# High performance, cost effective factory solutions



## Value and performance

The Epson LS-B series is both powerful and cost-effective with its performance, as well as with its low acquisition and operating costs.

The Epson LS-B 4 axis robot (including a controller) is a worthwhile investment and is designed to work in environments, which were typically reserved for linear systems, or other less flexible machines.

#### Advantages at a glance

Batteryless encoder

Space and energy saving

New top-of-arm layout

Built-in camera cable

Reduced cable height

#### Batteryless encoder

Minimise downtime and reduce overall cost of ownership.

#### Built-in camera connector

It all comes integrated with an RJ45 Ethernet connector for easy vision system setup.

#### User-friendly top-of-arm layout

An extra ethernet port and screw holes make for easy top of arm equipment mounting and welcome extratime saving. Everything is spaced out for easier than ever access.

#### Reduced cable height

The space-saving, compact design cuts cabling down to size: ideal for hard to reach work cell layouts.



## The range

#### **Advanced Epson LS-B Series**

Precision guaranteed. The four LS-B models vary in load capacity and range. Each robot is also available in a cleanroom version.

#### What's included:

Epson robot and controller

- 1 Epson RC+ program CD including simulator
- 2 mounting bracket sets for the RC90 robot controller
- 1 set of 3m power and signal cables
- 1 emergency stop plug
- 1 standard I/O plug

- 1 plug set for user cabling
- 1 backup disk for the RC90 robot controller
- 1 USB programming cable (RC90)

User manuals on CD

1 Installation/safety manual

## Optional extras:

Extended power and signal cable (5m/10m)

Tool adapter for easy installation of end effectors on Z axis



#### LS3-B SCARA Robot

Payload: 3kg

Range: 400mm

Standard Version or Cleanroom Version



#### LS6-B SCARA Robot

Payload: 6kg

Range: 500mm, 600mm and 700mm

Standard Version or Cleanroom Version



#### LS10-B SCARA Robot

Payload: 10kg

Range: 600mm, 700mm and 800mm

Standard Version or Cleanroom Version



#### LS20-B SCARA Robot

Payload: 20kg

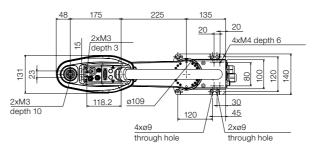
Range: 800mm and 1000mm

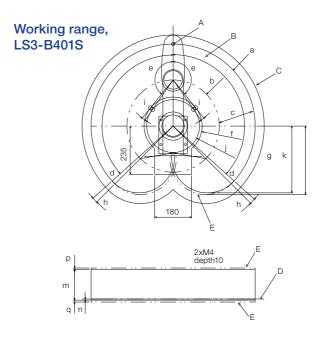
Standard Version or Cleanroom Version



Model name		LS3-B	A
Model number		LS3-B401S (LS3-B401C)	
Arm length (J1+J2) mm		400	
Payload*1 -	Rated (kg)	1	
Fayloau *	Max. (kg)	3	
	(J1+J2) mm	+/- 0.01	
Repeatability	(J3) mm	+/- 0.01	
	(J4) deg	+/- 0.01	
Standard cyc	cle time (s)*2	0.42	
	(J1+J2) mm/s	7200	
Max. operation speed	(J3) mm/s	1100	
	(J4) deg/s	2600	
(J4) allowable	Rated (kg m²)	0.005	
moment of inertia*3	Max. (kg m²)	0.05	
(J3) down	force (N)	100	
Installation E	nvironment	Standard or Clean (ISO4, Not ESD applied)	
Mountin	ng type	Floor	
Weight (kg) (cable	es not included)	14	
Applicable	Controller	RC90-B	
Installed wire for	r customer use	D-sub 15 pin x1, RJ45 8 pin (CAT 5e) x1	
Installed pneumatic tu	ube for customer use	Ø6mm x2, Ø4mm x1: 0.59Mpa (6kgf/cm²)	
Power	(V)	AC200-240	
Power Consumption*4	(kVA)	1.1	
Cable len	gth (m)*5	3, 5, 10	
		EU Directive Complied *5, KC, KCs	
Safety st	tandard	· · · · · · · · · · · · · · · · · · ·	

#### Top view





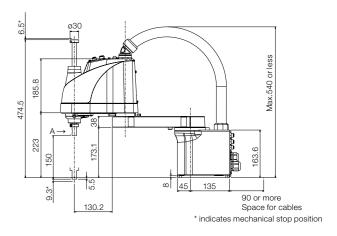
#### Working range, Epson SCARA LS3-B

			LS3-B401*
а	Arm #1 + Arm #2 length (mm)		400
b	Arm #1 length (mm)		175
С	Arm #2 length (mm)		225
d	(J1) motion angle (deg)		132
е	(J2) motion angle (deg)		141
f	Motion range (deg)		141.6
g	Motion range at the rear (deg)		325.5
h	Angle of the (J1) mechanical stop (deg)		2.8
i	Angle of the (J2) mechanical stop (deg)		4.2
j	Mechanical stop area (mm)		128.8
k	Mechanical stop area at the rear (mm)		333.5
n	n (J3) motion range (mm)	Standard	150
	ii (33) molion range (min)	Clean	120
_	Distance from the base	Standard	5.5
n	mounting face (mm)	Clean	9.5
_	(J3) mechanical stop	Standard	6.5
р	area upper end (mm)	Clean	10.5
_	(J3) mechanical stop	Standard	6.5
q	area lower end (mm)	Clean	10.5
_	·		

