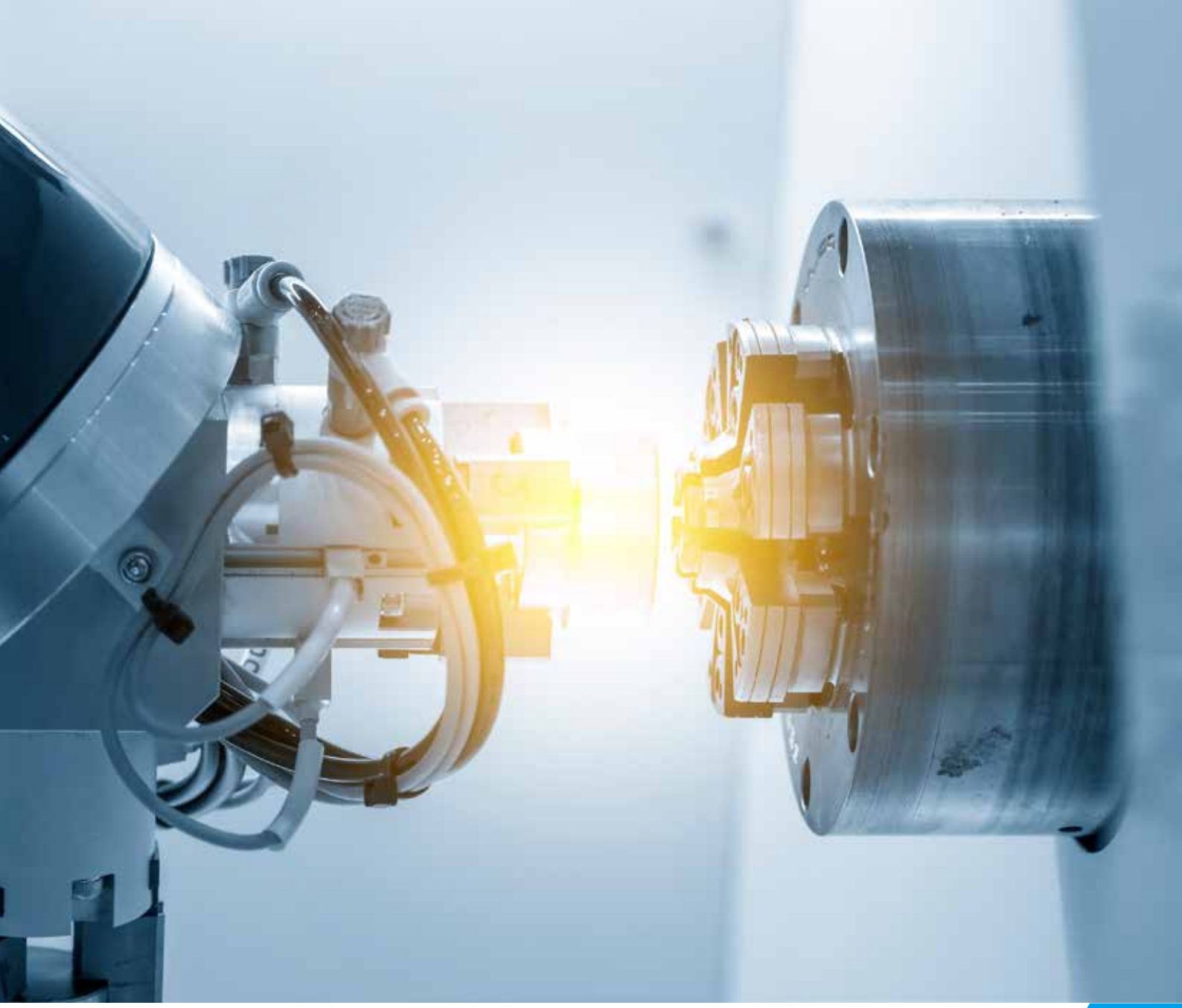


Digitized Automation for a Changing World

# Delta CNC Solution
# B Series


www.deltaww.com

DELTA
Smarter. Greener. Together.

