



INSTALLATION GUIDE & SPECIFICATIONS

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UNPACKING YOUR BATTERY

CAUTION: BATTERY CRATES MAY HAVE SHARP, PROTRUDING NAILS.

CAUTION: BATTERY SHOULD ONLY BE UNPACKED BY QUALIFIED BATTERY INSTALLERS.

CAUTION: DO NOT PENETRATE, DUMP, OR OTHERWISE DAMAGE THE BATTERY CRATE PRIOR TO THE REMOVAL OF THE BATTERY. ABUSING THE BATTERY IN THIS MANNER WILL VOID THE WARRANTY.

CAUTION: DO NOT STORE THE BATTERY IN EXTREME TEMPERATURE- ENVIRONMENTS OR IN DIRECT SUNLIGHT.

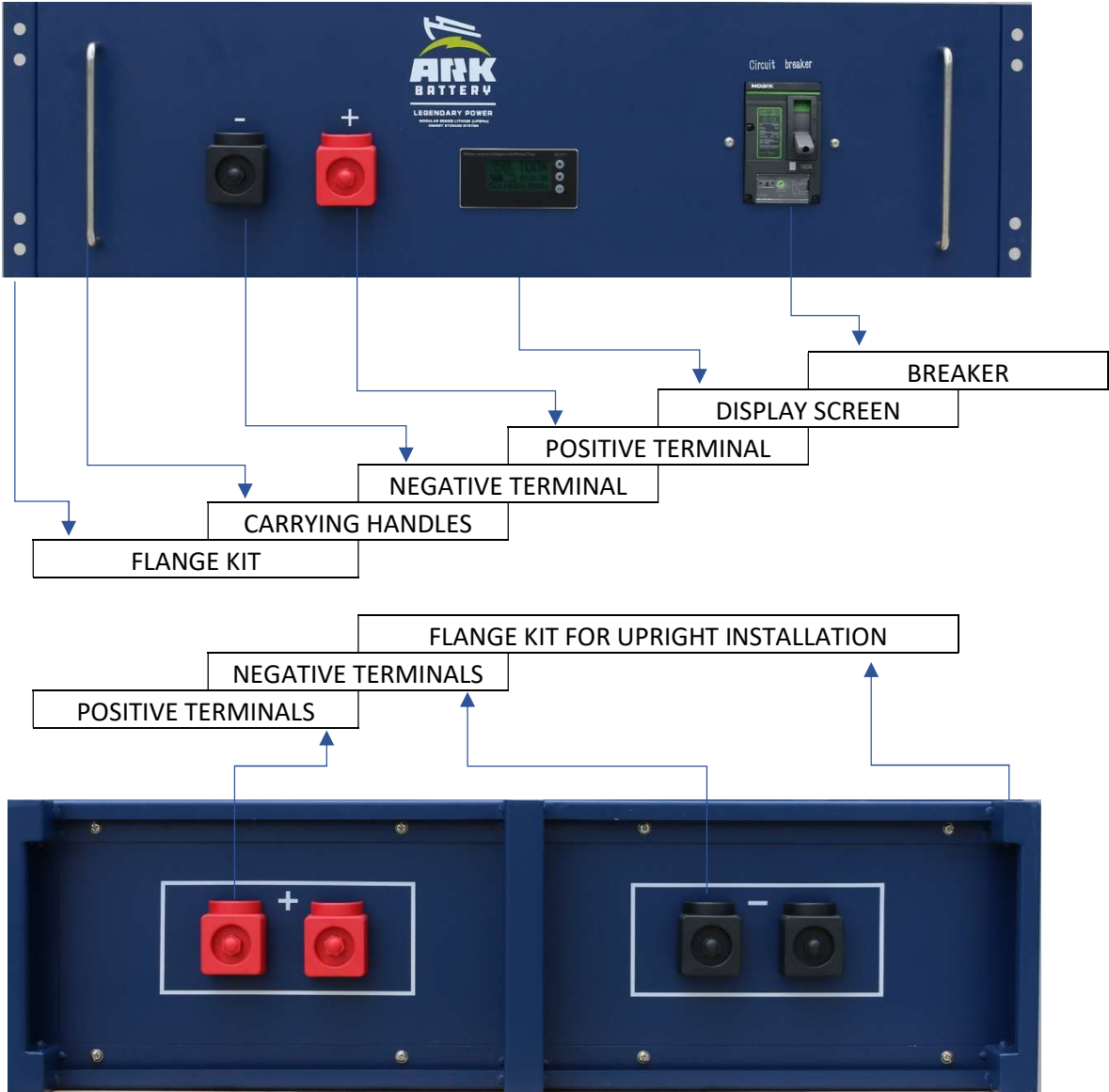
CAUTION: DO NOT TOUCH THE + OR – TERMINALS. HIGH VOLTAGE MAY CAUSE INJURY OR DEATH.

