



MOTION UNDER CONTROL

Servomotors and Drives

Torque and Linear Motors

Stepper and SR-Motors

Digital Servocontrols

Aktuators and Sensors

Motion Control Systems

MOTION CONTROL

MACCON - Technologies, Products & Services



MACCON

The Mechatronics Company

The SYSTEM INTEGRATOR

Front page

Top left: curvi-linear torquemotor segment of the SOFIA main positioning motor (3D direct drive with 2m diameter and a hydrostatic bearing).

Bottom left: 42V 8kW motor with water cooling for a city motorbike

Top right: control card of the MACCON 2 axis DSM2 motor controller.

Bottom right: customised motor controller design for brushless motors, 48V/30A

MACCON is your technically experienced partner for the execution of development and project work in the application of servomotors, steppers and drives.

Instead of maintaining expensive development resources our clients contract us to perform their Motion Control project work and supply the optimum solution for each application.

We maintain our technical leadership through our regular exposure to new component and system design challenges.



MACInverter

Motors

- PM-BLDC servomotors of all geometries
- Rotary and linear motors
- Electromechanical acutators (EMAs)

Drives

- Linear drive up to 2kW
- PWM drives up to 20kW
- Stepper, BL, SR, AC and DC types

Controls

- Positioning controls
- Multi-axis systems
- Industrial field bus systems
- CAN Aerospace etc.

Systems

- Dimensioning and application
- Servosimulation
- Programming

Projects and Services

- Turn-key projects
- Commissioning
- Training

MACCON and A&D

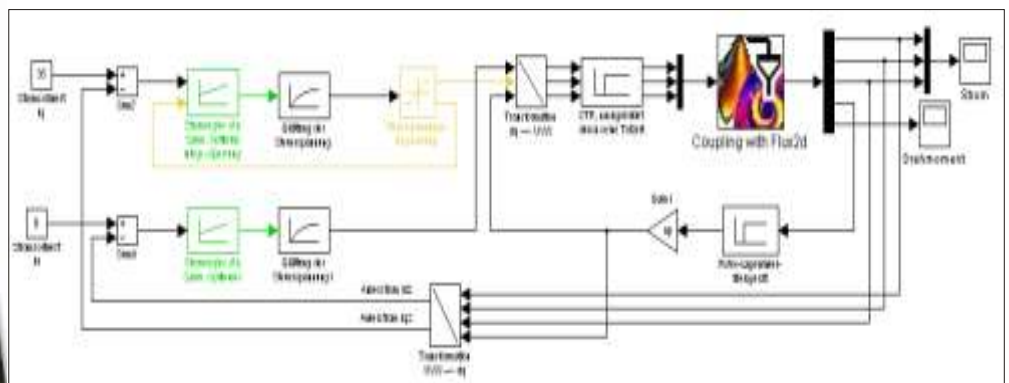
For over 20 years MACCON has been a supplier and development partner of leading German engineering companies in the Aerospace and Defense industry (A&D).



MACInverter®

The MACInverter is a universal state-of-the-art, embedded controller especially dedicated to the control of power drive modules for single and 3-phase electric motor drives.

Simulation of Control and Motor Systems using SIMULINK and FLUX



MOTORS & ACTUATORS

Motors from MACCON:

- Servomotors
- Stepper motors
- Torque motors
- Limited Angle Torquers
- BL hollow-shaft motors
- Kit motors (stator/rotor sets)
- Outer rotor motors
- SR motors
- Linear motors
- Voice-coil motors
- Electro-mechanical actuators

Outer rotor motor for a steer-by-wire actuator



Custom Motors

On this page we illustrate examples of our motor technologies and their many applications.

We design and build new motors and adapt existing models precisely to customer requirements.

Electromechanical Actuators (EMAs)

We achieve accurate linear and rotary motion against high force and torque loads by mechanically combining electric motors with gearbox and ball-screw reduction.

