



Digitized Automation for a Changing World

# Delta Industrial Automation

2025 Full Range

Catalogue

[www.nicsanat.com](http://www.nicsanat.com)

021-87700210



[www.deltaww.com](http://www.deltaww.com)



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# Delta Profile

## Corporate Mission:

**To provide innovative, clean, and energy-efficient solutions for a better tomorrow.**

Delta, founded in 1971, is a global leader in switching power supplies and thermal management products with a thriving portfolio of IoT-based smart energy-saving systems and solutions in the fields of industrial automation, building automation, telecom power, data center infrastructure, EV charging, renewable energy, energy storage and display, to nurture the development of smart manufacturing and sustainable cities. As a world-class corporate citizen guided by its mission statement, "To provide innovative, clean and energy-efficient solutions for a better tomorrow," Delta leverages its core competence in high-efficiency power electronics and its ESG-embedded business model to address key environmental issues, such as climate change. Delta serves customers through its sales offices, R&D centers and manufacturing facilities spread over close to 200 locations across 5 continents.

Throughout its history, Delta has received various global awards and recognition for its business achievements, innovative technologies and dedication to ESG. Since 2011, Delta has been listed on the Dow Jones Best-in-Class World Index (formerly the DJSI World Index of Dow Jones Sustainability™ Indices) for 14 consecutive years. Delta has also won CDP with double A List for 4 times for its substantial contribution to climate change and water security issues and has been named Supplier Engagement Leader for its continuous development of a sustainable value chain for 7 consecutive years.







## About Delta Industrial Automation (IABG)

Since the debut of our AC motor drive in 1995, Delta continues to develop our industrial automation business, providing superior quality, reliability and precision. Our range of complete smart manufacturing solutions covers equipment automation, automated production line design and integration, equipment IoT and data collection, as well as manufacturing management / monitoring and preventive maintenance to maximize productivity and stabilize production. Delta applies AI and big data analysis to optimize production processes and implement digitalization for equipment, production lines and energy usage. With automation products, software, and system solutions integrated into an all-in-one digitalized smart manufacturing model of factory, processes, and equipment, Delta provides numerous production models, including customized, small volume and wide variety, and mass production for customers on a global scale.

With robust R&D capability and abundant industry experience, Delta offers industrial automation products and solutions that find application in a broad range of industries, including electronics, components, photoelectric panels and food & beverages. We are dedicated to providing innovative and reliable smart, green manufacturing solutions for global customers, keeping our promise of "Digitized Automation for a Changing World".

## IABG Profile

To elevate the living environment through advanced automation technology with value-added innovations

### Headquarters

Taoyuan, Taiwan

### Founded

1995

### R&D technology centers

- Taiwan (Taipei, Taoyuan, Chungli, Taichung, Tainan)
- China (Beijing, Dalian, Xi'an, Nanjing, Wujiang, Wuhan, Dongguan)
- USA (Conklin, Rochester, Charlotte)
- Canada
- Slovakia
- United Kingdom
- Thailand
- Germany
- India
- Netherlands
- Japan

### Plants

- Taiwan (Taoyuan, Chungli, Taichung)
- China (Wujiang, Dongguan)
- India (Krishnagiri, Gurgaon)
- Thailand (Bangpoo)
- USA (Conklin, Rochester)



# Milestones

**1995**

- AC Motor Drive



**1999**

- Small PLC



**2003**

- Optical Incremental Encoder
- Temperature Controller
- AC Servo Drive and Motor



**2004**

- Human Machine Interface



**2006**

- Time /Counter /Tachometer



**2008**

- Industrial Power Supply



**2009**

- Pressure Sensor



**2010**

- Motion Control Card
- Active Front End Unit



**2011**

- CNC Controller
- Hybrid Energy Saving System
- Integrated Elevator Drive



**2012**

- High Performance Mid-Range PLC
- Controller with Human Machine Interface
- Machine Vision System
- Unmanaged Industrial Ethernet Switch



**2014**

- Smart Power Meter
- PC-based Motion Controller



**2025**

- Digital Twin
- Data Integration Platform + AI



**2023**

- e-Bike Mid Drive Motor



**2022**

- Machine Vision Platform



**2021**

- Industrial Camera
- Smart Screw Driver
- Smart Machine Box for Injection Molding



**2020**

- Smart Equipment
- Manufacturing Management & Visualization
- VTScada SCADA System



**2019**

- Electric Servo Press
- e-Scooter Integrated Side-Mounted Powertrain



**2018**

- Motion Controller



**2017**

- Laser Displacement
- Area Sensor
- Barcode Scanner



**2016**

- Industrial PC
- IIoT Cloud-Based Platform
- Manufacturing Execution System (MES)
- Planetary Gearbox
- IIoT Industrial Cloud Router
- Articulated Robot



**2015**

- Smart Sensor
- Linear Stage
- SCADA System
- Industrial Energy Management System
- SCARA Robot
- Robot Controller with Servo Drive Integrated



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# Compact Drive

## Compact Multi-Drive MX300

### Bilateral Installation & Compact Size

- Modular structure saves cabinet space
- Controls up to 6 inverter modules, 15 axes
- Plug-in installation for fast setup
- Supports Multiple industrial communication protocols (EtherCAT, PROFINET, EtherNet/IP, and CANopen), connects and controls up to 15 axes
- Regenerative power on a common DC bus ensures energy efficiency
- Max. 200% starting torque, 150% 60 sec. overload capacity

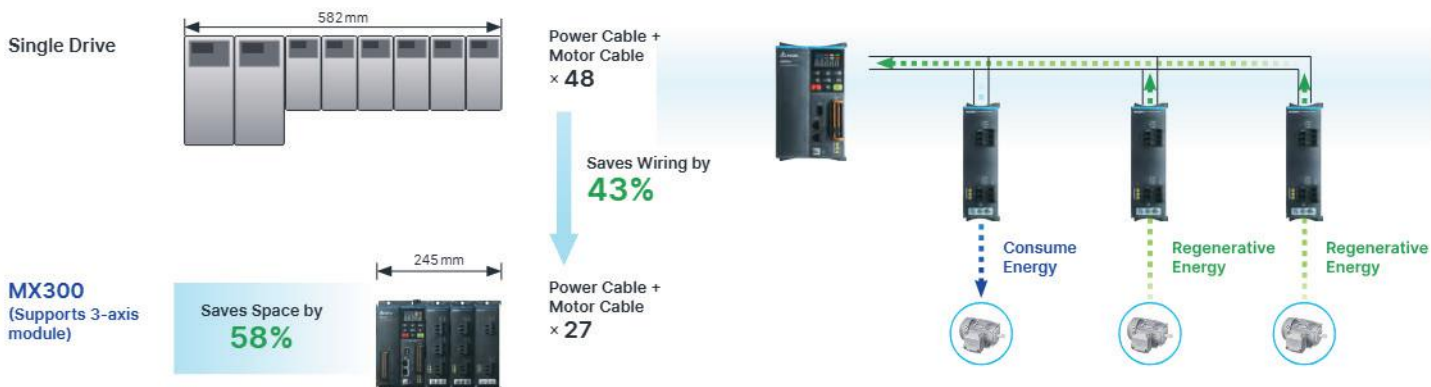


### Saves cabinet space + wiring + accessories = cost efficiency

- Multi-drive saves cabinet space and cables
- Unifies screw hole location between modules for simple installation

### Regenerative power on a common DC bus ensures energy efficiency

- Axes are in a common DC bus configuration



Note: Two 3.7kW drives with six 0.75kW drives as an example

Power Range	0.4 kW	0.75 kW	1.5 kW	2.2 kW	3.7 kW	5.5 kW	7.5 kW	11 kW	15 kW	18.5 kW	22 kW
230 V 1-Phase Rectifier											
MX300	230 V 1-Axis Inverter										
	230 V 2-Axis Inverter										
							460 V 3-Phase Rectifier				
	460 V 1-Axis Inverter										
	460 V 2-Axis Inverter										
	460 V 3-Axis Inverter										

## Applications

Open-loop control applications with multiple low-power axes, such as glass edging machine, woodworking machine, car wash machine, and more

# High Performance Compact Drive MH300

## Transmission & Tension Control Solutions

### Outstanding Drive Performance

- Supports IM and PM motors with optional PG cards for highly precise speed and position control
- Provides powerful torque output at low frequency (0.5Hz/200% without PG vector control; 0Hz/200% with PG vector control) for stable heavy duty operation at low speed and high torque

### Strong System Support

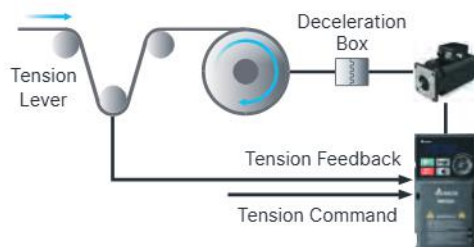
- Built-in PLC with 5k steps; system programming function saves costs
- Highly safe and reliable with Safe Torque Off (STO) SIL2/PL d
- All models can be connected through common DC bus
- Built-in Modbus and CANopen communication; optional communication card: EtherNet/IP, Modbus TCP, EtherCAT, DeviceNet, PROFIBUS DP, and PROFINET

### Flexible Expansion

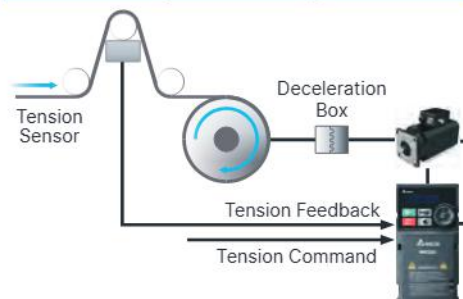
- Built-in two 33kHz high-speed pulse input terminals (MI6 & 7) and one output terminal (DFM)
- Built-in two accessory card slots for PG card, I/O expansion card, communication card, or 24V power card at the same time



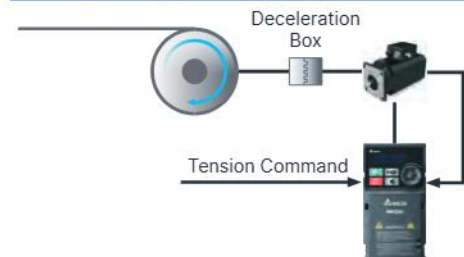
#### Closed-loop tension, speed control



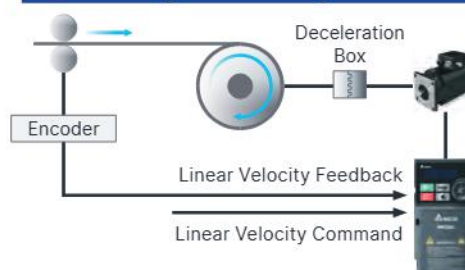
#### Closed-loop tension, torque control



#### Open-loop tension, torque control



#### Steady linear velocity control



### Applications

Machine tools, Textile machinery, Woodworking machinery, Rubber and plastic machinery, Winding/unwinding applications



Power Range	0.2kW	0.4kW	0.75kW	1.5kW	2.2kW	3kW	3.7/4kW	5.5kW	7.5kW	11kW	15kW	18.5kW	22kW	30kW	37kW	45kW	55kW	75kW
	0.25HP	0.5HP	1HP	2HP	3HP	4HP	5HP	7.5HP	10HP	15HP	20HP	25HP	30HP	40HP	50HP	60HP	75HP	100HP
MH300	115V/1-phase																	
	230V/1-phase																	
	230V/3-phase						230V/3-phase											
	460V/3-phase																	



# Compact Drive

## Compact Drive MS300

### Built-in PLC, Various Communication Protocols and Wide Power Range

- Overload capacity up to 150%/60 secs and 200%/3 secs for various constant torque loads
- Supports IM/IPM/SPM motors
- Supports Delta's MSI motors for an IE5 energy-efficient system (please refer to the product description of the motor series)
- High torque at low speed (up to 200% at 0.5Hz with vector control) for stable operation of heavy-duty equipment
- Integrated PLC function (2k steps)
- Highly safe and reliable with Safe Torque Off (STO) SIL2/PL d
- Built-in EMC filter<sup>(optional)</sup>
- Pull-out keypad
- 24 V power supply card<sup>(optional)</sup> for unexpected shutdowns
- USB charging on PC is available for parameter setting and update (no need for power supply from main circuit)
- Built-in Modbus and optional communication cards: CANopen, DeviceNet, EtherNet/IP, EtherCAT, PROFIBUS DP, Modbus TCP, and PROFITNET
- High-speed model up to 1,500Hz



### Plate-Mount Design

- Customers can design their own cooling system, applicable to water/oil/air cooling and others
- It can be used for applications with large on-site flecking and easy to block cooling fans, or textile and vacuum pump equipment with independent cooling plates at the customer's site



SEMI F47\*

\* Supports Finless Type

Power Range	0.2kW 0.25HP	0.4kW 0.5HP	0.75kW 1HP	1.5kW 2HP	2.2kW 3HP	3kW 4HP	3.7kW 5HP	5.5kW 7.5HP	7.5kW 10HP	11kW 15HP	15kW 20HP	18.5kW 25HP	22kW 30HP
MS300	115V/1-phase												
	Standard 230V/1-phase												
	0~599Hz 230V/3-phase												
	460V/3-phase												
	High-speed 230V/1-phase												
	0~1,500Hz 230V/3-phase												
	460V/3-phase												
Plate-mount													
0~599Hz			460V/3-phase										

### Applications

Machine tools, Air compressors, Textiles machines, Woodworking machines, Packaging machines, Electronics, Fans and pumps



# Basic Compact Drive ME300

## Compact Design for Basic Applications

- Overload capacity up to 150%/60 secs and 200%/3 secs for various constant torque loads
- Supports IM/IPM/SPM motors
- High torque of 200% at low speed 3Hz
- Built-in braking chopper
- Pulse/PWM input as frequency command
- Built-in EMC filter<sup>(optional)</sup> and Safe Torque Off (STO) SIL2/PL d<sup>(optional)</sup>
- Built-in sleep mode, water leak inspection, and multi-pump (in parallel) alternative operation function
- PCB with 100% conformal coating; compliant with IEC 60721-3-3 Class 3C3
- Built-in Modbus protocol
- Macro function for quick parameter setting for pumps, conveyor systems, and more
- Supports pull-out operation panel<sup>(optional)</sup>



### Alternate Operation



ME300 Status

- O Operating
- S Standby

## Pumping Functions

- Sleep mode and water leakage detection: Enters/Maintains sleep status at constant voltage to avoid frequent start and stop (parameter configuration required)
- Lack-of-water detection: Decelerates and stops operation for no water supply to avoid pump damage due to dry-run operation

## Multi-pump Control

- Alternate operation: Multiple pumps alternately operate at regular intervals (hourly, daily, or weekly) for easy maintenance and pump lifespan extension
- Constant pressure mode: Maintains constant water output pressure and adjusts the number of pumps per requirements for water supply and energy efficiency

### Constant Pressure Mode

ME300 Master 1	ME300 Slave 1	ME300 Slave 2	ME300 Slave 3	Water Usage
O	S	S	S	1 house icon
O	O	S	S	2 house icons
O	O	O	S	3 house icons
O	O	O	O	4 house icons



Power Range		0.1kW 0.125HP	0.2kW 0.25HP	0.4kW 0.5HP	0.75kW 1HP	1.5kW 2HP	2.2kW 3HP	3kW 4HP	3.7kW 5HP	5.5kW 7.5HP	7.5kW 10HP
ME300	Standard 0~599Hz	115V/1-phase									
		230V/1-phase									
		230V/3-phase									
		460V/3-phase									

## Applications

Logistics, Food packaging machines, Woodworking machines, Fans and pumps, Electronics, Conveyance equipment

# Compact Drive

## High Protection Compact Drive (IP66 Model) MS300 IP66 / NEMA 4X

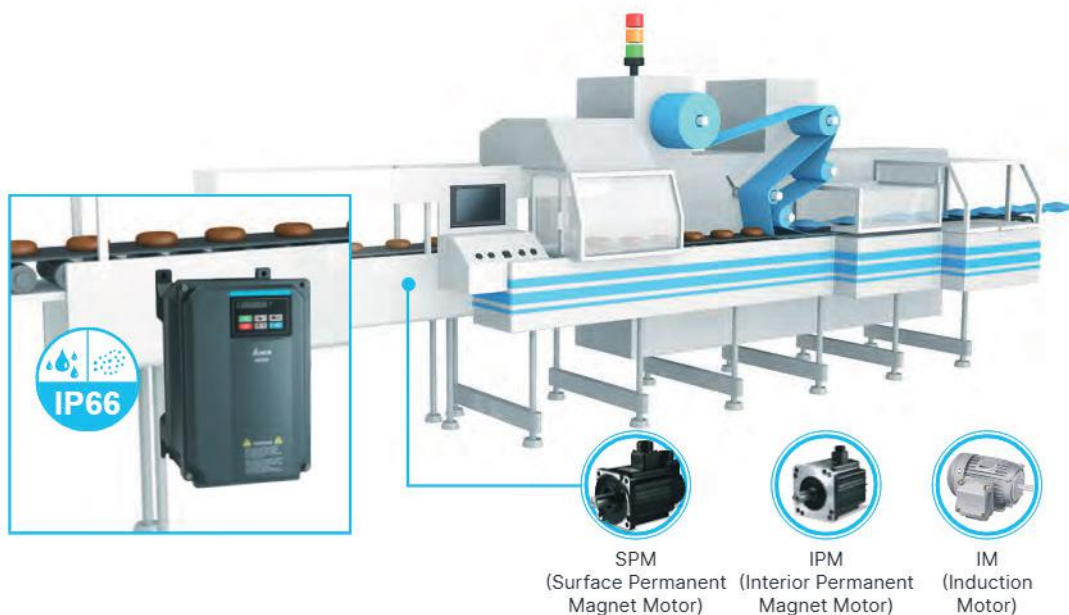
### Durable Operation under Harsh Conditions

- Protection against humidity and dust in industrial environments
- Main switch<sup>(optional)</sup> for fast installation, no need for an electric control cabinet to save cost
- Built-in braking chopper
- Integrated PLC function (2k steps)
- Highly safe and reliable with Safe Torque Off (STO) SIL2/PL d
- Built-in EMC filter<sup>(optional)</sup>
- Standard keypad
- Built-in Modbus; optional communication cards: CANopen, DeviceNet, EtherNet/IP, EtherCAT, PROFIBUS DP, Modbus TCP, and PROFINET\* for multiple applications and communication needs

\* Contact Delta for more details.



### IP66 / NEMA 4X Rated Protection Against Water and Dust



Power Range	0.4kW 0.5HP	0.75kW 1HP	1.5kW 2HP	2.2kW 3HP	3.7kW 5HP	5.5kW 7.5HP	7.5kW 10HP	11kW 15HP	15kW 20HP	18.5kW 25HP	22kW 30HP
MS300 IP66/NEMA 4X	230V/1-phase										
	230V/3-phase										
	460V/3-phase										

### Applications

For humid or dusty environments in various industries such as food & beverages, pumps, and more



## Sensorless Vector Control Compact Drive VFD-E

- Built-in EMC filter for 230V single-phase and 460V three-phase models to effectively minimize electromagnetic interference
- Standard Modbus protocol via RS-485 and optional fieldbus cards (including PROFIBUS, DeviceNet and CANopen)
- Optional extension modules for more flexible applications, such as PG (Encoder) card, I/O card and Relay card
- Built-in PLC with 500 steps program capacity

### Applications

Vacuum compressor, Conveyor and transportation, Fan/pump equipment, Paper/textile, Food processing, Woodworking, Machining tool/metal processing



## Sensorless Vector Control Compact Drive VFD-EL

- 6 sets of Digital Input, 1 set of Relay, 1 set of Analog Input, 1 set of Analog Output
- Built-in EMI filter for 230 V single-phase and 460 V three-phase models to effectively minimize the electromagnetic interference
- Supports side-by-side installation and DIN-rail mounting
- Built-in constant pump pressure control and PID control

### Applications

Edge banding, Logistics conveyor, Material handling



## Sensorless Vector Control Economical VFD-EL-W

- 4 sets of Digital Input, 1 set of Relay, 1 set of Analog Input, 1 set of SG+/SG-
- Supports side-by-side installation
- KC Certification (EL-W-1)

### Applications

Edge banding, Logistics conveyor, Food packing, Material handling



## Canopen Communication Compact Drive VFD-EL-C

- Built-in CANopen(Ci402) & RS-485(Modbus)
- CANopen remote I/O (6DI + 4DO)
- Dual RJ45 port, CANopen no Hub required
- CE certification
- Supports IM/PM Motors

### Applications

Photovoltaic production line, Food packing, Spray painting, Logistics, Woodworking





# Compact Drive

Category	Item	VFD-EL	VFD-EL-W	VFD-EL-C
Terminal	Digital input	6	4	6
	Digital output			4
	Relay	1	1	
	Analog input	1	1	
	Analog output	1		
	RJ45 port	1	1	2
	SG+ / SG- terminals		●	
	DC_BUS terminals	●		
Communication	Modbus RS485	●	●	●
	CANopen Ci402			●
Others	EMI filter	●		
	Installation	wall-mounted, DIN-rail	wall-mounted	wall-mounted
	Frequency control knob	●	●	



\* Supports VFD-E and VFD-EL  
\*\* Only for VFD-E

Power Range	0.2kW 0.25HP	0.4kW 0.5HP	0.75kW 1HP	1.5kW 2HP	2.2kW 3HP	3.7kW 5HP	5.5kW 7.5HP	7.5kW 10HP	11kW 15HP	15kW 20HP	18.5kW 25HP	22kW 30HP
VFD-E	115V/1-phase											
	230V/1-phase											
	230V/3-phase											
	460V/3-phase											
VFD-EL	115V/1-phase											
	230V/1-phase											
	230V/3-phase											
	460V/3-phase											
VFD-EL-W	230V/1-phase											
	460V/3-phase					4.0kW						
VFD-EL-C	230V/1-phase											
	460V/3-phase					4.0kW						

# Standard Drive

## High Performance Vector Control Drive C2000 Plus

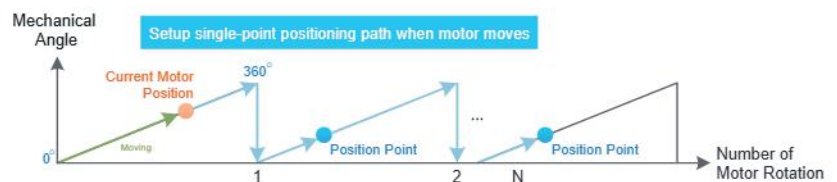
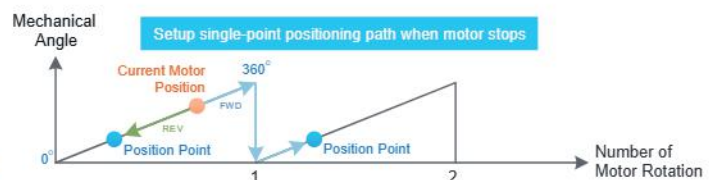
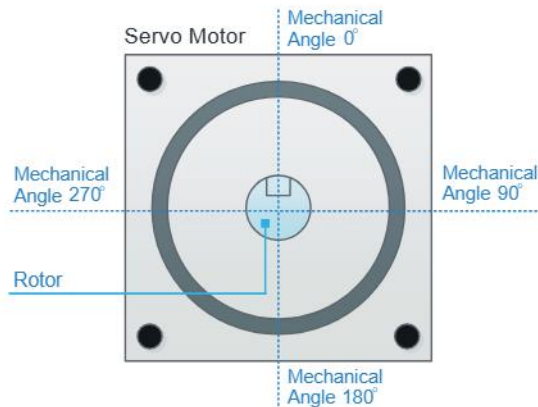
### Best Choice for General Drive Controls

- Heavy duty overload capability: 150%/60 secs and 180%/3 secs, suitable for constant torque applications
- Supports induction/PM/SynRM motors
- Field-oriented vector control
- P2P control
- Wide power range (up to 560kW for 460V models)
- User-friendly Start Wizard
- Display in 9 languages: English, Spanish, Portuguese, French, Russian, Turkish, German, Italian, and Traditional/Simplified Chinese
- Built-in PLC with 10k steps program capacity
- Enhanced protections and adaptation with PCB coating, compliant with Class 3C3
- Modular design for easy maintenance and extension
- Built-in Modbus and optional communication cards:  
EtherCAT, PROFINET, EtherNet/IP, PROFIBUS DP, DeviceNet, Modbus TCP, and CANopen



### Single-Point Positioning

Positions the motor at a specific point (within a single rotation) for precise stop upon request



Power Range	0.75 ~ 3.7 kW 1 ~ 5 HP	5.5 ~ 18.5 kW 7.5 ~ 25 HP	22 ~ 37 kW 30 ~ 50 HP	45 ~ 90 kW 60 ~ 125 HP	110 ~ 185 kW 150 ~ 250 HP	220 ~ 560 kW 300 ~ 750 HP	630 kW 850 HP
	230V/3-phase						
	460V/3-phase						
C2000 Plus	575V/3-phase						
	690V/3-phase						

\* The default of 575V & 690V models are light duty

### Applications

Machine tools, Extruders, Calender machines, Paper machines, Compressors, Wire drawing machines, Packaging machines

# Standard Drive

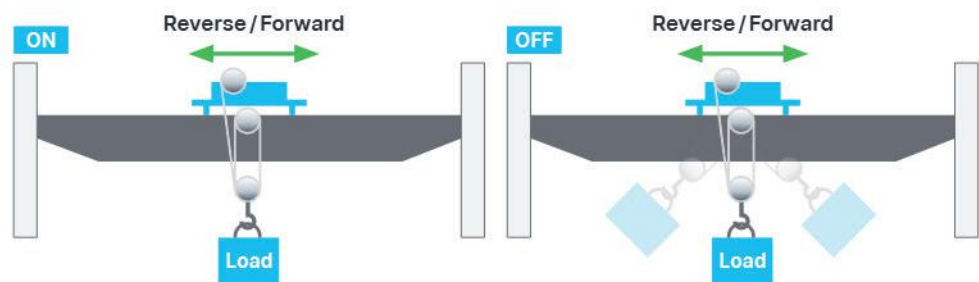
## Heavy Duty Vector Control Drive CH2000

### Excellent High Overload Capability for Impact Loading Applications

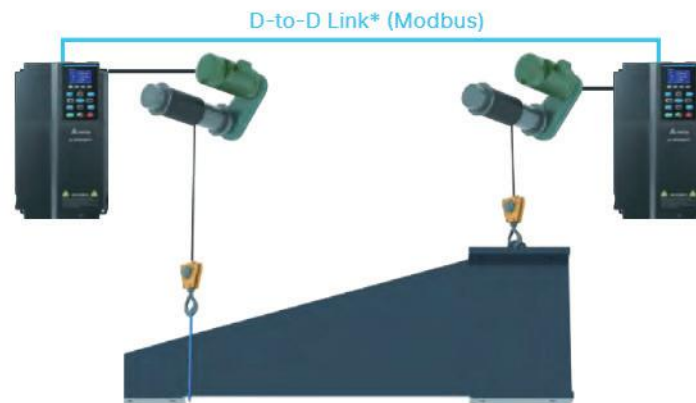
- Fast response to impact loads
- Super Heavy Duty (SHD) setting for high overload capability: 150%/60secs, and 200%/3secs
- Large starting torque: Over 200% at 0.5Hz/200% at 0Hz in FOC + PG mode
- Supports both induction and permanent magnet motors
- Various crane functions for high performance: Real-time anti-sway, anti-crab, torque proving, and shaft-synchro
- Modular design for easy installation and maintenance
- Built-in PLC with 10k steps program capacity
- Built-in braking unit (up to 75kW)
- Built-in Modbus communication
- Optional communication cards: PROFIBUS DP, DeviceNet, Modbus TCP, EtherNet/IP, EtherCAT and CANopen



### Real-Time Anti-Sway



### Advanced Crane Functions



\*Device-to-device link

CE UL SEMI F47

Power Range	0.75 ~ 3.7 kW 1 ~ 5 HP	5.5 ~ 18.5 kW 7.5 ~ 25 HP	22 ~ 37 kW 30 ~ 50 HP	45 ~ 75 kW 60 ~ 100 HP	90 ~ 220 kW 125 ~ 300 HP	280 ~ 450 kW 375 ~ 600 HP
CH2000	230V/3-phase					
	460V/3-phase					

### Applications

Machine tools, Punching machines, Cranes and hoists



# High-Speed Fluid

## High Frequency Motor Drive C2000-HS

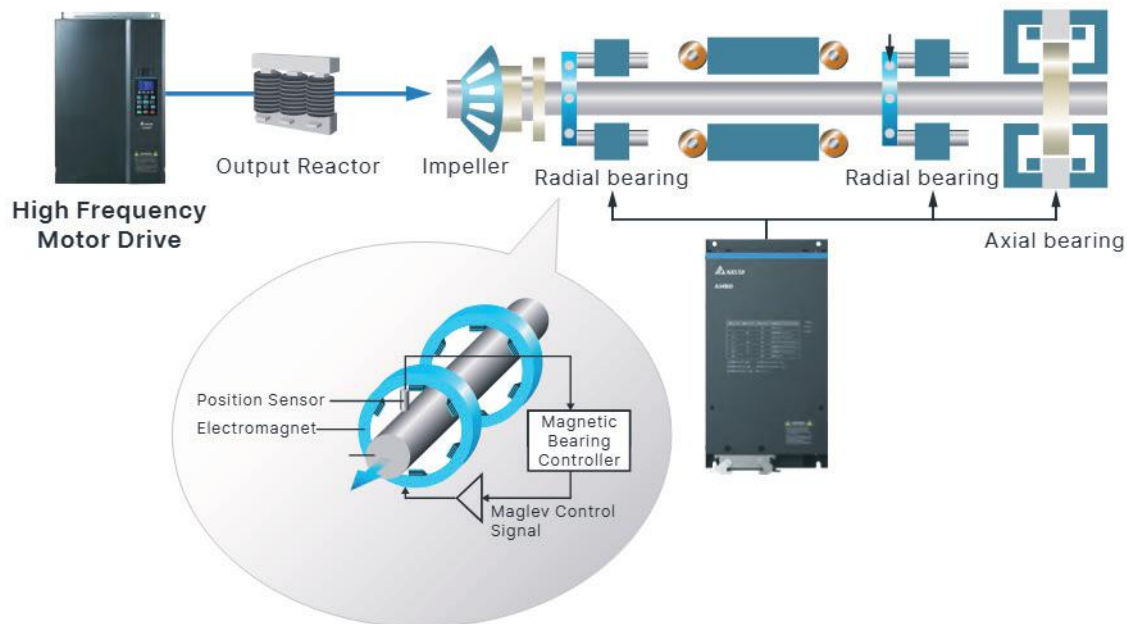
### Prime Product for High-Speed Fluid Applications

- Supports all kinds of high speed motors, including IM(induction motor), SPM (surface permanent magnet motor),IPM (Interior permanent magnet motor)
- Max. operating frequency up to 1,500 Hz
- 120% of rated current: 1 minute for every 5 minutes, 160% of rated current: 3 seconds for every 30 seconds
- Direct drive mechanism: reduced system footprint, higher efficiency and lower cost
- With FOC sensorless control, the speed control precision reaches 1:100
- Maintains high motor drive efficiency of up to 98% while running at a high carrier frequency
- All series built-in DC reactor to suppress harmonics distortion and compliant with EN61000-3-12
- Certifications: GB/T12668-2, UL508c, CE



01 AC Motor Drive

### Structure



Power Range	30 kW 40 HP	37 kW 50 HP	45 kW 60 HP	55 kW 75 HP	75 kW 100 HP	90 kW 125 HP	110 kW 150 HP	160 kW 215 HP	220 kW 300 HP	355 kW 475 HP
C2000-HS	460V/3-phase									

### Applications

Maglev chiller, Maglev and air bearing, Air compressor and turbo blower, Micro turbine generator, Fly-wheel energy storage

# High-Speed Fluid

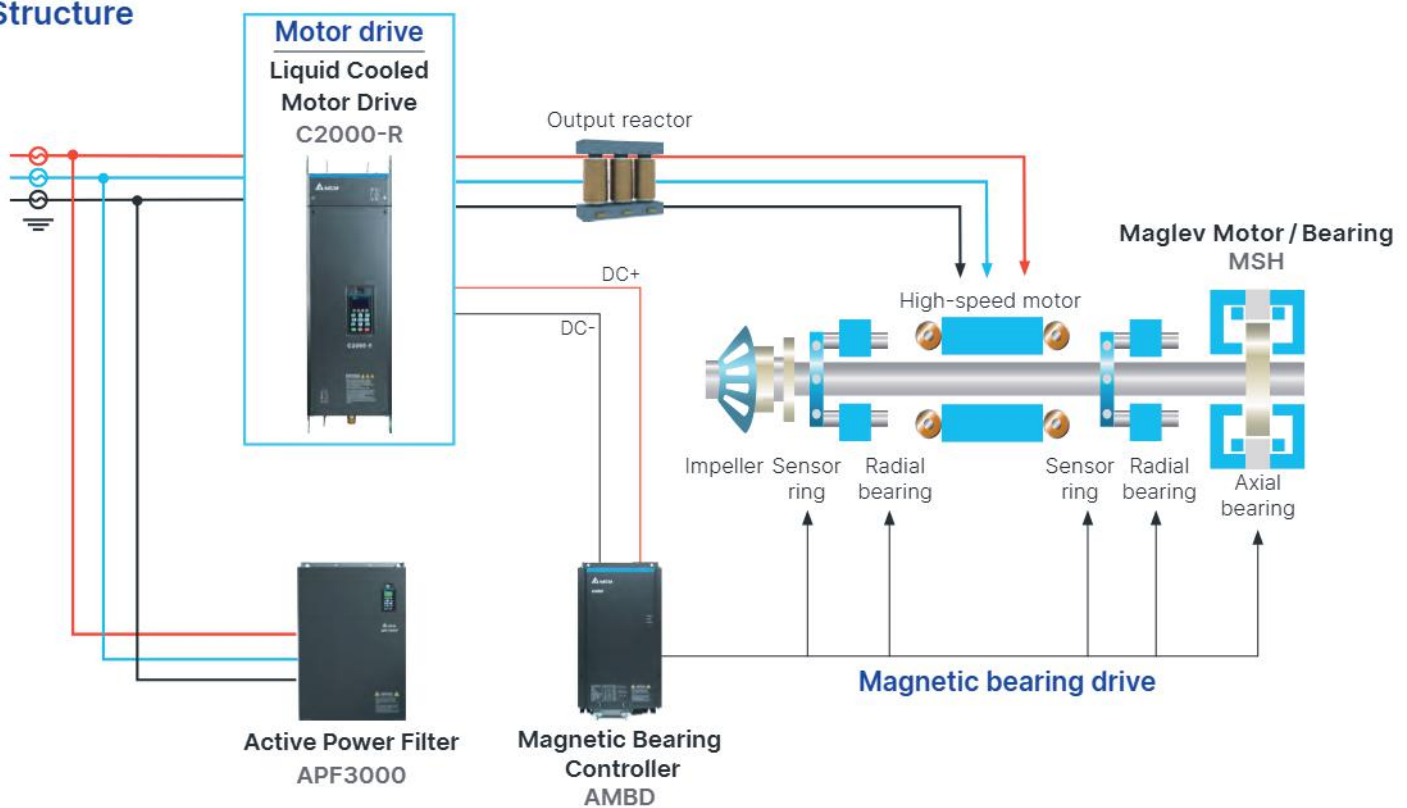
## High Performance Liquid Cooled Drive C2000-R

### Optimized Liquid Cooling Design, Compact Size

- Compact design saves space: Special heat dissipation design greatly reduces the volume compared with air-cooled drives
- Outstanding control technology for precise operation: Built-in motor ID parameters for sensorless control with stable output speed and optimized dynamic response; With FOC sensorless control, the speed control precision reaches 1:100
- Low harmonic distortion design reduces the impact on the power grid and peripheral equipment: All rating built-in DC reactors; Reduces harmonic distortion; Compliant with EN61000-3-12
- High EMC level, less additional accessory requirements: No external filter is required to meet C3 level requirement
- Anti-condensation function without an external controller: Built-in water temperature control function, effectively prevents condensation without an external controller



### Structure



Power Range	132 kW 175 HP	160 kW 215 HP	250 kW 335 HP	185 kW 250 HP	220 kW 300 HP	280 kW 375 HP	315 kW 420 HP	355 kW 475 HP	450 kW 600 HP
C2000-R	380V ~ 460V / 3-phase								

### Applications

Chiller units for HVAC systems, Mining crusher



# Active Magnetic Bearing Drive AMBD

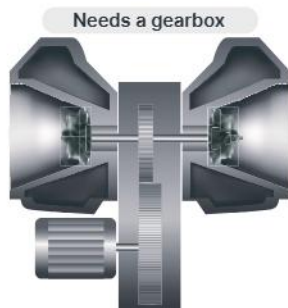
## New Generation Fluid Magnetic Solution

- Wide input voltage range: Wide DC power input to apply with the current terminals of 230/460V inverters
- Lower implementation costs: Leverages Delta's Inverter feature of power regeneration from deceleration, no need for UPS
- Magnetic bearing 5-axis control: Independent front and rear radial bearing control to reduce vibration and enhance magnetic suspension control accuracy. Independent axial position control to detect shaft elongation and avoid collisions caused by excessive temperature
- High control accuracy: Compliant with the ISO 14839-2 Zone A standard. The bearing vibration displacement is less than 30% of the maximum vibration displacement
- Supports external temperature sensors: Available for 6 sets of motor and magnetic bearing temperature protection
- Peak power up to 3kW: Suitable for magnetic bearing motors up to 500kW to perform magnetic suspension control

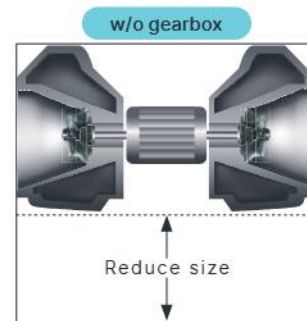


Magnetic bearing construction avoids traditional friction loss and maintenance issues and is the best choice for high flow, pressure and efficiency in high speed fluid applications. Compared with traditional centrifugal ice machines, it can save energy by more than 30%

### Ball Bearing



### High-Speed Magnetic Bearing



- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>• High-speed impossible. The limit rotation speed is about 8,000rpm</li> <li>• High speed (7,000~8,000rpm) needs to be equipped with oil or water cooling equipment, and mechanical system needs a gearbox</li> </ul> | <ul style="list-style-type: none"> <li>• Advantage: Low friction coefficient, smaller rotor inertia, longer life than traditional bearings, high system rigidity, anti-compressor surge shock</li> <li>• Disadvantage: Parameter adjustment, higher price, extra sensors installation</li> </ul> |
|--|--|

Peak Power Range		1.5kW	3.0kW
VFD-DD	Input Voltage	250~600 V <sub>DC</sub>	
	Rated Output Voltage	6 Amps	10 Amps

## Applications

Magnetic bearing chillers, Magnetic bearing turbo blowers, Micro gas turbines, Flywheel energy storage systems



# Fans and Pumps

## Open-Loop Variable-Torque Standard Drive VP3000 / VP3000-E <sup>New</sup> / VP3000-EHS <sup>New</sup>

High Efficiency, Stability, and Lower Harmonics  
Next-Generation Standard Drive for the Fluid Industry

- Controls various high-efficiency motors: IM, PM, and SynRM
- Effective harmonic suppression to extend system life:  
The lowest harmonics can reach THDi Min. 35%
- The volume of the slim type appearance design is 23% smaller, compared to the previous generation
- Predictive Maintenance (PdM): Monitors key components service life
- Built-in EMC filter C2, C3
- Enhances the corrosion resistance capacity: The PCB coating complies with IEC 60721-3-3 class 3C3
- Built-in PLC 20k steps, with drive and controller integrated
- Built-in multi-pump function: Alternate operation, constant pressure mode, and pump redundancy
- VP3000-E paired with APF3000 is compliant with IEEE-519 standards THDi 5%; Built-in DC bus terminals cater to DC grid trends
- VP3000-EHS supports high carrier frequency operation, delivering high performance and longer lifespan



### Effective Harmonic Suppression

- Adopts lower harmonic technology to effectively suppress harmonics without an extra reactor\*
- The lowest harmonics can reach THDi min. 35%, much better than EN 61000-3-12 standard (THDi < 48%)



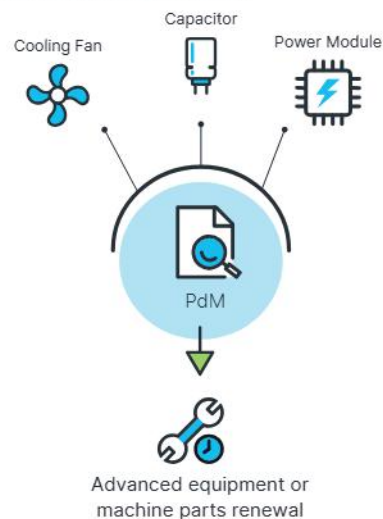
Motor drive without DC choke  
THDi 107%



VP3000 with low harmonic technology  
THDi 35%

### Predictive Maintenance (PdM)

- Early maintenance notification for power module, capacitor, and cooling fan to allow replacement before end of service life and prevent sudden downtime



\*Available in lower harmonic models. For details, please refer to Model Name Explanation.

