Barantech
CUSTOMIZED HMI SOLUTIONS

CRUZO PANEL SERIES

WHERE ELEGANCE MEETS SUPERIOR FUNCTIONALITY

The Cruzo panel is more than just an elegant replacement for traditional mechanical switches - it's designed from the ground up for seamless interoperability. It is compatible effortlessly with a wide range of digital switching systems and multifunction displays (MFDs), making it a flexible solution for both new builds and retrofit projects. This represents a meaningful shift in marine control systems, combining modern design with reliable performance and open integration.

The Cruzo panel has been successfully tested with leading platforms like Garmin EmpirBus, CZone, Raymarine and others, within NMEA 2000-compliant environments, ensuring compatibility across a variety of vessel systems.

BUILD YOUR OWN PANEL BYOP

ENHANCED CRUZO CONFIGURATOR

TOTAL CUSTOMIZATION, MADE EASY

The Cruzo Configurator gives system designers a powerful tool for tailoring boat control setups with greater precision and speed. With this tool, a Cruzo panel can be customized with your icons and colors. Additionally, you can see a virtual demo of your panel before purchase - drastically reducing design time and avoiding configuration errors during commissioning.

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KEY CHARACTERISTICS

Nautical Elegance
Blending striking touch technology with an elegant glass front to create a control panel that is both visually striking and highly efficient.

Multiple Panel Sizes
The panel can be configured in multiple sizes, all in multiples of a 2x1 base module. Panels can be oriented both horizontally and vertically.

Key Color and Text
The panel keys are fully customizable. You can choose the key color (white, red, green, or blue) and specify the text and icon for each key.

Multi-Function Key
All keys on the panel can operate as momentary (on until press released), latching, or timed (for 5 seconds), regardless of their position on the panel. You, the customer, tell us how you want your panel to operate.

NMEA 2000 Connection
The panel uses the NMEA 2000 (IEC 61162-3) standard, a plug-and-play communications standard for connecting marine sensors and display units on boats.

Redundancy
Incorporating dedicated physical controls alongside touchscreens enhances operational safety by providing redundancy, ensuring continued functionality in critical situations where touch interfaces may fail or become less reliable.

We are compatible with
Garmin EmpirBus, CZone, Raymarine and others

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Optional App

Using Bluetooth technology, our panels can be controlled by a state-of-the-art App: Exactly as if you are standing right in front of the Cruzo panel.

Easy Installation (Retrofit)

Offers easy retrofit installation, ensuring seamless compatibility with your existing marine control setup, and a smooth upgrade with minimal downtime.

Enhanced Touch Activation

Seamless operation with bare hands or gloves - even when the panel is wet or dirty, ensuring smooth and hassle-free control in any situation.

Self-Diagnostic Peace of Mind

Features self-diagnostic capabilities, conducting automatic checks during startup and continuous monitoring of critical functions.

Robust IP67 Rating

Engineered to withstand the harsh marine environment, ensuring complete protection of the panel and buzzer against dust and powerful jets of water.

Tempered Glass Durability

Provides exceptional durability, resistance against scratches, impact, and UV radiation.

Connectivity

The Cruzo Panel offers an unparalleled level of connectivity designed to enhance the functionality and efficiency of your boat's operational systems. By leveraging NMEA 2000 PGN (Parameter Group Numbers), it ensures seamless and standardized communication between various marine electronics, promoting interoperability and reducing the complexity of network integration.

The panel provides direct connection capabilities to the Cruzo Smart Relay via a standard NMEA 2000 Connector, allowing for effortless control and monitoring of multiple devices and systems on board.

Additionally, the Cruzo Panels have Bluetooth connectivity, allowing our app to control functionality throughout the boat.

Contact us to design your own panel!

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TECHNICAL INFORMATION

The Cruzo Panel is designed to fit vessels of all sizes, its compact design allows easy installation in small places. Customized panel that can be configured according to needed functions with up to 16 switches depending on the panel's configuration. The number of switches on the panel must be a multiple of 2. All panels can be horizontally or vertically oriented. Each switch can be predefined to act as a Latching, Momentary, or Timed function. Each switch illumination can be configured to be Red/Green/Blue or white when OFF and when ON.