# Delta CNC Solution B Series

## Delta Numerical Control B Series

Delta's new general-purpose CNC controllers support the standard ISO G-code format and algorithms for highly precise and high-speed performance. It integrates a human machine interface (HMI) for developing a user-friendly operating interface and implementing customization requirements for industries. Built-in with Delta's DMCNET motion bus, the CNC controllers can fulfill highly precise, high-speed, and smooth processing with the AC Servo System ASDA-A3 Series or ASDA-B3 Series, permanent magnet (PM) motors / induction motors (IM) for the spindle, and encoders.

Through long-term cooperation with in industries and continuous development of industrial automation, Delta has a deep understanding of client needs and can provide industry-specific processing technologies to assist customers in becoming more competitive in their markets.

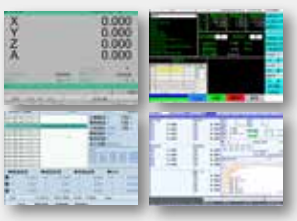

- **User-definable operating interface**
- **Easy operation with abundant functions**
- **Fully compatible with NC and MLC of A Series**

### Flexible Operating Interface and Useful Graphical Programming Tool

Easy operation and friendly interface with DOPSoft software for HMI programming

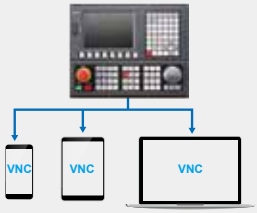
### Customization for Industries

Built-in with a new HMI that offers a definable industry-specific operating interface to enhance the operating experience



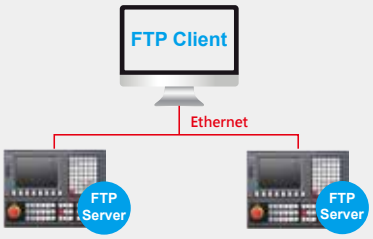
## VNC Server for Remote Monitoring

Built-in VNC server for remote monitoring and operating of the HMI via VNC Client App on mobile devices and computers (Windows, iOS, Android)



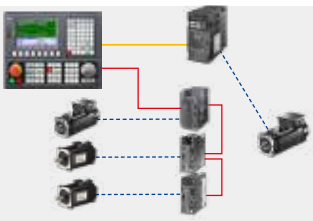

## FTP Server for Remote Monitoring

Built-in FTP server to update recipes, transmit processing data, and backup historical data, operation log and alarms



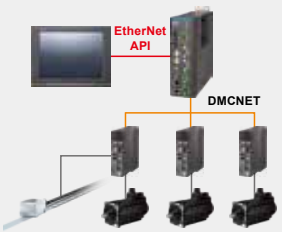

## Flexible Control of Spindle Driving

Flexible spindle control via Delta's DMCNET, analog signals or pulses



## Full Close-Loop Control with Signal Feedback from Linear Scales

Ensures position accuracy of the feeding axis with various brands of pulse type or communication linear scales, including Nikon, Mitutoyo, Fagor, Renishaw, and HEIDENHAIN



# CNC Product Features

## Delta Numerical Control B Series

### Interactive Editing

Industry-specific and interactive graphical editing and programming for an easy-to-use operating interface for process management

### Smart Machine Tuning and Integration

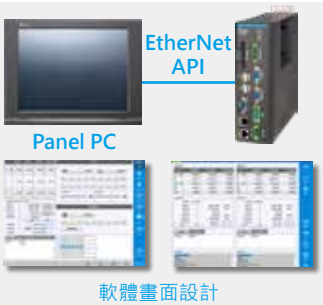
The CNC controller supports servo inertia estimation, resonance suppression, bandwidth control, and servo friction compensation with one-key operation for fast machine tuning, and eliminates issues of tool marks resulting from quadrant changes. For tapping applications, one-key tuning is available as well

### OpenCNC Software Operation on Large Touchscreen

Comes equipped with a large touchscreen for operation and user-definable interface

### PC + OpenCNC Software for Interface Customization and Process Configuration

Provides an Ethernet API for operating the controller, accessing data, defining a desired OpenCNC software interface, and collecting controller data for analysis

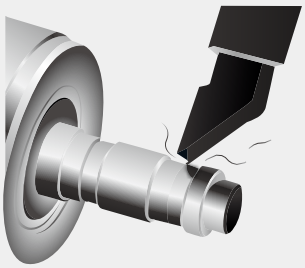



### CAD / CAM Software for Advanced Grinding Processes

Delta's CAD / CAM software provides a graphical interface, allowing users to quickly design complicated milling processes, such as punch grinding, contour grinding, tool grinding, and more

