



## PROVIDE A COMPLETE SET OF MOTION CONTROL SOLUTIONS

A motion controller specifically designed for circular arc, multi axis interpolation, and flying shear movements

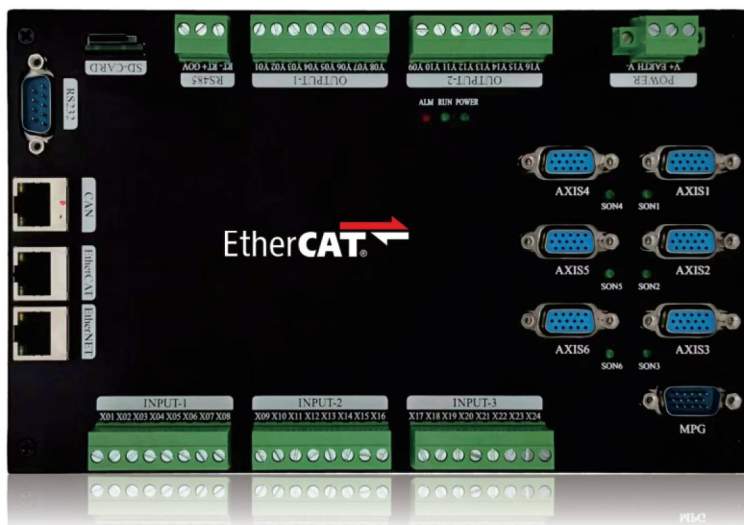
The servo motor drive has a high response bandwidth of 3KHZ

High speed communication 62.5μs

High precision encoder 8388608P/R 23bit

The positioning accuracy can reach within  $\pm 0.01\text{mm}$ ,

Assist in precise control of high-end automation equipment!



