

## enFUSION™ Solar Motor Controllers

Designed for off-grid installations, enFUSION™ Cell motor controllers use solar energy to power electric submersible pumps, compressors, and other inductive loads. The Blender can be added to seamlessly blend energy between a solar array and a power grid. These small devices now integrate the functions of an inverter and variable frequency drive (VFD) controller into one. No need to use costly and proprietary DC controllers when you can use universal off-the-shelf Cell and Blender components.

### PRODUCT HIGHLIGHTS

- Run standard AC motors using solar power
- Universal solar controller for single/three phase 50/60Hz, 120/240VAC motors
- Modular design for ease of installation and maintenance
- Solar VFD allows motors to run longer on solar
- Off-grid projects can qualify for tax credits, grants or other local rebates
- Patented and made in the USA



Cell 2000



Blender 2500



Cell 3500

### SPECIFICATIONS

#### enFUSION CELL™ 2000

##### ELECTRICAL

|                                    |          |
|------------------------------------|----------|
| Solar Operating Voltage:           | 100-380V |
| Max PV Open Circuit Voltage:       | 400V     |
| Minimum Operating PV Voltage:      | 100V     |
| Max PV Current Per Channel:        | 12A      |
| Max Single Phase AC Motor Current: | 8A       |
| Max Three Phase AC Motor Current:  | 6A       |
| Remote Sensor Inputs:              | 2        |

##### MECHANICAL

|   |  |
|---|--|
| Degree Of Protection:                     | NEMA4/IP66   |
| Enclosure Material:                       | Aluminum   |
| Operating Temperature:                    | -40°F to 122°F   |
| Dimensions:                               | 10" x 5.5" x 4"  |
| AC Load Terminals:                        | AWG #10-14   |
| Solar Terminals:                          | AWG #10-14   |
| Motor Terminal:                           | AWG #8-16  |
| Float Sensor Terminals:                   | AWG #14-122  |
| Cooling:                                  | Passive/No Fan   |
| Environmental – Compliance with IEC 60068 | IEC 60068-2-2 Cold<br>IEC 60068-2-2 Dry Heat<br>IEC 60068-2-14 Change of Temp.<br>IEC 60068-2-30 Damp Heat |

#### enFUSION BLENDER™ 2500

##### ELECTRICAL

|                                   |            |
|-----------------------------------|------------|
| AC Source Operating Voltage:      | 120-240V   |
| Max PV Open Circuit Voltage:      | 400Vdc     |
| Solar PV Open Circuit Voltage:    | 100Vdc     |
| Max PV Panel Current Per Channel: | 12Adc      |
| Remote Sensor Inputs:             | 2          |
| Analog Sensor Inputs:             | 2 (4-20mA) |

Remote control enabled by Blender or Programmable timer relay  
Over current, overvoltage and over temperature protections  
Optional: WiFi communication module, GFCI protections

##### MECHANICAL

|                         |                |
|-------------------------|----------------|
| Degree Of Protection:   | NEMA3R/IP65    |
| Enclosure Material:     | Aluminum       |
| Operating Temperature:  | -40°F to 122°F |
| Dimensions:             | 18" x 10" x 5" |
| AC Source Terminals:    | AWG #10-14     |
| Solar Terminals:        | AWG #10-14     |
| Float Sensor Terminals: | AWG #14-22     |
| Cooling:                | Passive/no fan |

#### enFUSION CELL™ 3500

##### ELECTRICAL

|                                   |            |
|-----------------------------------|------------|
| Solar Operating Voltage:          | 100V-380V* |
| Max PV Panel Current Per Channel: | 12Aac      |
| Solar PV Rated Current:           | 12Adc      |
| Remote Sensor Inputs:             | 2          |
| Analog Sensor Inputs:             | 2 (4-20mA) |

