

# IAI Product Lineup

30th revised Edition B

**Electric Actuators & Small Robots for  
Smart Industrial Automation**



# 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.



## ELECYLINDER EC SERIES



Slider Type  
**EC-S**



Rod Type  
**EC-R**



Radial  
Cylinder Type  
**EC-RR**



Side-mounted  
Motor  
Slider Type  
**EC-S□R**



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



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.



## 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 Load OK  
Radial Cylinder Type  
**RCP6/RCS4-RR**



Radial Load OK  
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:  $\pm 10\mu\text{m}$  (Standard Type),  $\pm 5\mu\text{m}$  (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 Load OK  
Radial Cylinder Type  
**RCP6/RCS4-RR**



Radial Load OK  
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  $\pm 0.5\%$ . 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**



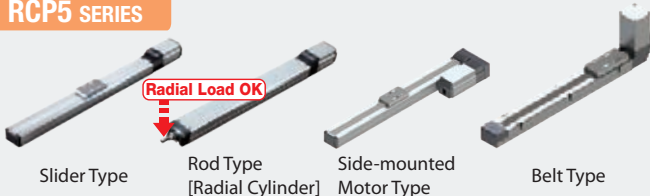
Medium Type  
**WU-M**

# 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



- 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



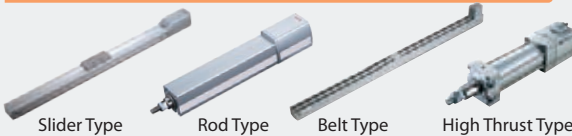
- By using a PowerCon, it has 1.5 times higher speeds and double the payload compared to traditional models.

## RCP3 SERIES



Table Type

## 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



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.

- 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

Coming Soon



Large Diameter Hollow Rotary Type

## RCA2 SERIES

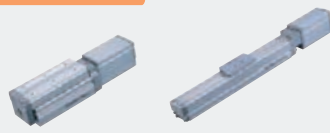


Table Type Slider Type

## RCA SERIES 24V SERVO MOTOR TYPE



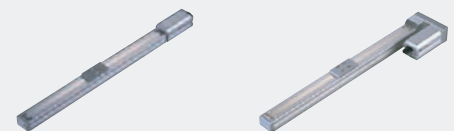
Rod Type Side-mounted Motor Rod Type Rod Type with Guide

Coming Soon



Rotary Chuck Unit

- 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.



Slider Type Side-mounted Motor Slider Type

## RCS3 SERIES



Aluminum-base Type



Steel-base Type

## RCS2 SERIES 230V SERVO MOTOR TYPE



Slider Type



Side-mounted Motor Slider Type



Slim Rod Type



Gripper Type



High-speed Slider Type  
**RCS3-CT8C**



High-speed Table Type  
**RCS3-CTZ5C**



Ultra-high-thrust Rod Type



Rod Type with Guide



Large Diameter Hollow Rotary Type

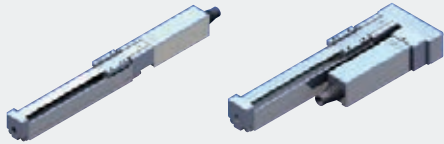
- Equipped with a servo motor, these actuators support high loads and long strokes.
- When an XSEL controller is used, you can combine three or more axes.
- Compatible with ProfiBus, DeviceNet, CC-Link, and other field networks.

# Mini RoboCylinder



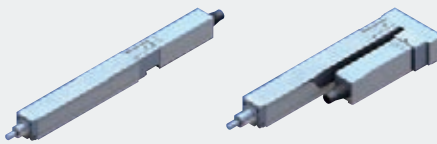
Next-generation electric actuators, the solution for space constrained applications

