Positioning and sounding

Positioning	Antenna	High-precision positioning and orientation GNSS dual antennas built into the hull, supporting CORS and radio mode
	Radio Protocol	SOUTH, TRIMTALK4505, TRIMMARKI, TRANSEOT, HI-TARGET, CHC, SATEL
	Satellite System	Supports BDS-3 global signals, BDS-2, GPS, GLONASS, Galileo, IRNSS, QZ55, SBAS. Supports L-Band and BD accuracy (single Beidou version is optional)
	Number Of Channels	1598
	Cold Start	<30s
	Loss-of-lock Recapture	<1s
	Rtk Initialization Time	<5s
	Speed Measurement Accuracy	0.02m/s
	Standard Single-point Accuracy	H ≤ 1.5m, V ≤ 2.5m
	Ppp Beidou Accuracy (optional)	Better than 10CM
	Rtk Accuracy	H: ± (8+10^{-6}×D) mm, where D is the baseline length (unit: km)
		V: ± (15+10^{-6}×D) mm, where D is the baseline length (unit: km)
	Orientation Accuracy	0.15°@1m baseline
	Inertial Navigation Accuracy	1. Supports integrated navigation and 1PPS. 2. Attitude accuracy is 0.25°. 3. 6°/h (accuracy decays by 1m in 20s). 4. Maximum IMU update rate is 200Hz
Depth Sounding	Standard Depth Sounder	Operating frequency 200kHz: Beam angle 5°
		Depth sounding range: 0.15 ~ 300m
		Depth sounding accuracy: ±1cm ± 0.1%D (D is the water depth value)
	Optional Depth Sounder	Operating frequency: High frequency ≥ 200kHz; Low frequency ≤ 20kHz
		Beam angle: High frequency ≤5°, Low frequency ≤20°
		Depth sounding range: High frequency: 0.15 ~ 300m, Low frequency: 0.5 ~ 600m
	Sound Velocity Adjustment	Range: 0 ~ 2000m/s
	Depth Sounding	Data types: South format, original waveform, etc.

Note: all information above is subject to change without any prior notice.

AQUA M20 Pro

Explore The New Realm Of Intelligent Applications

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M20 Pro USV

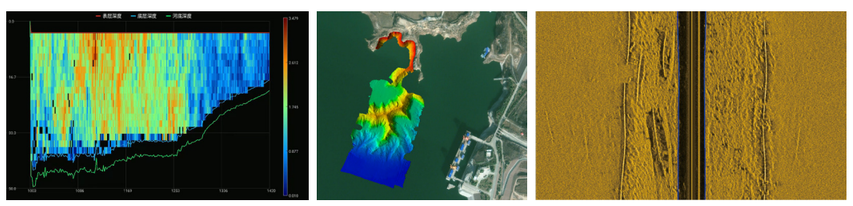
Explore The New Realm Of Intelligent Applications

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

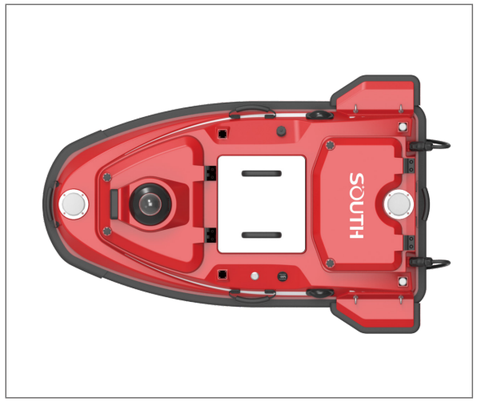
Hydrological surveying, topographic surveying, underwater target detection, etc.