##### MECHANICAL

|   |  |
|---|--|
| Degree Of Protection:                                 | NEMA3R   |
| Enclosure Material:                                   | Aluminum   |
| Operating Temperature:                                | -40°F to 122°F   |
| Dimensions:   | 18" x 10" x 5"   |
| Solar Terminals:                                      | AWG #10-14   |
| Motor Terminal:                                       | AWG #8-14  |
| Float Sensor Terminals:                               | AWG #14-22   |
| Cooling:  | Passive/No Fan   |
| Dual Solar Array Input                                | Over current, overvoltage and over temperature protections |
| Optional: WiFi communication module, GFCI protections |  |

**CALL GEOTECH TODAY (800) 833-7958**

**Geotech Environmental Equipment, Inc.**

2650 East 40th Avenue • Denver, Colorado 80205

(303) 320-4764 • FAX (303) 322-7242

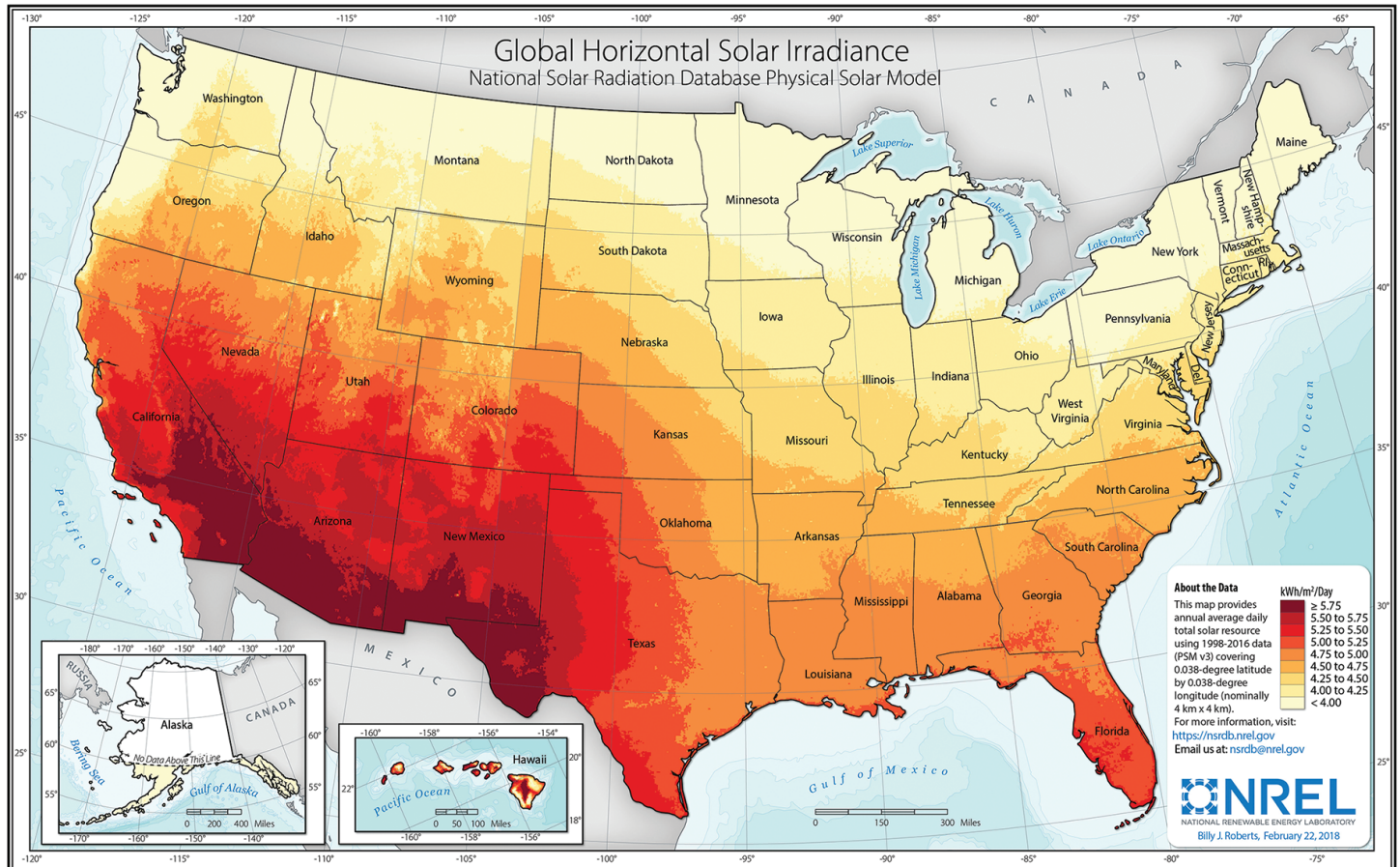
email: sales@geotechenv.com • website: www.geotechenv.com

