



# Model SPS-20W-DV2

## 20 Watt Photovoltaic Module

GAS DETECTION SENSORS ■ INTEGRATED CONTROL SYSTEMS ■ SMARTWIRELESS® ■ PIPELINE ANALYZERS ■ ALARMS

High-efficiency photovoltaic module using silicon nitride multicrystalline silicon cells.

### Performance

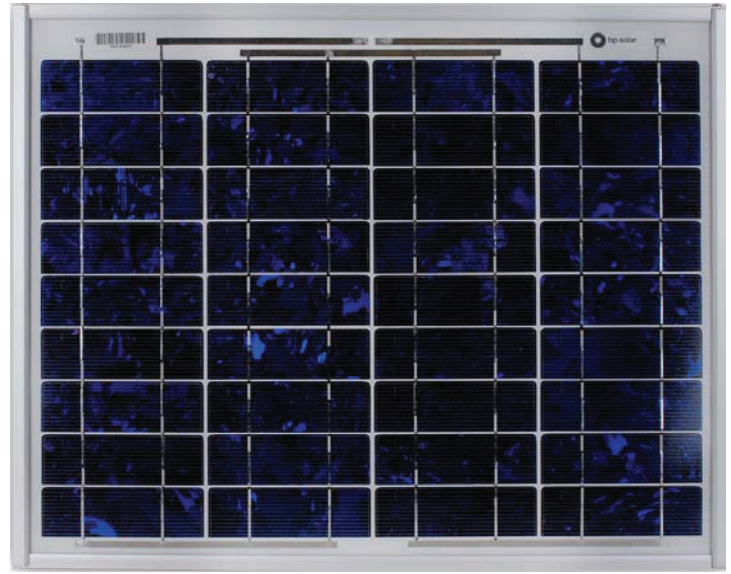
|                                 |          |
|---------------------------------|----------|
| Rated power (P <sub>max</sub> ) | 20W      |
| Power tolerance                 | ± 10%    |
| Nominal voltage                 | 12V      |
| Limited Warranty <sup>1</sup>   | 12 years |

### Configuration

- M Multimountframe with lo-pro J-Box and output cable
- J Clear universal frame and standard J-Box

### Electrical Characteristics <sup>2</sup>

|   |   |
|---|---|
| Maximum power (P <sub>max</sub> ) <sup>3</sup>        | 20W   |
| Voltage at Pmax (V <sub>mp</sub> )                    | 16.8V   |
| Current at Pmax (I <sub>mp</sub> )                    | 1.19A   |
| Warranted minimum P <sub>max</sub>                    | 18W   |
| Short-circuit current (I <sub>sc</sub> )              | 1.29A   |
| Open-circuit voltage (V <sub>oc</sub> )               | 21.0V   |
| Temperature coefficient of I <sub>sc</sub>            | (0.065±0.015)%/ °C                            |
| Temperature coefficient of V <sub>oc</sub>            | -(80±10)mV/°C                                 |
| Temperature coefficient of power                      | -(0.5±0.05)%/ °C                              |
| NOCT (Air 20°C; Sun 0.8kW/m <sup>2</sup> ; wind 1m/s) | 47±2°C  |
| Maximum series fuse rating                            | 3A  |
| Maximum system voltage                                | 50V (US NEC rating)<br>50V (IEC 61215 rating) |



### Mechanical Characteristics





|               |   |   |                       |                     |
|---------------|---|---|-----------------------|---------------------|
| Dimensions    | M   | Length: 421mm (16.6")   | Width: 501 mm (19.7") | Depth: 23mm (0.9")  |
|               | J   | Length: 425mm (16.7")   | Width: 502 mm (19.7") | Depth: 50mm (1.97") |
| Weight        | M   | 2.5 kg (5.5 pounds)   |                       |                     |
|               | J   | 3.0 kg (6.6 pounds)   |                       |                     |
| Solar Cells   | 36 cells (38mm x 114mm) in a 4x9 matrix connected in series   |   |                       |                     |
| Junction Box  | J   | J-Version junction box with 4-terminal connection block; IP 65, accepts PG 13.5, M20, ½ inch conduit, or cable fittings accepting 6-12mm diameter cable. Terminals accept 2.5 to 10mm <sup>2</sup> (8 to 14 AWG) wire |                       |                     |
| Output Cables | M   | AWG# 18 (0.75mm <sup>2</sup> ) 2 core ITC/PLTC; length - 4572mm   |                       |                     |
| Construction  | Front: High-transmission 3mm (1/8 <sup>th</sup> inch) tempered glass; Back: Polyester; Encapsulant: EVA |   |                       |                     |
| Frame         | M   | Clear anodized aluminum alloy type 6063T6 Multimount frame; Color: silver   |                       |                     |
|               | J   | Clear anodized aluminum alloy type 6063T6 Universal frame; Color: silver  |                       |                     |

1. Module Warranty: 12-year limited warranty of 90% power output; 2-year limited warranty of materials and workmanship. See your local representative for full terms of these warranties.
2. These data represent the performance of typical BP modules, and are based on measurements made in accordance with ASTM E1036 corrected to SRC (STC.)
3. During the stabilization process that occurs during the first few months of deployment, module power may decrease by approx. 1% from typical P<sub>max</sub>.

