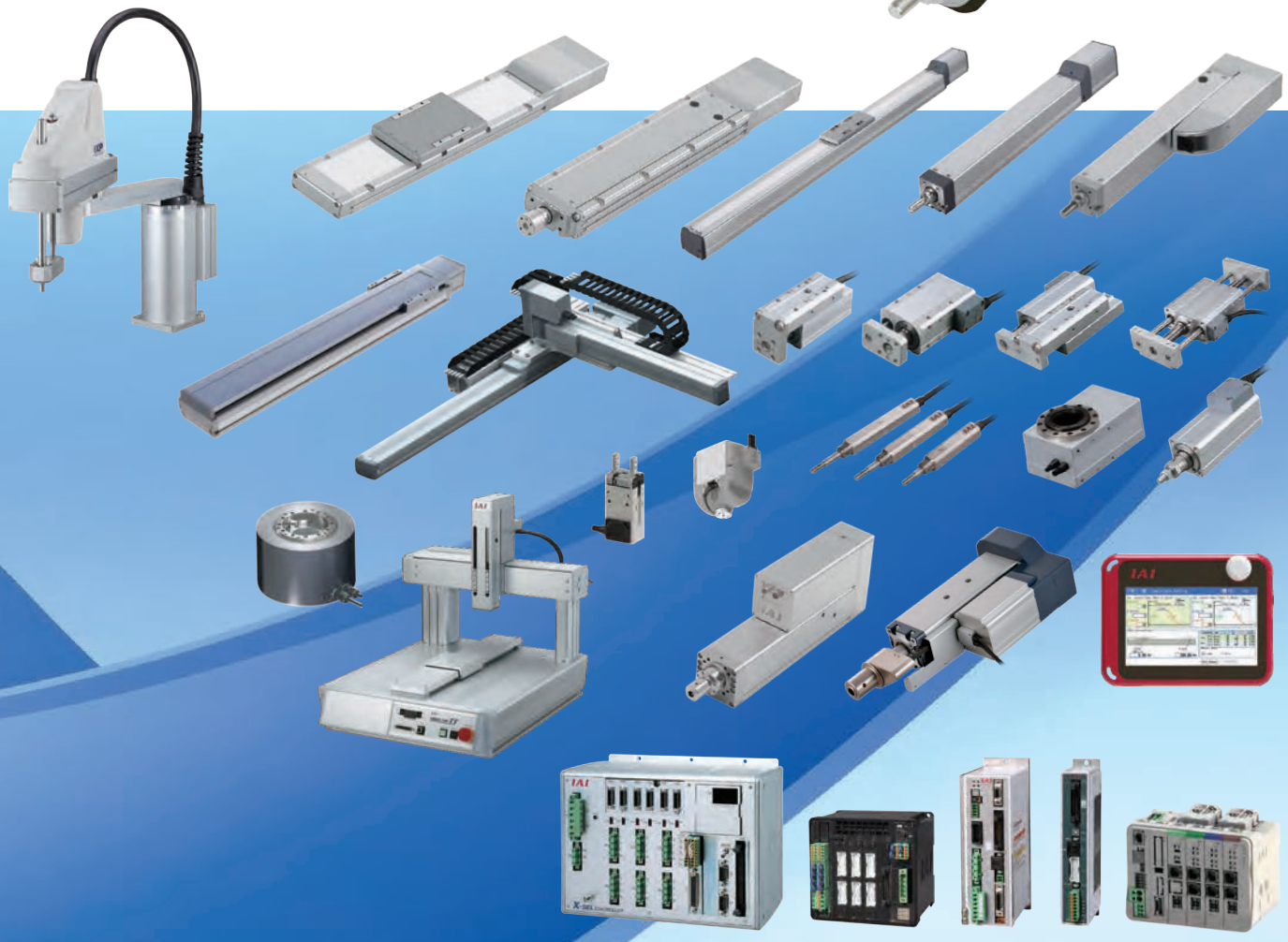
IAI
Quality and Innovation

GB

IAI Product Lineup

30th revised Edition D

Electric Actuators & Small Robots for Smart Industrial Automation



green automation
SMART FACTORY
IAI

Advancing into a new Era switching Air to EleCylinder

Designed to move between two points just like Air Cylinder
Speed / Acceleration / Deceleration can be set in just 5 minutes.