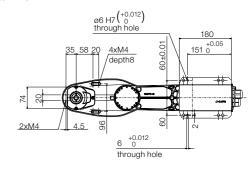
A = Centre of Joint #3 C = NB = Motion range D = B

C = Maximum range D = Base mounting face E = Area limited by a mechanical stop

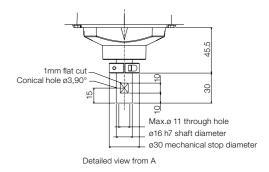
#### Side view



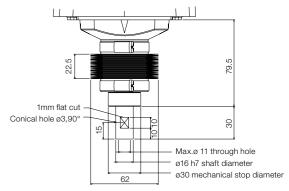
#### Rear view



#### Flange (standard)



#### Flange (cleanroom)



<sup>\*1 :</sup> Do not apply the load exceeding the maximum payload.

<sup>\*2 :</sup> Cycle time based on round-trip arch motion (300mm horizontal, 25mm vertical) with Accel 120% and 2kg payload (path coordinates optimised for maximum speed). Rounded down to the third decimal place.

<sup>\*3:</sup> If the centre of gravity is at the centre of each arm. If the centre of gravity is not at the centre of each arm, set the eccentric quantity using INERTIA command.

<sup>\*4 :</sup> It depends on operating environment and operation program.

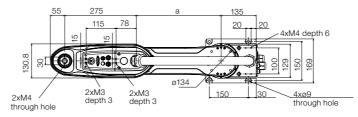
<sup>5:</sup> Standard cable only. There is no setting of the flexible cable. If necessary, a new MT or product planning is necessary.

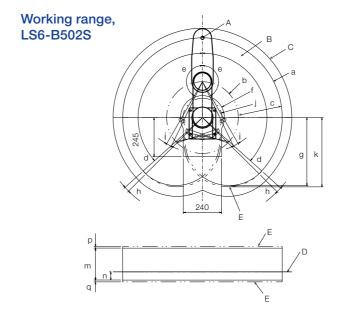


Model name			LS6-B	-	
Model number		LS6-B502S (LS6-B502C)	LS6-B602S (LS6-B602C)	LS6-B702S (LS6-B702C)	
Rated (kg)			2		
Payload*1	Max. (kg)		6		
Arm lengt	h (J1+J2)	500	600	700	
	(J1)	225	325	425	
	(J2)		275		
	(J1+J2) mm		+/- 0.02		
Repeatability	(J3) mm		+/- 0.01		
·	(J4) deg		+/- 0.01		
Standard cy	cle time (s)*2	0.41	0.42	0.43	
	(J1) deg		+/- 132		
Man matian man	(J2) deg		+/- 150		
Max. motion range -	(J3) mm		200 (Clean 170)		
	(J4) deg		+/- 360		
	(J1+J2) mm/s	7120	7850	8590	
Max. operation speed	(J3) mm/s		1100		
	(J4) deg/s		2000		
(J4) allowable	Rated (kg m²)		0.01		
moment of inertia*3	Max. (kg m²)		0.12		
(J3) down	force (N)		100		
Mountin	ng type		Floor		
Installation E	nvironment	Stand	dard or Clean (ISO4, Not ESD a	pplied)	
Weight (kg) (cabl	es not included)	17	17	18	
Applicable	Controller		RC90-B		
Cable length (m)*4			3, 5, 10		
Installed wire fo	r customer use	D-sı	D-sub 15 pin x1, RJ45 8 pin (CAT 5e) x1		
Installed pneumatic to	ube for customer use	Ø6mm x2, Ø4mm x1			
0-4-1	tondord	E	U Directive Complied *5, KC, K	Cs	
Safety s	tandard	ANSI/R	IA R15.06-2012, NFPA 79 (2007	7 Edition)	

