

## Explosion-proof wheeled inspection robot



### Overview

The explosion-proof wheeled inspection robot mainly consists of the robot body, wireless base station, autonomous charging device and remote control station. Widely used in Class II explosive environments, it can replace inspection personnel for equipment and environmental inspections, which can reduce the labor intensity of inspection personnel, reduce potential safety hazards during inspections, improve the quality of inspections, and maximize Intrinsic safety level of petrochemical enterprises.

### Product Advantages

It has a high-precision navigation system and can conduct autonomous navigation and high-precision inspections;

The explosion-proof modular hub drive system is adaptable to a variety of ground environments, especially extremely complex unstructured terrain, such as gravel roads, shock-absorbing belt roads,

High-power, four-wheel drive design meets the walking requirements of robots on complex road conditions;

The robot has its own power detection and autonomous charging functions;

Modular design, easy to expand, can be equipped with a variety of detection sensors to meet different on-site needs;

The robot supports 4G/5G/Wifi multi-network mode communication;

It has an intelligent identification and analysis system. Through intelligent identification algorithms, it can realize the analysis and identification of instruments, positions and equipment status, helping users quickly and accurately grasp on-site working conditions;

## Product features

- ① The leak detection function combines gas detection sensors and intelligent recognition algorithm detection technology to detect leaks of flammable and explosive gases; based on the fusion detection technology of image processing and deep learning, based on the image characteristics of liquid leakage, Accurate detection of leaks and leaks in key areas of oil pipelines.
- ② Video analysis function. It can intelligently analyze field instruments, valves and other equipment according to user requirements.
- ③ The audio analysis function can provide audio analysis and early warning for on-site cylinders, oil pumps, motors, bearings and other equipment according to user requirements.
- ④ Temperature collection and analysis function. It can realize the identification, analysis, and judgment of the temperature status of equipment, pipelines, and key components, and timely alarm for high and low temperature abnormalities; it uses the temperature imaging characteristics to detect the temperature trend of key components through different time nodes.
- ⑤ The intelligent anti-collision, anti-fall and autonomous obstacle avoidance functions adopt a highly stable infrared obstacle avoidance and anti-fall detection system. It will automatically stop and alarm when encountering obstacles and descending steps to prevent damage to personnel and equipment caused by collisions.
- ⑥ Data archiving and historical query function. The monitoring platform automatically archives abnormal information or its own faults discovered during robot inspection operations and can view them at any time.
- ⑦ The multi-angle fill light is equipped with fill light equipment to meet the light needs of the robot during inspection and provide guarantee for the robot's all-weather and multi-scenario application.
- ⑧ Support mobile terminal control and provide APP control terminal for remote data presentation and robot remote control through mobile phone and tablet APP. The more user-friendly platform software makes operation simple and efficient.

## Technical parameters

Product name		Explosion-proof wheeled inspection robot	
Basic configuration parameters			
Explosion-proof level	Ex d II C T4 Gb	working temperature	-30°C ~ 60°C
Working relative humidity	0% ~ 95% (no condensation)	size	1050mm*700mm*11010mm
		Usage environment	-30°C ~ 60°C
IP rating requirements	IP66	Drive form	Motor
Charging form	Contactless charging	intercommunication	WIFI, 4G, 5G
Control method	Remote monitoring, automatic operation, manual remote control	working hours	8 hours of battery life, 24 hours of standby
Drive system			
speed	0-1m/s	climbing angle	30°
turning radius	turn in place		
navigation system			
Navigation	SLAM+ 3D lidar	Positioning accuracy	±10mm
PTZ system			
horizontal direction	0° ~ 360°	vertical direction	-90° ~ 90°
control speed	Horizontal: 30°/s, vertical: 40°/s		
visible light camera			
resolution	1920×1080p	Pixel	2 million pixels, black and white 0.0005lux, full color 0.005lux
Zoom	30x optical zoom	Frame rate	Not less than 25FPS
Thermal imaging camera			
thermal sensitivity	≤ 0.06°C @30°C	resolution	384×288px
Temperature measurement range (can be customized)	-20°C ~ 150°C, -20°C ~ 300°C, 20°C ~ 500°C	Accuracy	±2°C or ±2% of reading
Gas detection			
Detection principle	electrochemical or catalytic combustion	Accuracy	≤ ±3%FS.