EC ELECYLINDER

ELECYLINDER EC SERIES

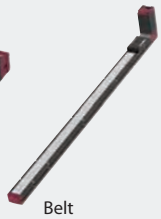
Slider Type
EC-S

Side-mounted Motor Slider Type
EC-S□R

Rod Type
EC-R

Radial Cylinder Type
EC-RR

Side-mounted Motor Radial Cylinder Type
EC-RR□R


Belt Type
EC-B

Mini Table/ Rod Type
EC-T/EC-RP

- Simple model selection & operation
- Start and end points can be set at any value.
- **A** (Acceleration), **V** (Velocity), **D** (Deceleration), A.V.D. can be adjusted individually.
- Few maintenance parts
- Stable velocity. Cycle time can be reduced.
- Long service life.

Next Generation RoboCylinder RCP6/RCS4

From an abundant lineup of 92 RCP6 models with pulse motor or
54 RCS4 models with servo motor, you can find one that is most suitable for your needs.

Battery-less Absolute Encoder
No Battery,
No Maintenance, and No Homing.
No Going Back to Incremental.

ROBO CYLINDER

RCP6(S)/RCS4 SERIES STRAIGHT MOTOR TYPE

*Built-in Controller Type (RCP6S) is available

Slider Type
RCP6/RCS4-SA

Wide Slider Type
RCP6/RCS4-WSA

Rod Type
RCP6/RCS4-RA

Radial Cylinder Type
RCP6/RCS4-RRA

Wide Radial Cylinder Type
RCP6/RCS4-WRA

Table Type
RCP6/RCS4-TA

Cleanroom Type
RCP6CR/RCS4CR

Dust/Splash-Proof Type
RCP6W

- Equipped with high-resolution battery-less absolute encoder as standard.
- Improved positioning repeatability:
  ±10μm (Standard Type), ±5μm (High-Precision specification).
- PowerCon compatible.
- Built-in Controller (RCP6S) can be selected for every RCP6 type.
- Cleanroom and Dust/Splash-Proof specification series available.

RCP6(S)/RCS4 SERIES SIDE-MOUNTED MOTOR TYPE

*Built-in Controller Type (RCP6S) is available

Slider Type
RCP6/RCS4-SA

Wide Slider Type
RCP6/RCS4-WSA

Rod Type
RCP6/RCS4-RA

Radial Cylinder Type
RCP6/RCS4-RRA

Wide Radial Cylinder Type
RCP6/RCS4-WRA

Table Type
RCP6/RCS4-TA

Servo Press Compatible RoboCylinder with Load Cell

Compact and low-thrust rod type actuator that can even be used for simple pressing.
The high-precision position control enables easy adjustment of the push force and the position control, typically difficult for hydraulic equipment. 8 types from a range of 20N - 50000N are available.

20N~200N
RCS3-RA4R

Max. 600N
RCS3-RA6R

Max. 1200N
RCS3-RA7R

Max. 2000N
RCS3-RA8R

Max. 6000N
RCS3-RA10R

- Loading repeatability is ±0.5%. Supports traceability.
- Variety of product groups: 8 models in the lineup.
- Setting is easy by using a dedicated software.
- Newly developed 3kW motor driver achieved max. Thrust of 5t and max. Speed of 220mm/sec.
- With Battery-less Absolute Encoder as Standard.
- High Payload Rod Types without Load Cell also available: max. Payload of 1/0.6t (horizontal/vertical).

Max. 19600N
RCS2-RA13R

Max. 30000N
RCS3-RA15R

Max. 50000N
RCS3-RA20R

Wrist Unit

IAI's unique design makes the parts light and compact.
Low cost compared to 6-axis articulated robots.
Orthogonal axes and interpolation commands are possible.

Compact Type
WU-S

Medium Type
WU-M

RoboCylinder

These affordable, highly precise and highly rigid actuators have 1/5th the running cost of a pneumatic system

RoboCylinder is high-performance electric actuator equipped with a ball screw, linear guide, and servo motor. These next-generation actuators have multi-point positioning capability as well as the ability to change speed and acceleration, unlike anything seen with air cylinders.

RCP5 SERIES

Slider Type | Rod Type [Radial Cylinder] | Side-mounted Motor Type | Belt Type

- Battery-less absolute encoder as standard equipment.
- By using a PowerCon, it has 1.5 times higher speeds and double the payload compared to traditional models.

