



# M20 Pro USV

## Explore The New Realm Of Intelligent Applications

The new - generation intelligent unmanned vessel of South Surveying & Mapping - M20 Pro has achieved a comprehensive upgrade from the hull hardware to the operating software. The M20 Pro unmanned vessel uses a new - generation carbon fiber composite material, combined with an innovative diversion design, to achieve weight reduction and speed increase. The replaceable anti - collision strip and detachable flank design improve the durability and the hull's ability to resist wind and waves. The introduction of a new propeller provides it with strong power and higher efficiency. The cabin design is further optimized. By modifying the moon pool structure, it has a larger capacity and its functions are more suitable for diverse mission load requirements.



Beidou Positioning



Smart Navigation



Anti - sinking and Anti - collision,



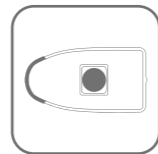
New Propeller



Intelligent Obstacle Avoidance



360° Omnidirectional Video



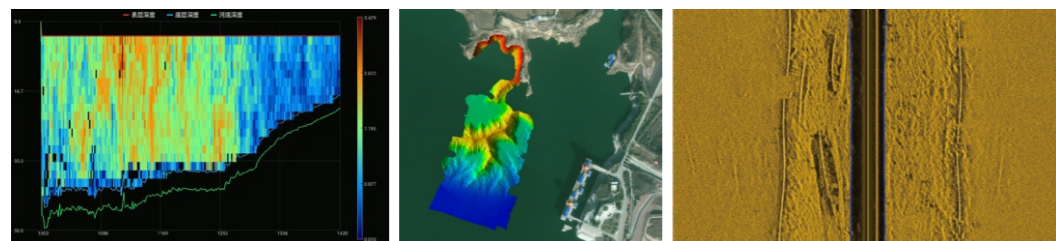
Enlarged Moon Pool



Long - lasting Battery

## Industry Applications

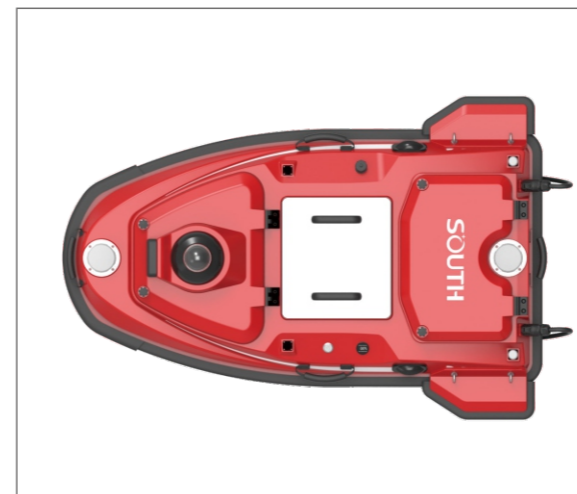
Hydrological surveying, topographic surveying, underwater target detection, etc.



## Brand - new

### Brand - New Hull Design

Diversion And Anti - Interference, Weight Reduction And Anti - Collision, Double The Protection

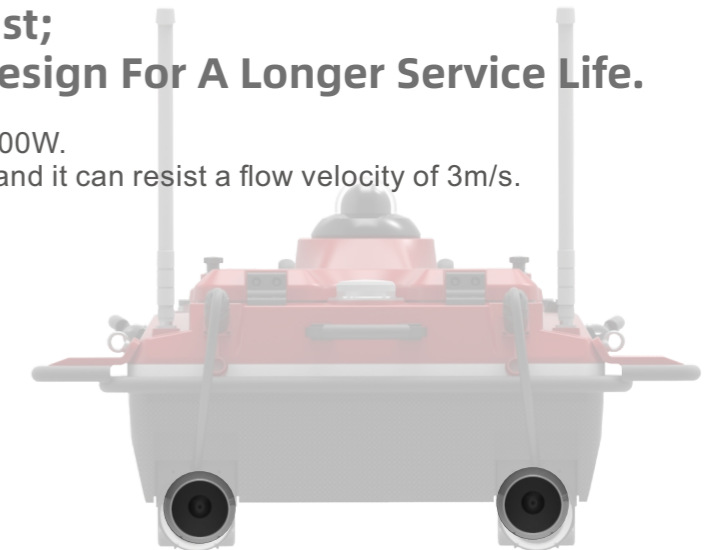


# Upgrade

## More Powerful - Propeller Power Upgrade

Higher Power, Greater Thrust;  
Three - Layer Waterproof Design For A Longer Service Life.