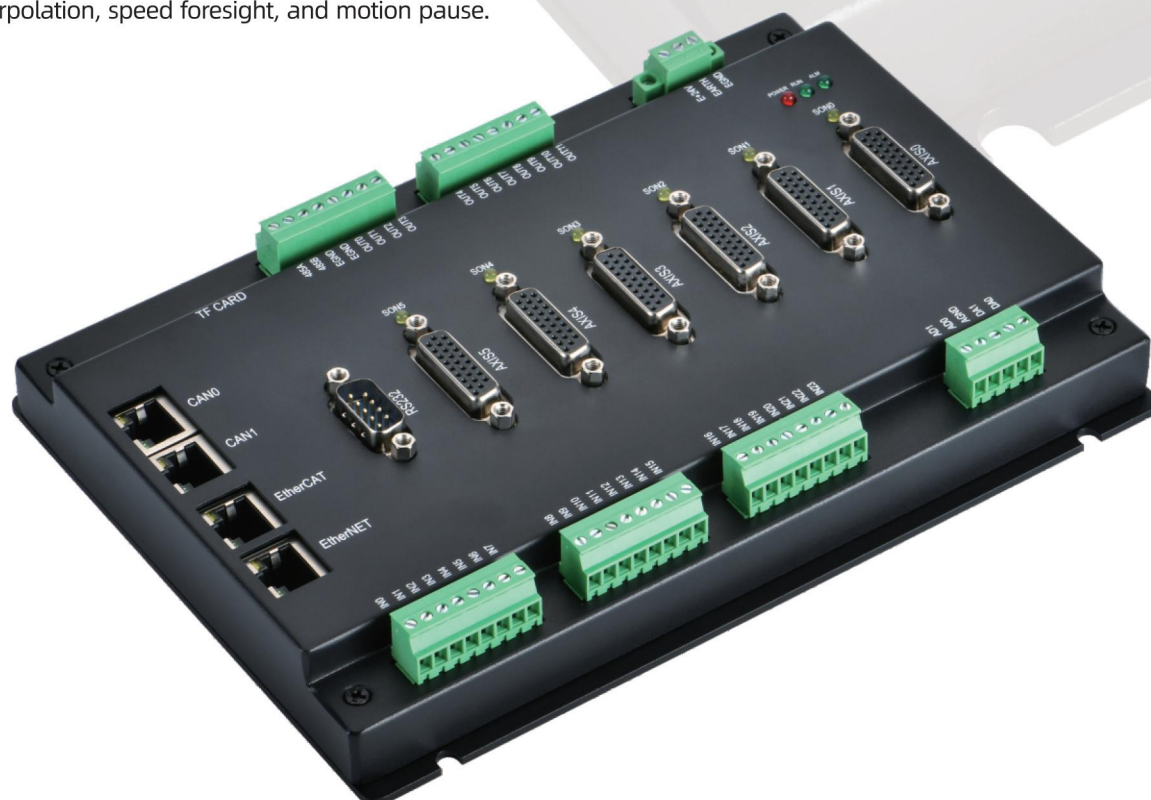
# NETWORK MOTION CONTROLLER

## Product Features

- Pulse type and EtherCat bus type motion controllers, supporting 4-32 axis motion control;
- Each axis has a maximum pulse output frequency of 10MHz, supports direction/pulse/dual pulse, and supports virtual axis;
- Equipped with RTC clock for installment payment function;
- Support data encryption protection to prevent data from being modified or lost;
- Support encoder feedback and handwheel input functions;
- Supports analog DA output (0V-10VDC) and analog AD input (0V-10VDC);
- Supports multiple isolated input ports and multiple isolated output ports (some controllers support high-speed input/output);
- Supports Ethernet interface, USB flash drive, SD card, RS232, RS485, CAN expansion;
- Supports storing 1024~4096 devices in case of power failure;
- Support program space of 480KB~10MB;
- Support large capacity motion cache;
- Supports complex motion functions such as straight lines, arcs, spirals, spatial arcs, electronic camshafts, electronic gears, synchronous tracking, hardware position locking, position comparison output, continuous interpolation, speed foresight, and motion pause.

## Product Application

- Winding machine equipment
- Soldering machine equipment
- Labeling machine equipment
- Zipper machine equipment
- Other XY automation equipment



# SERVO MOTOR

## TS 60 Series



### General Specifications

Insulation Class	F
Protection Level	IP65
Maximum radial load	180N
Maximum axial load	90N
Environment Requirement	Work: 0°C~+55°C Preserve: 20°C~80°C Work or Preserve: 90%RH (No Condensation) Above Sea Level 1000m Vibration: 5.88/s 2.10-60Hz

### Technical Specifications

Model	TS6005A
No.of Poles	10
DC link Voltage(VDC)	310
Rated Power(W)	400
Rated torque(N.m)	1.27
Rated Speed(RPM)	3000
Rated Current(Amps)	2.6
Maximum Torque(N.M)	3.81
Resistor lines( $\Omega$ )	3.3
Line-line inductance(mH)	5.8
Voltage constant(V/KRPM)	34
Torque constant(Nm/A)	0.51
Rotor inertia(Kg.cm <sup>2</sup> )	0.53*10 <sup>-4</sup>

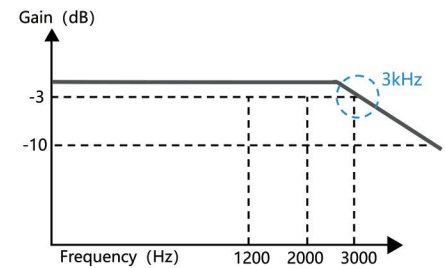


# EXCELLENT PERFORMANCE AND HIGHER EFFICIENCY

## High response 3kHz bandwidth

### Control performance

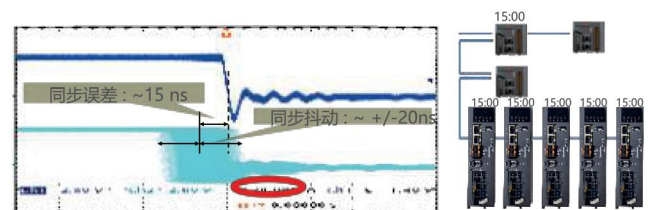
The X5/X7 series has increased response bandwidth, faster instruction tracking, and significantly reduced system tuning time. A highly responsive servo system will maximize the performance of mechanical equipment and assist product developers in solving servo problems.



## High synchronization 20ns

### Timing jitter

Through precise adjustment of EtherCAT distributed clock, the X5/X7S series achieves a distance of 120m between 300 nodes, with a synchronization error of 15ns and a synchronization jitter of  $\pm 20$ ns. Simultaneously, the position loop control is synchronized with the synchronization signal, further enhancing the synchronization of multi axis control.

