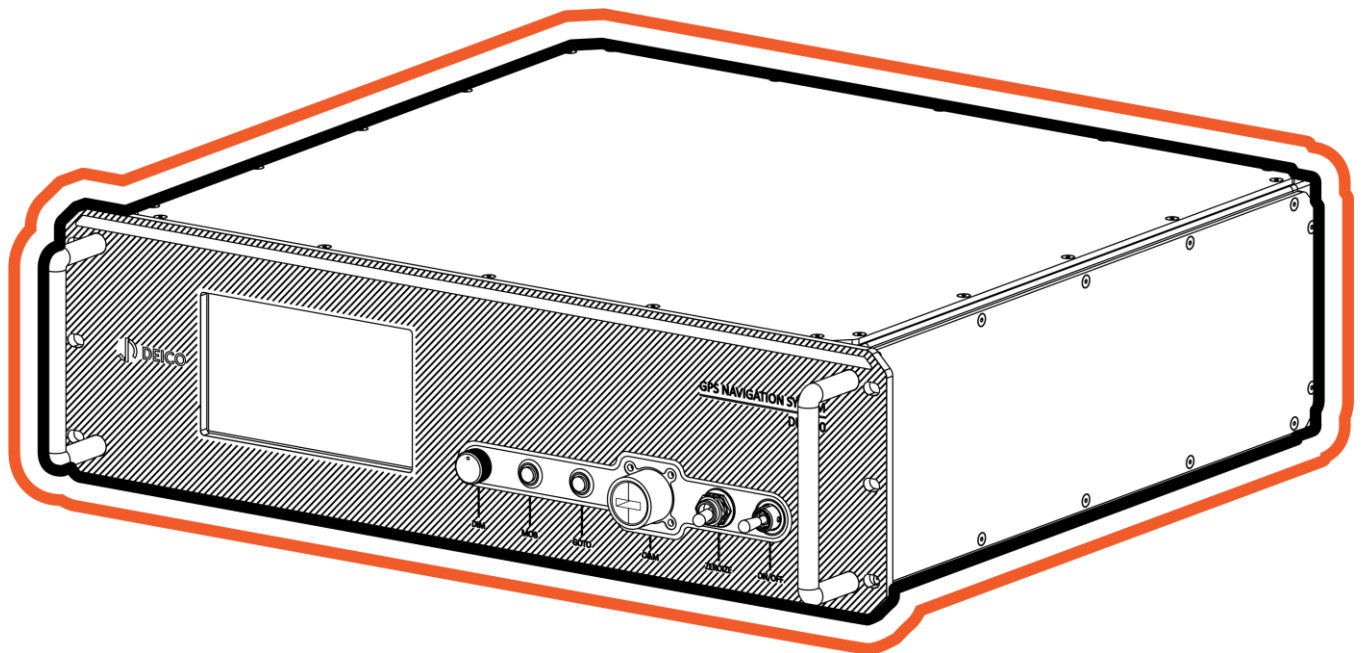


DE5000 DATASHEET

NavyGate®
GPS NAVIGATION SYSTEM



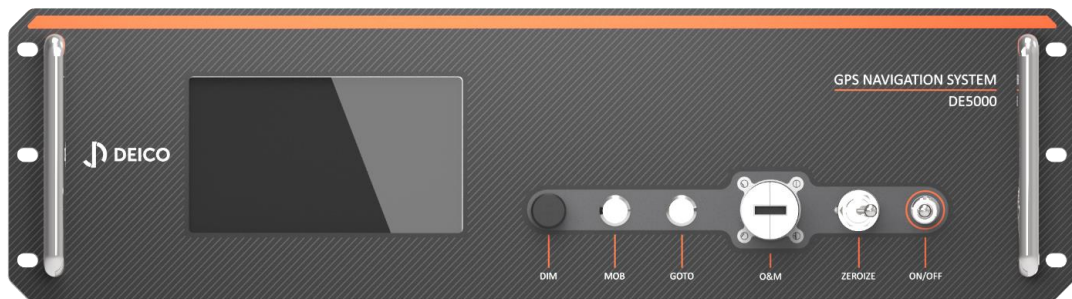
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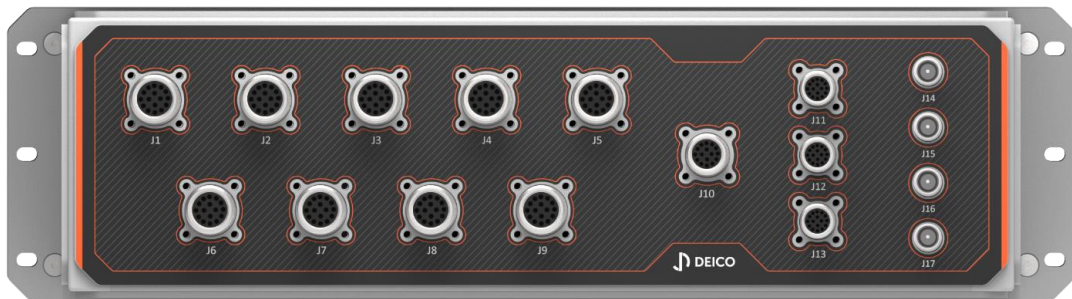
DESCRIPTION

DE5000 is a high-tech system that provides all the necessary data for external electronic systems through NMEA0183 and custom format messages, with flexible and independent settings. The system includes a Control and Display Unit, where users can view navigation and satellite information, as well as control the device settings. It also includes critical functions like MOB/GOTO and can accurately determine a ship's position by resolving radio beacon messages on land using DGPS. Suitable for harsh conditions with the support of Controlled Reception Pattern Antenna (CRPA). Overall, this system meets all the navigation requirements of any vessel with accurate and secure measurements.

