

FiXed piloting unit

Piloting unit



Europe



- Under approval by the Panama Canal authority
- Equipped with the latest Global Navigation Satellite System
- Integrated UPS with hot-standby
- High accuracy motion measurement



Category

All vessels with a beam of ≥ 109 feet



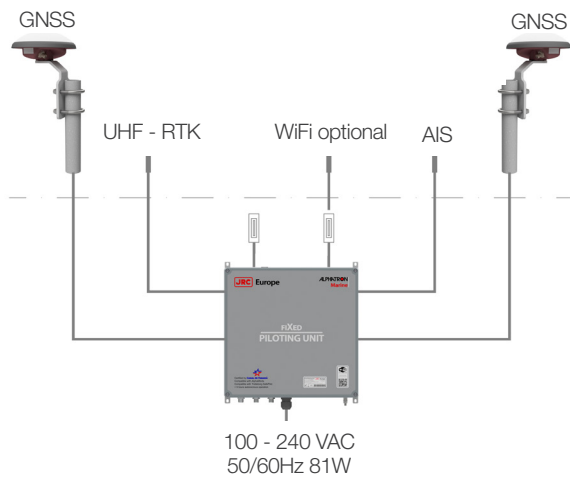
Deepsea

Features |

Effective on October 1, 2023, all vessels with a beam of 109 feet (neopanamax vessel) or more transiting the Panama Canal will be required to have a fixed piloting unit with Real Time Kinematics (RTK) for submeter accuracy on board. This measure is expected to improve the efficiency of the waterway by eliminating the delays associated with the installation of portable piloting units (PPU-RTK).

JRC can offer you a unit equipped with the latest Global Navigation Satellite System (GNSS) technologies. Our JRC Europe FiXed piloting unit is under test for approval and certification by the Panama Canal authority. Once the unit is installed and powered, it will provide the required communication with the pilot's tablet and the software via wireless network. The FiXed piloting unit ensures a stable and long-range connection in all conning positions during the transit through the Panama Canal, even in a total black-out, it will stay alive for at least 5 hours.

System overview |



- Full GNSS Precision Antennas
- High gain over the full GNSS spectrum
- State of the art CT-104 GNSS-receivers
- Real time kinematics (RTK) technology
- Dual channel AIS receiver
- UHF receiver for DGNSS corrections
- High accuracy motion measurement (IMU) with a Gyro Bias Instability $\leq 1.1^\circ/\text{hr}$
- Two Wi-Fi antennas for indoor use, optional outdoor antennas available



In the box

FiXed piloting unit G-022206

Consists of:

- Sturdy enclosure with integrated equipment and UPS
- Two high-precision GNSS antennas*
- Two Wi-Fi antennas for indoor use*
- One VHF antenna for AIS*
- One UHF antenna for RTK*
- Antenna brackets for outdoor antennas

* Antenna cables are not included



Optional

Outdoor WLAN antenna G-022235

AlphaMINDS Docking bundle G-009374

Specifications |

Fixed piloting unit

The FiXed piloting unit will house two GNSS receivers with latest technology, AIS and UHF receivers in a sturdy enclosure. The stand-alone unit will communicate through Wi-Fi with the pilot's tablet and the software, using a unique unit ID, providing the relevant navigation data.

Furthermore, the main unit will feature a power switch and a visual indicator to switch off the equipment while sailing outside the Panama Canal. However, the integrated UPS will have a hot-standby, which allows it to charge always, and capacity is available when needed.

Features

Power switch	On/ off with visual indicator
Power supply	90 - 240 VAC
UPS	Battery Backup: ≥ 5 hours of operation

Interfaces

W-LAN	2 x N- Connector – Wi-Fi communication: <ul style="list-style-type: none">• Standard 2x Indoor antenna• Optional:<ul style="list-style-type: none">• 1x Indoor antenna• 1x Outdoor antenna
UHF	1 x N- Connector – UHF DGNSS correction reception
VHF	1 x N- Connector - AIS reception
GNSS	2 x N- Connector - GNSS reception

Mechanical

Dimensions (WxHxD)	401 x 406 x 201 mm
Weight	20 kg

Environmental

Operating Temperature	-5°C ~ +55°C
IP-rating	IP66

Specifications |

Non-portable piloting unit unique ID

For a seamless and easy connection, we will provide the main unit with a QR code. This QR code will include ID, SSID & password.



GNSS Antenna				
Constellations	GPS/QZSS-L1/L2/L5, QZSS-L6, GLONASS-G1/G2/G3, Galileo-E1/E5a/E5b/E6, BeiDou-B1/B2/B2a/B3, NavIC-L5+ L-band correction services			
LNA Gain	37 dB min.			
Noise Figure	1.8 dB typ. @ 25 °C			
VSWR	< 1.5:1 typ. 1.8:1 max.			
GNSS Receiver				
Received signals (184-channels)	GPS L1C/A L2C, GLONASS L1OF L2OF, Galileo E1B/C E5b, BeiDou B1I B2I, QZSS L1C/A L1S L2C, SBAS L1C/A			
Nav. update rate	RTK 8Hz (up to 20 Hz ¹)			
Position accuracy ²	RTK 0,05 m + 1 ppm CEP			
Convergence time ²	RTK < 10 sec			
Anti-jamming	Active CW detection and removal onboard band pass filter			
Anti-spoofing	Advanced anti-spoofing algorithms			
Inertial Measurement Unit (IMU)				
Gyro Bias Instability	≤ 1.1°/hr			
Angular Random Walk	≤ 0.08°/√hr			
6 Degree OF Freedom	Triple gyroscopes			
Antennas	Frequency	VSWR	Gain	
UHF	445 - 470 MHz	< 1.5	3 dB	
VHF	146 - 162.5 MHz	< 1.5	3 dB	
Wi-Fi IEEE 802.11 (WLAN) a/b/g/h/j/n/p/ac	Indoor	2400 - 2495 MHz 4910 - 5925 MHz	Low Band < 2.0:1 High Band < 1.5:1	0 dBd
	Outdoor		< 2.0:1	9 dB
WLAN				
Standard	IEEE 802.11b/g/n			
Security	WPA/WPA2, WPA-PSK, Support Open System, Shared KeyWEP/			
Firewall	Includes SPI, Anti-DoS Attack, Filtering Multicast, Ping package, Access Control List (ACL), NAT, PAT, DMZ			
Maximum number of clients	User defined (at most 128)			
Data output				
NMEA output	GGA, VTG, HDT, ROT, GSA, GSV, VDM			
Data Protocol	Compatible with SafePilot			
PTMSX messages	Contain unique vendor ID and unique equipment ID			

¹ The highest navigation rate can limit the number of supported constellations.

² Depends on atmospheric conditions, baseline length, GNSS antenna, multipath conditions, satellite visibility, and geometry.



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