


# DUS CV compact USV platform

## COMPACT ELECTRIC USV FOR INLAND AND RIVER SURVEY OPERATIONS

Designed for professional data acquisition in shallow, confined and hard-to-access waters, the DUS CV compact USV platform combines autonomous navigation with flexible payload integration. Its shallow-draft, low-profile 1.90 m hull and powerful propulsion support autonomous navigation in floodplains, groin fields, creeks and other turbulent or overgrown survey areas. The standardized vessel architecture supports reliable hydrographic, environmental and asset management data acquisition and modular payload capability provides the integration of hull-mounted ADCP, 2D/3D side-scan sonar, multi-/single beam echo sounders, SBP, and water quality data collection and sampling tools.



## KEY FEATURES

### Precise control in confined waters

The patented USV Dynamic Positioning system enables stable, hands-free station-keeping and precise manoeuvring near shorelines and in confined areas.

### Rugged & protective design

Impact-resistant single-lid HDPE hull, inspired by military-grade flight cases, protects vessel, payloads and integrated antennas in harsh conditions.

### Ease of use & reliability

Central access to payload and vessel systems; industrial components ensure reliability and load bearing the ready-to-go configuration minimizes setup time.

DEMCON | UNMANNED SYSTEMS

# SPECIFICATIONS CV USV PLATFORM

## MAIN PARTICULARS

| | |
|---|---|
| Hull material: | HDPE & Aluminium (marine grade) |
| Structural design & layout: | Load bearing hull (no cradle needed), 1x lockable hatch, 1 compartment |
| Notations & compliance: | DNV-CG-0264 (AROS) |

## DIMENSIONS

| | |
|---|---|
| L.O.A.: | 1.90 m |
| Breadth: | 0.60 m |
| Height: | 0.75 m |
| Draught: | 0.25 m |
| Dry weight: | 100 kg |

## PERFORMANCE

| | |
|---|---|
| Speed (max): | 4.5 kts |
| Endurance (max): | 43 km - 10 hours (@2.3 kts), 27.5 km – 3.5 hours (@4 kts) |
| Seaworthiness (survivability): | Sea state 3 |

## POWER & PROPULSION

| | |
|---|---|
| Bow Thruster(s): | 1x 3 kW direct rim driven |
| Main Thruster(s): | 2x 3 kW direct rim driven |
| Power: | 1x 3.5 kWh lithium battery |
| Fast charger: | 1700 W (230 V), 0-100% in <2 hours |

## COMMUNICATION

| | |
|---|---|
| Data links: | Cellular: 2 x dual 4/5 G LTE modems, LOS: Wi-Fi 6 |
| Interaction: | AIS Class B/A (VDES), VHF/UHF radio (VOIP), 1x WAN (Auto) load balancing, 1x Ethernet network, Cyber security |

## NAVIGATION

| | |
|---|---|
| Navigation: | Primary GNSS INS Dual antenna (0.015° Roll&Pitch 0.05° Heading), ENC interface (ADMIRALTY Vector Chart Service Online) |
| Navigation lights: | Masthead (white), sidelights (green/red) |
| Situational Awareness Sensors: | AIS Class B, 360° Daylight camera (4 sensors), 32 line LiDAR |

## PAYLOADS

| | |
|---|---|
| Integration: | Powerbocks and network switch for easy 3rd party integrations |
| Moonpool: | Various sensor/robotic system payloads |
| Moonpool size: | 0.275 x 0.32 x 0.35 m |
| Winch: | *DUS Smart Mini Winch*** |

## OTHER EQUIPMENT

| | |
|---|---|
| Handling & transport: | 4x mooring/hoisting/handle cleats<br>*Hoisting equipment, trailer, lower deck air cargo crate*** |
| Launch & recovery: | *Crane RC magnetic automatic lifting hook, crane cradle, ramp/slipway trailer*** |

## REMOTE OPERATIONS

| | |
|---|---|
| Wireless control unit: | 1 |
| ROC boxes: | Dual LTE, WAN input for office or vessel LAN internet, Wi-Fi 6 LOS link, Fail over system for 110/230VAC (no outages), Back up battery for black out, 4 x 230VAC socket (no outages), Redundant power supply electronics, Electronic fuses for monitoring & resetting electronics, Humidity & temperature sensor |
| Computers: | High Level Mission Computer, Real Time Control Computer, Survey Data Acquisition Computer |
| Network: | Separate CANbus network (M12 IP67), Ethernet network (M12 IP67), Power distribution network (M12 IP67 each component electronically fused) |
| Safety Sensor network: | Water sensor hull, Water sensor bow, Temperature & humidity main compartment |

## SAFETY SYSTEMS

| | |
|---|---|
| Emergency stop: | Emergency stop button on mast vessel, Emergency Stop button on remote, Emergency Stop software |
| Redundancies: | Redundant Propulsion, Redundant Steering, Redundant Power Supplies Electronics, Communication system with multiple fallbacks, Fault tolerant networks |

## SOFTWARE*

| | |
|---|---|
| Demcon Uncrewed Mission Software: | ROC operator interface for mission planning and execution, vessel monitoring and situational awareness |
| Demcon Advanced Control & Navigation System: | Manual assisted, dynamic positioning and autonomous navigation control modes |
| Demcon Safety System: | Safety rules, safety actions, emergency stop handling, collision warning, obstacle avoidance and return-to-home functionality |
| Demcon Logging & Monitoring Software: | Local or cloud based time-based vessel data logging, system monitoring, diagnostics and support tooling |

**For more information about software see flyer DUS USV SOFTWARE*
***Optional*
Performance depends on configuration and environmental conditions

## GET IN CONTACT

**Our vessels are fully customizable and built to necessity. To get more information about possibilities, options and requirements, contact us through e-mail or call us.**

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