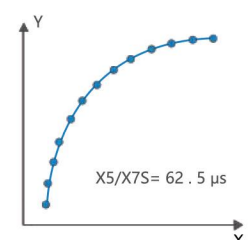


## High speed communication 62.5 $\mu$ s

### Synchronization cycle

The X5/X7S series adopts higher performance main control chips, further improving communication and interaction capabilities. It supports 62.5  $\mu$ s synchronization period for all operating modes of EtherCAT. For interpolation, cam and other trajectory control processes, the effect is better.

EtherCAT Operating mode	X5/X7S Minimum synchronization period
Contour Position Mode (pp)	62.5 $\mu$ s
Return to zero mode (hm)	62.5 $\mu$ s
Periodic Synchronous Position Mode (CSP)	62.5 $\mu$ s
Periodic synchronization speed mode (CSV)	62.5 $\mu$ s
Contour Speed Mode (PV)	62.5 $\mu$ s
Contour torque mode (pt)	62.5 $\mu$ s
Periodic Synchronous Torque Mode (CST)	62.5 $\mu$ s

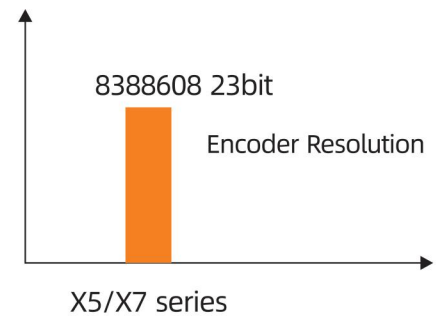




## High precision 8388608P/R 23bit

### Positioning accuracy

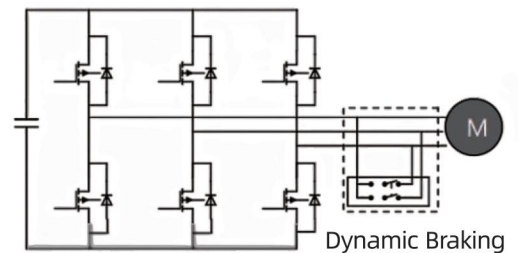
The X5/X7 series drives support up to 23 bit encoders with high precision of 8388608P/R, significantly improving device repeatability and absolute positioning accuracy.



## Secure

### Effectively protect personal and equipment safety

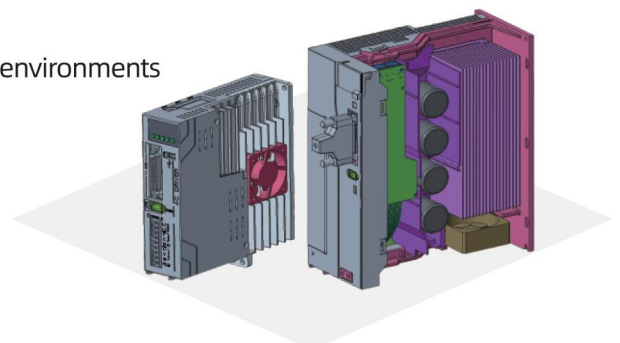
Dynamic braking - In the event of servo failure, emergency stop or shutdown, or motor brake failure, dynamic braking can be applied to prevent loss or personal injury caused by high-speed free parking of equipment.



## Protection

### Improving equipment reliability in response to high pollution environments

Independent air duct - Unique plastic air duct design enhances the heat dissipation performance of capacitors and other heating devices, while ensuring the independence of the air duct through maze design. Avoid dust, foreign objects, etc. from entering the control circuit.

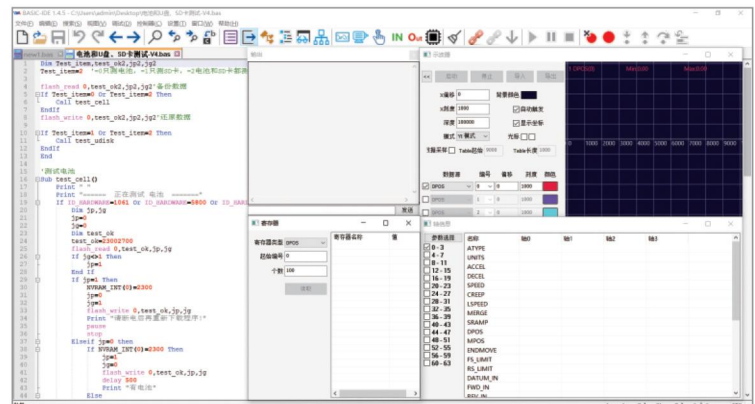
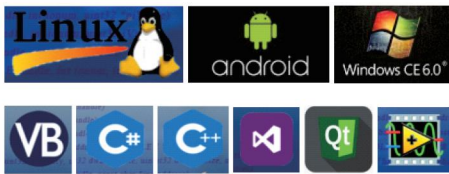


