ABYSS BATTERY®

MARINE LITHIUM POWER SYSTEMS · LARGO, FLORIDA

# TROLLING MOTOR BATTERY COMPATIBILITY CHART

## 24V & 36V LITHIUM TROLLING MOTOR BATTERIES

BOAT OWNERS | MARINE INSTALLERS | OEM PARTNERS | DEALERS

Verified voltage, current and runtime data for pairing ABYSS® lithium trolling motor batteries with today's bow-mount trolling motors — brushed and brushless, 24V and 36V, fresh and saltwater — plus wiring, circuit protection and charging reference tables.

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POWER YOUR PURSUIT.

# WILL IT FIT MY MOTOR?

Four checks that settle 95% of trolling motor battery questions — in the order an installer asks them.

**1 · VOLTAGE** Match the battery to the motor. A 24V motor runs on one ABYSS 24V battery; a 36V motor runs on one ABYSS 36V battery. Dual-voltage brushless motors (Minn Kota QUEST™, Garmin Force®/Kraken®, Lowrance Ghost®/RECON™, Power-Pole MOVE™) auto-detect the bank: choose 36V for maximum thrust and lower current, or 24V to keep an existing 24V rig. Never assemble 36V from a 24V battery plus a 12V battery — ABYSS batteries are not series-rated.

**2 · CURRENT** Every ABYSS 24V and 36V trolling battery delivers **100 A continuous** (200 A for 10 s on the Trolling Series). The hungriest bow-mount motors sold today draw 58–60 A at full throttle, so the BMS has a 40 %+ margin and never throttles the motor — including Spot-Lock / anchor-mode surges.

**3 · CAPACITY** Amp-hours set your day. 60 Ah covers day trips and lighter hulls; 75–90 Ah is the all-day choice for bay boats and tournament rigs; 105 Ah is built for big center consoles, offshore work and high-windage boats. The runtime planner on page 6 turns Ah into hours for your motor.

**4 · FIT** ABYSS batteries drop into standard Group 24, 31, 49 and 4D footprints (AB-G24 / G31 / G49 / G4D trays). One battery replaces two or three lead-acid batteries, saving 100–160 lb on the bow and freeing a tray for cranking or house power.

**QUICK MATCH** — start here, then confirm the exact motor on pages 4–5

| VOLTS | TYPICAL THRUST CLASS | BOAT / USE | GOOD | BETTER | BEST |
|---|---|---|---|---|---|
| **24V** | 55–80 lb brushed 78–97 lb brushless | Jon boats, skiffs, aluminum, bass boats ≤ ~19 ft · day trips | **24V 60Ah** Group 24 | **24V 90Ah** Group 31 | — |
| **24V** | 70–90 lb | Bass, bay, multi-species & pontoon boats 18–24 ft · tournaments, guides | **24V 90Ah** Group 31 | 2 × 24V 90Ah in parallel | — |
| **36V** | 101–112 lb brushed 100–120 lb brushless | Bass boats, skiffs, aluminum & light bay boats | **36V 60Ah** Group 31 | **36V 75Ah** Group 49 | **36V 105Ah** Group 4D |
| **36V** | 112–120 lb | Bay boats, center consoles & tournament rigs · all-day fishing | **36V 75Ah** Group 49 | **36V 105Ah** Group 4D | **SEAL™ 36V 105Ah** INFINITE™ Series |
| **36V** | 112–120 lb | Center consoles 30 ft+, offshore, catamarans, heavy / high-windage hulls | **36V 105Ah** Group 4D | **SEAL™ 36V 105Ah** | **INFINITE™ bundle** SEAL + SHARK™ + CRYSTAL® |

**Weight you give back to the boat.** A 36V 60Ah ABYSS (34.5 lb) replaces three Group 31 AGM batteries wired in series (≈ 65 lb each, ≈ 195 lb total) — about **160 lb** off the bow. A 24V 60Ah (24.9 lb) replaces two Group 24 AGMs (≈ 100 lb). And because lithium delivers its full rated capacity while lead-acid should only be cycled to ~50 %, a 60Ah ABYSS gives more usable energy than a 100 Ah AGM bank.

**The one-line rule for installers and OEM spec writers:** any 24V or 36V trolling motor whose manufacturer-rated maximum draw is 100 A or less is electrically compatible with the matching-voltage ABYSS battery. Every motor in this guide is rated at 60 A or less. Pick the voltage, pick the amp-hours for the day, size the breaker and cable to the motor — done.

**VERIFIED COMPATIBLE WITH** — every current bow-mount 24V / 36V motor from these brands (details on pages 4–5)

MINN KOTA® · RIPTIDE® · QUEST™ | MOTORGUIDE® XI3 · XI5 · TOUR | GARMIN® FORCE® · KRAKEN® | LOWRANCE® GHOST® · RECON™ | SIMRAD® RECON™ | POWER-POLE® MOVE™ | RHODAN® HD GPS ANCHOR®

# ABYSS TROLLING MOTOR BATTERY LINEUP

24V and 36V $LiFePO_4$ trolling motor batteries — specifications as published October 2026. All models: drop-in replacement for 12V batteries wired in series.



