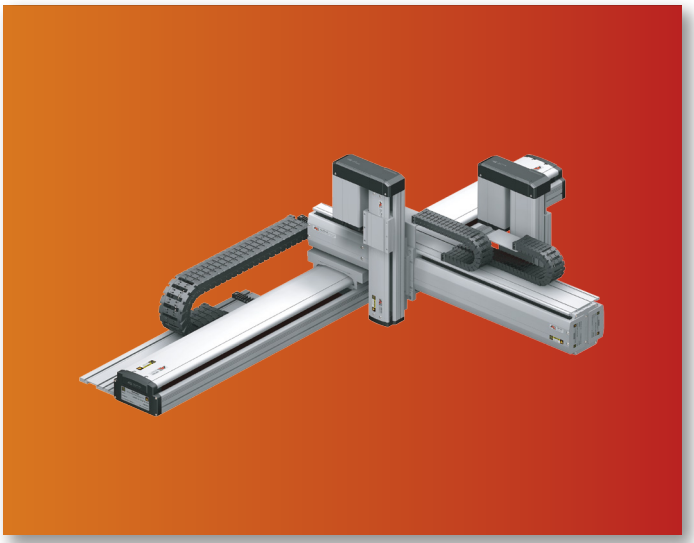
ELT robot & system

INDUSTRIAL ROBOT



ELT robot & system

MRC

Robot Controller
SERIES

ARC4

Robot Controller
SERIES

MMC1~8

Motion Controller
SERIES

ARS

Scara Robot
SERIES

ES

Scara Robot
SERIES

RC

Cartesian Robot
SERIES

MDR

Desktop Robot
SERIES

ELT robot & system

STD

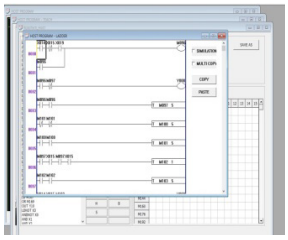
New Technology
Control System

MRC Robot Controller SERIES

ELT NEW Multi Robot Controller spec sheet		
Model		
Motor Power Capacity		2/3/4/6/8 axis , 1.2kw/ 2kw/ 2.4kw/3.6kw/4.8kw
Number of controllable axes		1 to 16 axis (built-in AC servo 8 axis, built-in step / external servo 8 axis)
Actuator type		AC servo, step, BLDC, single phase induction, special motor
Programming method		T - Box
		PC
Operating method		T - Box
		PC
		Front-Panel
		system I/O
Program Memory Capacity		100 programs - 1000steps/PGM
Position accuracy		less than 1 pluse(Encoder)
Motor Speed Control range(RPM)		1 ~3000 (rpm)
Communication interface		RS232C 2CH, EtherNET, FieldBUS, CAN, USB
System Input/Output		IN: 11, OUT: 5
User Input/Output		IN: 72, OUT: 72
Brake On/Off		Build in(24V DC,300mA),Error check
Teach Pendant		ARC-T8
PLC function		10 programs, 1000 steps/PGM
Program capacity		100 programs
Data memory capacity		20,000 step
Voltage / Frequency		AC220V/230V +-10%, 50/60Hz +-10%
Running temp/ Humidity		0 to 45°C,20 to 85%RH
Storage temp/ Humidity		-15 to 90°C,10 to 90%RH
Weight		kg
Dimensions	Width	540 mm
	Depth	310 mm
	Height	198 mm

PC GUI

PLC LADDER



16 AXIS 동시구동

Features

⊙ 최대 16축, 4대의 복수 로봇 동시 제어
Simultaneous control of up to 16 axes and 4 robots

⊙ 수직다관절, 직교, 델타, 스카라, Desktop 등 다양한 로봇 제어
Various robot control such as vertical articulated robot, orthogonal, delta, scalar, and desktop

⊙ 다양한 구동기 (내장 AC servo, 상용 servo, step, BLDC 등) 제어
Control various actuators (built-in AC servo, commercial servo, step, BLDC, etc.)