# SOFTWARE TOOL

BASIC-IDE is a PC program development, debugging, and diagnostic software for liwi control series motion controllers. BASIC-IDE has a convenient environment for programming, compiling, and debugging. BASIC-IDE can establish a connection with the controller through a serial port or Ethernet. By connecting it to the controller, users can easily edit and configure the controller's programs, quickly develop applications, and debug the running programs of the motion controller in real-time.

## Embedded development tools

### Support dynamic library development

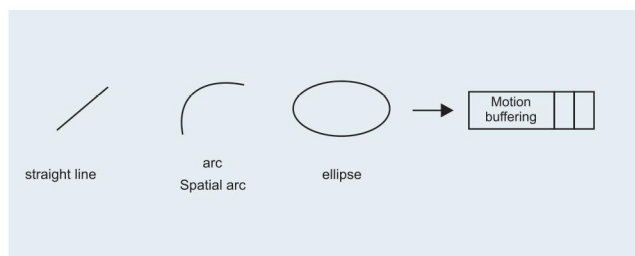


\*More features can be found in the development package

# PRODUCT FEATURES

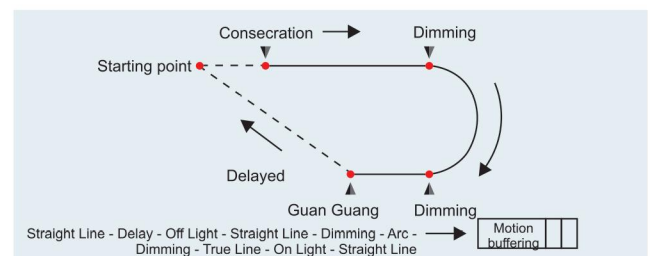
## Interpolation and continuous interpolation

Supports multiple interpolation types and can mix continuous interpolation.



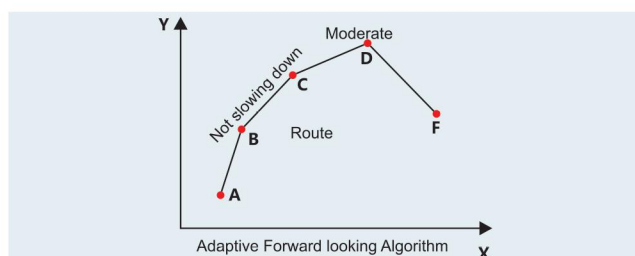
## Synchronized movements during exercise

Actions such as IO, PWM, DAC, or modifying system variables can all be synchronized for motion processing, making it simple and efficient.



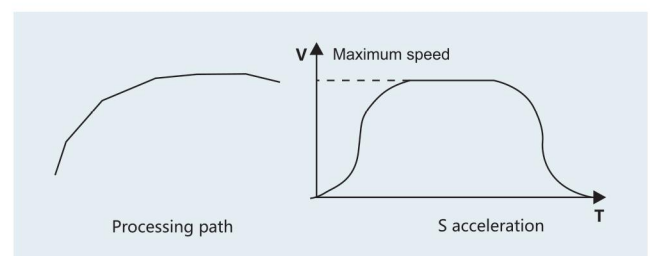
## Adaptive foresight

It can automatically anticipate and flexibly force the speed of special points. Supports up to 16 axis interpolation with forward view, and can specify additional axes without speed and forward view processing.



## S curve acceleration and deceleration

Merge and decelerate small line segments as a whole; The additional axis can be specified as a follow-up interpolation method, making it easier to use overall speed control.





