

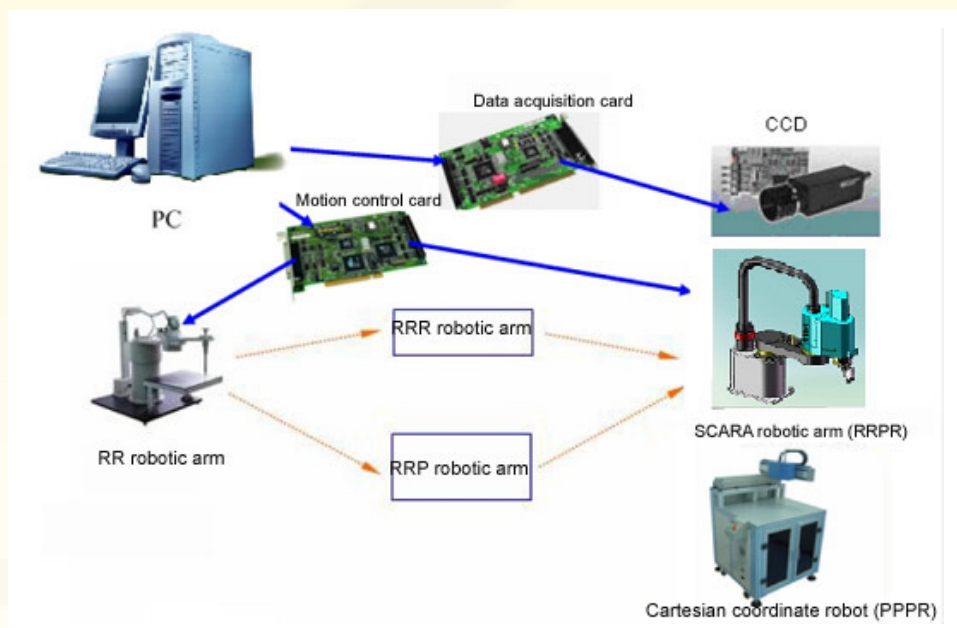
4DOF SCARA ROBOTIC ARM

Overview

The newly series 4DOF Robotic Arm by Googol Technology not only maintains the characteristics of an educational platform, but also adds new features for industrial environment. It provides a completely open, innovative experiment platform for the mechatronics, manufacture automation and automation control and other related courses for the technical institutes. It can be applied in the Machine Manufacture and Automation, Mechanical and Electronic Engineering, Machine Design and Theory, CNC Technology, Robotics, Automation Control and other related Mechanical and Electrical Control fundamental experiment courses.



□ Modularized Machine Platform



□ Industrial Standard Design and Manufacturing

- Rotary joints are driven by AC servo motor and harmonic gear;
- Translation joints are driven by AC servo motor and ball screw;
- Each component is designed and manufactured according to industrial standard.

□ Open Architecture

- Open hardware platform based on PC and DSP motion controller;
- Intelligent motion control development platform based on object oriented design approach;
- TCP/IP Protocol remote network programming, simulation and control functions;
- Equipped with assembly language programming and graphic teaching software, easy to program and train.
- Comprehensive user manual and control demos, guiding the users to learn the development of various application systems.



□ Creativity and Challenge

- Robot moment control mode research;
- Development of various application systems based on intelligent control platform;
- Challenging the research and development of visual servo system;
- Tackling research projects such as remote robot monitoring, and multiple-robot coordination.



Software interface (C++)