## FRANKLIN 4" MOTOR DATA

| HP    | Voltage | Phase | Service Factor Amperage (SFA) (A) | Power Factor (%) | Wattage Required (W) |
|-------|---------|-------|-----------------------------------|------------------|----------------------|
| 1/2HP | 230V    | 3     | 2.9                               | 70%              | 808                  |
| 3/4HP | 230V    | 3     | 3.8                               | 73%              | 1,105                |
| 1HP   | 230V    | 3     | 4.7                               | 72%              | 1,348                |
| 1.5HP | 230V    | 3     | 5.9                               | 76%              | 1,786                |
| 2HP   | 230V    | 3     | 8.1                               | 76%              | 2,452                |



## NATIONAL SOLAR IRRADIANCE



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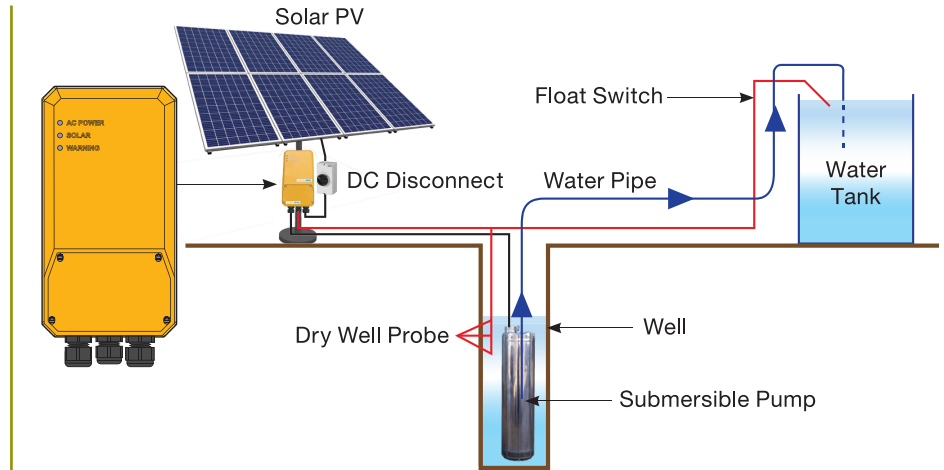
## SOLAR ZONES

**ZONE 5** = 5.0 - 5.99 kWh/m<sup>2</sup>/day

**ZONE 4** = 4.0 - 4.99 kWh/m<sup>2</sup>/day

**ZONE 3** = 3.0 - 3.99 kWh/m<sup>2</sup>/day

**Note:** these are annual averages with higher irradiance metrics seen in the summer months. Seasonal applications may be subject to different zones than what is depicted below.



### ZONE 3

#### Solar Only

| Rated HP Motor | Drive     | Panels | Minimum Solar PV Power [W] | Rack             | Jumper Cables | DC Disconnect |
|----------------|-----------|--------|----------------------------|------------------|---------------|---------------|
| 1/2HP          | Cell 2000 | 5      | 1625                       | PVRACK4          | 1             | 1             |
| 3/4HP          | Cell 2000 | 6      | 1950                       | PVRACK5          | 1             | 1             |
| 1HP            | Cell 2000 | 7      | 2275                       | PVRACK3, PVRACK4 | 2             | 1             |
| 1.5HP          | Cell 3500 | 10     | 3250                       | PVRACK5 (2x)     | 3             | 0             |
| 2HP            | Cell 3500 | 14     | 4550                       | PVRACK4 (4x)     | 4             | 0             |

