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UARM ROBOTS IN PYTHON DATA BASE FORMATION ELECTRICAL PRINCIPLE AND STRUCTURE SCHEME DESIGN

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Abstract
This article provides an overview of the uArm Swift robotic arm designed for a variety of industrial and home applications. uArm Swift offers features such as programmability, reproducibility, and flexibility that make it suitable for tasks such as prototyping, simulation, and proposed control algorithms. The article highlights the importance of repeatability in industrial robots and explains that the uArm Swift Pro model provides high accuracy with a repeatability of 0.2 mm.

Keywords: uArm robot, uArm Swift, industrial automation, repeatability, precision, modular design, programming, simulation, control algorithms, uArm Studio, block programming, manual control, final effects.

Introduction

Modern techniques developed present in the day work release in fields , industry and another areas robots, manipulators, automata without devices imagination to do difficult Authors HIL simulator based on MATLAB/Simulink software for algorithms work exit present they reach Robot's modules between contact for the authors central computer with distributed management from the system and modules with CAN (Controller Area Network) bus through contact does Robot's worker organ movement manage algorithms design reverse kinematic structure descriptive mathematician the model to know based on These are robotic systems each one work issuer in front standing standard is a task . Straight away and reverse of kinematics mathematician model most of the time analytical solution there is didn't happen linear algebraic equations system presentation. Industry of robots main components . Industry of the robot four _ main part manipulator , manager , person interface device and power source Manipulator hand is different in directions movement can Hand in V5 Workcell to move for strength which provides actuator task from the V5 Smart Engine that performs moves . Manipulators for modules set , that's it including digital camera module is released , this own your projects to create accelerates and simplifies . You the manipulator your control for company by work

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developed from uArm Studio your use can _ This is a program through programming don't know user easily " block " programming it through manage can .

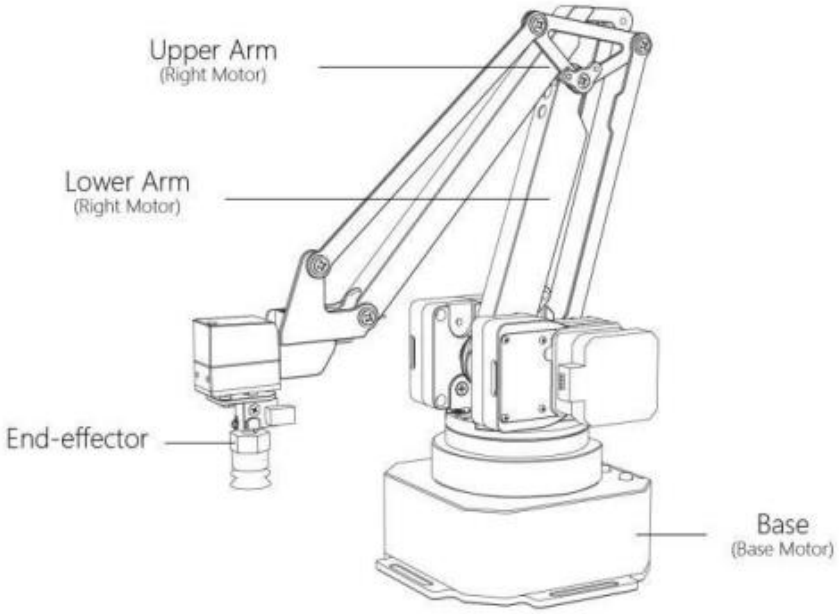

Figure 1. uArm swift pro robot structural part.

Industry from robots many p which uses another fields

Above list from the latest IFR World Robotics report received However, robotics big level effect showing one how many important fields available : warehouse logistics and pharmaceuticals industry. Warehouse - soon market to the report according to , warehouse robotics industry by 2025 to 11.7 percent growth and 6,471 million dollars reach forecast is being done . now warehouses working in them never how a person workers are not required (to robots technical service from showing except). Warehouse robots increased going surprising not.Pharmaceuticals industry in McKinsey 's 2019 Industrial Robot Report counting passed the most good from networks one to companies expenses reduce quality improve and efficiency increase enable giving this to the field investment entered .

Technical characteristics of uarm swift pro robot

➢ Warm swift pro robot full weight 2.2 kg organize is enough

➢ Our learning robot manipulator freedom level is equal to 4 .

➢ UARM swift pro robot repetition is equal to 0.2 mm .