| SPECIFICATION | 24V 60Ah | 24V 90Ah | 36V 60Ah | 36V 75Ah | 36V 105Ah | SEAL™ 36V 105Ah |
|---|---|---|---|---|---|---|
| **SKU** | **AB-24V60-BT** | **AB-24V90-BT** | **AB-36V60-BT** | **AB-36V75-BT** | **AB-36V105-BT** | **AB-36V-105-FN4** |
| **Nominal voltage** | 25.6 V | 25.6 V | 38.4 V | 38.4 V | 38.4 V | 38.4 V |
| **Rated capacity** | 60 Ah | 90 Ah | 60 Ah | 75 Ah | 105 Ah | 105 Ah |
| **Energy** | 1,536 Wh | 2,304 Wh | 2,304 Wh | 2,880 Wh | 4,032 Wh | 4,032 Wh (4.03 kWh) |
| **Case / group size** | Group 24 | Group 31 | Group 31 | Group 49 | Group 4D | Group 4D |
| **ABYSS tray** | AB-G24 | AB-G31 | AB-G31 | AB-G49 | AB-G4D | — |
| **Dimensions (L × W × H)** | 10.24 × 6.62 × 8.23 in<br>260 × 168 × 209 mm | 12.95 × 6.77 × 8.43 in<br>329 × 172 × 214 mm | 12.95 × 6.77 × 8.43 in<br>329 × 172 × 214 mm | 19.10 × 6.70 × 9.45 in<br>485 × 170 × 240 mm | 20.67 × 9.45 × 8.66 in<br>525 × 240 × 220 mm | 18.1 × 9.6 × 11.6 in<br>460 × 245 × 295 mm |
| **Weight** | 24.9 lb (11.3 kg) | 33.9 lb (15.4 kg) | 34.5 lb (15.6 kg) | 43.1 lb (19.5 kg) | 65.9 lb (29.9 kg) | 73.9 lb (33.5 kg) |
| **Cell type** | Cylindrical $LiFePO_4$ (EVE 15Ah) | Cylindrical $LiFePO_4$ (EVE 15Ah) | Cylindrical $LiFePO_4$ (EVE 15Ah) | Cylindrical $LiFePO_4$ (EVE 15Ah) | Prismatic $LiFePO_4$ (EVE 105Ah) | Grade-A $LiFePO_4$ |
| **BMS / monitoring** | 8S 100A, Bluetooth | 8S 100A, Bluetooth | 12S 100A, Bluetooth | 12S 100A, Bluetooth | 12S 100A, Bluetooth | Smart BMS + CRYSTAL® X3 display |
| **Max. continuous discharge** | **100 A** | **100 A** | **100 A** | **100 A** | **100 A** | **100 A** |
| **Peak discharge** | 200 A (10 s) | 200 A (10 s) | 200 A (10 s) | 200 A (10 s) | 200 A (10 s) | 100 A |
| **Discharge cut-off** | 20 V | 20 V | 30 V | 30 V | 30 V | 34.8 V (LVP) |
| **Charge voltage (CC/CV)** | 28.4–29.2 V | 28.4–29.2 V | 42.6–43.8 V | 42.6–43.8 V | 42.6–43.8 V | 42.6 V |
| **Standard charge current** | 30 A | 30 A | 30 A | 30 A | 60 A | 52.5 A recommended |
| **Max. charge current** | 60 A | 90 A | 60 A | 100 A | 100 A | 100 A |
| **Low-temp heating** | Yes | Yes | Yes | Yes | Yes | Yes |
| **Terminals** | M8 × 1.25 studs | M8 × 1.25 studs | M8 × 1.25 studs | M8 × 1.25 studs | M8 × 1.25 studs | Main + / – · cable kit AB-TMB-CK |
| **Ingress protection** | IP67 | IP67 | IP67 | IP67 | IP67 | IP67 |
| **Cycle life** | 4,000 @ 95% DoD<br>6,000 @ 80% DoD | 4,000 @ 95% DoD<br>6,000 @ 80% DoD | 4,000 @ 95% DoD<br>6,000 @ 80% DoD | 4,000 @ 95% DoD<br>6,000 @ 80% DoD | 4,000 @ 95% DoD<br>6,000 @ 80% DoD | > 3,000 @ 100% DoD<br>4,000 @ 80% DoD |
| **Parallel** | Up to 4 identical | Up to 4 identical | Up to 4 identical | Up to 4 identical | Up to 4 identical | No |
| **Series** | No | No | No | No | No | No |
| **Operating temperature** | Charge –20 to 55 °C<br>Discharge –20 to 60 °C | Charge –20 to 55 °C<br>Discharge –20 to 60 °C | Charge –20 to 55 °C<br>Discharge –20 to 60 °C | Charge –20 to 55 °C<br>Discharge –20 to 60 °C | Charge –20 to 55 °C<br>Discharge –20 to 60 °C | Charge 2 to 63 °C (cell)<br>Discharge –30 to 63 °C (cell) |
| **Certifications** | UL 1642 · IEC 62619 / 62133<br>UN 38.3 · CE · RoHS | UL 1642 · IEC 62619 / 62133<br>UN 38.3 · CE · RoHS | UL 1642 · IEC 62619 / 62133<br>UN 38.3 · CE · RoHS | UL 1642 · IEC 62619 / 62133<br>UN 38.3 · CE · RoHS | UL 1642 · IEC 62619 / 62133<br>UN 38.3 · CE · RoHS | CE · FCC · UN 38.3 |
| **Best for** | Jon boats, skiffs, aluminum & small bass boats (≤ ~19 ft) | Bass, bay & multi-species boats, pontoons (18–24 ft); guides | Bass boats, skiffs, aluminum & light bay boats | Bay boats, center consoles & tournament rigs — all-day | Center consoles 30 ft+, offshore, catamarans, heavy hulls | INFINITE™ flagship — offshore & tournament boats; built-in fire suppression |

Trolling Series values from ABYSS product data (spec groups) and the ABYSS 24V / 36V Catalogs 1.1-2026. SEAL™ values from the SEAL™ FN4 specification. Weights are approximate. Cycle life rated at 25 °C / 77 °F. Discharge beyond the BMS cut-off is prevented automatically; the battery recovers when a charger with a lithium wake-up (0 V start) mode is connected.

