TrioBASIC

FEATURES

- Fast BASIC language for easy standalone machine programming
- Fully integrated with Trio's *Motion* Perfect application development software
- Comprehensive motion control functions for multiple axes
- Multi-tasking of multiple programs for improved software structure and maintenance
- Support for traditional servo or stepper axes as well as digital (EtherCAT, RTEX, Sercos, SLM) axes
- A comprehensive set of move types supporting multiple axis coordination as well as simple single axis moves. This includes linear, circular and spherical interpolation as well as cam profiles and software gearboxes
- Real maths (up to 64 bit) including bit operators and variables
- Support for hardware position capture
- Support for high speed outputs

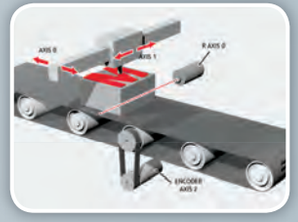
TrioBASIC is a multi-tasking programming language used by the Trio *Motion Coordinator* range. The syntax is similar to that of other BASIC family languages.

A PC with Microsoft Windows™ operating system running Trio's *Motion* Perfect v4 software is used to develop and test the application programs which coordinate all the required motion and machine functions. *Motion* Perfect v4 provides all editing and debugging functionality needed to write and debug applications written in TrioBASIC. The completed application does not require the PC in order to run.

One of the many strengths of TrioBASIC is that a program written for an entry level *Motion Coordinator* can be run, with only minimal modification on the highest performance *Motion Coordinator*. This portability extends even to users requiring upgrades for older *Motion Coordinators* where the core functions of a program written in TrioBASIC over a decade ago will still run on the latest hardware platforms.

Motion Profile Generation

Every *Motion Coordinator* includes a feature-rich Motion Profile Generator. This allows the *Motion Coordinator* to set axis speeds and acceleration as well as accurately control the gearing during linked motion. All motion commands issued by either TrioBASIC or IEC 61131-3 programs run in the same known and repeatable way.



The target axis type, whether analogue servo, stepper or a digital axis, has no effect on the motion profile. This makes programming *Motion Coordinators* very predictable and gives consistent results no matter which programming system or axis type is used.

Multi-Tasking

At the heart of the *Motion Coordinator* is an efficient and highly reliable pre-emptive multi-tasking operating system. Application programs and system processes share the processor resources in a deterministic way.

BASIC Language

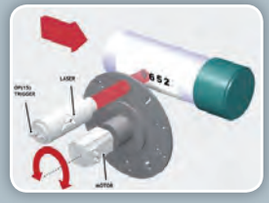
This familiar, easy-to-use but powerful language, has been the mainstay of motion programming for over three decades. The MC4/5/6 range extends the functionality while keeping compatibility with previous versions of TrioBASIC.

Motion

Every *Motion Coordinator* comes with an extensive library of Motion Functions. Intuitive commands like **MOVE, MOVEABS, SPEED** etc. allow first time users to quickly generate fully functioning motion programs.

Linked Motion

One of the strengths of the TrioBASIC motion language is the provision of accurate and repeatable functions for linking an axis to a master. The powerful set of commands gives life to a huge number of applications, such as flying shear, flow wrapper and conveyor synchronisation. **MOVELINK, CAMBOX** and **FLEXLINK** commands cover 99% of linked motion types.

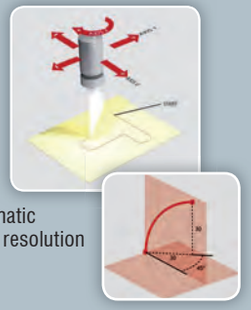


Look-Ahead

Multi-axis interpolation often uses CAD/CAM data as the motion source. The Look-Ahead functions allow data from polylines to be buffered and handled in an intelligent way. Both constant speed for glue-laying, or corner speed control for cutting, allow an XY motion system to be tailored precisely to need.

3D Motion

In addition to linear, circular and helical interpolated moves, the *Motion Coordinator* MC4/5/6 range supports spherical moves and plane rotation in 3 dimensions. 64 bit mathematics produces a dramatic improvement in accuracy and resolution when generating curves.



Robotics

The MC4/5/6 range opens up a new world of robotics and frame transformations. 2 and 3 axis Delta systems are programmed in familiar Cartesian coordinates while the complex axis position calculations are taken care of by the *Motion Coordinator*. Scara robots with up to 4 axes and articulated robots with up to 6 axes are also supported.

- Delta
- Parallel Link
- Scara
- Cartesian
- Anthropomorphic
- Single Belt 2 Axis
- Custom Kinematic Transformations

Communications

The speed and power of the BASIC language can be used to create protocol engines for RS232, RS485 and CANbus communications. Alternatively the growing number of built-in protocols can be configured by simply running the appropriate BASIC function.