

# Cruzo Panel Series USER MANUAL

Where Elegance Meets Superior Functionality



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# 1. Introduction

## Welcome

Thank you for choosing the Cruzó Marine Glass Panel by Barantech. Engineered for durability, elegance, and intuitive functionality, the Cruzó Panel redefines marine control systems. Whether upgrading an existing vessel or equipping a new one, Cruzó delivers a sleek and reliable interface built to withstand the marine environment.

## Purpose Of This Manual

This manual provides installers, users, and integrators with all necessary guidance for the installation, configuration, operation, and maintenance of the Cruzó Panel Series.

# 2. Key Features

- Nautical Elegance – Modern touch technology with an elegant tempered glass interface.
- Customizable Panel Sizes – Based on 2x1 modules, with horizontal or vertical orientations.
- Personalized Keys – Custom text, icons, and backlight colors (white, red, green, blue).
- NMEA 2000 Compatible – Plug-and-play integration with marine networks.
- Touch Sensitivity – Works with gloves or bare hands.
- Redundant Controls – Ensure functionality during touchscreen failure or under wet conditions.
- Bluetooth App Control(optional) – Full panel control via a mobile app.
- Simple Retrofit Installation – Easily replaces existing hardware.
- Self-Diagnostics – Monitors startup and panel status.
- IP67 Rated – Water- and dust-resistant.
- Tempered Glass front.

## 3. Product Overview

### Specifications

- Input Voltage: 11–15 VDC (reverse polarity protected)
- Max Keys per Panel: 16
  - Key Modes: Momentary / Latching / Timed (5 sec)
  - Key Illumination Colors: Red, Green, Blue, White
  - Activation Force: 3–5N
- NMEA 2000: Optically isolated
- Device Instance Selector: 10-position rotary switch
- Buzzer: IP67-rated (based upon initial panel configuration)
- Operating Temp: -15°C to 55°C
- Connectors: IP67 sealed
- Materials: Tempered glass front

## 4. Operation

### Switch Behavior

When a key is pressed, PGN 127502 (Switch Bank Control) is sent. The Panel listens for responses to PGN 127501 “Binary Status Report” messages.

The Panel illumination is updated upon receiving PGN 127501 (Binary Status Report). Each key is identified by its position in rows (R) and columns (C) (see figure 1 below). Example: For 8 keys, R = 2, C = 4.