⊙ 중형급 상용 PLC 내장 제어 (PLC 전장반-> ROBOT CONTROLLER로 대체)
Built-in mid-sized commercial PLC control (Replaced by PLC electric panel -> ROBOT CONTROLLER)

⊙ 1대 제어기로 System 토탈 제어
System total control with one controller

⊙ PLC(OR PC)+MOTION CARD+SERVO DRIVER=>하나의 ROBOT CONTROLLER로 대체
PLC (OR PC) + MOTION CARD + SERVO DRIVER => Replace with one ROBOT CONTROLLER

⊙ 현장 수정이 가능한 편리한 로봇 프로그램 제공.
Convenient robot program that can be modified in the field

ELT robot & system

STD

New Technology
Control System

MRC Robot Controller SERIES

controller 구성

- Main Control board
- I/O, ethernet, RS232/485
- 4 Axis STEP Driver

- Front Panel

- 8 Axis Control
- Step Motor
- 외장 상용 서보 드라이버

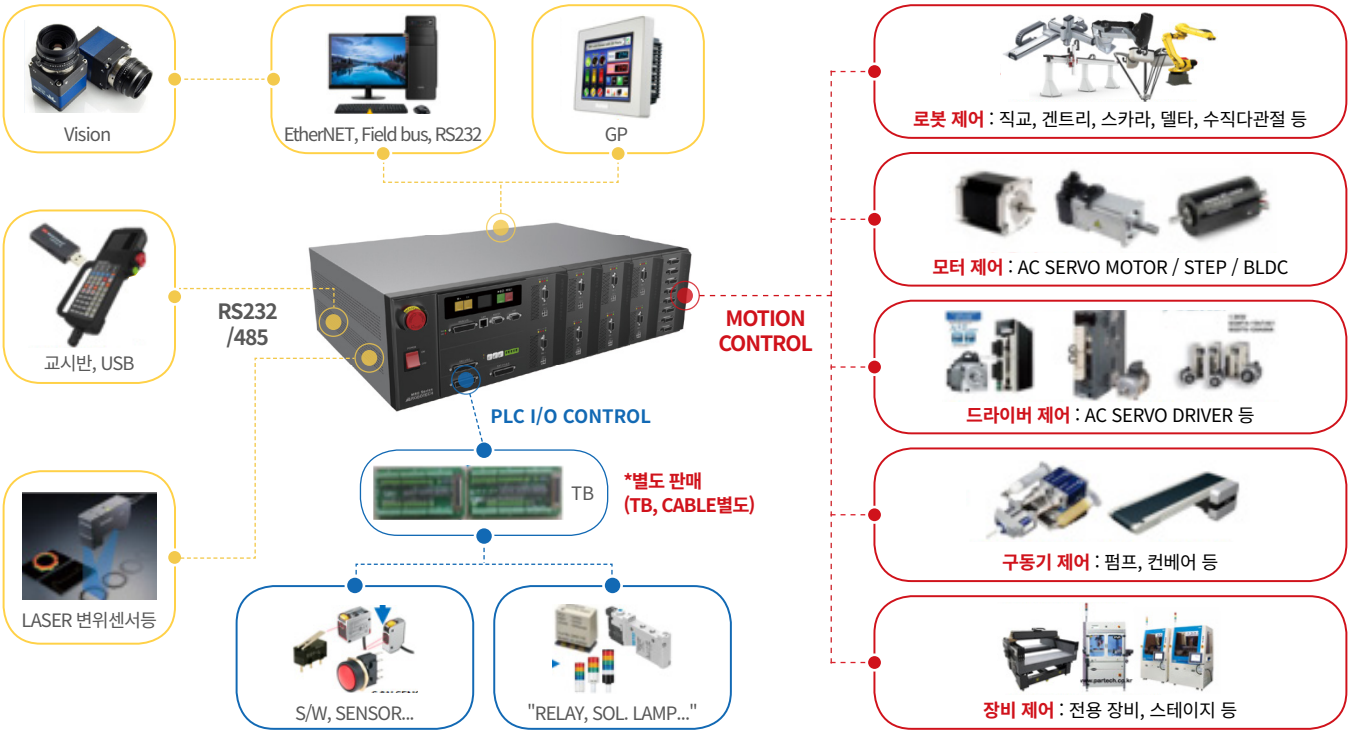
- Power Switch
- EMG Switch

- EXT I/O 1 board
- I/O, Fiels BUS,
- 4 Axis STEP Driver

- EXT I/O 2 board
- I/O Control

- Servo Control board
- 1 Board 2 모터 제어
- AC Servo / BLDC Motor Control
- 8 Axis Control