CE  SEMI F47

Power Range	0.75 ~ 3.7 kW 1 ~ 5 HP	5.5 ~ 18.5 kW 7.5 ~ 25 HP	22 ~ 37 kW 30 ~ 50 HP	45 ~ 90 kW 60 ~ 125 HP	110 ~ 185 kW 150 ~ 250 HP	220 ~ 450 kW 300 ~ 600 HP	560 ~ 630 kW 715 ~ 850 HP
VP3000	460V/3-phase						
VP3000-E	460V/3-phase						
VP3000-EHS	460V/3-phase						

### Applications

HVAC, Chiller, Air compressors, Tunnel ventilation, Water supply and treatment

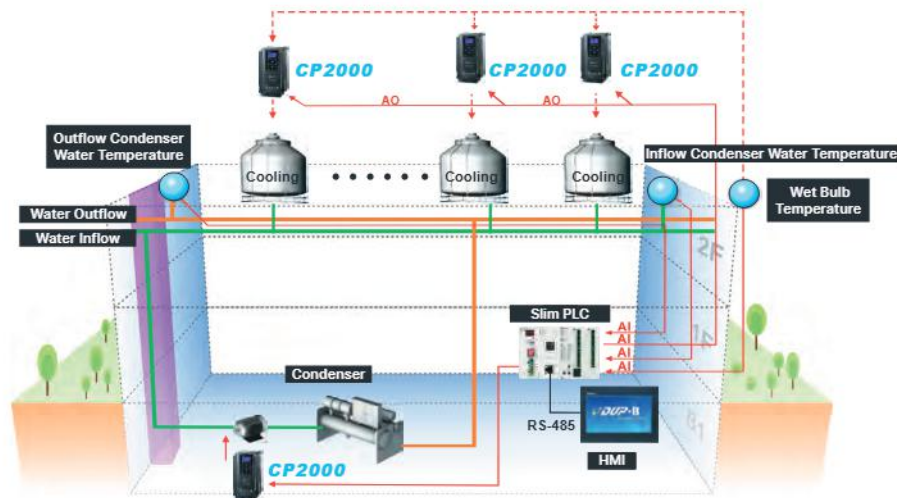
# Fan / Pump Vector Control Drive CP2000

## Excellent for Large Power Fans and Pumps Applications

- Supports IM/PM/SynRM motors
- Built-in Modbus and BACnet MS/TP communication
- Enhanced PCB (Printed Circuit Board) conformal coating improves drive durability; compliant with Class 3C3
- Fire mode and Bypass mode: Continuous pressure output to extract smoke when a fire accident or other emergency occurs
- Fast and easy installation with quick settings for self-defined parameter groups and parameter duplication
- Various modes for fans/pumps applications: PID control, sleep/wake up functions, flying start and frequency-hopping functions
- Supports Delta's MSI motors for an IE5 energy-efficient system (please refer to p.17)
- Built-in LCD keypad for easy operation, and the TPEditor software allows user-defined home page editing
- Synchronous multi-pump control of up to 8 motors, and fixed amount/fixed time circulation control (optional relay expansion cards available)
- Built-in PLC with 10k steps program capacity and real-time clock (RTC)
- Optional communication cards: PROFIBUS DP, DeviceNet, Modbus TCP, EtherNet/IP, CANopen, PROFINET and BACnet IP



## Structure



Power Range	0.75 ~ 3.7kW 1 ~ 5HP	5.5 ~ 18.5kW 7.5 ~ 25HP	22 ~ 37kW 30 ~ 50HP	45 ~ 90kW 60 ~ 125HP	110 ~ 185kW 150 ~ 250HP	220 ~ 450kW 300 ~ 600HP	560 ~ 630kW 715 ~ 850HP
CP2000	230V/3-phase						
	460V/3-phase						
	575V/3-phase						
	690V/3-phase						

## Applications

Factory automation, HVAC, Fans and pumps



# Fans and Pumps

## IP55 Fan / Pump Drive CFP2000

### For HVAC and Fans / Pumps Applications

- Supports induction / PM / SynRM motors
- IP55 and IP41 protections
- Built-in main switch for the IP55 models<sup>(optional)</sup>
- Built-in Safe Torque Off (STO) SIL2
- Built-in EMC filter; compliant with IEC 61800-3 C2 / C1
- Built-in DC reactor effectively reduces harmonic distortion; compliant with IEC 61000-3-12
- Enhanced PCB (Printed Circuit Board) conformal coating improves drive durability; compliant with Class 3C3
- 2 sets of PID controllers
- Built-in PLC with 10k steps program capacity and real-time clock (RTC)
- Built-in Modbus and BACnet MS/TP communication
- Optional communication cards:  
PROFIBUS DP, DeviceNet, Modbus TCP, EtherNet/IP, CANopen, PROFINET and BACnet IP
- Built-in Quick Start and industry recipes to simplify installation and setup

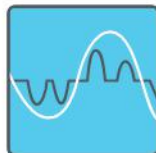


#### Built-in EMC Filter



- EN61800-3 C2 & C1

#### Built-in DC Choke



- Suppress harmonics, THDi < 48%
- EN61000-3-12

#### Protection Class



- IP41 Dust Resistant Type (standard)



- IP55 Waterproof Type<sup>(optional)</sup>



Power Range	0.75 ~ 5.5 kW 1 ~ 7.5 HP	11 ~ 22 kW 15 ~ 30 HP	30 ~ 37 kW 40 ~ 50 HP	45 ~ 55 kW 60 ~ 75 HP	75 ~ 90 kW 100 ~ 125 HP
CFP2000	220 V / 3-phase				
	380 to 480 V / 3-phase				
	600 V / 3-phase				

### Applications

HVAC, Fans and pumps, Water supply and treatment



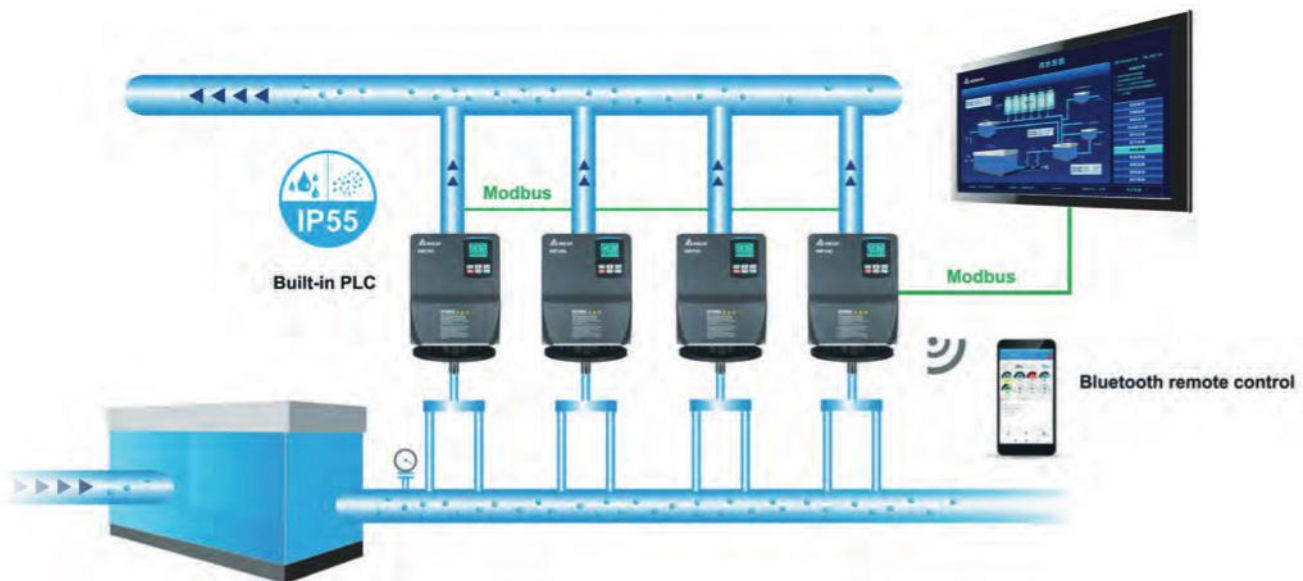
# Motor-Mounted Pump Drive MPD / MP300

## Highly Efficient Pumping Solution

- Adopts an efficient IE5 motor for energy efficiency, compliant with EN61800-9-2 IES2
- IP55-rated protection level
- Built-in PLC with 14k steps program capacity and RTC for flexible operation
- Suitable for water pumps requiring constant pressure and variable frequency; built-in multi-pump control of up to 8 pumps
- Smart pumping: Multi-pump redundancy, flow estimation, cavitation protection
- Pumping protection: Dry pump, high/low water pressure
- Optional EMI for EN61800-3 C1/C2 compliance
- Delta's optional dedicated pumping application with bluetooth connection for monitoring and adjustment



## Structure



Power Range		0.75 ~ 7.5 kW 1 ~ 10 HP	11 ~ 22 kW 15 ~ 30 HP
MPD	460 V/3-phase		
MP300	460 V/3-phase		

## Applications

Industrial/commercial water supply systems, Water supply systems in residential areas, Water pumps for pressurization and transportation

# Motors

## PMa Synchronous Reluctance Motor MSI

### High Power Density and High Efficiency

- Built with the latest materials and magnetic reluctance technology
- Ultra-high efficiency: Rated load /partial load
- High efficiency IE4 without rare earth elements (NdFeB)
- Lightweight design, small size, and high power density
- Low noise and vibration
- Easy replacement for a corresponding motor frame size
- IP55 protection
- Flexible installation: Flange mounting /foot mounting



### High Efficiency and Energy-Saving Systems:

- **Quick Settings:** Enter MSI motor codes for Delta's motor drive to automatically identify and load the motor parameters
- **Space-saving:** 1~2 frames smaller than induction motors with the same power range

### Fan and Pump Applications

Standard  
Compact Drive  
MS300

\* Refer to page 3 for MS300.



PMa Synchronous Reluctance Motor  
(Standard)  
MSI

- Overload capacity up to 120% / 60 secs



### Compressor Applications

Fan/Pump Vector  
Control Drive  
CP2000

\* Refer to page 15 for CP2000.



Power Range (kW)	0.75	1.1	1.5	2.2	3	4	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90	110
1,500rpm Standard MSI + MS300 Series	380V/3-phase																		
3,000rpm Standard MSI + MS300 Series	380V/3-phase																		

\* Applicable system voltage is 380 V.

### Applications

Fans and pumps, Compressors, Industrial machinery

# Injection Molding Solution

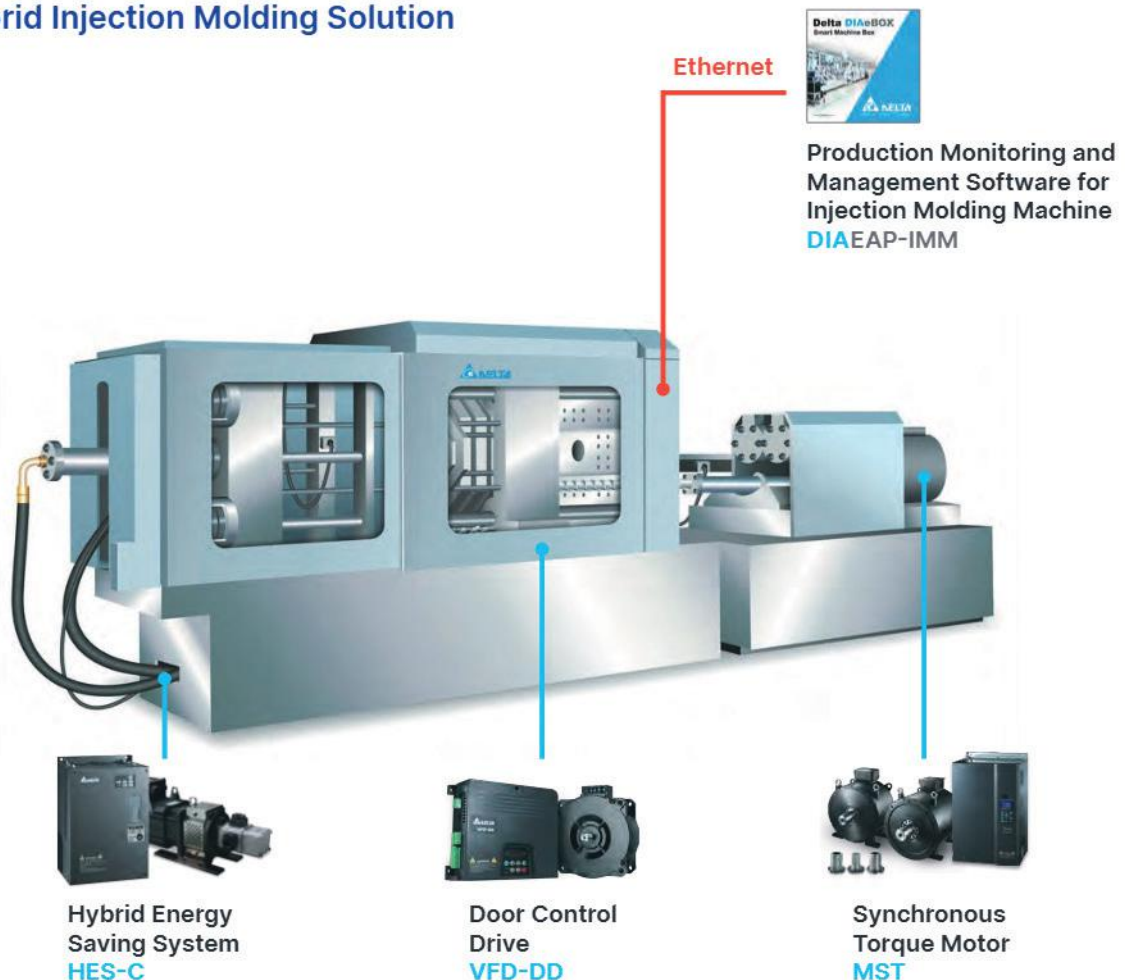
## Hybrid Injection Molding Solution

High Energy Efficiency, Precise Control and User-friendly Design for Optimized Injection Molding Processes

- Perfect combination of industrial know-how and advanced key components for high performance and energy-saving injection molding solutions:
  - **Hybrid Energy Saving System HES-C:**  
Precise pressure and flow control for each process to ensure highly accurate injection for stable and consistent products and quality
  - **Synchronous Torque Motor MST:**  
Replaces hydraulic motors or gearboxes; simultaneously performs mold opening and material feeding to shorten production cycle and increase productivity
  - **Hybrid Servo Drive VFD-VJ:**  
Built-in pressure control algorithm
- Compatible with production monitoring and management software (**DIAEAP-IMM**) for real-time production data collection, handling and monitoring



## Delta Hybrid Injection Molding Solution





# Injection Molding Solution

## Hybrid Energy Saving System HES-C

- Significant energy efficiency
- High overload capability
- Three sets of PID pressure control
- S-Curve for pressure/smooth flow control
- Field-weakening motor control
- Easy commissioning
- Multiple protections
- Multi-pump control for confluence/flow diversion
- User-friendly software for machine commissioning
- Diagnoses of component health



Flow Range (L/min)	63	80	100	125	160	200	250	320
HES-C	230V							
	460V							

## Synchronous Torque Motor MST

- High torque at low speed and stable operation: Precise control of feeding position
- Direct drive, no energy loss during transmission
- Fast acceleration/deceleration response and zero-speed holding function to avoid screw rotation during injection
- High efficiency, low noise
- Long service life, easy maintenance (No oil lines, belts, or gearboxes)
- Direct oil cooling in oil tanks, no need to install additional water tanks
- Shortens molding cycle and improves production efficiency



Power Range (kW)	15	22	30	55	75	132	160	220	280
MST	460V								

## Hybrid Servo Drive VFD-VJ

- Built-in pressure control algorithm
- Multi-pump convergent flow control
- PG card and communication card on control board
- Supports CANopen communication
- Built-in brake unit
- Protection of insufficient pump oil
- Supports IPM motor parameter auto-tuning
- 4k~10kHz adjustable carrier frequency



Power Range (kW)	11	15	18.5	22	30	37	45	55	75
VFD-VJ	230V								
	460V								

# Full Electric / Hybrid Injection Molding Solution IAS

Flexible Deployment, Full Electric Controller, High Speed and Precision, Energy Saving



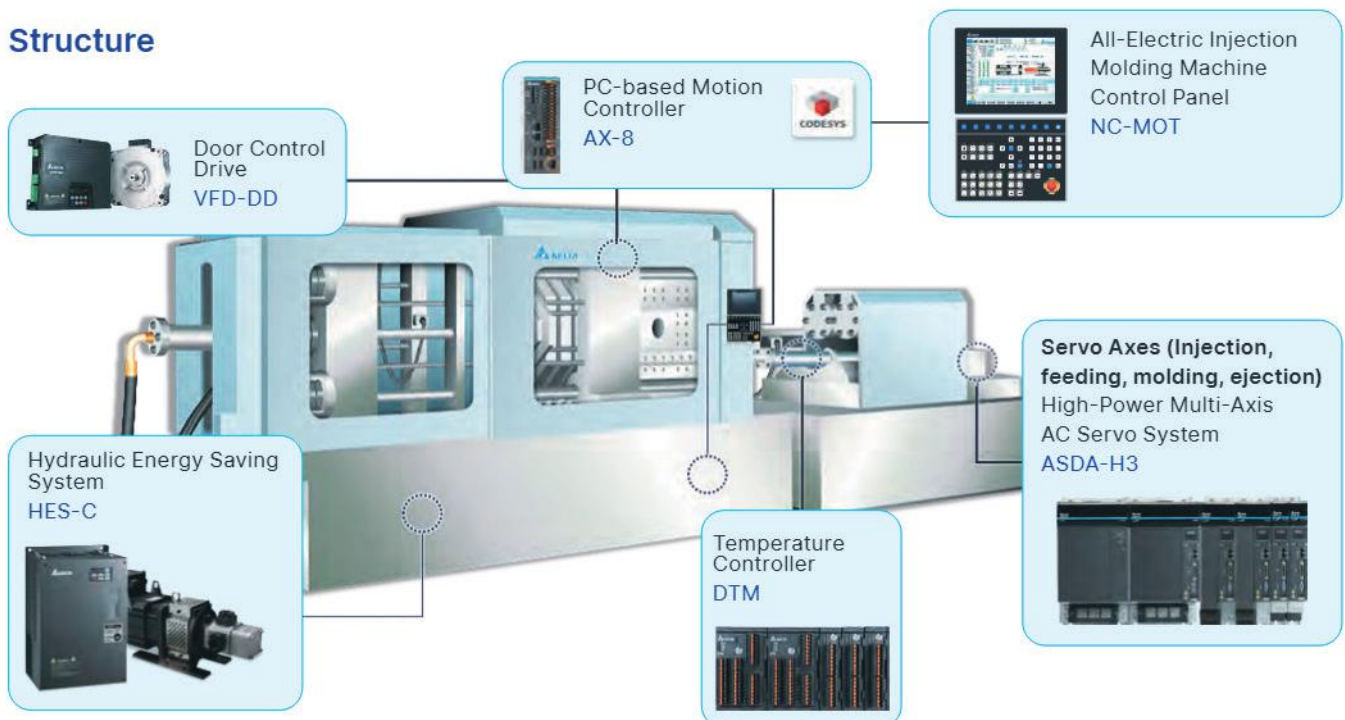
## An integrated system platform with Delta automation control solutions

- Supports various types of injection molding machines, such as single-color, multi-color, horizontal, vertical, and two-plate machines
- High-speed IPC controller with high response, precise control
- Supports different machine types, such as electric, oil and hybrid
- Barrel synchronous temperature rise function
- User-defined function to change machine operating flow quickly
- Hydraulic Energy Saving System HES-C provides precise pressure and flow control for each process to ensure accurate injection, enhancing stability and quality
- ASDA-H3 high power modular multi-axis servo drive provides common DC bus design to improve energy efficiency and reduce space

## Secondary development platform DIAStudio

- Provides users an interface and process control integrated development environment
- Provides complete examples and source code for easy secondary development
- Reserves the flexibility for customized development
- Online debugging, editing, and monitoring tool

## Structure





# Injection Molding Solution

## Intelligent Injection Molding Monitoring Solution

### DIAEAP-IMM

#### The Best IIoT Solution for Machine Tools

- Injection controller data collection
- Real-time production monitoring:  
Manufacturing information visualization, Data digitization, Mobile device interface, Remote production management
- Efficient e-Forms: Daily quality daily report, OEE report, Production history, Trend charts, and more
- Optimizes production efficiency: Big data analytics  
Parameter optimization, Reduce inefficiency
- Integration of systems:  
Integrates different brands of injection molding machines and ERP/MES



- Web server base structure
- User interface for injection molding machine industry
- Tags monitoring and work order status notification

#### Equipment manager



##### Parameter Wizard

- Machine hour overview
- Product information
- Mold lifespan
- Parameters monitoring
- Production record

#### Quality manager



##### Injection Molding Wizard

- Quality overview
- Fault analysis
- Virtual inspection

#### Production manager



##### Reporting

- OEE, Activation, Production, Working hours analysis
- Production history
- Mobile device interface
- Remote production management
- Production trend report

### Optimizes Manufacturing Efficiency

- Production experience can be recorded and accumulated, improving equipment parameters and manufacturing processes
- Edge computing and real-time analysis of injection molding machine, ensuring quick response, higher installation efficiency



# Logistics

## Telescopic Belt Conveyor Intergrated Drive LTC

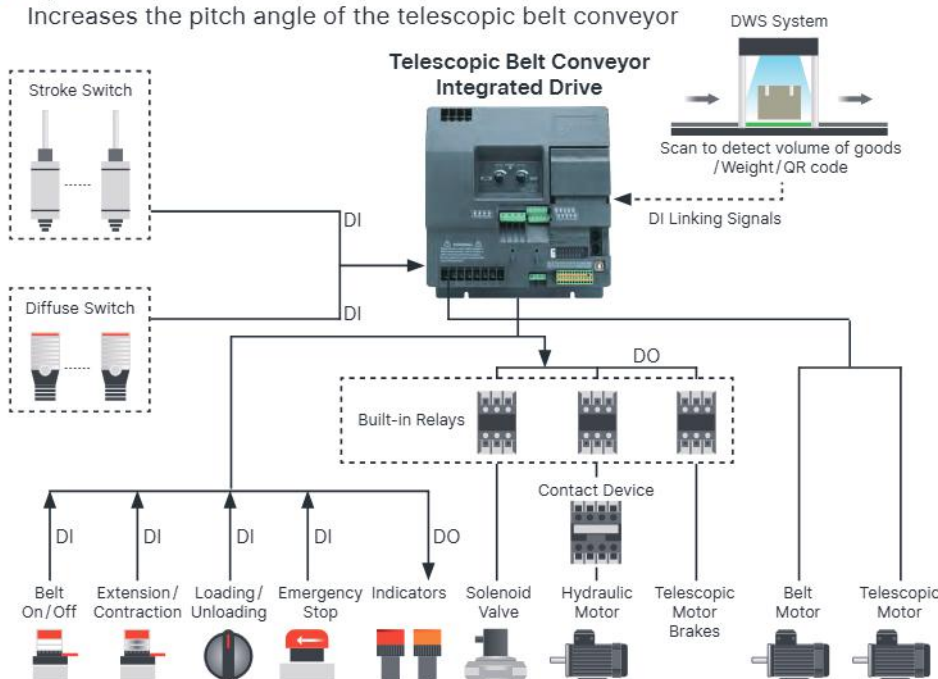
### Integrated Double VFDs, PLC and 24 V<sub>DC</sub> Power Supply

- Built-in PLC 14k steps logic controller to achieve integrated drive control
- Integrated 35W 24 V<sub>DC</sub> power supply
- 21 DI (17 user-defined DI & 4 internal defined DI), support NPN/PNP mode switching
- 13 DO (8 User-defined DO & 5 Internal defined DO), high reliability relays support 220 V<sub>AC</sub> and 24 V<sub>DC</sub>, with 1 DO supporting 380 V<sub>AC</sub> load)
- Large capacitance and common bus design: No need for optional brake and resistor, reduces installation costs
- Regenerative energy, intelligent soft brake



### Solution Architecture

- DWS System:  
Dimension Weight Scanning System
- Oil solenoid valve:  
Reduces the pitch angle of the telescopic belt conveyor
- Hydraulic motor:  
Increases the pitch angle of the telescopic belt conveyor



**Compact Size**  
Reduces control cabinet size by 60%



**Integrated Drive**  
Integrates motor drives and PLC



**Easy Installation**  
Simple wiring for installation



**Fast Tuning**  
Simple parameters setting



**Easy Maintenance**  
Quick replacement



**Optimal Costs**  
Reduces the number of parts in the control cabinet

### Power Range

380 ~ 480V<sub>AC</sub> / 3-phase

Model	VFD2207LTC43A		VFD4015LTC43A	
Inverter Unit	VFD1	VFD2	VFD1	VFD2
Applicable Motor Power (kW)	2.2	0.75	4.0	1.5
Applicable Motor Power (HP)	3.0	1.0	5.5	2.0
Frame Size	A			

# Conveying Equipment

## Distributed Electric Control Cabinet Drive VFD-EL-D

Highly Integrated Peripheral Electrical Components,  
Energy and Cost Effective

- EL-DL/EL-DS models: 5DI/3DO, EL-DA models, 10DI/6DO
- Supports Modbus/CANopen
- Supports IM/IPM/SPM motor
- High overload capacity: 200% for 3 seconds, 180% for 10 seconds, and 150% for 60 seconds
- EL-DL/EL-DS: one channel of 24V/250mA power supply;  
EL-DA: two channels of 24V/250mA independent power supply
- Sufficient I/Os to reduce external switching power supplies and intermediate relays
- The PUD1 keypad can be pulled out to serve as a replacement for conventional buttons and indicator lights
- One-button parameter copy via keypad PUD1
- Ultra-high air volume DC fan

DA Series



DS Series



DL Series



DC Series



Power Range	2.2 kW 3HP	4.0 kW 5HP	5.5 kW 7.5HP
VFD-EL-D	460V/3-phase		

## Applications



Matrix line belt conveyor



Turning belt conveyor



DWS front-end belt conveyor



Climbing belt conveyor

## Applications

- Electric distribution panel
- Industrial control situations requiring more digital input/output terminals and complex system wiring



# Elevator and Door Control

## Integrated Elevator Drive IED-S

Space-Efficient Integrated Drive and Control

### Versatile I/O Terminals

- 25 digital input ports
- 8 relay output ports
- 5 high-voltage input ports

### Encoders

- Incremental
- Sin/Cos
- SICK HIPERFACE
- HEIDENHAIN EnDat 2.1

### Control

- Highly efficient group control of up to 8 elevators without additional control cards
- Various operation modes: Demo, attendant service, and time-Based
- Single/double-door elevator applications
- Max. 63 floors

### Efficiency

- Direct stop: Multi-speed control to provide a comfortable ride with higher efficiency
- Peak hours operation: Improves peak hours operation efficiency
- Full-load bypass operation: Arrives at designated floor without stopping

### Auto-Adjustment

- Auto-learning hoistway and auto floor height detection
- Auto-tuning motor parameters without load disconnection
- PC software monitors motor operation status



01  
Industry-Specific  
Applications

### Energy Saving

- Lighting and air circulation scheduling for elevator cars
- Standby mode to save energy

### Certifications Compliant

- CE, UL certifications
- Supports Safe Torque Off (STO) SIL2
- Safety circuit certificate for electronic components
- Certificate for self-monitoring subsystem
- Compliance with CN elevator verification, meets EN81-20/50

### Power Range



Power Range	5.5kW 7.5 HP	7.5kW 10 HP	11kW 15 HP	15kW 20 HP	18.5kW 25 HP	22kW 30 HP	30kW 40 HP	37kW 50 HP	45 kW 60 HP	55kW 75 HP	75 kW 100 HP
IED-S	230 V/3-phase										
	460 V/3-phase										

### Applications

Commercial and residential buildings, Freight elevators, MR and MRL elevators



# Elevator and Door Control

## Advanced Elevator Drive EB3000

### Safe, Smart and Comfortable

- Built-in STO (SIL3), complies with EN81-20/50
- Optional models with built-in filter, complies with EN12015, EN12016
- Built-in brake transistor
- Built-in CANlift CiA 417 and DCP 3/4
- Flexible UPS configuration
- Supports various encoders: Endat2.2, SSI, BiSS-C, and more
- Direct docking mode to decrease creeping and travel time
- Data logger with 6 trigger modes
- Bluetooth connection for remote control via the app



### Structure



**Machine Room**  
Drive on the  
Rooftop



**Machine Room-less**  
Drive Inside the  
Hoistway Hall



**Machine Room-less**  
Drive Inside the  
Hoistway



Power Range	2.2 ~ 3.7 kW 3 ~ 5 HP	4 ~ 18.5 kW 5 ~ 25 HP
EB3000	230V/1-phase	460V/3-phase



(STO SIL 3)



(EN81-20, EN81-50)



### Applications

MR and MRL elevators, New installation or replacement cases

## Elevator Drive VFD-ED

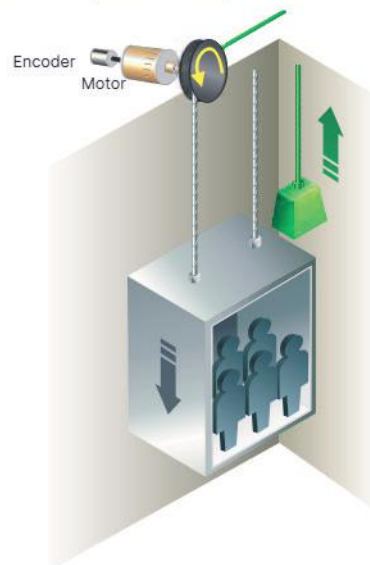
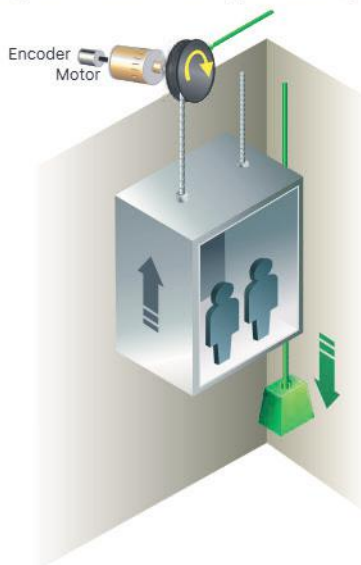
### Excellent Time Sequence Control for Smooth Rides

- Supports induction and permanent magnet motors
- Precise control of S curve performs smooth start and stop for a comfortable ride
- Optional PG feedback cards (Incremental/SinCos/SICK HIPERFACE/HEIDENHAIN)
- Highly precise field-oriented vector control
- Automatic torque compensation function to prevent elevators from slipping or vibrating
- Emergency operation enabled with UPS or battery when a power outage occurs
- Wall-mount or embedded installation
- Built-in LED digital keypad
- Built-in plentiful IO terminals for various elevator applications
- 1 CANopen and 2 RS-485 (Modbus)



### Emergency Operation

- Supports single phase 230 V<sub>AC</sub> uninterrupted power system (UPS)
- Automatically determines the light load operation direction when a power outage occurs



(EN81-1+A3, EN81-20)

Power Range	2.2kW 3HP	3.7kW 5HP	4kW * 5HP	5.5kW 7.5HP	7.5kW 10HP	11kW 15HP	15kW 20HP	18.5kW 25HP	22kW 30HP	30kW 40HP	37kW 50HP	45kW 60HP	55kW 75HP	75kW 100HP
230V/1-phase														
ED														

\*Min. power range of the 460V model: 4kW

### Applications

Commercial and residential buildings, Freight elevators, MR and MRL elevators

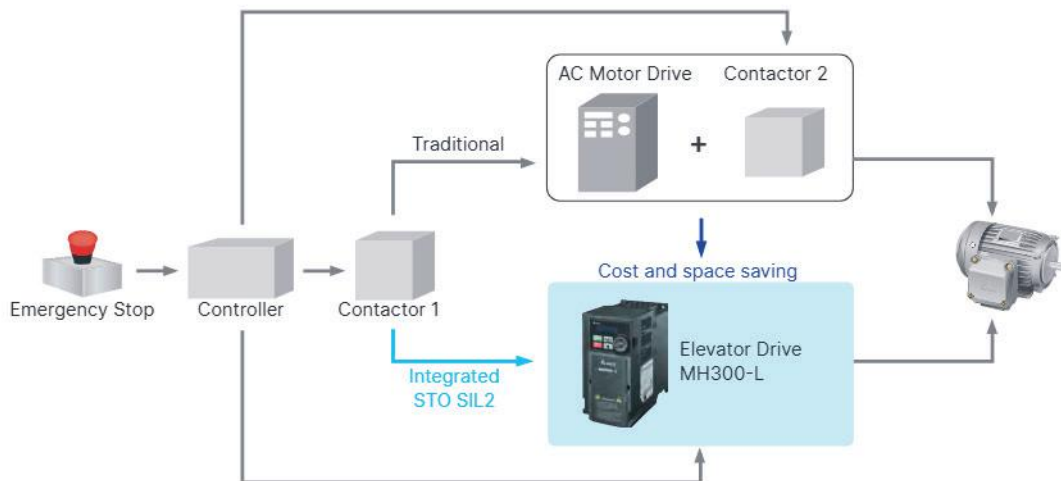
# Elevator and Door Control

## Compact Elevator Drive MH300-L

Compact Design with Open-Loop Control for Precise Time Sequence



- Supports asynchronous motors with open-loop control
- Precise control of S curve performs smooth start and stop for a comfortable ride
- Compact design and user-friendly operation
- Emergency Power Supply (EPS)/Automatic Rescue Device (ARD) and sequence control functions for elevator applications
- Built-in 5-digit 16-segment LCD digital keypad
- Built-in EMC filter<sup>(optional)</sup> complies with EN 12015/EN 12016 standards for lift applications
- Built-in brake chopper to enhance braking capability
- 7 digital inputs (extension up to 10) and 1 relay output (extension up to 3)
- Integrated Safe Torque Off (STO) SIL2



Power Range	2.2kW 3HP	3.7kW 5HP	5.5kW 7.5HP	7.5kW 10HP	11kW 15HP	15kW 20HP
MH300-L	230V/3-phase					
	460V/3-phase					



### Applications

Low floor residential buildings, IM open-loop elevators of villas



## Textile Vector Control Drive CT2000

### Plate Mount, Flange Mount, Wall Mount

- Deceleration Energy Backup (DEB) function for smooth motor deceleration control
- Supports both asynchronous and synchronous motors
- Common DC BUS design
- Built-in 10K steps PLC programming capability and RS-485 with Modbus communication
- Optional communication cards are available upon request
- SEMI F47, CE, UL Certifications <sup>(\*)</sup>

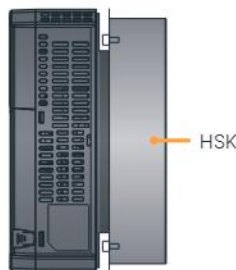
\*1: Finless Drive does not have SEMI F47 or UL certification



#### Plate-Mounting Type

In response to different textile environments, liquid cooling is sometimes used to reduce the impact of harsh environments on air-cooled heat dissipation. Plate-mount design can be applied to the liquid cooling plate for heat dissipation, suitable for customer's requirements.

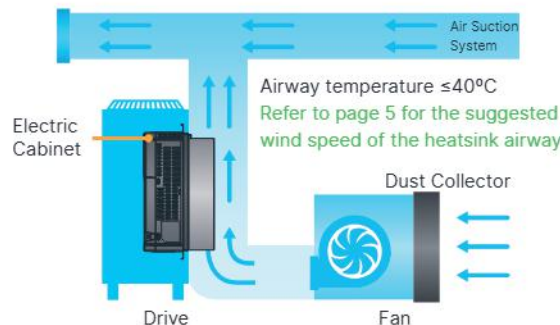
\*Available for models with names ending in A



#### Flange-Mounting Type

Flange-mount installation for the fanless model prevents the overheating problem caused by fiber or dust clogging the fan or entering the drive. Suitable for spaces with cooling ducts.

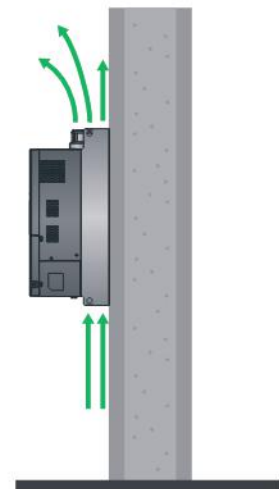
\*Available for models with names ending in B



#### Wall-Mounting Type

Large fan design for wall-mount installation, fulfills general textile applications.

\*Available for models with names ending in C



SEMI F47<sup>\*</sup>

\* Available for Flange-mounting and Wall-mounting types

460V (kW)	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90
460V (HP)	7.5	10	15	20	25	30	40	50	60	75	100	125
Plate-Mounting Type	A		B			C			D			
Flange-Mounting Type			B			C			D			
Wall-Mounting Type			B			C			D			

### Applications

For applications requiring flange mount, wall mount and finless installation, such as textile machines. The flange-mount heat dissipation duct design must meet CT2000 specifications

# Low Voltage Powertrain System

## e-Scooter Integrated Side-Mounted Powertrain

New

High Efficiency and High Reliability.  
Drive, Motor & Gearbox in ONE Unit

### Highly Integrated

- **Easy wiring:**  
A typical design often separates the drive and motor, while Delta's all-in-one powertrain integrates the drive, motor, and gearbox into a single unit which greatly reduces wiring (e.g., three-phase power supply, encoder)
- **Simplified assembly:**  
The all-in-one design optimizes the assembly process and time as well as offers convenient maintenance



### Modular Standard Platform

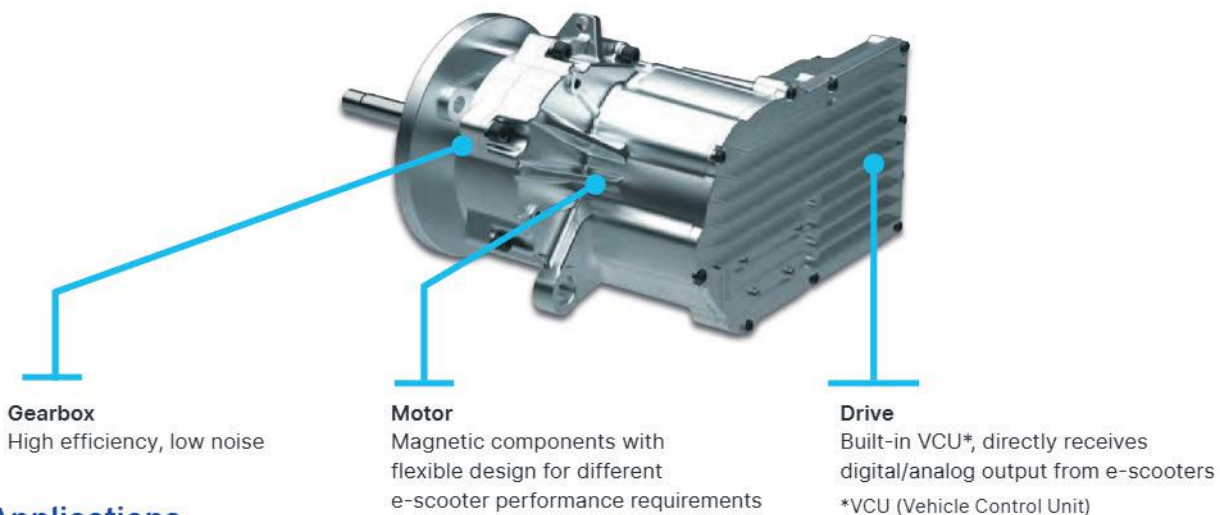
- Features a flexible design with diverse combinations of drive, motor, and gearbox for different performance and voltage specifications

### Waterproof & Dustproof

- IP67 rated. Capable of operating in <1m water depth for 30 minutes, providing outstanding protection to withstand harsh environments

### Flexible Underseat Storage

- Integrates the drive into the powertrain. Compared with traditional designs with the drive installed under the seat, Delta's powertrain enhances space utilization by around 10%



### Applications

Delivery service, Commuting





## e-Bike Mid Drive Motor New EBPH

Compact Size, High Performance Output

### Compact Size

- Leverages Delta's patented transmission technology to minimize the size, blending the Mid Drive Motor into a sleek and compact e-bike

### High-Performance Power Output

- Maintaining high-performance power output despite a more compact motor size marks a significant breakthrough. This offers riders enhanced power assistance

### Comprehensive Eco-System

- Featuring high system integration capabilities, the drive can integrate with manufacturers in the market, such as for battery and display dashboards for a total solution



#### Pedal Sensor

High sampling of torque and cadence as feedback for the control unit

#### Patented Transmission

Delta's unique gear technology ensures efficient power delivery

#### Motor Control

The control unit ensures a comfortable riding experience and reliability

#### High Torque Motor

High torque performance up to 120 rpm pedaling satisfies different riding conditions

#### Cover & Shell

Concise concentric cylinder design for easy installation and protection requirements

#### Chainwheel & Chain Guide

Features 34T chainwheel and supports chain guide installation to meet needs for both e-Trekking and e-Mountain Bikes

Europe: CE Marking  
Americas: NRTL Marking

## Applications

e-Mountain bike, e-Trekking bike, e-Cargo bike





# Low Voltage Powertrain System

## Low Voltage Electric Vehicle Drive

### BTD

#### Highly Efficient and Reliable with Outstanding Performance

The Drive BTD Series ensures a safe and comfortable riding experience. It also features a high compatibility and compact size, while providing advanced control of the LSV (Low Speed Vehicle) motor. The BTD drive offers customers a highly cost-effective combination of power, performance, and functionality.

The BTD drive is designed for golf cars, utility vehicles and Light-On-Road applications such as electric 3-wheelers. It is also suitable for material handling vehicles in the logistics industry such as warehouse trucks.

#### Outstanding Drive Performance

- Overload capacity up to 300% / 120 sec
- Supports IM/PMSM and Hub motors
- FOC control

#### High Compatibility

- Built-in CAN communication
- Built-in digital rotor position encoder interface

#### Robust Safety and Protection

- Output overcurrent protection
- HV/LV protection
- Overheat, Overload protection
- Locked rotor protection, battery low-voltage warning, seat warning
- Emergency stop output

#### Features and Functions

- Parking, rolling, wheel speed functions
- Emergency reversal
- Motor parameters auto-tuning
- SRO Mode/HPD Mode

#### International Certifications

- IP65 Rated per IEC60529
- UL recognized per UL583
- EMC: Designed to the requirements of EN 12895:2000 | IEC 61000-6-2:2016 | IEC 61000-4-2

Regulatory compliance of the complete vehicle system with the controller installed is the responsibility of the vehicle OEM.