## RCP3 MINI SLIDER TYPE



Motor Coupled Type Side-mounted Motor Type

## RCP3 MINI ROD TYPE



Motor Coupled Type Side-mounted Motor Type

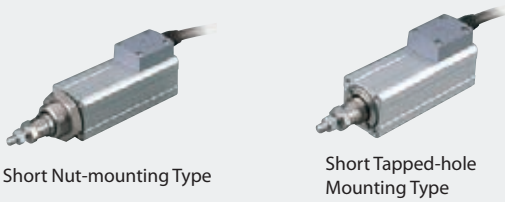
## RCA2 MINI SLIDER TYPE



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

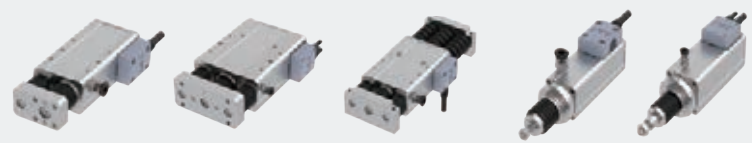


Short Nut-mounting Type

Short Tapped-hole Mounting Type

## RCA2/RCS2 MINI ROD TYPE

CLEANROOM DUST/SPLASH-PROOF



Cleanroom Type & Dust-/Splash-proof Type



Short Free Mounting Type with Single Guide

Short Free Mounting Type with Double Guides

Short Slide Unit Type with Double Guides

## 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

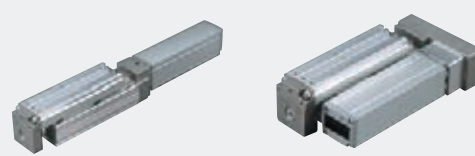


Short Compact Type

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

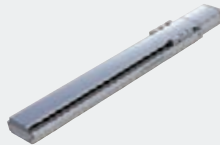
Medium Type  
GRS-M

# Single-axis Robots

Intelligent actuators with high-speed and high-transfer capabilities



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



High-rigidity Type  
(Steel-base)  
**SSPA**



Simple Dust-proof Type  
**ISDB/ISPDB**



High-rigidity  
Belt-drive Type  
**IF**



Slim Belt-drive Type  
**FS**



Rotary Type  
**RS**



Nut Rotational Type  
**NS**

- 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 \*

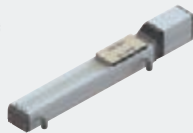
\* ISO Standard 14644-1:2015 (according to class 4 of previous ISO Standard 14644-1:1999)



Pulse Motor  
**RCP6(S)CR**



Pulse Motor  
**RCP5CR**



Pulse Motor  
**RCP4CR**



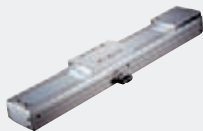
Servo Motor  
**RCACR**



Servo Motor  
**RCS2CR/  
RCS3CR/RCS4CR**



High-performance Type  
**ISDBCR/ISPBCR**



Anti-static Type  
**ISDBCR-ESD**



Gripper Type  
**RCP2CR-GR**



Rotary Type  
**RCP2CR-RT**



SCARA Robot  
**IXP-□C**



SCARA Robot  
**IX-NNC**



Ultra-compact  
SCARA Robot  
**IX-NNC**



Direct Drive  
Motor  
**DDACR**

Coming Soon

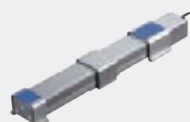
- A well sealed structure allows it to achieve ISO cleanliness class 2.5.
- A wide variety of products are available, from RoboCylinder all the way to single-axis actuators and SCARA robots.

# Splash-proof/Dust-proof Types

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



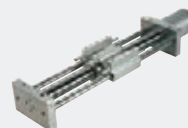
Pulse Motor  
Rod / Radial Cylinder Type  
**RCP5W-RA6/7/8/10**  
**RCP6(S)W-R(R)A4/6/7/8**  
**RCP6(S)W-WRA10/  
12/14/16**



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**



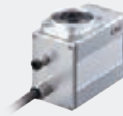
Pulse Motor  
Rod / Radial Cylinder Type  
**EC-R(R)6/7□W**



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



Gripper Type  
**RCP2W-GR**



Rotary Type  
**RCP2W-RT**



High power Slider Type  
**ISWA/ISPWA**



SCARA Robot  
**IXP-□W**

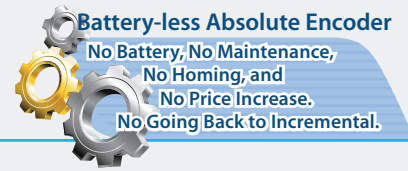


SCARA Robot  
**IX-NNW**

- 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 battery-less absolute encoders



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



- All models come standard with 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



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

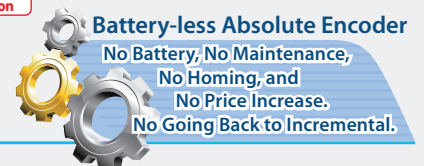


- Achieves high speeds, payload and precision.
- Easy programming makes these actuators much more user-friendly.
- It supports a wide variety of arm lengths, ranging from 120mm to 800mm.