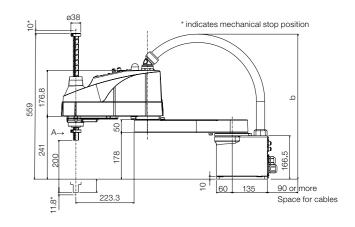
J2 = Axis 2 J4 = Axis 4

#### Top view

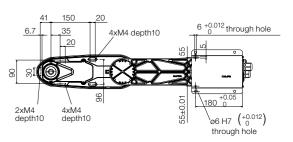




#### Side view



#### Rear view



#### Working range, Epson SCARA LS6-B

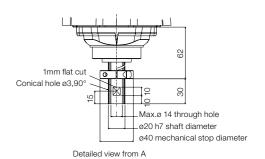
			LS6-B502*	LS6-B602*	LS6-B702*
а	Arm #1 + Arm #2 length (mm)		500	600	700
b	Arm #1 length (mm)		225	325	425
С	Arm #2 length (mm)			275	
d	(J1) motion angle (deg)			132	
е	(J2) motion angle (deg)			150	
f	Motion range (deg)		138.1	162.6	232
g	Motion range at the rear (deg)		425.6	492.5	559.4
h	Angle of the (J1) mechanical stop (deg)			2.8	
i	Angle of the (J2) mechanical stop (deg)			4.2	
j	Mechanical stop area (mm)		121.8	142.5	214
k	Mechanical stop area at the rear (mm)		433.5	504	574.5
m	(J3) motion range (mm)	LS6-B**2S		200	
	(JS) Motion range (Min)	LS6-B**2C		170	
_	Distance from the base	LS6-B**2S		51	
n	mounting face (mm)	LS6-B**2C		530	
	(J3) mechanical stop	LS6-B**2S		10	
р	area upper end (mm)	LS6-B**2C		6	
~	(J3) mechanical stop	LS6-B**2S		11.8	
q	area lower end (mm)	LS6-B**2C		9.8	

#### Centre of Joint #3 C = Maximum

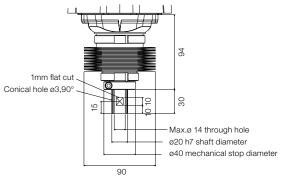
#### C = Maximum range D = Base mounting face

#### E = Area limited by a mechanical stop

#### Flange (standard)



#### Flange (cleanroom)



 $<sup>^{\</sup>star}1$  : Do not apply the load exceeding the maximum payload.

<sup>\*2 :</sup> Cycle time based on round-trip arch motion (300mm horizontal, 25mm vertical) with Accel 120% and 2kg payload (path coordinates optimised for maximum speed). Rounded down to the third decimal place.

<sup>\*3:</sup> If the centre of gravity is at the centre of each arm. If the centre of gravity is not at the centre of each arm, set the eccentric quantity using INERTIA command.

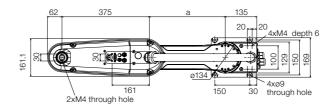
 $<sup>^*4:</sup> Standard\ cable\ only.\ There\ is\ no\ setting\ of\ the\ flexible\ cable.\ If\ necessary,\ a\ new\ MT\ or\ product\ planning\ is\ necessary.$ 

<sup>\*5 :</sup> Because the robot is built and used in the customer's equipment, therefore robot shipment includes a 'Declaration of Incorporation of Partly Completed Machinery'.

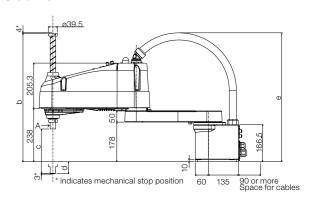


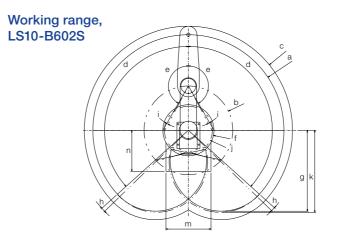
Model	name		LS10-B		
Model n	umber	LS10-B60*S (LS10-B60*C)	LS10-B70*S (LS10-B70*C)	LS10-B80*S (LS10-B80*C	
Arm lengt	h (J1+J2)	600	700	800	
D 1 14	Rated (kg)		5		
Payload*1 -	Max. (kg)		10		
	(J1+J2) (mm)	+/- 0.02	+/- 0.02	+/- 0.025	
Repeatability	(J3) mm		+/- 0.01		
-	(J4) deg		+/- 0.01		
Standard cyc	cle time (s)*2	Less than 0.389	Less than 0.409	Less than 0.449	
	(J1+J2) mm/s	9100	9800	10500	
Max. operation speed	(J3) mm/s		1100		
_	(J4) deg/s		2500		
Join#4 allowable	Rated (kg m²)		0.02		
moment of inertia*3	Max. (kg m²)		0.3		
(J3) down	force (N)		200		
Mountir	ig type		Floor		
Installation E	nvironment	Star	Standard or Clean (ISO4, Not ESD applied)		
Weight (kg) (cable	es not included)	22	22	23	
Applicable	Controller		RC90-B		
Cable len	gth (m)*4		3, 5, 10		
Installed wire for	r customer use	D-:	D-sub 15 pin x1, RJ45 8 pin (CAT 5e) x1		
Installed pneumatic tu	be for customer use	Ø6mm x2, Ø4mm x1			
Power	(V)	AC200-240			
Power Consumption*4	(kVA)		1.8		
Cable len	gth (m)*5	3, 5, 10			
0-1-1			EU Directive Complied *5, KC, K	Cs	
Safety standard		ANSI/F	RIA R15.06-2012, NFPA 79 (200)	7 Edition)	