시스템 제어 구성도



MRC CONTROLLER 장점

*대규모 전장반 대체

*단 하나의 CONROLLER로 라인내 전체 로봇 제어(최대 16축)

ELT robot & system

STD

New Technology
Control System

ARC4 Robot Controller SERIES

General thchnical data (Robot Controller)			
Specifications / Model	ARC-A2	ARC-A3	ARC-A4
Motor Power Capacity	2 axis Max. 1.2KW	3 axis Max. 2KW	4 Axis Max. 2.4KW
Encoder Type	Incremental(Line Drive Type)Qwires, Absolute(Line Drive Type)15Wires		
Programming	Teach Pendant or Personal Computer		
Program Memory Capacity	100 Programs-1000 steps / PGM		
Position accuracy	Less than 1 pulse (Encoder)		
Motor Speed Control range(RPM)	1 ~ 3000		
Communication interface	RS-232C 2CH		
System Input / Output	23 points / 6 points		
User Input / Output	32 points / 32 points		
Brake On / Off	Build in (24V DC, 300mA), Error check		
Protection function	Over Limit, Over Current, Over Voltage, Over Heat, IPM Error, Power Down, Control Power Down, CPU Down, Encoder Error, Break Error, Over Load, Software Limit, Battery Down		
Voltage / Frequency	AC 200V, 50 / 60Hz, ±10~15%		
Running temp / Humidity	0 to 45℃, 20 to 85%RH		
Storage temp / Humidity	-15 to 90℃, 10 to 90%RH		
Weight	8kg	9.5kg	10kg
Teach Pendant	ARC-T4		

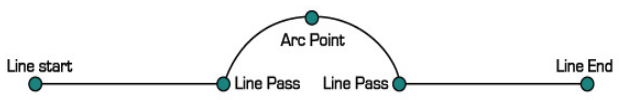
MMC1~8 Motion Controller SERIES

ELT Motion Controller spec	
Model	MC-4/8
Number of controllable axis	4/8 axis
Axis control method	Pulse, (Max 1 Mpps)
Programming method	T – Box / PC
Operating method	T – Box / PC / Front-Panel / system I/O
Program Memory Capacity	100 programs - 1000steps/PGM
Communication interface	RS232C 2CH, EtherNET, FieldBUS, CAN, USB
System Input / Output	IN: 11, OUT: 5
User Input / Output	IN: 72, OUT: 72
Teach Pendant	ARC-T8
PLC function	10 programs, 1000 steps/PGM
Program/Data memory capacity	100 programs / 20,000 step

Features

- ⊙ 로봇 전용 언어 사용으로,모션 컨트롤러 프로그램 작성 편의성 증가.
  By using robot-specific language, the program convenience of the motion controller is increased.
- ⊙ 다관절 로봇, 스카라 로봇 등 관절형 로봇 제어 가능.
  multi-joint robot, scara robot, etc ... joint-type robot control is possible.
- ⊙ 중형급 상용 PLC 내장 제어 (PLC 전장반-> MOTION CONTROLLER로 대체)
  Built-in mid-sized commercial PLC control
  (Replaced by PLC electric panel -> MOTION CONTROLLER)
- ⊙ 전용 티칭 펜던트 사용이 가능.
  Dedicated teaching pendant can be used.
- ⊙ 스텝 모터 사용시, 내장 스텝 드라이버 사용가능
  When using a stepper motor,Built-in Type step driver available

- ⊙ dedicated Sealing command(실링 전용 명령어)
  *기존 로봇의 난해한 운영프로그램을 실링 전용 명령어로 간단히 운영 프로그램을 작성
  *실링 작업에 적합한 기능 및 명령어 구현



ELT robot & system

STD

New Technology

Scara Robot

ARS Scara Robot SERIES

ITEM		SCARA ROBOT SPECIFICATION	
Model		ARS6-2	ARS8-2
Max. Standard Payload		5kg	5kg
Repeatability	1 + 2 Axis	± 0.03mm	± 0.03mm
	3 Axis	± 0.02mm	± 0.02mm
	4 Axis	± 0.03˚	± 0.03˚
Movement Range	1 Axis	± 130˚	± 130˚
	2 Axis	± 135˚	± 135˚
	3 Axis	200mm	200mm
	4 Axis	± 360˚	± 360˚
Max. Speed	1 Axis	360˚/s	225˚/s
	2 Axis	360˚/s	360˚/s
	3 Axis	1000mm/s	1000mm/s
	4 Axis	720˚/s	720˚/s
Motor Capacity	1 Axis	800W	800W
	2 Axis	400W	400W
	3 Axis	200W	200W
	4 Axis	50W	50W
Axis 4 allowable inertia		10kg - 0.03kg.m2	10kg - 0.03kg.m2
Encoder		Absolute Encoder	Absolute Encoder
Body Weight		appox. 41kg	appox. 49kg

