

## SCORBOT-ER 9Pro

### SPECIFICATIONS

Mechanical structure

Vertically articulated  
Enclosed casting  
Maximum Payload

4kg (8.8 lb) (with reduced acceleration)  
2kg (4.4 lb)(Full speed)  
Axis Movement

Range Effective Speed Maximum Speed  
Axis 1: Base rotation 276° 80°/sec 140°/sec  
Axis 2: Shoulder rotation 153° 69°/sec 123°/sec  
Axis 3: Elbow rotation 214° 78°/sec 140°/sec  
Axis 4: Wrist pitch 202° 103°/sec 166°/sec  
Axis 5: Wrist roll 737° 185°/sec 300°/sec

Speed

1.9 m/sec (74.8"/sec)  
Operating radius

691 mm (27.2") without gripper  
Number of Axes

5 rotational axes and gripper  
Repeatability

± 0.05 mm (0.002")  
Position Feedback

Incremental optical encoders with index pulse on each axis  
Homing

Optical switch and encoder index pulse on each axis  
Actuators

24VDC servo motor on each axis  
Transmission

Harmonic drives and timing belts  
Weight

51 kg (112.5 lb)

USB-Pro Controller  
Type of control

Real-time; PID; PWM  
Servo axis drivers

8 axes for robot and peripherals  
Path control

Joint; Linear; Circular  
Speed control

10 speed settings; Travel time definitions  
Control parameters

160 parameters, many are user-accessible; Servo control; PID; speed; velocity profile; axis position error; gripper operation; impact; limit protection; homing; Cartesian calculations.  
Power requirements

110-220VAC ±10%, 5A, 50-60Hz  
Internal power supplies

Servo: 48V  
Digital: 5V/12V/24V  
Microcontroller

Microcontroller ARM7TDMI Processor: 32-bit RISC Architecture with 256 Kbytes of Internal High-speed Flash  
Communication

USB type A cable connection to PC;  
Plug and play without rebooting;  
Integrated RS232 for teach pendant;  
Inputs

16 digital inputs: 24V max., sink/source configurable;  
4 analog inputs(8-bit resolution): input voltage 0-10V  
Outputs

16 digital outputs: 24V max.; 4 relays; 12 open collector, sink/source configurable; 2 analog outputs: output voltage 0-10V  
User power supply

12 VDC (1A) and 24 VDC (2A) terminals, for connection of remote switches, sensors, etc.  
Programming

SCORBASE for Controller-USB PRO software, with Multi tasking – Up to 100 concurrent programs, in-program parameter manipulation, built in Scripting, ON line Graph With PWM and position error; RoboCell for Controller-USB PRO : 3D simulation software (optional); Teach pendant for Controller-USB PRO (optional); Programming Interface  
Position definition

XYZ coordinates; Joint coordinates (degrees); Encoder counts; Absolute and relative positions; In program position manipulation  
LED indicators

Main power, power on , communicating with PC; Motor on; Digital Inputs / Digital Outputs;  
Emergency  
Weight

7.5 kg (16.5 lb)  
Dimensions

460(L)x245(W)x140(H) mm (18.1"x9.6"x5.5")  
Operating temperature

2° - 40°C (36° - 104°F)  
Safety features

Certified for CE safety compliance;  
Emergency switch on controller front panel/ Teach Pendant/remote;  
Input/Output short-circuit protection;  
Over-current protection;  
Communication error; impact; thermic overload