V hot array (80% Vmp)		240.8
NEC Max Current		21.625

NU-U240F2

600 Vdc

550

510
500

400

300

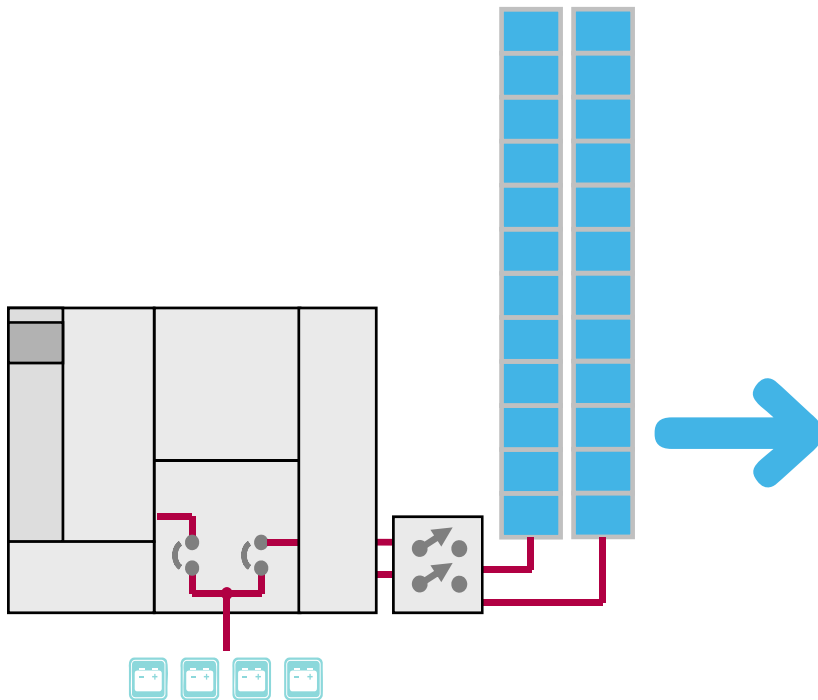
230

200
195

100

MPPT Range
Operating Range
Start Voltage

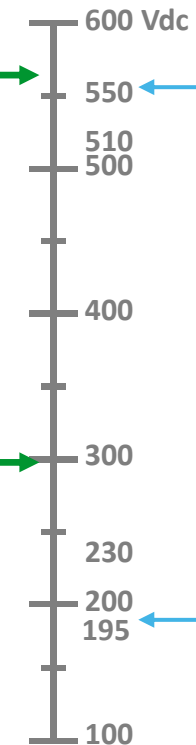
SolarWorld Application example (48V)



6,000 W STC
2 PV Strings

	Module Specs (STC)	12 x 2 Array Specs
Power	250 W	6,000 W
Voc (V)	37.8	453.6
Vmp (V)	31.1	373.2
Isc (A)	8.28	16.56
Imp (A)	8.05	16.10
Voc w/ 125% TCF		567
V hot array (80% Vmp)		298.6
NEC Max Current		20.7

SW 250 mono



Notes:

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MPPT Range
Operating Range
Start Voltage

Balance of System – PV Array disconnect, DC breakers

Schneider Electric offers all components for installation

C60PV-DC:

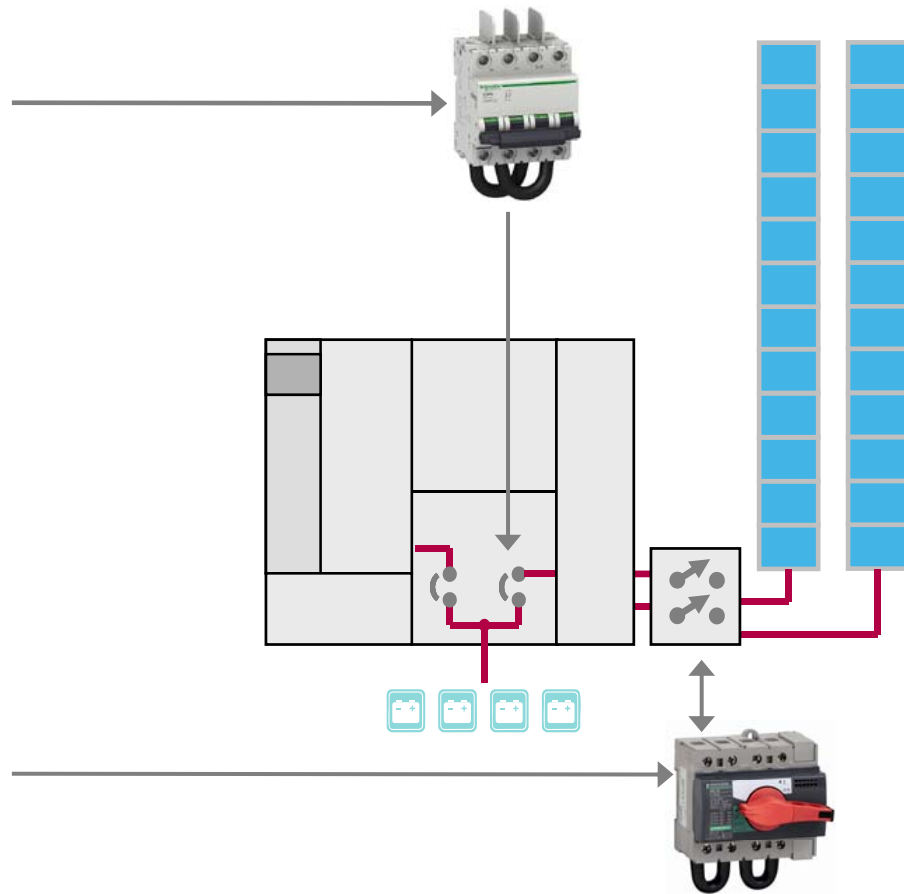
Circuit breaker, protects photovoltaic modules against fire in case of short-circuits

C60NA DC:

Modular switch, electrically insulating a chain of modules in any enclosure managing more than 3 chains

Interpact INS DC Switches:

Interpact family of DC switches dedicated to array isolation and control



Summary

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Specifications

- 80 Adc Output; 48 V or 24 V Battery (nominal)
- Up to 600 Vdc input
- 35 Adc Maximum PV Current Input
 - (= 28 A Isc STC x 125% NEC / CEC multiplier)
- Full Power (4,800 W @ 48 Vdc; 2,560 W @ 24 Vdc) up to 45C
- Fast Sweep MPPT Algorithm
- Two- or Three-stage Battery Charger, Plus EQ
- Battery Type Settings: FLA, AGM, Gel, Custom
- Battery Temperature Compensation
- High Efficiency: 96% nom @ 48 V; 94% nom @ 24 V
- Low Tare Loss (0.5 W; Xanbus Power Supply Off)
- Built-in GFP and Indicator
- Input Over-voltage and Over-current Protection
- Output Over-current and Back-feed Protection
- Over-temperature Protection
- Variable Speed Cooling Fans
- PV Cell Compatibility: Mono, Poly, String, Thin-Film
- Selectable PV Array Grounding: (+), (-), or ungrounded
- Positive or Negative System Ground
- AUX Output (dry contact, form "C")
- PDP Mounting Compatible (30" x 8.5" x 8.5")
- XW Network Compatible with AGS, Gateway, SCP, and XW