Advantage

⦿ High Speed, Precision, and stiffness
고속, 고정도, 고강성

★ Highly-stiff structure adopting FEM
FEM채택으로 고강성 구조구현

★ Advanced motion control
(Vibration suppression control,
Optimal trajectory planning)
고급기술을 이용한 모션제어
(진동억제기능, 최적가감속기능)

★ First and second axis
resualtant speed : Max. 7.9m/s
1,2축 합성속도 max. 7.9m/s

★ Position repeatability : ±0.03mm
위치 반복정밀도 : ±0.03mm

⦿ The short cycle time : 0.45sec
최단의 Cycle Time : 0.45sec

⦿ Brand-new controller
최신형 컨트롤러

★ The latest DSP. CPU
최신형 DSP, CPU탑재

★ Full digital servo module
Full Digital 고속CPU 적용

★ Highly reliable IPM
고 신뢰성의 IPM 모듈 적용

★ Optimal trajectory and flexible motion control
avoiding sigular postions
특이점 회피가능 적용으로 최적 가감속 및 유연한 모션제어

ELT robot & system

STD

New Technology

Scara Robot

ES *Scara Robot* SERIES

ITEM		SCARA ROBOT SPECIFICATION		
Model		ES-300	ES-400	ES-500
Max. Standard Payload		5kg	5kg	5kg
Repeatability	1+2+3Axis	±0.015mm	±0.015mm	±0.015mm
	4 Axis	±0.01°	±0.01°	±0.01°
Movement Range	1 Axis	±120°/110mm	±120°/180mm	±120°/280mm
	2 Axis	±130°/190mm	±130°/220mm	±130°/220mm
	3 Axis	150mm	150mm	150mm
	4 Axis	±360°	±360°	±360°
Speed	1+2 Axis	s5.9m/s	7.7m/s	9.0m/s
	3 Axis	1.6m/s	1.6m/s	1.6m/s
	4 Axis	1200°/s	1200°/s	1200°/s
Cycle Time		0.46 sec	0.48 sec	0.52 sec
Axis 4 allowable inertia		0.05kg.m^2	0.05kg.m^2	0.05kg.m^2
Encoder		Absolute Encoder	Absolute Encoder	Absolute Encoder
Body Weight		approx.15kg	approx.18kg	approx.25kg

Advantage

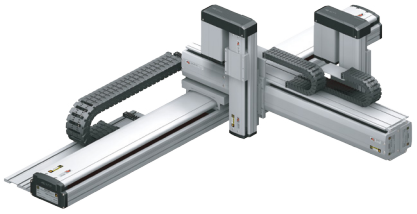
- ⦿ High Speed, Precision, and stiffness by application of extrusion body
  압출 바디 적용으로 고강성 확보
- ⦿ Installation space is minmized due to minimized machine structure
  기구부 소형화로 설치 공간 최소화
- ⦿ Multifunctional small scara robot that is optimal for electronic parts, small precision parts and assembly work.
  전자부품, 소형정밀 부품, 조립작업에 최적인 다기능 소형 스카라 로봇.
- ⦿ Low price compared to existing SCARA models.
  기존 스카라모델과 비교하여 저렴한 가격.

ELT robot & system

STD

New Technology
Cartesian Robot

RC Cartesian Robot SERIES



Advantage

- Various modeis according to movements-range and payload
  다양한 동작 영역과 가반 하중별로 제품 선정 다양
- Available for diverse combinations with single axis robots
  단축 ROBOT을 응용하여 여러가지 형태로 조합가능
- Suitable for transfering Part-inserting and screwing operations.
  부품이송 및 삽입. 나사체결 공정등에 적합
- AC servo motor, embedded for high reliable and maintenace-free system
  AC SERVO MOTOR 사용으로 제어가 간단, 신뢰성이 높고 유지보수가 용이
- Self-protection and self-diagnosis function
  ROBOT 자체적으로 자기보호기능 및 진단기능 보유
- High Speed and preclsion guaraanteed by adopting ball screw and LM guide
  Ball Screw와 LM Guide System을 채용하여, 고속 고정도를 실현
- Repeatability of ±0.02 and payload of min 21kg~max 100kg
  반복정밀도는 ±0.02 가반하중 최소 21kg ~ 최대 100kg제품사양 제공
- Optimal movements and Maximal applications through exclusive control system
  전용 CONTROL SYSTEM을 통하여 이상적인 동작기능과 응용성을 자랑