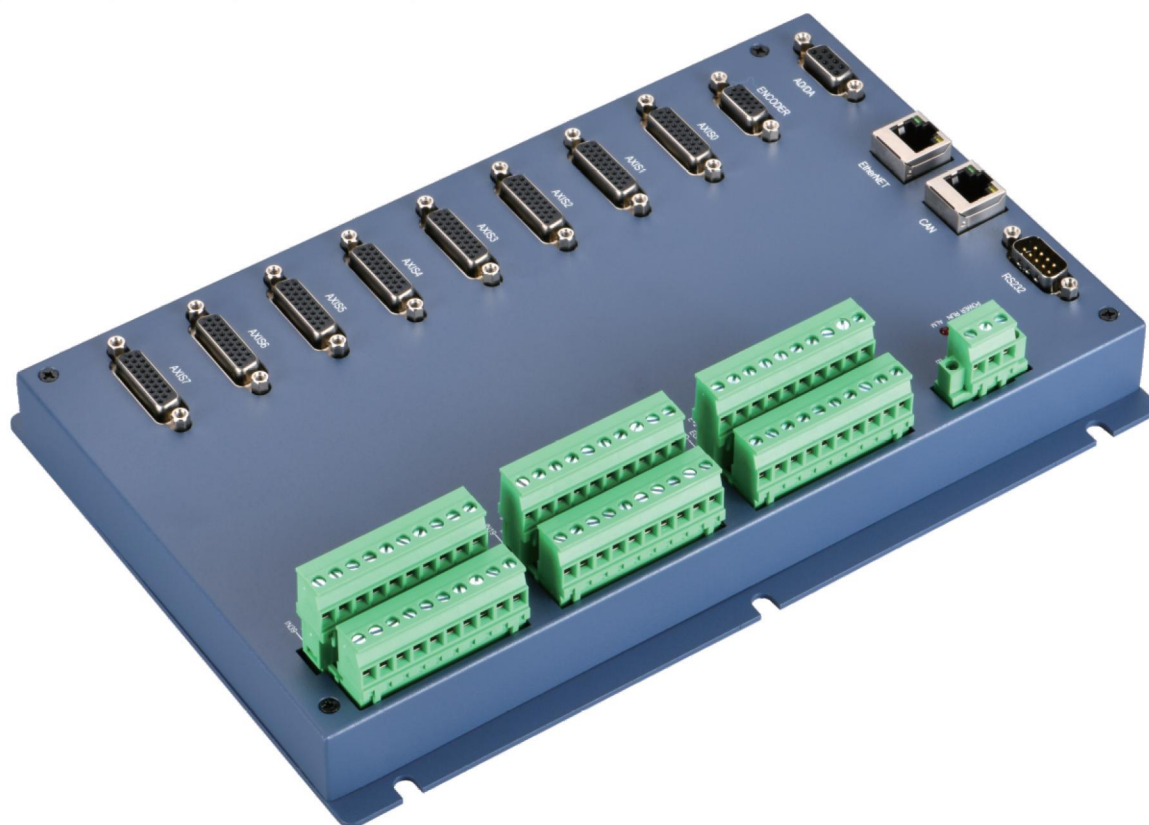
# NETWORK MOTION CONTROL CARD

## Product Features

- Pulse type and bus type motion controllers, supporting 4-32 axis motion control;
- Each axis has a maximum pulse output frequency of 10MHz, supports direction/pulse/dual pulse, and supports virtual axis;
- Support data encryption protection to prevent data from being modified or lost;
- Support encoder feedback and handwheel input functions;
- Supports analog DA output (0V-10VDC) and analog AD input (0V-10VDC);
- Supports multiple isolated input ports and multiple isolated output ports (some controllers support high-speed input/output);
- Supports Ethernet interface, RS232, RS485 communication, and CAN expansion;
- Supports storing 1024~2084 devices in case of power failure;
- Supports program space of 128KB;
- Support large capacity motion cache;
- Supports complex motion functions such as straight lines, arcs, spirals, spatial arcs, electronic camshafts, electronic gears, synchronous tracking, hardware position locking, position comparison output, continuous interpolation, speed foresight, and motion pause.

## Product Application

- Screw locking machine equipment
- Visual glue dispensing equipment
- Woodworking processing equipment
- PCB processing equipment
- Other XY automation equipment



## I'm an **IMPACT** Maker

**影** I BE **I**NNOVATIVE  
**M** BE OPEN **M**INDED  
**响** P BE **P**ASSION  
**A** BE **A**CTION TAKER  
**C** BE **C**URIOUS  
**力** T BE **T**EAMWORK ORIENTED



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