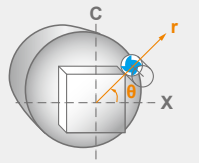
## Lathe Turning without Stringy Chips

Prevents stringy or strip-shaped chips falling around tools or workpieces from damaging the processing surfaces or shortening the lifespan of tools

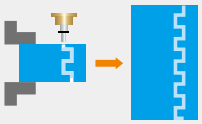


## Compound Lathe Turning and Milling Functions

Integration of lathe turning and milling functions, such as SC switching, polar coordinate interpolation, cylindrical coordinate interpolation, driven-tool axis milling, and more, for diverse processing



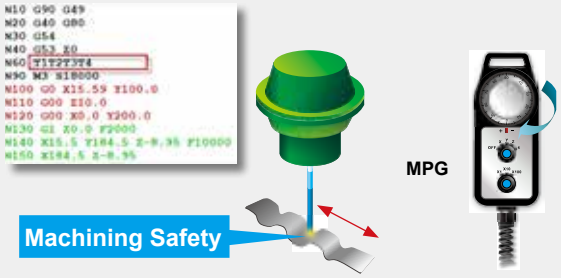

Polar coordinate interpolation



cylindrical interpolation

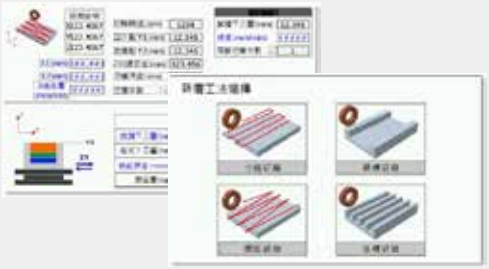
## Functions Dedicated for the Woodworking Industry

Supports multiple T commands with up to 12 consecutive T codes in a single line command. Each T code includes up to 4 yards in length for fast tool change
Supports T codes to execute subroutines in advance for tool change preparation with better efficiency. The reversing handwheel operation facilitates managing anomalies




## UI Customization and Automatic Programming of Specific Processes

Fast process configuration with user-definable interface for standard surface / cylindrical grinding methods and ranges



## Applications with Multiple Z Axes

- Provides control of synchronous and moving motions, tool table of the multi-end milling machine, and G43 length compensation for multi-end tools
- Expandable for various high-speed contacts for multiple Z-axis motions
- Industry-specific functions for single-end machine or up to six-end machine applications

# CNC Product MAP

## Delta Numerical Control B Series

High Performance

### CNC 5 Series

- Built-in quad-core CPU for multi-path interpolation, higher Lookahead speed, better engraving and milling, and higher efficiency
- Implementation of automated processes with the multi-path interpolation, such as material loading / unloading, and multi-process operation
- RTCP function to achieve advanced mold or non-contact processing
- Automatic servo tuning and smart friction estimation and compensation
- Expandable with MLC devices, cutters, and system variables

*Coming soon in Q4, 2021

### CNC 300 B Series and 200 B Series

- Built-in 32-bit high-speed dual CPU for multiple tasks and high performance
- Implements data transmission and noise suppression with Delta's high-speed servo drives
- Equipped with a high-resolution encoder with an accuracy of up to 0.1 um for smooth and precise motions
- Automatic gain adjustment offers adequate motion control during machine tuning
- A new operating interface built-in with the DOPSoft software for interface customization
- A USB port for data access and parameter backup
- Optional spindles of communication type or analog voltage type
- The MPG function allows manual control of pulse input or handwheel input with a push button

### OPEN-CNC NC30EB Series

- A new operating interface built-in with the DOPSoft software for interface customization
- Open-structured system with Delta's CNC API for developing PC software and improving equipment functions
- Supports standard G-code and Macro variable expansion
- Compact design with metal casing; high-resolution display in 720p
- MOP operating panel and 4 USB 2.0 ports
- Built-in 32 inputs / 32 outputs, spindle pulse output, and dual DAC output