With no moving parts and high durability, the Cruzo panel offers huge advantages over traditional electromechanical switches such as high reliability, easy installation, and elegant look and feel. The panel can be activated even when there is water or dirt on the glass and can also be activated using thick gloves.

Device Instance Configuration via Rotary Switch

The panel features a rotary switch located on the back of the panel, enabling the user to manually configure the device instance. The selected instance number determines how the product identifies itself on the NMEA 2000® network and ensures proper communication and interoperability with other networked devices, by allowing multiple panels on the same network without interference.

The instance value directly affects both the interpretation of received commands and the identification of transmitted messages on the NMEA 2000 bus. Each unique instance allows multiple units of the same product type to coexist on the same network without conflict.

General Features

- NMEA 2000 interface opto-isolated
- Bluetooth app connectivity for remote control
- Reverse polarity protection - prevents damage due to incorrect wiring
- Switches functions: Latching / Momentary / Timed
- Fault condition indication for each switch
- Illuminated surface: White, Red, Green, Blue for each switch
- Laser-etched legends
- Large icon library

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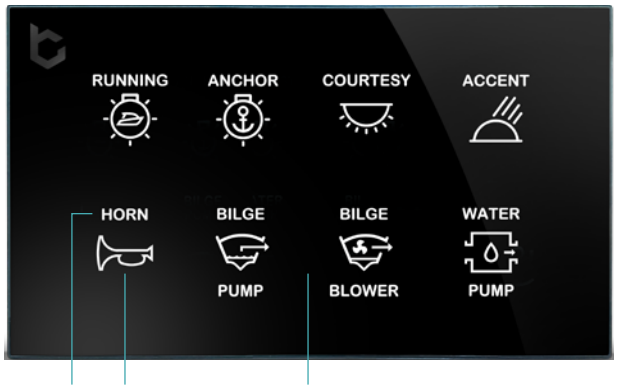
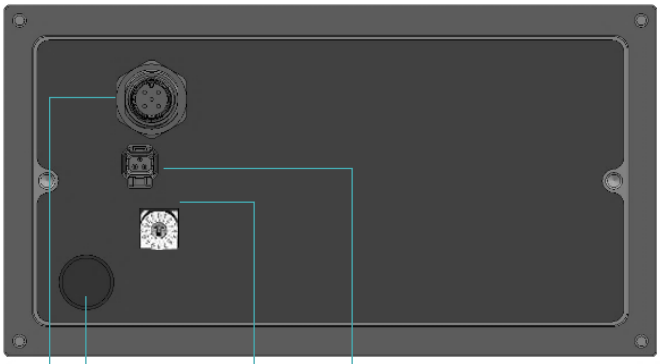
FRONT VIEW



Customizable Icons & Labels

Tempered Glass

REAR VIEW



Buzzer

NMEA-2K

Device Address Set

Power in

Ordering Options:

- The panel can be ordered in different sizes and functionalities.
- Total number of switches should not exceed 16 switches per panel.
- The number of switches on the panel should be a multiple of 2.
- All panels can be horizontal or vertical oriented.

No. of Rows	Options (Rows X Columns)
1	1X2, 1X4, 1X6, 1X8
2	2X1, 2X2, 2X3, 2X4, 2X5, 2X6, 2X7, 2X8

NMEA 2000 Parameter Group Numbers

Description	PGN#	PGN Name	Default Rate
Periodic Data PGNs	127501	Binary Switch Bank Status	1 time / 2 seconds
Response to Requested PGNs	126464	PGN List	
	126996	Product Information	
	126998	Configuration Information	
Protocol PGNs	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	
	126993	Heartbeat	1 time / 10 minutes

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Certifications

Parameters	Comment
NMEA 2000	Pending

Electrical Data

Parameters	Value	Comment
Supply Voltage	11 – 15 VDC	DC Voltage
Power Consumption	Each switch: max 30 mA	@Vin: 12VDC
Load Equivalence Number (LEN)*	1	1LEN = 50 mA
Reverse Polarity Protection	YES	
NMEA Connector	M12-5, Code A, IP67	
Power Connector	2 PIN, IP67, MFG P/N: 560-002-420-301	
Wires	Red, Black 22AWG, 1m	
Buzzer	80dB, IP67	

*The LEN number represents the current that is drawn from the NMEA 2000 bus. The unit cannot be powered from the NMEA 2000 bus.