# 24V TROLLING MOTOR COMPATIBILITY

Every motor below is rated at 60 A or less by its manufacturer — well inside the 100 A continuous rating of the ABYSS 24V 60Ah and 24V 90Ah. Full-throttle hours = rated Ah ÷ manufacturer max draw.

| BRAND | MOTOR / SERIES (AS SOLD OCT 2026) | MOTOR TYPE | MAX THRUST @ 24V | MFR. MAX DRAW | MFR. BREAKER | ABYSS FIT | 24V 60AH HOURS @ MAX DRAW | 24V 90AH HOURS @ MAX DRAW | NOTES |
|---|---|---|---|---|---|---|---|---|---|
| **Minn Kota** | Terrova 80 · Ultrex 80 · Ulterra 80 · Fortrex 80 · Maxxum 80 | Brushed | 80 lb | **56 A** | 60 A | ✓ YES | 1.1 h | 1.6 h | |
| **Minn Kota** | PowerDrive 70 · Maxxum 70 | Brushed | 70 lb | **42 A** | 50 A | ✓ YES | 1.4 h | 2.1 h | |
| **Minn Kota** | Riptide Terrova 80 · Riptide Ultrex 80 · Riptide Fortrex 80 (saltwater) | Brushed | 80 lb | **56 A** | 60 A | ✓ YES | 1.1 h | 1.6 h | |
| **Minn Kota** | Riptide PowerDrive 70 (saltwater) | Brushed | 70 lb | **42 A** | 50 A | ✓ YES | 1.4 h | 2.1 h | |
| **Minn Kota** | QUEST™ series @ 24V — Ultrex, Terrova, Ulterra, Riptide Terrova, Riptide Instinct | Brushless, dual 24/36V | 90 lb | **58–60 A** | 60 A | ✓ YES | 1.0 h | 1.5 h | Dual-voltage: wire to 36V for 115 lb |
| **MotorGuide** | Xi5-80 (freshwater & saltwater) | Electric-steer | 80 lb | **56 A** | 60 A | ✓ YES | 1.1 h | 1.6 h | |
| **MotorGuide** | Xi3-70 | Electric-steer | 70 lb | **42 A** | 50 A | ✓ YES | 1.4 h | 2.1 h | |
| **MotorGuide** | Tour 82 · Tour Pro 82 | Cable-steer | 82 lb | **56 A** | 60 A | ✓ YES | 1.1 h | 1.6 h | |
| **Garmin** | Force® · Force Pro · Force Kraken® @ 24V | Brushless, dual 24/36V | 80 lb | **57 A** | 60 A | ✓ YES | 1.1 h | 1.6 h | Garmin: bank must supply 60 A continuous |
| **Garmin** | Force® Current (kayak) @ 24V | Brushless, 12/24V | 50 lb | **40 A cont.** | 40 A (≤ 60 A) | ✓ YES | 1.5 h | 2.2 h | Kayak / small craft |
| **Lowrance** | Ghost® · Ghost X @ 24V | Brushless, dual 24/36V | 97 lb | **≤ 50 A *** | 50 A | ✓ YES | ≥ 1.2 h | ≥ 1.8 h | * Lowrance specifies a 50 A breaker; max draw not published |
| **Lowrance / Simrad** | RECON™ (FW & SW) @ 24V | Brushless, dual 24/36V | 90 lb | **52–58 A** | 60 A | ✓ YES | 1.0 h | 1.6 h | Thrust per Lowrance 'industry standard' rating |
| **Power-Pole** | MOVE™ ZR · MOVE™ PV @ 24V | Brushless, dual 24/36V | 78 lb | **48 A** | 50 A | ✓ YES | 1.2 h | 1.9 h | Power-Pole requires 50 A at 24V |
| **Rhodan** | HD GPS Anchor® Gen 5 · G5.2 · Legacy @ 24V | Electric-steer, GPS | 80 lb | **≤ 50 A** | 60 A (Gen 5) · 50 A (Legacy) | ✓ YES | ≥ 1.2 h | ≥ 1.8 h | |

**How to read this table.** "Mfr. max draw" is the manufacturer's published maximum current at full throttle; "Mfr. breaker" is the manufacturer's required or recommended circuit breaker. Full-throttle hours are a worst case: real days are a mix of Spot-Lock, trolling and short bursts that average 10–25 A — see the runtime planner on page 6. Dual-voltage motors show their 24V figures here and their 36V figures on page 5. Verify the exact model, shaft and year in the manufacturer's manual before quoting a job.

# 36V TROLLING MOTOR COMPATIBILITY

Every motor below is rated at 60 A or less — inside the 100 A continuous rating of every ABYSS 36V battery, including the SEAL™ 36V 105Ah. Hours = rated Ah ÷ manufacturer max draw.