Standard

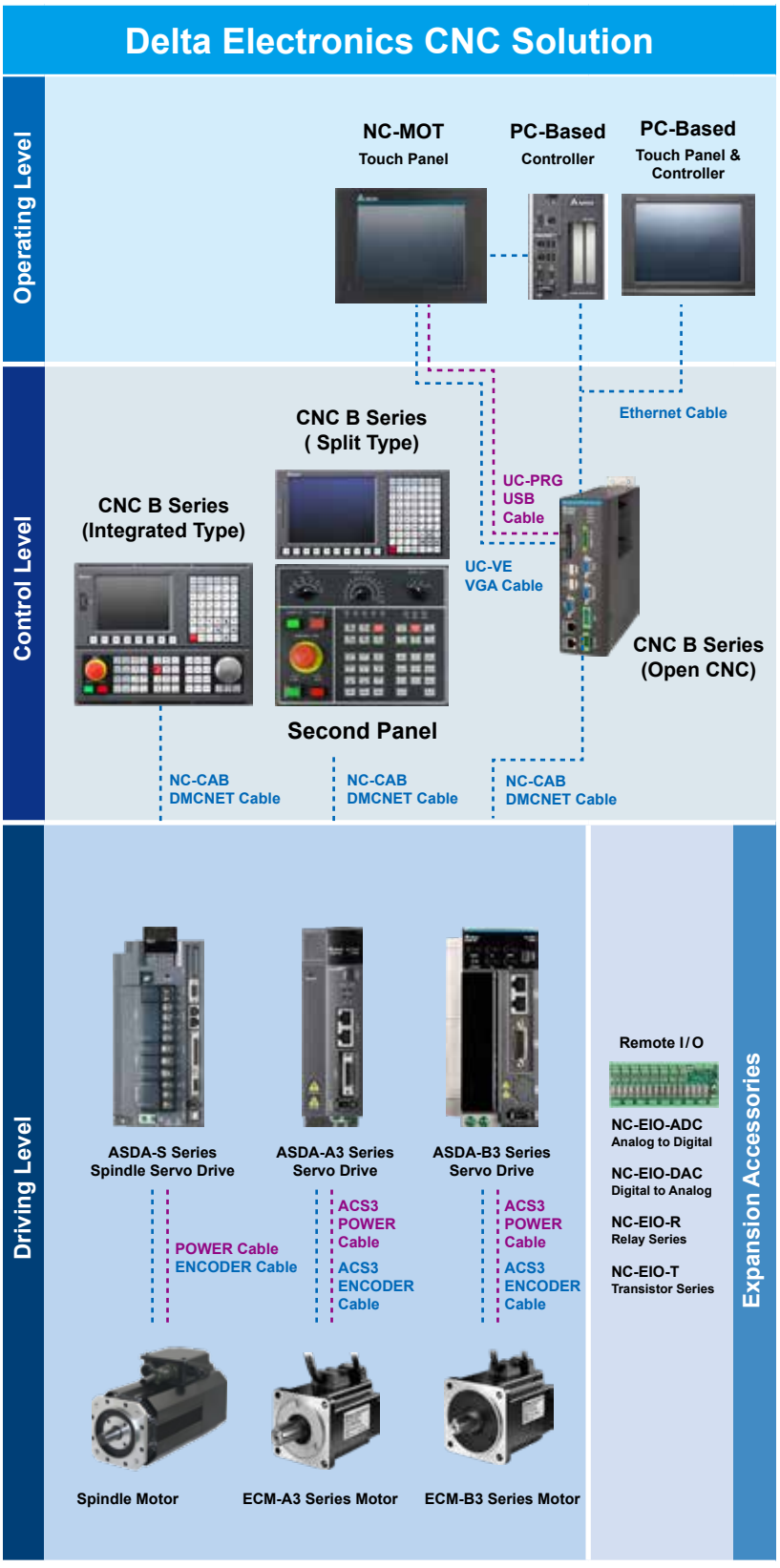
| | Lathe | Machining Center |
|---|---|---|
| Max. Axes (Max. NC+PLC axes) | 32 | 32 |
| Max. NC Synchronous Interpolation Axes | 4 | 5* |
| Max. Spindles | 8 | 8 |
| Max. PLC Axes | 9 | 9 |
| Max. NC Axes | 6 | 8 |
| Max. Paths | 6 | 6 |
| Min. Length Increment | 1 nm | 1 nm |
| Max. Variables | 2000 | 2000 |
| Max. Workpiece Coordinate Corrections | 300 Sets | 300 Sets |
| Max. Cutter Corrections | 512 Sets | 512 Sets |