RCP4 SERIES

Slider Type | Rod Type [Radial Cylinder] | Side-mounted Motor Type

- By using a PowerCon, it has 1.5 times higher speeds and double the payload compared to traditional models.

RCP3 SERIES

Table Type

Slider Type

Rotary Type

High Force Gripper

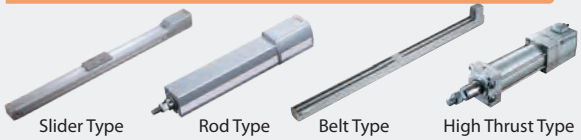
3-finger-Gripper

Short Body Type

Short Body Type with Guide

- A high push force is achieved utilizing the characteristics of pulse motors.
- An abundance of sizes and variations is available to meet a wide range of applications.

RCP2 SERIES PULSE MOTOR TYPE WITH HIGH PERFORMANCE



Slider Type | Rod Type | Belt Type | High Thrust Type

RCP4/RCP2 GRIPPER

Horizontal Type

Vertical Type

RCP6 GRIPPER

Slim High-force Type | Long Stroke Type

- Equipped with a Battery-less Absolute Encoder.
- High Rigidity
- Slim High-force Type: Flat Shape with height of 39mm.
- Long Stroke Type: max. opening/closing stroke of 260mm

RCP6 ROTARY TYPE

Large Diameter Hollow Rotary Type

Rotary Chuck Unit

RCA2 SERIES

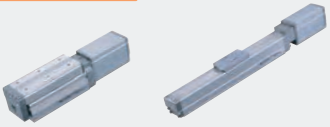
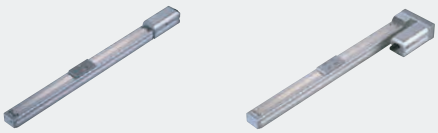


Table Type | Slider Type

- Shaped similar to a rod-type air cylinder, these actuators accept various mounting brackets that are used on air cylinders.
- Three motor installation methods are available to choose from.
- An optional home check sensor can be set.

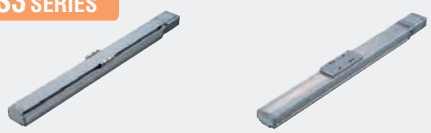
RCA SERIES 24V SERVO MOTOR TYPE

Rod Type | Side-mounted Motor Rod Type | Rod Type with Guide

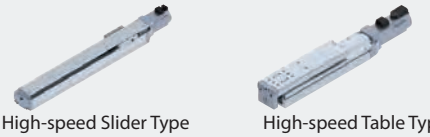


Slider Type | Side-mounted Motor Slider Type

RCS3 SERIES



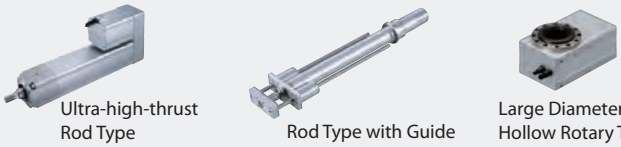
Aluminum-base Type | Steel-base Type



High-speed Slider Type **RCS3-CT8C** | High-speed Table Type **RCS3-CTZ5C**

RCS2 SERIES 230V SERVO MOTOR TYPE

Slider Type | Side-mounted Motor Slider Type | Slim Rod Type | Gripper Type



Ultra-high-thrust Rod Type | Rod Type with Guide | Large Diameter Hollow Rotary Type

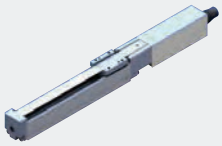
- Equipped with a servo motor, these actuators support high loads and long strokes.
- When an XSEL controller is used, you can combine three or more axes.
- Compatible with ProfiBus, DeviceNet, CC-Link, and other field networks.

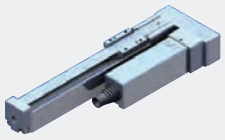
Mini RoboCylinder

ROBO CYLINDER

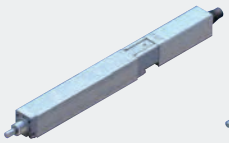
Next-generation electric actuators, the solution for space constrained applications

RCP3 MINI SLIDER TYPE


Motor Coupled Type


Side-mounted Motor Type

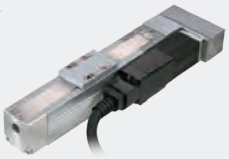
RCP3 MINI ROD TYPE


Motor Coupled Type

Side-mounted Motor Type

RCA2 MINI SLIDER TYPE

Motor Coupled Type


Side-mounted Motor Type

- Replacement is simple with the coupled type motor.
- You can choose from the straight type (motor coupled type) and the side-mounted motor type.