#### Top view

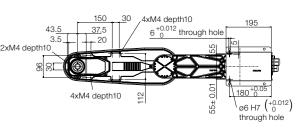


#### Side view





#### Rear view



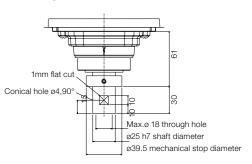
#### Working range, Epson SCARA LS10-B

			LS10-B60**	LS10-B70**	LS10-B80**
а	Arm #1 + Arm #2 length (mm)		600	700	800
b	Arm #1 length (mm)		225	325	425
С	Arm #2 length (mm)			275	
d	(J1) motion angle (deg)			132	
е	(J2) motion angle (deg)			150	
f	Motion range (deg)		138.1	162.6	232
g	Motion range at the rear (deg)		425.6	492.5	559.4
h	Angle of the (J1) mechanical stop (deg)			2.8	
i	Angle of the (J2) mechanical stop (deg)			4.2	
j	Mechanical stop area (mm)		121.8	142.5	214
k	Mechanical stop area at the rear (mm)		433.5	504	574.5
m	(12) motion range (mm)	LS10-B**2S		200	
m	(J3) motion range (mm)	LS10-B**3S		300	
	Distance from the base	LS10-B**2*		53	
n	mounting face (mm)	LS10-B**3*		153	
р	(J3) mechanical stop area upper end (mm)	LS10-B***S		4	
q	(J3) mechanical stop area lower end (mm)			3	

Centre of Joint #3 C = Maximum range

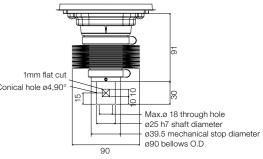
#### E = Area limited by a mechanical stop

#### Flange (standard)



Detailed view from A

#### Flange (cleanroom)



11

B = Motion range D = Base mounting face Detailed view

 $<sup>^{\</sup>star}1$  : Do not apply the load exceeding the maximum payload.

<sup>\*2 :</sup> Cycle time based on round-trip arch motion (300mm horizontal, 25mm vertical) with Accel 120% and 2kg payload (path coordinates optimised for maximum speed).

<sup>\*3:</sup> If the centre of gravity is at the centre of each arm. If the centre of gravity is not at the centre of each arm, set the eccentric quantity using INERTIA command.

 $<sup>^{*}\!4</sup>$  : It depends on operating environment and operation program.

 $<sup>^{*}5</sup>$ : Standard cable only. There is no setting of the flexible cable. If necessary, a new MT or product planning is necessary.

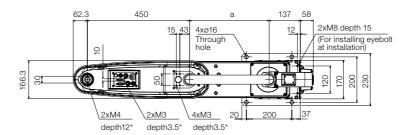
Detailed view from A

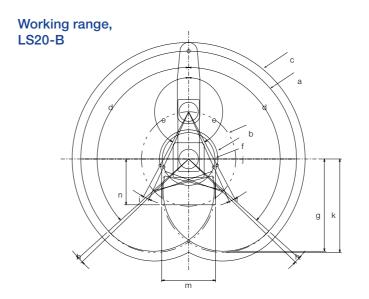


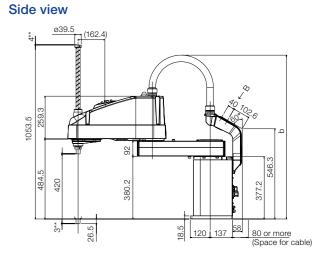
Model name		LS2	0-B
Model number		LS20-B804S (LS20-B804C)	LS20-BA04S (LS20-BA04C)
Arm length (J1+J2)		800	1000
Payload*1	Rated (kg)	10	0
Payloau 1	Max. (kg)	21	0
	(J1+J2) (mm)	+/- 0	.025
Repeatability	(J3) mm	+/- (	0.01
	(J4) deg	+/- (	0.01
Standard cy	cle time (s)*2	0.39	0.43
	(J1+J2) mm/s	9940	11250
Max. operation speed	(J3) mm/s	23	00
	(J4) deg/s	14(	00
(J4) allowable moment of inertia*3	Rated (kg m²)	0.0	05
	Max. (kg m²)	1	
(J3) down	force (N)	25	50
Mountin	ng type	Flo	oor
Installation E	Environment	Standard or Clean (ISO4, Not ESD applied)	
Weight (kg) (cabl	les not included)	48	51
Applicable	Controller	RC90 (no	npolarity)
Installed wire fo	r customer use	D-sub 15 pin x1, 9 pin x1	, RJ45 8 pin (CAT 5e) x1
Installed pneumatic to	ube for customer use	Ø6mm x2,	Ø4mm x1
Power	(V)	AC200	0-240
Power Consumption*4	(kVA)	2.	4
Cable ler	ngth (m)*5	3, 5, 10	
0-1-1	to a dougl	EU Directive Com	nplied *5, KC, KCs
Safety standard —		ANSI/RIA R15.06-2012,	NFPA 79 (2007 Edition)

