



## dockmate Twist Wireless Joystick Control User Manual

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**dock mate Twist Wireless Joystick Control**



## OVERVIEW

Congratulations on your purchase of a DOCKMATE TWIST system. Please read the following instructions carefully before getting started. DOCKMATE is a wireless system that enables you to maneuver your ship. With your fingertips you can control the engines, horn, bow- and stern thruster and anchor winch.

### **IMPORTANT: Read the precautions before first use!**

What's in the box ?\$

- This user manual
- Installation manual
- The DOCKMATE Receiver
- The DOCKMATE TWIST transmitter
- Dockmate Cradle/wireless charger
- Lanyard
- All necessary wiring cut to length
- Antenna

## Precautions

To avoid damage to your DOCKMATE and hurting yourself or others, you should read the following safety precautions before using the device. Keep these safety instructions in an area where all users can read them. When in doubt, contact PPA-Electronics regarding the use or operation of the unit. PPA-Electronics is not responsible for injuries or damage caused as a result of improper use or installation by a non-qualified technician.

- Before taking command with Dockmate make sure that all levers controlling the engines and thruster are in a

neutral position

- The transmitter is sensitive to magnetic fields. Keep it at least 1m from any devices that generate magnetic fields like compasses. Otherwise, the operation of the joystick can be disturbed.
- Your Dockmate transmitter has been designed to seamlessly interact with a Dockmate Cradle (wireless charger) powered by the Dockmate Receiver. If your Dockmate Cradle is not powered by the receiver but directly by the mains or if you're using another certified charger do not put the transmitter that is switched on onto the wireless charger. Always switch it off first, before charging. The charger generates a magnetic field, that will disturb the joystick when it is turned on.
- Do not disassemble the transmitter or receiver. Touching the internal parts may lead to injuries. Repairs may only be performed by licensed technicians.
- Do not use near flammable gases or liquids. This may cause an explosion or fire.

Dockmate is a registered trademark from PPA-Electronics B.V.

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- Keep out of reach of children. The devices contain small parts which can be swallowed by children. Beware for suffocation by plastic packaging.
- The DOCKMATE may only be used by persons who have the necessary skills of maneuvering a yacht.
- Be careful with the lanyard. Keep it away from small children (choking hazard).
- Do not use the DOCKMATE when the transmitter or receiver have been immersed in water. The units may be damaged beyond repair. Test both devices before use with the boat in a safe environment. Contact your DOCKMATE dealer when any abnormality is detected.
- Make sure you can operate the DOCKMATE like an expert before actually using it in a crowded harbor.
- In very exceptional circumstances, the communication between the transmitter and receiver can be disturbed by radio frequency transmitters in the immediate neighborhood.
- Never use the DOCKMATE if you are not on the ship. Remember that the use of the DOCKMATE from ashore or the jetty is a criminal offense in several countries.
- Batteries should be charged as soon as the orange LED signal on the transmitter lights.
- Please note that when the system is in operation each involuntary push on the buttons of the transmitter has an action as a result.
- The transmitter and receiver may only be opened by an authorized technician.

## Installation

The installation has to be done by a qualified engineer. Our system consists of two major components: a transmitter and a Receiver. These have already been paired so they recognize each other.

### Installation of the Receiver

- Dimensions rev.G : 23,8 x 20,5 x 8,6 cm or 9.4 x 7.9 x 3.2"
- Install the Receiver in a dry, not too warm area.
- Install the Receiver free of vibrations.
- Place the Receiver close to the dashboard, as close as possible to the controls of the parts to be controlled

(throttles, horn, anchor winch, bow- and stern thrusters).

- Please note that one-time settings are needed at the Receiver. (accessible by screwdriver?)

## Use of the DOCKMATE



We recommend that you always wear the lanyard around your neck while using the DOCKMATE.

### The transmitter has the following features :

- **LINK LED**

Shows the status of the connection with the Receiver. It also shows warnings and errors if there are any.

- **Status LED**

Shows the status of the transmitter. It also shows if any special options have been activated through Dockmate.

- **BUZZER & VIBRATOR**

Indicates no communication, low battery, warning or error.

- **Keys anchor winch**

By pressing the upper button you lower the anchor. By pressing the lower button, you raise the anchor. When pressed together, you can choose between windlass 1 and 2 (2 or 4 beeps) if the Dockmate Receiver is fitted with the AnchorX2 module.

- **On / Off button**

Press and hold to turn the transmitter on. Press 3 times quickly or hold for 3s to shut it off. NOTE: When this button is pressed other signals are inhibited for safety, so the boat controls go to neutral, regardless of the position of the joystick.

- **Take Command button**

Pressing this button makes the Dockmate the active steering position. NOTE: With the Gearbox, driver installed it has no effect – Dockmate is always active then.

- **Keys bow thruster:**

By pressing the left button (port) the bow thruster gives thrust to the right so the bow is moving to the left. By pressing the right button (starboard) the bow thruster gives thrust to the left so the bow is moving to the right.