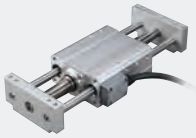
RCA2/RCS2 MINI ROD TYPE

Short Nut-mounting Type

Short Tapped-hole Mounting Type

Short Free Mounting Type with Single Guide

Short Free Mounting Type with Double Guides

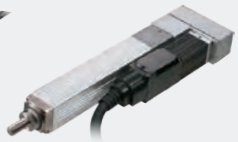

Short Slide Unit Type with Double Guides

RCA2/RCS2 MINI ROD TYPE CLEANROOM DUST/SPLASH-PROOF

Cleanroom Type & Dust-/Splash-proof Type

RCA2 MINI ROD TYPE

Motor Coupled Type


Side-mounted Motor Type

- You can choose between the slim motor coupled type and the short free mounting type, that has significantly reduced in length.
- You can choose between built-in guide type which allows for increased rigidity and straightness, or the external guide type which has significantly been reduced in size.

RCA2/RCS2 MINI TABLE TYPE

Short Compact Type

Short Wide Type

Short Flat Type

RCP3/RCA2 MINI TABLE TYPE

Motor Coupled Type

Side-mounted Motor Type

- The built-in guide allows the actuator to hold overhung loads.
- You can choose between the compact short type and the motor coupled type with longer stroke.

RCD MICRO CYLINDER

Ultra-compact Rod Type

Mini Vertical Gripper Type

- The smallest in the industry with a cross-section size of 12mm.
- The built-in encoder allows position control.

Solenoid Gripper

Compact and lightweight electric gripper that fits in the palm of the hand.
The price is as low as an air chuck.
Opening and closing of the fingers are operated simply by ON/OFF signals of single wiring.
Continuous retention is possible while still in the gripping or release state.

Small Type
GRS-S

Medium Type
GRS-M

Single-axis Robots

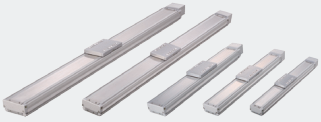
Intelligent actuators with high-speed and high-transfer capabilities

INTELLIGENT ACTUATOR

Standard Type: **ISB**
High-precision
Standard Type: **ISPB**

Standard Type: **ISA**
High-precision
Standard Type: **ISPA**

High-rigidity
Steel-base Type
SSPA



Simple Dust-proof
Standard/High-precision Type
IS(P)DB/IS(P)DA

High-rigidity
Belt-drive Type
IF

Rotary Type
RS

Nut Rotational Type
NSA

- ISB/ISDB Series equipped with Battery-less Absolute Encoder as standard.
- ISB/ISDB High-speed Type equipped with 3x lead ball screws.
- Many variations are available to meet diverse applications.
- The guide is integrated with the base for the linear actuators.

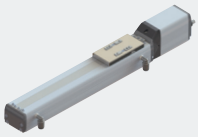
Cleanroom Types

Dedicated cleanroom types conforming to ISO cleanliness class 2.5 *

* ISO Standard 14644-1:2015 (according to class 4 of previous ISO Standard 14644-1:1999)

Pulse Motor
RCP6(S)CR

Pulse Motor
RCP5CR



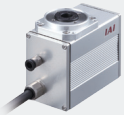
Pulse Motor
RCP4CR

Pulse Motor
EC-S□CR

Servo Motor
RCACR

Servo Motor
RCS2CR/
RCS3CR/RCS4CR

Gripper Type
RCP2CR-GR



Rotary Type
RCP2CR-RT

High-performance Type
IS(P)DBCR/IS(P)DACR

High-performance
Steel-base Type
SSPDACR

Pulse Motor
SCARA Robot
IXP-□C

SCARA Robot
IX-NNC

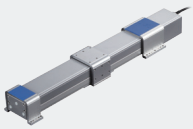
Ultra-compact
SCARA Robot
IX-NNC

- A well sealed structure allows it to achieve ISO cleanliness class 2.5.
- A wide variety of products are available, from RoboCylinder all the way to single-axis actuators and SCARA robots.