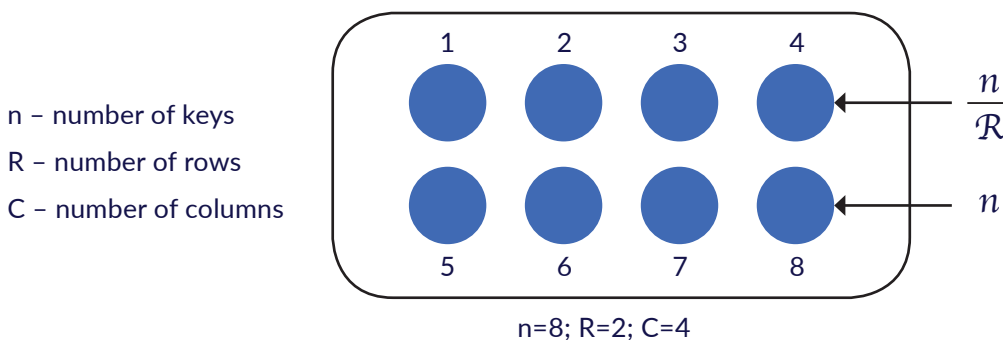


Figure 1: Switch Numbers

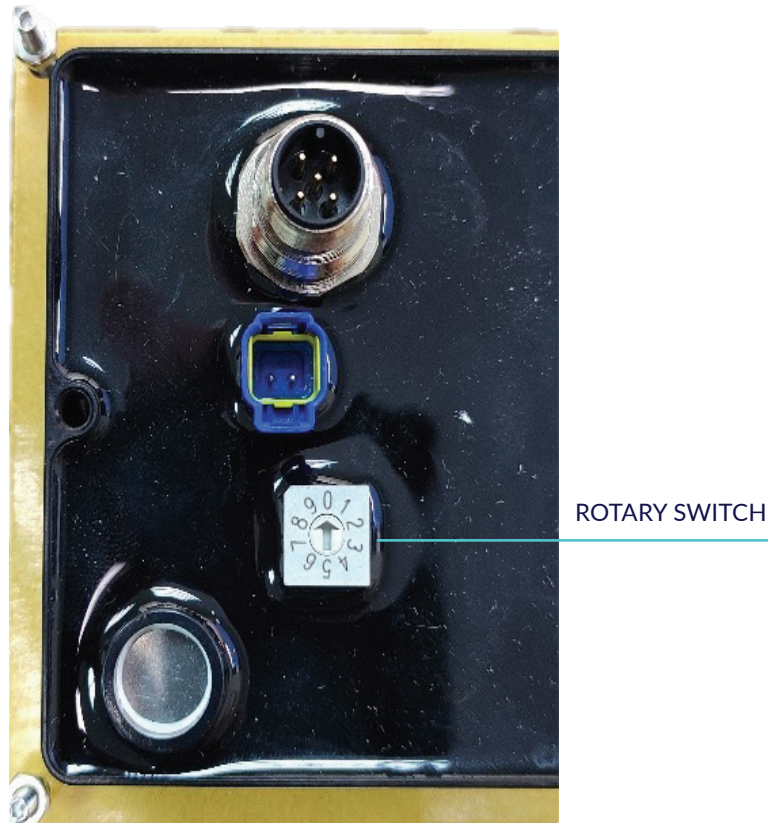
The color of illumination is set according to the original configuration of the Panel (which is set in the manufacturing process). The switches do not have any functional capabilities; rather, they are programmable switches. This is accomplished via the switching devices (Barantech Relay Pack or a digital switch) via PGN 127501.

## Device Instance Selection

NMEA 2000 uses a unique instance number to allow more than one device to be connected to the NMEA network. This instance number is reflected on the Switch Bank Control message (PGN 127502).

The Cruzo Panel uses a rotary DIP switch to control the instance number. The device instance is selected by turning the rotary switch to the desired instance number (0-9) on the back of the panel.

Figure 2: Device Instance Rotary Switch



## Error Indication

If an error is detected (PGN 127501 sends an ERROR status), the corresponding key will flash. Press the key again to reset.

## 5. Installation

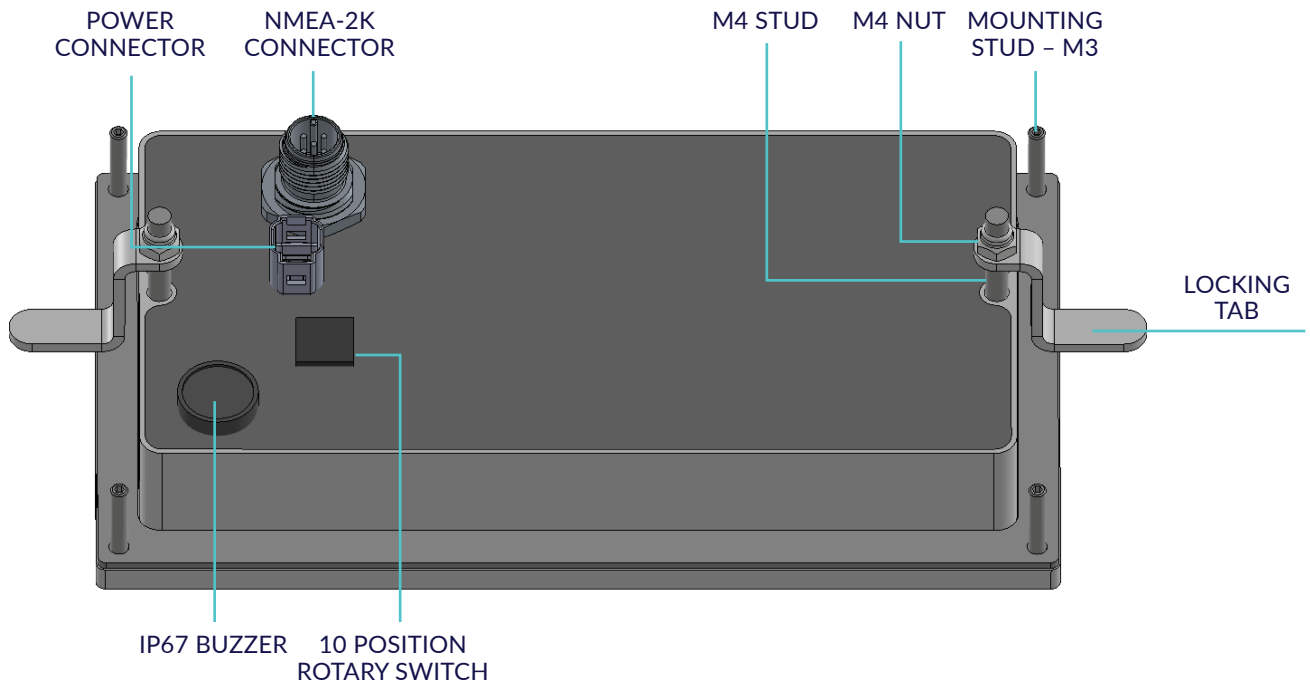


Figure 3: Hardware Description – Back View

### What's In The Box

- 1× Cruzo Panel
- 1× Sealing Gasket
- 1× Power Cable (1m)
- 4× M3 Nuts
- 2× M4 Lock Nuts
- 2× M4x30 Hex Studs
- 2× Locking Tabs