- **Keys stern thruster :**

By pressing the left button (port) the stern thruster gives thrust to the right so the stern is moving to the left. By pressing the right button (starboard) the stern thruster gives thrust to the left so the stern is moving to the right.

- **Joystick:**

By moving the joystick forwards, both engines (or one in single-engine configuration) are switched forward.

By moving the joystick astern both engines are switched to the rear. Moving the joystick to the left makes both (if installed) thrusters move the boat to port.

Moving the joystick to the right makes both thrusters move the boat to starboard. In case the boat has 2 engines and only a bow thruster, moving the joystick sideways will engage the bow thruster and 2 engines in order to walk the boat sideways. B Moving the joystick forwards and right in a 45° angle causes the port engine to go forward and makes the boat steer to the right.

The other 45° angle positions on the joystick work on the same basis. The Dockmate Twist can be fully programmed by your dealer so that combining engines and thrusters in any position of the joystick is possible. Twisting the joystick knob clockwise causes the boat to rotate clockwise (port engine switched forward, starboard engine switched astern). Twisting the joystick knob counterclockwise will do the opposite. Pressing the knob of the joystick will sound the horn.

When a “SpeedCtrl” Module is installed in the Dockmate Receiver you can control the engine’s throttle by moving the joystick. The harder you push, the more throttle. When the thruster modules with SpeedCtrl are installed in the Dockmate Receiver you can control the thrusters’ power by moving the joystick. The harder you push, the more thrust.

## Charging the batteries

The Dockmate TWIST transmitter is fitted with a Li-Ion battery that has to be charged occasionally. When the Dockmate TWIST transmitter is turned on, both LEDs will go white. Then the Status LED will show one of the following:

	Battery fully charged	More than 3.90V
	Battery OK	Between 3.45V and 3.90V
	Battery Warning	Between 3.45V and 3.30V
	Battery Failed	Less than 3.30V
	Battery Failed	Less than 3.00V

It is not possible to turn on the transmitter when the battery voltage drops below 3.30V. It is highly recommended

to charge the transmitter when the LED shows orange on the starting up.



The Dockmate TWIST transmitter will start to charge when switched off and placed on the Dockmate Cradle or wireless charger. The LEDs on the charger will change in color from solid red to solid green indicating the charging process. When the indicator on the charger flashes red that means a foreign metal object was placed on the charging pad or the charger is overheated. Also, the Status LED on the transmitter will start to flash in different colors depending on the battery percentage ( 0-50%: , 50-80% : , 80-100% ). When the battery is fully charged the Dockmate transmitter will shut down automatically and the charger will show a red led.

#### **WARNINGS:**

When the battery is fully charged, there will be no reaction when the transmitter is placed on the charger. After some use, when the voltage drops, it will be possible to charge the transmitter again.

Turning the transmitter on and off

Press the key for 1 second to turn on the transmitter. The transmitter will be automatically switched off after 30 minutes of nonuse. Alternatively, the transmitter can be switched off by pressing 3 times the button or holding it down for 3 sec. After the transmitter is switched on, both LEDs will go white. Then the LINK light will go dark and the STATUS LED will show one of following:

	Battery fully charged	More than 3.90V
	Battery OK	Between 3.45V and 3.90V
	Battery Warning	Between 3.45V and 3.30V
	Battery Failed	Less than 3.30V
	Joystick / Keys not in neutral	When during startup the joystick is out of neutral or the pushbuttons are pressed, it blinks blue/violet, beeps and the transmitter switches off after ~5s.

#### **WARNING:**

The software of the transmitter has built in safety features to check upon start-up whether one of the keys is depressed or the joystick is out of neutral. Until the STATUS light is off and the LINK light is on about 2s) the user cannot press any key or move the joystick – otherwise the software will recognize this as a fault situation (blinking blue/violet and beeping) and will switch off the unit.

In that case the unit needs to be restarted.

Then it will go dark and the LINK light will show the communication status:

	Communication OK, actively transmitting data	When moving the joystick or pressing a button
	Communication OK, standby mode	When not moving the joystick or pressing any button for more than 5s
	Communication lost	When communication could not be established or was interrupted. The transmitter also beeps.
	Yellow / Green Blinking: Feedback from the receiver : warning	Receiver status warning. For example ext can interface not in command
	Purple / Green Blinking Feedback from the receiver : error	Receiver status error. For example ext can interface not powered on

Depending on the equipment of the boat (gear lever system) the Dockmate can automatically take command after the transmitter is switched on. You can also take over the command by pressing the “SEL” button then.

## Maintenance

The installation is 100 % maintenance-free, except for battery charging. Eventually, the transmitter and Receiver can be cleaned with a damp cloth.

