AlienGo

Product Introduction

AlienGo is a well-known startup 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.

Innovation

A novel model and design of quadruped robots, with light and compact structure, quadruped robot has four legs, and each leg is composed of different parts, such as joints, motors, controllers, etc.

Environment

Li-ion battery, lightweight, low carbon footprint, can be used extensively. Build your own robot with your own parts, carbon fiber, and other non-polluting aviation aerospace materials.

Craft

The newly designed power system is more lightweight and integrated, the joint cables are built-in, and the joint is integrated with overload protection, which improves the life of the reducer and enables the reducer to withstand severe impact loads.

Practical

It can be equipped with various instrumentation and testing equipment such as GPS, robotic arm, lidar, etc. To complete a series of tasks (such as smart construction, exploration, sports and leisure, security inspection, etc.), with a variety of tasks and working environments.

AlienGo Technical Parameters

<table>
<thead>
<tr>
<th>FUNCTION</th>
<th>PARAMETER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machine Weight (with Battery)</td>
<td>131.1kg</td>
</tr>
<tr>
<td>W (max (Stand))</td>
<td>0.68°31’5”/min 2.1”22’7”</td>
</tr>
<tr>
<td>W (max (Folded))</td>
<td>0.68°31’5”/min 2.9”13’9”</td>
</tr>
<tr>
<td>Load Capacity</td>
<td>33kg</td>
</tr>
<tr>
<td>Maximum Walking Speed</td>
<td>0.76m/s</td>
</tr>
<tr>
<td>Slopes</td>
<td>18” - 24”</td>
</tr>
<tr>
<td>Operating Time</td>
<td>3.4-4h</td>
</tr>
<tr>
<td>Battery Capacity</td>
<td>33000mAh</td>
</tr>
<tr>
<td>Total DOF</td>
<td>12</td>
</tr>
<tr>
<td>Protocols Mode</td>
<td>Emergency stop, fall protection</td>
</tr>
<tr>
<td>Alarm System</td>
<td>Voltage, temperature, current, charging alarm</td>
</tr>
<tr>
<td>All Motor Cables Built-in</td>
<td>Support</td>
</tr>
<tr>
<td>Encoder Torque Protection</td>
<td>Support</td>
</tr>
<tr>
<td>Reducer Wear Protection</td>
<td>Support</td>
</tr>
<tr>
<td>HD Video</td>
<td>Real-time Transmission</td>
</tr>
<tr>
<td>Power Supply</td>
<td>12V, 24V, 48V, BAT (240-300V)</td>
</tr>
<tr>
<td>Encoder External Interface</td>
<td>Encoder: 2 or 4. Encoder: &gt; 4</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: shock (real-time) Environmental awareness: shock (real-time)</td>
</tr>
<tr>
<td>Have and support developmental sports functions</td>
<td>Walk, jump and run. Can climb stairs, slopes and mazes. Can traverse a hole. Support for development of walking and landing gait and other high-performance.</td>
</tr>
</tbody>
</table>

*This manual is subject to modification in product improvement; specifications change and other reasons without notice.

APP

Intelligent Perception System

Depth Camera

Global shutter and side field of view

Lidar

Resolution depth output up to 1290 x 720

Visual Odometer Camera

The delay between posture action and action reflex is less than 1%

Depth

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

Camera

Robust pose estimation, spherical 163.5° field of view, stable tracking target

APP

Visual mileage

Navigation planning
**Human Posture Recognition Tracking and Face Recognition**

1. **Body Posture Recognition**
   - The color camera can identify the specific posture of the person according to the depth 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 transform and point out 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 lock him/her by a certain posture (for example, raising the left hand). Thereafter, 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 is used to automatically conduct face recognition and crowd classification, and it can identify gender, age and traits.

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

3D Environment Construction
- In the process of motion, the robot uses the cameras 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.

- Octomap (probability map) are built by using cameras that detect the robot’s surroundings as it moves to provide obstacle data.

- Probability Map
  - 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.

- Dynamic Obstacle Perception
  - During the process of map creation, the global and local real-time positioning functions are available. The map will follow the current perspective in real-time, and support real-time panning-in, zooming-out, 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 mountain, jungle, graspland and other wild terrain.

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

- Humans have a natural affinity for robotic dogs, making them suitable companions for family companionship and care.

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

- Accomplish 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 of different specifications have different performance.

**Use Cases**

- Research
- Entertainment
- Inspection
- Exploration
- Logistics
- Care

**Contact Details**

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