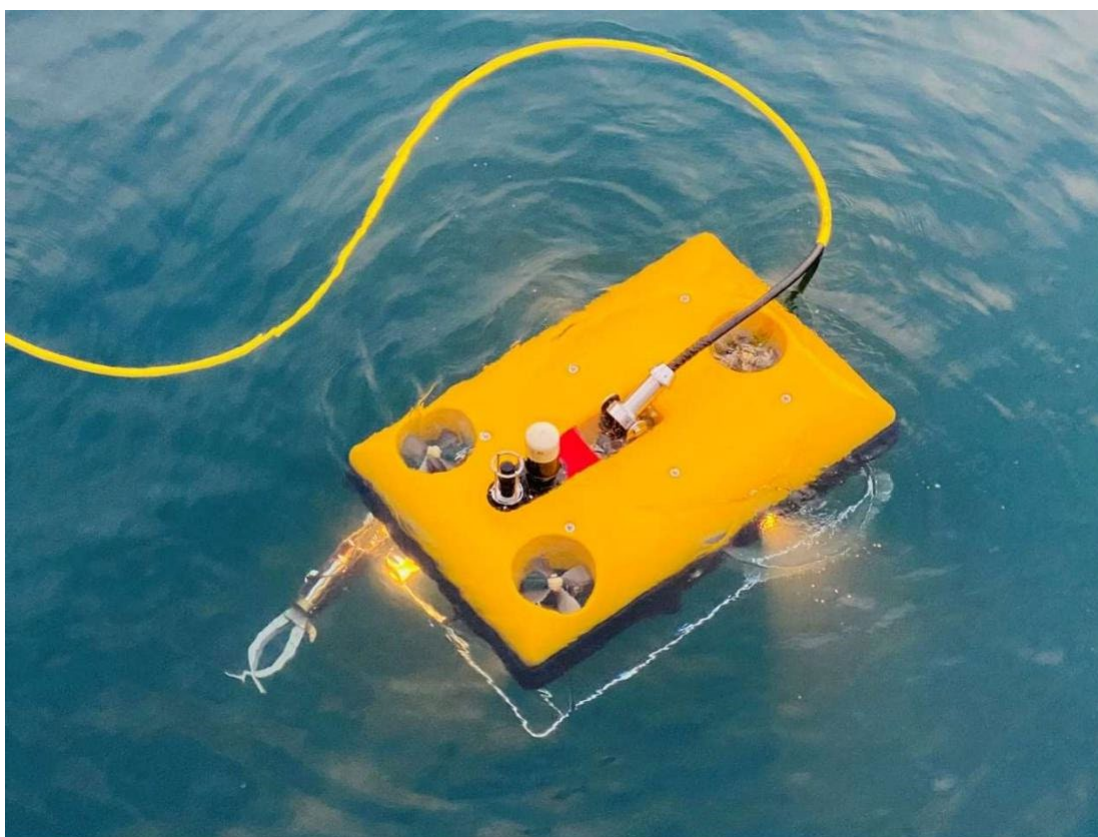


WM ROV-300H

UNDERWATER RESCUE ROBOT



WEST MARINE SUBSEA SERVICES PTE LTD

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1. Introductions

The Vehicle of WM ROV-300H is equipped with 7 high-power thrusters, four mounted horizontally, and three mounted vertically. Four horizontal thrusters can enable the underwater WM ROV to advance at a speed of up to 3.0 knots, and three vertical thrusters can enable the underwater WM ROV to have a load capacity of more than 30 kilograms underwater, ensuring that the WM ROV-300H can operate in relatively complex environments - stable operation undersea conditions.



WM ROV-300H Underwater Rescue Robot

WM ROV-300H adopts a frame design, and the main body is made of 316L stainless steel and polypropylene materials, it has strong corrosion resistance and anti-collision capabilities and is suitable for working in seawater with harsh environments. The modular design makes WM ROV-300H repair and maintenance very simple.

The WM ROV-300H can be equipped with a 4-function electro-hydraulic hybrid manipulator as standard. The manipulator can simultaneously carry a maximum

cutting capacity of 25mm polyethylene rope. It also has a replaceable claw function to adapt to objects of different diameters. At the same time, the strong hydraulic performance ensures the overall maximum carrying weight of the robot exceeds 20kg.