Splash-proof/Dust-proof Types

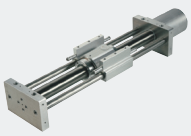
These actuators offer protection conforming to IP54~IP67, and are a desirable solution when operated in adverse environments.

Pulse Motor
Rod / Radial Cylinder Type
RCP5W-RA6/7/8/10
RCP6(S)W-R(R)A4/6/7/8
RCP6(S)W-WRA10/
12/14/16



Pulse Motor Slider Type
RCP4W-SA5/6/7

Pulse Motor Rod Type
RCP4W-RA6/7



Pulse Motor Slider Type
RCP2W-SA16C

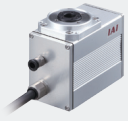
Pulse Motor Rod Type
RCP2W-RA4C/RA6C

Pulse Motor
High-thrust Rod Type
RCP2W-RA10C

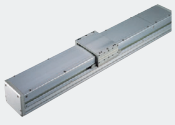
Pulse Motor
Rod / Radial Cylinder Type
EC-R(R)6/7□W

Servo Motor Rod Type
RCS2W-RA4
RCAW-RA3/4

Gripper Type
RCP2W-GR



Rotary Type
RCP2W-RT



High power Slider Type
ISWA/ISPWA

Pulse Motor
SCARA Robot
IXP-□W

SCARA Robot
IX-NNW
IXA-□NSW

- These actuators handle environments with extreme dust or water splashes.
- Many variations are available to meet diverse applications.

IXP Series | PowerCon Scara Robots

All models come standard with pulse motors and battery-less absolute encoders

Battery-less Absolute Encoder
No Battery, No Maintenance,
No Homing, and
No Price Increase.
No Going Back to Incremental.

POWERCON SCARA ROBOT ARM LENGTH 180/250/350/450/550/650mm

Standard Type

Gripper Type

Splash-proof/
Dust-proof Type

Cleanroom Type

- All models come with pulse motors and battery-less absolute encoders.
- The encoder resolution has increased to 10 times that of the existing IXP.
- The cost of IXP is around half of the traditional models.
- Lighter than conventional models.
- The regular cycle time is about 60% shorter than conventional cartesian robots.
- Added 3-axis specification, 4-axis with gripper specification.
- Equipped with optimal speed and acceleration/deceleration settings.

IX Series | Scara Robots

The IX SCARA robots feature high performance and functionality

IX INTELLIGENT ACTUATOR

SCARA ROBOT ARM LENGTH 120/150/180/250/350/500/600/700/800mm

Standard
Ultra-compact Type

Standard Small, Medium, Large Type

High-speed Type

Wall Type

Ceiling Type

- Achieves high speeds, payload and precision with servo motors.
- Easy programming makes these actuators much more user-friendly.
- It supports a wide variety of arm lengths, ranging from 120mm to 800mm.

IXA Series | High-power Scara Robots

New IXA SCARA robots with servo motor and battery-less absolute encoder

Battery-less Absolute Encoder
No Battery, No Maintenance,
No Homing, and
No Price Increase.
No Going Back to Incremental.

HIGH-POWER SCARA ROBOT ARM LENGTH 180/300/450/600mm

Standard and High-speed Type (Vertical axis stroke: 50/150/180/330mm)

- Fastest cycle times.
  (Standard cycle time of high-speed type: 0.26s)
- Achieves a low price.
- Low vibration, accurate positioning.
- Equipped with a Battery-less Absolute Encoder as standard.
- Patent pending: Mechanical structure / features
- Standard type / High-speed type are available.

TTA Series | Tabletop Robots

Improved tabletop robots for cell productions, R&D applications, and more

Battery-less Absolute Encoder
No Battery, No Maintenance,
No Homing, and
No Price Increase.
No Going Back to Incremental.

Gate Type

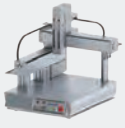
2-axis Specification

3-axis Specification

4-axis Specification

Cantilever Type

2-axis Specification


3-axis Specification

4-axis Specification

- Every model equipped with battery-less absolute encoder as standard.
- AC servo motor specification added to the series of previous pulse motor specification.
- Max. payload: X-axis: 30kg Z-axis: 15kg (AC servo motor), Max. speed: XY-axis: 1200mm/s Z-axis: 40mm/s (AC servo motor)
- Improved positioning repeatability: ±0.005mm (AC servo motor) /±0.01mm (Pulse motor spec)
- The SEL Program Generator eliminates the tedious work of program creation.