#### BTDH2 Series



#### BTDS1 Series



# Servo System

## AC Servo Drive & Motor ASDA-H3

3.1 kHz High Response Bandwidth  
27-bit High Resolution Absolute Encoder  
PR Mode for Advanced Motion Command Planning

400V Single-Axis 4.5 ~ 155 kW | Rated Current 13 ~ 300 A  
400V Dual-Axis 0.75 ~ 20 kW | Rated Current 3.1 ~ 40 A

### Space-Saving

- ASDA-H3 (Single-Axis 7.5 kW × 6)



### Single-Axis/Dual-Axis Drive Module

#### Single-Axis

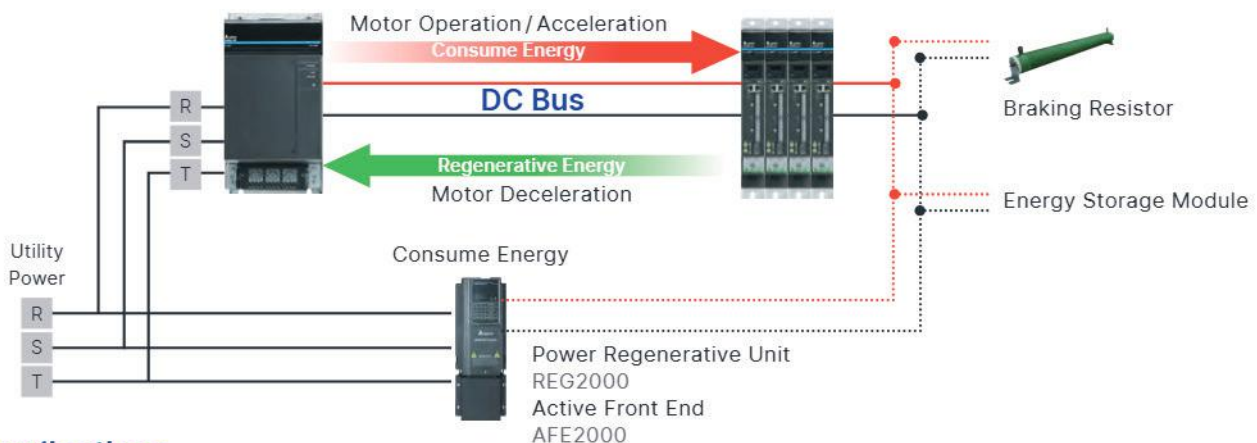


#### Dual-Axis



### High Energy Efficiency

Common DC bus transfers the regenerative energy into power



### Applications

Metal processing, Rubber & plastics, Multi-wire cutting, Carton cutting



# Servo System

## AC Servo Drive & Motor ASDA-W3

### Seamless Multi-Axis Control New Chapter for Servo Tech

200V Dual-Axis 0.1~1.5kW

Rated Current 0.9A~8.3A

200V Single-Axis 2~3kW

Rated Current 13.4A~19.4A



### Modular Design

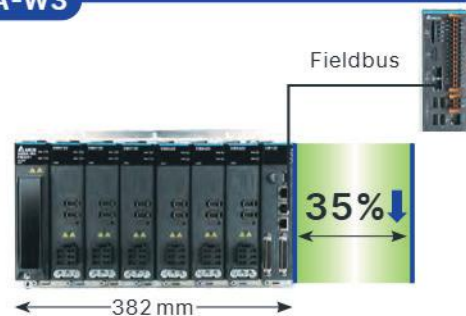
- Power, drive, and control modules are mounted on the backplane
- No dissipating space needed between modules
- Every drive module can drive two motors\*

\* 2kW and 3kW drive module can only control one motor

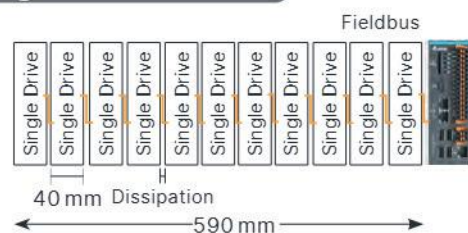
### Simple Wiring

- Saves installation time and cost
- Power modules supply power via backplane, reducing power wiring
- High speed backplane communication protocol. No network wiring is required between modules
- Organizes cables easily, keeping panels tidy

### ASDA-W3

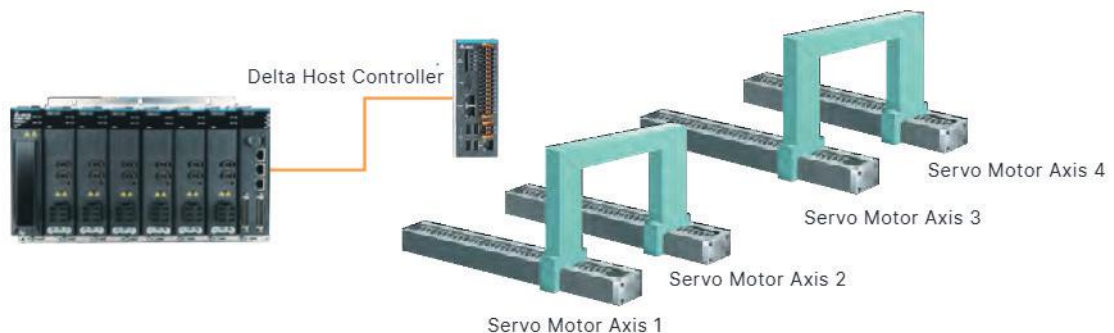


### Single Drive Structure



### Built-in Motion Control - Supports Multiple Sets of Gantry Motion

- High performance control module coupled with high speed backplane communication. Under the speed of 16 kHz, capable of controlling the host and slave motor
- Flexible selection of master axis and follows by designated slave axis, achieving multi-gantry control
- Host controller delivers master axis motion command



### Applications

Semiconductors, Electrics & electronics, New energy (lithium batteries), Woodworking, Packaging, Logistics



# AC Servo Drive & Motor ASDA-A3

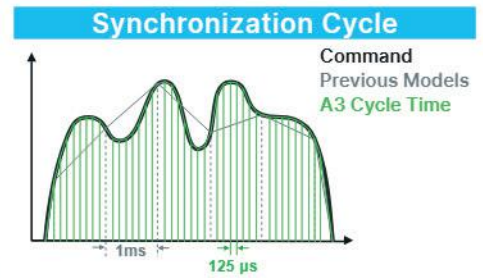
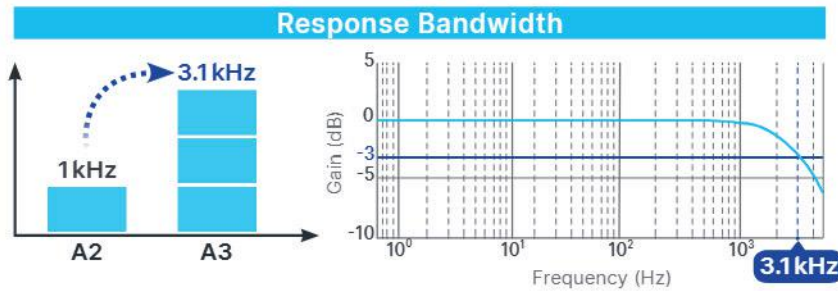
24-bit Absolute Encoder / 3.1 kHz Bandwidth  
Advanced Motion Control Functions  
Supports Functional Safety (only 400 V model)

200 V: 0.1 ~ 15 kW | 400 V: 0.4 ~ 15 kW



## 3.1 kHz Bandwidth and Shorter Synchronization Cycle

- Response bandwidth increased by 3.1 times (compared to the ASDA-A2 Series), providing higher speed for commands
- Higher responsiveness and shorter settling time increases productivity
- The synchronization cycle of the ASDA-A3 Series is 125 μs, which is 8 times faster than that of the ASDA-A2 Series



## 24-bit Absolute Encoder

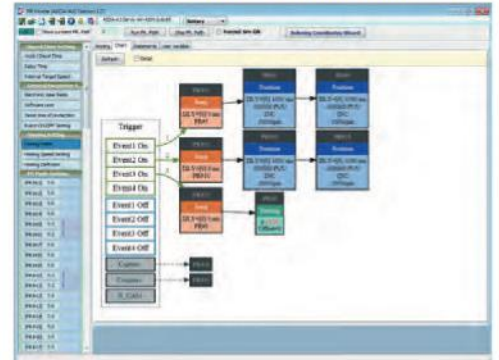
16,777,216 pulses  
for one single turn



46,603 pulses  
for one degree



## Advanced Motion Control Functions



## Model Types

Type	Linear Motor	PT Mode Pulse Train	PR Mode	RS-485	CANopen	DMCNET	EtherCAT	Analog Voltage Control	Full-Closed Loop Control	E-CAM	STO	New Functional Safety
L	✓	✓	✓	✓	-	-	-	✓	✓	-	-	-
M	✓	✓	✓	✓	✓	-	-	✓	✓	✓	✓	-
A3 F	✓	-	✓	-	-	✓	-	-	✓	✓	-	-
E	✓	-	✓	-	-	-	✓	-	✓	✓	✓	-
New EP	-	-	-	-	-	-	✓	-	✓	-	✓	✓

## Applications

Machine tools, Electronics assembly or detection equipment, Industrial robots, Packaging machines, Labeling machines, Semiconductor processing equipment, Textiles equipment

# Servo System

## AC Servo Drive & Motor ASDA-B3

24-bit Absolute Encoder / 3.1 kHz Bandwidth  
Advanced Motion Control Functions

200V: 0.1~3kW | 400V: 1~7.5kW



### Model Types

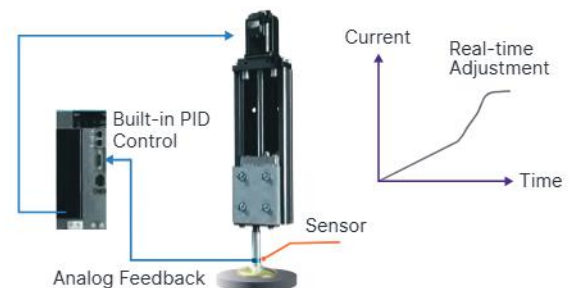
Type	PT Mode Pulse Train	PR Mode	RS-485	Analog Voltage Control	CANopen	DMCNET	EtherCAT	PROFINET	STO	Dynamic Brake
B3	L	✓	✓	✓	-	-	-	-	-	-
	M	-	✓	-	✓	-	-	-	-	-
	F	-	✓	-	✓	-	-	-	-	-
	E	-	✓	-	✓	-	✓	-	-	-
B3A	L	✓	✓	✓	-	-	-	-	✓	✓
	M	✓	✓	✓	✓	-	-	-	✓	✓
	F	✓	✓	-	✓	-	-	-	✓	✓
	E	✓	✓	-	✓	-	✓	-	✓	✓
	P	-	✓	-	-	-	-	✓	✓	✓

### High Response Bandwidth and Shorter Synchronization Cycle

- Higher responsiveness: From 0.5kHz of the ASDA-B2 Series to 3.1kHz of the ASDA-B3 Series
- Increased productivity: Settling time decreased by 40%
- The synchronization cycle of the ASDA-B3 Series is 125μs, which is 8 times faster than that of the ASDA-A2 Series

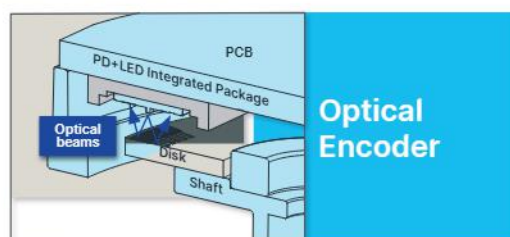
### Analog Feedback PID Control

- Supports analog signal input
- Achieves real-time and precise PID control with the analog signals from the external sensor, which enhances production yields and processing performance



### High Resolution Encoder

- B3 series drivers support absolute type motors
- 24-bit optical encoder: The encoder is lighter and thinner with the reflective sensor technology; the exclusive optical sensor compensation function enhances product reliability
- 17-bit magnetic encoder: The magnetic induction technology enhances the capability to prevent vibration and increases the oil resistant level
- Battery-less absolute encoder: Reduces maintenance efforts, avoids abnormal failures caused by battery exhaustion, and prevents the complicated process of lithium battery transportation



### Applications

Machine tools, Electronics assembly equipment, Tool magazines and turrets, Industrial robots, Packaging machines, Labeling machines, Semiconductor equipment, Textiles equipment, Diamond cutting machines



# AC Servo Drive & Motor ASDA-M

## Three-in-One Intelligent Servo System Integrating Motion Controller and Servo Drive

### Outstanding Motion Control

- 3-axis synchronous servo module with higher performance
- Built-in motion control and PLC functions
- Multi-axis synchronous interpolation and built-in motion control require high synchronous control accuracy
- Advanced synchronous gantry control
- Versatile PR mode for various continuous motion movements

### New PC Software Functions

- ASDA-Soft provides built-in contour analysis function
- EzASD provides PLC programming and motion commands editing environment

### High Precision, High Performance Servo Motors

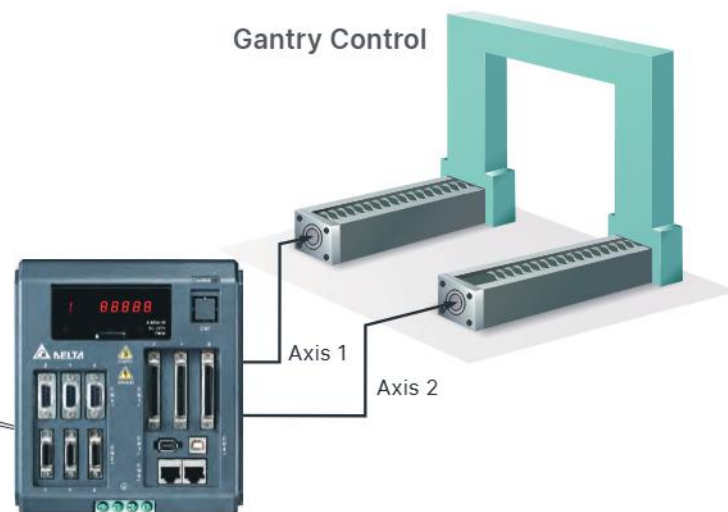
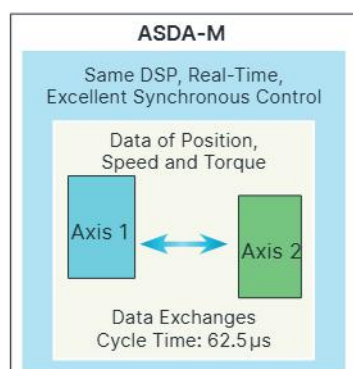
- Supports incremental and absolute encoders
- Incremental encoder provides up to 1,280,000 p/rev resolution for high-precision positioning

### Real-Time, Reliable and High-Speed Motion Control Network

- Supports DMCNET and CANopen communication protocols
- Builds an integrated system configuration by DMCNET with the aid of Delta's Controller with Human Machine Interface (HMC)
- Supports DMCNET extension digital input and output modules

### Advanced Gantry Control

- Real-time data exchange among 3 axes greatly increases the efficiency and performance of gantry control
- Simultaneously performs precise motion control and drive for each axis in rigid or general mechanical systems whether the loading on multiple axes is equal or not



### Applications

Machine tools, Electronics assembly equipment, Tool magazines and turrets, Industrial robots, Packaging machines, Labeling machines, Semiconductor equipment, Textiles equipment, Diamond cutting machines



# Linear Motion

## Linear Pocket Actuator

### LPL

- Integrates linear motors, linear encoders, and rails in one unit. Lightweight and easy to install
- The rated thrust is 5 N and 37 N
- Low thrust and short travel; the acceleration is up to 10 G
- Fine force analysis; the minimum is within 0.1 N
- Excellent force repeatability; the minimum thrust is within  $\pm 1\%$  (with Delta's servo drives)
- The whole series includes optical linear encoders with a  $0.5\mu\text{m}$  resolution



#### Direct Driven Structure

Linear motor driven features high speed, high precision, lightweight and with no backlash or abrasion



#### Precise Force Control

Integrated one-unit design for less deviations; Capable of achieving high precision force control with Delta's servo drives



#### Soft Landing

Capable of slow contact and precise pressing control with the soft landing features of Delta's servo drives to avoid component damage

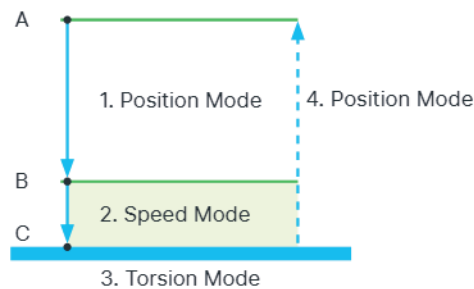


#### Lightweight

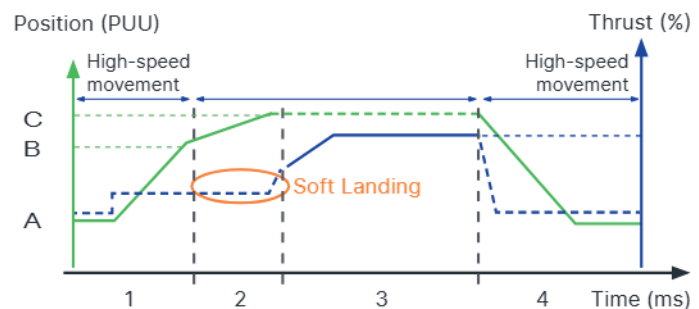
Small size to save space. Capable of side-by-side installation. Suitable for precise pressing and fast pick and place z-axis applications, such as electronic components, lens, and wafer production

**LPL Series features soft-landing on the secondary platform with Delta Servo Drive ASDA-A3 Series to avoid damaging the processing parts**

#### Operating Route



#### Position-Thrust Curves



Movement Types	Movement Status	Benefits
1. Position Mode (A→B)	Falls to the default position in high speed	High-speed movements; Reduces processing hours
2. Speed Mode (B→C)	Falls in low speed and gently presses the contact platform (The process is called soft landing)	Gentle contacts; Avoids damaging the processing parts
3. Torque Mode (C)	Compresses to the default value and retains the pressure for torsion output	Stable torsion; Fulfills production requirements
4. Position Mode (C→A)	Quickly pulls back	High-speed movements; Reduces processing hours

#### Advantages of Soft Landing

- Linear motor module structure features high speed, high precision, and stability for more precise and timely soft landing
- Breaks down different movement modes to optimize production efficiency and quality yield
- Suitable for precise pressing and assembly applications, such as lens, wafers, electronic components, and other production that is easy to damage parts

#### Applications

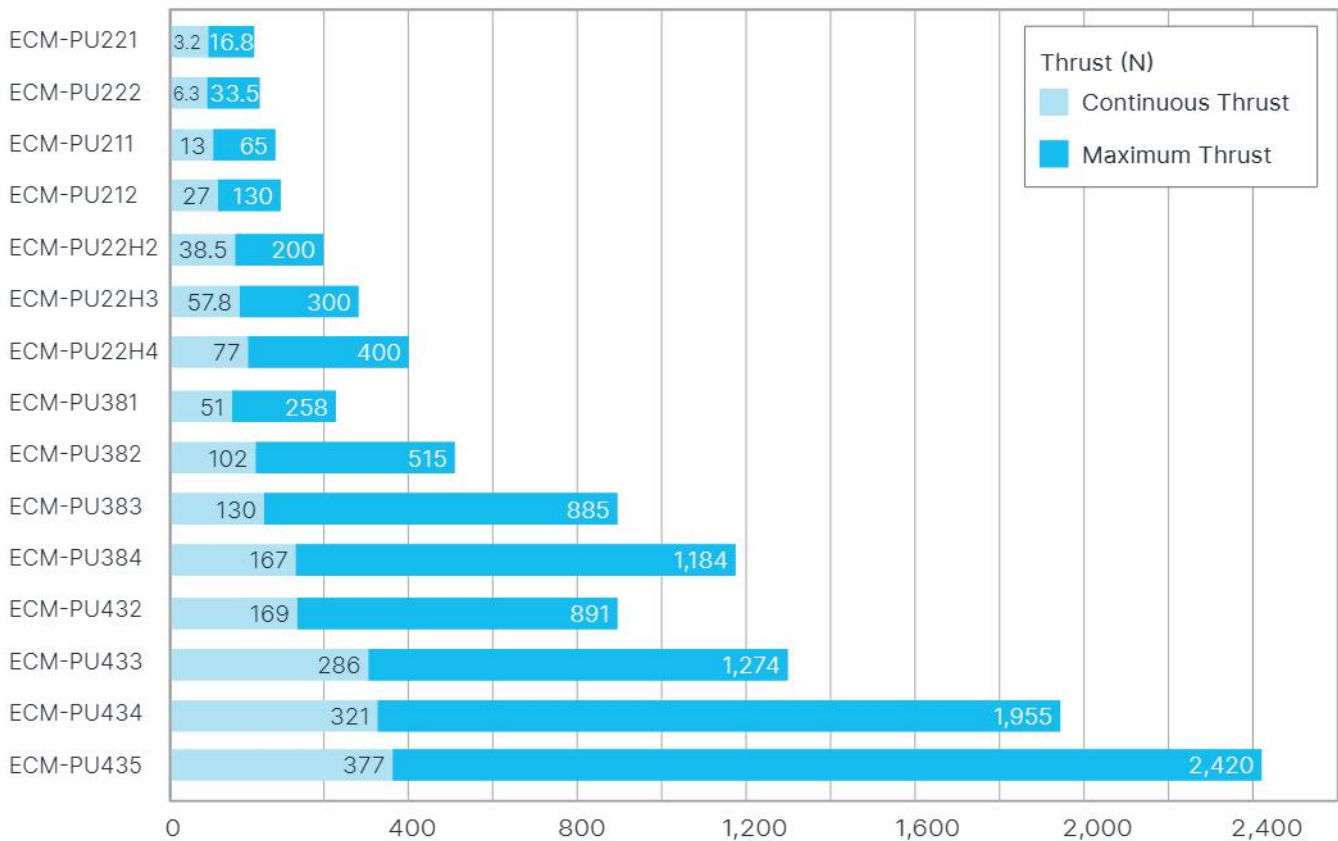
Electronics assembly equipment, Semiconductor packaging and testing, Micro Z-axis applications such as lenses assembly

## U-Shaped Ironless Linear Motor ECM-PU

- Simple design for easy mounting on equipment
- Suitable for continuous motions
- No cogging force, low thrust ripple
- Excellent dynamic response
- No backlash
- Built-in temperature sensors and Hall devices
- Large air gap for quick installation
- Long and non-restricted distance



### Thrust Range



### Magnetic Track Length (Unit: mm)

Model Name	Length	Gap
ECM-PU21	135, 270	135
ECM-PU38	156, 312	156
ECM-PU43	156, 312	156

### Applications

Electronics equipment, Semiconductor equipment

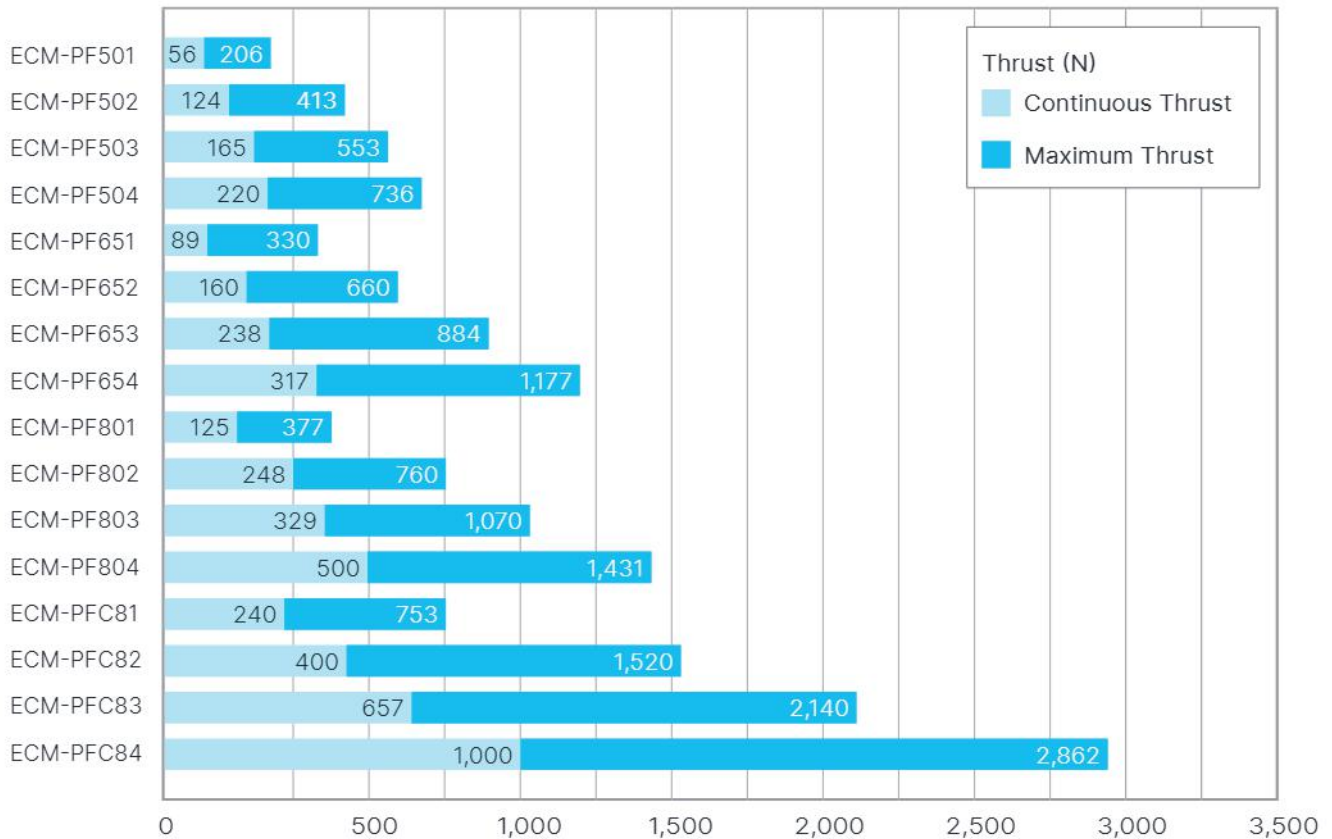
# Linear Motion

## Flat Iron-Core Linear Motor ECM-PF

- Simple design for easy mounting on equipment
- Intense unit thrust
- Suitable for point-to-point motion
- Excellent dynamic response
- No backlash
- Built-in temperature sensors and Hall devices
- Large air gap for quick installation
- Long and non-restricted distance



### Thrust Range



### Magnetic Track Length (Unit: mm)

Model Name	Length	Gap
ECM-PF80	128, 320	192
ECM-PFC8	128, 320	192

### Applications

Machine tools, Laser processing, Semiconductor equipment



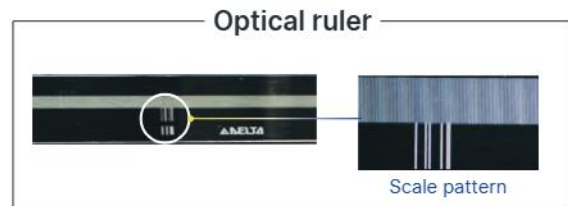
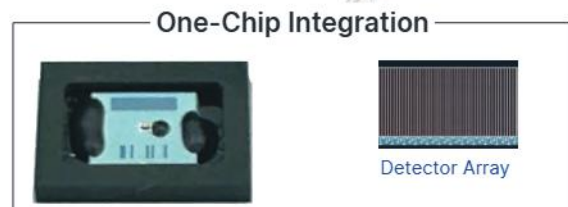
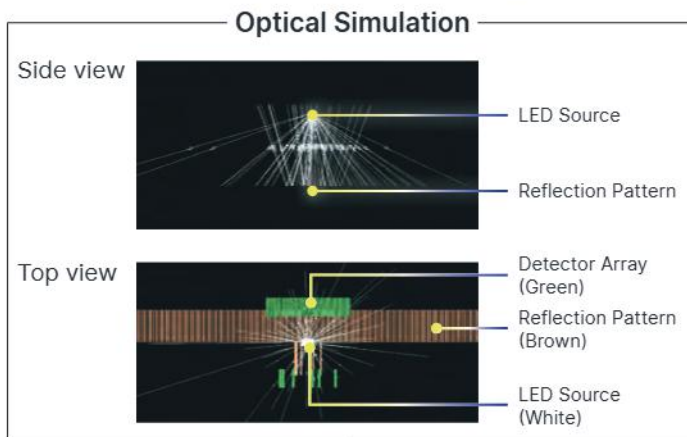
# Encoder

## Optical Linear Encoder MSR-LEH

- High precision, high immunity to dirt, missing pulse detection, and unintended collision prevention (with Delta Servo Drive)
- 4 nm high resolution, suitable for various high-speed and precision applications. Commonly used for linear motor position feedback or installed outside rotary motors for extra precision
- Reflective optical inspection design with smaller encoder read heads
- Includes communication and pulse-output types for different requirements of the servo drives
- Employs LED indicators at the encoder read heads, clearly shows the current installation status
- Satisfies high-resolution (4 nm) and high-speed (10 m/s) working environments

### Reflective Optical Sensor

- Precise optical ray tracing simulation
- One-chip integration of light source and detector
- Achieves high-precision measurement with higher installation tolerance



### High Immunity to Dirt

Patterned array design enhances dirt immunity, such as to light cutting oil stains and dirt particles

Surface	Clean	Fingerprint	Cutting Oil	Marker Pen
Image				
Contaminant Width	-	11 mm	4 mm	1 mm
Signal Quality (%)	100	58	43	79
Signal Distortion	NO	NO		
		Contaminants lower the signal quality, but Delta's built-in array algorithm ensures signal reconstruction		

### Applications

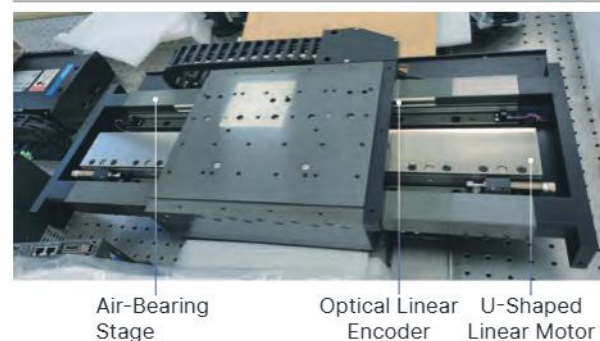
Electronics assembly equipment, Semiconductor packaging and testing, Camera lens module assembly machine

### Superior Precision Measurement

- Inspection of linear motor modules with Delta Optical Scale using Laser Interferometry
- General applications: A common stage requires 2  $\mu\text{m}$  repeatability
- Advanced applications: Requires 1  $\mu\text{m}$  repeatability
- The Delta Linear Motion Module\* solution meets the requirements
- **Repeatability up to 0.128  $\mu\text{m}$**

\* Linear motion module includes Delta linear motor, Delta optical linear encoder, and air-bearing stage

Unit	(+) $\mu\text{m}$	(-) $\mu\text{m}$	(Bidir) $\mu\text{m}$
Repeatability	0.105	0.073	<b>0.128</b>



# Encoder

## Rotary Encoder ES/EH/HS/HH

### Incremental

- Configurable resolution (magnetic)
- Wide input voltage: 5 ~ 30 V<sub>DC</sub>
- Resolution: 100 ~ 4,096 PPR
- Output form: open collector, line driver, push-pull
- HS/ES outer diameter of solid shaft: 37 mm/50 mm
- EH outer diameter of hollow shaft: 37 mm/50 mm

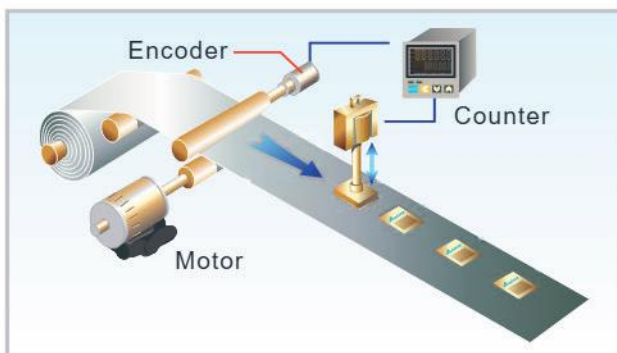


#### Solid Mandrel

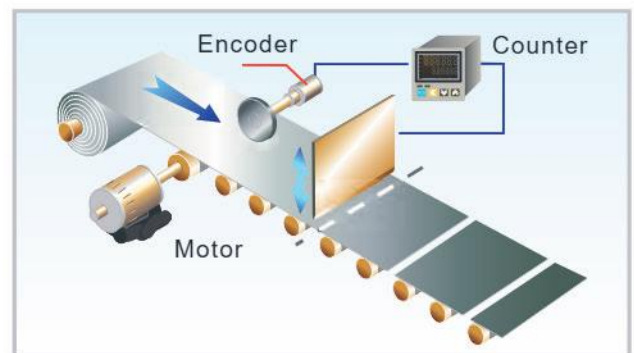
ES5/ES3 (Optical)  
HS5/HS3 (Magnetic)

#### Hollow Mandrel

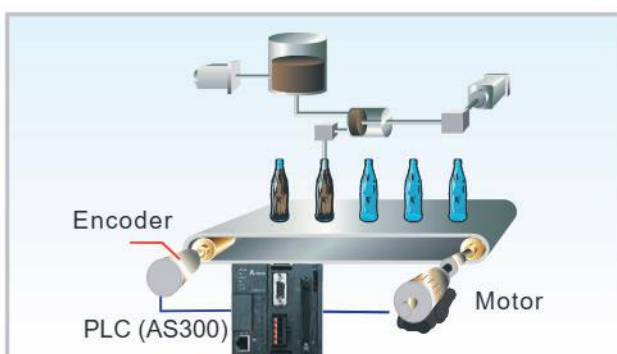
EH5/EH3 (Optical)  
HH5/HH3 (Magnetic)



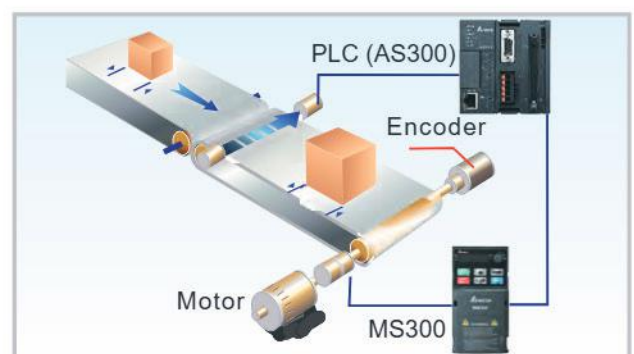
Label Printing Machine



Cutting Machine



Bottling Machine



Testing/Inspection Machine

### Applications

Label printing machines, Testing/inspection machines, Elevators, Bottling machines, Cutting machines, Elevator doors



# Planetary Gearbox

## High Precision Planetary Gearbox PS



03  
Motion

- **Supports All Series of Delta Servo Motors**
- **Provides Concentric and Right-Angle Models**
- **High Precision**
  - Backlash for concentric 1-stage gearbox is under 3 arcmin
  - Backlash for right angle 1-stage gearbox is under 4 arcmin
- **High Input Speed**
  - Input speed allows for 5,000 rpm
- **High Torque**
  - Helical gear design offers higher output torque in comparison with spur gearbox
- **High Efficiency**
  - Efficiency for 1-stage model exceeds 97%
  - Efficiency for 2-stage model exceeds 94%
- **Low Noise**
  - Under 65 dB
- **Lifetime Lubrication**
  - IP65-rated sealed design avoids leakage problems and requires no maintenance during the product's lifetime

## Precision Planetary Gearbox PA



- **Supports All Series of Delta Servo Motors**
- **Provides Concentric Models**
- **High Rigidity and High Torque**
  - Employs uncaged needle roller bearings with a set design
  - Includes ring teeth, gearbox, and helical gears for high rigidity and output torque
- **High Precision**
  - Backlash for 1-stage gearbox is under 8 arcmin
  - Backlash for 2-stage gearbox is under 12 arcmin
- **High Efficiency**
  - Efficiency for 1-stage model exceeds 95%
  - Efficiency for 2-stage model exceeds 92%
- **Low Noise**
  - Uses helical gears capable of meshing to ensure smooth and quiet operation
- **Lifetime Lubrication**
  - IP65-rated sealed design avoids leakage problems and requires no maintenance during the product's lifetime

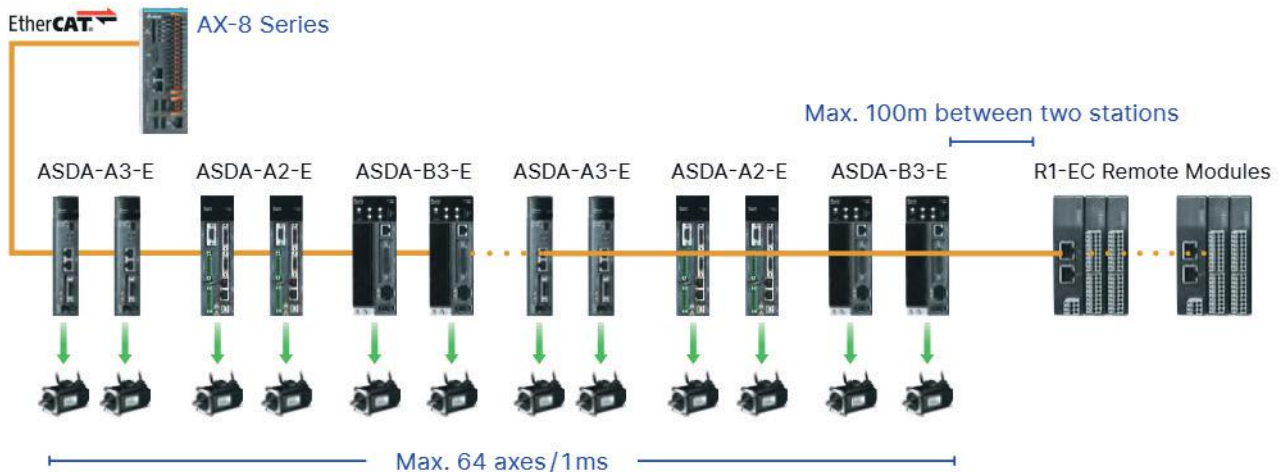


# AX Series Motion Solution

## Standalone Motion Controller AX-8

Supports EtherCAT and **DIADesigner-AX** Programming Software as a High-Performance Motion Control Solution for Various Industrial Applications

- Intel x86 CPU with fanless and compact design
- Provides low-voltage detection and data overwriting functions
- Supports EtherCAT, Modbus, and OPC UA protocols
- Supports 8 high-speed digital local inputs/outputs
- Synchronous servo control of up to 64 axes/1ms
- Built-in security IC system for enhanced software and hardware security
- IEC 61131-3 compliant software provides a standardized programming and controller development platform



## Standalone Motion Controller AX-C

Supports EtherCAT and **DIADesigner-AX** Software as a Compact Motion Control Solution for General OEM Applications

- Supports EtherCAT, Modbus, PROFONET and OPC UA protocols
- Built in 4 sets of 200kHz high speed input/4 axes of 200 kHz pulse output
- Synchronous servo control of up to 12 axes/1ms
- IEC 61131-3 compliant software provides a standardized programming and controller development platform



### Applications

Electronic products assembly line, Electronics, Lithium battery, Logistics, Woodworking, Packaging, Printing

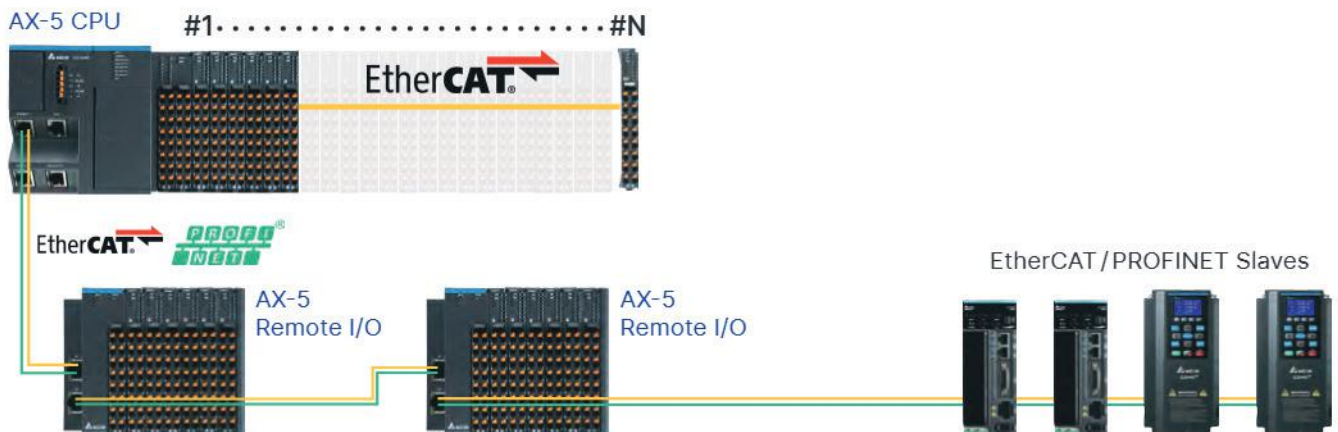
## High-End IIoT Motion Controller AX-5 New

Provides a Real-Time EtherCAT I/O System and IIoT Capability for Advanced Motion Applications with **DIADesigner-AX** Programming Software



04  
Motion Control

- Utilizes quad core processor to ensure both motion and data exchange performance
- AX-5 Series CPUs support up to 8/12/16/32/64-axis EtherCAT motion control ability
- High performance: Min. execution time of basic instruction is 1ns; min sync. time of AX-5 reaches up to 0.5 ms for 16 axes
- Supports new generation AX-5 series ultra slim power/digital/analog/temperature/load cell/positioning I/O modules (max. quantity: 4,096) and 100Mbps EtherCAT system I/O bus
- Built-in EtherCAT, CANopen, PROFINET, Modbus, EtherNet/IP, OPC UA, MQTT, and FTP protocols
- Onboard USB Type A interface supports 3<sup>rd</sup> party Wi-Fi and Bluetooth dongles (available in Q3 2025)
- IEC 61131-3 compliant software provides a standardized programming and controller development platform, offering motion instructions such as position, velocity, torque, multi-axis interpolation, E-gear, E-CAM, and more



## PLC-Based Motion Controller AX-3

Provides a Flexible Motion Solution for Various Applications with **DIADesigner-AX** Software and EtherCAT Communication

- AX-308E/AX-316E/AX-332E CPUs support up to 8/16/32-axis EtherCAT motion control ability (min. sync time of AX-332E: 0.5 ms for 16 axes)
- AX-304EL/AX-364EL CPUs support 4/64-axis EtherCAT point-to-point control ability
- Supports PLC AS series' power, DIO, AIO and temperature expansion modules (max. 32 modules)
- High performance: Min. execution time of basic instruction is 0.5 ns (AX-332E)
- IEC 61131-3 compliant software provides a standardized programming and controller development platform, offering motion instructions such as position, velocity, torque, multi-axis interpolation, E-gear, E-CAM, and more
- Built-in 6~16 DI, 6~8 DO, incremental encoder (x1~2), SSI absolute encoder, RS-232/RS-485, Ethernet and EtherCAT ports






















# AX Series Motion Solution

## Motion Controller Programming Software

### DIA Designer-AX

**DIA Designer-AX** is a Programming Platform Compliant with IEC 61131-3 for Delta's PC-based Motion Controller AX Series. It Provides a Large Number of Application Commands and a Useful Motion Library. It Has Multiple Built-in Languages and Enables Easy and Highly Efficient Development with its User-Friendly Interface

- **Standardized Programming**  
IEC 61131-3 compliant software provides a standardized programming and controller development platform
- **Unified Integrated Software**  
Programs all of Delta's automation products on a single platform to shorten development time and costs
- **Open and Modular Platform**  
Allows secondary development for customized functionalities and components with users' industry know-how
- **Single PLC/Motion Platform**  
CODESYS runtime supports Windows, VxWork, and Linux operating systems to program PC-based or PLC-Based controllers
- **Supports EtherCAT High-Speed Fieldbus**  
Highly efficient, precise and instant motion control enhances productivity
- **Tag Sharing Between HMI and Controllers Based on CODESYS**  
Easy and simple variable sharing saves editing time and labor
- **Supports Diverse Industry Applications**  
Suitable for industrial robots, woodworking, printing, and packaging applications

Motion Software			
Motion Controllers	Standalone	PLC-Based	HMI
	AX-8 Series  AX-C Series 	AX-3 Series  AX-5 Series 	DOP-100 
Field Devices	Servo Drives	Remote I/O Modules	Motor Drives
	ASDA-H3  ASDA-A3-E  ASDA-B3-E 	R1-EC  R2-EC  RTU-ECAT  R2-EC0004D0  (EtherCAT Remote I/O)	C2000 Plus  MS300  MH300  MX300 



# PLC-Based Motion Solution

## Compact Modular Motion Controller AS500

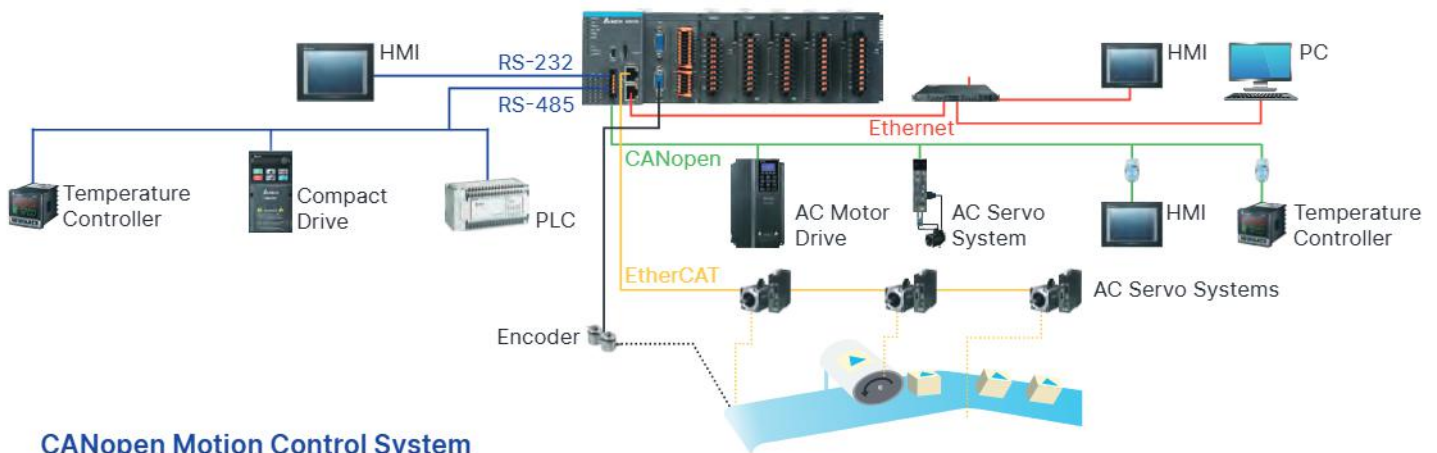
The Optimal Solution for OEM Equipment

### EtherCAT Motion Control System

- Provides a variety of controller options  
Standard controller: 16-axis | Point-to-point controller: 32-axis and 64-axis
- AS516E CPU supports up to 16 axes Delta EtherCAT servo drives (min. sync time: 1 ms/16 axes)
- Supports AS power, DIO, AIO, temperature and load cell expansion modules (max. 32 modules)
- 1GHz processor provides high operation performance
- Provides various motion commands: position, velocity, torque, multi-axis interpolation, E-gear, E-CAM, G-code, and more
- Built-in 16 DI & 8 DO, incremental encoder × 2, SSI absolute encoder, RS-232/485, Ethernet, CANopen DS301, and EtherCAT interfaces