➢ Maximum load capacity is 500 gr is enough

➢ Work range is 50mm -320mm organize does

➢ UARMswift pro robot maximum speed 100mm/ sec the organize is enough

➢ UARM swift pro robot via micro USB technician don't build let's connect possible , wireless in case and using Bluetooth is connected .

➢ Warm swft pto robot dimensions pot : 150x140x281 ➢ Weight , kg: 2.2 kg

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What is Python ?

Python is popular programming language _ It was by Guido van Rossum in 1991 work developed This is programming language learning for easy to use for convenient , many edged programming language to programming _ new entered for both, field specialists also great for selection .

Python is as follows for used :

- web development exit (server side),
- software supply work output ,
- mathematician deeds ,
- system scripts .

This is programming in the language what are to do can

• Python is on the server web applications work exit for use can

• Python work flows Create for software supply with one in line use can

• Python data base to systems connection can _ From this except , it files read and change can

• Python is big to information processing to give and complicated mathematics perform for use can

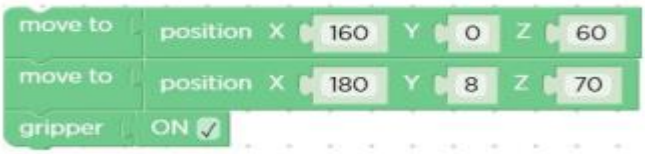
• Python fast prototyping or work to issue ready software supply work exit for to use possible

Arduino is it not so much big didn't happen plate being his own processor (microcontroller) and in memory of have has been device is considered Arduino 's many types there is being to these example as : Arduino Yun, Arduino Uno, Arduino Duemilanove , Arduino Diecimila , Arduino Nano, Arduino Mega, Mega 2560, Mega ADK, Arduino Leonardo, Arduino Micro and etc s we get can Arduino robotics and to electronics interested and seeker to young people very hand will come because this on the device small and big has been program , algorithms created without xar character devices , robots and another interesting practices if he does will be Otherwise by doing in other words , Arduino software and technical parts by combining giver is a device .

Arduino 's many types there is being to these example as : Arduino Yun, Arduino Uno, Arduino Duemilanove , Arduino Diecimila , Arduino Nano, Arduino Mega, Mega 2560, Mega ADK, Arduino Leonardo, Arduino Micro and etc s we get can

Blocked function description

1) uArm's main movement manage code :



2) The command how to work take down times :

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3) Did actions to work download :

Conclusion

uArm robot to use comfortable easy programmable installation easy has been is a manipulator . Other to robots than him learning easy laboratory practices and work release in the fields use can . Model management algorithm ease with manage and sure actions provide for work developed Around the Arduino Mega 2560 built uArm Swift Pro is open resourceful and DIY friendly robotic arm platform to be and work producers and study purposes work developed This small the robot to use very easy and each who him one how many per minute how to use learning can 0.2 mm repeatability with uArm up to 500 g was things collection and to place able. It's in the market the most high level configured consumption level robotic platforms is one Metal holder uArm with 4 DOF improves , therefore for you uArm each how open resourceful in projects or even standard light in the industry your application can. Arm in the world the first open is a source robot platform . You our Github our library and to our devices complete access to the right have you will be See camera collection with uArm that you transfer AI for different different form or in color objects observation can projects . " teaching -learning " mode each to whom uArm minute inside to work possibility will give . new beginning robot readers GUI programming for robots with programming logic to understand help provides.UArm Swift Pro, STEAM and work producers for intended open source robot arm from customers different different comments took _ Some this conceptual the work and modeling for considered useful _ if so , others his performance and quality with depends to problems face they came A few users of the hand fragility and weak accuracy about complaint they did , one customer within three months broken about message gave _ They are also 3D printed release of the head quality and his opportunities because of its limitation dissatisfaction they said Objects without throwing them to get possible lack of and assimilation of the module flow speed control of doing lack of main disadvantages as it was emphasized . Users , as well as accessories connection of pins location they found it uncomfortable . Some customers certain projects for of the hand recognized the potential and his use convenience they emphasized , but the consensus of the product simplicity for price very high that emphasized . Summary by doing in other words , uArm Swift Pro is known tasks perform for convenience despite the money quality , limitation and value for to criticism met _ uArm robots Ufactory enterprise by work is issued . About the robot more more data https://www.ufactory.cc/ site through get can _ Main data English in the language present done _.

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