The SCORBOT-ER 4u robot is a versatile and reliable system for educational use. The SCORBOT-ER4u robot arm can be mounted on a tabletop, pedestal or linear slidebase. The robot’s speed and repeatability make it highly suited for both stand-alone operations and integrated use in automated workcell and FMS applications such as robotic welding, machine vision and CNC machine tending. The optional RoboCell 3D simulation software lets students design and control industrial workcells.

The SCORBOT-ER 4u is a powerful tool for teaching science and technology in the classroom or lab. Many teachers have already discovered its potential in subjects such as:

- Mathematics: Use the robot to demonstrate 3-dimensional space and coordinate systems.
- Physics: Combine the robot with motion sensors and tracking software to measure and test physical properties such as speed, velocity and acceleration.
- Computer Science: Program complex conditional statements to solve logic problems such as the Hanoi Tower and have the robot execute the manipulation task.
- Technology: Use the robot controller’s digital and analog input/output capabilities to create and monitor systems controlled by physical properties such as light, temperature or sound.

SOFTWARE
RoboCell for USB Controller is an optional 3D simulation software that lets students create, program, simulate and control the entire operation of robotic workcells.

SCORBASE for USB Controller is a robot control and programming PC based robotic learning software. SCORBASE software is included with the robot arm.

CURRICULUM
With LearnMate® extensive curriculum and a wide range of accessories, the SCORBOT-ER 4u is the ultimate resource tool for robotics and technology training.

Fundamentals of Robotics for SCORBOT-ER4u
Robotics and Materials Handling 1 with SCORBOT-ER4u (laboratory)
Robotics and Materials Handling 2 with SCORBOT-ER4u
Automated Welding with SCORBOT-ER4u
Advanced Robotic Programming with the SCORBOT-ER4u
STANDARD FEATURES

- Mechanical arm
- Controller-USB
- USB communication cable
- Software CD
- Plastic dust covers
- Documentation for all software and hardware components

This system is certified for CE safety compliance.

SPECIFICATIONS

CONTROLLER
- USB Controller (see page 19).

MECHANICAL STRUCTURE
- Vertically articulated

NUMBER OF AXES
- 5 axes plus servo gripper

AXIS MOVEMENT RANGE EFFECTIVE SPEED
- Axis 1: Base rotation 310° 20°/sec
- Axis 2: Shoulder rotation 158° 26.3°/sec
- Axis 3: Elbow rotation 260° 26.3°/sec
- Axis 4: Wrist pitch 260° 83°/sec
- Axis 5: Wrist roll Unlimited 106°/sec

(MAXIMUM OPERATING RADIUS
- 610 mm (24")

END EFFECTORS
- DC servo gripper, with optical encoder, parallel finger motion; Measurement of object’s size by means of Gripper sensor and software.

MAXIMUM GRIPPER OPENING
- 75 mm (3") without rubber pads
- 65 mm (2.6") with rubber pads

HOMING
- Fixed position on each axis found by means of micro switches

FEEDBACK
- Optical encoder on each axis

ACTUATORS
- 12 VDC servo motors

TRANSMISSION
- Gears, timing belts, lead screw

MAXIMUM PAYLOAD
- Default parameters 1Kg (2.2 lbs)
- Reduce velocity increase weight up to 2.5Kg (5.5 lbs)

POSITION REPEatability
- ±0.18 mm (0.007") at TCP (tip of gripper)

WEIGHT
- 10.8 kg (23.8 lb)

MAXIMUM PATH VELOCITY
- 700 mm/sec (276'/sec)

AMBIENT OPERATING TEMPERATURE
- 2°–40°C (36°–104°F)

ACCESSORIES

- DC servo motor kit
- Gravity parts feeder
- Linear conveyor
- Linear slidebase for small robots
- MicroASRS
- Multi-purpose gripper adapters
- Rotary index table
- Teach Pendant for USB Controller

APPLICATIONS (SAMPLES)

ER4 u with Machine Tending
(Milling/Turning/Laser Engraver)
ER4 u with Assembly and/or Quality control

ER9 Pro para Montaje/Control de calidad