#### Grid Tied

| Rated HP Motor | Drive        | Panels | Minimum Solar PV Power [W] | Rack         | Jumper Cables | DC Disconnect |
|----------------|--------------|--------|----------------------------|--------------|---------------|---------------|
| 1/2HP          | Blender 2500 | 4      | 1300                       | PVRACK4      | 1             | 1             |
| 3/4HP          | Blender 2500 | 5      | 1625                       | PVRACK5      | 1             | 1             |
| 1HP            | Blender 2500 | 6      | 1950                       | PVRACK6      | 2             | 1             |
| 1.5HP          | Blender 2500 | 8      | 2600                       | PVRACK4 (2x) | 2             | 1             |

### ZONE 4

#### Solar Only

| Rated HP Motor | Drive     | Panels | Minimum Solar PV Power [W] | Rack             | Jumper Cables | DC Disconnect |
|----------------|-----------|--------|----------------------------|------------------|---------------|---------------|
| 1/2HP          | Cell 2000 | 4      | 1300                       | PVRACK4          | 1             | 1             |
| 3/4HP          | Cell 2000 | 5      | 1625                       | PVRACK5          | 1             | 1             |
| 1HP            | Cell 2000 | 7      | 2275                       | PVRACK3, PVRACK4 | 2             | 1             |
| 1.5HP          | Cell 2000 | 8      | 2600                       | PVRACK4 (2x)     | 2             | 1             |
| 2HP            | Cell 3500 | 14     | 4550                       | PVRACK4 (4x)     | 4             | 0             |

#### Grid Tied

| Rated HP Motor | Drive        | Panels | Minimum Solar PV Power [W] | Rack         | Jumper Cables | DC Disconnect |
|----------------|--------------|--------|----------------------------|--------------|---------------|---------------|
| 1/2HP          | Blender 2500 | 4      | 1300                       | PVRACK4      | 1             | 1             |
| 3/4HP          | Blender 2500 | 5      | 1625                       | PVRACK5      | 1             | 1             |
| 1HP            | Blender 2500 | 6      | 1950                       | PVRACK6      | 2             | 1             |
| 1.5HP          | Blender 2500 | 8      | 2600                       | PVRACK4 (2x) | 2             | 1             |

### ZONE 5

#### Solar Only

| Rated HP Motor | Drive     | Panels | Minimum Solar PV Power [W] | Rack         | Jumper Cables | DC Disconnect |
|----------------|-----------|--------|----------------------------|--------------|---------------|---------------|
| 1/2HP          | Cell 2000 | 4      | 1300                       | PVRACK4      | 1             | 1             |
| 3/4HP          | Cell 2000 | 5      | 1625                       | PVRACK5      | 1             | 1             |
| 1HP            | Cell 2000 | 6      | 1950                       | PVRACK6      | 2             | 1             |
| 1.5HP          | Cell 2000 | 8      | 2600                       | PVRACK4 (2x) | 2             | 0             |
| 2HP            | Cell 3500 | 14     | 4550                       | PVRACK4 (4x) | 4             | 0             |

#### Grid Tied

| Rated HP Motor | Drive        | Panels | Minimum Solar PV Power [W] | Rack         | Jumper Cables | DC Disconnect |
|----------------|--------------|--------|----------------------------|--------------|---------------|---------------|
| 1/2HP          | Blender 2500 | 4      | 1300                       | PVRACK4      | 1             | 1             |
| 3/4HP          | Blender 2500 | 5      | 1625                       | PVRACK5      | 1             | 1             |
| 1HP            | Blender 2500 | 6      | 1950                       | PVRACK6      | 2             | 1             |
| 1.5HP          | Blender 2500 | 8      | 2600                       | PVRACK4 (2x) | 2             | 1             |
| 2HP            | Blender 2500 | 8      | 2600                       | PVRACK4 (2x) | 2             | 1             |

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