**Note:** The Lock Nuts, Hex Studs and Locking Tabs come in a separate bag and are not mounted on panel.

## Electrical Connections

### Power Connector

- Mating Connector: 560-002-000-410
- External fuse necessary for connection
- Do not install under live voltage

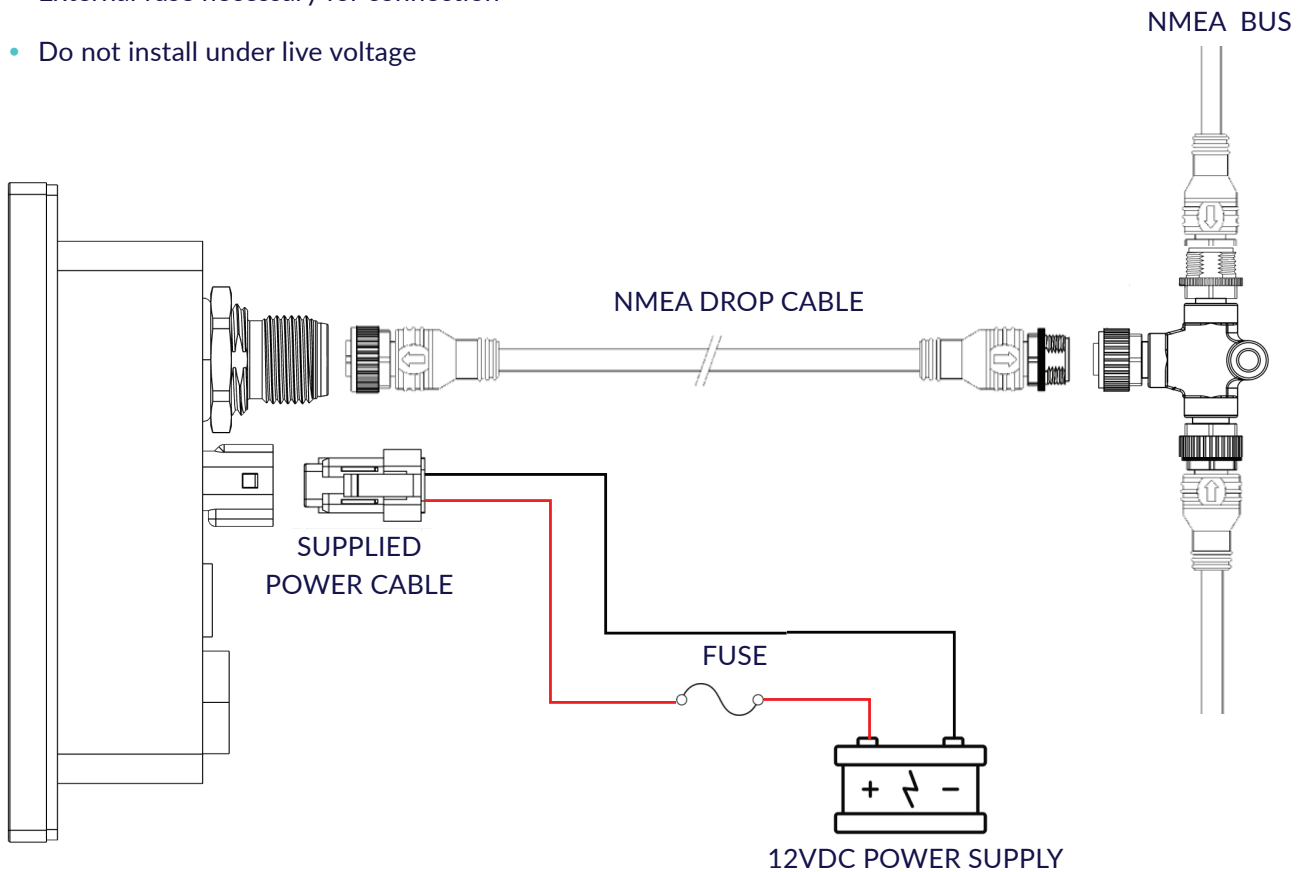


Figure 4: Power Connection Diagram

#### FUSE RATING FOR CONNECTION:

Use fuse with higher current rating than the panel max. current rating.