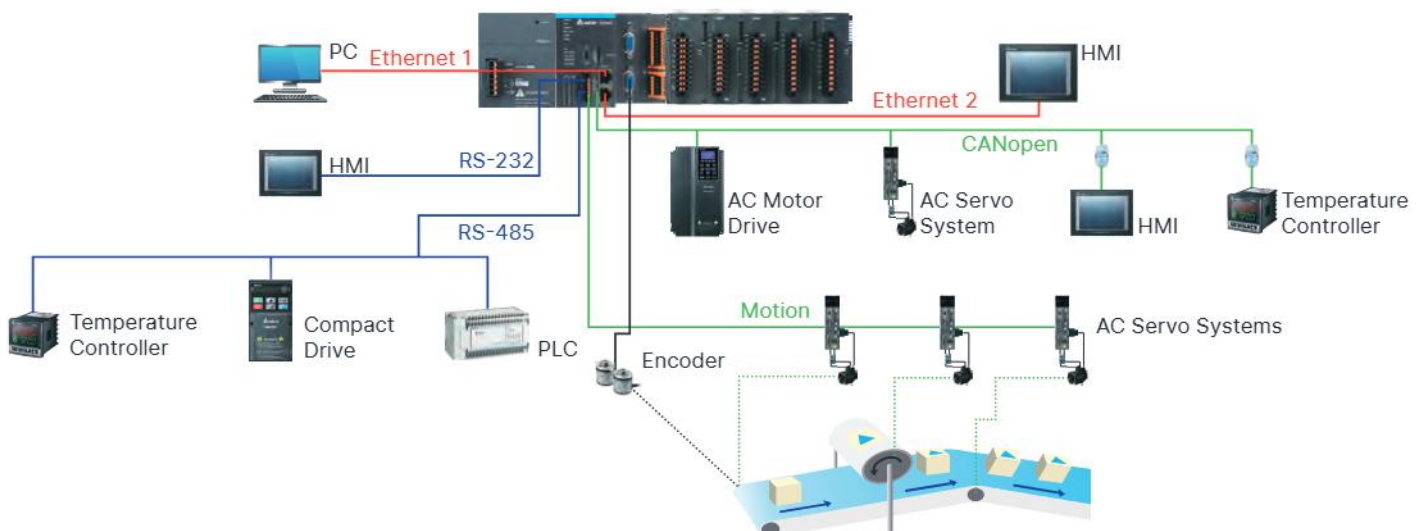


04 Motion Control



### CANopen Motion Control System

- AS524C CPU supports up to 24 axes Delta CANopen servo drives (min. sync time: 2 ms/4 axes)
- Supports AS power, DIO, AIO, temperature and load cell expansion modules (max. 32 modules)
- 1GHz processor provides high operation performance
- Provides various motion commands: position, velocity, torque, multi-axis interpolation, E-gear, E-CAM, G-code, and more
- Built-in 16 DI & 8 DO, 2 incremental encoders, SSI absolute encoder, RS-232/485, Ethernet × 2, CANopen DS301, and CANopen motion interfaces



# PLC-Based Motion Solution

## Multi-Axis Motion Controller DVP-15MC / 50MC

High Speed, High Precision, and High Performance Motion Control

### EtherCAT Motion Controller

- Standard: 6 and 32 axes
- Point-to-point: 4 and 16 axes

### CANopen Motion Controller

- Standard: 6 and 32 axes



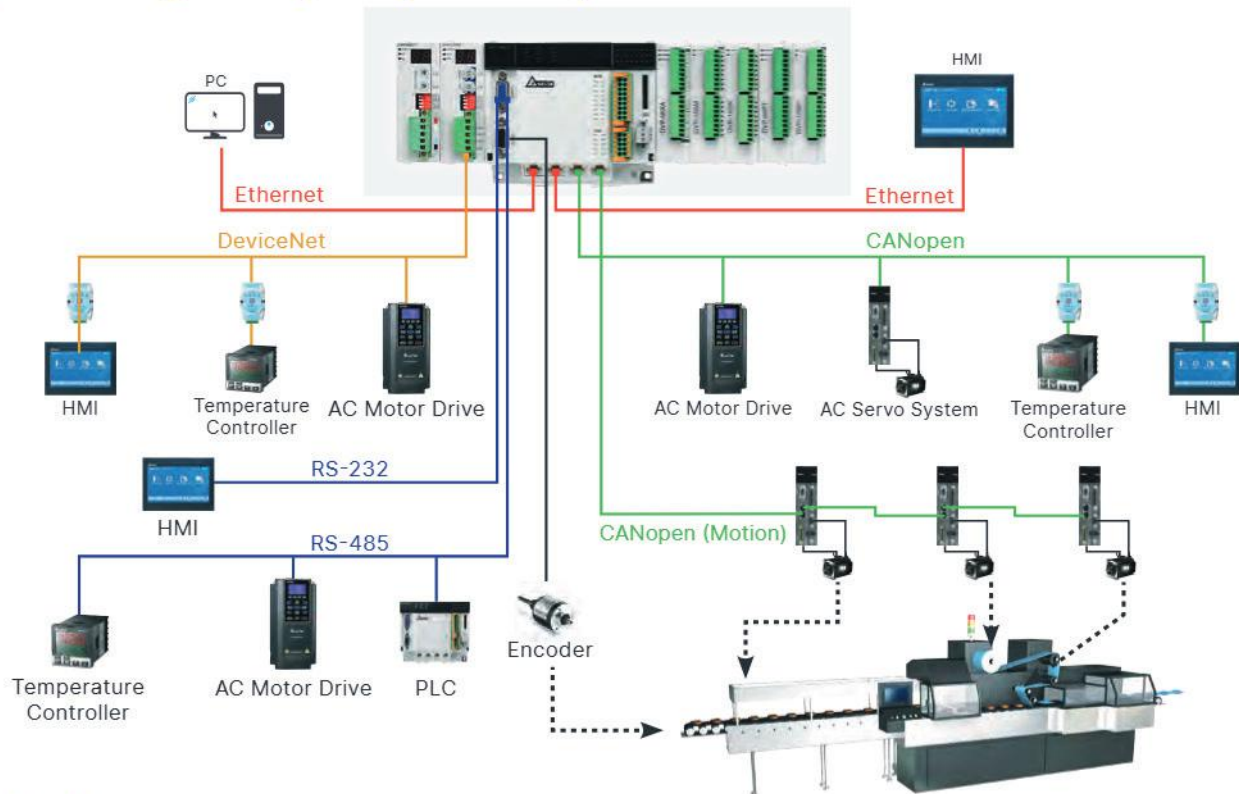
DVP-15MC

DVP-50MC

### Perfect Controllers for EtherCAT / CANopen Motion Solutions

- Built-in 16/24 I/O points; max. 480 I/O points
- Program capacity: 20M bytes
- Built-in Ethernet, RS-232 and RS-485 ports, and supports standard Modbus ASCII/RTU protocol
- e-CAM function (2,048 points) for rotary/flying shears
- Supports DVS-S Series modules (left-side and right-side modules) for multiple options
- Flexible industrial networking applications (DeviceNet Master/Slave, CANopen Master/Slave modules)
- Provides standard communication cables, terminal resistors, distribution boxes, and more accessories for easy wiring and connection

### System Configuration (CANopen Motion)



### Applications

High-speed cutting machine, Digital board cutting machine, CNC lathe



# PC-based Motion Solution

## Standalone Motion Controller MH2

### Supports EtherCAT Fieldbus for Various Motion Control Applications

- **Energy Efficiency and Robust Hardware**  
The MH2 Series: cable-less, fan-less, and low-power consumption design supports stable operation; built-in SD card and M.2 SSD slots provide fast and stable data transmission
- **Multiple Peripheral Interfaces for Communication**  
Built-in USB ports, serial COM ports, GBps Ethernet ports
- **Supports Master and Slave Modules**  
Built-in EtherCAT fieldbus for servo system and motion control module connection (up to 64 axes/100 stations via EtherCAT)
- **High Security**  
Dedicated IC for programming security and confidential information protection
- **OS and Software Support**  
The MH2 Series is built in with Windows 10 IoT and DLL for flexible usage and software development



04 Motion Control

External Touch Panel



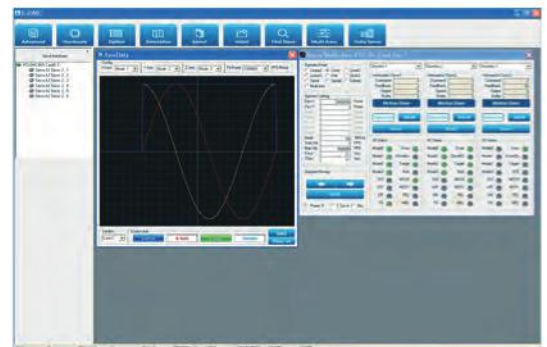
PAC

EtherCAT



Max. 64 axes  
or 100 remote  
modules

- **Speed Curve Tracing**  
Speed curve tracing function traces current motion speed and adjusts commands
- **Simulation Scope**  
Captures figures of motion commands or real motion tracks with X/Y-axis monitor to simulate motion commands or monitor motion tracks
- **Verification Software for EtherCAT**  
The EcNavi software enables verification for data communication, functional identification, programming and debugging, providing a fast and easy way for first-timers to understand the solution



## Applications

- **Electronics Production:**  
Automated Optical Inspection (AOI) machines, LED machines, TFT/OLED inspection machines, PCB machines, Semiconductor machines, TAP machines, GPU testing machines, IC testers, Optical lens processing machines, Lens assembly machines, Laser dicing machines, Electronics assembly, Consumer electronics, Winding machines, Glue dispensing machines
- **Woodworking:** CNC drilling machines, Woodworking machines, Board slitting machines
- **Others:** Aluminum & stone processing equipment



# PC-based Motion Solution

## Remote I/O Module New R1-C

### One-Station Multi-Expansion EtherCAT Module

- EtherCAT Coupler - [R1-C00CEC00-0A](#)
- PROFINET Coupler - [R1-C00CPN00-0A](#)
- 12 Channel DO (Relay) - [R1-C12RN0A-0A](#)
- 16 Channel DI - [R1-C16RM30-0A](#)
- 16 Channel DO - [R1-C16RN05-0A](#) (NPN), [R1-C16RN06-0A](#) (PNP)
- 16 Channel DI+ 16 Channel DO - [R1-C32RN35-0A](#) (NPN), [R1-C32RN36-0A](#) (PNP)
- 32 Channel DI - [R1-C32RM30-0A](#)
- 32 Channel DO - [R1-C32RN05-0A](#) (NPN), [R1-C32RN06-0A](#) (PNP)
- 4 Channel AI - [R1-C04AD10-0A](#) (Voltage), [R1-C04AD20-0A](#) (Current)
- 4 Channel AO - [R1-C04DA01-0A](#) (Voltage), [R1-C04DA02-0A](#) (Current)
- 8 Channel AI - [R1-C08AD10-0A](#) (Voltage), [R1-C08AD20-0A](#) (Current)
- 8 Channel AO - [R1-C08DA01-0A](#) (Voltage), [R1-C08DA02-0A](#) (Current)
- 2 Channel Encoder -  
[R1-C02HC30-0A](#) (Differential), [R1-C02HC40-0A](#) (SSI-Absolute), [R1-C02HC60-0A](#) (Single-End)
- 4 Channel Pulse out - [R1-C04PU01-0A](#)
- 8 Channel Temperature (RTD/TC) - [R1-C08XT20-0A](#)
- 1 Channel COM (RS-485/RS-232) - [R1-C01CS30-0A](#)
- Power Module - [R1-C02PS10-0A\(2A\)](#)



## Remote I/O Module New R3-C

### High-Speed Ultra-Slim EtherCAT Module

- EtherCAT Coupler - [R3-C00CEC00-0A](#)
- 16-Channel DI - [R3-C16RM30-0A](#) (3 ms)
- 16-Channel DI - [R3-C16RM30-0B](#) (100 μs)
- 16-Channel DO (NPN) - [R3-C16RN01-0A](#) (NPN)
- 16-Channel DO (PNP) - [R3-C16RN02-0A](#) (PNP)
- 4-Channel AI - [R3-C04AD30-0A](#) (Voltage + Current)
- 4-Channel AO - [R3-C04DA03-0A](#) (Voltage + Current)
- 4-Channel PT - [R3-C04PT10-0A](#)
- 4-Channel TC - [R3-C04TC10-0A](#)
- Power Module - [R3-C02PS10-0A](#) (2A)



## Remote I/O Module R1-EC

Rugged and Compact Gateway Type E-Bus Slave Modules for High Precision and Demanding Industry Applications

- Gateway Type E-Bus Remote Power Coupler  
**R1-EC5500D0**

Connects to digital I/O, analog I/O, and pulse I/O extension modules



With E-Bus power module

- 16 Digital Input Remote Modules

**R1-EC6002D1 / R1-EC6022D1**

Provides digital input signals remote control for an EtherCAT master



- 1-Channel Pulse Remote Module

**R1-EC5621D1**

Connects to digital I/O, analog I/O, pulse I/O, and MPG signal extension modules with an EtherCAT master



- 4-Channel Analog Input Remote Module

**R1-EC8124D1**

Provides analog input signals remote control for an EtherCAT master



- 16 Digital Output Remote Modules

**R1-EC7062D1 / R1-EC70A2D1 /  
R1-EC70E2D1 / R1-EC70F2D1**

Provides digital output signals remote control for an EtherCAT master



- MPG Module

**R1-EC5614D1**

Receives Manual Pulse Generator (MPG) signals remotely for an EtherCAT master



- 4-Channel Analog Output Remote Module

**R1-EC9144D1**

Provides analog output signals remote control for an EtherCAT master



## Remote I/O Module R2-EC

High-performance remote I/O bus system

- 32-Channel DI / 32-Channel DO (Relay, 2A/Port) Modules

**R2-EC0902D0**

Provides digital input and output signals for remote monitoring via an EtherCAT master



- 16-Channel DI / 16-Channel DO Modules

**R2-EC0004D0**

Provides digital input and output signals for remote monitoring via an EtherCAT master

- 32-Channel DI Modules

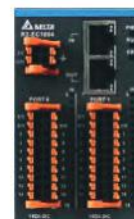
**R2-EC1004D0**

Provides digital input signals for remote monitoring via an EtherCAT master

- 32-Channel DO Modules

**R2-EC2004D0**

Provides digital output signals for remote monitoring via an EtherCAT master





# PC-based Motion Solution

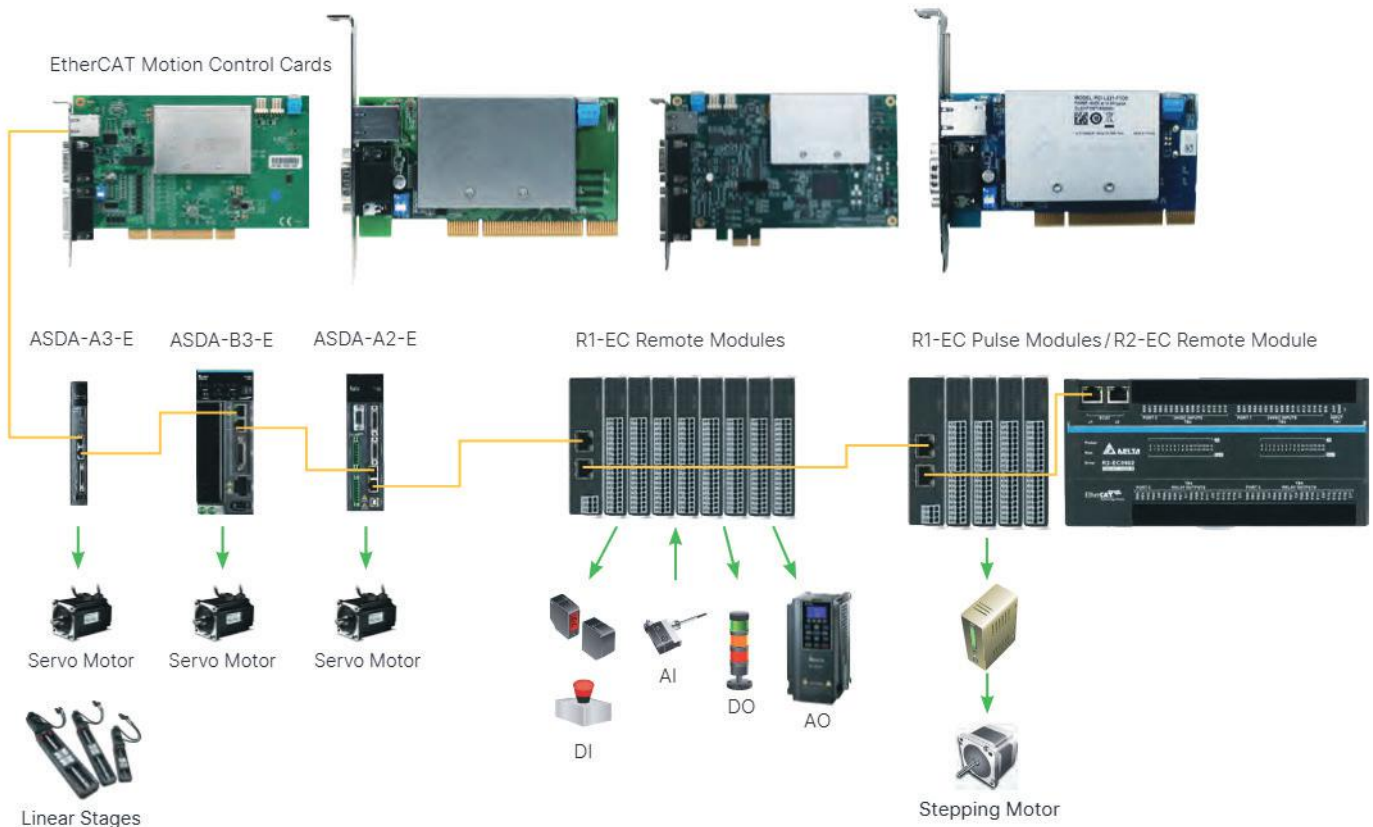
## EtherCAT High-Speed Motion Control System

EtherCAT (Ethernet Control Automation Technology) is an Open Ethernet-Based Fieldbus System that Provides High-Efficiency and High-Performance Synchronization Quality for Automation Control

- PCI-L221 series and PCIE-L221 series motion control cards provide complete functions for EtherCAT masters and support device descriptions in XML format (EtherCAT Slave Information ESI file), allowing quick identification of ESI files and information from different slaves and offering the capability of real-time connection via EtherCAT for high-level integration
- High-speed motion control of up to 64 slave stations, including 32 servo axes within 1 ms cycle time
- Communication cycle time can be adjusted to 2 ms, 1 ms or 0.5 ms for different needs
- Motion control functions: 35 homing modes, point-to-point position control, 2-axis/3-axis interpolation, multi-axis synchronization, continuous motion control, gantry control, speed control, torque control, and more



### EtherCAT System Configuration



### Applications

Automated optical inspection machines, GPU testing machines, Electronics assembly, Consumer electronics assembly, Automotive production lines, Semiconductor equipment, IC testing and packaging machines



# CNC Solution

## Open CNC Solution NC50E

Open-Structured CNC Control System  
for Customization and Flexibility

### Standard

HDMI output for external display with Delta programmable operation interface

- Fully customized operation interface according to application requirements by DOPSoft screen editor
- Supports large touch screen size panel
- Supports screen, keyboard, and mouse operation
- Customizable dialog programming function
- User interface localization design
- EtherCAT high-speed motion control field bus

### Performance-Oriented

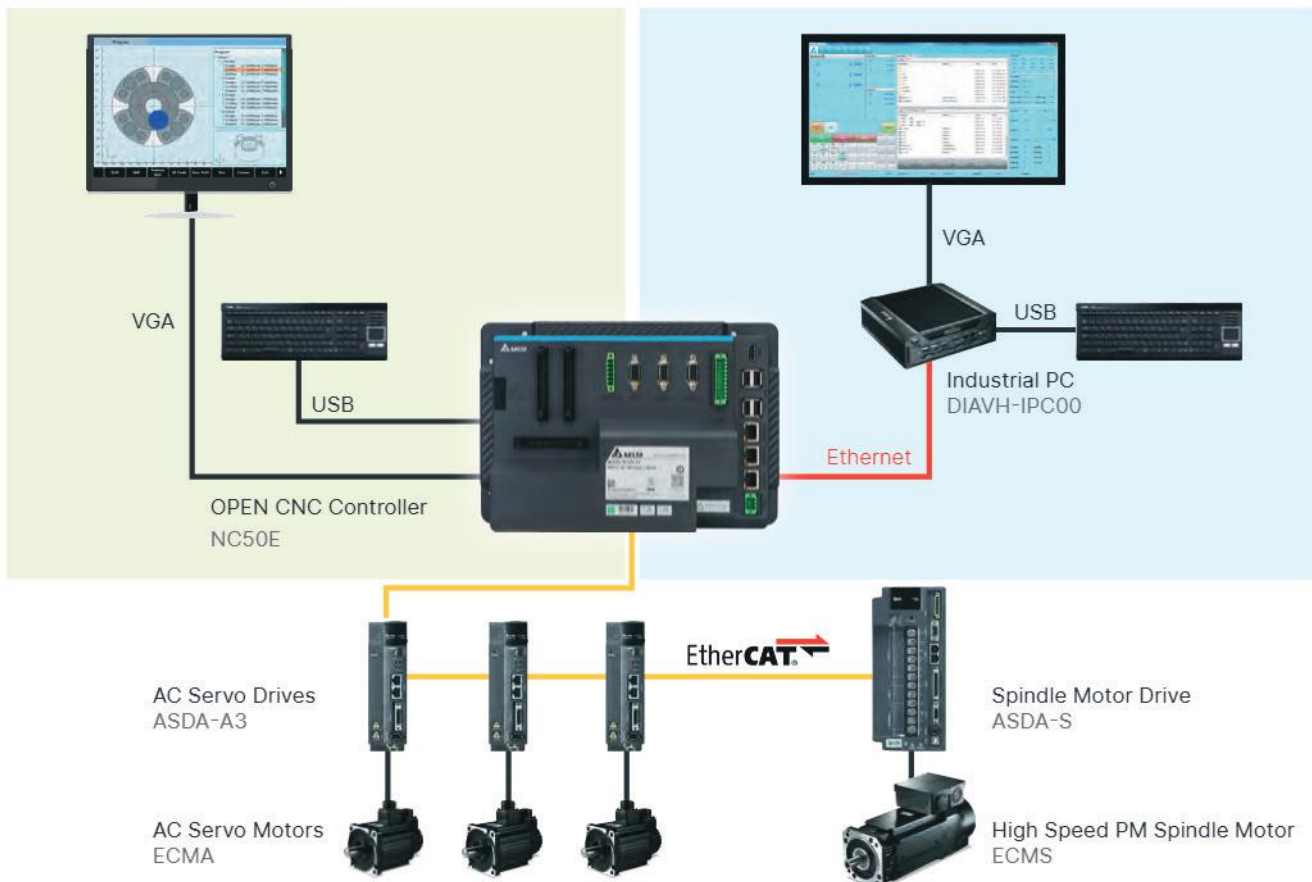
Realizes industry-specific solutions  
with PC architecture

- Provides specific API for C programming interface to remotely connect to CNC controller
- Functional packages such as CAD/CAM can be integrated through C programming to enhance the high-end solutions
- Reduces additional hardware cost for customers to focus more on software upgrades and better integration for higher operation performance



04 Motion Control

## System Configuration



## Applications

Customized CNC systems, Woodworking machines, Lathes, Grinding machines, Milling machines, Glass cutting machines, Rim engraving, Machine tending robots integration

# CNC Solution

## CNC Solution

Integrated Total Solution for the  
CNC Machine Tools Industry



### New Architecture Customized Interface

- New multi-core processor hardware architecture greatly upgrades computing capacity
- Flexible interface editing function easily makes an exclusive controller meet customer needs

### EtherCAT Field Bus

- Integrates Delta EtherCAT servo drive system and I/O modules to form a complete CNC solution, with cable lengths up to 1,000 m

### Multi-Axis / Multi-Paths / Multi-Configuration

- Maximum 4 paths, 24 feed axes, and 8 spindles
- Simultaneously controls up to 16 feed axes and 5 axes interpolation in a single path
- Achieves multi-paths control of machining and loading & unloading at the same time

### High Speed, High Precision

- 4,000 blocks look-ahead and 4,000 bps processing capability
- Fine machining is achieved by 1nm command resolution

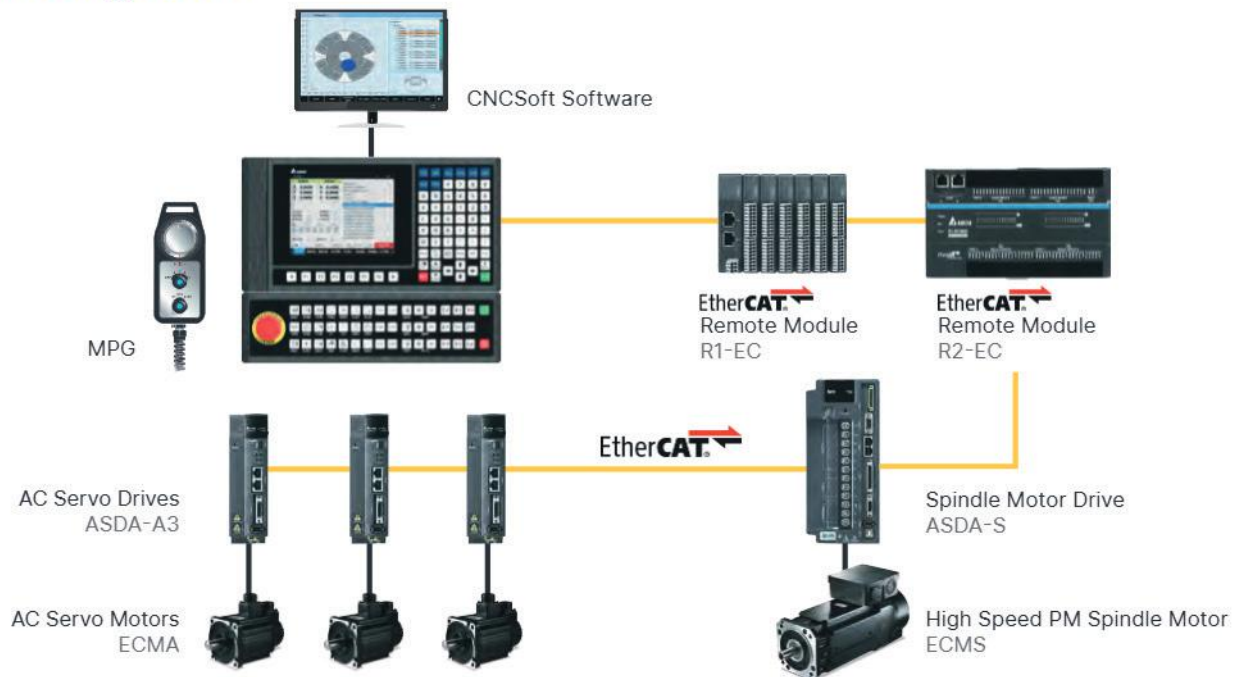
### Integration Capability

- Built-in dual Ethernet port to satisfy intranet and extranet applications
- Integrates the intelligent platform through CNC API library

### Industry Features

- Integrates industry-specific CAD/CAM software to simplify complicated operations and reduce training resources

## System Configuration



## Applications

CNC machining centers, High-speed tapping machines, Engraving machines, CNC gantry control machines, CNC woodworking machines



## Intelligent CAD/CAM Solution

Integrates Domain Know-How and Different Customer Needs to Provide Optimal Industry Solutions with Delta Motion Controllers, Achieving Software-Hardware Integration and Outstanding Performance

- Simplified user interface with intuitive, guided operation saves manpower and machining time
- One-button design is equipped with patterns identification, tool selection, and know-how integration. Generates optimal machining programs
- 3D machining preview and interference simulation detection ensure safe and smooth machinery



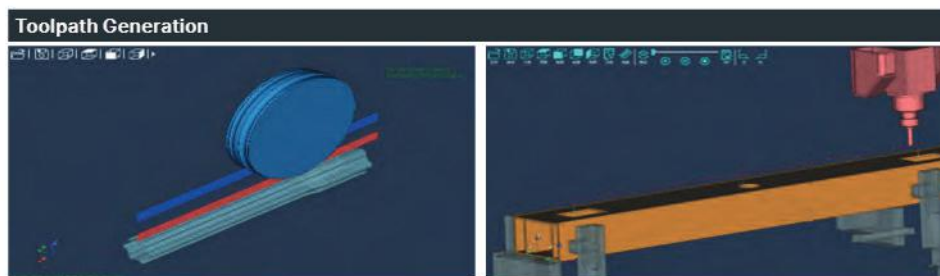
### Model Design (CAD)

- Built-in multiple workpieces and feature templates. Supports DXF file import for rapid 3D model design
- Provides feature self-drawing function, enabling users to draw any contour lines
- Automatically identifies multiple features after importing a STEP file, which saves project design time



### Auto Generation of NC Path (CAM)

- For different machining needs, generates optimal NC path accordingly



### Simulation

- 3D display of machining process to check results in advance
- Interference detection prevents collision, ensuring operation safety
- Coupled with Delta motion controllers to achieve real-time machining simulation





# Robot Controller

## Robot Controller with Servo Drive Integrated ASDA-MS

An Innovative and Comprehensive  
Development Platform for Robot Control

### Complete Robot Solution

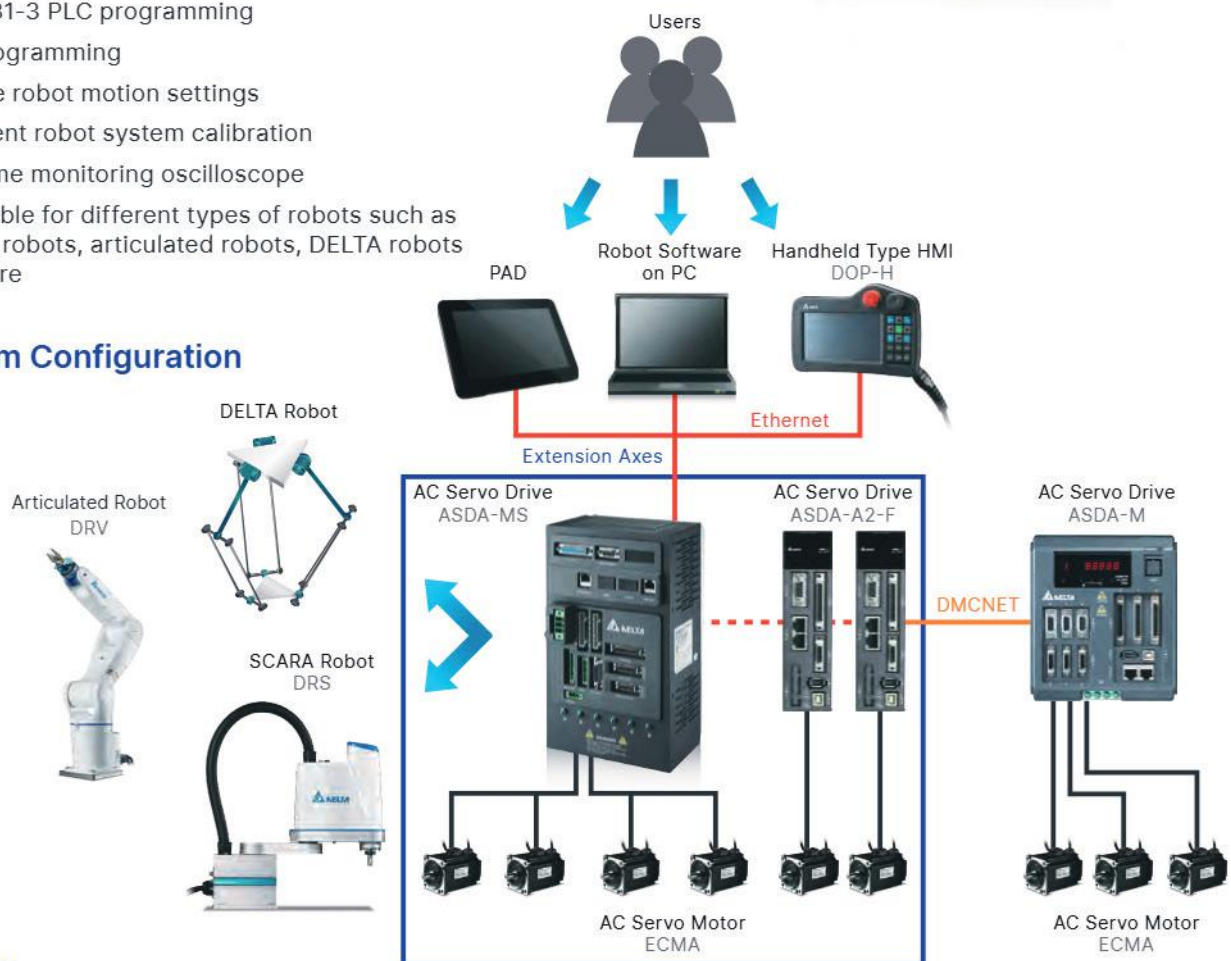
- Integrated servo drive and controller in one single unit for real-time control with high flexibility and reliability
- Various communication protocols
- Built-in diverse robot control modules
- Up to 10-axis motion control: 4-axis robot + 6 external axes
- Supports 5 kinds of programming languages with IEC 61131-3 and the PLCOpen motion function block
- Offers DRL Languages for robot application programming
- Supports G-code programming

### User-Friendly Robot Software

- IEC61131-3 PLC programming
- DRL programming
- Multiple robot motion settings
- Intelligent robot system calibration
- Real-time monitoring oscilloscope
- Applicable for different types of robots such as SCARA robots, articulated robots, DELTA robots and more



### System Configuration



### Applications

**Industries:** Consumer electronics, Electrical/electronics, Rubber and plastics, Packaging, Metal fabrication

**Tasks:** Insertion, Screw driving, Assembly, Glue dispensing, Soldering, Loading/unloading, Stacking, Inspection

# Programmable Logic Controller

For System

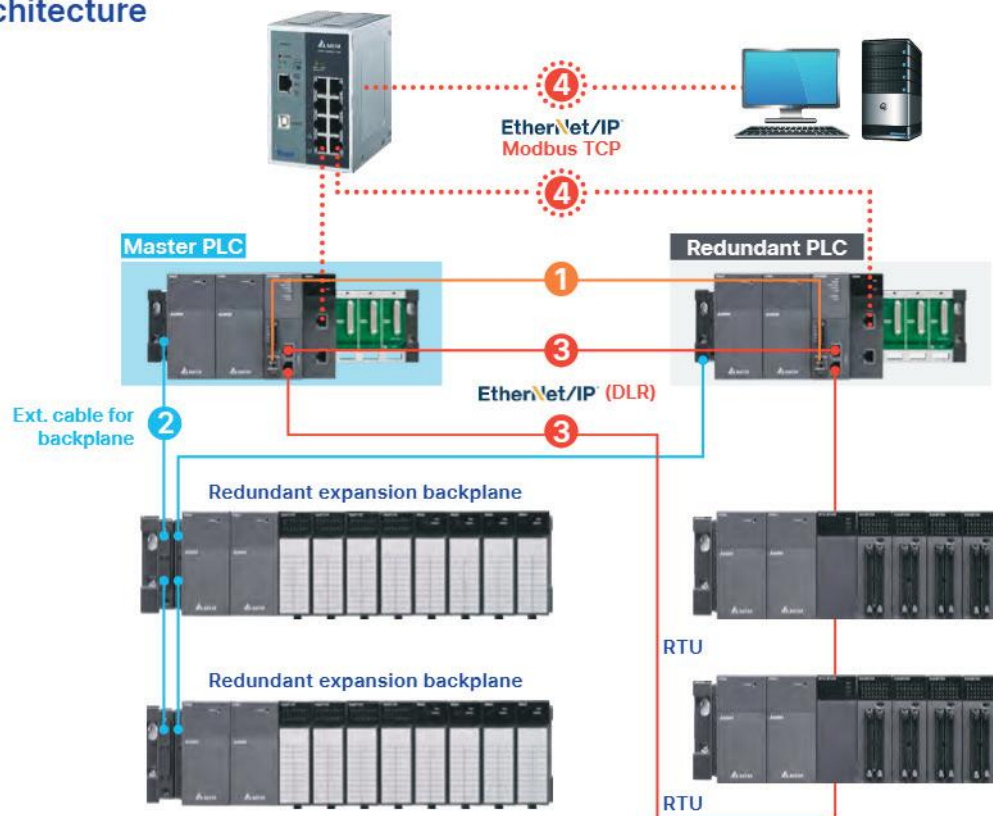
## Hot Swappable Mid-Range PLC AH

### An Excellent Controller for High-Level Applications

- 32-bit dual-core multitasking processor (RTOS)
- Excellent program execution speed (LD: 0.02  $\mu$ s)
- Max. I/O:
  - DIO: Max. 4,352 points
  - AIO: Max. 544 channels
  - RIO: >100,000 points
- Program capacity: Max. 1M steps (4 MB)
- Data register (D+L): 512k words
- CPU built-in with fully isolated RS-232/422/485, Mini-USB, Ethernet and SDHC card slot
- Abundant selection of extension modules: DIO, AIO, temperature measurement, network, pulse-train, and EtherCAT motion control



### System Architecture



- 1 Sync. optical fiber    2 Ext. cable for backplane    3 EtherNet/IP ring topology (DLR)    4 Star topology EtherNet/IP / Modbus TCP

### Applications

Logistics/Warehouse, High-end industrial machines, System applications (Water / Waste water, HVAC, Traffic)



# Programmable Logic Controller

For Equipment

## High-End IIoT PLC

AX-5 New

Scalable, Fast, and Versatile | Multiple Protocols Integrated | IIoT-Ready

An all-in-one CPU provides an EtherCAT I/O system with IIoT capability for advanced motion applications with **DIA Designer-AX** software platform

- Utilizes quad core processor to ensure both motion and data exchange performance
- Supports up to 8/12/16/32/64-axis EtherCAT motion control ability
- High performance: min. basic instruction execution time: 1ns; min sync. time: 0.5ms for 16 axes
- Supports new generation AX-5 series ultra slim (12mm) power/digital/analog/temperature/load cell/positioning I/O modules (max. 4,096) and 100Mbps EtherCAT system I/O bus
- Built-in EtherCAT, CANopen, PROFINET, Modbus, EtherNet/IP, OPC UA, MQTT, and FTP protocols
- Onboard USB Type A interface supports 3<sup>rd</sup> party Wi-Fi and Bluetooth dongles (available in Q3 2025)
- IEC 61131-3 compliant software provides a standardized programming and controller development platform, offering motion instructions such as position, velocity, torque, multi-axis interpolation, E-gear, E-CAM, and more



CPU

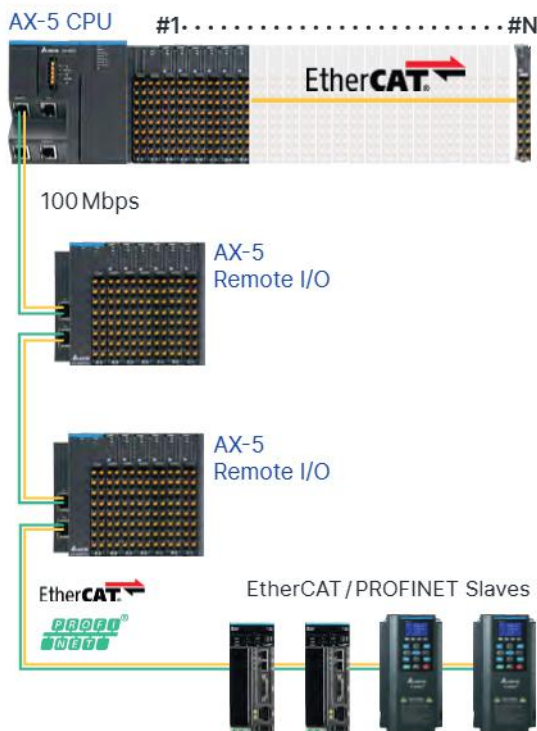


Coupler



I/O Module

### 100 Mbps EtherCAT | PROFINET I/O system



### High performance all-in-one CPU

- Arm Cortex Quadcore Processor: Multi-tasking to ensure both motion and data exchange performance
- Supports multiple protocols

EtherCAT  
EtherNet/IP  
MQTT  
FTP

OPC UA  
Modbus  
CANopen  
PROFINET

Reduces product, engineering, and service costs with a fully integrated development platform



Full Ethernet system supports data exchange, motion control, I/O



Integration and scalability



IIoT connectivity



Suitable for machine makers

### Applications

Lithium batteries, Woodworking, Textiles, Logistics/Warehouse, High-end industrial machines

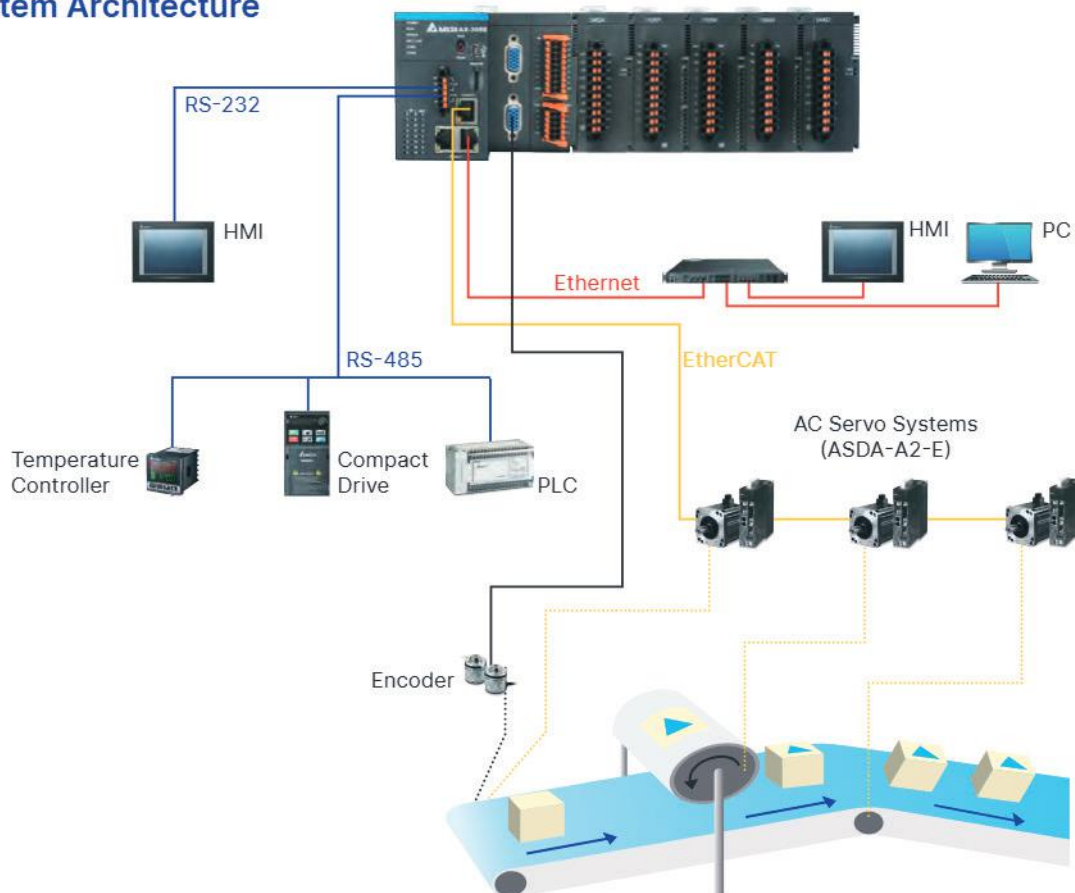
# Compact Modular AX Series PLC AX-3

Combines Flexibility and User-Friendliness to  
Achieve High-Performance

Provides a flexible motion control solution for various applications  
with **DIA Designer-AX** platform and **EtherCAT** communication

- Provides multiple controller solutions
  - EtherCAT motion controllers
    - AX-308E/AX-316E/AX-332E CPUs support up to 8/16/32-axis EtherCAT motion control ability (min. sync time of AX-332E: 0.5 ms for 16 axes)
    - AX-304EL/AX-364EL CPUs support 4/64-axis EtherCAT point-to-point control ability
  - Logic controllers
    - AX-300N/AX-324N CPUs built-in 0/24 DIO points
- Supports AS power, DIO, AIO and temperature expansion modules (max. 32 modules)
- High performance, min. execution time: 5 ns
- IEC 61131-3 compliant software provides a standardized programming and controller development platform, offering motion instructions such as position, velocity, torque, multi-axis interpolation, E-gear, E-CAM, and more
- Built-in 16 DI and 8 DO, incremental encoder × 2, SSI absolute encoder, RS-232/485, Ethernet and EtherCAT interfaces

## System Architecture



## Applications

Woodworking, Packaging, Printing, Textiles, and Pharmaceutical machines



# Programmable Logic Controller

For Equipment

## Compact Modular Mid-Range PLC AS

Flexible, Smart, Friendly - An Ideal Option for Upgrading Multitasking Equipment for Automated Equipment Control



- Max. I/O: 1,024 points
- Max. program capacity: 128k steps
- Data register: 60k words
- Max. extension ability: 32 modules
- 32-bit SoC (System on Chip) CPU for high-performance and high-speed computing
- CPU with built-in RS-485 port x 2, mini USB port, Ethernet port, micro SD card slot and CANopen port (\*1)
- Max. 8 axes control via CANopen motion network / max. 6 axes control via pulse control (200 kHz)
- Robust rackless design and patented DIN rail clips for easy plug-in / plug-out module installation and replacement
- Various modules for selection: digital I/O, analog I/O, load cell, temperature, serial communication and industrial bus
- PLC programming software (ISPSoft & **DIADesigner**) for program editing, hardware and network configuration, system diagnosis and axis positioning control

Note 1: AS300 CPUs don't support built-in CANopen port

### Advanced CPU Performance

High-speed execution: up to 40k steps/ms  
(Condition: 40% LD instruction/60% MOV instruction)

LD instruction	0.025 $\mu$ s
MOV instruction	0.15 $\mu$ s
Floating point operation instruction	1.6 $\mu$ s
Trigonometric operation instruction	3.5 $\mu$ s

### Positioning Control - High-Speed Pulse

- AS transistor CPU: Up to 6 axes (or 12 channels) 200 kHz
- AS324MT-A differential CPU: 2 axes 4 MHz + 4 axes 200 kHz
- Positioning planning table for fast positioning planning and path simulation
- Choose any given 2 axes for linear and arc interpolation



AC Servo Drive  
ASDA Series

### Positioning Control - Delta's CANopen Control

- The AS CPU supports up to 8 Delta servo drives and 8 AC motor drives (AS-FCOPM function card is needed for AS300)
- Fast positioning configuration in one initialization instruction, a CANopen data exchange table not required
- Axis control by instructions for easy maintenance and high PLC program readability



### Applications

High-end equipment for electronics manufacturing, Machinery processing, Food packaging and other industries

# The 3<sup>rd</sup> Generation Standard / EtherCAT / AIO Brick PLC DVP-ES3 / ES3-TEC / EX3

## Ideal for Upgrading Multitasking Equipment

The 3<sup>rd</sup> generation brick PLCs fulfill the market demand for value-added machines with a user-friendly programming interface, built-in analog I/O, multiple communication ports, and expanded program capacity.