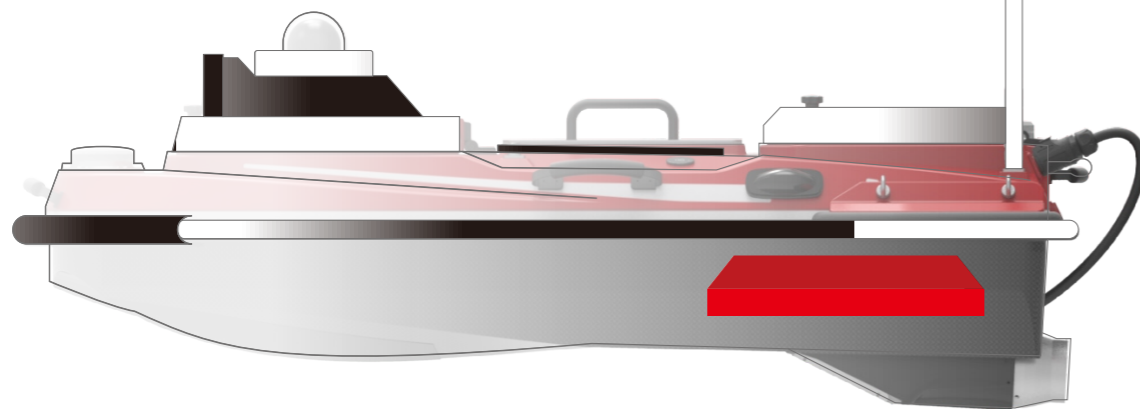
The power of a single motor can reach 1100W.  
The maximum navigation speed is 7m/s, and it can resist a flow velocity of 3m/s.



## Brand - New Data Link

Signal Enhancement And Stable Transmission

It adopts a new - generation data link to comprehensively improve the communication bandwidth and signal strength, and can ensure stable transmission regardless of complex environments.



## Larger - Modification and capacity expansion of the moon pool

Larger Capacity, More Compatibility,  
And A More Suitable Shape.

It is standard - equipped with a high - precision depth sounder, compatible with all Southern hydrological measurement instruments and can also carry mainstream measurement instruments on the market. It fits complex - shaped instruments such as moving ADCP, small multi - beam echo sounders, and sub - bottom profilers.



Moving ADCP



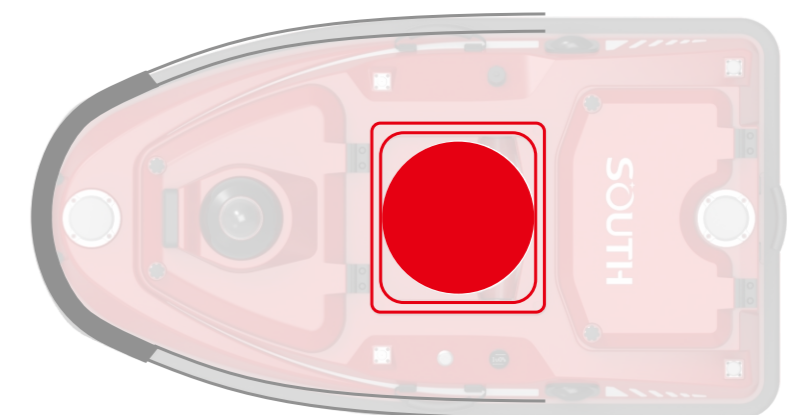
Miniaturized multi - beam echo sounder



Water quality monitor



SE - 2 pipeline detector/silt detector



## More Comfortable - Screen Display Upgrade

### Larger Screen, Longer Battery Life, And Smoother Operation.

2000 - nit industrial - grade sunlight - visible screen.

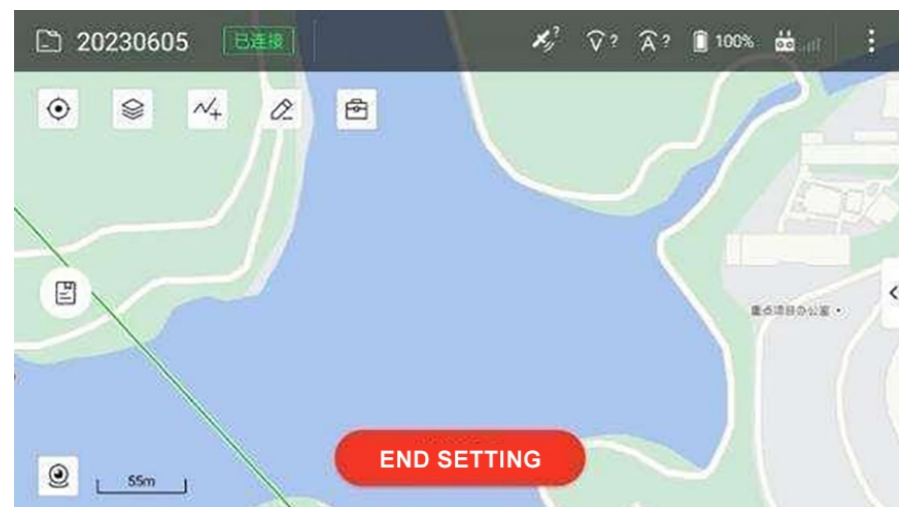
The large screen can adapt to complex light environments such as strong light and cloudy days, providing a comfortable visual experience and convenient operation.