| BRAND | MOTOR / SERIES (AS SOLD OCT 2026) | MOTOR TYPE | MAX THRUST @ 36V | MFR. MAX DRAW | MFR. BREAKER | ABYSS FIT | 36V 60AH HOURS @ MAX DRAW | 36V 75AH HOURS @ MAX DRAW | 36V 105AH HOURS @ MAX DRAW | SEAL™ 105AH HOURS @ MAX DRAW | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Minn Kota** | Terrova 112 · Ultrex 112 · Ulterra 112 · Fortrex 112 | Brushed | 112 lb | **52 A** | 60 A | ✓ YES | 1.2 h | 1.4 h | 2.0 h | 2.0 h | |
| **Minn Kota** | Terrova 101 · Fortrex 101 (legacy models) | Brushed | 101 lb | **46 A** | 50 A | ✓ YES | 1.3 h | 1.6 h | 2.3 h | 2.3 h | |
| **Minn Kota** | Riptide Terrova 112 · Riptide Ultrex 112 · Riptide Ulterra 112 (saltwater) | Brushed | 112 lb | **52 A** | 60 A | ✓ YES | 1.2 h | 1.4 h | 2.0 h | 2.0 h | |
| **Minn Kota** | QUEST™ series @ 36V — Ultrex, Terrova, Ulterra, Riptide Terrova, Riptide Instinct | Brushless, dual 24/36V | 115 lb | **58–60 A** | 60 A | ✓ YES | 1.0 h | 1.2 h | 1.8 h | 1.8 h | 50% more torque, 30% longer run time (Minn Kota) |
| **MotorGuide** | Xi5-105 (freshwater & saltwater) | Electric-steer | 105 lb | **41 A** | 50 A (60 A best) | ✓ YES | 1.5 h | 1.8 h | 2.6 h | 2.6 h | |
| **MotorGuide** | Tour 109 · Tour Pro 109 | Cable-steer | 109 lb | **41 A** | 60 A recommended | ✓ YES | 1.5 h | 1.8 h | 2.6 h | 2.6 h | |
| **Garmin** | Force® · Force Pro · Force Kraken® @ 36V | Brushless, dual 24/36V | 100 lb | **54 A** | 60 A | ✓ YES | 1.1 h | 1.4 h | 1.9 h | 1.9 h | Garmin: breaker rated ≥ 42 VDC |
| **Lowrance** | Ghost® · Ghost X @ 36V | Brushless, dual 24/36V | 120 lb | **≤ 50 A *** | 50 A | ✓ YES | ≥ 1.2 h | ≥ 1.5 h | ≥ 2.1 h | ≥ 2.1 h | * Lowrance specifies a 50 A breaker; max draw not published |
| **Lowrance / Simrad** | RECON™ (FW & SW) @ 36V | Brushless, dual 24/36V | 115 lb | **56–58 A** | 60 A | ✓ YES | 1.0 h | 1.3 h | 1.8 h | 1.8 h | Thrust per Lowrance 'industry standard' rating |
| **Power-Pole** | MOVE™ ZR · MOVE™ PV @ 36V | Brushless, dual 24/36V | 100 lb | **55 A** | 60 A | ✓ YES | 1.1 h | 1.4 h | 1.9 h | 1.9 h | Power-Pole requires 60 A at 36V |
| **Rhodan** | HD GPS Anchor® Gen 5 · G5.2 · Legacy @ 36V | Electric-steer, GPS | 120 lb | **≤ 50 A** | 60 A (Gen 5) · 50 A (Legacy) | ✓ YES | ≥ 1.2 h | ≥ 1.5 h | ≥ 2.1 h | ≥ 2.1 h | |

**Why 36V makes sense for dual-voltage motors.** At 36V the same motor makes more thrust and pulls fewer amps for the same work (Garmin Force®: 57 A at 24V vs 54 A at 36V for 25 % more thrust; Minn Kota QUEST™: 90 lb → 115 lb). Lower current means thinner cable, less voltage drop and cooler connections. **Breaker voltage rating matters on 36V:** many common "marine" breakers are rated 32 VDC maximum — use a breaker rated for 42–48 VDC or higher on a 36V bank (Garmin specifies ≥ 42 VDC).

# RUNTIME PLANNER

Hours of trolling motor use by average current draw. ABYSS lithium delivers its full rated capacity with a flat voltage curve — runtime (h) = rated Ah ÷ average draw (A).

| AVERAGE DRAW | FISHING PROFILE | 24V 60AH | 24V 90AH | 36V 60AH | 36V 75AH | 36V 105AH | SEAL™ 36V 105AH |
|---|---|---|---|---|---|---|---|
| **5 A** | Spot-Lock, calm water | 12.0 h | 18.0 h | 12.0 h | 15.0 h | 21.0 h | 21.0 h |
| **10 A** | Light — slow trolling | **6.0 h** | **9.0 h** | **6.0 h** | **7.5 h** | **10.5 h** | **10.5 h** |
| **15 A** | Moderate — typical mixed day | **4.0 h** | **6.0 h** | **4.0 h** | **5.0 h** | **7.0 h** | **7.0 h** |
| **25 A** | Working — wind & current | **2.4 h** | **3.6 h** | **2.4 h** | **3.0 h** | **4.2 h** | **4.2 h** |
| **35 A** | Heavy — long runs between spots | 1.7 h | 2.6 h | 1.7 h | 2.1 h | 3.0 h | 3.0 h |
| **45 A** | Hard running | 1.3 h | 2.0 h | 1.3 h | 1.7 h | 2.3 h | 2.3 h |
| **Max** | Full throttle (motor max draw) | 1.1 h | 1.6 h | 1.2 h | 1.4 h | 2.0 h | 2.0 h |

Full-throttle row uses the most common brushed motor maximums (56 A at 24V, 52 A at 36V). Runtime shown is motor-only; livewells, electronics and pumps on the same bank shorten it. Figures match the ABYSS 24V / 36V Catalog 1.1-2026 runtime tables.

## WHAT MOTORS ACTUALLY DRAW

| MOTOR (MANUFACTURER DATA) | ≈ 50 % THROTTLE | ≈ 60–75 % | ≈ 80–90 % | FULL THROTTLE |
|---|---|---|---|---|
| **Minn Kota 112 lb @ 36V** | ≈ 10 A | ≈ 23 A | — | 52 A |
| **Garmin Force® @ 24V** | 14 A (50 %) | 29 A (70 %) | 40 A (80 %) | 57 A |
| **Garmin Force® @ 36V** | 10 A (50 %) | 15 A (60 %) | — | 54 A |
| **Power-Pole MOVE™ @ 24V** | 9 A (level 10 of 17) | 21 A (level 13) | 37.5 A (level 15) | 48 A (level 17) |
| **Power-Pole MOVE™ @ 36V** | 6 A (level 10 of 20) | 25 A (level 15) | 44 A (level 18) | 55 A (level 20) |

Manufacturer-published current at partial throttle (Minn Kota, Garmin owner's manual, Power-Pole MOVE Appendix D). Current rises roughly with the cube of speed — backing off two speed settings often halves the draw.