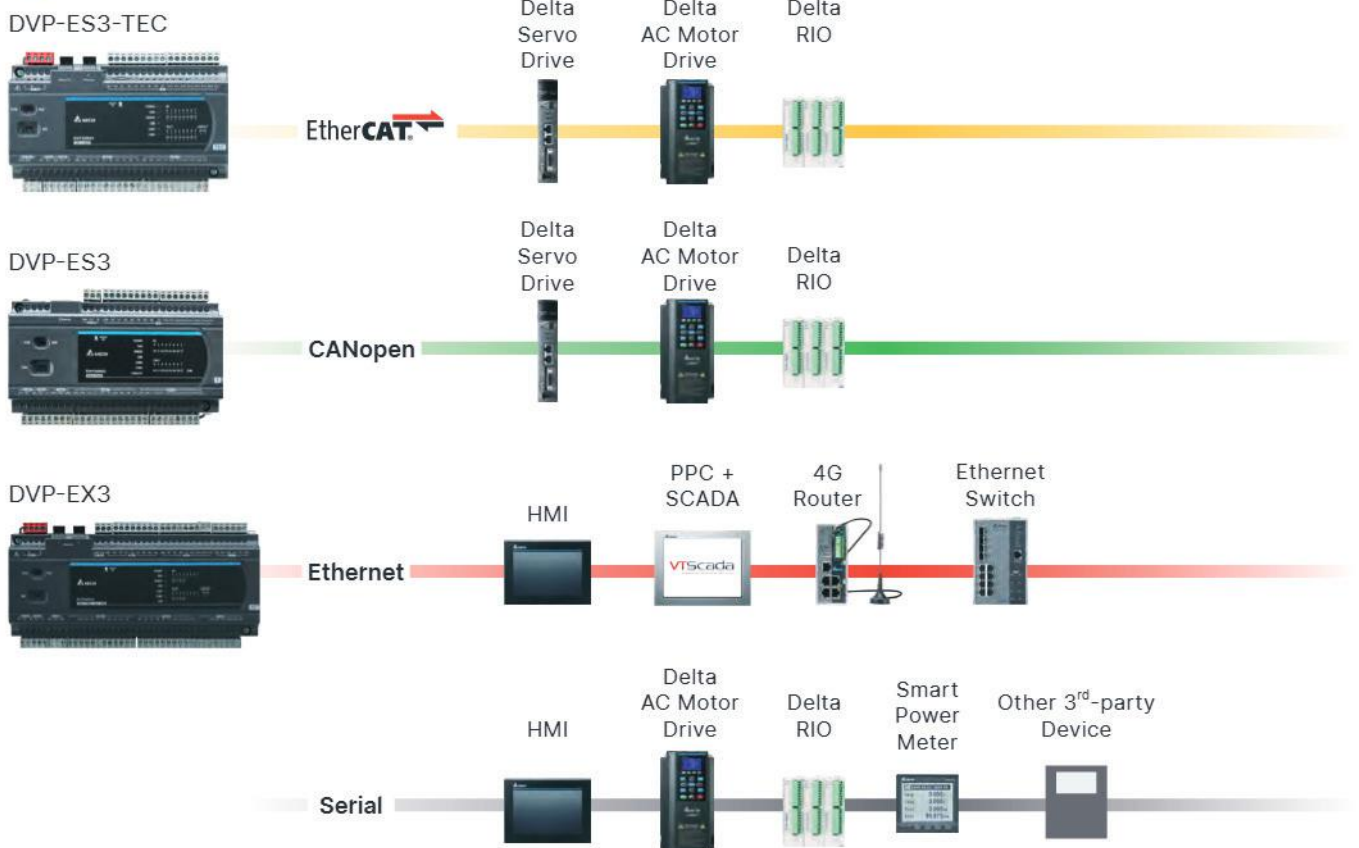
Compared with the previous generation, the 3<sup>rd</sup> generation aligns with market demands for versatile PLCs.

- Max. basic instruction execution speed: 25 ns (adopts 32-bit SoC processor)
- Program capacity: 64k steps
- Max. 256 points for the total of inputs and outputs (max. 8 AIO extension modules)
- Built-in 2 × RS-485, AIO (EX3 only), micro SD card
- Supports EtherCAT\* (ES3-TEC only), EtherNet/IP Scanner / Adapter, Modbus TCP, CANopen DS301 (ES3 and EX3 only)

\*Only supports Delta servo drives (ASDA-A2-E, ASDA-A3-E and ASDA-B3-E) and Delta AC motor drives (C2000 and CH2000 series)



## System Architecture



## Applications

Machinery, Packaging, Textiles, HVAC, and Data collection



# Programmable Logic Controller

Compact PLC

## Standard / Analog Brick PLC DVP-ES2/EX2

Provides Comprehensive Functions for General Applications

### Features integrated communication and high efficiency for various control systems

- DVP-ES2 Series:
  - 16/20/24/32/40/60/80 I/O points for a variety of applications
  - No battery required; RTC function operates for at least one week after power off (hardware version 2.0 or above)
  - DVP32ES2-C model with built-in CANopen (Baud: 1Mbps)
- DVP-EX2 Series:
  - Built-in 12-bit 4 analog inputs/2 analog outputs, can be matched with 14-bit analog I/O extension modules
  - Analog I/O and temperature model DVP30EX2 Series features built-in PID auto tuning and complete analog control functions
- Program capacity: 16k steps
- Data register: 10k words
- Max. basic instruction execution speed: 0.35µs
- High efficiency: 1k steps of programs can be processed within 1ms
- Max. 100 kHz pulse control; motion control instructions (mark/masking and instant frequency changing) available for multi-axis applications
- Up to 4-level password protection ensures program security and safeguards intellectual property



### Applications

HVAC, Molding injection machine, Large-scale warehouse management, Packaging machine, Precise textile machine, Logistics system

## Network Type Advanced Slim PLC DVP-SE

Provides versatile communication functions for advanced applications

- Program capacity: 16k steps
- Data register: 12k words
- Max. basic instruction execution speed: 0.64µs
- Built-in Ethernet, supports Modbus TCP, EtherNet/IP (Adapter)
- IP Filter function protects systems against malware and network threats
- No battery required; RTC function operates for 15 days after power off
- Supports DVP-S Series left-side and right-side modules (DVP26SE only supports right-side modules)



### Applications

Remote device monitoring, Production line monitoring, Building automation, Printing machine, Container filler (recipe application)

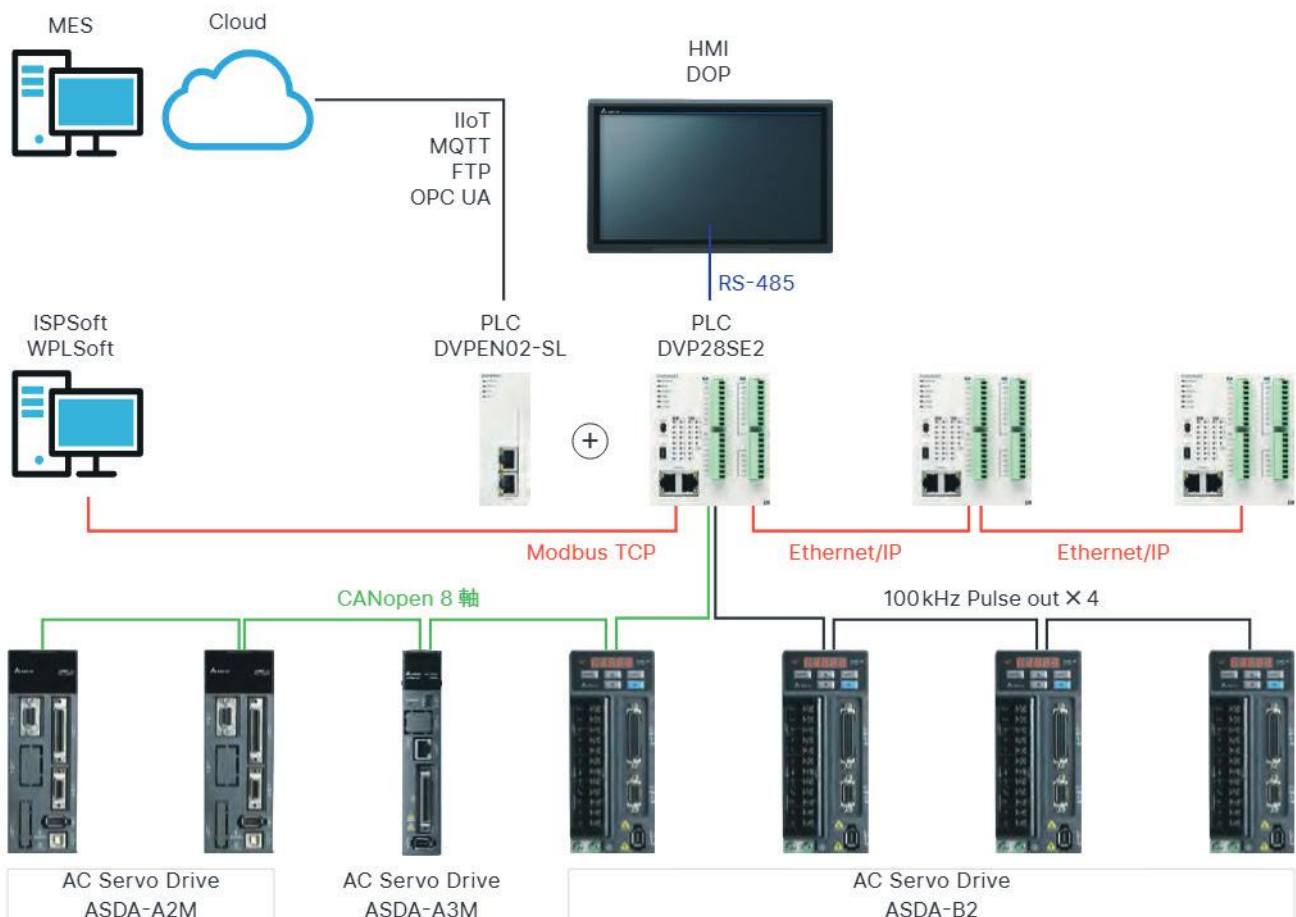
# The 2<sup>nd</sup> Generation Network Type New Advanced Slim PLC DVP-SE2

## Combination of Data Logging and Simple Motion Controller

- A 32-bit high-speed processor supports an overall PLC program execution speed approximately twice as fast as the DVP-SE host
- Built-in 3 high speed counters offer a Max. frequency of 100 kHz each; 4-axis (8 points) provide a high speed position output at 100 kHz
- Larger program capacity: 64k steps and memory (general registers: 12k; memory for storing parameters: 8k)
- Supports Delta 8-axis servo and 8 motor drives. CANopen DS301 communication mode (up to 64 slaves)
- Built-in 10/100 M Ethernet communication interface: Includes built-in switch function or dual IP mode for dual ports
- Built-in Ethernet interface support, Webpage, Modbus TCP Client/Server, Ethernet/IP Adapter, TCP/UDP Socket



## System Structure



## Applications

Remote device monitoring, Production line monitoring, Building automation, Printing machine, Container filler (recipe application)



# Programmable Logic Controller

Compact PLC

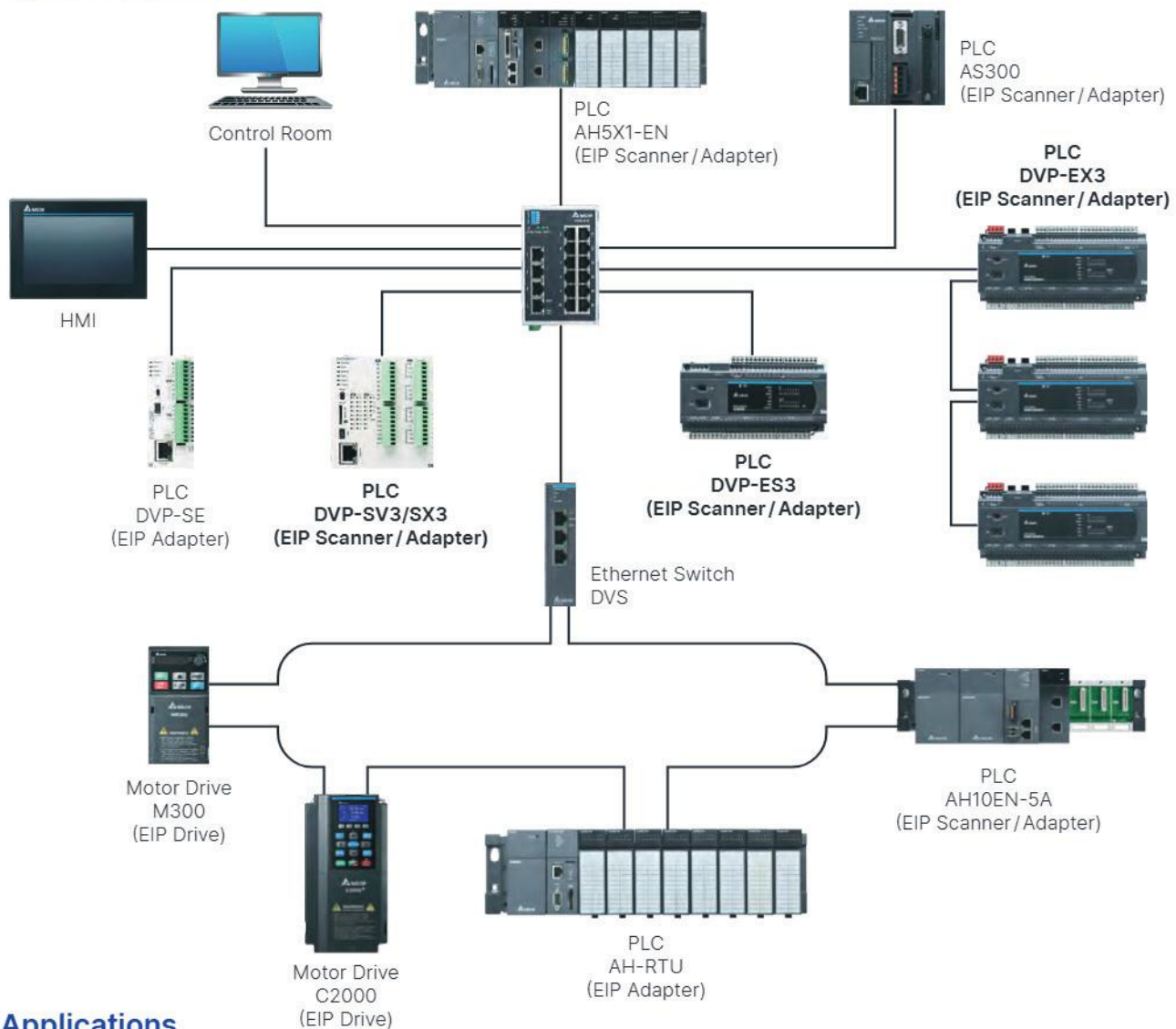
## The 3<sup>rd</sup> Generation Standard / AIO Slim PLC DVP-SV3 / SX3

### Recommended for Compact Machine Upgrading

- Max. basic instruction execution speed: 25 ns (adopts 32-bit SoC Processor)
- Program capacity: 64k steps
- Supports Max. I/O: 512 points (256 inputs + 256 outputs, including its built-in 16 inputs and 16 outputs), both left and right side expansion up to 8 modules per side
- Built-in 2 × RS-485, AIO (SX3 only), micro SD card
- Supports EtherNet/IP Scanner/Adapter, Modbus TCP, CANopen DS301



### System Structure



### Applications

Positioning control, Material cutting machines (high-speed servo control), Crane main hoists, Material clips (controlled by servos), Optoelectronics equipment, Semiconductors, Textiles, and HVAC

# High Performance Slim PLC DVP-SV2

## Top Choice for Slim Type PLC

High-end model of DVP-S Series with larger program capacities and data registers for more demanding and complex applications

### Excellent Motion Control

- High-speed pulse output: 4 axes of 200 kHz pulse output
- Supports max. 4 high-speed counters (200 kHz)
- Various motion control instructions to achieve high-speed and high-precision positioning control for labeling machines, packaging machines, printing machines, and more
- Linear/arc interpolation motion control
- Provides up to 16 external interrupt pointers

### Full Program Protection

- Auto backup to prevent program and data loss even when the battery runs out
- Secondary backup function saves an extra copy of programs and data to enhance program safety
- Up to 4-level password protection ensures program security and intellectual property

### Scalability

- Supports DVP-S Series left-side and right-side modules
- Ethernet communication instructions (ETHRW) available

### High-Speed Modules (Left-Side)

#### Network Modules

- **DeviceNet Master**  
DVDPNET-SL



- **CANopen Master**  
DVPCOPM-SL



- **RS-485 Serial Communication Module**  
DVPSCM12-SL



- **BACnet MS/TP Slave Serial Communication Module**  
DVPSCM52-SL



- **Ethernet**  
DVPEN01-SL  
DVPEN02-SL **New**



- **PROFINET**  
DVPPN02-SL **New**

#### Analog Input/Output Modules

- **Analog Input**  
DVP04AD-SL
- **Analog Output**  
DVP04DA-SL



#### Load Cell Modules

- DVP201LC-SL
- DVP211LC-SL
- DVP202LC-SL



#### Left-Side Positioning Module

- **2-Axis Positioning**  
DVDPNET-SL



## Applications

2-Axis servo positioning control, Material cutting machine (high-speed servo control), Crane main hoist, Material clips (controlled by servo), Optoelectronics equipment, Semiconductor, Textiles, Energy saving and Building automation





# Programmable Logic Controller

Compact PLC

## Standard Slim PLC DVP-SS2

### Economic and Compact Type

- Max. I/O: 480 points
- Program capacity: 8k steps
- Data register: 5k words
- Max. basic instruction execution speed: 0.35μs
- Built-in RS-232 and RS-485 ports (Master/Slave)
- Supports standard Modbus ASCII/RTU protocol and PLC Link function
- Motion control functions:
  - 4 points of 10kHz pulse output
  - 8 points of high-speed counters: 20kHz/4 points, 10kHz/4 points



## Advanced Slim PLC DVP-SA2

### Advanced Type for High-Speed Modules (Left-Side)

- Program capacity: 16k steps
- Data register: 10k words
- Max. basic instruction execution speed: 0.35μs
- Built-in 1 RS-232 and 2 RS-485 ports (Master/Slave)
- Supports standard Modbus ASCII/RTU protocol and PLC Link
- No battery required; RTC operates for 15 days after power off
- Supports DVP-S Series left-side and right-side modules
- Motion control functions:
  - 4 points of high-speed pulse output: 100kHz/2 points, 10kHz/2 points
  - 8 points of high-speed pulse input: 100kHz/2 points, 10kHz/6 points, 1 set of A/B phase 50kHz
  - Supports 2-axis linear and arc interpolation



## Analog I/O Slim PLC DVP-SX2

### Analog Type with Highly Efficient PID Control

- Program capacity: 16k steps
- Data register: 10k words
- Max. basic instruction execution speed: 0.35μs
- Built-in 4 analog inputs/2 analog outputs
- Supports standard Modbus ASCII/RTU protocol and PLC Link function
- No battery required; RTC operates for at least one week after power off (hardware version 2.0 or above)
- Supports DVP-S Series modules (left-side and right-side modules)
- Motion control functions:
  - 4 points of high-speed pulse output: 100kHz/2 points, 10kHz/2 points
  - 8 points of high-speed pulse input: 100kHz/2 points, 10kHz/6 points
  - Supports 2-axis linear and arc interpolation



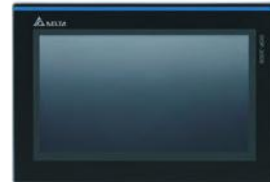
# Human Machine Interface

## DOP-300 New

Made for IIoT - Shaping a New Horizon for Smart Operations

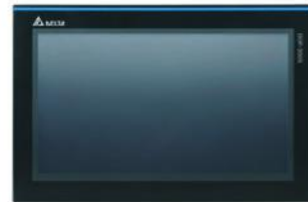
### 7-inch | DOP-3S07S3E2

- 7" 24-bit colors TFT display/resolution: 1024 x 600 pixels
- Cortex-A7 Dual Core 1.2 GHz CPU/512 MB RAM/512 MB ROM
- 3 Serial communication ports
- 2 10/100Base-T(X) ports
- 2 USB hosts for peripheral device connection



### 10.1-inch | DOP-3S10S3E2

- 10" 24-bit colors TFT display/resolution: 1024 x 600 pixels
- Cortex-A7 Dual Core 1.2 GHz CPU/512 MB RAM/512 MB ROM
- 3 Serial communication ports
- 2 10/100Base-T(X) ports
- 2 USB hosts for peripheral device connection





# Human Machine Interface

## DOP-100

Connect Your Work, Step into the Cloud

### Advanced Multimedia Type HMI

#### 12-inch | DOP-112MX

- 12" 24-bit colors TFT/Display resolution: 1,024 × 768 pixels
- Dual core 1GHz CPU/1GB RAM/8GB ROM
- 2 built-in Ethernet ports and supports SD cards
- Serial Communication Port × 4 (D-Sub × 2)
- Supports analog/IP camera multilingual input
- Mini USB client/USB host
- Supports FTP/Email/VNC/Web monitor



#### 15-inch | DOP-115MX

- 15" 24-bit colors TFT/Display resolution: 1,024 × 768 pixels
- Dual core 1GHz CPU/1GB RAM/8GB ROM
- 2 built-in Ethernet ports and supports SD cards
- Serial Communication Port × 4 (D-Sub × 2)
- Supports analog/IP camera multilingual input
- Mini USB client/USB host
- Supports FTP/Email/VNC/Web monitor



### Advanced Type HMI

#### 4.3-inch | DOP-103WQ

- 4.3" 16-bit TFT/Display resolution: 480 × 272 pixels
- Cortex-A8 800 MHz CPU/512MB RAM/256MB ROM
- Built-in Ethernet port × 1
- Serial Communication Port × 2 (D-Sub × 1)
- Multilingual input
- USB host for peripheral device connection
- Supports FTP/Email/VNC/Web monitor



## Advanced Type HMI

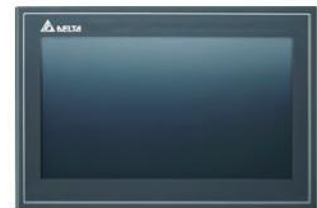
### 7-inch | DOP-107WV

- 7" 16-bit TFT/Display resolution: 800 × 480 pixels
- Cortex-A8 800 MHz CPU/512 MB RAM/256 MB ROM
- Built-in Ethernet port × 1
- Serial Communication Port × 3 (D-Sub × 2)
- Multilingual input
- USB host for peripheral device connection
- Supports FTP/Email/VNC/Web monitor



### 10.1-inch | DOP-110WS

- 10.1" 16-bit TFT/Display resolution: 1,024 × 600 pixels
- Cortex-A8 800 MHz CPU/512 MB RAM/256 MB ROM
- Built-in Ethernet port × 1 and supports SD cards
- Serial Communication Port × 3 (D-Sub × 2)
- Multilingual input
- USB host for peripheral device connection
- Supports FTP/Email/VNC/Web monitor



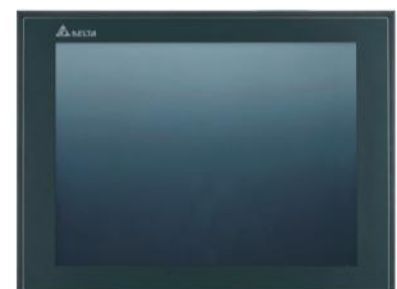
### 12-inch | DOP-112WX

- 12" 24-bit TFT/Display resolution: 1,024 × 768 pixels
- Dual core 1GHz CPU/1GB RAM/8GB ROM
- Built-in Ethernet port × 2 and supports SD cards
- Serial Communication Port × 4 (D-Sub × 2)
- Multilingual input
- Mini USB client/USB host for peripheral device connection
- Supports FTP/Email/VNC/Web monitor



### 15-inch | DOP-115WX

- 15" 24-bit TFT/Display resolution: 1,024 × 768 pixels
- Dual core 1GHz CPU/1GB RAM/8GB ROM
- Built-in Ethernet port × 2 and supports SD cards
- Serial Communication Port × 4 (D-Sub × 2)
- Multilingual input
- Mini USB client/USB host for peripheral device connection
- Supports FTP/Email/VNC/Web monitor





# Human Machine Interface

## Standard Premium Type HMI

### 7-inch | DOP-107PV

- 7" 24-bit TFT/Display resolution: 800 × 480 pixels
- Cortex-A8 800 MHz CPU/256 MB RAM/256 MB ROM
- Built-in Ethernet port × 1
- Serial Communication Port × 3 (D-Sub × 2)
- USB host for peripheral device connection
- Supports FTP/MAIL/VNC/Web Monitor



## Standard Ethernet Type HMI

### 7-inch | DOP-107IV

- 7" 16-bit TFT/Display resolution: 800 × 480 pixels
- Cortex-A8 800 MHz CPU/256 MB RAM/256 MB ROM
- Built-in Ethernet port × 1 and supports SD cards
- Serial Communication Port × 3 (D-Sub × 3)
- USB host for peripheral device connection
- Supports FTP/Email/VNC/Web monitor



### 7-inch | DOP-107EV

- 7" 16-bit TFT/Display resolution: 800 × 480 pixels
- Cortex-A8 800 MHz CPU/256 MB RAM/256 MB ROM
- Built-in Ethernet port × 1
- Serial Communication Port × 3 (D-Sub × 2)
- USB host for peripheral device connection
- Supports FTP/Email/VNC/Web monitor



### 7-inch | DOP-107EG

- 7" 16-bit TFT/Display resolution: 800 × 600 pixels
- Cortex-A8 800 MHz CPU/256 MB RAM/256 MB ROM
- Built-in Ethernet port × 1 and supports SD cards
- Serial Communication Port × 3 (D-Sub × 2)
- USB host for peripheral device connection
- Supports FTP/Email/VNC/Web monitor



## Standard Ethernet Type HMI

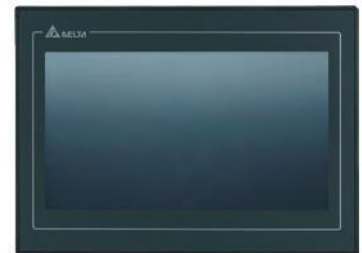
### 8-inch | DOP-108IG

- 8" 16-bit TFT / Display resolution: 800 × 600 pixels
- Cortex-A8 800 MHz CPU / 256 MB RAM / 256 MB ROM
- Built-in Ethernet port × 1 and supports SD cards
- Serial Communication Port × 3 (D-Sub × 3)
- USB host for peripheral device connection
- Supports FTP / Email / VNC / Web monitor



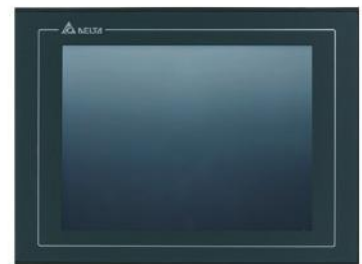
### 10.1-inch | DOP-110IS

- 10.1" 16-bit TFT / Display resolution: 1,024 × 600 pixels
- Cortex-A8 800 MHz CPU / 256 MB RAM / 256 MB ROM
- Built-in Ethernet port × 1 and supports SD cards
- Serial Communication Port × 3 (D-Sub × 3)
- USB host for peripheral device connection
- Supports FTP / Email / VNC / Web monitor



### 10.4-inch | DOP-110IG

- 10.4" 16-bit TFT / Display resolution: 800 × 600 pixels
- Cortex-A8 800 MHz CPU / 256 MB RAM / 256 MB ROM
- Built-in Ethernet port × 1 and supports SD cards
- Serial Communication Port × 3 (D-Sub × 3)
- USB host for peripheral device connection
- Supports FTP / Email / VNC / Web monitor





# Human Machine Interface

## Standard Type HMI

### 5.6-inch | DOP-105CQ

- 5.6" 16-bit TFT/Display resolution: 320 × 234 pixels
- Cortex-A8 800 MHz CPU / 256 MB RAM / 256 MB ROM
- Serial Communication Port × 3 (D-Sub × 2)
- USB host for peripheral device connection



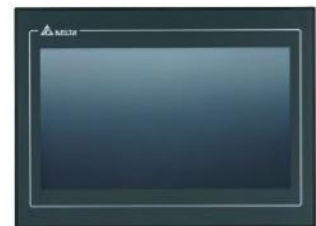
### 7-inch | DOP-107CV

- 7" 16-bit TFT/Display resolution: 800 × 480 pixels
- Cortex-A8 800 MHz CPU / 256 MB RAM / 256 MB ROM
- Serial Communication Port × 3 (D-Sub × 2)
- USB host for peripheral device connection



### 10.1-inch | DOP-110CS

- 10.1" 16-bit TFT/Display resolution: 1,024 × 600 pixels
- Cortex-A8 800 MHz CPU / 256 MB RAM / 256 MB ROM
- Serial Communication Port × 3 (D-Sub × 2)
- USB host for peripheral device connection



### 10.4-inch | DOP-110CG

- 10.4" 16-bit TFT/Display resolution: 800 × 600 pixels
- Cortex-A8 800 MHz CPU / 256 MB RAM / 256 MB ROM
- Serial Communication Port × 3 (D-Sub × 2)
- USB host for peripheral device connection



## Handheld HMI

### 7-inch | DOP-107H

- 7" 16-bit TFT, 16:9
- Display Resolution: 800 × 480 pixels
- Supports SD/SDHC cards
- Built-in emergency stop switch
- Built-in enable switch (rear side)
- Serial communication models support RS-485/RS-422
- Ethernet communication models support Ethernet port × 1
- Optional MPG (Manual Pulse Generator)
- Compact and lightweight design: 750 g
- Integrated style cables available (5 m/10 m)



## Basic Ethernet Type HMI

### 4.3-inch | DOP-103DQ

- 4.3" 16-bit TFT/Display resolution: 480 × 272 pixels
- Cortex-A8 800 MHz CPU/512 MB RAM/256 MB ROM
- Built-in Ethernet port × 1
- Serial Communication Port × 2 (D-Sub × 1)
- USB host for peripheral device connection
- Supports FTP/Email/VNC/Web monitor



### 7-inch | DOP-107DV

- 7" 16-bit TFT/Display resolution: 800 × 480 pixels
- Cortex-A8 800 MHz CPU/256 MB RAM/256 MB ROM
- Built-in Ethernet port × 1
- Serial Communication Port × 2 (D-Sub × 1)
- USB host for peripheral device connection
- Supports FTP/Email/VNC/Web monitor



## Basic Type HMI

### 4.3-inch | DOP-103SQ

- 4.3" 16-bit TFT/Display resolution: 480 × 272 pixels
- Cortex-A8 800 MHz CPU/256 MB RAM/256 MB ROM
- Serial Communication Port × 2 (D-Sub × 1)
- USB host for peripheral device connection



### 4.3-inch | DOP-103BQ

- 4.3" 16-bit TFT/Display resolution: 480 × 272 pixels
- Cortex-A8 800 MHz CPU/256 MB RAM/256 MB ROM
- Serial Communication Port × 2 (D-Sub × 1)
- USB host for peripheral device connection



### 7-inch | DOP-107BV

- 7" 16-bit TFT/Display resolution: 800 × 480 pixels
- Cortex-A8 800 MHz CPU/256 MB RAM/256 MB ROM
- Serial Communication Port × 2 (D-Sub × 1)
- USB host for peripheral device connection





# Touch / Text Panel Human Machine Interface

## TP

### 4-Line Text Panel HMI

#### TP04G-AL-C / TP04G-AL2

- 4.1" STN-LCD
- User-defined function keys available
- RS-232/RS-422/RS-485 ports (TP04G-AL2)
- Password protection function
- User-defined boot screen
- Built-in real-time clock (RTC)

#### TP04G-BL-C

- 4.1" STN-LCD
- 0~9 numeric keys and user-defined function available
- Built-in RS-232 and RS-422/RS-485 ports
- Modbus ASCII/RTU modes
- Password protection function
- User-defined boot screen
- Built-in real-time clock (RTC)

### 8-Line Text Panel HMI

#### TP08G-BT2

- 3.8" STN-LCD
- Resolution: 240 × 128 dots
- Built-in 1,024k bytes flash memory
- 24 user-defined function keys
- Built-in RS-232 and RS-422/RS-485 ports
- Recipes and macro functions

## Applications

High-end electronics manufacturing equipment, Machining, Food packaging



### 7-Inch Touch Panel HMI with Built-in PLC

#### TP70P

- Adopts the CPU of the DVP-SS2 Series PLC: program capacity: 4k steps/D device: 5k words
- Provides 2 sets of 10 kHz high-speed pulse input
- 7" TFT-LCD touch screen
- Built-in USB port for program upload/download
- Built-in RS-485 port × 2
- Modbus ASCII/RTU modes
- Built-in real-time clock (RTC)
- Digital and analog I/O terminals available

### 4-Line Text Panel HMI with Built-in PLC

#### TP04P

- Adopts the CPU of the DVP-SS2 Series PLC: program capacity: 8k steps/D device: 5k words
- Provides 2 sets of 10 kHz high-speed pulse input
- 4.1" STN-LCD
- Provides 0~9 numeric keys with user-defined functions
- Built-in USB port for program upload/download
- Built-in RS-485 port × 2
- Modbus ASCII/RTU modes
- User-defined boot screen
- Built-in real-time clock (RTC)
- Digital and analog I/O terminals

# Industrial PC

## DIAPH / IPC / PPC

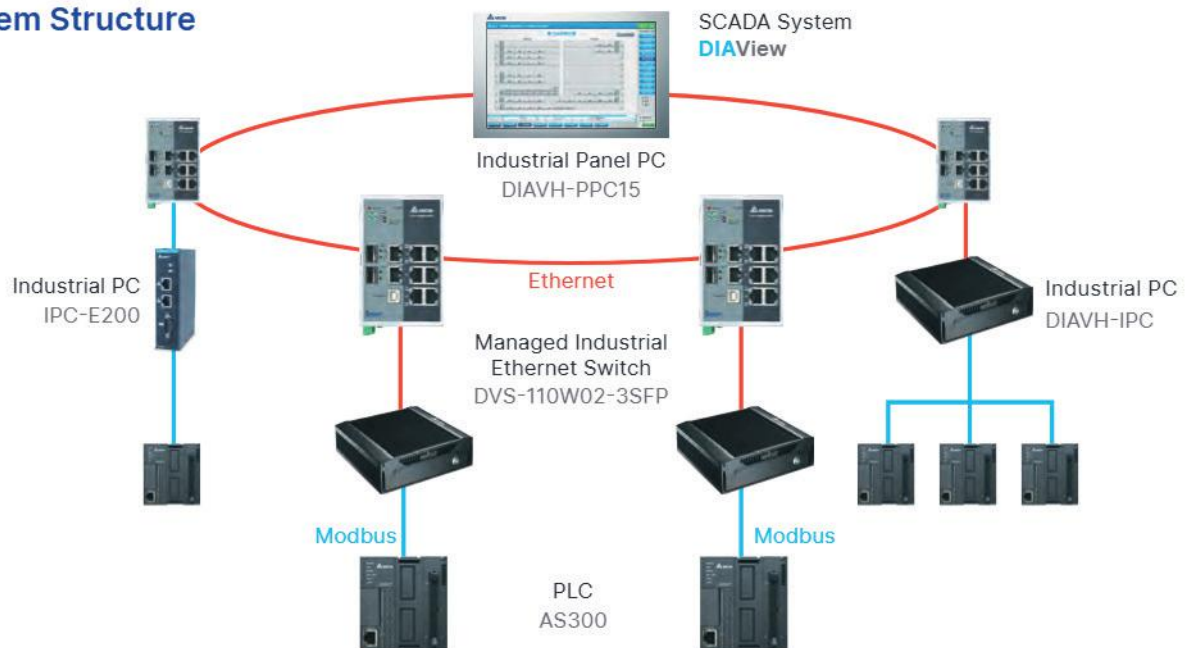
### Stable and High-Performance Integration Platform

- Standard fanless industrial computers for easy DIN-rail mounting
- System expansion with PCI/PCIe slots for machine vision, web monitoring and motion control applications
- Multiple sizes of Panel PC available (10"/12"/15"/17"/19"/21")
- High/Low-temperature resistance and IP65-rated front panel (dustproof & waterproof), suitable for applications in harsh industrial environments
- Intel Core i3/i5/i7 and Celeron J1900 processor with fanless design and low power consumption for high efficiency and excellent performance
- One-click startup (power-on)
- Built-in Windows 10 (Pro/IoT version) with 64/128/256/512G SSD
- Compatible with SCADA and IEMS software platforms



06 Industrial PC

### System Structure



Facility Control & Management System



Equipment Management System



Production Process Control System



Production Quality Management System



### Applications

Equipment for electronics manufacturing, Machinery equipment, HVAC, Water treatment, Facility management and monitoring control



# Industrial Ethernet & IIoT Solution

State-of-the-Art Industrial Networking for Smart Manufacturing

## Layer 3 Managed Switch

### DVS-G928W01

- 28-Port full GbE (10GbE optional), modular design for flexible configuration
- Layer 3 routing functions (RIP & VRRP) allow multiple subnets in a large network to exchange data and information across a network address
- Complete L2 network management functions: Q-in-Q VLAN, QoS, LACP, IGMP and SNMP v1/v2c/v3
- IPv6 address suitable for large network and neighbor discovery
- EtherNet/IP and Modbus TCP protocols that facilitate the remote management by SCADA and other industrial devices
- Adopts high-end proprietary redundancy technologies ONE RING & ONE CHAIN for quick self-recovery within 30 ms from network disconnection
- Enhanced network security with IEEE 802.1X, TACACS+, SSH, HTTPS and SNMP v3
- IEEE 1588v2 PTP (Precision Time Protocol) for precise time synchronization and calibration for network equipment
- Loopback-detection to avoid broadcast storms by automatically shutting down the ports over a switching loop
- Cable diagnostic to auto-detect the twisted-pair cabling quality and report cabling issues regularly
- Auto alarm notifications by emails, relay, Syslog and SNMP trap
- Compatible with various industrial protocols, including EtherNet/IP, PROFINET, CC-LINK IE and DNP 3.0
- 100~240 V<sub>AC</sub> and 125~370 V<sub>DC</sub> wide-range redundant power input
- IP30 metal case, -40°C~85°C operating temperature
- Electrical substation: IEC 61850-3, IEEE 1613
- Rail traffic: EN 50121-4
- Certification: UL 61010, IEC 60950-1, CE, FCC, CCC and RCM



## Modules

### DVS-G900-8GE

8 10/100/1000Base-T RJ45



### DVS-G900-8GF

8 100/1000Base-SFP



### DVS-G900-6GM12

6 10/100/1000Base-T M12



### DVS-G900-4GF

4 100/1000Base-SFP



## Managed Switch DVS-G116

- 12-Port GbE + 4-Port GbE SFP, designed for backbone networks in IIoT applications; full Gigabit Ethernet configuration
- Complete L2 network management functions: Q-in-Q VLAN, QoS, LACP, IGMP and SNMP v1/v2c/v3
- IPv6 address for large network and neighbor discovery
- Modbus TCP and EtherNet/IP protocols that facilitate remote management by SCADA and other industrial devices
- Optimizes network redundancy by adopting high-end proprietary redundancy technologies ONE RING & ONE CHAIN for quick self-recovery within 10 ms from network disconnection
- Enhanced network security with IEEE 802.1X, TACACS+, SSH, HTTPS and SNMP v3
- Loopback-detection to avoid broadcast storms by automatically shutting down the ports over a switching loop
- DDM diagnosis function by SFP fiber module
- Auto alarm notifications by emails, DI, relay, syslog and SNMP trap
- Compatible with various industrial protocols, including EtherNet/IP, PROFINET, CC-LINK IE and DNP 3.0
- IP40 metal case, -40°C ~ 75°C wide operating temperature
- Certification: UL 61010, IEC 62368-1, CE, FCC and RCM



## DVS-G112

- 8-Port GbE + 4-Port GbE SFP, designed for backbone networks in IIoT applications; full Gigabit Ethernet configuration
- Complete L2 network management functions: Q-in-Q VLAN, QoS, LACP, IGMP & SNMP v1/v2c/v3
- IPv6 address for large network and neighbor discovery
- Modbus TCP and EtherNet/IP protocols that facilitate remote management by SCADA and other industrial devices
- Optimizes network redundancy by adopting high-end proprietary redundancy technologies ONE RING & ONE CHAIN for quick self-recovery within 10 ms from network disconnection
- Enhanced network security with IEEE 802.1X, TACACS+, SSH, HTTPS and SNMP v3
- Loopback-detection to avoid broadcast storms by automatically shutting down the ports over a switching loop
- DDM diagnosis function by SFP fiber module
- Auto alarm notifications by emails, DI, relay, syslog and SNMP trap
- Compatible with various industrial protocols, including EtherNet/IP, PROFINET, CC-LINK IE and DNP 3.0
- IP40 metal case, -40°C ~ 75°C wide operating temperature
- Certification: UL 61010, IEC 62368-1, CE, FCC and RCM





# Industrial Ethernet & IIoT Solution

## DVS-G106

- 4-Port GbE + 2-Port GbE SFP, designed for backbone networks in IIoT applications; full Gigabit Ethernet configuration
- Complete L2 network management functions: Q-in-Q VLAN, QoS, LACP, IGMP and SNMP v1/v2c/v3
- IPv6 address for large network and neighbor discovery
- Modbus TCP and EtherNet/IP protocols that facilitate remote management by SCADA and other industrial devices
- Optimizes network redundancy by adopting high-end proprietary redundancy technologies ONE RING & ONE CHAIN for quick self-recovery within 10 ms from network disconnection
- Enhanced network security with IEEE 802.1X, TACACS+, SSH, HTTPS and SNMP v3
- Loopback-detection to avoid broadcast storms by automatically shutting down the ports over a switching loop
- DDM diagnosis by SFP fiber module
- Auto alarm notifications by emails, DI, relay, syslog and SNMP trap
- Compatible with various industrial protocols, including EtherNet/IP, PROFINET, CC-LINK IE and DNP 3.0
- IP40 metal case, -40°C ~ 75°C wide operating temperature
- Certification: UL 61010, IEC 62368-1, CE, FCC and RCM