J1 = Axis 1 J3 = Axis 3

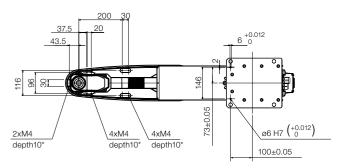
#### Top view





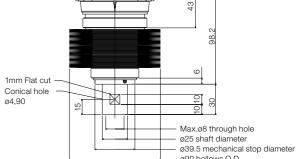


#### Rear view



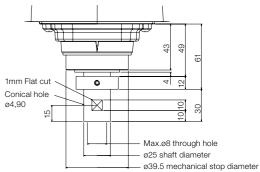
#### Working range, Epson SCARA LS20-B

			LS20-B804*	LS20-BA04*
а	Arm #1 + Arm #2 length (mm)		800	1000
b	Arm #1 length (mm)		350	550
С	Arm #2 length (mm)		48	50
d	(J1) motion angle (deg)		10	32
е	(J2) motion angle (deg)		15	52
f	Motion range (deg)		216.5	260.7
g	Motion range at the rear (deg)		684.2	818
h	Angle of the (J1) mechanical stop (deg)		2	2
i	Angle of the (J2) mechanical stop (deg)		3	.6
j	Mechanical stop area (mm)		195.3	232.8
k	Mechanical stop area at the rear (mm)		693.1	832.1
	(10) motion range (mm)	LS20-B***S	42	20
m	(J3) motion range (mm)	LS20-B***C	39	90
	Distance from the base	LS20-B***S	26	3.5
n	mounting face (mm)	LS20-B***C	33	3.7
(J3) mechanical stop		LS20-B***S	4	4
р	area upper end (mm)	LS20-B***C	3	.2
~	(J3) mechanical stop	LS20-B***S	(	3
q	area lower end (mm)	LS20-B***C	1	.8



Detailed view from A

E = Area limited by a mechanical stop



Flange (standard)

Detailed view from A

#### Flange (cleanroom)

J2 = Axis 2 J4 = Axis 4

<sup>\*1 :</sup> Do not apply the load exceeding the maximum payload.

<sup>\*2 :</sup> Cycle time based on round-trip arch motion (300mm horizontal, 25mm vertical) with Accel 120% and 2kg payload (path coordinates optimised for maximum speed).

<sup>\*3:</sup> If the centre of gravity is at the centre of each arm. If the centre of gravity is not at the centre of each arm, set the eccentric quantity using INERTIA command.

 $<sup>{}^{\</sup>star}\!4$  : It depends on operating environent and operation program.

<sup>\*5 :</sup> Standard cable only. There is no setting of the flexible cable. If necessary, a new MT or product planning is necessary.