# IXA Series | High-power Scara Robots

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

Coming Soon



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

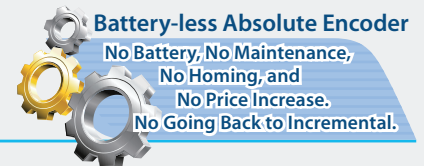


Standard and High-speed Type (Vertical axis stroke:: 150/180/330mm)

- 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



**Gate Type**

**Cantilever Type**



- Every model equipped with battery-less absolute encoder as standard.
- AC Servo Motor specification added to the series.
- 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:  $\pm 0.005\text{mm}$  (AC servo motor) /  $\pm 0.01\text{mm}$  (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

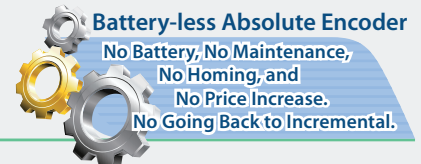


DDA/DDACR  
High Torque type

- Positioning repeatability  $\pm 0.00103$  degree ( $\pm 3.7s$ ), Index accuracy  $\pm 0.00833$  degree ( $\pm 30s$ ) 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:  $\varnothing 52mm$ ), Slim or High-torque types in lineup. Flange option is available.

## Cartesian Robots

Pre-configured cartesian robots that reduce installation and setup times



### 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**

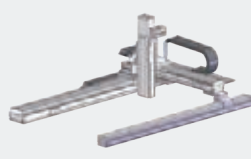


Gantry Type  
**XYG**

### ICSB3/ICSPB3 3-AXIS CONFIGURATION

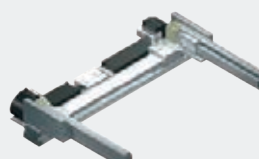


XYB + Z-axis Type  
B□□□□□□□

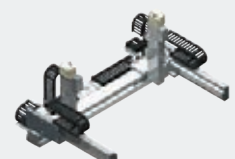


XYG + Z-axis Type  
G□□□□□□□

### 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

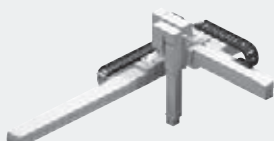


Y-axis Base Mount Type  
**XYB**



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

**PSEP**



For RCP2/RCP3

**ASEP**



For RCA/RCA2

**DSEP**



For RCD

- 3-position controllers.
- Use the same signals as air-cylinder solenoid valves.
- Standard and dust-proof specifications are available.
- The dust-proof specification has a protective structure conforming to IP53, allowing it to be installed outside the control panel.

**P<sub>CON</sub>-CB**  
(PowerCon)



For RCP6/5/4/3/2

**A<sub>CON</sub>-CB**



For RCA/RCA2

**D<sub>CON</sub>-CB**



For RCD

**S<sub>CON</sub>-CB**



For RCS2/3/4 Single-axis (S<sub>CON</sub>-CB/LC)

**S<sub>CON</sub>-CAL**



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.
- S<sub>CON</sub>-CB comes with vibration control function.
- S<sub>CON</sub>-LC and MSEP-LC with PLC function via LC ladder software.

**M<sub>CON</sub>**

For RoboCylinder, CON Series 8-axis Type



**MSEP**

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



**R<sub>CON</sub>**

For RoboCylinder, CON Series 8-/16-axis Type



**M<sub>SCON</sub>**

S<sub>CON</sub> 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, S<sub>CON</sub> extension and simple absolute unit (R<sub>CON</sub>).

- 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

**XSEL**



1-8 axes  
For RCS2/RCS3/RCS4 Single-axis/SCARA

**MSEL**



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

- PSEL/ASEL/SSEL controllers support interpolated operation and are used to set 1 or 2 axes.
- XSEL 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

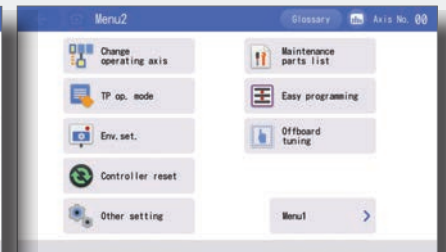
**TB-02**



\*screen image

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

**TB-03**



**IAI Industrieroboter GmbH**

Ober der R6th 4 • D-65824 Schwalbach / Frankfurt

Phone: +49-6196-8895-0 • Fax: +49-6196-8895-24

E-Mail: info@IAI-GmbH.de • Internet: http://www.eu.IAI-GmbH.de



**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. 0819-E  
Vers. CE0033-30.8B