## DVS-103

- 3-Port 10/100Base-T(X) Ethernet switch for EtherNet/IP DLR specifically
- Supports EtherNet/IP protocol
- DLR (device-level ring) technology, self-healing recovery time < 3 ms (less than 50 nodes)
- Design with DI and DO for auto alarms
- IP40 metal case, -20°C ~ 70°C operating temperature
- Certification: UL 61010, IEC 62368-1, CE, FCC and RCM



## PoE+ Managed Switch

### DVS-G512

- 8-Port GbE + 4-Port 100/1000Base-SFP, full Gigabit
- 8 10/100/1000Base-T PoE (PSE) ports, each provides 30W power supply to meet IEEE 802.3at and IEEE 802.3af standards
- Complete L2 network management functions: VLAN, QoS, LACP, IGMP and SNMP v1/v2c/v3
- IPv6 address for large network and neighbor discovery
- Advanced PoE management and intelligent powered device (PD) class detection
- IEC 62439-2 MRP media redundancy protocol; IEEE 1588v2 PTP precision time protocol
- DDM diagnosis function by SFP fiber module
- Auto alarm notifications by emails, relay, syslog and SNMP trap
- IP30 metal case, -40°C ~ 70°C operating temperature
- Certification: CE, FCC and RCM



## Unmanaged Switch

### DVS-G008W01

- 8-Port GbE
- Transparent transmission of VLAN tagged packets
- Auto alarm notifications by relay output for power failure
- Power supply: 12 ~ 48 V<sub>DC</sub> or 10 ~ 24 V<sub>AC</sub>, supports redundant dual inputs
- IP30 metal case, -40°C ~ 75°C operating temperature
- Certification: UL 61010, EN 62368-1, CE, FCC and RCM



### DVS-005 / 008 / 016

- 5/8/16-Port FE; supports long-distance transmission via fiber optics
- IEEE 802.1p based QoS for packet forwarding precedence
- Built-in broadcast storm protection
- Transparent transmission of VLAN tagged packets
- Auto alarm notification by relay output for link-down and power failure
- Power supply: 12 ~ 48 V<sub>DC</sub>, supports redundant dual inputs
- IP40 metal case, -40°C ~ 75°C operating temperature
- Certification: UL 508, IEC 61131-2, CE, FCC and RCM



### DVS-G005I00C

- 5-Port GbE
- Jumbo frame size: up to 10k Bytes
- Power supply: 12 ~ 48 V<sub>DC</sub>, supports redundant dual inputs
- IP40 PC case, -20°C ~ 70°C operating temperature
- Certification: UL 61010, IEC 62368-1, CE, FCC and RCM



### DVS-008W00-M12

- 8-Port 10/100Base-T(X) M12, ensures robust and tight connection
- Strong 5g resistance to extreme vibration environments
- IP67 metal housing to prevent water and dust ingress
- Transparent transmission of VLAN tagged packets
- Power supply: 12 ~ 48 V<sub>DC</sub>, supports redundant dual inputs
- -40°C ~ 75°C wide operating temperature
- Certification: UL 61010, EN 62368-1, CE, FCC and RCM





# Industrial Ethernet & IIoT Solution

## PoE+ Unmanaged Switch

### DVS-G406W01-2GF

- 4-Port GbE + 2-Port 100/1000Base-SFP, full Gigabit
- 4 10/100/1000Base-T PoE (PSE) ports, each provides 30W power supply to meet IEEE 802.3at and IEEE 802.3af standards
- Jumbo frame size: up to 9,216 Bytes
- Auto alarm notifications by relay output for power failure
- IP30 metal case, -40°C ~ 70°C operating temperature
- Certification: CE, FCC and RCM



## PoE+ Splitter

### DVS-G401

- 1-Port GbE for PoE+ data/power input and 1-Port GbE for data output
- All ports compliant with IEEE 802.3at and IEEE 802.3af standards, each provides 30W power supply
- Intelligent PoE input overvoltage protection
- Power output up to 27W
- IP30 metal case, -20°C ~ 70°C operating temperature
- Certification: CE, FCC and RCM



## PoE+ Injector

### DVS-G402

- 2-Port GbE for PoE+ data/power output and 2-Port GbE for data input
- All ports compliant with IEEE 802.3at and IEEE 802.3af standards, each provides 30W power supply
- Intelligent PoE output overvoltage protection
- Built-in 12V<sub>DC</sub> power booster for flexible PoE deployment
- IP30 metal case, -20°C ~ 70°C operating temperature
- Certification: CE, FCC and RCM



## Ethernet-to-Fiber Media Converter

### DVS-G002I00-TF

- 1-Port 100/1000Base-T to 100/1000Base-SFP
- Jumbo frame size: up to 10k Bytes
- Supports Link Fault Pass-Through (LFP)
- Power supply: 12~48 V<sub>DC</sub>, supports redundant dual inputs
- IP40 PC case, -20°C~70°C operating temperature
- Certification: UL 61010, IEC 62368-1, CE, FCC and RCM



## SFP Fiber Transceiver

### LCP-GbE

- 1-Port GbE, compliant with IEEE 802.3z
- Full duplex operation
- DDM diagnosis monitors transmission quality
- Hot-plugging duplex LC connectors for maximum flexibility
- Metal case, -40°C~85°C operating temperature



### LCP-1FE

- 1-Port FE, compliant with IEEE 802.3u
- Full duplex operation
- DDM diagnosis monitors transmission quality
- Hot-plugging duplex LC connectors for maximum flexibility
- Metal case, -40°C~85°C operating temperature



## High-Gain Antenna

### DVW-ANT

- Supports IEEE 802.11 b/g/n or IEEE 802.11 a/b/g/n
- 2.4 & 5 GHz dual-band omni-directional 5.5 & 8dBi, or 2.4 GHz omni-directional 7 dBi
- Powerful magnetic base with 3-meter extension cord and RP-SMA (male) connector
- IP65 waterproof and UV resistant design, suitable for applications under all kinds of weather conditions
- -30°C~60°C operating temperature





# Industrial Ethernet & IIoT Solution

## Industrial Ethernet DIACloud Router New

### DX-2310LN

- 1-Port 10/100Base-T(X) WAN + 4-Port 10/100Base-T(X) LAN + 2-Port RS-232 & RS-485
- Data acquisition device connected to cloud servers, supports a two-way data collection channel between the device and the cloud
- Sets up a secure tunnel between the user and the remote device via the cloud server, without additional VPN servers
- Supports Modbus TCP, Modbus RTU/ASCII protocol, Mitsubishi MC, Omron FINS, and Siemens TCP protocol
- Supports standard MQTT protocol, allowing for seamless integration with AWS IoT
- IP30 metal case, -20°C ~ 75°C operating temperature



## Industrial 4G/WAN DIACloud Router New

### DX-2400L9

- 1-Port 10/100Base-T(X) WAN + 4-Port 10/100Base-T(X) LAN + 2-Port RS-232 & RS-485
- Data acquisition device connected to cloud servers, supports a two-way data collection channel between the device and the cloud
- Sets up a secure tunnel between the user and the remote via **DIACloud** cloud servers, without additional VPN servers
- Supports Modbus ASCII/RTU, Mitsubishi MC, Siemens ISO-on-TCP, and Omron FINS protocols
- Supports standard MQTT protocol, allowing for seamless integration with AWS IoT
- IP30 metal case, -40°C ~ 85°C operating temperature



## Industrial 4G/WAN Cloud Router

### DX-3021L9

- 4-Port FE LAN + 1-Port FE WAN + 1-Port RS-232 + 1-Port RS-485
- Universal 4G LTE-FDD and LTE-TDD frequency bands, compatible with WCDMA/GSM/GPRS/EDGE 3G/2G networks
- Supports **DIACloud** Cloud Management Platform, no ISP public IP address required
- Supports Modbus TCP, Modbus ASCII/RTU, Mitsubishi MC and Siemens TCP protocols
- Dual SIM dual standby technology, seamless switch among ISP systems for continuous network connection
- Built-in DI/DO for alarm settings and triggering
- Firmware upgrade and automatic configuration via USB flash drives; allows remote access to the USB flash drives via FTP
- USB port compatible with 3<sup>rd</sup> party Wi-Fi USB adapter to add WLAN interface as Wi-Fi client (only Realtek RTL8192EU driver supported)
- Internet connection via cellular network or broadband interfaces; allows self-defined internet connectivity priority
- Firewalls: SPI, DoS attacks, IP/MAC filter
- IP30 metal case, -20°C ~ 70°C operating temperature
- Certification: NCC, CE, FCC and UL



## IEEE 802.11 WLAN

### DVW-W01I2-E1

- Comprehensive transmission interface: 1-Port GbE + 1-Port RS-232 + 1-Port RS-485
- Compliant with IEEE 802.11ac wireless technology for up to 866 Mbps data transmission rate
- Proprietary ONE ROAMING high-end fast roaming technology with seamless switch (< 150ms) among APs
- Multiple wireless modes: AP, Client, repeater
- Supports serial device servers and Modbus gateways
- Wireless QoS (IEEE 802.11e, WMM) for video packet transmission precedence
- Enhanced wireless security: WPA-PSK/WPA2-PSK (TKIP/AES)
- Modbus TCP protocol that facilitates remote management by SCADA and other industrial devices
- Auto alarm notification by emails, DI and relay
- IP40 metal case, -10°C ~ 60°C operating temperature
- Certification: UL 61010, IEC 62368-1, CE, FCC, RCM, SRRC and NCC





# Communication Module

High-Speed and Stable Industrial Network Solutions

## Communication Module

### PROFINET | DVPPN02-SL New

- PROFINET Device
- 2\*RJ-45 Ethernet ports, 100 Mbps
- I/O data length: 512 Byte
- Comm. mode: RT
- Min. comm. cycle: 1ms
- Supported topology: line, star, tree
- Distance: <50 meters between 2 modules



### PROFINET | RTU-PN12 New

- PROFINET Device
- 2\*RJ-45 Ethernet ports, 100 Mbps
- Built-in 8DI+8DO, 4-axis 200 kHz high speed input/output
- I/O data length: 512 Byte
- Comm. mode: RT
- Min. comm. cycle: 1ms
- Supported topology: line, star, tree
- Distance: <50 meters between 2 modules



### Ethernet | DVPEN02-SL New

- Modbus TCP connections  
Client: 32 | Server: 32
- 2\*Ethernet ports
- Supports EtherNet/IP Adapter
- Supports DVPEN01-SL functions



### Ethernet | DVPEN01-SL

- Modbus TCP connections:  
Client: 32 | Server: 16
- Smart data exchange
- RTU mapping
- Simple firewall
- Email alarm



### Ethernet | RTU-EN01

- Modbus TCP slave protocol
- Able to connect 8 DVP-S Series analog I/O modules
- Able to connect digital I/O modules (256 points)
- RS-485 port supports max. 32 Modbus slaves
- Smart PLC if-then function
- Smart monitor function



### EtherCAT | RTU-ECAT

- EtherCAT protocol
- Able to connect 8 DVP-S series analog I/O modules
- Able to connect DVP-S series digital I/O modules (256 points)



### CANopen | DVPCOPM-SL

- CANopen protocol
- Able to connect max. 110 slaves
- Various PDO and high-speed SDO transmission
- Supports NMT slave, Heartbeat, Emergency, and more protocols



### CANopen | RTU-CN01

- CANopen protocol
- Able to connect 8 DVP-S series analog I/O modules
- Able to connect DVP-S series digital I/O modules (256 points)



## Master Module

### DeviceNet | DVPDNET-SL

- For DVP-EH3-L, DVP-MC, DVP-SA2, SE, SV2, SX2 Series only
- Supports DeviceNet protocol
- Connectable to 63 slaves
- Max. baud rate: 500k bps
- Max. network length: 500m
- RTU mapping



### RS-485 | RTU-485

- Modbus protocol
- Able to connect 8 DVP-S Series analog I/O modules
- Able to connect digital I/O modules (256 points)
- Max. baud rate: 115.2 Kbps



### RS-485 | DVPSCM12-SL

- Standard Modbus communication and user-defined RS-485 communication protocols
- 2 sets of independent RS-485 communication interfaces
- Isolated power and communication provide strong noise immunity; built-in 120Ω terminal resistor switch and removable terminal
- Data transmission settings via software, no programming required
- Applicable for PLC communication ports for program uploading/downloading and monitoring



### BACnet MS/TP | DVPSCM52-SL

- BACnet MS/TP slave, standard Modbus and user-defined RS-422/485 communication protocols
- Compatible with major brand software and DDC; remote I/O and converter function available when connected to a PLC with I/O point extension
- Isolated power and communication provide strong noise immunity
- Compatible with high-speed communication modules on the left (PLC needed)





# Communication Module

## USB Converter

### USB » CAN | IFD6530

- A USB/RS-485 communication converter for AC motor drive C2000 series
- Supports AC motor drive VFD series keypad (KPC-CC01) for parameter storage and editing in TPEditor software
- Offers 9V power supply
- Supports baud rate 75~115,200 bps



### USB » RS-485 | IFD6500

- A USB/RS-485 communication converter
- Supports baud rate 75~115,200 bps
- No external power supply required
- Auto-detects data flow direction
- Plug and play USB device



### USB » CAN | IFD6503

- Extracts CAN messages (standard and extended frames), decodes and displays following DeviceNet and CANopen protocols
- Filters by preset conditions
- CAN messages (1 sent manually, and max. 8 sent automatically)
- Max. 1Mbps
- Plug and play USB device



## Modbus Serial Converter

### RS-422 / 485 | IFD8510-A

- Automatically configures communication format and transmission
- Switch-less and fully-isolated design
- Communication baud rate: up to 115,200bps



### RS-232 «» RS-422 / 485 | IFD8500-A

- RS-232 to RS-422 / 485 isolated converter
- Auto transmission speed adjustment



## Modbus Serial Converter

### EtherNet/IP, Modbus TCP » Modbus | IFD9506

- Isolation in RS-485 channel (incl. power supply)
- Ethernet/IP and Modbus TCP protocols
- Smart monitor function
- Supports webpage setup and on-line monitoring
- Serial virtual COM available
- Alarm notifications through email



# Smart Sensor

## Laser Displacement LD-E

- 25~700 mm detection range
- Supports Digital I/O/Analog 4~20 mA/Modbus RS-485 communication
- 5~800  $\mu$ m repeatability
- Panel buttons enable quick parameter setting and support seven-segment display
- IP67 protection, suitable for various environments
- Compact size (25 × 44 × 24 mm) for easy installation



08 Sensor & Field Device

## Area Sensor AS-B General Model

### Area Protection (Standard Type)

- Detects finger-sized, hand-sized, and arm-sized objects
- Detection height: 160 mm~1,920 mm
- Lighting angle < 5°, reduces external stray light impact
- Simultaneously conducts light beam scanning, voltage and channel diagnosis in each scanning cycle
- Transmitter and receiver alignment indicators
- Ball-impact tested to avoid damage to the cover



### Object Measurement (Communication Type)

- Full Functionalities: includes AS-B Standard Type features and supports RS-485 connection
- Proactive Protection: supports interlock and restart functions
- Supports fixed/floating blanking setting for presence check
- Proactively uploads channel status or combination data to the control system for immediate reaction



## AS-E Compact Model

### Area Protection (Standard Type)

- Ø30 mm (hand-sized) detection capability
- Detection height: 140 mm~540 mm
- Lighting angle < 5°
- Simultaneously conducts light beam scanning, voltage and channel diagnosis in each scanning cycle
- PIN supports both NPN or PNP output



### Object Measurement (Communication Type)

- Ultra Slim: 15 × 17 mm; detection height: 560 mm
- Full Functionalities: includes AS-E Standard Type features and supports RS-485 connection
- Active upload function can be controlled via input PIN
- Proactively uploads channel status, combination data or channel energy value to the control system for immediate reaction
- Low Energy Alert indicates smudge, misalignment, or replacement needed





# Temperature Controller

## Hotbar Pulse Heat Reflow Power Supply DTH New

### High-Speed, High-Precision Temperature Control

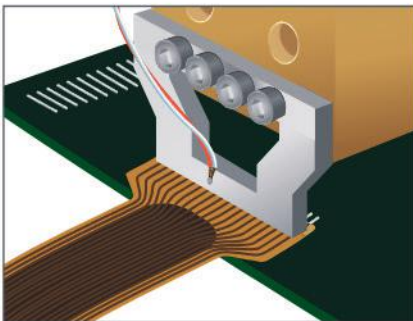
The DTH series is equipped with fast and stable temperature measurement capabilities and provides precise temperature control through PID control and DC pulse output. Supports efficient computing and data analysis with built-in algorithms and large storage capacity. It is an excellent tool for pulse heat pressing and ensures high processing speed, stable yield, and lower consumption of soldering materials.

- DC pulse output ensures stable temperature control
- 500 Hz high-speed sampling for precise temperature control
- PID auto-tuning complete in 10 seconds
- User-friendly interface
- Detailed records for easy tracking
- Supports remote monitoring to realize smart manufacturing

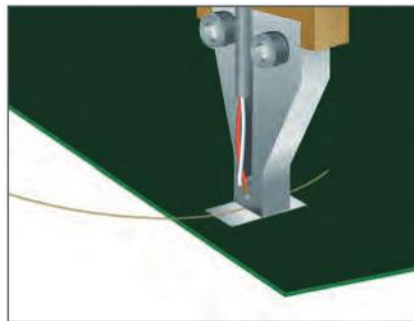


### Applications

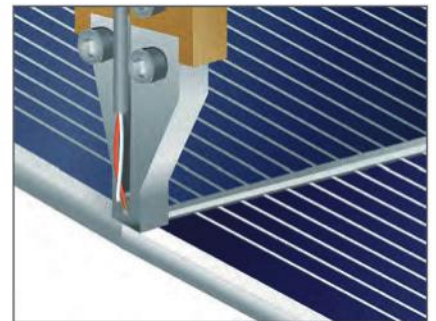
Flexible flat cable (FFC) bonding, PCB wire bonding, Conducting wire bonding, Plastic heat pressing, Solar panels conducting wire bonding, Type C/USB cable bonding



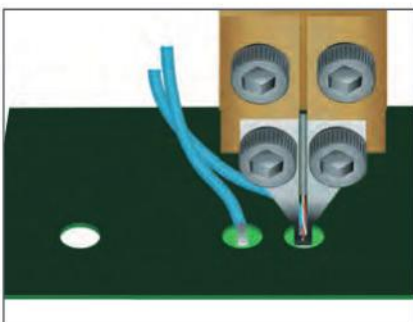
Flexible flat cable (FFC) bonding



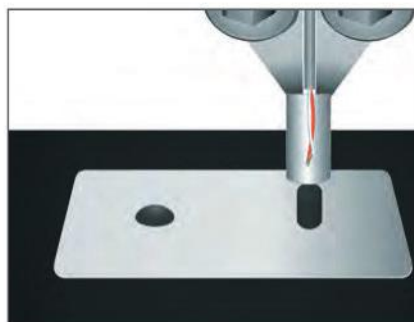
PCB wire bonding



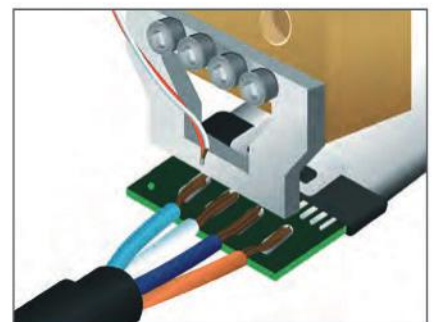
Solar panels conducting wire bonding



Conducting wire bonding



Plastic heat pressing



Type C/USB cable bonding

# High-Precision Modular Temperature Controller DTDM

New

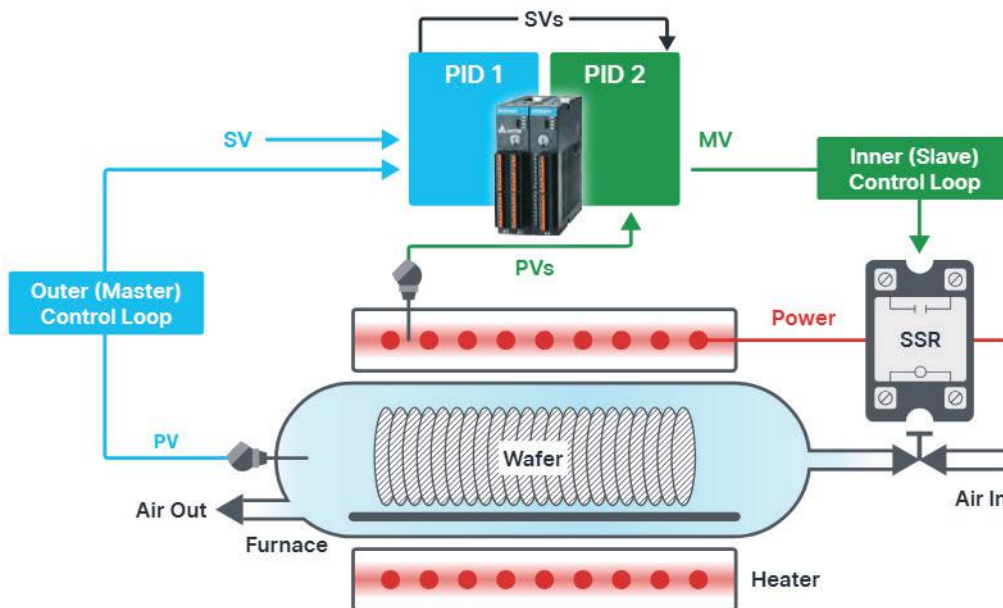
## Thin-Type Design and Multi-Point Temperature Control

- $\pm 0.1\%$  measurement accuracy
- 10 ms fast sampling period
- Up to 32 PID control loops and 128 I/O channels
- RS-485 and EtherCAT compliance
- Advanced control algorithms
- Suitable for semiconductor industry



## PID Cascade Control

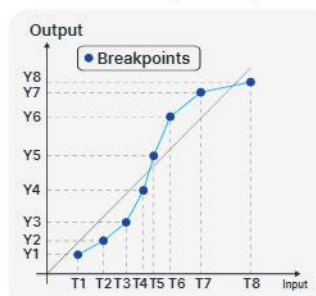
Dual loop PID control shortens response time and increases temperature control precision



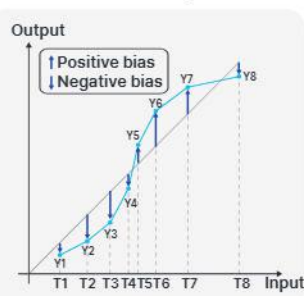
## Linearization Table

Eliminate temperature differences by nonlinearity errors or between measuring points distance

### Linearization by Breakpoints

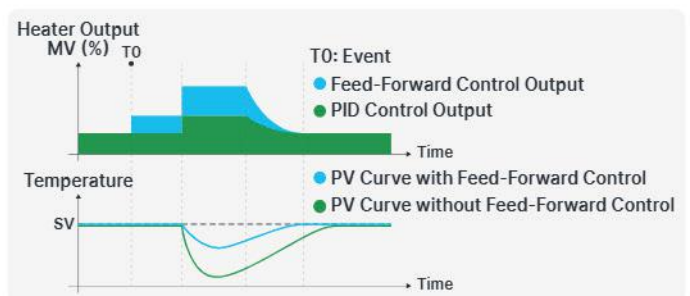


### Linearization by Biases



## Feedforward Control

Temperature compensation for known and anticipated disturbances





# Temperature Controller

## Economical Multi-Loop Modular Temperature Controller DTN

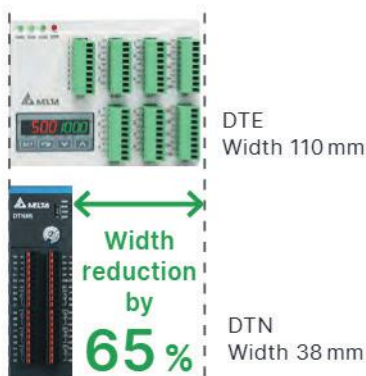
### Thin-Type Design and Multi-Point Temperature Control

- Thin-type design saves horizontal mounting space
- Supports Ethernet/EtherCAT communication for stable and real-time multi-loop parameter control
- Modular design allows easy replacement and extension up to 64 PID control loops for flexible applications



### Thin-Type Design Saves Horizontal Mounting Space

- Reduces width by 65 % compared to the DTE Series
- Saves horizontal mounting space and overcomes cabinet size limitation



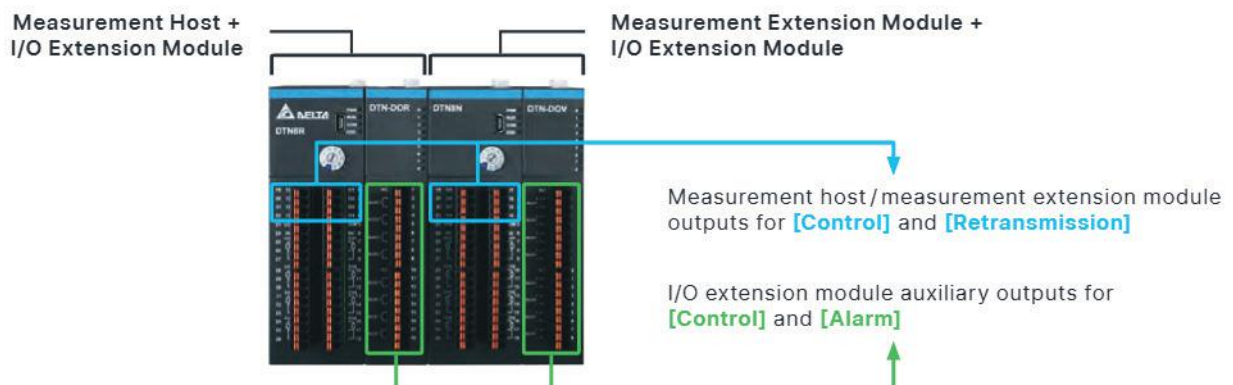
### Fast Module Connection via RS-485 Communication

- Max. Baud rate: 115,200 bps
- Supports Modbus RTU / ASCII
- Offers external switches for communication protocol and address set up, easy to install and maintain



### Various Extension Modules for Flexible Applications

- The DTN Series consists of measurement hosts, measurement extension modules, output extension modules, an Ethernet module and an EtherCAT module
- One measurement module provides an up to 8-point control loop, and a host group controls up to 64 points
- The second output and alarm point can be easily set as any address in the I/O extension module for convenient on-site wiring and various applications



### Applications

Rubber and plastics, Semiconductor, Solar energy, Glass manufacturing, and more

# Multi-Loop Modular Temperature Controller DTM

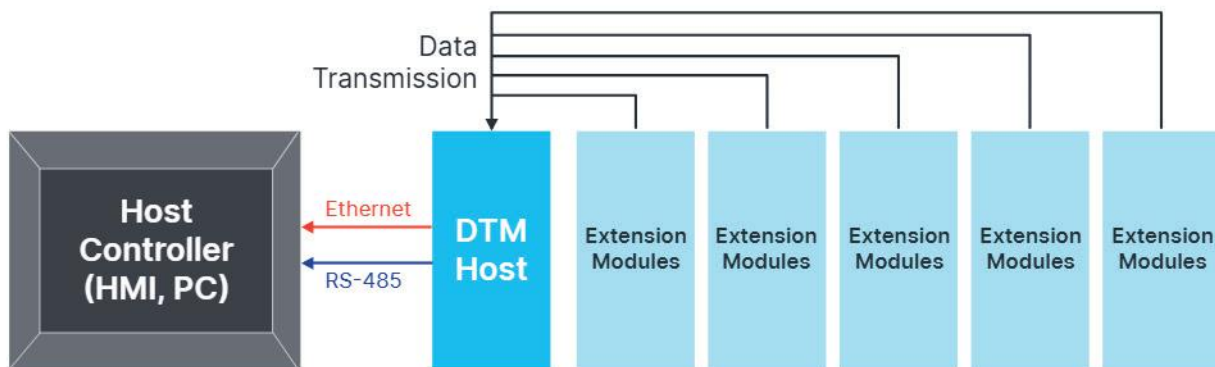
## Quick Start and a User-Friendly Interface

- Modular design for easy wiring
- Various extension modules for various applications
- Data collection by CPU for higher data exchange efficiency
- Supports RS-485 and Ethernet communication, and multi-point temperature control (max. 64-CH control loops for a DTM group)
- User-defined communication addresses
- Complete isolation between channels



## Data Collection by Host

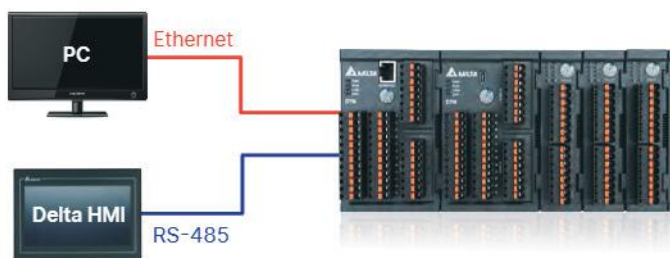
- The DTM host collects data from all extension modules at any time and uploads to the master controller immediately for higher communication efficiency



The host sends all data from the DTM group to the host controller.

## RS-485 and Ethernet introduction

- Ethernet: supports Ethernet/IP communication
- RS-485
  - Max. Baud rate 115,200 bps
  - Supports ASCII and RTU
  - Offers external switches communication protocols, address setup, and easy installation and maintenance



## Applications

Rubber and plastics, Semiconductor, Solar energy, Glass manufacturing, and more



# Temperature Controller

## Multi-Channel Modular Temperature Controller

### DTE

- Power input:  $24 V_{DC} \pm 10\%$
- Thermocouple: K, J, T, E, N, R, S, B, L, U, TXK (supports max. 8 sets of inputs)
- Platinum resistance: Pt100, JPt100 (supports max. 6 sets of inputs)
- RTD: Cu50, Ni120
- Output: Relay, current  $4 \sim 20 \text{ mA}$ , pulse voltage, analog voltage  $0 \sim 10 \text{ V}$
- Control mode: ON/OFF, PID, manual, PID process control
- Built-in Modbus communication
- 2 sets of alarm outputs, 13 alarm modes



## Modular Temperature Controller

### DTC

- Power input:  $24 V_{DC} \pm 10\%$
- Thermocouple: K, J, T, E, N, R, S, B, L, U, TXK
- Platinum resistance: Pt100, JPt100
- Analog input:  $0 \sim 5 \text{ V}$ ,  $0 \sim 10 \text{ V}$ ,  $0 \sim 20 \text{ mA}$ ,  $4 \sim 20 \text{ mA}$ ,  $0 \sim 50 \text{ mA}$
- Output: Relay, current  $4 \sim 20 \text{ mA}$ , pulse voltage, analog voltage  $0 \sim 10 \text{ V}$
- Control mode: ON/OFF, PID, manual, PID process control
- Built-in Modbus communication
- 2 sets of alarm outputs, 13 alarm modes



# Advanced Intelligent Temperature Controller DT3

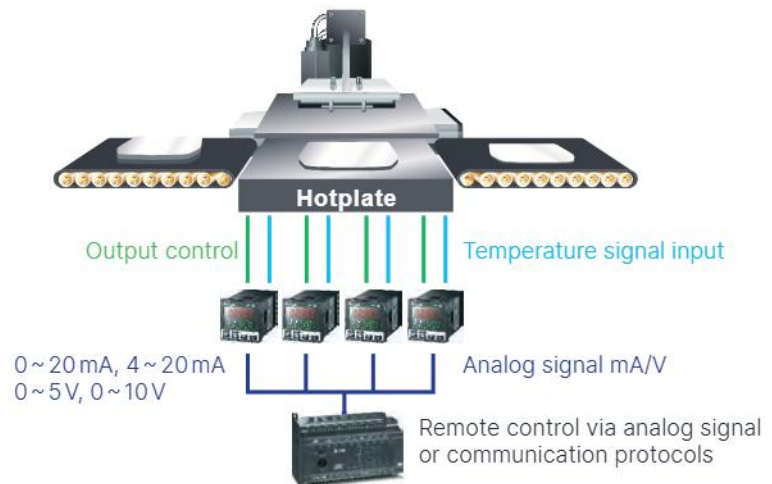
## High Speed, High Precision, High Performance - Multifunction Temperature Controller

- Power supply: 80~260 V<sub>AC</sub> 50/60Hz, 24 V<sub>AC</sub> ± 10% 50/60Hz, 24 V<sub>DC</sub> ± 10%
- Thermocouple: K, J, T, E, N, R, S, B, L, U, TXK
- Platinum resistance sensor: Pt100, JPt100
- Resistance temperature detector: Cu50, Ni120
- Sensor input sampling rate: 0.1 second
- Control output: relay, 4~20 mA current, voltage pulse, 0~10 V voltage
- Control mode: ON/OFF, PID, PID program, manual, self-tuning, fuzzy control
- Modbus communication: optional
- Dual control output for heating and cooling control
- Heater burnout alarm
- PID program control provides 16 patterns with 16 steps each
- IP66 ingress protection rating on front panel and CE, UL certification



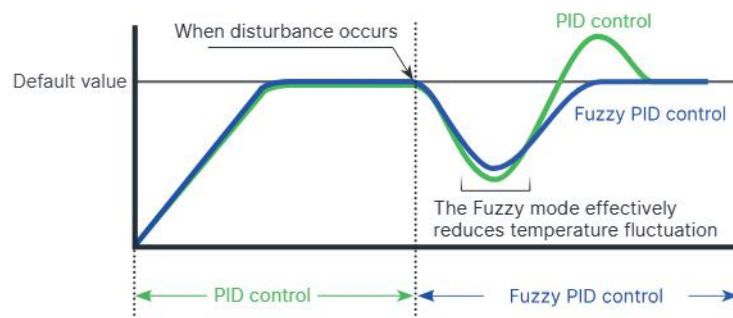
### Remote Control

- Temperature settings via analog output of host controller



### Various Control Modes

- Auto-tuning
- Fuzzy
- Manual
- ON/OFF
- PID process control
- Self-tuning



### Applications

Solar panel manufacturing, Food & beverages packaging, Pharmaceuticals, Semiconductor, Rubber and plastics, High-tech electronics industries, HVAC



# Pressure Sensor

## Intelligent Temperature Controller DTK

- Power input: 100 ~ 240V<sub>AC</sub>, 50/60Hz
- Thermocouple: K, J, T, E, N, R, S, B, L, U, TXK
- Platinum resistance: Pt100, JPt100
- RTD: Cu50, Ni120
- Output: Relay, current 4 ~ 20mA, pulse voltage
- Control mode: ON/OFF, PID, manual
- Modbus communication<sup>(optional)</sup>
- 1 set of alarm output (2 sets of alarm outputs are optional), 9 alarm modes
- IP66 ingress protection rating on front panel
- Panel size options: 48×48, 48×96, 72×72, 96×96 (mm)



## Advanced Temperature Controller DTB

- Power input: 100 ~ 240V<sub>AC</sub>, 50/60Hz, 24V<sub>DC</sub> ± 10%
- Thermocouple: K, J, T, E, N, R, S, B, L, U, TXK
- Platinum resistance: Pt100, JPt100
- Analog input: 0 ~ 5V, 0 ~ 10V, 0 ~ 20mA, 4 ~ 20mA, 0 ~ 50mA
- Output: Relay, current 4 ~ 20mA, pulse voltage, analog voltage 0 ~ 10V
- Control mode: ON/OFF, PID, manual, PID process control
- Built-in Modbus communication
- 2 sets of alarm outputs, 18 alarm modes
- Dimensions: 48×24, 48×48, 48×96, 96×96 (mm)
- IP65 protection



## Valve Controller DTV

- Power input: 100 ~ 240V<sub>AC</sub>, 50/60Hz, 24V<sub>DC</sub> ± 10%
- Thermocouple: K, J, T, E, N, R, S, B, L, U, TXK
- Platinum resistance: Pt100, JPt100
- Analog input: 0 ~ 5V, 0 ~ 10V, 0 ~ 20mA, 4 ~ 20mA, 0 ~ 50mA
- Output: Relay
- Control mode: ON/OFF, PID, manual, PID process control
- Built-in Modbus communication
- 2 sets of alarm outputs, 17 alarm modes
- Dimensions: 48×96, 96×96 (mm)
- IP65 protection



## Standard Multifunction Pressure Sensor DPA

### High-Precision Pressure Sensor with Comprehensive Functions

- Measurement range:  
DPA01: -100 kPa ~ 100 kPa  
DPA10: -100 kPa ~ 1,000 kPa
- Tri-color display
- Simple code display
- Various unit conversions
- Various output modes
- RS-485 communication and analog output
- 10 sets of outputs for response time setup
- Safety control function
- Energy-saving mode



## Basic Multifunction Pressure Sensor DPB

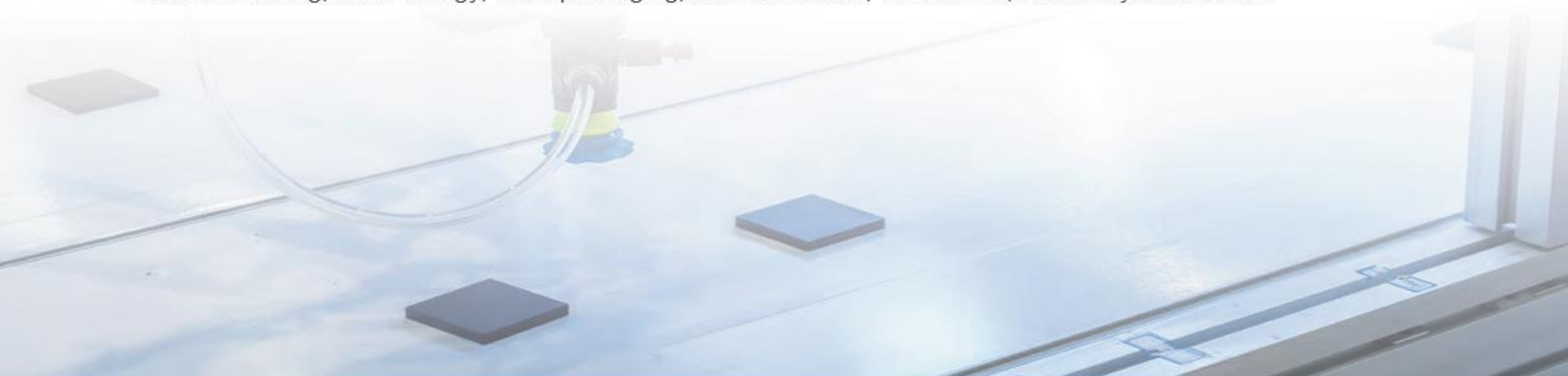
### Miniature Pressure Sensor for Easy Integration and Cost Savings

- Measurement range:  
DPB01: -100 kPa ~ 100 kPa  
DPB10: -100 kPa ~ 1,000 kPa
- Various unit conversions
- 10 sets of outputs for response time setup
- Various output modes
- Tri-color display
- Fast zeroing / reset
- Safety control function
- Simple code display



### Applications

Machine making, Solar energy, Food packaging, Semiconductor, Electronics, Assembly automation





# Timer / Counter / Tachometer

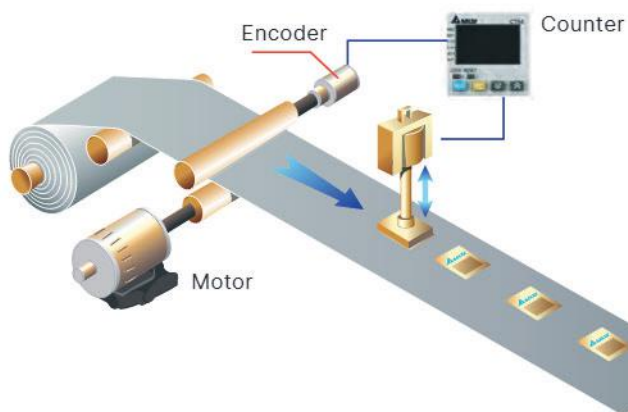
## Timer / Counter / Tachometer CTA

### All-in-One Device

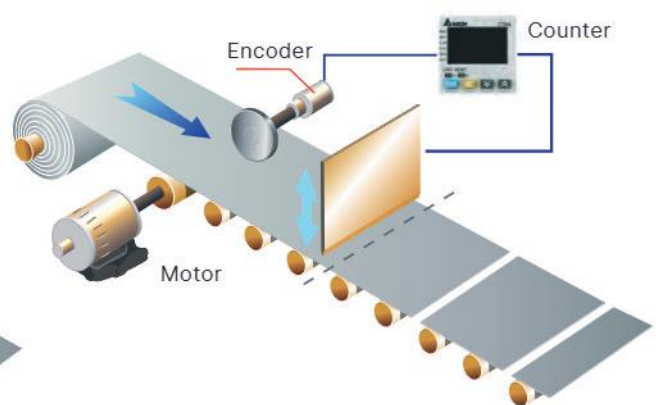
- Power input: 100 ~ 240 V<sub>AC</sub>, 50/60 Hz, 24 V<sub>DC</sub> ± 10%
- Simultaneous counting and timing in the mixed mode
- 6-digit LCD display
- Max. counting speed: 10 Kpps
- NPN or PNP input
- Pre-scale function
- Counting modes: 1-stage, 2-stage, batch, total, dual
- Modbus communication<sup>(optional)</sup>



### Labeling Machine



### Fixed Length Cutting Machine



## Applications

Food packaging machines, Labeling machines, Fixed length cutting machines, Logistics, Electronics



# Smart Power Meter

## DPM

### Highly Accurate, Reliable Power Monitoring Solution

The DPM Series precisely measures parameters of electrical energy and power quality including power factors, harmonics, and current / voltage unbalance. This series also features a variety of communication protocols for easy integration with critical power systems and monitoring functions to provide power data, off-limit alarms, and history logs

- Precise measurement of bidirectional energy and electrical parameters; compliant with the IEC 62053-22 standard
- Supports Modbus communication for easy integration with system software
- Various models for selection based on installation types and function levels to fulfill different requirements and purposes in energy management

## Panel Mounting Type

### DPM-C

- Suitable for applications in general power systems
- Large LCD displays power data in real time
- A variety of communication protocols for easy integration
- Various power monitoring functions for different applications



#### Applications

Distribution boards, Electrical rooms, Factory / building energy management systems

## DIN Rail Mounting Type

### DPM-D

- Easy installation and integration for various equipment
- Applicable to general energy management systems
- Multiple functions of energy measurement for different applications



#### Applications

High power-consuming equipment, Electrical equipment cabinets, Enclosures

## Multi-Loop Type

### DPM-M

- Multiple and selective circuit monitoring reduces large-scale power meter use
- Suitable for large-scale applications to save power circuit costs
- AC/DC measurement



#### Applications

Shopping malls, Dormitories, Telecommunication systems



# Machine Vision

## RGB-D ToF Camera DMV-TM

New

\* Suitable for indoor/outdoor applications

### Sharp Eyes that Let Robots See Their Working Space

The Delta RGB-D ToF camera features a compact design and utilizes Time-of-Flight (ToF) technology to provide depth information under various lighting conditions. It also supports 2D color imaging, making it suitable for a wide range of indoor and outdoor applications.

The DMV-TM adopts industrial standards and communication protocols, offering high flexibility and broad compatibility for seamless integration with various industrial control devices. Additionally, with PoE (Power over Ethernet) support, the DMV-TM can simplify installation processes, making it ideal for applications such as AGV/AMR mobile robots. When paired with Delta's **DIA** Vision Machine Vision Platform, it enables environmental perception, obstacle avoidance, and path planning.



### Camera Specifications

Sensing Technology	2D RGB	3D iToF
Resolution (Pixel)	1440 × 1080	640 × 480
Pixel Size	3.45 μm	5.0 μm
Frame Rate	30 fps	
LD Wavelength	-	940 nm
FOV	DMV-TMO300GWM	107° × 78°
	DMV-TMO300GUWS	107° × 78°
Recommend Working Range	0.15 m ~ 3 m	
Interface	100/1000Mbps Ethernet, GigE Vision 2.0	
Power Supply	PoE: IEEE802.3at, DC: 24V ± 10%	
Power Consumption	Average 8 W	
Dimensions	108.2(L) × 33(H) × 37.5(W) mm	

### Applications

AGV / AMR navigation and collision avoidance



# Machine Vision

## 3D ToF Smart Camera DMV-T \* Suitable for indoor applications only

### Sharp Eyes that Let Robots See Their Working Space

The 3D ToF Smart Camera DMV-T integrates imaging, sensing and computing functions in a compact design. The DMV-T processes the image data in real time with a built-in dual-core CPU and provides quality images and accurate 3D depth information in various lightings.