4DOF SCARA Robot Technical Specification

Item		Index
Loading capacity		payload 2KG
Motion resolution (Pulse equivalent weight/Rotation)	Joint No.1	800000/r
	Joint No.2	800000/r
	Joint No.3	2500pulse/mm
	Joint No.4	30000/r
XY-plane Repeatability		±0.05mm
Joint No. 3 Repeatability		±0.02mm
Joint No. 4 Repeatability		±0.05 °
Number of DOF		4
Range of motion	Joint No.1	± 120 °
	Joint No.2	± 130 °
	Joint No.3	0~150mm
	Joint No.4	0~360 °
Max. speed	Joint No.1	6.54 rad/S
	Joint No.2	6.54 rad/S
	Joint No.3	300 mm/S
	Joint No.4	31.4 rad/S
XY-plane max. synchronized speed		3.3m/s
Max. radius		400mm
Height		706mm
Weight		≤30Kg
Dimension	Joint No.1 (Length)	250mm
	Joint No.2 (Length)	150mm
	Joint No.3 (Displacement)	150mm
Installation requirements		Acclinic table Temperature: 0~45° C Humidity: 20~80%RH (No condensation) Vibration: Less than 0.5G Avoid contacting with inflammable and corrosive fluids. Keep away from power cables.

Robot visual device system parameters (optional):

Item	Index
Image acquisition card	<ul style="list-style-type: none"> ➤ Support the acquisition of NTSC,PAL,RS170 and CCIR standard video sources ➤ Dual video decoder structure allows rapid channel switching ➤ Can connect with and switch between 16 CVBS channels, 8 Y/C or mixed input channels ➤ 16 channel TTL I/O auxiliary interface and RS-485 parallel interface ➤ Watchdog timer allows integrity of monitoring system ➤ Support 32 bit 33/66 MHz PCI bus ➤ Software development package includes Matrox Imaging Library (MIL)/ActiveMIL, MIL-Lite/ActiveMIL-Lite ➤ Support Microsoft Windows 2000 and WindowsXP OS
CCD Industrial camera	<ul style="list-style-type: none"> ➤ High resolution ➤ VBS and Y/C output ➤ Electronic circuit function ➤ Single click white balance ➤ Preloaded DSP ➤ TV System NTSC/PAL ➤ Image sensor Interline CCD ➤ Effective pixels 752*582 ➤ Pixel size 8.6*8.3 ➤ Number of scanning lines 625Lines ➤ Resolution 470TV lines(Horizontal) 460TV lines (Vertical) ➤ Signal-noise ratio 46dB ➤ Power DC12V + - 10% ➤ Camera interface C ➤ Dimension 31 (W) ×29 (H) ×80 (D) mm

Fundamental Experiments Content

- The recognition of the mechanisms, electric, control and software of robots;
- The operation practice of robots;
- Robotics kinematics;
- Robotics dynamics.



Ordering Guide

Model No.	Product name	Product Description
GRB3014	4DOF SCARA Robotic Arm (Type II)	ARB-MB-2004-II 4DOF Robotic Arm (Type II) GT-400-SG-PCI-EDU GT-400-SG motion controller ARB-EB-4 4-axis control module ARB-RM-2 Electric gripper ARB-WP Demo part component SRB-VC-4 Intelligent control software (with part of source code)
GRB3024	4DOF SCARA Robotic Arm with support stand (Type II)	ARB-MB-2004-II 4DOF Robotic Arm (Type II) ARB-BS-1 Aluminum stand GT-400-SG-PCI-EDU GT-400-SG motion controller ARB-RM-2 Electric gripper ARB-WP Demo part component SRB-VC-4 Intelligent control software (with part of source code)
GRB3034	Single camera vision device SCARA Robotic Arm (Type II)	ARB-MB-2004-II 4DOF Robotic Arm (type II) ARB-BS-1 Aluminum stand GT-400-SG-PCI-EDU GT-400-SG motion controller ARB-RM-2 Electric gripper ARB-WP Demo part component ARB-VM-1 Single camera vision module SRB-VC-4-1VS Single camera vision robotic arm control software (with part of source code)
GRB3044	Dual camera vision device SCARA Robotic Arm (type II)	ARB-MB-2004-II 4FOD Robotic Arm (type II) ARB-BS-1 Aluminum stand GT-400-SG-PCI-EDU GT-400-SG motion controller ARB-VM-2 Dual camera vision module ARB-RM-2 Electric gripper ARB-WP Demo part component SRB-VC-4-1VS Single camera vision robotic arm control software (with part of source code) SRB-VC-4-2VS Dual camera vision robotic arm control software (with part of source code)