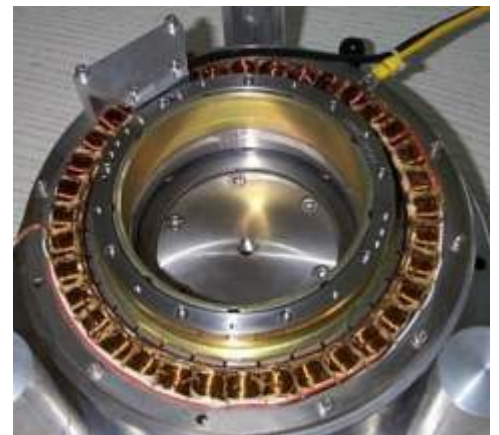


Hollow shaft motor with Harmonic Drive gearbox for pedestal positioning

"Steer-by-wire" actuator with two torque motors



BL-motor for automotive "brake-by-wire" application

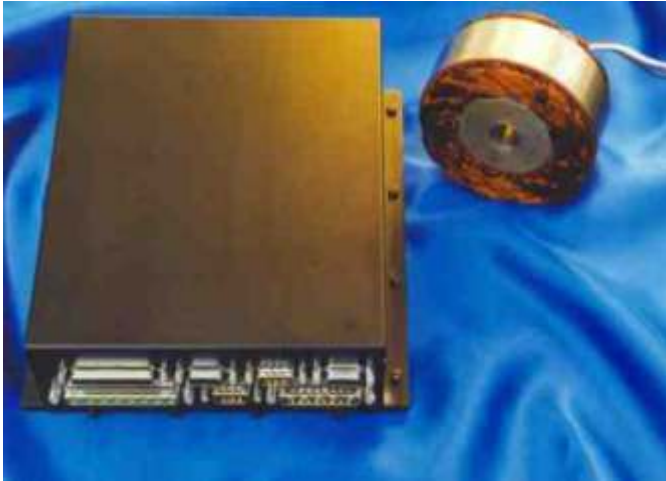


Indexing table with air-bearing, torque motor and precision encoder

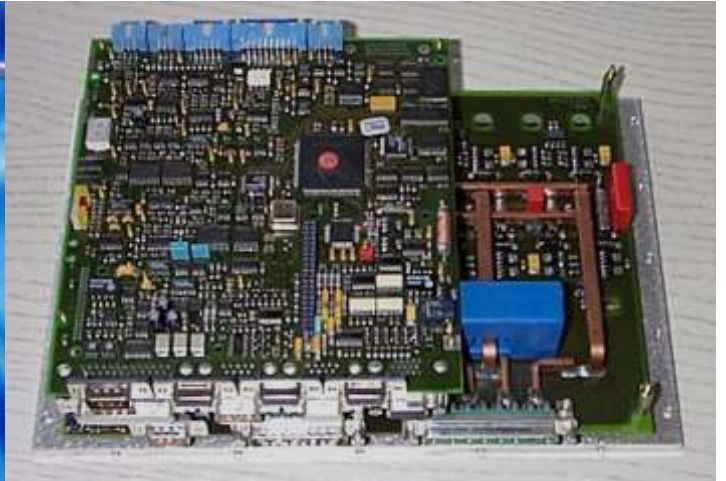
4 phase SR-motor for EMA truck brake system



ELECTRONICS & SYSTEMS



*Universal controller
for BL-Motors (MIL)*



*80A BL-controller
for automotive "by-wire"
applications*

Drive Types

- DC- and 3 phase BL-drives
- Stand-alone and 19" modules
- Linear and PWM power stages
- Analog and digital control
- CANbus. RS422 interfaces etc.