Combined as an integrated solution, the DMV-T and the machine vision platform **DIAVision** achieve precise measurement, recognition, and positioning for various applications such as object detection and robot vision.

- 60fps frame rate
- 640 × 480 video resolution
- 6m of working range
- ARM Dual Cortex-A53 & Xilinx FPGA
- Supports GenICam interface and PoE power supply
- IP67 Protection and IEC-certified vibration resistance



### Camera Specifications

<b>Sensor</b>	Sony IMX556	<b>OS</b>	Linux
<b>Resolution (Pixel)</b>	640 × 480, 0.3 M	<b>Interface</b>	10/100/1000 Mbps Ethernet, GigE Vision 2.0 Compliant
<b>Frame Rate (fps)</b>	60	<b>Power Supply</b>	PoE: IEEE 802.3bt / 24 V <sub>DC</sub> ± 10%
<b>LD Wavelength (nm)</b>	850	<b>Dimensions (mm)</b>	72 × 70 × 70 (L × H × W)
<b>FOV</b>	67° × 51°	<b>Weight</b>	500g
<b>Recommend Working Range (m)</b>	6	<b>Certification</b>	IP66, IP67, CE, KC, UL
<b>Distance Resolution (mm)</b>	1	<b>Temperature</b>	Storage: -40°C to 85°C
<b>CPU</b>	Dual Cortex-A53 1.2GHz	<b>Eye Safety</b>	Class I

### Applications

This integrated solution combining the DMV-TM and **DIAVision** is ideal for warehousing and logistics to optimize storage, handling and dispatch of goods, reduce sorting errors, and enhance throughput.



Reduces sorting errors via high-precision object measurement and identification



Enhances pick-and-place and transport efficiency by fast detection and precise positioning



Ensures smooth AGV/AMR operation via obstacle and collision avoidance



# Machine Vision

## 2.5GigE Industrial Camera DMV-C 2.5GigE

Seamless Upgrade with  
Affordable Solution

New



Transmission distance up to  
100m with RJ-45 Ethernet  
connection



1.6M ~ 24.5M Resolutions



Supports PoE and  
DC Power



GigE Vision 2.0 compliance  
and 128 MB Image Cache  
Memory



Twisted Pair Cables for  
resistance to interference



CE, UL, RoHS  
Certified

### Models & Specifications

Model No.	Image Sensor	Type	Shutter Type	Resolution (Pixels)	Optical Size (inch)	Pixel Size (um)	Frame Rate (fps)
DMV-CC1M6G2M154	Sony IMX273 CMOS	Mono	Global Shutter	1440 × 1080	1/2.9	3.45	154
DMV-CC1M6G2C154	Sony IMX273 CMOS	Color (Bayer Filter)	Global Shutter	1440 × 1080	1/2.9	3.45	154
DMV-CC3M2G2M055	Sony IMX265 CMOS	Mono	Global Shutter	2048 × 1536	1/1.8	3.45	55
DMV-CC3M2G2C055	Sony IMX265 CMOS	Color (Bayer Filter)	Global Shutter	2048 × 1536	1/1.8	3.45	55
DMV-CC5M0G2M049	Sony IMX547 CMOS	Mono	Global Shutter	2448 × 2048	1/1.8	2.74	49
DMV-CC5M0G2C049	Sony IMX547 CMOS	Color (Bayer Filter)	Global Shutter	2448 × 2048	1/1.8	2.74	49
DMV-CX5M0G2M035	Sony IMX264 CMOS	Mono	Global Shutter	2448 × 2048	2/3	3.45	35
DMV-CX5M0G2C035	Sony IMX264 CMOS	Color (Bayer Filter)	Global Shutter	2448 × 2048	2/3	3.45	35
DMV-CC12MG2M020	Sony IMX565 CMOS	Mono	Global Shutter	4096 × 3000	1/1.1	2.74	20
DMV-CC12MG2C020	Sony IMX565 CMOS	Color (Bayer Filter)	Global Shutter	4096 × 3000	1/1.1	2.74	20
DMV-CX20MG2M012	Sony IMX541 CMOS	Mono	Global Shutter	4504 × 4504	1.1	2.74	12
DMV-CX20MG2C012	Sony IMX541 CMOS	Color (Bayer Filter)	Global Shutter	4504 × 4504	1.1	2.74	12
DMV-CX25MG2M010	Sony IMX540 CMOS	Mono	Global Shutter	5320 × 4600	1.2	2.74	10
DMV-CX25MG2C010	Sony IMX540 CMOS	Color (Bayer Filter)	Global Shutter	5320 × 4600	1.2	2.74	10
DMV-CL12MG2M020	Sony IMX226 CMOS	Mono	Global Shutter	4000 × 3000	1/1.7	1.85	20
DMV-CL12MG2C020	Sony IMX226 CMOS	Color (Bayer Filter)	Global Shutter	4000 × 3000	1/1.7	1.85	20
DMV-CL20MG2M012	Sony IMX183 CMOS	Mono	Global Shutter	5472 × 3648	1	2.4	12
DMV-CL20MG2C012	Sony IMX183 CMOS	Color (Bayer Filter)	Global Shutter	5472 × 3648	1	2.4	12

# Industrial Camera

## DMV-C

### High Speed, High Performance and High Stability

- Supports exposure time and white balance settings
- Gamma correction, LUT, Gain
- Software trigger, external I/O trigger and continuous capture
- User-defined ROI and mirror output
- GigE Vision 2.0 compliant
- 64 MB image cache memory
- CE, KC, UL and RoHS certified



#### DMV-CC/CX

- CMOS sensor
- Resolution: 0.4 M ~ 5 M
- Global shutter

#### DMV-CL

- CMOS sensor
- Resolution: 0.4 M ~ 20 M
- Global shutter, Rolling shutter

### Camera Specifications

Model	Sensor Model	Resolution (W×H)	Optical Size (inch)	Shutter	Exposure Time	Pixel Size (um)	FPS	Mono/Color	Pixel Format	GPIO
DMV-CC400GM290	IMX287	720×540	1/2.9	Global	20μs~1s	6.9	290	Mono	Mono (12,10,8) Bayer (12,10,8)	Isolated Input×1
DMV-CC400GC290								Color		
DMV-CC1M6GM075	IMX273	1440×1080				3.45	75	Mono		
DMV-CC1M6GC075								Color		
DMV-CC3M2GM036	IMX265	2048×1536	1/1.8			36	Mono			
DMV-CC3M2GC036							Color			
DMV-CX5M0GM023	IMX264	2448×2048	2/3			23	Mono			
DMV-CX5M0GC023							Color			
DMV-CL5M0GM023	IMX335	2592×1944	1/2.8	2		Mono	Isolated Output×2			
DMV-CL5M0GC023						Color				
DMV-CL6M3GM016	IMX178	3072×2048	1/1.8	Rolling		2.4	16	Mono	Mono (10,8) Bayer (10,8)	
DMV-CL6M3GC016								Color		
DMV-CL12MGM008	IMX226	4000×3000	1/1.7			1.85	8	Mono	Mono (12,10,8) Bayer (12,10,8)	
DMV-CL12MGC008								Color		
DMV-CL20MGM005	IMX183	5472×3648	1			2.4	5	Mono		
DMV-CL20MGC005								Color		

### Applications

Inline inspection, Vision-guided robot applications, Logistics, Food & beverages packaging, Electronics, Printing



# Machine Vision

## Machine Vision System DMV3000G

### Smart Machine Vision System with a User-Friendly Interface

- Supports 2 color / monochrome GigE industrial cameras for simultaneous multi-task detection
- Smart and easy setup allows quick inspection project building
- Enhanced inspection speed to increase production efficiency and save cost
- Multiple built-in image inspection tools, saving program development and editing time
- Ethernet, RS-232, RS-485 interfaces for data output
- Compliant with high industrial standards; higher stability than home edition PC-based systems
- Built-in communication system connected by PLC, no need for extra programming
- Supports lens distortion correction (including camera tilt correction) and grid calibration for greater detection accuracy



### Camera Specifications

Resolution	Level	Frame Rate	Pixel Dimensions (Horizontal/Vertical)	Sensor Size (inch) (Horizontal/Vertical)	Pixel Size (μm)	Lens Mount
0.4 M	Mono/Color	290	720 × 540	1/2.9	6.9	C-mount
1.6 M	Mono/Color	75	1440 × 1080	1/2.9	3.45	C-mount
3.2 M	Mono/Color	36	2048 × 1536	1/1.8	3.45	C-mount

### Applications

Inspection for mobile phone lens quality, Disposable coffee filters, Logistics, Food & beverages packaging, Electronics, Printing, Motion control, Paper cup inspection, and other automated production



# Machine Vision System DMV1000G

## Basic and Easy-to-Use Machine Vision System

- User-friendly interface for quick system setup
- A flowchart project editor saves development time
- Built-in multi-functional developing tools save users from complex programming
- Offers versatile digital I/O terminals
- Compact and light, saves wiring and space
- Exceptional hardware supports high-speed processing
- Supports GigE interface industrial camera
- Complete product line-up including lighting and lenses
- Compatible with Ethernet and RS-232/485 communication interfaces for quick system integration
- Supports Micro SD cards
- Compliant with high industrial standards; higher stability than PC-based systems



## Camera Specifications

Resolution	Level	Frame Rate	Pixel Dimensions (Horizontal/Vertical)	Sensor Size (inch) (Horizontal/Vertical) (mm)	Pixel Size (μm)	Lens Mount
0.3M	Mono	120fps	640 × 480	1/2.9" (4.4 × 3.3)	6.9	C-mount
0.8M	Mono	60fps	1024 × 768	1/2.9" (3.5 × 2.6)	3.45	C-mount

## Applications

Food & beverages packaging, Electronics, Printing machines, Pharmaceuticals, Vision Guided Robotic System (VGRS), Robot/automated production lines





# Industrial Power Supply

## Machine Vision Platform

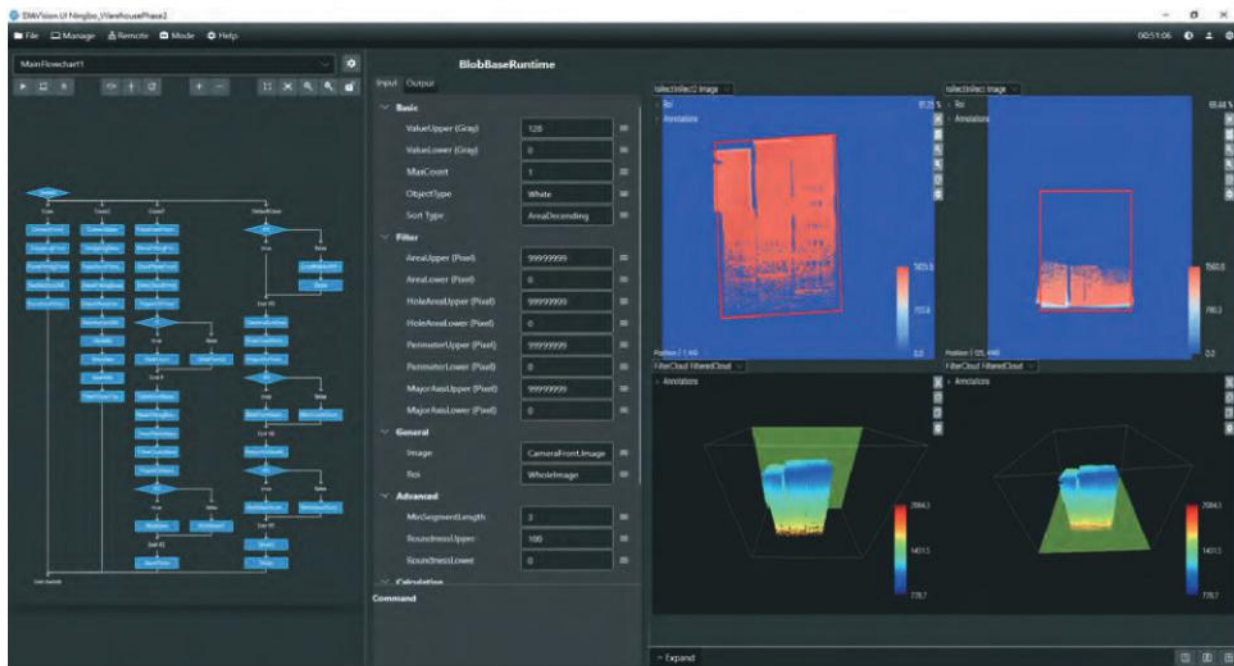
### DIAVision

**DIAVision** enables developers to complete vision application design, development and integration on one single platform. Offering high compatibility with industrial standards and a wide range of built-in Vision Functions, **DIAVision** features high flexibility for value-added vision application software customization.



- Cross-platform - **DIAVision** can operate on Linux and Windows systems
- Web-Based design enables **DIAVision** to run on/with various hardware systems/software
- Compatible with multiple industrial standards and devices, such as GigE industrial cameras, robotic arms, industrial controllers, and more
- Designed with abundant graphical components that provide easy drag-and-drop on the screen
- 100+ built-in Vision Functions, and allows integration of other vision algorithms
- Vision Functions flow and UI designs can be stored and reused for new application development without much effort
- All the assets on **DIAVision** are protected by specific mechanisms to prevent leakage of software design secrets

### A Friendly Graphical Editor, WYSIWYG



Design

Configure

Image

## DIN Rail Models

Force-GT, LYTE, LYTE II, CliQ III, CliQ M, CliQ VA, CHROME II, SYNC






Force-GT	Model Name	Output Voltage (V)	Output Power (W)
	DRF-12V120W1GBA	12 1-Phase	120
	DRF-12V120W1GTA		120
	DRF-12V240W1GBA		240
	DRF-12V240W1GTA		240
	DRF-24V120W1GBA	24 1-Phase	120
	DRF-24V120W1GTA		120
	DRF-24V240W1GBA		240
	DRF-24V240W1GTA		240
	DRF-24V480W1GBA	48 1-Phase	480
	DRF-24V480W1GTA		480
	DRF-48V120W1GBA		120
	DRF-48V120W1GTA		120
	DRF-48V240W1GBA	48 1-Phase	240
	DRF-48V240W1GTA		240
	DRF-48V480W1GBA		480
	DRF-48V480W1GTA		480
	DRF-24V120W3GBA	24 3-Phase	120
	DRF-24V120W3GTA		120
	DRF-24V240W3GBA		240
	DRF-24V240W3GTA		240
	DRF-24V480W3GBA	480	480
	DRF-24V480W3GTA		480
	DRF-24V960W3GBA	960	960
	DRF-24V960W3GTA		960
CliQ III	Model Name	Output Voltage (V)	Output Power (W)
	DRP-24V120W1CAN	24	120
	DRP-24V240W1CAN		240
	DRP-24V480W1CAN		480
CliQ M	Model Name	Output Voltage (V)	Output Power (W)
	DRM-24V80W1PN	24	81.6
	DRM-24V120W1PN		120
	DRM-24V240W1PN		240
	DRM-24V480W1PN		480
	DRM-24V960W1PN	960	960
	DRM-24V480W1SN		480
	DRM-24V480W3PN		480
	DRM-24V960W3PN		960
CliQ VA	Model Name	Output Voltage (V)	Output Power (W)
	DRV-24V120W1PN	24	120
	DRV-24V240W1PN		240
	DRV-24V480W1PN		480
CHROME II	Model Name	Output Voltage (V)	Output Power (W)
	DRC-12V030W1RZ	12	24
	DRC-12V060W1RZ		54
	DRC-12V100W1RZ		85.2
	DRC-24V030W1RZ	24	36
	DRC-24V060W1RZ		60
	DRC-24V100W1RZ		91.92
	DRC-48V060W1RZ	48	60
	DRC-48V100W1RZ		92.16
LYTE	Model Name	Output Voltage (V)	Output Power (W)
	DRL-12V75W1AA	12	75
	DRL-24V75W1AA	24	75
	DRL-48V75W1AA	48	75.36
LYTE II	Model Name	Output Voltage (V)	Output Power (W)
	DRL-12V120W1EN	12	120
	DRL-12V240W1EN		240
	DRL-24V120W1EN	24	120
	DRL-24V240W1EN		240
	DRL-24V480W1EN	48	480
	DRL-48V120W1EN		120
	DRL-48V240W1EN		240
	DRL-48V480W1EN		480
SYNC	Model Name	Output Voltage (V)	Output Power (W)
	DRS-5V30W1NZ	5	15
	DRS-5V50W1AZ		30
	DRS-5V50W1NZ		25
	DRS-12V50W1NZ	12	48
	DRS-24V30W1AZ		30
	DRS-24V30W1NZ	24	30
	DRS-24V50W1NZ		50
	DRS-24V100W1AZ		96
	DRS-24V100W1NZ		91.2
	DRS-24V100W1NZ		91.2



# Industrial Power Supply

## DIN Rail Models

### Modules, DVP

Redundancy Module	Model Name	Output Voltage (V)	Output Current (A)
	DRR-20N	24	20
	DRR-40N		40
DC-UPS Module	Model Name	Output Voltage (V)	Output Current (A)
	DRU-24V40ABN	24	40
	DRU-24V10ACZ		10
	DRU-24V10AMN		10
	DRU-24V20AMN		20
	DRU-24V40AMN		40
Buffer Module	Model Name	Output Voltage (V)	Output Current (A)
	DRB-24V020ABN	24	20
	DRB-24V040ABN		40
Battery Module (without battery)	Model Name	Input/Output Voltage (V)	Capacity (A)
	DRN-24V7AAEN	24	40
DVP	Model Name	Output Voltage (V)	Output Power (W)
	DVP-PS01	24	24
	DVP-PS02		48
	DVP-PS03		120

## Industrial Power Supply CliQ M Series Sets for Uninterruptible Systems

Delta integrates its Industrial Power Supply CliQ M Series with the new DC-UPS and battery modules for uninterruptible systems. The integration is set to reduce production downtime during power failures.



## Panel Mount Models

### PMT2, PMC, PMF, PMR, PMU

PMT2	Model Name	Output Voltage (V)	Output Power (W)
	PMT-12V35W2BA	12	36
	PMT-12V50W2BA	12	50.4
	PMT-12V75W2BA	12	72
	PMT-12V100W2BA	12	102
	PMT-12V150W2BA	12	150
	PMT-12V150W2CA	12	150
	PMT-12V200W2BM	12	204
	PMT-12V200W2BR	12	204
	PMT-12V350W2BM	12	348
	PMT-12V350W2BR	12	348
	PMT-15V35W2BA	15	36
	PMT-15V50W2BA	15	51
	PMT-15V75W2BA	15	75
	PMT-15V100W2BA	15	105
	PMT-15V150W2BA	15	150
	PMT-15V150W2CA	15	150
	PMT-24V35W2BA	24	36
	PMT-24V50W2BA	24	52.8
	PMT-24V75W2BA	24	76.8
	PMT-24V100W2BA	24	108
	PMT-24V150W2BA	24	150
	PMT-24V150W2CA	24	150
	PMT-24V200W2BM	24	211.2
	PMT-24V200W2BR	24	211.2
	PMT-24V350W2BM	24	350.4
	PMT-24V350W2BR	24	350.4
	PMT-30V35W2BA	30	36
	PMT-30V50W2BA	30	57
	PMT-30V75W2BA	30	75
	PMT-30V100W2BA	30	105
	PMT-30V150W2BA	30	150
	PMT-30V150W2CA	30	150
	PMT-36V35W2BA	36	36
	PMT-36V50W2BA	36	52.2
	PMT-36V75W2BA	36	75.6
	PMT-36V100W2BA	36	100.8
	PMT-36V150W2BA	36	154.8
	PMT-36V150W2CA	36	154.8
	PMT-36V200W2BM	36	212.4
	PMT-36V150W2BR	36	212.4
	PMT-36V350W2BM	36	349.2
	PMT-36V350W2BR	36	349.2
	PMT-48V35W2BA	48	38.4
	PMT-48V50W2BA	48	52.8
	PMT-48V75W2BA	48	76.8
	PMT-48V100W2BA	48	110.4
	PMT-48V150W2BA	48	158.4
	PMT-48V150W2CA	48	158.4
	PMT-48V200W2BM	48	211.2
	PMT-48V200W2BR	48	211.2
	PMT-48V350W2BM	48	350.4
	PMT-48V350W2BR	48	350.4
	PMT-D1V75W2BA	12/5	73
	PMT-D1V75W2CA	12/5	73
	PMT-D2V75W2BA	24/5	75.4
	PMT-D2V75W2CA	24/5	75.4

PMC	Model Name	Output Voltage (V)	Output Power (W)
	PMC-05V015W1AA	5	15
	PMC-12V150W1BA	12	150
	PMC-12V600W1BA	12	600
	PMC-24V150W1BA	24	150
	PMC-24V300W1BA	24	300
	PMC-24V600W1BA	24	600
	PMC-24V600W1RW	24	600
	PMC-DSPV100W1A	24/5	100
	PMC-48V150W1BA	48	150
	PMC-48V600W1BA	48	600

PMF	Model Name	Output Voltage (V)	Output Power (W)
	PMF-4V320WCGB	4.2	231
	PMF-5V320WCGB	5	275
	PMF-24V240WCGB	24	240
	PMF-24V320WCGB	24	320

PMR	Model Name	Output Voltage (V)	Output Power (W)
	PMR-4V320WCAA	4.2	252
	PMR-4V320WDAA	4.2	252
	PMR-4V320WDGA	4.2	252
	PMR-4V320WDBA	4.2	252
	PMR-4V320WDCA	4.2	252
	PMR-5V320WCAA	5	300
	PMR-5V320WDAA	5	300
	PMR-5V320WDGA	5	300
	PMR-5V320WDBA	5	300
	PMR-5V320WDCA	5	300
	PMR-12V150W1AT	12	150
	PMR-12V240W1AT	12	240
	PMR-12V320W1AT	12	320.4
	PMR-12V600W1BT	12	600
	PMR-24V150W1AT	24	150
	PMR-24V240W1AT	24	240
	PMR-24V320W1AT	24	321.6
	PMR-24V600W1BT	24	600
	PMR-36V150W1AT	36	150
	PMR-36V240W1AT	36	241.2
	PMR-36V320W1AT	36	320.4
	PMR-36V600W1BT	36	600
	PMR-48V150W1AT	48	150
	PMR-48V240W1AT	48	240
	PMR-48V320W1AT	48	321.6
	PMR-48V600W1BT	48	600


PMU	Model Name	Output Voltage (V)	Output Power (W)
	PMU-13V155WCBA	13.8	151
	PMU-13V155WCCA	13.8	151
	PMU-27V155WCBA	27.6	151
	PMU-27V155WCCA	27.6	151





# Industrial Power Supply


## Open Frame Models

### PJ, PJB, PJH, PJT, PJU, PJL

PJ	Model Name	Output Voltage (V)	Output Power (W)
	PJ-5V15WBNA	5	15
	PJ-12V15WBNA		15.6
	PJ-12V30WBNA		30
	PJ-12V50WBNA	12	51.6
	PJ-12V100WBNA		102
	PJ-12V150WBNA		150
	PJ-24V30WBNA		31.2
	PJ-24V50WBNA	24	50.4
	PJ-24V100WBNA		103.2
	PJ-24V150WBNA		150
	PJ-48V50WBNA	48	52.8


PJB	Model Name	Output Voltage (V)	Output Power (W)
	PJB-24V100WBNA		103.2
	PJB-24V150WBNA	24	151.2
	PJB-24V240WBNA		240
	PJB-24V300WBNA		300

PJH	Model Name	Output Voltage (V)	Output Power (W)
	PJH-24V300WBBA	V <sub>I</sub> : 24 V <sub>SB</sub> : 5	300
	PJH-24V300WBBA	V <sub>I</sub> : 24 V <sub>SB</sub> : 12	300
	PJH-36V300WBBA	V <sub>I</sub> : 36 V <sub>SB</sub> : 5	300
	PJH-36V300WBBA	V <sub>I</sub> : 36 V <sub>SB</sub> : 12	300

PJT	Model Name	Output Voltage (V)	Output Power (W)
	PJT-12V40WBAA		40
	PJT-12V65WBAA	12 V	60
	PJT-12V100WBAA		100
	PJT-12V100WBBA		80 <sup>A)</sup> 100 <sup>B)</sup>
	PJT-15V40WBAA		40
	PJT-15V65WBAA	15 V	63
	PJT-15V100WBAA		100
	PJT-15V100WBBA		80 <sup>A)</sup> 100 <sup>B)</sup>
	PJT-18V40WBAA		40
	PJT-18V65WBAA	18 V	65
	PJT-18V100WBAA		100
	PJT-18V100WBBA		80 <sup>A)</sup> 100 <sup>B)</sup>
	PJT-24V40WBAA		40
	PJT-24V65WBAA	24 V	65
	PJT-24V100WBAA		100
	PJT-24V100WBBA		80 <sup>A)</sup> 100 <sup>B)</sup>
	PJT-27V150WBNA	V <sub>I</sub> : 27V V <sub>SB</sub> : 12V	150

A) Convection  
B) Forced Cooling

PJU	Model Name	Output Voltage (V)	Output Power (W)
	PJU-13V60WCAA	V <sub>I</sub> : 13.8	60
	PJU-13V60WCBA	B <sup>+</sup> : 13.6	60
	PJU-27V60WCAA	V <sub>I</sub> : 27.6	60
	PJU-27V60WCBA	B <sup>+</sup> : 12.4	60

PJL	Model Name	Output Voltage (V)	Output Power (W)
	PJL-48V200WBBA	48	200
	PJL-48V400WBBA		400

## Applicable Series



### Building Automation

- Escalators & Elevators
- CCTV Surveillance
- HVAC Control

CliQ III, LYTE, LYTE II, CHROME II, SYNC, PMT2, PMC, PMU, PJT, PJ, PJU



### Machine Automation

- Robotic Arms
- Injection Molding Machines

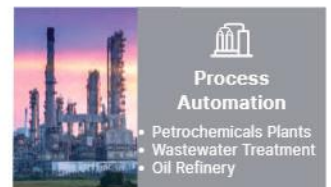
Force-GT, CliQ III, CliQ M, CliQ VA, LYTE, LYTE II, CHROME II, SYNC, PMT2, PMC, PMF, PMU, PJT, PJ, PJB



### Renewable Energy

- Wind Turbines
- Solar Tracker Systems

Force-GT, CliQ III, CliQ M, CliQ VA



### Process Automation

- Petrochemicals Plants
- Wastewater Treatment
- Oil Refinery

Force-GT, CliQ III, CliQ M, CliQ VA, LYTE, LYTE II, CHROME II, SYNC, PMT2, PMC, PMF, PMU



### Test & Measurement

- Spectrum Analyzers
- AC Power Sources
- Oscillators

CHROME II, SYNC, PMT2, PMC, PJT, PJ, PJB



### Factory Automation

- Packaging Machines
- Wave Soldering Machines
- Conveyor Systems

Force-GT, CliQ III, CliQ M, CliQ VA, LYTE, LYTE II, CHROME II, SYNC, PMT2, PMC, PMF, PMU, PJT, PJ, PJB



### LED Lighting

- Stage Lighting
- Digital Signage Solutions

PMC, PMF, PMR, PJL



### Household Appliance

- Coffee Machines
- Vending Machines
- Self-service Kiosks (SSKs)

CHROME II, PMT2, PMR, PJH

# Robot

## Collaborative Robot New D-Bot

### User-Friendly Operation, Enhanced Safety, Human-Robot Collaboration

The D-Bots feature advanced safety mechanisms that adjust or halt their operation when a person is nearby, significantly reducing the risk of accidents. This seamless integration of safety allows for close human-robot collaboration without barriers, transforming D-Bots from simple tools to essential team members.

#### Innovative Reflex Safety

- D-Bots are engineered to detect contact with people or objects and instantly cease operation. This rapid response is vital for accident prevention, maintaining a secure workspace, and protecting both personnel and equipment from potential harm

#### IP66 Certified

- The IP66 certification shields the D-Bots from dust and makes them resistant to strong water jets. This protection guarantees optimal performance in environments with dust or moisture, significantly reducing downtime and maintenance needs

#### Adjustable Speed Settings

- D-Bots are equipped with adjustable speed settings that can be tailored to specific tasks and environments. By controlling the speed, operators can ensure that the cobot operates safely, particularly when human interaction is frequent



Cobot	DC06	DC08	DC10	DC16	DC20	DC30
<b>Payload</b>	6 kg (13.3lbs)	8 kg (17.7lbs)	10 kg (22.1lbs)	16 kg (35.3lbs)	20 kg (44.1lbs)	30 kg (66.2lbs)
<b>Reach</b>	800 mm (31.5in)	1,300 mm (51.2in)	1,200 mm (63in)	1,600 mm (63in)	1,800 mm (70.1in)	1,300 mm (51.2in)
<b>Degrees of Freedom</b>	6 rotary joints					
<b>Programming Interface</b>	Drag & Drop, Python, C#, C++, ROS 1, ROS 2					

#### Control Box

- The Control Box serves as the central hub for the D-Bot operations, offering a robust, secure interface that integrates seamlessly with existing systems. It features advanced security, durable design, and easy mounting, ensuring reliable and smooth operations in various industrial settings.



<b>Dimensions</b>	493 mm × 470 mm × 243 mm
<b>Weight</b>	20 kg (44.1lbs)
<b>Power Supply</b>	100-240V <sub>AC</sub> , 50/60Hz, max. 1.5kW (for DC30 max. 2kW)
<b>Interface</b>	EtherNet/IP, Modbus TCP, USB 3.0, Safe I/Os
<b>Additional Hardware (HW)</b>	OPC UA, Profinet, EtherCAT

#### Teach Pendant

- The Teach Pendant features a user-friendly touchscreen that simplifies programming and control of cobots. Its ergonomic design and customizable settings enhance operational flexibility and efficiency, allowing for easy adjustments and real-time troubleshooting directly from the production floor



<b>Dimensions</b>	300 mm × 245 mm × 133 mm
<b>Resolution</b>	2,560 × 1,600
<b>Cable Length</b>	5m (3.3ft)



# Robot

## Modular Robot RS-M New

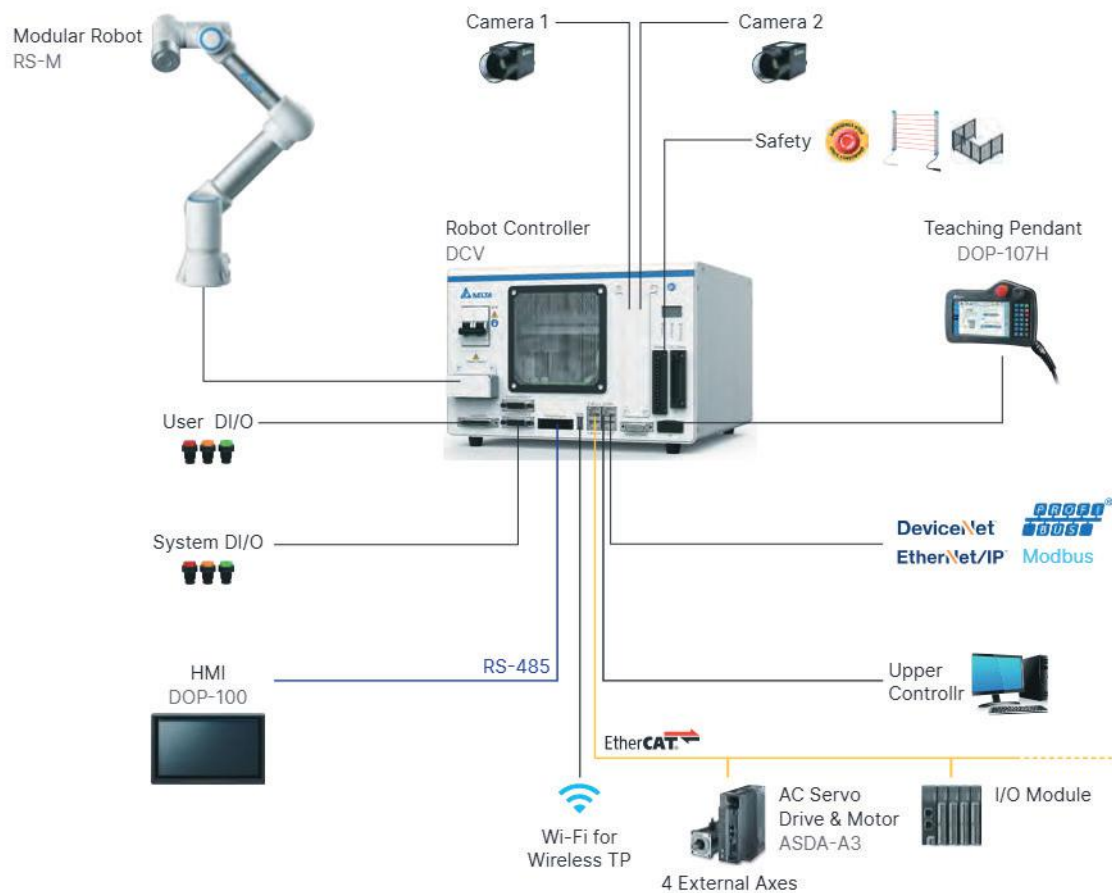
Easy Installation, Intuitive Operation, and Convenient Maintenance

- Compact layout
- Modular design
- Easy to use
- Multiple programming methods

RS-M90E7	
Max. Working Range	920 mm
Max. Payload	7 kg
IP Rating	IP65



### System Configuration



### Applications



Machine Tending



Loading/Unloading



Logistics



Inspection

# Articulated Robot DRV

Automation for  
Smart Manufacturing



	DRV70L	DRV90	DRVA1/A4L7	DRVA41/A4LC
Max. Working Range	710mm	900mm	1,111/1,411mm	1,183/1,419mm
Max. Payload	7kg	7kg	7kg	12kg
IP Rating	IP40, IP65	IP40, IP65	IP65	IP54 (wrist IP65)

## Hollow-Wrist Design

### No Hollow Design

Tangled wire/cords  
lead to equipment  
interference



### Hollow Design

Enhanced  
reliability of  
extension  
wire/cords



## High Flexibility/ Multiple Installations

- Max. working range:  
710 mm ~ 1,411 mm enhances  
manufacturing flexibility
- Desk-mount/wall-mount/  
ceiling-mount installation  
fulfills various application  
needs



## Simple and User-Friendly Operation Interface

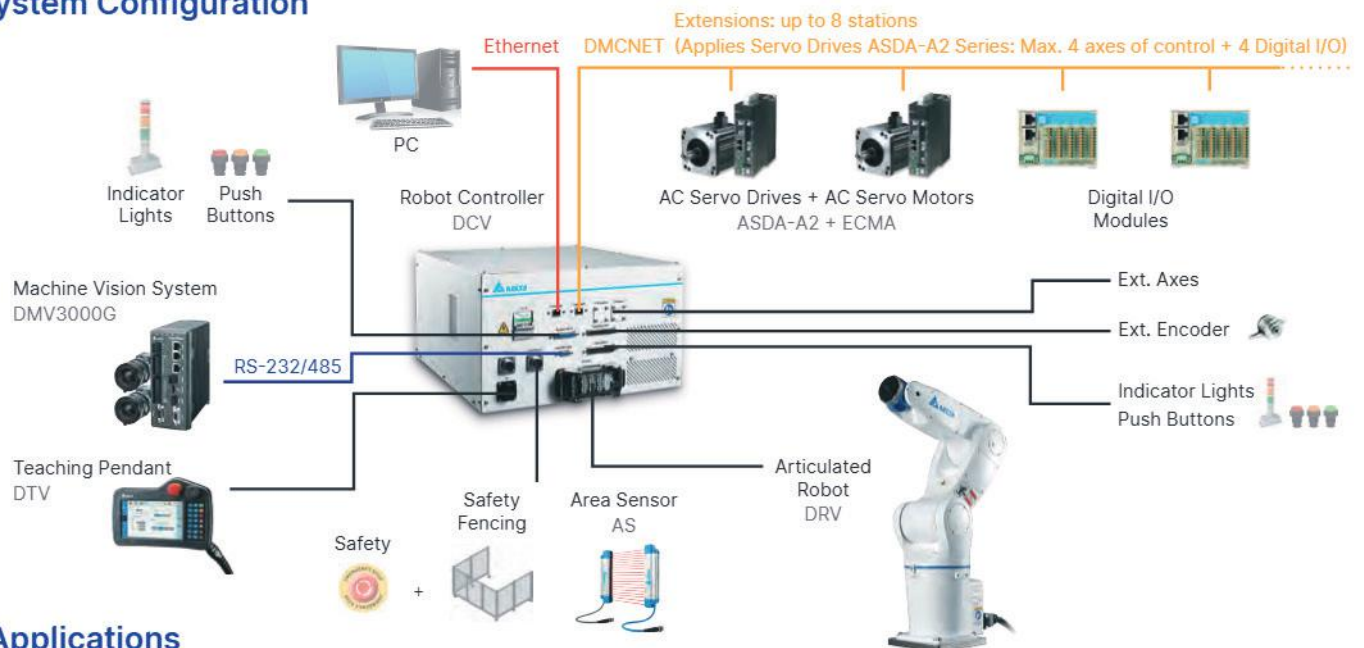
### • DRAStudio Robotic Automation Studio software system

### • Intuitive user interface

- Real-time equipment data
- Complete tuning  
function
- Dynamic-link library
- Easy backup with  
one click
- Self-defined user I/O
- Optimized parameters



## System Configuration



## Applications

Pick-and-place, Load/unload, Assembly, Insertion, Inspection, Screw-driving



# Robot

## SCARA Robot DRS

High Repeatability, High Precision, Outstanding Linearity and Verticality



Max. Working Range: 800/1,000 mm  
Max. Payload: 22 kg



Max. Working Range: 300~800 mm  
Max. Payload: 3/6/12 kg



DRS80/AOLM	DRS40/60/80L Series			
<ul style="list-style-type: none"> <li>Cycle time: 0.42 s/0.45 s (2 kg)</li> <li>Repeatability: <ul style="list-style-type: none"> <li>±0.025 mm (J1+J2)</li> <li>±0.01 mm (J3)</li> <li>±0.01° (R axis)</li> </ul> </li> </ul>	Standard Model		Special Model	
	Arm Length	Payload		
	<ul style="list-style-type: none"> <li>300~600 mm</li> <li>500~700 mm</li> <li>600~800 mm</li> </ul>	<ul style="list-style-type: none"> <li>3 kg</li> <li>6 kg</li> <li>10 kg</li> <li>12 kg</li> </ul>	<ul style="list-style-type: none"> <li>Number of Axis: 3 axis/5 axis/ceiling mounted</li> <li>Arm length: 600 mm</li> </ul>	

### Optimizes Operational Efficiency

- Safe operation, enhances operational stability
- Outstanding dynamic display for operational efficiency and intelligent control
- Smart temperature control, real-time control of working environment

### Intuitive Teaching Methods with Versatile Control Approaches



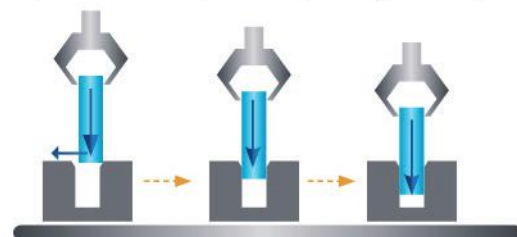
### On-the-Fly & Conveyor Tracking

- Easy and flexible conveyor tracking
- User-friendly template guidance
- On-the-fly function provides outstanding positioning to shorten cycle time and enhance productivity
- Integrates with Delta's IA products for a total solution



### Sensor-Less Compliance Control Function

- Compensates for the deviation between workpieces and insertion holes
- Fast and precise smooth insertion
- Enhances assembly and production performance
- Insertion performance may differ depending on workpiece hardness

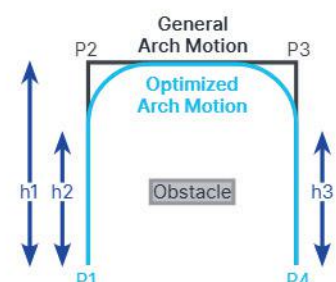


### Real-Time Information Monitoring and Collection

- Robot machine data monitoring and analysis
- Oversees real-time machine operation data
- On-site production information acquisition

### Arch Motion Control

- Route optimization
- Saves motion time
- Quick and easy setting
- Optimizes arch route setting, fast operational speed
- Prevents crash when near the top or edge of robot route planning



# Robotic Simulation Platform

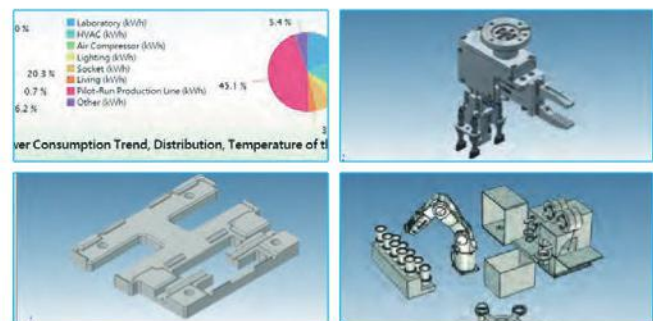
## DRASimuCAD

One Software Provides Workstation Design, Simulation and Operation Path Generation, Saving Setup Time and Boosting Introduction Efficiency

- Simulates the actual workflow and operation environment, allowing real 3D models to be imported to pre-assess the rationality of the robot and peripheral equipment settings
- Pre-inspects robot abnormalities, detects collision and operation range limitations, saving teaching time and reducing errors when introducing the robot into applications
- Auto-generates path simulation and creates robot projects for fast workflow design and programming to enhance efficiency

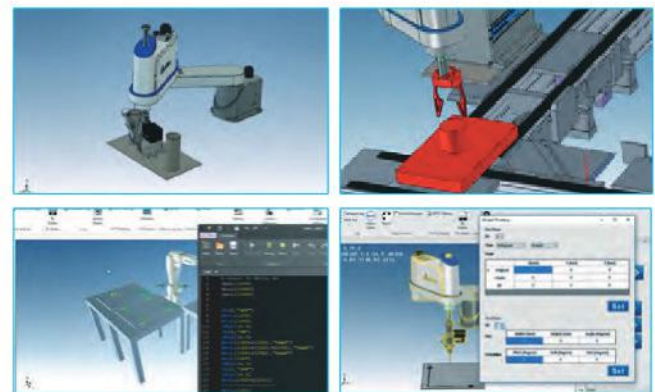
### Modeling (CAD)

- Complete 3D CAD design capabilities
- Built-in Parasolid and ACIS Dual-Core for mainstream CAD formats support, resolving the splitting image issue when importing/exporting image files
- Built-in robot, tool and application device library for easy drag and drop; preset actions links for fast simulation system establishment



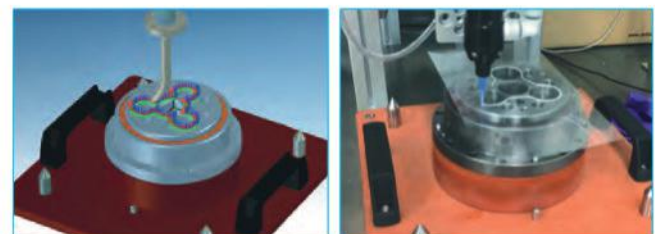
### Virtual Robot Simulation

- Collision Detection
  - Predicts any collision under operation
  - Pre-inspects the operation range settings to eliminate repeated modification
- Offline Programming
  - Direct robot programming in robot language (RL)
  - Same interface with DRAstudio, allowing teaching points, setting coordinate system (user frame/tool frame) and creating a robot project



### Path Generating (CAM)

- Auto-generates processing path and is combined with visual features for fast simulation



### Applications

Conveyor belt dynamic processing simulation, Deburring, Sole gluing, Remote TCP





# Smart Screwdriving System

## Transducerized Smart Screwdriver ECM-SD3

- » High-resolution position feedback encoder
- » High precision torque sensor signals directly fed to the full closed-loop control
- » Low cogging torque of the AC servo motor
- Indicator light signals screwing status
- Front LED light eliminates shading during operation
- Easily mounted on robots and equipment with a coupling



Small Torque

## Smart Screwdriving Controller ASD-SD3

- » Dual-spindle control for higher efficiency
- » Enables dual-spindle synchronization and separate operation
- 10.1 inch large screen displays the results of both drivers at a time
- Large memory capacity stores more than 200,000 results

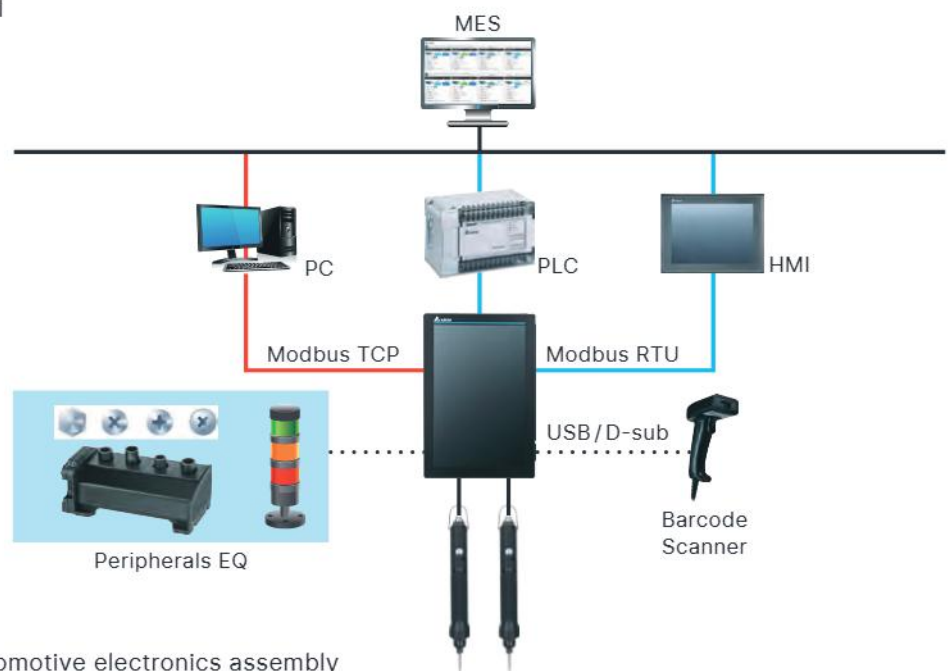


Micro Torque

### System Features

- Controls two screwdrivers with just one controller
- Stores up to 500 sets of model configurations and 500 screw parameters
- Manufacturing data can be retained at a local machine or uploaded to a manufacturing execution system
- Provides multiple control modes, including torque, angle and seating points control
- Sets two screwdrivers to operate synchronously or at different intervals to meet different needs
- Analyzes defects causes such as stripping, or tilted screws to continually optimize quality
- Ensures implementing the correct screwdriver and processes in operation to prevent resource waste and enhance yield rate

### System Structure



### Applications

Electronic product assembly, Automotive electronics assembly

# Manufacturing Equipment

## Electric Servo Press AM-ESP S / AM-ESP E / AM-ASP F

Features flexible speed control of the stroke and downforce based on process requirements, meeting the rapid, flexible, and mixed-line production demands of the electronics manufacturing industry. It can enhance processing quality, reduce errors and losses caused by poor pressing, and thereby save unnecessary costs for customers. In addition, the electric cylinder servo press saves material costs without the need for traditional press components such as flywheels, pneumatic cylinders, press motors, and clutches, saving material costs and reducing pollution. This accomplishes high efficiency and energy saving for diversified markets



	S Series	E Series	F Series
<b>Force</b>	500~5,000 kgf	100~5,000 kgf	100~5,000 kgf
<b>Stroke</b>	100/250 mm	100/200/300/400 mm	100/200/300/400 mm
<b>Features</b>	Adopts a cast base with integral design, and combined with Delta components, it possesses high dynamic load capacity.	Satisfies industry demands, compact size, user-friendly interface, hassle-free implementation	Provides a high-rigidity structure, autonomous I/O control, and analysis of statistical data
<b>Advantages</b>	Features rapid mold change capabilities to accommodate small-volume large variety. It also includes the recording of process data during operations for statistical analysis and integrates mechanisms relevant to MES (Manufacturing Execution System) usage.		

