



## ACTUATORS & STAGES



AKRIBIS SYSTEMS

**Direct Drive Stages and Actuators.** High performance linear and rotary solutions. Direct drive stages and actuators come packaged with a choice of bearings and high-resolution encoders. Solutions for applications requiring quick accelerations, high speeds, fine precision, and rapid settling times. Products include voice coils, iron core & ironless motors as well as integrated linear motor stages and actuators.



GMT GLOBAL, INC.

**Precision Stages.** GMT offers a wide variety of high precision, ball screw driven linear and rotary stages. Stages for applications requiring small moves, high precision, and smooth motion. Products include manual or motorized single axis stages, compound XY & XYZ stages, rotary positioning tables, motorized and pneumatic 2 and 3 finger gripper, ball screws, profile rails, cross roller bearings, and integrated stepping motor with ball screws.



THOMSON LINEAR

**Industrial Linear Systems.** Carriage style solutions include belt or screw driven actuators incorporating multiple guidance systems that are fully configurable to meet your unique application needs. Carriage style actuators are suitable for applications requiring an integrated bearing system for industrial needs. Products include actuators with linear guides, lifting columns, roller guides, ball screws, lead screws, and belt drives all configured to ship with custom RediMounts for easy motor installation.

**Rod Style Linear Actuators.** Thomson offers both industrial and precision rod style actuators. Industrial actuators are great for replacing pneumatics and hydraulics. These actuators can produce up to 9kN of force and have numerous environmental protection classes. Products include AC & DC integrated solutions, stepper actuators, servo ready precision actuators and worm gear screw jacks.



DUNKERMOTOREN

**Tubular Linear Motors.** Dunkermotoren offers rod style linear motors with internal feedback, optional IP67 ratings, and configurable bearing options. Tubular linear motors are great for applications that need a rod style actuator in harsh environments requiring fast moves and high duty cycles. Sizes include 11, 25, and 38 mm diameters.

## ROBOTS

NACHI

NACHI ROBOTIC SYSTEMS

**Robotic Systems.** Compact 6 axis industrial robots. Nachi offers a wide range of robots and turnkey solutions for many applications. Platforms are rated for payloads of 1 to 1000kg, with reaches up to 3.9m and have an embedded proprietary vision system and clean room solutions. The FD11 controller makes programming and initializing easy. Types of robots include palletizing, collaborative, and SCARA.

## ENCODERS

HEIDENHAIN

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**Precision Optical Encoders.** Heidenhain has made metrology a science and pushes the boundaries of measurements, providing high accuracy feedback devices for linear and rotary applications. Rotary encoders are available with or without integral bearings as well as large hollow shaft designs with or without a stator coupling. Linear encoders are available in sealed or exposed versions. Features include incremental and absolute outputs with EnDat, SSI, PROFIBUS DP, and other serial data interfaces.

POSITAL

POSITAL

**Absolute Encoder.** Posital's proprietary Wiegand sensors allow for multi-turn positioning without battery back-up which reduces machine down time and maintenance. Posital also offers dynamically compensated inclinometers by averaging gyro and accelerometer feedback. Products include encoder kits, draw string encoders, inclinometers, and rugged industrial sealed encoders.

Quantum Devices

QUANTUM DEVICES

**Rotary Modular Optical Encoders.** A US-based encoder manufacturer that designs and manufactures high performance incremental optical rotary encoders. Quadrature output designs provide exceptional reliability and can be configured with or without bearings. Resolutions up to 20,000 ppr, IP66 rating, low profile and sine/cosine inputs.



RENISHAW

**Linear and Rotary Encoder Systems.** Cymatix has vast experience and success at integrating the Renishaw high resolution feedback devices into custom high-performance systems. Products include optical and magnetic linear and rotary encoders.

## MOTORS



### AKRIBIS SYSTEMS

**Direct Drive Motors.** Akribis is a global designer and manufacturer of direct drive linear and rotary motors. Ironless and iron core motors are offered in a range of lengths and force densities. Products include linear, frameless rotary motors, voice coils and arc segments.



### CYMATIX, INC.

**Rotary Servo Motors.** Cymatix stocks a wide range of brushless motors. Base motors can be configured to meet unique application needs. Custom designs include ironless cores, hollow shafts, pancake, and spindle motors. Incremental and absolute encoder with brake options available. Motor sizes include both NEMA and metric.



### DELTA ELECTRONICS

**High Voltage Rotary Motors.** Delta Electronics offers a variety of AC servo motors that operate on 220-400Vac and are fully configurable to meet your application needs. Motors range in power from 100W to 15kW. Matched servo drives offer plug-n-play simplicity in a small footprint. Standalone operation for torque, velocity, step/direction, master/follower, and indexing are offered. Multi-axis solutions run on a CANopen, EtherCAT or RS485 network. Products include high, low, and medium inertia motors configured with either incremental or absolute encoders, brakes, keyways, and oil seals.