DDA Direct Drive Motors

Coming Soon

High speed/payload/precision, easy control, and compact: A direct drive motor that achieved high cost-performance.

DDA/DDACR
Slim Type

DDA/DDACR
High Torque type

- Positioning repeatability ±0.00103 degree (±3.7s), Index accuracy ± 0.00833 degree (±30s) with SCON-CB & High resolution type.
- Maximum speed of 1800°/s and acceleration/deceleration of 6.0G can make faster positioning time possible.
- Standard or Cleanroom specification (Hollow bore: Ø52mm), Slim or High-torque types in lineup. Flange option is available.

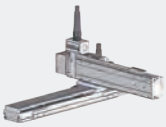
Cartesian Robots

Pre-configured cartesian robots that reduce installation and setup times

Battery-less Absolute Encoder
No Battery, No Maintenance, No Homing, and No Price Increase. No Going Back to Incremental.

ICSB2/ICSPB2 2-AXIS CONFIGURATION

Y-axis Base Mount Type
XYB



Y-axis Slider Mount Type
XYS

Z-axis Base Mount Type
XZ

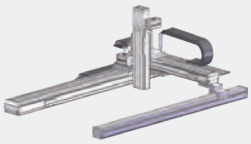
Y-axis Base Mount Type
YZB

Y-axis Slider Mount Type
YZS

Gantry Type
XYG

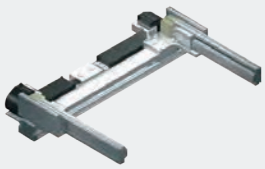
ICSB3/ICSPB3 3-AXIS CONFIGURATION

XYB + Z-axis Type
B□□□□□□

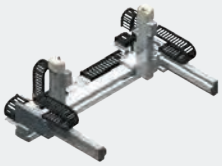


XYG + Z-axis Type
G□□□□□□

ICSPA4 4-AXIS CONFIGURATION



ICSPA6 6-AXIS CONFIGURATION



- Many variations are available to support 2 to 6-axis configurations.
- The multi-slider types (ICSPA4/ICSPA6) let you reduce space and cycle time.
- High resolution Battery-less Absolute Encoder is available.
- Any models can be customized to meet your specific needs.

Cartesian RoboCylinder

Multi-axis RoboCylinder RCP2/RCP6/RCS2 kits at a reasonable price

IK2-P/IK2-S 2-AXIS CONFIGURATION

Y-axis Base Mount Type
XYB

Z-axis Upright Type
XZ

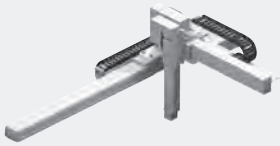
Z-axis Base Mount Type
YZB

IK2-P6 2-AXIS CONFIGURATION

Y-axis Base Mount Type
XYB

Z-axis Base Mount Type
YZB

IK3-P/IK3-S 3-AXIS CONFIGURATION



Y-axis + Z-axis Base Mount Type
XYB+Z

IK3-P6 3-AXIS CONFIGURATION

Y-axis + Z-axis Base Mount Type
XYB+Z

IK4-P6 4-AXIS CONFIGURATION

Y-axis Base Mount Type + ZR (Vertical/Rotation) Unit Type
XYB + ZR unit

- IK-P series: RCP2 combinations based on 24 VDC pulse motor.
- IK-S series: RCS2 combinations based on 230 VAC servo motor.
- IK-P6 series: RCP6 combinations based on 24 VDC pulse motor with battery-less absolute encoder and high-output driver specification (PowerCon).

Controllers

A wide variety of operational patterns to fit your specific needs

LC-LADDER

Free Ladder Programming Software is available for our controller with PLC function

POSITION CONTROLLER

REC

For EleCylinder

Coming Soon

- EC gateway master unit REC-GW for connect EleCylinder axes to field networks ProfiBus, CC-Link, DeviceNet, Profinet, CC-Link IE, EtherCAT or Ethernet/IP.
- 1~4 EleCylinder with ACR option can be connected to EC connection unit RCON-EC (up to 16 EleCylinder for max. 4 EC connection units per system).
- RCON-EC with RCON controller port allows mixed connections with RoboCylinder and single axis robots.