WHAT'S INSIDE

WHEN UNPACKING YOUR BATTERY, CHECK TO MAKE SURE THAT YOUR BATTERY INCLUDES THE FOLLOWING ACCESSORIES:

1. FLANGE KIT FOR UPRIGHT INSTALLATION
2. HARDWARE PACKAGE FOR CABINET INSTALLATION
3. ANGLE BRACKETS: USED TO SECURE BATTERY TO WALL (UPRIGHT INSTALLATION) OR SECURE BATTERY TO TOP OF CABINET (TOP BATTERY ONLY)

BATTERY FEATURES



BATTERY SET-UP & INSTALLATION

CAUTION: DO NOT SHORT-CIRCUIT + AND – TERMINALS.

CAUTION: DO NOT REVERSE POLARITY WHEN CONNECTING CHARGING/ DISCHARGING EQUIPMENT.

CAUTION: DO NOT INSTALL BATTERY IN AN ENVIROMENT THAT IS <32 DEGREES FARENHEIT OR MORE THAN 120 DEGREES FARENHEIT.

CAUTION: ARK LITHIUM BATTERIES SHOULD ONLY BE INSTALLED IN DRY, CLIMATE-CONTROLLED AREAS.

CAUTION: DO NOT CONNECT BATTERIES IN SERIES. ONLY PARALLEL CONNECTIONS ARE PERMITTED.

INSTALLATION:

1. ENSURE THAT THE BATTERY IS FIRMLY SECURED AND WILL NOT MOVE OR TIP. BATTERIES MAY BE INSTALLED UPRIGHT OR HORIZONTAL IN A CABINET. IF INSTALLING HORIZONTALLY WITHOUT A CABINET, DO NOT STACK HIGHER THAN THREE MODULES.
2. CABLING: LEAVE ALL BREAKERS IN THE 'OFF' POSITION UNTIL CABLING IS COMPLETED. TIGHTEN NUTS TO ----- FLBS.
WHEN USING MULTIPLE BATTERIES IN A BANK, A MINIMUM OF ONE CABLE SET SHOULD BE RUN (FOR APPLICATIONS WHERE CHARGE/DISCHARGE IS LESS THAN .5C (.5 X CAPACITY)) TO THE CHARGING/DISCHARGING SOURCE EVERY 3 BATTERIES TO ENSURE THAT EACH BATTERY IS CHARGED/DISCHARGED EVENLY.
3. IF CHARGE/DISCHARGE EXCEEDS .5C, A CABLE SET SHOULD BE RUN TO THE CHARGE/DISCHARGE SOURCE FOR EVERY 2 BATTERIES IN THE BANK.
4. WHEN PARALLELING MULTIPLE BATTERIES, THE MAXIMUM ALLOWABLE VOLTAGE DIFFERENCE IS 0.3 VOLTS. CHARGE OR DISCHARGE BATTERIES INDIVIDUALLY AS NEEDED BEFORE CABLING THEM TOGETHER.

NOTE: AN EXTERNAL MAIN FUSE OR BREAKER IS REQUIRED WHEN STACKING 2 OR MORE BATTERIES IN ONE BANK. FOR SINGLE BATTERY INSTALLATIONS WITH NO EXTERNAL FUSE OR BREAKER, A MINIMUM WIRE/CABLE SIZE OF 2 AWG COPPER IS REQUIRED. FOLLOW NEC GUIDELINES FOR CABLE SIZING IN BANKS THAT HAVE MULTIPLE BATTERIES PARALLELED.

IMPORTANT! WHEN POWERING UP AN INVERTER SYSTEM OR ANY OTHER TYPE OF LOAD, SET THE BREAKER OF EACH ARK BATTERY IN THE BANK TO 'ON' BEFORE INSTALLING/ TURNING ON THE MAIN FUSE OR BREAKER. WHEN POWERING DOWN, DISCONNECT THE MAIN FUSE/ BREAKER BEFORE TURNING OFF BREAKERS ON THE ARK BATTERIES IN YOUR BANK.

NOTE: ALWAYS KEEP CABLES AS REASONABLY SHORT AS POSSIBLE. HEAVIER CABLES SHOULD BE USED AS NECESSARY WHEN COMPENSATION FOR DISTANCE BETWEEN BATTERIES AND CHARGE/DISCHARGE SOURCE. AVOID DISTANCES OF MORE THAN 25 FEET. IT IS NOT NECESSARY TO KEEP ALL CABLES EXACTLY THE SAME LENGTH.

ENSURE THAT ALL CHARGING AND DISCHARGING EQUIPMENT IS PROGRAMMED ACCORDING TO THE SPECS OUTLINED ON PAGE 7. AN ADVANCED SETUP GUIDE FOR SOME INVERTERS AND CHARGE CONTROLLERS IS AVAILABLE FOR CERTIFIED INSTALLERS. PLEASE CONTACT YOUR DISTRIBUTOR TO OBTAIN A COPY.