## RC90-B controller



RC90-B	controll	Δr
U-080-D	COLLIGIO	ᄗ

Ports Substituted by Chambers   14 MSB memory, 15 MSB device   14 MSB memory   15 MSB device   15 MSB server   15 MSB server		RC90-B controller
Hardware Option  Teach Pendant 2  I/O expansion 24/16, 2 additional cards possible I/O slave fieldbus cards EtherCat, DeviceNet, Profilbus, Co-Link, Ethernet / IP, 1 additional card of leach type possible I/O fieldbus master cards Profibus, DeviceNet, Ethernet / IP, 1 additional card of each type possible No fieldbus master cards Profibus, DeviceNet, Ethernet / IP, 1 additional card of each type possible RS-2320 serial interface 2 channels per card, 2 additional cards possible RS-2420 serial interface 3 channels per card, 2 additional cards possible RC+ API 7.0 previously VB Guide External Control Point Motion (ECP) GUI Builder GUI Builder Connection values  AC 200 V to AC 240 V, one-phase 50/60 Hz Power consumption Up to 2,500 VA – depending on manipulator model Ambient temperature S-40°C Relative humidity  Emergency Stop button, safety door entry, low power mode, generator brake Error detection Encoder cable break Detectors Motor overload, motor speed error, irregular motor torque (manipulator out of control), overheating of a motor driver module, positioning overrun – servo error, speed overrun – servo error, CPU error, memory checksum error, relay drop-out, excess voltage, mains voltage outage, temperature deviation, fin error  CE ANSI RIA RIS.06-1999 EC Machinery Directive 2006/42/EC Dimensions	Ports	1x 10/100 base T-Ethernet 24/16 standard I/O channels – 8/8 as remote
V/O expansion   24/16, 2 additional cards possible   V/O slave fieldbus cards   V/O slave fieldbus cards   EtherCat, DeviceNet, Profibus, Profibus, CO-Link, Ethernet / IP, 1   additional card of each type possible   V/O fieldbus master cards   V/O fieldbus master cards   Profibus, DeviceNet, Ethernet / IP, 1   additional card of each type possible   RS-232C serial interface   2   channels per card, 2   additional cards possible   RS-232C serial interface   2   channels per card, 2   additional cards possible   RS-232C serial interface   2   channels per card, 2   additional cards possible   RS-232C serial interface   2   channels per card, 2   additional cards possible   RS-232C serial interface   2   channels per card, 2   additional cards possible   RS-232C serial interface   2   channels per card, 2   additional cards possible   RS-23C serial interface   2   channels per card, 2   additional cards possible   RS-23C serial interface   2   channels per card, 2   additional cards possible   RS-23C serial interface   2   channels per card, 2   additional cards possible   RS-23C serial interface   2   channels per card, 2   additional cards possible   RS-23C serial interface   2   channels per card, 2   additional cards   2   channels per card, 2   channels per card, 2   channels per card,	CPU	32-bits Microprocessor
Expansion card options  EtherCat, DeviceNet, Profibus, Co-Link, Ethernet / IP, 1 additional card of each type possible I/O fieldbus master cards Profibus, DeviceNet, Ethernet / IP, 1 additional card of each type possible I/O fieldbus mater cards Profibus, DeviceNet, Ethernet / IP, 1 additional card of each type possible RS-232C serial interface 2 channels per card, 2 additional cards possible RC+ API 7.0 previously VB Guide External Control Point Motion (ECP) GUI Builder  Development environment Epson SPEL+ multitasking-capable Connection values AC 200 V to AC 240 V, one-phase 50/60 Hz  Power consumption Up to 2,500 VA – depending on manipulator model Ambient temperature 5-40°C Relative humidity Emergency Stop button, safety door entry, low power mode, generator brake Error detection Encoder cable break Detectors Motor overload, motor speed error, irregular motor torque (manipulator out of control), overheating of a motor driver module, positioning overrun – servo error, Speed overrun – servo error, CPU error, memory checksum error, relay drop-out, excess voltage, mains voltage outage, temperature deviation, fan error  CE Certifications 380 x 350 x 180mm	Hardware Option	Teach Pendant 2
Software options  External Control Point Motion (ECP) GUI Builder  Development environment  Epson RC+ 7.0  Programming language  Epson SPEL+ multitasking-capable  Connection values  AC 200 V to AC 240 V, one-phase 50/60 Hz  Power consumption  Up to 2,500 VA – depending on manipulator model  Ambient temperature  5-40°C  Relative humidity  20% to 80% – non-condensing  Emergency Stop button, safety door entry, low power mode, generator brake  Error detection  Encoder cable break  Detectors  Motor overload, motor speed error, irregular motor torque (manipulator out of control), overheating of a motor driver module, positioning overrun – servo error, speed overrun  - servo error, CPU error, memory checksum error, relay drop-out, excess voltage, mains voltage outage, temperature deviation, fan error  CE  Certifications  ANSI RIA RT.5.06-1999  EC Machinery Directive 2006/42/EC  Dimensions  Sa8 x 350 x 180mm	Expansion card options	24/16, 2 additional cards possible  I/O slave fieldbus cards  EtherCat, DeviceNet, Profibus, ProfiNet, CC-Link, Ethernet / IP, 1 additional card of each type possible  I/O fieldbus master cards  Profibus, DeviceNet, Ethernet / IP, 1 additional card of each type possible  RS-232C serial interface
Programming language  Epson SPEL+ multitasking-capable  Connection values  AC 200 V to AC 240 V, one-phase 50/60 Hz  Power consumption  Up to 2,500 VA – depending on manipulator model  Ambient temperature  5-40°C  Relative humidity  20% to 80% – non-condensing  Emergency Stop button, safety door entry, low power mode, generator brake  Error detection  Encoder cable break  Detectors  Motor overload, motor speed error, irregular motor torque (manipulator out of control), overheating of a motor driver module, positioning overrun – servo error, speed overrun – servo error, CPU error, memory checksum error, relay drop-out, excess voltage, mains voltage outage, temperature deviation, fan error  Certifications  CE  ANSI RIA R15.06-1999  EC Machinery Directive 2006/42/EC  Dimensions	Software options	External Control Point Motion (ECP)
Connection values  AC 200 V to AC 240 V, one-phase 50/60 Hz  Power consumption  Up to 2,500 VA – depending on manipulator model  Ambient temperature  5-40°C  Relative humidity  20% to 80% – non-condensing  Emergency Stop button, safety door entry, low power mode, generator brake  Error detection  Encoder cable break  Detectors  Motor overload, motor speed error, irregular motor torque (manipulator out of control), overheating of a motor driver module, positioning overrun – servo error, speed overrun  - servo error, CPU error, memory checksum error, relay drop-out, excess voltage, mains voltage outage, temperature deviation, fan error  CE  ANSI RIA R15.06-1999  EC Machinery Directive 2006/42/EC  Dimensions  380 x 350 x 180mm	Development environment	Epson RC+ 7.0
Power consumption  Up to 2,500 VA – depending on manipulator model  Ambient temperature  5-40°C  Relative humidity  20% to 80% – non-condensing  Emergency Stop button, safety door entry, low power mode, generator brake  Error detection  Encoder cable break  Detectors  Motor overload, motor speed error, irregular motor torque (manipulator out of control), overheating of a motor driver module, positioning overrun – servo error, speed overrun – servo error, cPU error, memory checksum error, relay drop-out, excess voltage, mains voltage outage, temperature deviation, fan error  CE  ANSI RIA R15.06-1999  EC Machinery Directive 2006/42/EC  Dimensions  380 x 350 x 180mm	Programming language	Epson SPEL+ multitasking-capable
Ambient temperature  Relative humidity  20% to 80% – non-condensing  Emergency Stop button, safety door entry, low power mode, generator brake  Error detection Encoder cable break  Detectors  Motor overload, motor speed error, irregular motor torque (manipulator out of control), overheating of a motor driver module, positioning overrun – servo error, speed overrun – servo error, CPU error, memory checksum error, relay drop-out, excess voltage, mains voltage outage, temperature deviation, fan error  CE  ANSI RIA R15.06-1999 EC Machinery Directive 2006/42/EC  Dimensions  380 x 350 x 180mm	Connection values	AC 200 V to AC 240 V, one-phase 50/60 Hz
Relative humidity  20% to 80% – non-condensing  Emergency Stop button, safety door entry, low power mode, generator brake  Error detection  Encoder cable break  Detectors  Motor overload, motor speed error, irregular motor torque (manipulator out of control), overheating of a motor driver module, positioning overrun – servo error, speed overrun – servo error, CPU error, memory checksum error, relay drop-out, excess voltage, mains voltage outage, temperature deviation, fan error  CE  ANSI RIA R15.06-1999  EC Machinery Directive 2006/42/EC  Dimensions  380 x 350 x 180mm	Power consumption	Up to 2,500 VA – depending on manipulator model
Emergency Stop button, safety door entry, low power mode, generator brake  Error detection Encoder cable break  Detectors  Motor overload, motor speed error, irregular motor torque (manipulator out of control), overheating of a motor driver module, positioning overrun – servo error, speed overrun – servo error, CPU error, memory checksum error, relay drop-out, excess voltage, mains voltage outage, temperature deviation, fan error  CE  ANSI RIA R15.06-1999 EC Machinery Directive 2006/42/EC  Dimensions  380 x 350 x 180mm	Ambient temperature	5-40°C
Safety equipment  Safety equipment  Motor overload, motor speed error, irregular motor torque (manipulator out of control), overheating of a motor driver module, positioning overrun – servo error, speed overrun – servo error, CPU error, memory checksum error, relay drop-out, excess voltage, mains voltage outage, temperature deviation, fan error  CE  ANSI RIA R15.06-1999  EC Machinery Directive 2006/42/EC  Dimensions  380 x 350 x 180mm	Relative humidity	20% to 80% – non-condensing
Certifications  ANSI RIA R15.06-1999 EC Machinery Directive 2006/42/EC  Dimensions  380 x 350 x 180mm	Safety equipment	Error detection Encoder cable break Detectors  Motor overload, motor speed error, irregular motor torque (manipulator out of control), overheating of a motor driver module, positioning overrun – servo error, speed overrun – servo error, CPU error, memory checksum error, relay drop-out, excess voltage, mains voltage
	Certifications	ANSI RIA R15.06-1999
Price Included in SCARA Light price	Dimensions	380 x 350 x 180mm
	Price	Included in SCARA Light price

