

## Table of Contents

<b>GOING SOLAR</b> .....	4	Relays .....	117
<b>SYSTEM DESIGN</b> .....	8	Diversion Loads.....	118
Grid-Tie .....	8	<b>METERS &amp; MONITORING</b> .....	119
Grid-Tie w/ Battery Backup .....	11	<b>BATTERIES</b> .....	126
Off-Grid .....	12	Technical Information.....	126
<b>PRE-CONFIGURED SYSTEMS</b> .....	16	Commercial .....	130
Grid-Tie .....	16	Commercial/Industrial .....	132
Grid-Tie w/ Battery Backup .....	17	Industrial .....	133
Remote Power .....	18	Battery Enclosures .....	136
<b>SOLAR MODULES</b> .....	20	Chargers & Accessories .....	139
PV Modules .....	20	<b>ELECTRICAL DISTRIBUTION PARTS</b> ..	142
Portable PV Modules .....	28	Surge Protection .....	142
<b>MOUNTING STRUCTURES</b> .....	31	Array Grounding .....	143
Roof Mounts .....	32	Array Combiners .....	144
Roof & Ground Mounts.....	44	Array Breakers & Fuses .....	147
Pole Mounts .....	48	Disconnects & Overcurrent Protection .....	148
Specialty Ground Mounts .....	54	Transfer Switches .....	153
Trackers .....	56	DC Automatic Switches .....	154
<b>WIND POWER</b> .....	59	Connectors & Terminal Blocks .....	155
System Design .....	59	<b>WIRE &amp; CABLE</b> .....	156
Off-Grid .....	61	Battery & Inverter Cable .....	156
Grid-Tie .....	63	Cable Lugs & Tools .....	157
<b>MICRO HYDROPOWER</b> .....	64	Wire .....	158
<b>INVERTERS</b> .....	68	Array Wiring & Accessories .....	159
System Design .....	68	DC Wiring Accessories.....	162
Grid-Tie Residential .....	70	<b>WATER PUMPING</b> .....	163
Grid-Tie Commercial.....	80	Design Information.....	163
Grid-Tie w/ Battery Backup .....	84	Accessories .....	164
Grid-Tie w/ Battery Backup/Off-Grid .....	85	Submersible Pumps .....	165
Off-Grid .....	87	Surface Pumps .....	170
Converters & Transformers .....	99	<b>LIGHTING</b> .....	177
<b>POWER SYSTEMS</b> .....	100	<b>REFRIGERATION</b> .....	182
System Panels .....	100	<b>VENTILATION &amp; COOLING</b> .....	184
Fully Assembled Systems .....	102	<b>PORTABLE POWER</b> .....	188
System Components .....	104	<b>REFERENCE</b> .....	191
<b>CHARGE CONTROLLERS</b> .....	106	Wiring Information.....	191
MPPT.....	106	Solar Insolation Maps .....	194
MPPT/PWM .....	110	Glossary .....	200
PWM.....	111	<b>SPACE FOR YOUR NOTES</b> .....	202
PWM/Lighting Controllers.....	114	<b>INDEX</b> .....	205
Generator Start Controllers.....	116		