## More Intelligent - Software Upgrade

### Richer Functions, More Efficient Operation, And Smarter Tasks.

The integrated software for ship control and measurement has been further optimized. The navigation status is clear at a glance, the task progress is accurately calculated, and the operations are more intelligent and efficient. It is perfectly compatible with multi - beam echo sounders and underway ADCP (Acoustic Doppler Current Profiler) flow measurement operations.



## Hull parameter

Hull	Hull Size	1180mm*630mm*430mm (Length * Width * Height),
	Hull Material	Nano carbon fiber, Kevlar high-strength composite material
	Hull Shape	M-shaped diversion design
	Hull Self-weight	10.8kg
	Hull Load Capacity	42kg
	Waterproof And Dustproof	IP67
	Moonshine Aperture	24cm
	Wind And Wave Resistance Level	Level 3 wind, Level 2 wave
	Carriable Equipment	Built-in depth sounder, can carry mainstream domestic and foreign ADCP/water quality monitoring, sampling equipment/shallow profiler/side scan sonar/multi-beam
Power	Safety Protection Design	<ol style="list-style-type: none"> <li>1. Intelligent self-check.</li> <li>2. Equipped with replaceable anti-collision strips, double-hull anti-sinking design.</li> <li>3. Digital power display on the hull, supports temperature and humidity detection.</li> <li>4. Shallow water reminder and automatic reverse driving away.</li> <li>5. 360° high-definition infrared night vision camera.</li> <li>6. Double indicator lights show the hull operation status and positioning signal status.</li> <li>7. Motor embedded ducted installation design and equipped with waterproof grass cover.</li> <li>8. Millimeter-wave radar for autonomous obstacle avoidance (Obstacle avoidance distance 0.2 ~ 40m , Pitch * Azimuth 14°*112°, supports detecting and tracking up to 128 targets simultaneously).</li> <li>9. Detachable side wings to improve wind and wave resistance.</li> </ol>
	Power Mode	Electric drive
	Battery Specification	33V/50Ah battery, portable design,, with power display
	Steering Mode	Steering by differential speed without steering gear, can reverse
	Installation Mode	Modular plug-in design, easy to disassemble and replace, waterproof grass
	Motor Power	Single motor 1100W
	Maximum Boat Speed	7m/s (Adapts to a maximum flow velocity of 3m/s)
	Endurance Time	6h@2m/s
	Communication	Sim Card
Communication		4G , bridge, 2.4GHz radio station
Communication Distance		Intelligent remote control 2.5 kilometers,
Main Control Design		Integrated main control integrated design
Data Storage		Multi-channel storage, can be stored in the remote control and boat end
Main Control Waterproof		IP67
Software	Remote Control	10.1-inch high-definition display, supports different storage spaces, can control the hull, collect data, view videos, and switch working modes
	Control And Acquisition Software	<ol style="list-style-type: none"> <li>1. Supports measurement task planning, autonomous navigation, hull operation control, task progress statistics, coordinate system input.</li> <li>2. Supports real-time viewing of the hull navigation trajectory, depth measurement data, waveforms, and videos from multiple angles.</li> <li>3. Can realize multi-channel data storage: local storage, hull storage, server storage.</li> <li>4. Can set automatic return when the battery is low, automatic return when disconnected, and can set the return point.</li> <li>5. Can automatically hover and adapt to the flow velocity change according to the survey line.</li> <li>6. Can set different measurement modes according to the carried equipment.</li> </ol>
	Data Post-processing Software	<ol style="list-style-type: none"> <li>1. Supports data playback, waveform and water depth data overlay, water depth data correction, tide gauge data correction, data delay correction, attitude correction, and coordinate parameter conversion.</li> <li>2. Can re - sample the collected data according to time and distance.</li> <li>3. Allows users to customize the output format of the result data and can display different depths in different colors.</li> <li>4. Has undo and redo functions.</li> <li>5. Supports PPK post - processing calculation.</li> </ol>