### DINGS' MOTION

#### Stepper Motors and Step Actuators.

DINGS' Motion offers a wide variety of step motor solutions including integrated solutions with motor and drive as well as integrated motor and lead screw solutions. Products include NEMA 8 to 34 stepper motors, integrated NEMA 23 stepper motors, and lead screw-based stepper actuators that are captive, non-captive, or external.



### DUNKERMOTOREN

#### Integrated Rotary Motors.

These motors are integrated systems where the drive, controls and encoder are embedded into the motor. They can be operated in both speed and position modes as well as from a PLC via CANopen, PROFIBUS or EtherCAT. Integrated motors are great solutions to implement when reducing panel space and cable routing. Products include brush and brushless motors, with or without planetary or worm drive reducers.

## DRIVES & CONTROLS



### COPLEY CONTROLS

**Servo and Stepper Drives.** AC and DC drives (up to 240 Vac) as well as various communication protocols: CANopen, EtherCAT, Ethernet and RS232. Distributed architecture simplifies the amplifier-to-controller wiring allowing a single communication protocol serving both motion and IO. CANopen is supported with a PCI and USB interface. Power ranges from 3A to 35A continuous, multi-axis modules, and software interfaces for Visual Basic and C++.



### TRIO MOTION TECHNOLOGY

#### Multi-Axis Motion Controller.

Coordinating and controlling up to 128 axes of motion. Easy-to-use interface allows for quick implementation of robotic kinematics and helical interpolations on servo, stepper, piezo motors and hydraulic systems. Digital I/O and additional equipment such as HMI's can all be controlled from a single master. Systems may be used with a standalone program or alternatively commands can be sent from an external computer. Trio's expertise of motion programming is based within its Motion-iX technology. Products include HMIs, controls, motors and drives.

## REDUCERS



### CGI

#### Precision Planetary Gearheads.

A wide range of standard ratios (from 3:1 to 700:1) in planetary and spur designs. Custom shafts and multiple mounting options are offered for inline, right angle, and offset configurations. Sizes include NEMA 17 to 34 and metric equivalents.



### GAM

#### Robotic and Strain Wave Reducers.

GAM has a broad selection of precision servo gear reducers that can be customized. Products include planetary, bevel, cycloidal and zero backlash strain wave reducers. Other drive components include rack & pinion systems, servo couplings, linear mounting kits, and other precision mechanical drive solutions.

## INDUSTRIAL COMPONENTS



### DELTA ELECTRONICS

#### **Programmable Logic Controllers (PLC).**

Delta offers a wide variety of controllers that run on an Ethernet or RS485 network. Screw-in or snap-in terminals, IO points up to 512, 30k line count programming and 12k word data registers are available. Features include process, PID, temperature, and logic controllers.

**Human Machine Interfaces (HMI).** Touch screens that operate on Ethernet and/or RS485 based network. Screen sizes from 4.1 to 15 inches, resolutions up to 1024, 16 million colors, IP65 ratings, and built in PLC functionality with embedded IO points are among the many features available.

**Variable Frequency Drives (VFD).** UL & CE rated drives available from 0.25 to 475 HP. These come in a wide range of model types and can be programmed via a RS485 interface or operator keypad. Features include PID loop control, counters, multi-step speeds, MODBUS, EtherCAT, auto-slip compensation, and adjustable acceleration/deceleration settings. Products include micro, IP65, V/F, high frequency (3 KHz), closed loop vector, sensorless vector, constant torque, and variable torque.



### OPTEX

#### **Industrial Sensors.** Detection of positioning, distance, thickness, flatness, and depth are

offered in a small package. Laser sensor features include background suppression, time of flight, and high linearity. Photoelectric sensors are available with an IP67 rating for heavy wash down and an IP69K rating for high-pressure and steam cleaning conditions. Fiber optic sensors with high-speed response time and moisture detection are offered. Color sensors detect specific colors and/or the amount of color within a field of view. Products include laser, photoelectric, fiber optic, color, and LED vision lighting.

## VALUE-ADDED SERVICES



### CYMATIX

#### **Value-Added Services.** We will team with your engineering and production staffs to

design, assemble and test components to meet your needs. Let us facilitate your bill of materials by having our in-house assembly department become an extension of your manufacturing capacity. Services include concept to inception sub-assemblies, panel builds, custom cables, system assembly and testing as well as design reviews and engineering support.

**Custom Designs.** With almost 40 years of experience serving the motion control industry, we know that some applications require custom solutions and designs. Cymatix has the expertise to design custom sub-assemblies to meet your unique application requirements. Our experienced team of industry experts allows us to provide various services to ensure your application's success. Examples include, but not limited to, high precision stages, custom motors, and amplifier chassis.

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