The panel max. current depends on the size of the panel.

To calculate the maximum current draw of the panel, use this equation:  $I_{max} = (\text{No. of keys} \times 0.03) + 0.1$

Example: 2X4 panel (8 keys), the max =  $(8 \times 0.03) + 0.1 = 0.34A$

Table 1: POWER CONNECTOR PINOUT

J1 CONNECTOR		
Pin no.	Description	Notes
1	VIN DC (+)	RED WIRE
2	VIN DC (-) (GND)	BLACK WIRE

## NMEA

- Mating Connector: NMEA2000 micro-C

**Table 2: NMEA Connector Pinout**

J2 CONNECTOR	
Pin no.	Description
1	SHIELD
2	NET - S (POWER SUPPLY POSITIVE, V+)
3	NET - C (POWER SUPPLY COMMON, V-)
4	NET - H (CAN - H)
5	NET - L (CAN - L)

## NMEA 2000 Parameter Group Numbers (PGN)

**Table 3: NMEA 2000 PGN**

NMEA 2000 PARAMETER GROUP NUMBERS			
Description	PGN#	PGN Name	Default Rate
<b>Response to Requested PGNs</b>	162464	PGN List	
	126996	Product Information	
	126998	Configuration Information	
<b>Protocol PGNs</b>	059392	ISO Acknowledge	
	059904	ISO Request	
	060928	ISO Address Claim	
	059392	ISO Acknowledge	
	060160	ISO Transport Protocol, Data	
	060416	ISO Transport Protocol	
	126208	Request group function	1 time/10 minutes
	126993	Heartbeat	

## Mounting Orientation

The panel can be installed horizontally or vertically. Ensure installation in areas within the specified temperature range ( $\leq 55^{\circ}\text{C}$ ).



Figure 5: Horizontally Installed Panel

## Mounting Options

There are two mounting options:

### Option 1: Use rear studs with nuts and washers.

Max torque: 1Nm / 8.85 Inch Libra

Max mounting area height: 10mm

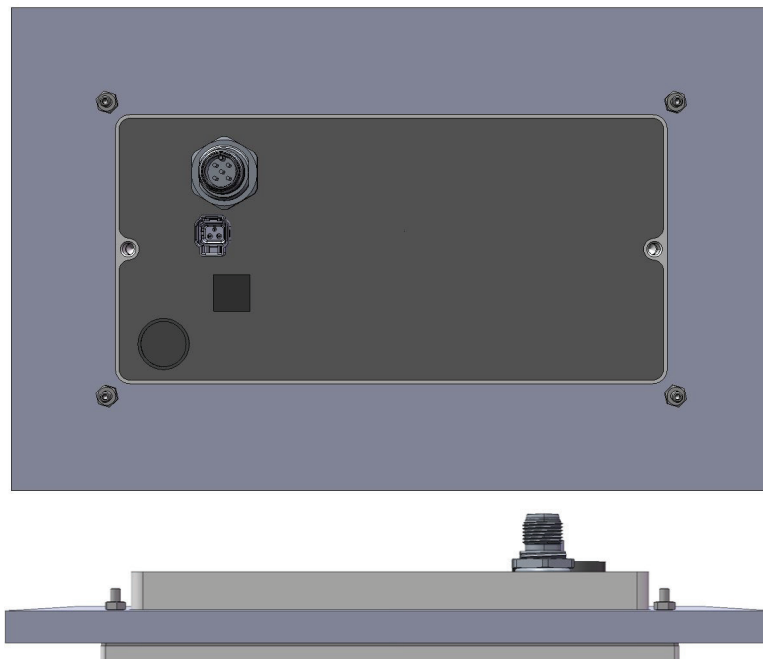


Figure 6: Unit Mounted Using Rear Studs With Nuts And Washers

**Option 2: Use supplied locking tabs and studs with nuts.**

Max torque: 3 Nm / 26.5 Inch Libra

Max mounting area height: 30mm (if material is higher than 30mm, the locking stabs can be mounted backwards to support higher materials).