## LITHIUM VS. LEAD-ACID

| BANK | USABLE CAPACITY | WEIGHT | REPLACE INTERVAL |
|---|---|---|---|
| **ABYSS 36V 60Ah** | **60 Ah** (100 % usable) | 34.5 lb | 4,000+ cycles |
| **3 × Group 31 AGM, 100 Ah** | ≈ 50 Ah (50 % DoD) | ≈ 195 lb | 300–500 cycles |
| **ABYSS 24V 60Ah** | **60 Ah** (100 % usable) | 24.9 lb | 4,000+ cycles |
| **2 × Group 24 AGM, 75 Ah** | ≈ 38 Ah (50 % DoD) | ≈ 100 lb | 300–500 cycles |

AGM weights and cycle life are typical industry values. Lead-acid also loses capacity under high draw (Peukert effect) and sags in voltage late in the day; ABYSS $LiFePO_4$ holds full thrust to the last few percent.

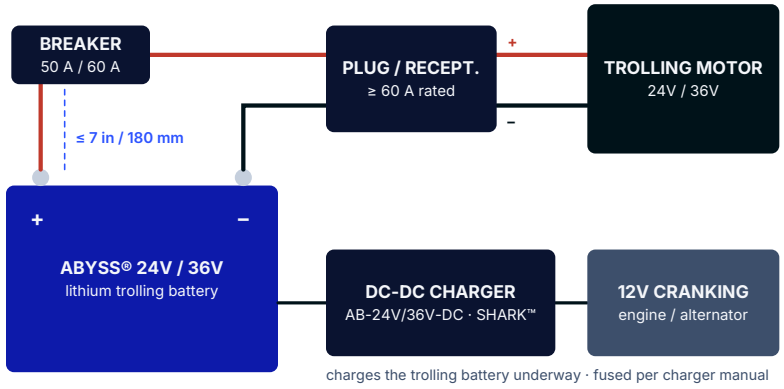
## SIZING WORKSHEET FOR INSTALLERS

| SIZING WORKSHEET | EXAMPLE A — BASS BOAT, 36V 112 LB | EXAMPLE B — BAY BOAT, 24V 80 LB, LONG DAYS |
|---|---|---|
| **1. Hours of motor use planned per day** | 8 h | 10 h |
| **2. Average draw for your style (runtime table rows)** | 10 A (mostly Spot-Lock, some running) | 12 A (current, wind, repositioning) |
| **3. Minimum Ah = hours × amps ÷ 0.8 (keeps a 20 % reserve)** | 8 × 10 ÷ 0.8 = **100 Ah** → 36V 105Ah (or 36V 75Ah + AB-36V-DC-HP adding ≈ 13 Ah per engine hour) | 10 × 12 ÷ 0.8 = **150 Ah** → 2 × 24V 90Ah in parallel (180 Ah), or 24V 90Ah + AB-24V-DC adding ≈ 10 Ah per engine hour |
| **4. Recharge between trips** | AB-CRG-36V20A: 105Ah in ≈ 5.5 h | AB-CRG-24V20A: 90Ah in ≈ 4.7 h per battery |

# WIRING, BREAKERS & CIRCUIT PROTECTION

Reference for installers and OEM rigging — follow ABYC E-11 and the trolling motor manufacturer's installation manual; the heavier specification always wins.

## SINGLE-BATTERY CIRCUIT




Schematic only — size conductors, breakers and plugs per the tables on this page and the motor manufacturer's manual.

## BREAKER SIZING BY MOTOR

| MOTOR MAX DRAW | BREAKER / FUSE | TYPICAL MOTORS |
|---|---|---|
| 40–46 A | 50 A | MotorGuide Xi5-105 / Tour 109 (41 A), Minn Kota 70 lb (42 A), Terrova / Fortrex 101 (46 A), Garmin Force Current (40 A) |
| 48–50 A | 50 A (60 A for Rhodan Gen 5) | Power-Pole MOVE @ 24V (48 A), Lowrance Ghost (50 A breaker per Lowrance), Rhodan HD GPS Anchor (≤ 50 A) |
| 52–60 A | 60 A | Minn Kota 80 lb & 112 lb (56 / 52 A), QUEST (58–60 A), Garmin Force / Kraken (57 / 54 A), RECON (58 A), MOVE @ 36V (55 A), MotorGuide Xi5-80 / Tour 82 (56 A) |

## MINIMUM CABLE GAUGE (ABYSS RECOMMENDED)

| CIRCUIT | ≤ 5 FT | 5–10 FT | 10–15 FT | 15–20 FT | 20–25 FT | 25–30 FT |
|---|---|---|---|---|---|---|
| 50 A (40–50 A motors) | 8 AWG | 8 AWG | 8 AWG | 6 AWG | 6 AWG | 4 AWG |
| 60 A (52–60 A motors) | 8 AWG | 6 AWG | 6 AWG | 4 AWG | 4 AWG | 2 AWG |

Based on manufacturer wiring charts (Minn Kota, Power-Pole, Lowrance) for 24V/36V circuits. Never go lighter than the motor manufacturer's chart.