Small, compact and flexible, the RC90-B is ideal for small work cells and can be installed in a control cabinet. This flexible application can be operated as a stand alone or integrated system.

Use as a slave within a network or as a master to control multiple robots and peripheral devices. It comes with serial interfaces, expansion I/O cards and an Ethernet port, but should you require additional inputs/outputs, you can expand your system cost-effectively and flexibly to suit your needs.



TP2 mobile operating unit





I/O expansion card

I/O expansion cable kit

I/O expansion kit (card, block and cable)



RS-232C serial interface



Fieldbus cards

Slave

Profibus, ProfiNet, DeviceNet, CC-Link, EtherCat

EtherNet/IP

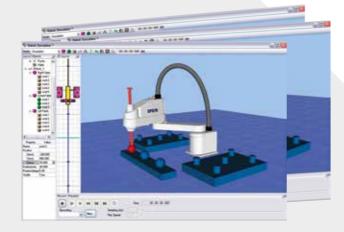
Master

Profibus, DeviceNet, Ethernet/IP

## Epson RC+ 7.0 development interface – powerful, efficient, intuitive

Thanks to its intuitive Windows control interface, open structure and integrated image processing, programming applications is incredibly quick and easy.

The unique Epson-developed SPEL+ script language, enables you to program a wide range of robot motions, from simple pick & place application to complex multi-manipulator line control.



The Epson RC+ Simulator allows you to carry out risk-free testing, comparison and process visualisation before any robot implementation.

### Integrated software tools for the Epson RC+ 7.0 development environment

#### Command

One-line command editor.

#### Compiler

Programme checking (syntax, definition, value range, and many more).

#### Debugger

Programme with stop points / step mode.

#### DLL-functions

Access to external DLL functions.

#### Editor

Create SPEL+ programs:

Online help, syntax check, label lists, detection and colour display of keywords, parameters and comments, parameter list, definition jump.

#### Error text editor

Creation of your own, application-specific, error messages.

#### File management

Create and access files and databases (Excel, Access, SQL).

#### IO label editor

Edit names for I/O / markers / field bus I/O for the data sizes bit, byte, and word.

#### IO monito

Display the status of I/O / markers / field bus I/O for the data sizes bit, byte, and word. Allows you to create special user displays.

#### Macro editor

Create a SPEL+ program as a programming aid.

#### Robot manager

Contains all information and control elements relevant to robots – inserted in clear windows: Set-up, edit points, loop parameters, tool and robot coordinate systems, load capacity and moment of inertia. The robot trip points can be used to switch power on and off, complete a reset or complete a home run.