PCON·CB (PowerCon) ACON·CB DCON·CB SCON·CB SCON-CAL

For RCP6/5/4/3/2

For RCA/ RCA2

For RCD

For RCS2/3/4 Single-axis (SCON-CB/LC)

For RCS2/3/4 Single-axis/ Cartesian

- PowerCon archives 150% more output compared to the traditional models. It supports RCP5 etc. with a battery-less absolute encoder.
- Up to 512 positions can be set.
- ProfiBus, DeviceNet and other field networks can be supported.
- SCON-CB comes with vibration control function.
- SCON-LC and MSEP-LC with PLC function via LC ladder software.

MCON

For RoboCylinder, CON Series 8-axis Type

MSEP

For RoboCylinder, 8-/6-axis Type (MSEP-C/LC)

RCON

For RoboCylinder, Single-axis, 8-/16-axis Type

MSCON

SCON Controller, 6-axis Type

- Supporting RCP6 with battery-less absolute encoder.
- Supporting PowerCon (High-output driver), and Mini Cylinder.

- Supporting PowerCon (High-output driver), and Mini Cylinder (MSEP-C/LC).
- Module based network controller with gateway, axis driver, SCON extension and simple absolute unit (RCON).

- For RCS2/3/4 and single-axis robot, combined 6 controllers into 1 controller.
- Supporting various field networks.

PROGRAM CONTROLLER

PSEL

For RCP2/RCP3

ASEL

For RCA/RCA2

SSEL

1-2 axes

For RCS2/RCS3/RCS4 Single-axis

X-SEL

1-8 axes

For RCS2/RCS3/RCS4 Single-axis/SCARA

RSEL

Coming Soon

1-8 axes

For RoboCylinder, Single-axis/Cartes. Robot

MSEL

1-4 axes

For RCP6/5/4/3/2 IXP SCARA

- PSEL/ASEL/SSEL controllers support interpolated operation and are used to set 1 or 2 axes.
- XSEL and modular RSEL controllers can operate up to 8 axes.
- All controllers support ProfiBus, DeviceNet and other field networks.

Teaching Pendants

Programming points have never been easier
Compatible with Safety Category

*screen image

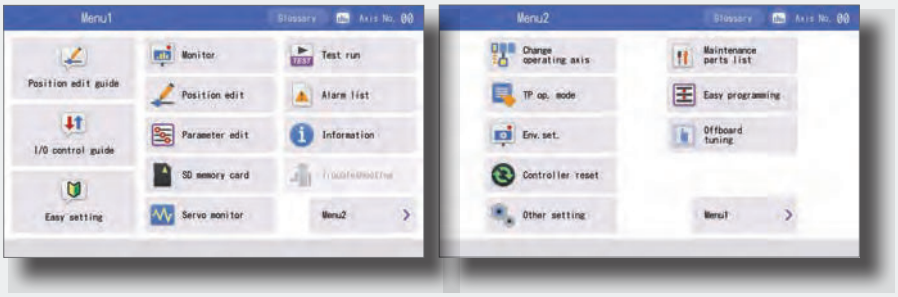
Touch Panel Teaching Pendant for Position Controllers and Program Controllers

TB-02

*screen image

Touch Panel Data Setter (for EleCylinder also with Wireless Function)

TB-03



IAI Quality and Innovation

IAI Industrieroboter GmbH
Ober der Röth 4 • D-65824 Schwalbach / Frankfurt
Phone: +49-6196-8895-0 • Fax: +49-6196-8895-24
E-Mail: info@IAI-GmbH.de • Internet: http://www.IAI-automation.com

RoHS COMPLIANT 2011 / 65 / EU

ISO 9001

IAI America Inc.
2690 W. 237th Street, Torrance, CA 90505, U.S.A
Phone: +1-310-891-6015 Fax: +1-310-891-0815

IAI CORPORATION
577-1 Obane, Shimizu-Ku, Shizuoka 424-0103, Japan
Phone: +81-543-64-5105 Fax: +81-543-64-5192

IAI Product Lineup
Flyer No. 0821-E
Vers. CE0033-30.10D

IAI, the IAI-logo, EleCylinder™, the EleCylinder™-logo, RoboCylinder™, the RoboCylinder™-logo, IntelligentActuator™ and the IntelligentActuator™-logo are trademarks or product names of IAI Corporation or of the subsidiaries in USA or Germany