## INSTALLATION RULES

- **Over-current protection** on the positive lead, as close to the battery as practical (within 7 in / 180 mm of the terminal). Manual-reset, trip-free breaker or fuse sized to the motor manufacturer's rating — never to the battery's 100 A.
- **Voltage rating:** breaker DC rating must exceed the bank voltage. 36V banks charge to 43.8 V — use breakers rated 48 VDC (or ≥ 42 VDC per Garmin). Many 12V/24V marine breakers stop at 32 VDC.
- **Ignition protection:** breakers, plugs and chargers in engine or fuel spaces must be ignition-protected (SAE J1171 / UL 1500).
- **Cable:** tinned-copper marine wire (UL 1426), heat-shrink lugs, ≤ 3 % voltage drop at max draw. Length in the table is one-way battery-to-motor; longer runs or shared circuits — step up a size.
- **Trolling motor plug / receptacle:** rated ≥ 60 A (Garmin, Lowrance, MotorGuide specify 50–60 A minimum). Keep the receptacle above deck drainage.
- **One battery per bank.** No series connections. Parallel: up to four identical Trolling Series batteries with equal-length, equal-gauge links and one breaker per battery positive.
- **12V accessories** (electronics, livewell, Power-Pole® anchors) run from a 12V battery or DC-DC converter — never from a tap on a 24V/36V battery.

## TERMINALS & MOUNTING

- **M8 × 1.25 coarse-thread studs** (8 mm Ø) — use tinned ring lugs with a 5/16 in (M8) hole and fit the supplied rubber boots. Longer M8 × 1.25 bolts are stocked at most hardware stores if a thick lug stack needs them.
- Tighten with a torque wrench — never by hand. Loose or corroded terminals overheat and void the warranty.
- Restrain the battery so it cannot move more than 1 in (25 mm) in any direction (ABYC E-10) using the matching AB-G tray; cables must never carry the battery's weight.
- Mount above bilge water, away from engine heat, exhaust and direct sun. Any orientation with boots fitted; upright preferred. Support cables every 18 in (45 cm).
- Connect positive first, negative last; disconnect negative first.

# CHARGING COMPATIBILITY

ABYSS chargers by battery, with charge-time estimates (0 → 100 %, ≈ Ah ÷ charger amps × 1.05). Any charger must run a $LiFePO_4$ CC/CV profile with a lithium wake-up (0 V start) mode.

| ABYSS CHARGER | TYPE | OUTPUT | CHARGES | CHARGE TIME (EMPTY → FULL) | NOTES |
|---|---|---|---|---|---|
| **AB-CRG-24V10A** | On-board AC (shore power) | 24V · 10 A · 29.2 V | 24V 60Ah · 24V 90Ah | 60Ah 6.3 h · 90Ah 9.5 h | Overnight charger. IP65, auto shut-off, reverse-polarity & temperature protection. |
| **AB-CRG-24V20A** | On-board AC (shore power) | 24V · 20 A · 29.2 V | 24V 60Ah · 24V 90Ah | 60Ah 3.2 h · 90Ah 4.7 h | Fast turnaround; natural match for the 24V 90Ah. |
| **AB-CRG-12V/24V-3B** | Multi-bank AC | 24V bank + 2 × 12V banks | 24V trolling + cranking / house | — | Isolated banks: one charger for the trolling battery and two 12V batteries. |
| **AB-24V-DC** | Engine alternator (DC-DC) | 12V → 24V, on-demand | 24V 60Ah · 24V 90Ah | ≈ 10 Ah per engine hour | Transfers only above 13.3 V on the cranking battery; holds it ≥ 12.5 V. |
| **AB-CRG-36V10A** | On-board AC (shore power) | 36V · 10 A · 43.8 V | 36V 60Ah · 75Ah · 105Ah | 60Ah 6.3 h · 75Ah 7.9 h · 105Ah 11.0 h | Overnight charger. IP68-rated housing. |
| **AB-CRG-36V20A** | On-board AC (shore power) | 36V · 20 A · 43.8 V | 36V 60Ah · 75Ah · 105Ah · SEAL™ | 60Ah 3.2 h · 75Ah 3.9 h · 105Ah 5.5 h | Fast charger; natural match for 105Ah. Ignition-protected, IP65. |
| **AB-CRG-12V/36V-3B · -4B** | Multi-bank AC | 36V bank + 12V banks | 36V trolling + cranking / house | — | Isolated banks; certified ignition-protected. -4B adds a third 12V bank. |
| **AB-36V-DC** | Engine alternator (DC-DC) | 12V → 36V · 10 A · 438 W | 36V 60Ah · 75Ah · 105Ah | ≈ 10 Ah per engine hour | Smart on-demand charging; protects cranking battery (≥ 13.3 V). IP67. |
| **AB-36V-DC-HP** | High-output alternator (DC-DC) | 12V → 36V · 13 A · 570 W | 36V 75Ah · 105Ah (best) | ≈ 13 Ah per engine hour | 94.4 % efficiency; CC/CV lithium profile; full protection suite. |
| **SHARK™ AB-MDX13-60** | Bi-directional DC-DC | Up to 720 W (12V 60 A side) | SEAL™ / 36V & 24V lithium ↔ 12V engine | Adaptive — by engine time & load | INFINITE™ Series power manager: charges the trolling battery underway and shares power back to the 12V side. |
| **MANTA™ AB-MSC30N** | MPPT solar | 36V $LiFePO_4$ output | 36V · SEAL™ (INFINITE-PLUS™) | Depends on array size & sun | Up to 99 % tracking efficiency; IP67; auto lithium recognition. |