Brand - new

Brand - New Hull Design

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



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Upgrade

More Powerful - Propeller Power Upgrade

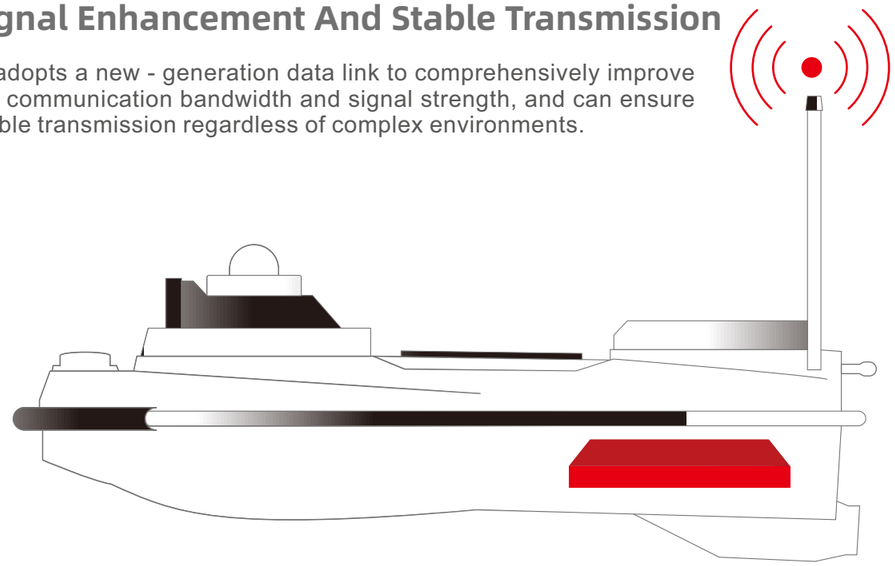
Higher Power, Greater Thrust;
Three - Layer Waterproof Design For A Longer Service Life.

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.

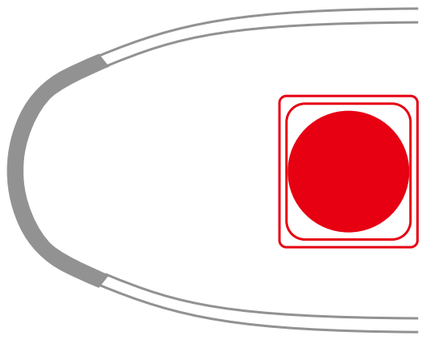
It is standard - equipped with a high - precision depth sounder, compatible with all Southern hydrological measurement instruments and can also carry mainstream measurement instruments on the market. It fits complex - shaped instruments such as moving ADCP, small multi - beam echo sounders, and sub -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

Moving ADCP

Miniaturized multi - beam echo sounder

Water quality monitor

SE - 2 pipeline detector/silt detector



* Water sampling and quality equipment supports only customer provided third-party solutions.

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More Comfortable - Screen Display Upgrade

Larger Screen, Longer Battery Life, And Smoother Operation.

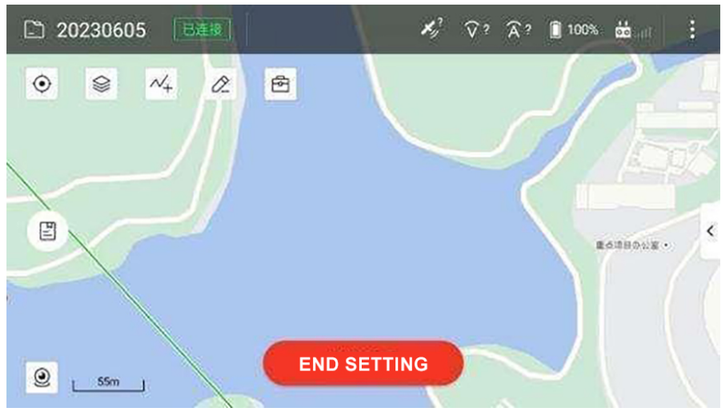
2000 - nit industrial - grade sunlight - visible screen.

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
	Safety Protection Design	1. Intelligent self-check. 2. Equipped with replaceable anti-collision strips, double-hull anti-sinking design. 3. Digital power display on the hull, supports temperature and humidity detection. 4. Shallow water reminder and automatic reverse driving away. 5. 360° high-definition infrared night vision camera. 6. Double indicator lights show the hull operation status and positioning signal status. 7. Motor embedded ducted installation design and equipped with waterproof grass cover. 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). 9. Detachable side wings to improve wind and wave resistance.
Power	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	Supports Nano 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
	Remote Control	10.1-inch high-definition display, supports different storage spaces, can control the hull, collect data, view videos, and switch working modes
Software	Control And Acquisition Software	1. Supports measurement task planning, autonomous navigation, hull operation control, task progress statistics, coordinate system input. 2. Supports real-time viewing of the hull navigation trajectory, depth measurement data, waveforms, and videos from multiple angles. 3. Can realize multi-channel data storage: local storage, hull storage, server storage. 4. Can set automatic return when the battery is low, automatic return when disconnected, and can set the return point. 5. Can automatically hover and adapt to the flow velocity change according to the survey line. 6. Can set different measurement modes according to the carried equipment.
	Data Post-processing Software	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. 2. Can re - sample the collected data according to time and distance. 3. Allows users to customize the output format of the result data and can display different depths in different colors. 4. Has undo and redo functions. 5. Supports PPK post - processing calculation.

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