The WM ROV-300H is equipped with a push-position navigator composed of a Doppler log and high-precision inertial navigation, which effectively ensures that the robot's heading is not affected by the ferromagnetic environment of the use environment, and at the same time achieves stable positioning function in complex sea conditions, giving operators Provides precise navigation and comfortable operating experience.

2. Technical Parameters

<u>Model: WM ROV-300H</u>	
WM ROV-300H underwater robot system includes one underwater robot vehicle, one control Terminal and one set of zero buoyancy optical composite cable electric winches.	
System Composition	<ul style="list-style-type: none"> * 1 unit of underwater robot vehicle * 1 unit of control terminal * 1 set of zero buoyancy photoelectric composite cable electric winch
ROV use waters	Used in offshore waters, rivers, lakes and other waters
Mission functions	Underwater reconnaissance and disposal missions, with functions such as search, grab, and shear
<u>Underwater Robot Vehicle</u>	
Power supply	AC 380V/415V, 50Hz, 15KW
Underwater maneuvering	<ul style="list-style-type: none"> * Advance and retreat, lateral movement, heave, turn, pitch, roll. * It has the functions of fixed depth, directional maneuvering and fixed-point hovering. * Roll and pitch attitude self-stabilization function. * Navigation route can be preset, with track monitoring function.
Flow resistance	Hover in water flowing at least 1.5 knots
Reserved port	<ul style="list-style-type: none"> * Power supply interface (24V). * Communication interface (network port).
Gross weight	300 kg (in air)
Dimensions (not including antenna)	1450mm(L)x900mm(W)x700mm(H)
Maximum still water speed	<ul style="list-style-type: none"> * Forward speed: 3.0 knots. * Vertical lifting/lowering speed: 1 knot.
Load capacity	30 kg (in water)
Working depth	300 meters

Optical detection module	<ul style="list-style-type: none"> * Resolution: 1920×1080. * With lighting assist function, lighting brightness 4100 lumens, linearly adjustable.
Acoustic detection module	<ul style="list-style-type: none"> * Forward looking sonar. * Horizontal opening angle: 120 degrees.
Robotic arm	<ul style="list-style-type: none"> * Degrees of freedom: 4 * Carry weight: 20kg * Clamping force: 300N * Capable of cutting polyethylene ropes with an outer diameter of 25 mm
Safe mode	<ul style="list-style-type: none"> * Water leakage alarm * Temperature alarm * Ultra deep alarm * Loss of connection protection
Umbilicals (including winch)	<ul style="list-style-type: none"> * Weight: 420 kg * Umbilical cable type: zero buoyancy composite cable * Length: 350 meters * Tensile strength: 15000 Newtons * Breaking force: 10,000 Newtons * Isolated regulated power supply: 15KW

3. System Composition

3.1 Underwater Robot Vehicle



WM ROV-300H Underwater Robot Vehicle

The underwater robot vehicle is the core part of the underwater robot, mainly including buoyancy materials, frames, cameras, lights, thrusters, electronic cabins and other extensions. The whole machine adopts an open modular design, which is convenient for modification and rapid maintenance and repair.

3.2 Control Terminal



Control Terminal & Power Supply Unit

WM ROV-300H uses an industrial three-screen processing computer as the console to display ROV status information and equipment operation interface. It can display multiple cameras and sonar detection images at the same time and control all equipment on the underwater robot vehicle.

<u><i>The performance parameters of the industrial three-screen computer are as follows</i></u>	
Computer	CPU I9 9900T/8G memory/1T solid state drive/Leadtek T600 graphics card
Monitor	Three screen display Single screen resolution 1920*1080
Interface	1 network port 1 HDMI 1 power port
Weight	22Kg
Power supply	12AH battery pack, standby time 3 hours; 220V charging adapter
Other	Integrated keyboard and mouse touchpad, external mouse and keyboard can be connected

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3.3 Electric Winch



Electric retractable umbilical winch

The standard configuration is an electric winch, carrying a 350-meter zero-buoyancy composite umbilical cable, and is also equipped with a power conversion box for the WM ROV-300H underwater robot. The bottom of the winch is equipped with four universal wheels for easy movement and transportation.