OPERATION & MONITORING

ARK BATTERIES ARE EQUIPPED WITH A DISPLAY FOR MONITORING PURPOSES. CALCULATIONS ARE MADE BY MEANS OF AN INTERNAL SHUNT. THIS DISPLAY INCLUDES:

1. BATTERY VOLTS
2. CHARGE/DISCHARGE AMPS
3. CHARGE/DISCHARGE WATTS
4. TIME REMAINING
5. AH REMAINING
6. CHARGE INDICATION (BLINKING BACKLIGHT)
7. DISCHARGE INDICATION (SOLID BACKLIGHT)

NOTE: THE DISPLAYED % ON A BATTERY IS NOT ACCURATE UNTIL THE BATTERY HAS BEEN FULLY CHARGED. THE METER WILL SELF-CALIBRATE WHEN FULL CHARGE IS REACHED.

TO MANUALLY CALIBRATE THE METER ON A NEW BATTERY, CHARGE BATTERY TO ABSORB VOLTAGE AS OUTLINED ON PAGE 7. MAINTAIN ABSORB VOLTAGE UNTIL CHARGE CURRENT IS LESS THAN 5% OF BATTERY CAPACITY. PRESSING AND HOLDING THE 'UP' (▲) BUTTON CALIBRATES SOC% TO 100%. PRESSING AND HOLDING THE 'DOWN' (▼) BUTTON CALIBRATES THE BATTERY TO 0%.

THERE ARE NO SETTINGS TO BE MADE ON THE METER!

WARRANTY

ARK BATTERY IS PLEASED TO OFFER A 5 YEAR WARRANTY ON ALL PRODUCTS AND COMPONENTS. GUARANTEE BEGINS ON DATE OF INSTALLATION.

WARRANTY PROCEDURE:

TO OBTAIN A WARRANTY FOR A DEFECTIVE PRODUCT, CONTACT OUR SUPPORT CENTER AT 844-SOL-POWE(R).

ONLY CERTIFIED INSTALLERS AND DISTRIBUTORS CAN CLAIM A WARRANTY. ARK BATTERY WILL ISSUE AN RMA FOR PRODUCTS DEEMED DEFECTIVE.

IF PRODUCT IS DEEMED TO BE A CELL- RELATED ISSUE, A REPLACEMENT BATTERY OF EQUAL OR GREATER CAPACITY WILL BE SENT TO CERTIFIED INSTALLER.

IF DEFECT IS DEEMED TO BE A BMS OR OTHER ELECTRONICS ISSUE, ARK BATTERY, AT ITS DISCRETION WILL:

1. SHIP A REPLACEMENT BATTERY OF EQUAL OR GREATER CAPACITY

OR

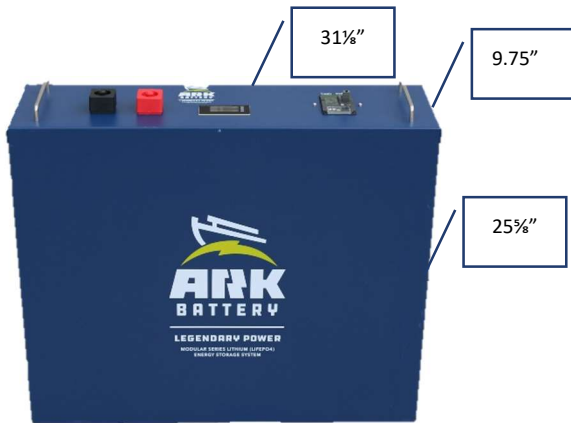
2. SEND A CERTIFIED TECHNICIAN ON SITE TO REPLACE THE DEFECTIVE ELCTRONICS.

PLEASE NOTE! THERE IS NO WARRANTY FOR BATTERIES THAT ARE SUBJECTED TO ABUSE INCLUDING, BUT NOT LIMITED TO:

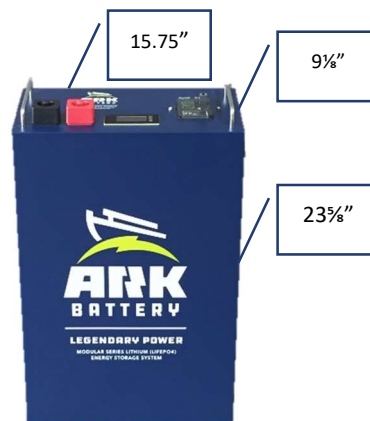
1. IMPROPER CHARGING/DISCHARGING METHODS
2. HAZARDOUS VOLTAGES
3. EXCESSIVE CURRENTS
4. TEMPERATURE EXPOSURE OUTSIDE OF GUIDELINES SPECIFIED ON PAGE 7.
5. UNAUTHORIZED INDIVIDUALS OPENING THE BATTERY (BROKEN SEAL)
6. CYCLES EXCEEDING RATED CYCLE LIFE (PG. 6)