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## Quality and Safety

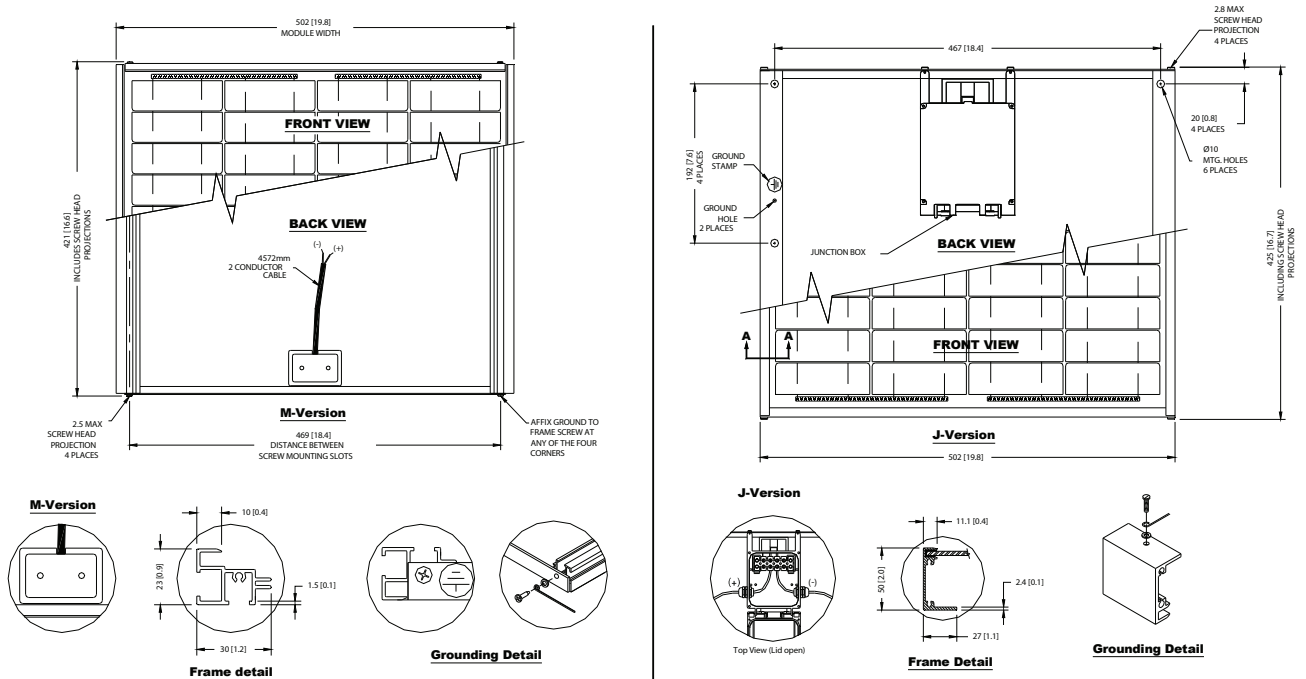
|   |   |
|---|---|
|  | Manufactured in ISO 9001-certified factories; conforms to European Community Directives 89/33/EEC, 73/23/EEC, 93/68/EEC; certified to IEC 61215 |
|  | Module power measurements calibrated to World Radiometric Reference through ESTI (European Solar Test Installation at Ispra, Italy)             |
|  | Listed by Underwriter's Laboratories for electrical and fire safety (Class C fire rating)   |
|  | Approved by Factory Mutual Research in NEC Class 1, Division 2, Groups C & D hazardous locations.   |

## Qualification Test Parameters

|  |                                   |
|--|-----------------------------------|
| Temperature cycling range              | -40°C to +85°C (-40°F to 185°F)   |
| Humidity freeze, damp heat             | 85% RH                            |
| Static load front and back (e.g. wind) | 2,400 pa (50psf)                  |
| Front loading (e.g. snow)              | 5,400 pa (113psf)                 |
| Hailstone impact                       | 25mm Ø (1 inch) at 23 m/s (52mph) |

## Module Diagram

Dimensions in brackets are in inches. Un-bracketed dimensions are in millimeters. Overall tolerances ±3mm (1/8")



Included with each module: self-tapping grounding screw (J-Version), instruction sheet and warranty document.

Note: This publication summarizes product warranty and specifications, which are subject to change without notice.

Houston ■ Odessa ■ Shanghai ■ Dammam ■ Del Carmen ■ Europe



Tel: 713-559-9200  
 Toll Free: 888-367-4286  
 Fax: 281-292-2860  
 Email: sales@detcon.com  
 Web: www.detcon.com

