

# The Most Compact, Precise and Easy to Integrate SCARA Robot



## Ultra compact

- Has its controller embedded into the base
- 30% smaller than the closest comparable option with same reach



## Highly precise

- Boasts 0.005 mm repeatability



## Easy to integrate

- Hardware and software agnostic
- Can be mounted upside-down
- Easy to mount, weighs only 4.3 kg
- Highest range of motion among comparable SCARA robots



## Easy to use

- MecaPortal, the most intuitive control interface, is included in each robot
- Easiest and fastest robot installation (plug & play)



## Fast cycle times

- Maximized throughput for high-precision applications



## Robust build quality

- Precision machined aluminum housing
- Battery-less super high resolution encoders
- High power density, high efficiency precision motors
















## Low total cost of ownership

- Includes battery-less design, built-in controller, power supply, four communication protocols, M12 Ethernet cable and MecaPortal web interface with no license fee

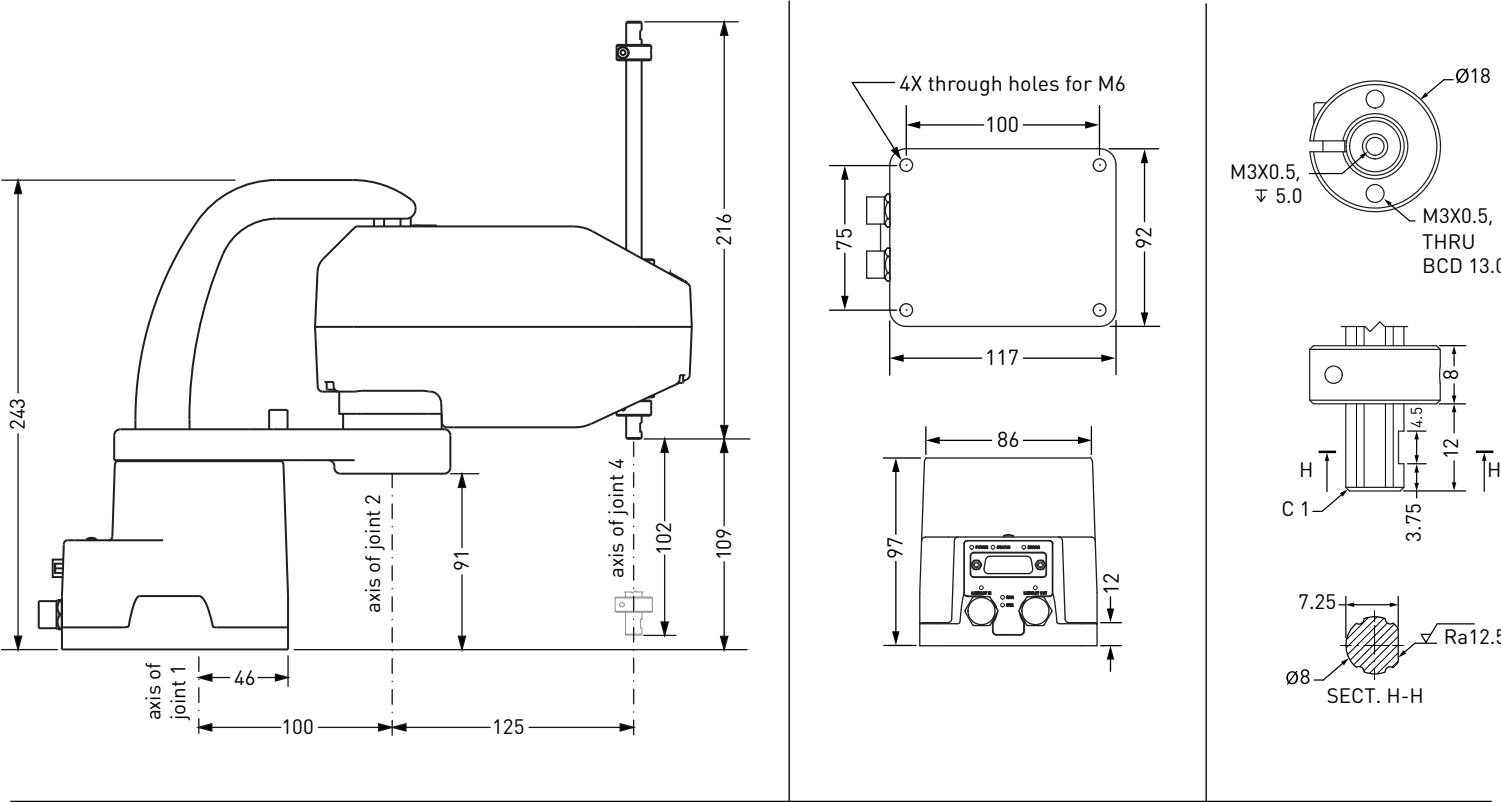
## Specifications

Characteristic	Value
Horizontal reach	225 mm
Position repeatability	0.005 mm
Rated payload	0.5 kg
Maximum payload	1.0 kg (under special conditions)
Weight of robot arm	4.3 kg
Mounting orientations	tabletop or upside down
Range for joint 1	[-140°, 140°]
Range for joint 2	[-145°, 145°]
Range for joint 3	[-102 mm, 0 mm]
Range for joint 4	[-3,600°, 3,600°]
Cycle time*	0.42 s
Maximum speed for joint 1	300°/s
Maximum speed for joint 2	500°/s
Maximum speed for joint 3	700 mm/s
Maximum speed for joint 4	5,000°/s
Average power consumption	200 W
Operating ambient temperature range	[5°, 45°]
Operating ambient relative humidity range	[10%, 80%] (non-condensing)
IP rating	IP 40