## Troubleshooting

PROBLEM	POSSIBLE CAUSE	SOLUTION
The Receiver does not work.	The Dockmate transmitter is switched off.  The Dockmate Receiver does not receive D/C Volts.	Switch on (see point 6 in this manual).  Check : fuse blown ?
The transmitter does not work.	The batteries are empty.	Charge the batteries (see point 5 in this manual).
The LED low battery on the transmitter is on.	The batteries are empty.	Charge the batteries (see point 5 in this manual).
The transmitter has fallen in the water.		Rinse with clear water and dry with a soft cloth.  Open the transmitter by unscrewing the 4 screws on the back (behind) the grey rubber and put the transmitter in a well-ventilated area for 24 hours. Assemble and test the transmitter before use with the boat in a safe environment.
Red Status LED, Receiver beeps (100ms / 1s) – Violet / White LED inside the receiver is blinking	Power supply to the receiver too low.	Check battery voltage and connection.
Receiver beeps (100ms / 1s) – Yellow LED inside the receiver is blinking	Internal settings memory corrupted.	Call the technician to setup the necessary settings.

## Technical specifications

### Transmitter

- Joystick: 3-axis, proportional
- Dimensions: 70 x 150 x 40 mm or 2.75 x 5.91 x 1.57"
- Weight: ca. 150 gr or 5.29 oz
- Frequency : 433.081MHz to 434.757MHz

- Range: 50 meters or 165 feet
- Housing: ABS & rubber – according to IP67 specifications
- Battery: Lasts up to at least 15 10min docking maneuvers 350 mAh Li-ion
- charging Operating temperature: Qi-certified wireless 0°C to +43°C or +32°F to +110°F

#### **Receiver:**

- Dimensions Rev.G: 23,8 x 20,5 x 8,6 cm or 9.4 x 7.9 x 3.2” Weight Rev.G:
- Frequency: 433.081MHz to 434.757MHz ca. 1,95 kg or 4.3 lbs
- Range: 50 metres or 165 feet
- Housing: Aluminium – according to IP67 specifications
- Power: 12V or 24V
- Operating temperature: -10°C to +60°C or +14°F to +140°F

#### **FCC Warning**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

**Caution:** Any changes or modifications to this device not explicitly approved by the manufacturer could void your authority to operate this equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. The device has been evaluated to meet general RF exposure requirements. The device can be used in portable exposure conditions without restriction.

#### **Environmental Information**

The equipment that you have bought requires the extraction and use of natural sources for its production. It may contain substances that are hazardous to health and the environment.

In order to avoid the dissemination of those substances in our environment, and to diminish the pressure on natural resources, we encourage you to use the appropriate take-back systems. These systems will reuse or recycle most of the materials of your end-of-life equipment in an environmentally sound way. The crossed-bin symbol marked on your device indicates you should use these systems.

If you need more information on the collection, reuse, and recycling of this product, please contact your local or regional waste administration. You can also contact us for more information on the environmental performance of our products.

#### **Product registration**

To benefit from our 3 years factory warranty, please go to [www.dockmate.eu/productregistration](http://www.dockmate.eu/productregistration) and fill out the form

### **Warranty**

Each DOCKMATE has a 3-year warranty from the date of registration by the first owner. The warranty covers all defects and failures that are not caused by the customer. The manufacturer will repair or replace your product free of charge on the following conditions:

- The warranty is not valid in case of improper installation or improper use of the device. Products must have been used strictly in accordance with operating instructions supplied. Dockmate will have no liability for defects caused by accident, misuse, alteration or neglect.
- The electrical components must remain complete. They may not be disassembled, not tampered with, nor be modified in any way. The use of non-original electronic accessories can damage the device. This is not covered by the warranty.
- When the receiver has water damage, the warranty is not valid.
- Returns of defective equipment under this warranty :  
Before returning, please contact the vendor of the device by phone or e-mail<sup>o</sup> Always include a brief description of the problem that occurs.  
Do not forget to include your full contact and delivery details : name, telephone, complete address  
To avoid damage during shipment, the unit must be adequately packaged. The manufacturer will accept no liability for units lost or damaged in transit from the customer.  
Shipment costs are always for the buyer.
- The liability of the manufacturer is limited to replacing or repairing the unit. The manufacturer decides whether the device will be repaired or replaced.
- The buyer agrees that the liability of the manufacturer is limited to the purchase price of the equipment, regardless of the circumstances.
- The manufacturer is not responsible for damages resulting from the use of the device.
- The manufacturer can never be held responsible for any accidents and / or damage caused to persons and / or property.
- The repair or replacement of the equipment during the warranty period, does not extend the original warranty period.
- Without warning the manufacturer may at any time make changes to the specifications of the device, both to the hardware and the software.
- The manufacturer has taken all the necessary steps to ensure that the information in this guide is accurate and complete.

This manual may in no way be reproduced, complete or partial, without the written permission of PPA-Electronics.

### **Documents / Resources**

  <i>Docking Made Easy!</i> User manual	<p><a href="#">dockmate Twist Wireless Joystick Control</a> [pdf] User Manual TXDOCKF, 2AQQATXDOCKF, Twist, Wireless Joystick Control</p>
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**References**

- [electronics.com](#)
- [PPA Electronics](#)

Manuals+