Mechanical Data

Housing Material	Aluminum
Front	Tempered Glass
Housing Finish	Black

Environmental Data

Operating Temperature	-15°C to +55°C (+5°F to +131°F)
Storage Temperature	-40°C to +65°C (-40°F to +149°F)
IP Rating	IP67
Actuation Force	3-5N (0.67–1.12lbf)

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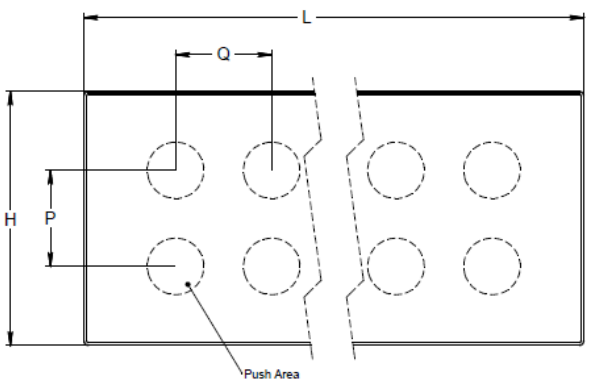
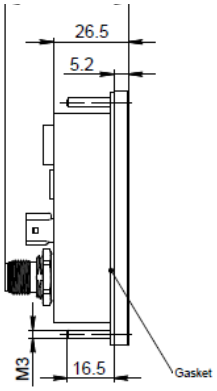
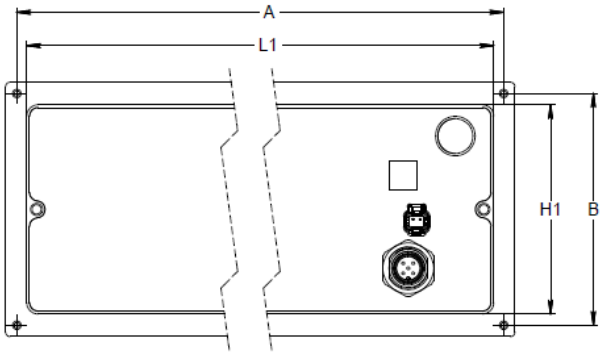
Dimensions

FRONT VIEW





REAR VIEW



Panel Configuration	A mm (inch)	B mm (inch)	H mm (inch)	L mm (inch)	H1 mm (inch)	L1 mm (inch)	P mm (inch)	Q mm (inch)
1x2 / 2x1	82 (3.23)	57 (2.24)	65 (2.56)	90 (3.54)	50 (1.97)	74 (2.91)	34 (1.34)	34 (1.34)
1x4 / 4x1	150 (5.91)			158 (6.22)		142 (5.59)		
1x6 / 6x1	218 (8.58)			226 (8.90)		210 (8.27)		
1x8 / 8x1	286 (11.26)			294 (11.57)		278 (10.94)		
2x2	91 (3.58)	82 (3.23)	90 (3.54)	99 (3.90)	74 (2.91)	84 (3.31)		
2x3 / 3x2	125 (4.92)			133 (5.24)		118 (4.65)		
2x4 / 4x2	159 (6.26)			167 (6.57)		152 (5.98)		
2x5 / 5x2	193 (7.60)			201 (7.91)		186 (7.32)		
2x6 / 6x2	227 (8.94)			235 (9.25)		220 (8.66)		
2x7 / 7x2	261 (10.28)			269 (10.59)		254 (10.00)		
2x8 / 8x2	295 (11.61)			303 (11.93)		288 (11.34)		

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