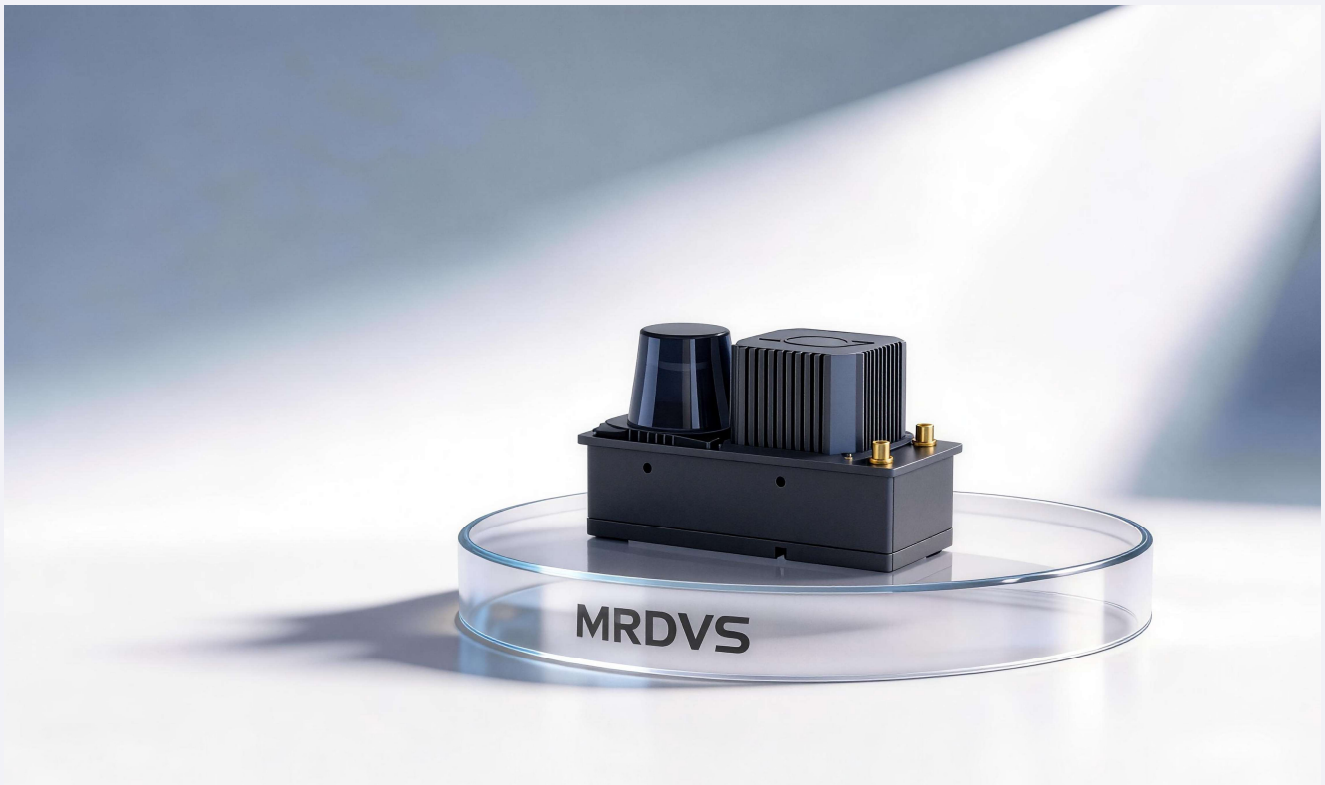


V2Pro Navigation Controller

2026-04-21 V2.1

MRDVS



MRDVS V2Pro is a second-generation high-performance navigation controller specifically designed for complex scenarios. It has been upgraded from the first-generation controller and integrates top-view visual SLAM with 2D LiDAR, precisely meeting the navigation needs of robots in complex environments. The controller has built-in computing power and does not rely on external industrial control computers. When the robot runs completely within the designated area, the V2Pro can automatically scan the environmental information and quickly create a map through AI algorithms, providing a stable and reliable navigation solution for mobile robots.

Functional characteristics

Precise Navigation of Mobile Robots



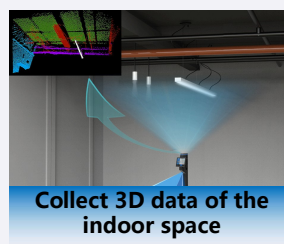
- ◆ V2Pro integrates a wide-angle top-view camera ($108^{\circ} \times 57^{\circ}$) and a high-precision 2D lidar (270°). Combined with an industrial-grade IMU module, it achieves a repeat positioning accuracy of $\pm 1\text{cm}$ by fusing data from multiple sensors.
- ◆ The product is equipped with a 6TOPS processor, enabling the rapid creation of high-precision environmental maps. Combined with a visual operation interface, it allows for one-click mapping, significantly reducing the deployment threshold.

Enhanced Solution for Manual Forklifts



- ◆ Integrating the latest WiFi 6 technology, it has been specially optimized based on the positioning requirements of manual forklifts, ensuring the real-time and reliability of data transmission.
- ◆ The product is equipped with a 3-pin audio output, supporting voice prompts and alarm functions, significantly enhancing the safety of human-machine collaborative operations.

Application scenarios



Collect 3D data of the indoor space

Factory logistics

Supporting seamless indoor and outdoor shuttle of AGV - unmanned forklifts (from warehouse to platform to workshop)



Applications of manual forklifts

Upgrade of forklifts

Alternative to UWB solution, with higher accuracy ($< 3\text{cm}$ level positioning), lower deployment cost and shorter deployment time

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Product Parameter

Product Model	V2Pro Navigation Controller	
Top-view camera	Detection range	1m-15m (ambient light 0-10 klux)
	Field of view (FOV)	108°(H)×57°(V)±3°
	Frame rate	20fps
	Antijamming capability	Anti-glare / Anti-environmental light
	Integrated module	IMU (inertial navigation module)
2D LiDAR	Scanning frequency	15hz-25hz (switchable)
	Detect range	15m @ 10% reflectivity/ 40m @ 90% reflectivity
	Ranging accuracy	±30mm (typical)
	Angular resolution	0.1°
	Horizontal field of view	270°
Master control system	Processor	Rockchip 8-core ARM platform
	NPU computing power	6TOPS
	Communication interface	1× Ethernet / 1× CAN / 4× IO (2 IN 2 OUT)
	Power input	24V(±4.8V) DC IN
	Power consumption	6.6W (average), 15.3W (maximum)
	Wireless module	WiFi 6
	Audio input	1×3pin audio_out (L/R/GND)
	Size	146.5mm×66.3mm×89.4mm
	Protection class	IP54
	Operating temperature	-20°~60°
	Storage temperature	-40°~80°