DE5000 has a display and keypad on the front panel, which allows operators to select different usage codes, provide and confirm information, display results, and show basic scanning and satellite information. The keypad includes ON/OFF, Zeroize, MOB, GOTO, and DIM functions. Additionally, two custom function keys can be added upon request.



Front view



Back view

HARDWARE OVERVIEW

Hardware Specifications

Specially designed rear panel includes;

Connector Type	Description
2 x Military Connectors	Power Inlets (AC&DC independent)
1 x Military Connector	Power Out for Anti-Jam Antenna
6 x Military Connectors	Isolated RS-422 ports for navigation data
1 x Military Connector	External Display Unit Isolated CAN communication port
2 x Military Connectors	HQIIA Out
1 x TNC PLUG	GPS L1/L2 antenna RF input
2 x TNC PLUG	1 PPS Outs compatible with ICD-GPS-060A
1 x TNC PLUG	RF input dedicated DGPS (RTCM data with MSK modulation)

Control & Display Unit

Function	Description
UNIT CONTROL	CIT (Internal Test) MODE Selection (SPS, DGPS etc.) Contrast Adjustment (Dim) Zeroize (Deleting Records)
PORT CONTROL	RS-422 baud, frequency, parity etc. NMEA0183 output message types NMEA0183 input message types HQIIA, 1PPS open/close
ROUTE	Lat-Lon-Altitude, UTM, UTC, GMT, TFOM, PFOM, COG, SOG displaying Coordinate Transformation Antenna Leakage Data Register for Lever-Arm Unit Transformations (meter-notik etc.) Datum Selection Route Point and Route Selection MOB Page and Warning
SATELLITE	Visible Satellites Tracked Satellites Satellite Status Info Elevation, Azimuth, SNR Info

Electrical Specifications

Specification	Description
INPUT VOLTAGE	DC / 18 – 36VDC ** AC / 85-264 VAC (upon request)
POWER CONSUMPTION	<50W
POWER ON/OFF	Open / Close Switch
EMI	MIL-STD-461F

Physical Specifications

Specification	Description
DIMENSIONS	15.8" (401mm) x 19" (482,6mm) x 3U (133,35mm)
WEIGHT	6kg

Environmental Specifications

Specification	Description
OPERATING TEMPERATURE	-40 °C ≈ +85 °C
VIBRATION	MIL-STD-810G
HUMIDITY	MIL-STD-810G
INGRESS	-
SHOCK	MIL-STD-810G

SIGNAL CONNECTIONS

Interfaces

Interface	Description
RS422	6 x galvanic isolated (250kpbs)
CAN (1x)	1 x galvanic isolated
CAN	2.0
ETHERNET	1 x 10/100/1000
USB	2
HQIIA	2 x (ICD-GPS-060A compatible)
1PPS	2 x (ICD-GPS-060A compatible)
BUTTON	1 x MOB, 1 x GOTO
SWITCH	1 x Zeroize, 1 x Power On/Off

Protocols

Protocol	Description
NMEA0183	v2.x, v3.x, v4.x
RTCM	v2.x
NMEA2000	-

GPS

GPS	Specification
FREQUENCY	GPS: L1, L2
CORRECTION	RTCM, CMR
NAVIGATION OUTPUTS	NMEA-0183: DTM, GGA, GLL, GNS, GSA, GST, GSV, RMC, VTG, ZDA etc.
TTF	Cold: 50, Hot: 2
GPS RECEIVER	448 Channels – GPS: L1C/A, L1C, L1PY, L2C, L2P, L5 GLONASS: L1CA, L2CA, L2P, L3 CDMA Beidou: B1I, B1C, B2a, B2I, B3I2 Galileo: E1, E5a, E5b, E5 AltBoc, E6I2 QZSS: L1C/A, L1C, L2C, L5, L6I2 SBAS: Egnos, WAAS, GAGAN, MSAS, SDCM (L1, L5)
GPS ANTENNA	CRPA, 4 elements, GPS L1 / L2, BeiDou (B1C)/Galileo (E1,E5a,E5b)/SBAS GLONASS (L1,L2)/GPS (L1,L2)/QZSS (L1)
HORIZONTAL ACCURACY	Standalone: 1.2m, SBAS: 0.6m, DGPS: 0.4m
VERTICAL ACCURACY	Standalone: 1.9m, SBAS: 0.8m, DGPS: 0.7m

SAFETY GUIDELINES



Caution Do not operate the DE5000 in a manner not specified in this document. Product misuse can result in a hazard. You can compromise the safety protection built into the product if the product is damaged in any way. If the product is damaged, return it for repair.



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