SPECS

ARK BATTERY SPECS	100AH, 48V	200AH, 24V	200AH,48V
NOMINAL VOLTAGE	48	24	48
ACTUAL VOLTAGE 30% SOC	51.2	25.6	51.2
BATTERY AH	100	200	200
RECOMMENDED CHARGE/DISCHARGE CURRENT	75	100	100
MAX CONTINUOUS CHARGE/DISCHARGE CURRENT	100	140	140
SURGE AMPS 10MS	300	600	600
BREAKER SIZE (A)	125	160	160
MINIMUM TEMPERATURE (FARENHEIT)	32	32	32
MAXIMUM TEMPERATURE (FARENHEIT)	120	120	120
ABSORB VOLTS	57.2	28.6	57.2
FLOAT VOLTS	54.4	27.2	54.4
ABSORB DONE AMPS	5 AMPS	10 AMPS	10 AMPS
ABSORB DONE TIME	10 MIN.	10 MIN.	10 MIN.
BMS HIGH VOLT CUTOUT	60.6 +/- 1V	30.3 +/- 0.5V	60.6 +/- 1V
BMS LOW VOLT CUTOUT	41 +/- 1V	20.5 +/- 1V	41 +/- 1V
RECOMMENDED INVERTER LOW VOLT CUTOUT	48	24	48
TERMINAL TYPE	BOLT ON	BOLT ON	BOLT ON
LOW TEMPERATURE PROTECTION	YES	NO	NO
CELL CERTIFICATION	UL1642	UL1642	UL1642
BATTERY CERTIFICATION	UL1973	UN38.3	UN38.3
TEMPERATURE COMPENSATION	0	0	0
CELL CHEMISTRY	LifePO4	LifePO4	LifePO4
RATED CYCLE LIFE: 100% DEPTH OF DISCHARGE	3,000	3,000	3,000
RATED CYCLE LIFE: 80% DEPTH OF DISCHARGE	5,000	5,000	5,000
RATED CYCLE LIFE: 50% DEPTH OF DISCHARGE	6,500	6,500	6,500
RETAINED CAPACITY AT THE END OF CYCLE LIFE	80%	80%	80%
VENTILATION REQUIRED	NO	NO	NO



200AH, 48V



100AH, 48V
AND
200AH, 24V

TROUBLE-SHOOTING

TROUBLE-SHOOTING AND/OR SERVICING AN ARK BATTERY SHOULD ONLY BE PERFORMED BY A QUALIFIED INDIVIDUAL.

WHEN CALLING FOR TECHNICAL ASSISTANCE, PLEASE HAVE A DC VOLTMETER WITH A VOLTAGE RANGE OF 0-60VDC ON HAND.

FAULTS:

DISPLAY SCREEN IS BLANK:

TEST FOR VOLTAGE ON BATTERY TERMINALS WITH BREAKER IN 'ON' POSITION. IF NO VOLTAGE IS PRESENT, PROCEED TO STEPS OUTLINED IN 'LOW-BMS CUTOUT' BELOW. IF VOLTAGE IS PRESENT, CALL FOR FURTHER ASSISTANCE.

BMS LOW CUTOUT:

APPLY VOLTAGE TO TERMINALS TO 'WAKE UP' THE BATTERY.

CAUTION: NEVER 'JUMP' WITH ANOTHER BATTERY. USE A BATTERY CHARGER THAT PERFORMS WITHIN THE SPECS OUTLINED ON PAGE 6.

WE RECOMMEND THE FOLLOWING CHARGERS TO WAKE UP THE BATTERY:

- ✓ 24V: MEANWELL GC120A24-AD1
- ✓ 48V: MEANWELL GC120A48-AD1

DISCONNECT ALL CHARGING/DISCHARGING SOURCES UNTIL BMS HAS TURNED BACK ON.

BMS HIGH VOLT CUTOUT:

DISCHARGE BATTERY UNTIL THE CHARGING PORTION OF THE BMS TURNS BACK ON.

PREMATURE BMS HIGH/LOW CUTOUT:

IF THE BMS SHUTS OFF DURING A CHARGE CYCLE BEFORE REACHING ABSORB VOLTAGE OR SHUTS OFF DURING DISCHARGE BEFORE REACHING 'RECOMMENDED INVERTER LOW VOLT CUTOUT' (PAGE 6), CALL FOR FURTHER ASSISTANCE.

HIGH-PITCHED NOISE:

(IF BATTERY MAINTAINS A CONSISTANT, HIGH-PITCHED NOISE DURING CHARGE OR DISCHARGE) CALL FOR FURTHER ASSISTANCE.