

PRODUCT MANUAL INSTALLATION INSTRUCTIONS

**PONTOON BODY
POSITIONING
MONITORING
SYSTEM
(ON-LINE/GPRS/SMS
based system)**



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1) What this product does

- Continuously monitors pontoon tilt in X and Y axes.
- If tilt crosses safe limits, it triggers local alarm/beacon and sends SMS alerts.
- This “online” edition adds SIM-based GPRS/SMS connectivity so the Station (Receiver) and Pontoon Sensor (Transmitter) can exchange status over the mobile network.

Status levels (defaults):

- NORMAL — $|\text{tilt}| < 5^\circ$
- WARNING — $5^\circ \leq |\text{tilt}| \leq 9^\circ$ (pre-alert)
- DANGER — $|\text{tilt}| > 9^\circ$ (alarm/beacon + SMS alert)

2) What's in your kit

- Pontoon Sensor Box (goes on the pontoon body)
- Station Display Box (goes near the operator)
- Two antennas (one for each box)
- 12.8v 12Ah Lithium Phosphate battery box (goes on the pontoon body)
- 12v beacon light (goes on the pontoon body)
- harness cable (goes on the pontoon body)
- Battery charger.
- Mounting screws & pads
- This guide

3) Safety first

- Switch OFF power before connecting anything.
- If installed outdoors, seal all cable entry points and add drip loops.
- Do not install near strong engines or large metal sheets that can block the signal.
- When working on the pontoon, use basic PPE (life jacket, gloves, non-slip shoes) and ensure stable footing.

4) How it works (GPRS/SMS)

- Receiver power-on → Receiver automatically sends an SMS to the Transmitter requesting status; Transmitter replies with X°, Y°, battery %.
- Transmitter power-on (or reboot) → Transmitter automatically sends a status SMS to the Receiver and to all saved contact numbers.
- Normal health-checks → Transmitter sends 4 SMS per 24 hours (about every 6 hours) to Receiver + contacts.
- Alert → When tilt exceeds 5°, Transmitter sends an immediate alert SMS to Receiver + contacts (local beacon/alarm can activate).
- Bluetooth is used to add/manage contact numbers in the Transmitter.
- From an authorized phone, sending “GET STATUS” (alias: “STATUS”) to the Transmitter returns X°, Y°, and battery %.
- “TEAR” / “TARE” (baseline zero) can be done via Bluetooth or SMS.

Note: If the Receiver does not hear from the Transmitter for a set interval, the Receiver shows: “Pontoon disconnected”.

5) Final connections at a glance (your kit)

On the Pontoon (Sensor Box, Battery, Beacon, Harness)

- Antennas: screw one onto the Sensor Box (pontoon) and one onto the Station Display. Keep both upright and clear of metal ($\geq 5-10$ cm).
- Battery \rightarrow Sensor Box power: connect the harness leads as labeled from the battery box to the Sensor Box POWER + / POWER -. Place a fuse on the battery + line near the battery.
- Beacon light: connect harness leads BEACON + / BEACON - to the beacon light. The Sensor Box switches the beacon ON in WARNING/DANGER.
- Extended beacon cable (if used): for runs up to 10 m, use 1.0–1.5 mm² cable. Keep joins waterproof (heat-shrink) and route away from sharp edges.
- Cable routing: run the harness neatly; use pads/cable ties; keep away from standing water.

At the Station (near operator)

6. Station power: plug the power cable into mains

7. Power up: turn on the battery switch (if present) and power the Station. The screen should show x and y data and disconnected.





6) Install in 15 minutes

- Mount rubber pad (3–5 mm) on the chosen iron sheet area.
- Fix the Sensor Box and battery box on the pad; strap the battery; keep antenna position clear of metal.
- Install the 12V beacon light in a visible spot (avoid spray, point upwards).
- Lay/extend the harness between battery, Sensor Box, and beacon; add grommets and heat-shrink on any joins; secure with pads/ties.
- Attach antennas to Sensor Box and Station (vertical, clear of metal).
- Power the Sensor Box from the battery (fuse near battery +); then power the Station via its adaptor.
- Wait for “Connected with Pontoon” on the Station.
- Calibrate level (zero): pontoon in normal resting position → hold CAL/SET for 3s (if available).
- Test: gently lean the pontoon. Confirm WARNING/DANGER and that the beacon turns ON in these states. Use MUTE to silence if needed.

7) BLUETOOTH (CONFIGURE CONTACTS)

- Install “Serial Bluetooth Terminal” (Android).
- Power ON the Transmitter; enable Bluetooth on your phone.
- In the app: Devices → connect to “PONTOON_TX” (PIN 1234 or 0000 if asked).
- Use the commands below (or equivalent SMS commands) to manage contacts.

Common Bluetooth commands

- ADD1:+91XXXXXXXXXX → Add authorized contact #1
- ADD2:+91XXXXXXXXXX → Add authorized contact #2
- DEL1 / DEL2 → Delete contact #1 or #2
- SHOW CONTACTS → List saved numbers
- SET RX:+91XXXXXXXXXX → Set Receiver number (status/alerts destination)

8) SMS COMMANDS (CHEAT SHEET)

Send these to the Transmitter's SIM number from the Receiver or any authorized contact number (unauthorized numbers are ignored).

1. GET STATUS (alias: STATUS)

--Returns X°, Y°, battery %, last alert time.

2. TEAR (alias: TARE)

--Sets current tilt as 0° baseline (use only when pontoon is level).

3. ADD1:+91XXXXXXXXXX

--Add contact number #1 (authorized).

4. ADD2:+91XXXXXXXXXX

--Add contact number #2 (authorized).

5. DEL1 / DEL2

--Delete contact #1 or #2.

6. SHOW CONTACTS

--Replies with saved contacts.

7. RESET CONTACTS

--Clears stored contacts (safety confirmation model-dependent).

8. SET RATE 6H

--Sets health-check SMS interval (example: every 6 hours = 4/day).

9. HELP

--Returns a short list of supported commands.

9) AUTOMATIC BEHAVIOUR SUMMARY

- Receiver ON → sends "STATUS?" SMS → Transmitter replies.
- Transmitter ON → sends boot status SMS to Receiver + contacts.
- Normal mode → 4 health-check SMS/day (about every 6 hours).
- Tilt > 5° → immediate alert SMS to Receiver + contacts; local beacon may activate.

8) Daily use

- Receiver shows large X°/Y° with status (NORMAL/WARNING/DANGER).
- Mute button silences alarm temporarily (auto re-arm).
- “Pontoon disconnected” means no recent data/SMS: check power, SIM balance, network, and antennas.

9) Care & maintenance

- Monthly: check mounts, seals, cable entries; keep antennas upright.
- Re-calibrate baseline (TEAR/TARE) if resting attitude changes.
- Maintain SMS balance; ensure SIM PIN is disabled.



10) Battery

- Charge every 15 days, or keep a spare battery ready to swap on the pontoon.
- When the battery level drops below 30%, charge it.
- Use the supplied charger. Set the selector to 12 V (LiFePO₄ mode if available) — not 6 V.

11) Support & warranty (fill-in)

Support contact : 8971494668

Email / Phone: eande.universal@gmail.com

Warranty: 12 months against manufacturing defects (water ingress from unsealed cables or misuse is not covered).

Keep this guide near the Station Display for easy reference.





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