#### Stack editor

Display the program branches.

#### System history

Record errors, events and warnings (diagnostics).

#### Task manager

Display called multi-tasks, traps, and their statuses, display current program line.

#### Variable editor

Display / Edit current variable values.

#### Maintenance manager

Create / Load / Display backups, controller reset.

#### Simulator

Plan and visualise processes, validate programs.

#### Software options

#### Conveyor tracking

Synchronise position with conveyor running.

#### External control point (ECP)

Guide the workpiece contour easily and precisely along an external point.

#### Force sensing

Real-time robot force measurement.

#### GUI builder

For the fast, easy creation of your own user interface based on the Epson SPEL+ programming language.

#### Optical character recognition (OCR)

Reliably detect fonts and symbols and check printing – even under challenging conditions.

#### PG motion system

Read conveyor speeds via encoders.

#### RC+ API

Integrate your application in external software, develop user interfaces, and use databases.

#### Security option

Increased security through user management and usage control.

#### Vision guide 7.0

Powerful Epson image processing system.

## About Epson

Epson Robotic Solutions is one of the leading suppliers of high-tech robot systems that are renowned worldwide for their reliability. The product range includes six-axis, SCARA, entry-level LS-, T- and VT-series robots. Also, the special Epson-developed Spider and N-series robots as well as the pioneering Dual Arm robot. Added to this are image processing controls and the Epson Force Sensor for force-controlled applications.

This gives Epson Robotic Solutions one of the most comprehensive ranges of high-precision industrial robots in the world, making them a technological pioneer for intelligently controlled automation processes.

#### Technological pioneer

#### 1982

Epson SCARA robots freely available in Japan for the first time

#### 1986

First cleanroom robot class 1

#### 1997

First PC-based controller

#### 2008

Inventor of the right or left arm-optimised G3 SCARA robot

#### 2009

Inventor of the spider – a unique SCARA robot with no dead zones

#### 2013

First application of Epson QMEMS® sensors in robotics, reducing 6-axis kinematics vibrations

#### 2014

Epson Compact Vision CV2: Epson's own ultra-fast image processing computer

#### 2016

Epson N2 series: World's first 6-axis robot with folding arm – extremely compact and space-saving

#### 2017

Epson Dual Arm robot with an arm geometry inspired by human physiology, as well as integrated sensors such as cameras, force sensors, and accelerometers

#### Pre- and after-sales support

Feasibility studies for maximum planning and project security

Support for planning and implementation

Introductory seminars, programming/maintenance courses, operator training

Inspection and individual maintenance concepts

Hotline service, on-site repair service

Central spare part stocking

## Ensure your production line hits top gear

#### Epson robot systems: precise, fast and reliable

Our robots pallet, saw, mill, drill, grind, assemble, move and build together. They work precisely and at a breathtaking speed in all these and many other applications – often for up to 24 hours a day.

Our product portfolio includes one of the most extensive SCARA model ranges worldwide, 6-axis robots, controllers and software.

# EPSON

#### **Epson Spider robots**

The economic miracle. Thanks to its unique design, the Epson Spider can reach every corner of its workspace while achieving unmatched cycle times.



#### **Epson SCARA robots**

Precise working even at high speeds. Compact and powerful, Epson has the world's largest range of SCARA robots – with over 300 models.

#### Discover the full potential of your Epson robot systems

As a service, we offer a comprehensive pre and after-sales support program, including:

Feasibility studies for maximum planning and project security

Support for planning and implementation

Introductory seminars, programming/maintenance courses, operator training

Inspection and individual maintenance concepts

Hotline service, on-site repair service

Central spare part stocking



#### **Epson controllers**

Strong performance in a small space. Epson controllers are based on a robust, integrated system and can control manipulators and peripherals.



#### Epson 6-axis robot

Flexibility through rotating axes. Unrivalled point and track accuracy enable complex work processes to be precisely executed.

## Epson Industrial Solutions Centre find your solution









Experience all our Epson robots in action. Build, simulate and improve your automation application in a workshop cell, with help from our experts. The cell can be controlled and networked using all conventional fieldbus systems. In addition, we can supply you with modern peripherals such as a vision and conveyor tracking system.

#### Make an appointment

Call us on +49 2159 538 1800

or send an email to info.rs@epson.de

Epson Deutschland GmbH Robotic Solutions Division Otto-Hahn-Straße 4 40670 Meerbusch

Phone: +49 2159 5381800 Fax: +49 2159 5383170 E-Mail: info.rs@epson.de www.epson.de/robots

Epson America Inc. www.epsonrobots.com Seiko Epson Corp http://global.epson.com/products/robots/

Epson China Co, Ltd. www.epson.com.cn/robots/

#### Committed to corporate and social responsibility

Epson is committed to developing environmentally conscious products, which means that sustainability is considered from conception to completion. We help customers recognise the environmental gains brought on by technology, whether it is redefining manufacturing through innovative robotics, saving energy with our office printing technology or revolutionising textile printing with digital solutions.



The content of this publication has not been approved by the United Nations and does not reflect the views of the United Nations or its officials or Member States www.un.org/sustainabledevelopment