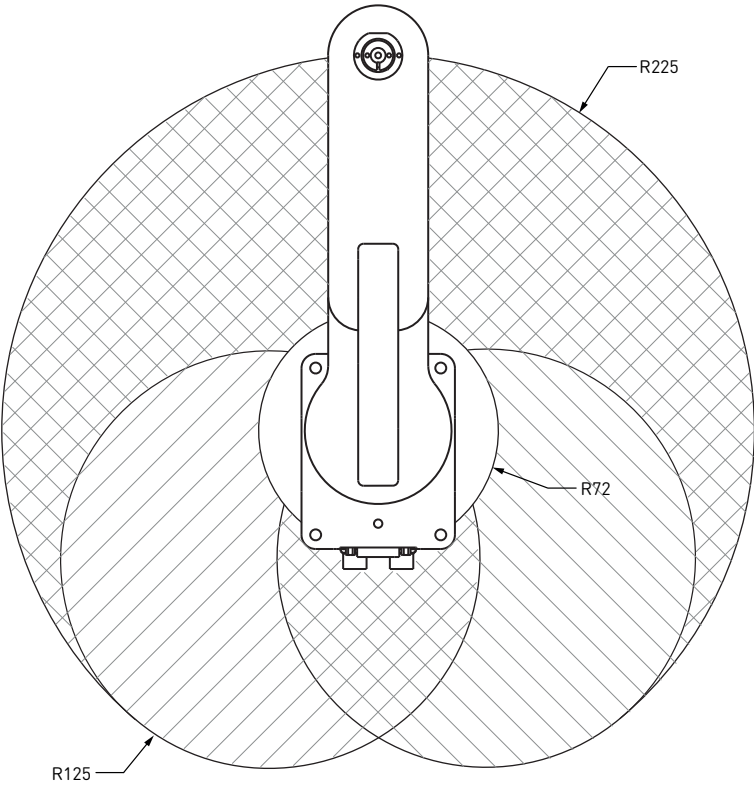
\*Cycle time based on round-trip arch motion (100 mm horizontal, 25 mm vertical) with 500 g payload.

Communication Protocols	Programming Languages	Available PLC Packages
    TCP Socket	    & more	     & more

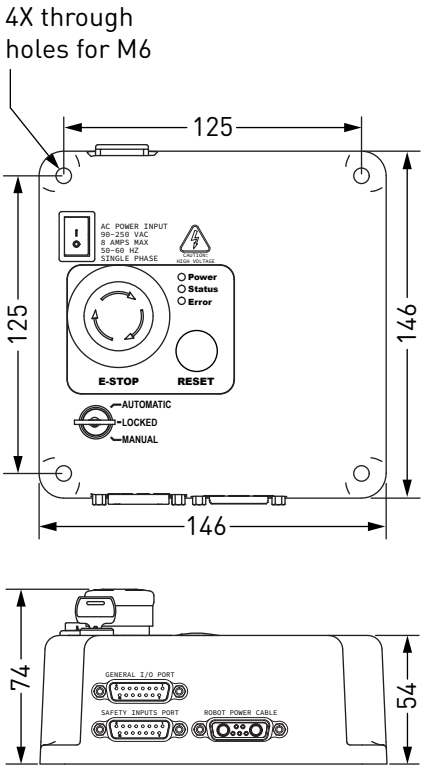
The principal dimensions and offsets of the MCS500 robot



The working range of the MCS500 robot



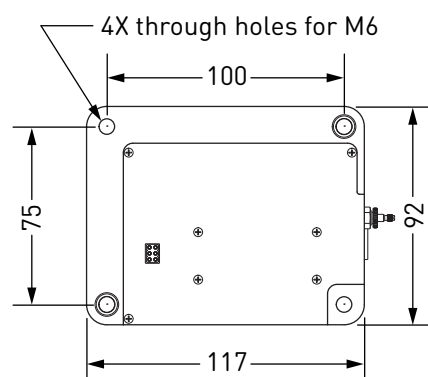
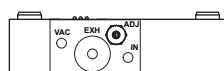
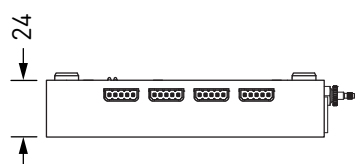
Dimensions of the MCS500 intelligent power supply



# Smart Vacuum & I/O module



The MVK01 kit contains a vacuum and I/O module developed by Mecademic, specifically for the MCS500 (R1) SCARA robot arm. The module essentially consists of a configurable vacuum ejector with a pressure sensor and circuitry for 8 digital inputs and 8 digital outputs. The MVK01 kit also comes with several accessories: three suction cups, a mechanical adaptor, 4-mm (OD) tubing, and four cable connectors.



units: mm

MVK01 module dimensions

Specifications

TECHNICAL SPECIFICATIONS	
Characteristic	Value
Compressed air connector	port IN
Operating pressure	7 bar (102 psi)
Vacuum connector	port VAC
Maximum vacuum	-75 kPa
Pressure sensor accuracy	±1.5 kPa
Suction rate (max.)	37.5 l/min
Air consumption suction	23.5 l/min
Maximum for inputs	24 V (DC), 10 mA
Minimum for inputs	3.3 V (DC), 1.1 mA
Maximum for outputs	24 V (DC), 250 mA
Ports	Three M5 threaded orifices, of which port IN comes with preinstalled push-in pneumatic fitting for 6-mm OD tubes, port VAC comes with preinstalled push-in pneumatic fitting for 4-mm OD tubes, and port EXH comes with a preinstalled pneumatic muffler.
Mechanical adjustments	Screw for adjusting the force of the air purging (marked ADJ)
Housing	Black anodized aluminum alloy
Total weight	572 g
Operating temperature	5° to 45°C
Operating humidity	[10%, 80%] (non-condensing)



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