*4 axis linear-drive control system
for positioning to <2nm*

Sensor Interfaces

- DC-tachometers
- Resolver, Inductosyn
- Incremental encoder
- Sine/cosine encoder (1Vs)
- EnDat/Hiperface/BISS
- Netzer electrical encoder

*Customised SR-controller
for 4-phase SR-motors*



Hi-rel Drives

- 12 to 300V, 100W to 20kW
- IP65 protection
- Commercial and extended temperature
- Controllers for space applications
- MIL and automotive applicatons

*2 channel motor controller
for a space scanning applications*



*A motor controller for industrial
positioning applications*



MOTION CONTROL APPLICATIONS



Door Actuators for A380 Demonstrator

Industry and Medicine

- Patient tables
- Material testing equipment
- Indexing tables

Aerospace

- Inertia-wheels
- Scanner motors
- Control electronics

Science

- Nanometer positioning systems
- High-speed choppers, etc.



SOFIA (IR-telescope)

Biolab (Columbus)

On this page we show just a few of the many application examples for our Motion Control products, know-how and services.

Astronomy

- Controls for astronomical telescopes
- Choppers and aperture controls
- Planetarium projector positioners

Air and Sea Defense

- Rudder control systems (ACUs) for missiles, drones, torpedos and ROVs
- Periscope positioning drives
- Controls for launchers and air and sea defense systems
- Winches and Towed-array drives
- Propulsion motors for underwater ROVs

Military Vehicles

- Munition feeder systems
- Platform positioning controls
- Turret and Cupola drives
- Seeker-heads

Automotive

- Motors, acutators and controls for steer- and brake-by-wire systems
- Compressors, pumps etc.
- Auxiliary motors



Neutron Chopper Control

ASRAD-R Weapon and Rader Platform



MSP4000 Ballistic Trajectory Monitor System



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Motion Control Systems	http://www.maccon.de

Partners

In addition to our own products and services we sell and support products of other leading Motion Control manufacturers. Some of the major names that we represent and distribute are:

- Inland Motor, now Danaher Motion
- Compumotor, Digiplan, now Parker EME
- Anorad, now Rockwell Automation
- Copley Controls
- DACO Scientific
- Delta Tau
- GeePlus, ex Densitron

References

Over 20 years MACCON has served many clients with hi-tech Motion Control solutions - a small excerpt:

- Bodensee Gerätetechnik - Ueberlingen
- BMW - Munich
- Carl Zeiss - Oberkochen, Jena
- Daimler - Stuttgart, Berlin, Frankfurt, Ulm
- DLR - Munich, Cologne, Braunschweig
- EADS Astrium - Friedrichshafen, Bremen
- EADS LFK - Munich, Schrobenhausen
- ESO - Garching
- Fraunhofer Institutes - Stuttgart, Aachen etc.
- Heidenhain - Traunreut
- Hoechst - Wiesbaden
- Krauss-Maffei-Wegmann - Kassel
- Leica Microsystems - Wetzlar, Jena
- Leybold - Hanau
- MAN Technologie - Augsburg
- Rheinmetall - Augsburg, Bremen and Unterlueess
- Siemens - Munich etc.
- TRW - Koblenz, Dusseldorf
- Thales - Glasgow, GB
- VW - Braunschweig and Wolfsburg

Portrait

Our company was formed in 1982. We are active in the field of electronically controlled motion. The company name is made up of the first letters of the words

MACHINE CONTROL.

MACCON has made a name in the technical community through its participation in advanced Motion Control projects as well as through its many publications and technical seminars. Our partners are world-renown companies, whose products synergise with our own developments.

Mission Statement : Our mission is to serve users in solving their real-time motion control problems in machines, processes and experiments. Our markets are primarily the German speaking countries in Europe.

Our expertise lies in:

MOTION UNDER CONTROL

- an extensive range of qualified motor and sensor products
- achieving precise, dynamic and smooth coordination of motion in multi-axis systems
- matching our products to the host control
- adapting our products to special interfaces and environments
- our comprehensive engineering knowledge in the field of Mechatronics

We achieve our aims by cooperating closely with Universities and executing complex projects together with leading engineering companies. Our products are primarily electrical motors, actuators, drive and control electronics and position sensors.

We are committed to providing our customers with expert technical support and top product quality at competitive prices. We strive to be the technical leader in motion control systems.