AlienGo

Product Introduction

Innovation

A high-speed and intelligent perception robot, formed by lightweight and high-strength materials such as fibers and plastics, carbon fiber and other aerospace aluminum, can be used to complete various tasks in different scenes, such as search and rescue, military application, etc.

Practical

Quadruped robots can adapt to different terrains, such as stairs, steps, slopes, and other environments, providing a new way for exploration and rescue operations.

Environment

The newly designed power system is more lightweight and integrated, and the joint cables are built-in, enabling the reducer to withstand severe impact loads.

Lithium ion battery-powered, can be used repeatedly. It can be equipped with various instrument and testing equipment such as GPS, robotic arm, lidar, etc., to complete a series of tasks such as measuring, exploration, sports, research, security inspection, etc.

Craft

The high-performance and lightweight body, equipped with explosive joint, can adapt to different terrains and provide stable and reliable performance.

Force Sensor

Multiple Vision System

Power Unit

Motor and Perception Controllers

Nickel Iron Batteries

Explosion proof

AlienGo Technical Parameters

FUNCTION

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machine Weight (with Battery)</td>
<td>3.8kg</td>
</tr>
<tr>
<td>W×H×H (Stand)</td>
<td>0.68’’×3’’×0.5m/ 2’’×11’’×2’’</td>
</tr>
<tr>
<td>W×H×H (Folded)</td>
<td>0.68’’×3’’×0.5m/ 2’’×9’’×2’’</td>
</tr>
<tr>
<td>Load Capacity</td>
<td>3kg</td>
</tr>
<tr>
<td>Maximum Walking Speed</td>
<td>0.7-0.8km</td>
</tr>
<tr>
<td>Steps</td>
<td>15cm</td>
</tr>
<tr>
<td>Operating Life</td>
<td>0.5±1h</td>
</tr>
<tr>
<td>Battery Capacity</td>
<td>30000mAh</td>
</tr>
<tr>
<td>Total DOF</td>
<td>32</td>
</tr>
<tr>
<td>Procedural Mode</td>
<td>Emergency stop, fall protection</td>
</tr>
<tr>
<td>Alarm System</td>
<td>Voltage, temperature, circuit, charging alarm</td>
</tr>
<tr>
<td>All Motor Cables Built-in</td>
<td>Support</td>
</tr>
<tr>
<td>Encoder Wear Protection</td>
<td>Support</td>
</tr>
<tr>
<td>Reducer Wear Protection</td>
<td>Support</td>
</tr>
<tr>
<td>HD Video Real-time Transmission</td>
<td>Support</td>
</tr>
<tr>
<td>Power Outputs</td>
<td>5V, 12V, 19V, BAT (24V~30V)</td>
</tr>
<tr>
<td>Encoder for Each Joint</td>
<td>Motor Encoder × 1, Output Encoder × 1</td>
</tr>
<tr>
<td>Perception module</td>
<td>Depth camera (2 unit), visual odometer camera (1 unit), Lidar: single line or multi-line as optional</td>
</tr>
<tr>
<td>No. of Foot Force Sensors</td>
<td>4 (Can greatly reduce the difficulty of developing and writing landing detection programs)</td>
</tr>
<tr>
<td>RTOS</td>
<td>Motion control, obstacle detection, environmental awareness, mobile apps</td>
</tr>
<tr>
<td>Have and support developmental sports functions</td>
<td>Walk, jump and run, environmental awareness, mobile apps</td>
</tr>
</tbody>
</table>

*The manual is subject to change due to product improvement, specification changes, and other reasons without notice.

Intelligent Perception System

Depth Camera

HD vision Transmission

Visual Odometer Camera

APP

Global shutter and wide field of view

The minimum sensing depth is about 0.31m.

Resolution depth output up to 1280 x 720

Highly optimized V-SLAM, loop offset is less than 1%

The delay between posture action and action reflex can reach 20ms

Fisheye lens imager, hemispherical 163±5° field of view, stable tracking target

Product Introduction

Environment Craft

Innovation Practical

Shipper Robotics is a well-known start-up company in the world of robotics, an outstanding pioneer in the marketization of global high-performance quadruped robots, fully committed to promoting mobile robots to truly enter people’s lives.

Manufacturers of Excellent Motion Performance Robots

Cubevvm is a well-known start-up company in the world of robotics, an outstanding pioneer in the marketization of global high-performance quadruped robots, fully committed to promoting mobile robots to truly enter people’s lives.
Human Posture Recognition and Face Recognition

1. Body Posture Recognition
   The color camera can identify the specific posture of the person according to the deep learning model, and conduct human-machine interaction. The robot can make corresponding movements according to different body postures.

2. Human Skeleton Perception
   The color camera can analyze and calculate the two-dimensional skeleton information of the human body according to the color information from the perspective, and further analyze and calculate the three-dimensional skeleton information and motion information of a specific character using depths of field.

3. Target Person Tracking
   When there is more than one person in the scene, someone can tell the robot to look for a person in a certain position (for example, standing in the left-hand). Therefore, the robot will follow the movement of the target, even during the movement.

4. Face Recognition and Appearance Determination (under development)
   From the perspective of the robot, artificial intelligence algorithms are used to automatically conduct face recognition and create classifications, and it can identify gender, age and traits.

Depth Vision - 3D Map Real-time Creation and Navigation Planning

1. 3D Environment Construction
   In the process of motion, the robot uses the camera to obtain the color and depth information of the environment, and then reconstructs the 3D spatial information of the object with the help of a specific vision algorithm.

2. Probability Map
   Orthogonal(probability map) are built by using cameras that detect the robot’s surroundings as it moves provide back obstacle data.

3. Dynamic Obstacle Perception
   When the robot encounters a dynamic obstacle, it will refresh the current map data within a certain range, thus discarding the “moving artifact” left by the dynamic obstacle on the map.

4. The Global Positioning
   During the process of map creation, the global and local real-time positioning functions are available. The map will follow the camera’s perspective in real-time, and support real-time panning, zooming-out, zooming-in, moving and arbitrary rotation.

Loop Detection
   The robot can maintain a high loop-back accuracy in a wide range of fields, a high positioning accuracy within a certain range, and can maintain stability within a certain oscillation amplitude, with drift or loss.

Application

Flexible mobility, excellent performance, suitable for mountainous, grassland, and other wild terrain.

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Reliable mechanical structure and super-fast response algorithm, can achieve large jumps and obstacle jumps.

Achieving tasks like patrol exploration, material transport in the fields of petrochemical, electric power, railway, mineral collection and so on.

The discrete landing point of the foot robot and Unitree self-developed multi-vision technology can quickly go up and down the stairs under different specifications have different performances.

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Thanks to the good reliability and stability of the hardware, it has super adaptability to irregular terrain.

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