Model		Model No	Speed.(mm/s)	Stoke.(mm)	Payload.(kgf)
AR-S Series		* Ballscrew Type AR050, AR060, AR090 AR120, AR160, AR200	N-500 H-1000	100 ~ 1200	4 ~ 120
AR-PL Series		* Ballscrew Type AR050, AR060, AR090 AR120, AR160, AR200	N-500 H-1000	100 ~ 1200	4 ~ 120
BR Series		* Belt Type BR120, BR160, BR200	H-2000	1000 ~ 2800	50
MR Series		* Belt Type MR080	H-2000 ~ 5000	1000 ~ 2800	80 ~ 120
RS Series		RS050, RS100, RSR100			10.8 ~ 21.6

* Clean type이 필요할 경우, 당사로 별도 문의 요청

ELT robot & system

STD

New Technology
Desktop Robot

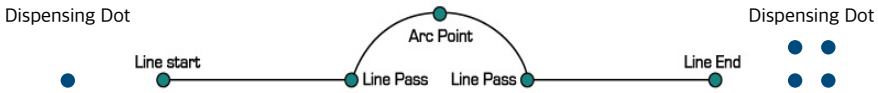
MDR Desktop Robot SERIES

Feature of eIT's Desktop

⦿ dedicated Sealing command(실링 전용 명령어)

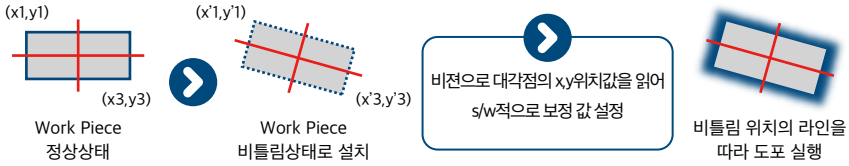
*기존 로봇의 난해한 운영프로그램을 실링 전용 명령어로 간단히 운영 프로그램을 작성

*실링 작업에 적합한 기능 및 명령어 구현



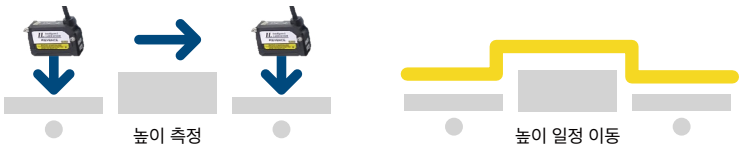
⦿ VISION module

비젼카메라를 이용, 대상물의 변위량을 측정하여, 경로를 보정,변경된 위치값으로 디스펜싱작업.



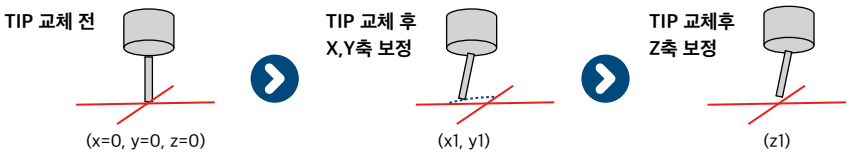
⦿ Laser distance measurement sensor module

레이저 Height sensor로, 경로상의 대상물 높이에 대한 변위량을 측정, Z축의 높이 값을 보정,
변경된 Z축의 높이로 디스펜싱작업.



⦿ Tip Alignment Module

디스펜서 노즐 교체시, 위치 변화를 자동 측정 후, 보정해줍니다.



Advantage

⦿ All srot of operations such as point and line dispensing are allowable.