## CHARGE PARAMETERS FOR ANY CHARGER

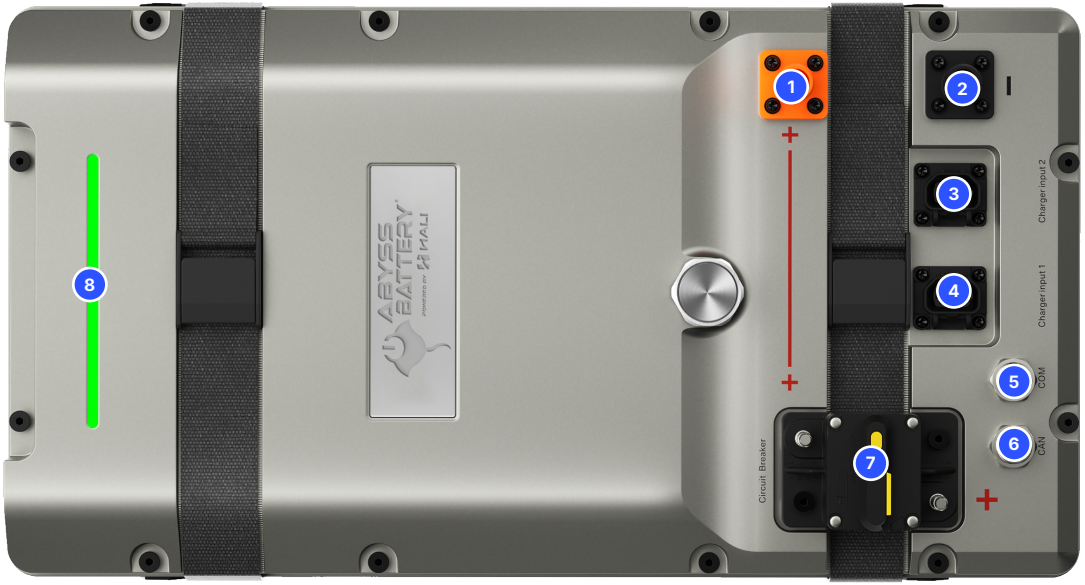
| PARAMETER | ABYSS 24V (8S) | ABYSS 36V TROLLING SERIES (12S) | SEAL™ 36V 105AH |
|---|---|---|---|
| **Profile** | CC/CV lithium ($LiFePO_4$) | CC/CV lithium ($LiFePO_4$) | CC/CV lithium ($LiFePO_4$) |
| **Bulk / absorption voltage** | 28.4 – 29.2 V | 42.6 – 43.8 V | 42.6 V |
| **Float** | Off, or ≤ 27.4 V | Off, or ≤ 41.2 V | Off, or ≤ 41.2 V |
| **Max charge current** | 60 A (60Ah) · 90 A (90Ah) | 60 A (60Ah) · 100 A (75Ah, 105Ah) | 100 A (52.5 A recommended) |
| **Charge temperature** | −20 to 55 °C — heater warms cells first | −20 to 55 °C — heater warms cells first | 2 to 63 °C (cell), heated |
| **Not permitted** | Equalize / desulfate modes · lead-acid float · 12V chargers on each "half" | Equalize / desulfate · chargers without 0 V wake-up · series charging | Same as 36V Trolling Series |

**Third-party and OEM-fitted chargers.** On-board chargers with a dedicated 24V or 36V lithium output can be used when set to the parameters at left. A single ABYSS 24V/36V battery has one input — multi-bank 12V chargers that expect to charge each 12V "half" separately are not compatible. Alternator DC-DC chargers from other brands must be the matching-voltage lithium version; confirm with ABYSS before OEM specification. Storage: 40–80 % state of charge, 0–45 °C, top up every 6 months. Self-discharge < 3 % per month.

# SEAL™ 36V 105Ah & THE INFINITE™ SERIES

The INFINITE™ Series flagship — the world's first lithium marine battery with built-in fire suppression, built for 36V motors on larger center consoles and offshore boats.

## CONNECTION PANEL — TOP VIEW




1. Main positive terminal
2. Main negative terminal
3. Charger input 2
4. Charger input 1
5. COM port
6. CAN port
7. Integrated circuit breaker (positive output)
8. Status indicator bar

## WHY SEAL™

- **Built-in fire suppression** — the first lithium marine battery to carry it, designed for enclosed battery compartments on larger hulls.
- **Two dedicated charger inputs** keep shore (AC) and SHARK™ DC-DC or MANTA™ solar charging off the main terminals — no stacked lugs.
- **Integrated circuit breaker** on the main positive output, plus factory-labelled COM and CAN ports for the CRYSTAL® X3 display and system integration.
- **Status indicator bar** readable from the hatch — check the battery at a glance, no app required.
- **Single-battery system** — not for parallel or series connection. One SEAL™ runs every 36V motor in this guide (max draw ≤ 60 A against a 100 A continuous rating).

## THE INFINITE™ SYSTEM

| INFINITE™ SYSTEM COMPONENT | ROLE |
|---|---|
| **SEAL™ 36V 105Ah** · AB-36V-105-FN4 | 4.03 kWh $LiFePO_4$ battery with built-in fire suppression, heating and X3 monitoring |
| **SHARK™ DC-DC** · AB-MDX13-60 | Bi-directional: charges the SEAL™ underway and shares power back to the 12V side (720 W) |
| **CRYSTAL® X3 monitor** | Live state of charge, voltage, current, temperature and diagnostics at the helm |
| **INFINITE™ cable kit** · AB-PWR-CK | Plug-and-play battery, SHARK™ and AC-charger connections |
| **MANTA™ solar** (optional) · AB-MSC30N | 36V MPPT solar charging, up to 99 % tracking efficiency, IP67 |

| SEAL™ AT A GLANCE | |
|---|---|
| **Capacity / energy** | 105 Ah · 4.03 kWh (38.4 V nominal) |
| **Discharge** | 100 A continuous · 34.8 V low-voltage protection |
| **Charge** | 42.6 V · 52.5 A recommended · 100 A max |
| **Size / weight** | 18.1 × 9.6 × 11.6 in (460 × 245 × 295 mm) · 73.9 lb (33.5 kg) |
| **Protection** | IP67 · CE · FCC · UN 38.3 · built-in heating · fire suppression |
| **Cycle life** | > 3,000 @ 100 % DoD · 4,000 @ 80 % DoD · motors up to 112 lb (p. 5) |

## VERIFIED WITH

RHODAN HD GPS ANCHOR® · MINN KOTA® RIPTIDE · TERROVA · QUEST™ · MOTORGUIDE® XI5 · POWER-POLE® MOVE™ · GARMIN® FORCE® · KRAKEN® · LOWRANCE® GHOST® · SIMRAD® RECON™

### SEAL™ INSTALLATION NOTES

- Mount upright, ventilated, above bilge water; restrain with the hold-down straps to ≤ 1 in of movement (ABYC E-10).
- Motor connects to the main + / – terminals via the INFINITE™ cable kit; confirm the motor's breaker, plug and cable on page 7.
- Shore charger and SHARK™ / MANTA™ each take a dedicated charger input (42.6 V CC/CV, 52.5 A recommended); CRYSTAL® X3 connects at COM / CAN.