| | Lathe | Machining Center |
|---|---|---|
| Max. Axes (Max. NC+PLC axes) | 8 | 8 |
| Max. NC Synchronous Interpolation Axes | 4 | 4 (BH=5*) |
| Max. Spindles | 2 | 2 |
| Max. PLC Axes | 8 | 8 |
| Max. NC Axes | 6 | 8 |
| Max. Paths | 1 | 1 |
| Min. Length Increment | 1 nm | 1 nm |
| Max. Variables | 1450 | 1450 |
| Max. Workpiece Coordinate Corrections | 70 Sets | 70 Sets |
| Max. Cutter Corrections | 64 Sets | 100 Sets |

| | Lathe | Machining Center |
|---|---|---|
| Max. Axes (Max. NC+PLC axes) | 8 | 6 |
| Max. NC Synchronous Interpolation Axes | 4 | 4 |
| Max. Spindles | 2 | 2 |
| Max. PLC Axes | 8 | 6 |
| Max. NC Axes | 6 | 6 |
| Max. Paths | 1 | 1 |
| Min. Length Increment | 1 nm | 1 nm |
| Max. Variables | 1450 | 1450 |
| Max. Workpiece Coordinate Corrections | 70 Sets | 70 Sets |
| Max. Cutter Corrections | 64 Sets | 100 Sets |

| | Lathe | Machining Center |
|---|---|---|
| Max. Axes (Max. NC+PLC axes) | 8 | 8 |
| Max. NC Synchronous Interpolation Axes | 4 | 4 (BH=5*) |
| Max. Spindles | 2 | 2 |
| Max. PLC Axes | 8 | 8 |
| Max. NC Axes | 6 | 8 |
| Max. Paths | 1 | 1 |
| Min. Length Increment | 1 nm | 1 nm |
| Max. Variables | 1450 | 1450 |
| Max. Workpiece Coordinate Corrections | 70 Sets | 70 Sets |
| Max. Cutter Corrections | 64 Sets | 100 Sets |

* Synchronous interpolation models with more than 5 axes are strategic high-tech commodities (SHTC), and are not allowed to be exported to certain countries without notification. For details, please go to the website of the Bureau of Foreign Trade (MOEA).



# CNC Product Specification

## Delta Numerical Control B Series

| Model | | NC 50EB Series (OPEN CNC) Note: Coming soon in Q4, 2021. | NC 300 B Series | NC 200 B Series | NC 30EB Series (OPEN CNC) |
|---|---|---|---|---|---|
| Processor System | CPU | ARM Quad Core 1.60 GHz | HMI：ARM 800 MHz Motion：DSP 225 MHz | HMI：ARM 800 MHz Motion：DSP 225 MHz | HMI：ARM 800 MHz Motion：DSP 225 MHz |
| | DRAM | DDR3-SDRAM 2 GB | SDRAM 256 MB | SDRAM 256 MB | SDRAM 256 MB |
| | Non-volatile Memory | 8 GB | 256 MB CF card: 4 GB | 256 MB CF card: 512 MB | 256 MB CF card: 512 MB |
| Display | HDMI | HDMI x 1 | Built-in display | Built-in display | VGA x 1 |
| I/O Interface | USB | USB 2.0 Host x4 | USB 2.0 Host x2 | USB 2.0 Host x2 | USB 2.0 Host x4 |
| | Ethernet | 10/100M x2 | 10/100M x1 | 10/100M x1 | 10/100M x1 |
| | Fileldbus | EtherCAT | DMCNET | DMCNET | DMCNET |
| | MPG(D-Sub) | x1 | | | |
| | Spindle (D-Sub) | x1 | | | |
| | Analog Port | x2 | | | |
| | Digital IO | 32 Input / 32 Output | 21 Input / 21 Output | 21 Input / 21 Output | 32 Input / 32 Output |
| | Remote IO | 32(I/O)*8(station) = 256(I/O) | | | |

**Industrial Automation Headquarters**
**Delta Electronics, Inc.**
Taoyuan Technology Center
No.18, Xinglong Rd., Taoyuan City,
Taoyuan County 33068, Taiwan
TEL: 886-3-362-6301 / FAX: 886-3-371-6301

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