6DOF Robotic Arm

GOOGOL TECHNOLOGY

6DOF industrial robotic arm is a typical industrial robot that is used in automatic pick and place, installation, welding, painting, etc. The new GRB serial industrial robot combines the motion control technology together with advanced educational concept and fulfills both the industrial needs as well as the education and research needs in motion planning and industrial system design.

The robot uses 6-joint in serial design. Each joint uses absolute encoder and high precision harmonic gearbox to ensure the accuracy. Camera, pneumatic tools and some other interfaces are preserved at the end effecter for user to extend the robot for other usage. The robot is controlled by the newly developed VME bus controller which integrates PC, image processing technology, logic control and motion control to achieve high speed, high

Main Features

Open Architecture Experimental Platform:
- Based on VME bus open architecture high performance industrial motion controller
- VC++ software and CoDeSys realtime control software
- Visual display for teaching and training makes programming the robot easier
- Detailed operation manual and lab manual

Industrial Standard Design
- In serial structure, absolute encoder and high precision harmonic gearbox
- Module design, simple and compact
- Preserved extension interfaces
- High payload, high speed, large work space

Control Software

CoDeSys: Support IEC61131 standard with 6 standard programming languages. The standard is supported by over 150 machine producer. CoDeSys provides user with abounded extensions, e.g. program support different bus types, PLC programming, drivers, display devices etc. The main features of the CoDeSys are:

- Support IEC 61131-3 standard
- RTE (Real Time Extension for Window XP), soft PLC is implemented in XP
- HMI (Human Machine Interface), integrates the display function for PLC programming
- Motion Control Function Block, integrates the motion control and PLC
- ENI (Engineering Interface) Server, interface for auto-manufacturing

6DOF Robot Controller

Suggested Experiments
- Robot Coordinates Setup
- Forward Kinematics
- Inverse Kinematics
- Motion Planning

Research Work
- Robot Torque Control
- Motion Planning Based on Intelligent Control System and Software
- Vision Servoing
- Remote Network Control, Multi Robot

6DOF Robotic Arm Software Based on CoDeSys

Software Interface for C++ Version (English

Distributed by:

Solutions 4U

Technical Specification

Item			Value
Arm Length		J3 to J2	720 mm
		J2 to J1	150 mm
		J5 to J3	645 mm
		J4 to J3	150 mm
Range of Motion	Radius	P to J1	1537 mm
		R3	356 mm
	Angle	J1	± 180 deg
		J2	-105，+175 deg
		J3	-235，+85 deg
		J4	± 180 deg
		J5	-40, +220 deg
		J6	± 360 deg
Max. Speed	End Effecter Speed		>8000 mm/s
	J1		140 deg/s
	J2		180 deg/s
	J3		225 deg/s
	J4		450 deg/s
	J5		450 deg/s
	J6		545 deg/s
Resolution	J1		2048000 pulse /r
	J2		1638400 pulse /r
	J3		1310720 pulse /r
	J4		655360 pulse /r
	J5		655360 pulse /r
	J6		540672 pulse /r
Repeatability	X/Y/Z		± 0.08 mm
Allowable Moment	J4		0.3 kg*m²
	J5		0.3 kg*m²
	J6		0.2 kg*m²
Payload			6 kg
Mass			140 kg
VME Controller	Axis No.		8-Axis Servo / Stepper Motor
	PC		X86 Architecture, Celeron 1.6G, USB2.0, 10M/100M Ethernet, Keyboard, Mouse, VGA, CF Card Slot
	Image Processing (Optional)		Dual video input, PAL, NTSC
Installation	Environment		Temperature: 0~45° C
			Humidity: 20-80%RH (No dew.)
			Vibration: below 0.5g
			Avoid contact with inflammable and corrosive liquid or gas.
			Keep away from electrical noise sources.

Ordering Guide

Model Number	Product Name	Package
GRB-3016-06	6DOF Robotic Arm	• 6DOF Robotic Arm Body (Payload 6kg) • 8-Axis VME Bus Motion Controller • Electronic Module • Pneumatic Gripper • Parts for Pick and Place • Software with Source Code
GRB-3016-06	6DOF Robotic Arm	• 6DOF Robotic Arm Body (Payload 6kg) • 8-Axis VME Bus Motion Controller • Electronic Module • Pneumatic Gripper • Parts for Pick and Place • Software with Source Code

Remarks: Vision system is available as per requested.