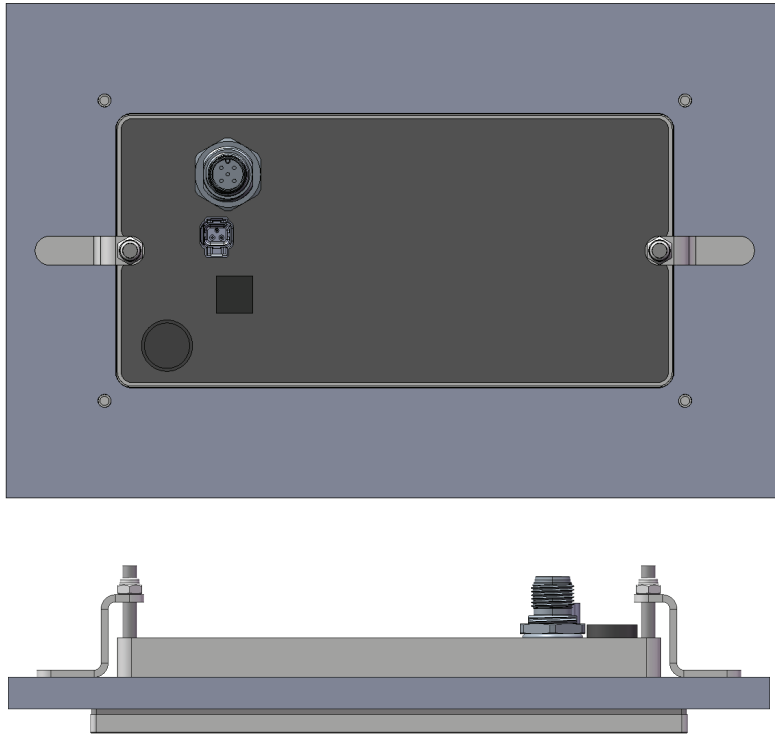


Figure 7: Unit Mounted Using Rear Studs With Nuts And Washers

## 6. Troubleshooting

Symptom	Possible Cause	Solution
<b>Panel not turning ON</b>	No power supply	Check the power wiring and fuse.
<b>Illumination not working</b>	Incorrect configuration	Verify the panel setup.
<b>Key is flashing</b>	Error from switching device	Press the key again to reset.
<b>Buzzer not sounding</b>	Not enabled in configuration	Confirm it was requested/activated in configuration
<b>No reaction when pressing switches</b>	No NMEA communication	Check the NMEA bus connection to the Panel and to the switching device.
	No response from switching device	Check that the switching device is operating correctly.
	Incorrect device instance	Check the position of rotary switch on the back of the panel for the correct instance address.
		Check that the device instance matches the device instance of the switching device.
<b>Incorrect switch function (Latching / Momentary / Timed / Other)</b>	Incorrect configuration of switching device	Make sure that the switching device is configured correctly.

## 7. Warranty & Support

Barantech® ("Manufacturer") guarantees and warrants to the purchaser of record ("purchaser") that the Barantech® product is free from defects in material and/or workmanship for a period of two (2) years following the date of shipment to purchaser.

This Warranty covers the repair or replacement of the Barantech® product at the manufacturer's sole discretion, and subject to the conditions stated below if the Barantech® product is proven defective or should fail within two (2) years of shipment to purchaser as a result of normal use in accordance with Manufacturer's published specifications. If manufacturer chooses to replace the Barantech® product, manufacturer will replace the returned Barantech® product with an equivalent product as that originally purchased, including, inter alia, the graphics, termination, configuration, and electrical specifications.

This Warranty does not cover (1) loss or damage to any equipment connected, related or associated with the Barantech® product; (2) loss or damage that occurs as a result of (a) assembly or installation of the Barantech® product into the purchaser equipment, (b) misuse of the Barantech® product or use of the Barantech® product in equipment or for other uses for which it is not intended, (c) modification or repair attempts by purchaser or another person or entity, (d) force major or accident, (e) use of the Barantech® product in operating regimes that have not been approved by manufacturer, or (f) the intentional destruction of the Barantech® product by purchaser or any person or entity; (3) the cost of labor, parts or other incidental expense for removal of the Barantech® product suspected to be defective; (4) the cost of labor, parts or other incidental expense for reinstallation of the Barantech® product, and (5) service calls.

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Failure to notify the manufacturer of a suspected defect or failure may extinguish the purchaser rights under this warranty at the discretion of the manufacturer. MANUFACTURER'S PRIOR WRITTEN CONSENT MUST BE OBTAINED BEFORE THE PURCHASER SEND ANY Barantech® PRODUCT TO THE MANUFACTURER FOR REPAIR OR REPLACEMENT. Once the purchaser has received written approval, the product must be forwarded, freight prepaid and insured (or assume the risk of loss or damage during shipment), to the manufacturer: Barantech at 18 Tzoran Boulevard, Kiryat Gat, 8258100, Israel.

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