# INSTALLER & OEM NOTES

System facts for rigging shops, boat builders and dealers — plus the questions we are asked most.

## SYSTEM FACTS

- **BMS protections** (all models): over-charge, over-discharge (BMS cut-off), over-current (100 A), short-circuit, over- / under-temperature, cell balancing and low-temperature charge protection via the built-in heater.
- **Monitoring:** ABYSS app over Bluetooth (state of charge, voltage, current, temperature, cycles) on the Trolling Series; CRYSTAL® X3 display on the SEAL™. Pair before the boat leaves the shop so the customer sees a live gauge on day one.
- **Dual-voltage motors** read the bank voltage and set their mode automatically — no programming. Confirm the motor's own wiring instructions for 24V vs 36V (some change bolt count or harness).
- **Series:** never. **Parallel:** up to four identical Trolling Series batteries (same model, same age); the SEAL™ is single-battery only.
- **Group sizes** 24 / 31 / 49 / 4D with AB-G trays make ABYSS a drop-in for factory battery compartments. Design in ≥ 1 in (25 mm) restraint and ventilation per ABYC E-10.
- **Standards & shipping:** cells UL 1642, IEC 62133, IEC 62619; cells and pack UN 38.3; pack CE; RoHS; IP67; ABYC-compliant design (E-10, E-11, E-13). Ships as UN3480 lithium-ion, Class 9.
- **OEM & dealer programs:** rigging guides, CAD models, custom cable kits and co-marketing assets are available to boat builders and dealers — contact the ABYSS team in Largo, Florida.

## PRE-DELIVERY CHECKLIST

- ☐ Motor voltage confirmed (24V or 36V)
- ☐ Motor max draw ≤ 100 A (all listed motors)
- ☐ Breaker sized to motor, rated ≥ bank voltage
- ☐ Breaker within 7 in of battery positive
- ☐ Cable gauge per run length (table p. 7)
- ☐ Plug / receptacle rated ≥ 60 A
- ☐ Tray / group size fits compartment
- ☐ Battery restrained ≤ 1 in movement
- ☐ M8 lugs torqued with torque wrench, boots fitted
- ☐ Charger has lithium profile + 0 V wake-up
- ☐ App paired, firmware current
- ☐ Warranty registered within 90 days

## FREQUENTLY ASKED

| | |
|---|---|
| **Can I run a 24V motor on a 36V battery (or vice-versa)?** | No. Match voltages exactly. Dual-voltage motors accept either bank but a single-voltage motor must see its rated voltage. |
| **Can I put two 24V batteries in series to make 48V?** | No — ABYSS trolling batteries are not rated for series connection. For 48V applications use the ABYSS 48V 105Ah. |
| **Will Spot-Lock / anchor mode kill the battery faster?** | In calm water anchor modes average only 3–8 A. In strong wind or current the motor works harder — plan on the 15–25 A rows of the runtime planner. |
| **My motor says "minimum 50 Ah" — is 60 Ah enough?** | Yes. All ABYSS trolling batteries exceed the minimum capacity every motor brand lists for lithium, and all deliver 100 A continuous. |
| **Can I keep my existing 3-bank 12V charger?** | Only if one bank is a true 36V lithium output. Standard 3 × 12V bank chargers cannot charge a single 36V battery — use an AB-CRG-36V or multi-bank 12V/36V charger. |
| **Does cold weather matter?** | Charging below freezing is handled by the built-in heater (powered by the charger). Discharge is rated to −20 °C (SEAL™: −30 °C). |

### WARRANTY

**10-year limited warranty** on ABYSS trolling motor batteries when registered within 90 days of purchase (online or in the app, with proof of purchase and serial number); **5 years** unregistered with the original receipt. Transferable to a new owner at no charge when the transfer is registered within 30 days. Not covered: improper installation or charging (including chargers without a lithium profile or wake-up mode), loose or corroded terminals, submersion, unauthorized opening, jump-starting, and normal wear within the published cycle life. Applies to purchases on or after August 1, 2026 — full terms at abyssbattery.com/pages/warranty-policy.

Trolling motor specifications (thrust, maximum current draw, breaker and cable recommendations) are the manufacturers' published values as of October 2026 and may change without notice; always confirm against the installation manual supplied with the motor. Minn Kota®, Riptide®, QUEST™, Spot-Lock®, MotorGuide®, Xi5®, Garmin®, Force®, Kraken®, Lowrance®, Ghost®, RECON™, Simrad®, Power-Pole®, MOVE™ and Rhodan® are trademarks of their respective owners, which are not affiliated with and do not endorse ABYSS BATTERY®. ABYSS BATTERY®, SEAL™, SHARK™, CRYSTAL®, MANTA™ and INFINITE™ are trademarks of ABYSS BATTERY®, Inc. Specifications subject to change. Not sure? Run the Boat Wizard at abyssbattery.com or call the ABYSS team in Largo, Florida.

**NOT SURE WHICH SYSTEM FITS?**

Run the Boat Wizard at abyssbattery.com for a system matched to your hull, motor and electronics — or send your rigging questions to the ABYSS team.

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