프로그램에 의한 각종 액체의 점도포, 선도포 자동화

⦿ Muiltifunction optimal for dispensing and assembly operation on small parts, electronic and mechanical parts

전자부품, 소형정밀 부품, 토출작업 및 조립작업에 최적인 다기능 탁상형 로봇

⦿ Installation space is minmized due to controller-embedded mechanical structure

기구부, 제어부 일체형 로봇으로 설치 공간 최소화

Application

⦿ Dispensing Soldering, Screwfastening, Routing and Equipments for educational purpose

디스펜싱, 솔더링, 나사체결, 라우팅, 교육용 장비

MDR-221

MDR-221

MDR-331 / MDR-441

MDR-331 / MDR-441

MDR-331R / MDR-441R

MDR-331R / MDR-441R

MDR-3351 / MDR-4461

MDR-3351 / MDR-4461

ELT robot & system

STD

New Technology

Desktop Robot

DESKTOP ROBOT SPECIFICATION - (SERVO TYPE)

Model		MDR-331(R)	MDR-441(R)	MDR-3351	MDR-4461
Axis		3 Axis	3 Axis	4 Axis	4 Axis
stroke (mm)	X1 axis	300	400	300	400
	X2 axis (R axis)	- (320°)	- (320°)	300	400
	Y axis	300	400	500	600
	Z axis	100	100	100	100
servo motor (W)	X1 axis	100	100	100	100
	X2 axis (R axis)	- (100)	- (100)	100	100
	Y axis	100	100	200	200
	Z axis	100(Brake)	100(Brake)	100(Brake)	100(Brake)
MAX.Load (kg)	X1 axis	24kg	24kg	24kg	24kg
	X2 axis (R axis)	- (3kg)	- (3kg)	24kg	24kg
	Y axis	24kg	24kg	24kg	24kg
	Z axis	7kg	7kg	7kg	7kg
MAX.speed	X1 axis	500mm/sec	500mm/sec	500mm/sec	500mm/sec
	X2 axis (R axis)	- (360°/s)	- (360°/s)	500mm/sec	500mm/sec
	Y axis	500mm/sec	500mm/sec	500mm/sec	500mm/sec
	Z axis	500mm/sec	500mm/sec	500mm/sec	500mm/sec
Repeatability		± 0.02mm	± 0.02mm	± 0.02mm	± 0.02mm
controller		inside	inside	inside	inside

DESKTOP ROBOT SPECIFICATION - (STEP TYPE)

Model		MDR-221-T	MDR-331T(R)	MDR-441T(R)	MDR-3351-T
Axis		3 Axis	3 Axis	3 Axis	4 Axis
stroke (mm)	X1 axis	200	300	400	300
	X2 axis (R axis)	- (-)	- (320°)	- (320°)	300
	Y axis	200	300	400	500
	Z axis	50	100	100	100
step motor	X1 axis	□56 *42mm	□56 *76mm	□56 *76mm	□56 *76mm
	X2 axis (R axis)	- ( )	- (□56*76mm)	- (□56*76mm)	□56 *76mm
	Y axis	□56 *76mm	□56 *76mm	□56 *76mm	□56 *76mm
	Z axis	□56 *76mm	□56 *76mm	□56 *76mm	□56 *76mm
MAX.Load (kg)	X1 axis	10kg	10kg	10kg	10kg
	X2 axis (R axis)	-	- (3kg)	- (3kg)	10kg
	Y axis	15kg	15kg	15kg	15kg
	Z axis	5kg	5kg	5kg	5kg
MAX.speed	X1 axis	450mm/sec	450mm/sec	450mm/sec	450mm/sec
	X2 axis (R axis)	- (-)	- (360°/s)	- (360°/s)	450mm/sec
	Y axis	450mm/sec	450mm/sec	450mm/sec	450mm/sec
	Z axis	100mm/sec	200mm/sec	200mm/sec	200mm/sec
Repeatability		± 0.1mm	± 0.1mm	± 0.1mm	± 0.1mm
controller		inside	inside	inside	inside

* Note 1. MDR-****(R): R AXIS additional model.

Main Product

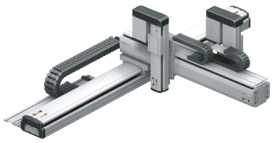
Robot Controller
MRC *SERIES*

Robot Controller
ARC4 *SERIES*

Motion Controller
MMC 1~8 *SERIES*

Scara Robot
ARS *SERIES*

Cartesian Robot
RC *SERIES*



Desktop Robot
MDR *SERIES*

Specifications in This Catalog Are Subject to Change for Improvement Without Notice.

ELT robot & system

ELT CO.

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