### Multiple Control Modes: Control for Swift Determination of Quality

Various control modes for specific pressing positions and forces to control the pressing stroke, minimize defects and enhance production efficiency:

- Position Mode/Force Position Mode
- Force Mode/Force Distance Mode
- Distance Mode/Multiple Modes

In addition, incorporating dynamic frame mode (geometric constraints) enables real-time monitoring and recording. This facilitates monitoring processes, confirming details, and ensuring quality control

### DIAServoPress Software for High Efficiency <sup>(Optional)</sup>

- Real-time monitoring on pressing status
- Real-time display of pressing curves and status, sensor values, and statistics
- Production visualization (productivity, yield rates, and more) to enhance management efficiency

### Remote Control for Fast Execution

- Data upload to the manufacturing execution system (MES) via the built-in Ethernet communication for efficient and remote management, recording and analysis



### Applications

Vehicle charging devices, Metal parts, Electronic & electrical appliance components, Industrial robots



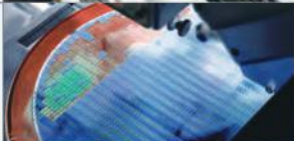





# Automated Smart Equipment

For equipment requirements in industries such as electronics assembly, semiconductor, and passive components, corresponding to odd-form insertion, AOI, and CMC winding in production line processes, Delta provides high-efficiency, high-precision, and highly reliable product solutions.

## Features and Advantages

- Highly stable equipment operation, leading to enhanced product yield
- Real-time monitoring and alarms
- Reduces labor costs and production expenses
- Supports MES connectivity with real-time production data upload
- Saves on material and equipment energy consumption
- Achieves rapid line changeovers

Delta Smart Equipment					
Industry Solution Pack	Electronics Assembly		Main Process Equipment	Odd-Form Insertion	
	Semiconductor			AOI	
	Passive Component			CMC Winding	

## Smart Equipment List

### Electronics Assembly

- |                                       |                         |  |
|---------------------------------------|-------------------------|--|
| • Auto Insertion                      | • AOI                   | • Soldering                            |
| • Router                              | • Appearance Inspection | • Stringing & Bending                  |
| • Labeling                            | • Transfer              | • Auto Packing Line                    |
| • Screw Driving                       | • Board Inverter        | • Automated Storage / Retrieval System |
| • Glue Dispensing                     | • Lift Carrier          | • Press Fit                            |
| • Conveyor Integrated Glue Dispensing | • Feeding               |  |

### Semiconductor

- |                |                       |                                  |                      |
|----------------|-----------------------|----------------------------------|----------------------|
| • Wafer Sorter | • Wafer Edge Grinding | • Wafer Edge Profile Measurement | • Pinhole Inspection |
|----------------|-----------------------|----------------------------------|----------------------|

### Passive Components

- |                          |                        |                          |                     |
|--------------------------|------------------------|--------------------------|---------------------|
| • Winding                | • Six-Sided Inspection | • 7" Taping & Labeling   | • Testing & Packing |
| • Power Inductor Winding | • Substrate Inspection | • 13" Reel Tape Labeling |                     |

# Smart Machine Suite

## DIAStudio iD

Save Time and Bring Convenience to Your Design

DIAStudio is an integrated engineering platform designed for machinery system development.

To simplify and reduce the time required, tasks such as product selection (Delta's HMIs, PLCs, servo drives and motors, AC motor drives), PLC programming, parameter setting, machine commissioning, and HMI integration can all be executed smoothly on one platform with DIAStudio.

### iD DIAStudio Smart Machine Suite



#### DIASelector Product Selection

- Provides desktop (Windows), web, and mobile apps (Android & iOS) for quick product selection



#### DIADesigner Programming and Configuration

- Provides an integrated environment of controllers and terminal equipment for project management, IEC61131-3 programming and parameter setting, adjusting and monitoring, allowing users to quickly implement complex industry applications



#### DIADesigner-AX Motion Controller Programming

- Supports Delta's new generation motion controller (AX series) based on IEC 61131-3 programming with a large number of built-in application commands and a powerful motion control library



#### DIAScreen HMI Programming

- Provides wizards for configuration, communication, user interface design, and variable tag sharing with DIADesigner and DIADesigner-AX

### Applications

Automated equipment: Electronics manufacturing, Labeling, Food packaging, and Textiles machines



# Smart Machine Suite

## DIASelector Product Selection

### Quick & Smart Selection Tool

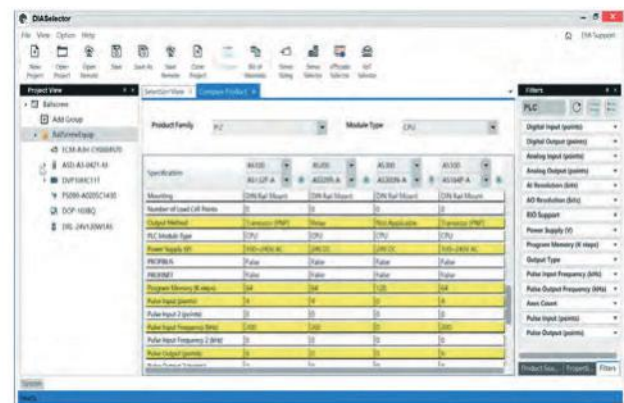
With DIASelector, you can quickly search and select Delta's controllers, HMIs, servo systems, drives, robots, and sensors using product specifications, models, or keywords. Transforming a complex task into a time-saving advantage.

- Desktop (Windows), Web, and Android/iOS versions are available
- Smart selection wizard for efficient product selection
- Integrated product information/ documentation and real-time data updates
- Compatible accessory recommendations to simplify the selection process
- Supports data export to EPLAN, significantly reducing design time
- Cross team collaboration with cloud sharing, upgrading overall efficiency
- Quickly generates BOM, easily shared via email

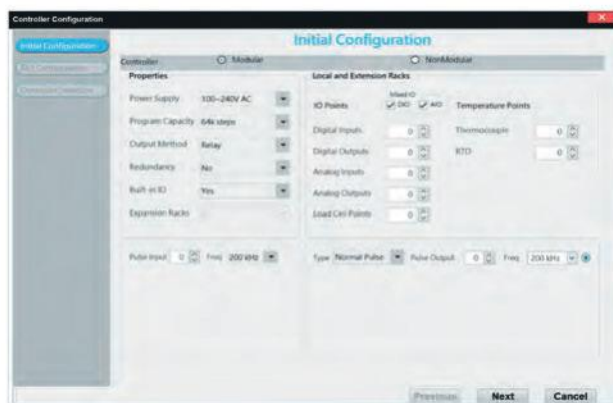
### Product Selection/Search/Filter



### Product Comparison



### Smart Wizard



### Servo Sizing

Friendly model selection by application scenarios for 8 servo types





# DIADesigner PLC Programming and Configuration

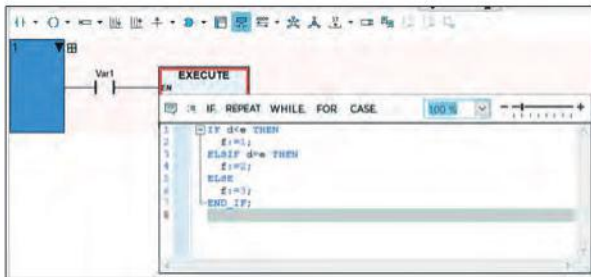
## Integrated Development & Engineering Software

Provides a programming environment for machine system developers to enhance system configuration and development efficiency.

- **Manages multiple products in one project:**
  - PLCs/AC servo drives/AC motor drives
- **Programming:**
  - Compliant with IEC 61131-3 standards
  - LD, ST, SFC, CFC and C language
- **Project Comparison:**
  - Based on color highlights, users can quickly distinguish the differences between current and compared projects to speed up project modification
- **Intuitive Topology Configuration:**
  - Friendly network and hardware configuration environment
- **Integrated Commissioning Functions:**
  - Includes oscilloscope, parameter editor, and tuning functions for easy setup
- **DIACloud Communication:**
  - Cloud service for remote applications
- **One Wire Communication:**
  - Connects **DIADesigner**, controllers, and field devices
- **Library Manager:**
  - Users can reuse libraries to enhance development efficiency
- **Customizable Component Installation:**
  - Flexible utilization of disc space

### Advanced Programming:

LD in-line ST execution block



### Project Comparison



### Intuitive Topology Configuration



### Commissioning Tool:

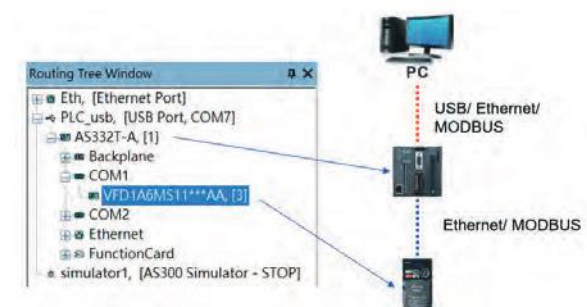
oscilloscope, parameter editor, and tuning



### DIACloud Communication



### One Wire Communication





# Smart Machine Suite

## DIA Designer-AX Motion Controller Programming

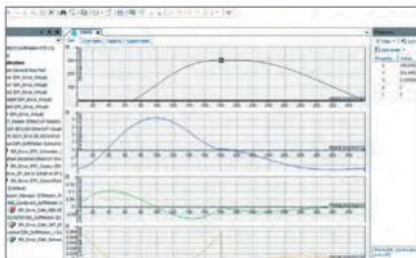
### Motion Development & Engineering Software

**DIA Designer-AX** is the IEC 61131-3 programming tool for Delta's new generation motion controller. It offers built-in commands and a powerful motion control function library. Multilingual function and a user-friendly interface create an efficient development environment.

- IEC 61131-3 programming tool for Delta's new-generation motion controller AX Series
- Built-in commands and a powerful motion control function library
- Open and modular platform allows secondary development of customized functionalities and components by users from different industries
- Motion control programming based on standard PLC open motion control
- Easy tag sharing between **DIA Screen** and AX Series Controllers

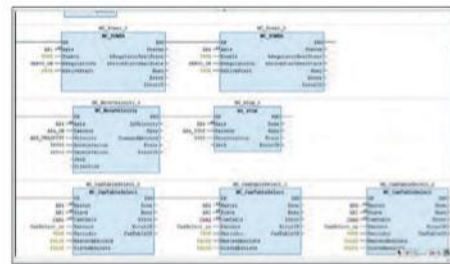
### Electronic Cam

- Provides E-Cam synchronous control function
- Graphic interface for programming E-Cam curves



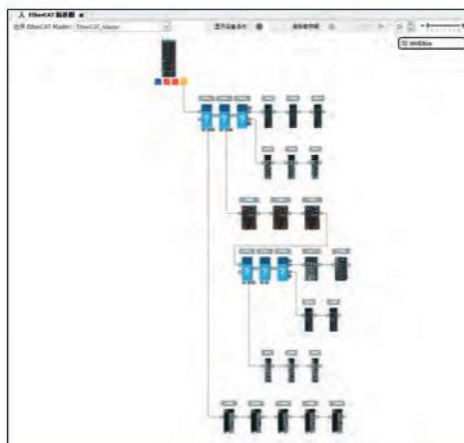
### Multi-Axis Function Block

- Motion control using IEC 61131-3 function blocks

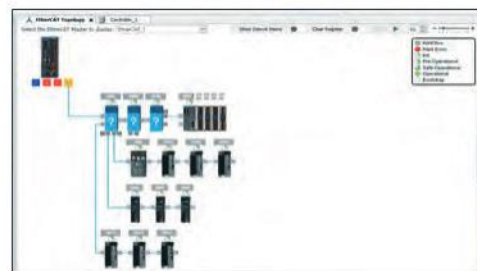


- Provides intuitive EtherCAT topology configuration to display the connection of slaves and junction devices
- Monitors and quickly finds problematic devices

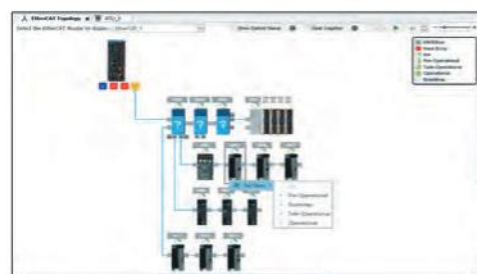
### Intuitive EtherCAT Topology Configuration



### EtherCAT Topology Diagnosis



### Status Setting with Just One Click

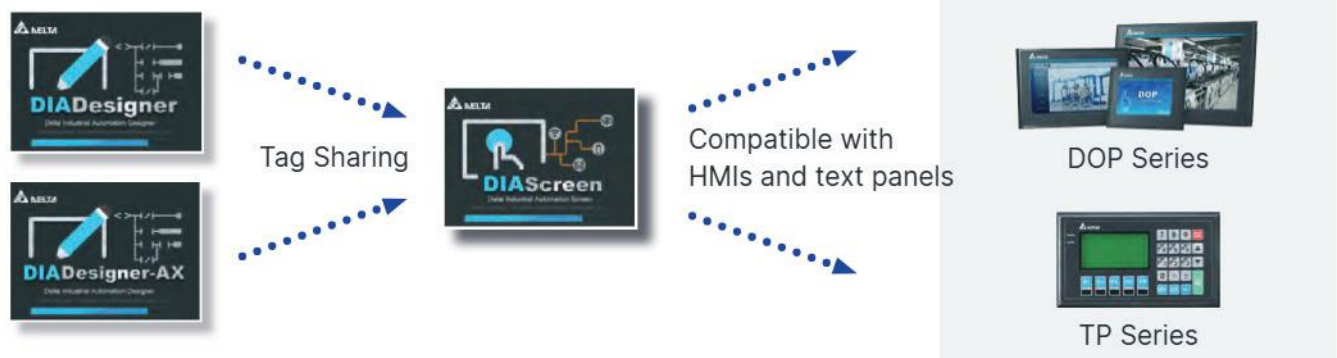


## DIAScreen HMI Programming

### Intuitive Visualization Software

#### User-friendly HMI programming software for DOP-100 and TP Series

- Provides a variety of templates for more efficient software programming
- Satisfies FDA 21 CFR Part 11 to ensure the accuracy and reliability of electronic data
- DIACloud cloud service solution
- RFID authorization management login
- Secure and remote access to device data
- Integrates HMI and text panel software functions and user interface for consistent UX
- Tag sharing between projects on **DIADesigner** and **DIADesigner-AX**



## DIAWebDesigner Web Interface Editor New

### SCADA Diagramming Configuration and Planning Cloud Configuration Screen Software

- Admins can select critical data to complete customized visualization
- Provides flexible layout and visualization interface design
- One-stop software development platform for easy development of monitoring dashboards
- Real-time data collection and quick decision-making with data-driven analytics
- Provides customized scene planning tools to meet industry needs





# Delta Smart Manufacturing

Delta Smart Manufacturing integrates Delta's software and hardware products of the OT and IT layer. This integrated solution upgrades production lines, digitizes production progress, and controls product quality for stable and seamless operation.

Managers can precisely control production status, factory information, and energy consumption data across plants, enabling real-time remote scheduling and decision-making. By applying AI and big data analytics, Delta Smart Manufacturing gives clients the edge in managing rapidly changing market demands and the manufacturing digitization wave.

Enterprise

Management

Control

OT



War Room



Mobile / Alarm



Cloud Platform



Data Analytics



Energy Analytics

## Digital Twin



**DIATwin**  
Digital Twin

## Manufacturing Operation DIAWorks



- Manufacturing Execution **DIAMES**
- Equipment Management **DIAEMS**
- Alarm Management **DIAAMS**
- Statistical Process Control **DIASPC**
- Smart Visualization **DIASVP**

## Automation Integration DIAAuto



- Equipment Automation Program **DIAEAP**
  - EAS for Electronics Assembly
  - IMM for Injection Molding Manufacturing
  - PMM for Precision Machining Manufacturing

## Industrial Communication Protocol Solution DIAAuto

Equipment Standard Communication and Control Application Software

- **DIASECS** for Semiconductors
- **DIACFX** for Electronics Assembly

Equipment IoT Platform

**DIALink**

## Intra-Plant Logistics DIATrans

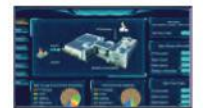


Warehouse Management  
**DIAWMS**



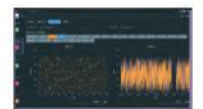
Material Control  
**DIAMCS**

## Smart SCADA



**VTSceda** | **DIAView**  
SCADA System

**DIAEnergie**  
Industrial Energy Management System (IEMS)

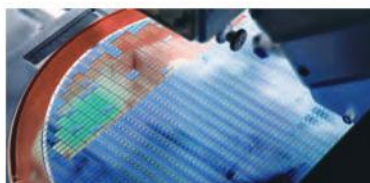


Equipment Predictive Maintenance (PdM AI)

## Electronic Assembly



## Semiconductor



## Passive Component



# Digital Twin

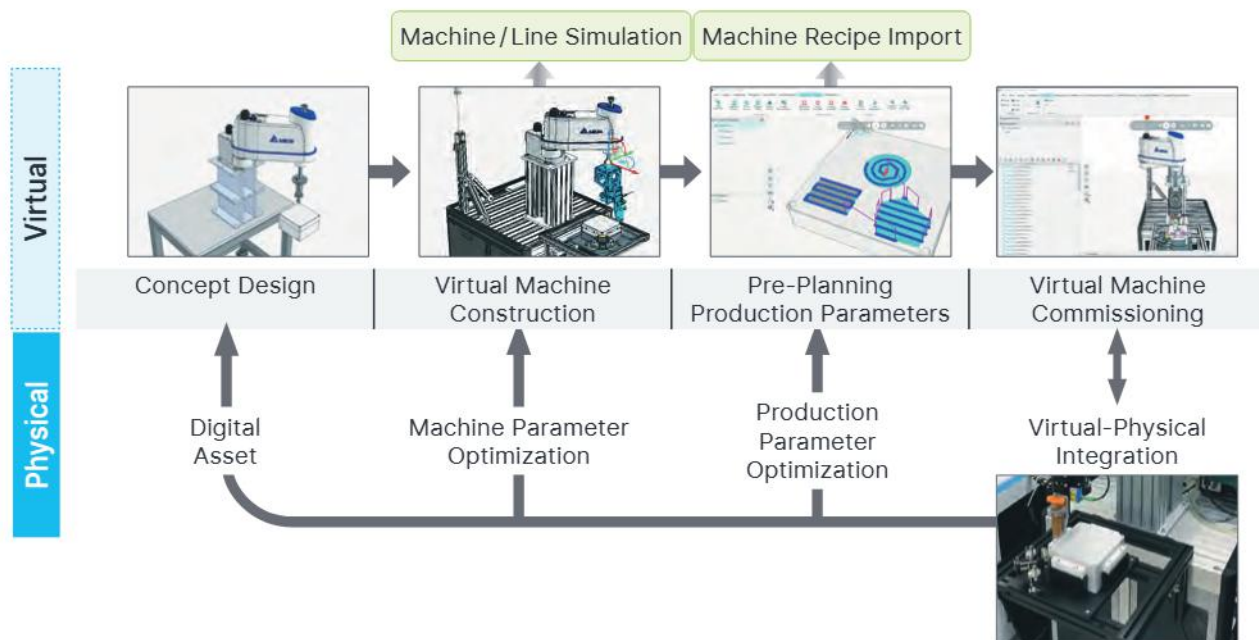
## Virtual Machine Development Platform

New

### DIATwin

DIATwin delivers cutting-edge machine-level and line-level digital twin solutions, seamlessly integrating conceptual design, process simulation, and parameter optimization into one robust platform. As a machine maker's Smart Design tool, DIATwin empowers one stop smart machine development — from pre-sales visualization and virtual prototyping to offline path planning and recipe generation. By leveraging DIATwin, businesses unlock smarter investment strategies, optimize costs, accelerate time-to-market, and achieve unparalleled efficiency and production capacity.

### Digital Twin Solution for Automated Machine Development



#### Virtual-Physical Integration

- Optimizes parameters based on path, time, and key metrics
- Supports programming for PLC, PC-Based controllers, and Delta RL controllers
- Provides process behavior analysis tools such as collision detection and oscilloscopes

#### Easy Operation

- Speeds up layouts with a comprehensive machine and model library
- Simplifies development through algorithms and models in the industry module toolkit

#### High Flexibility

- Features add-ons for expanding industry modules
- Follows FMI standards, supporting reusable/ planned simulation models

#### High-Fidelity Simulation

- Achieves 3D process simulation without physical equipment
- Accurately simulates Delta products, including motion control cards, robots, servo drives, PLCs, and more

#### Applications

PCBA, Electronics assembly equipment, Semiconductor testing & packaging, Packaging, Precision machine makers and the Industrial Engineering (IE) department of the factory



# Smart SCADA

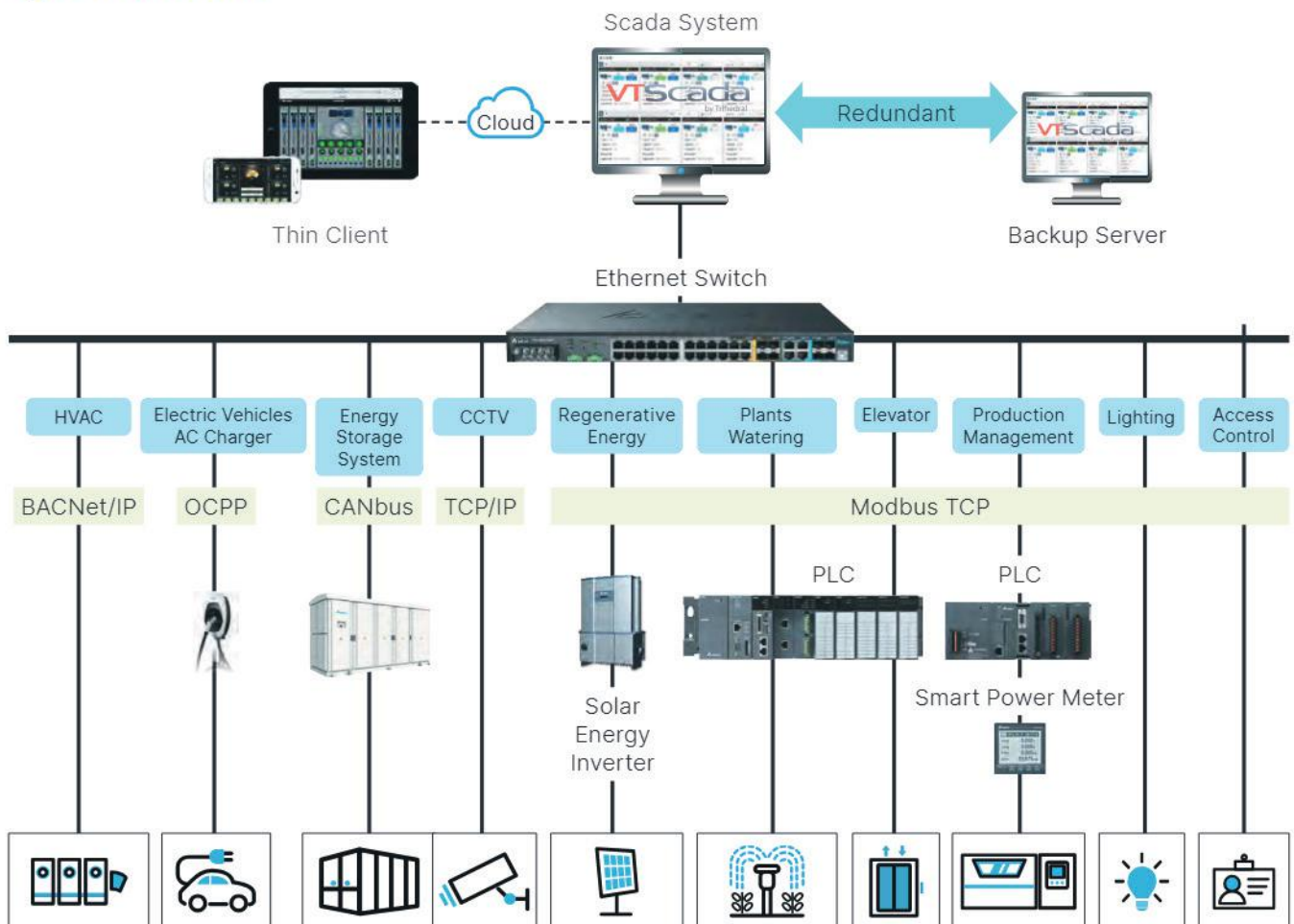
## SCADA System VTScada

### Remote Real-time Monitoring for Factories

- Integrated architecture with one-time installation
- Diverse Driver Library with 100+ industry standard and proprietary protocols
- Built-in Historian database, no extra cost or configuration
- Achieves IEC-62443-4-1-ML 3 cybersecurity certification
- VTScada Thin Clients enable remote access from anywhere
- Instantly build intuitive screen with 200+ widgets, 4000+ graphics, and 3D pipes



### System Structure



### Applications

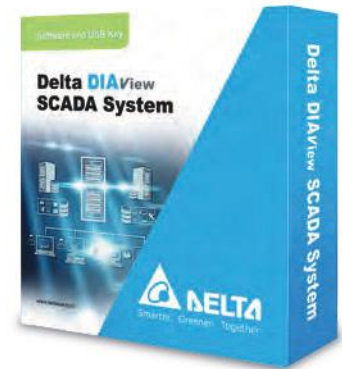
Water & wastewater treatment, Oil & gas, Chemicals, Electronics manufacturing, Food & beverages

# SCADA System

## DIAView

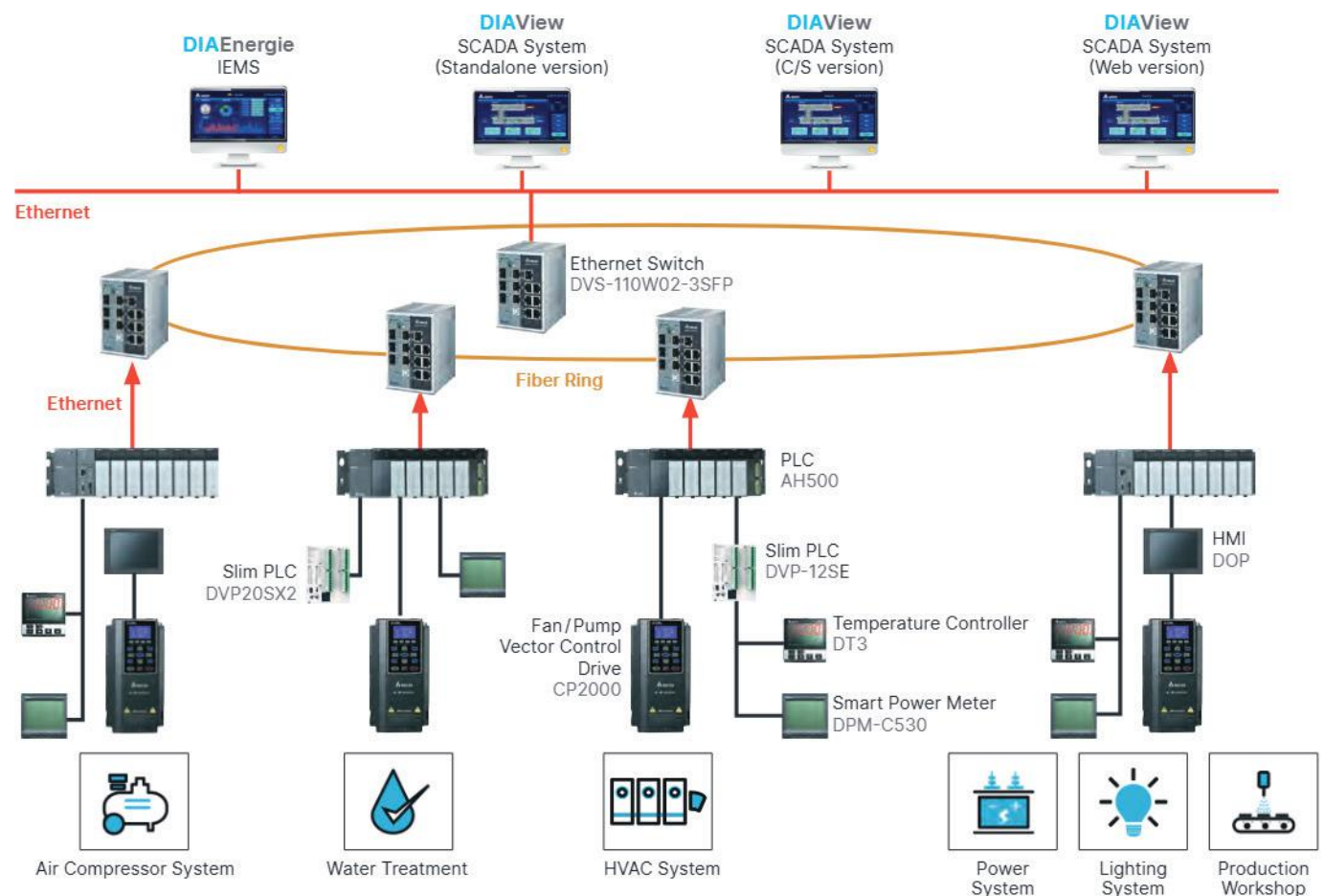
### Remote Monitoring for Smart Factory Management

- Seamless integration with Delta PLCs and I/O modules, supporting various industrial communication protocols and equipment drivers
- Web-Based CSS/HTML5 platform and WPF technology for intuitive & vivid displays and easy-to-navigate interfaces
- Variables Library and batch parameter editing for flexibility and high efficiency
- Diverse real-time data visualization: curve/pie/bar charts and reports
- Real-time and historical data analysis tools
- Efficient anomaly alarms and management
- Easy-to-learn VBScript language
- Reliable user authority management for different authorization levels



12 Software

### System Structure



### Applications

Smart manufacturing and smart machines, HVAC, Water treatment, Electronics manufacturing



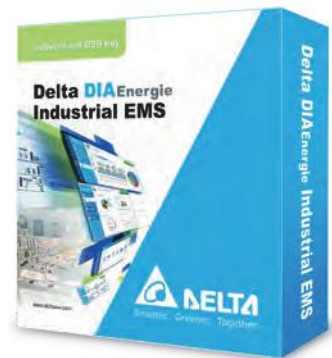
# Smart SCADA

## Industrial Energy Management System

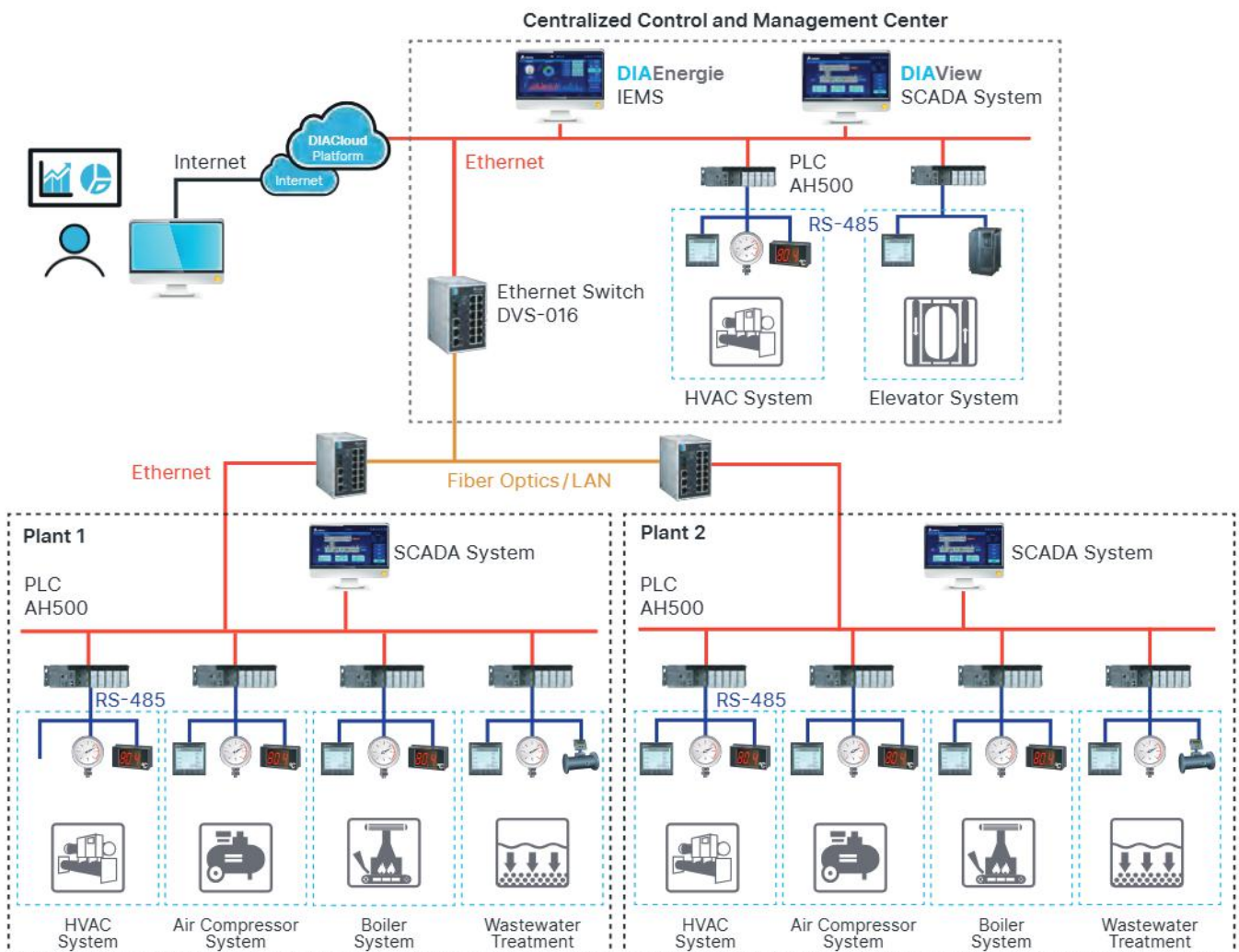
### DIAEnergie

#### Innovative Solution for Smart Energy Saving

- Remote monitoring and visualization of critical power data
- Data analytics by areas and user authorization levels
- Monitoring and analysis for energy performance goals
- Real-time alarms for anomalies
- Power consumption analysis for efficient electricity usage and cost savings
- Demand management and forecasts to avoid exceeding the electricity consumption threshold
- User-defined tools for report output and a variety of data analyses



#### System Structure



#### Applications

Energy saving, Environment control, Power monitoring and analysis, Facility management control

# Data Integration Platform New inData+

inData+ offers a one-stop integrated solution for digital transformation, enabling centralized management of data, configurations, and licensing across subsystems via a central server, ensuring stable and efficient connectivity

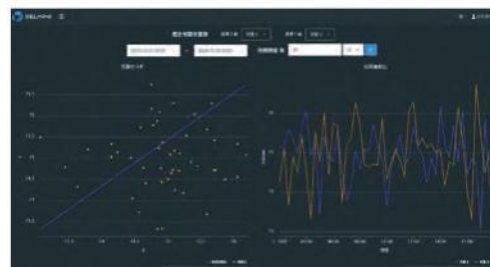
## Flexible and deployment and management

- Supports mainstream OT and IT communication protocols, including OPC DA, OPC UA, Modbus, ODBC, MQTT, and Web API, enabling seamless connectivity with various devices and systems

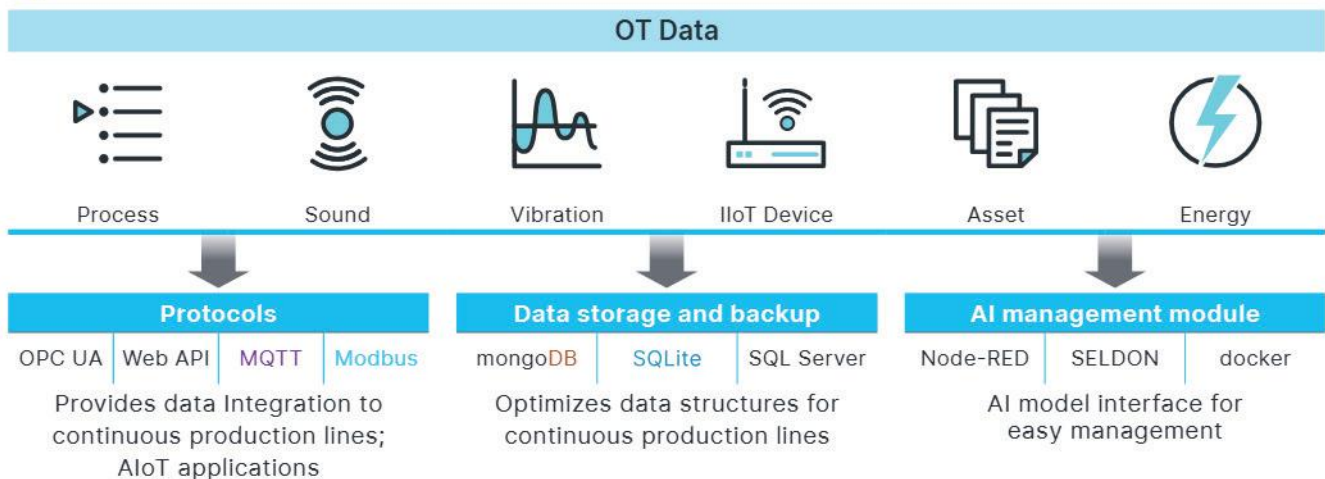


## Rapid deployment and management AI models

- The database is compatible with process data (such as temperature, pressure, flow) and equipment inspection information (such as vibration data and inspection reports), providing AI models with more diverse feature data to support precise learning and analysis



## System Structure



## Applications

Petrochemical industry, Steel industry, and Fiber/textile industry; Other continuous production lines



Petrochemical



Steel



Fiber/Textile



# Smart SCADA

## Predictive Maintenance AI New PdM AI

PdM AI is a robust solution for continuous processing industries, offering three core functions: real-time monitoring with OA, health / RUL prediction, and anomaly detection

### Anomaly detection and alarms

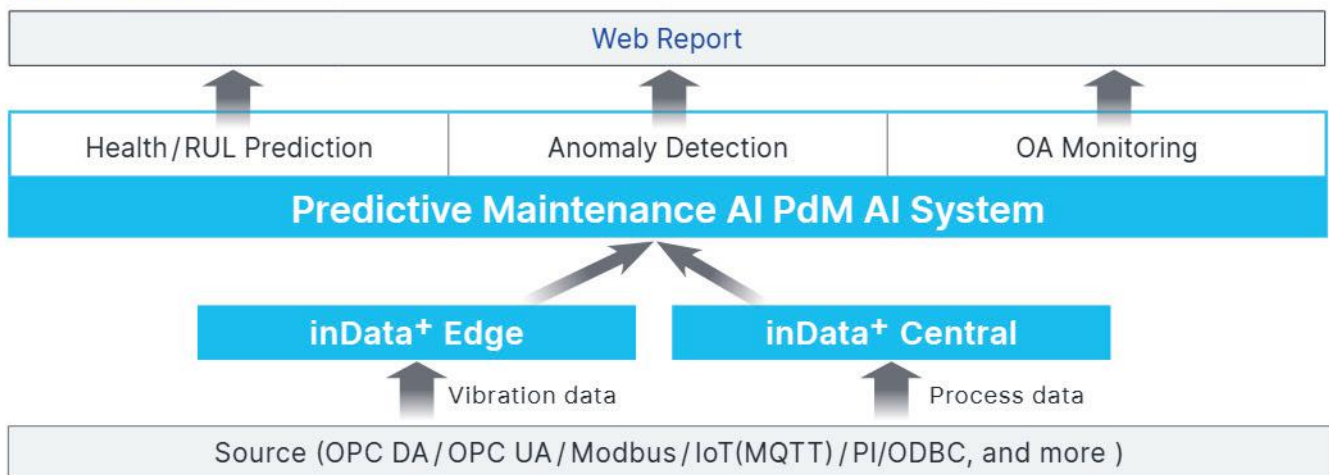
- Real-time monitoring
- Immediate alert notification
- Historical data analysis & trends
- User-configurable alert thresholds

### Failure root cause analysis

- Accumulation of experiences
- Cost reduction due to lower professional personnel turnover
- Effective anomaly management strategies
- Continuous improvement



### System Structure



### Applications

Petrochemical, Steel, Fiber / Textile industry, Other continuous production lines



Petrochemical



Steel



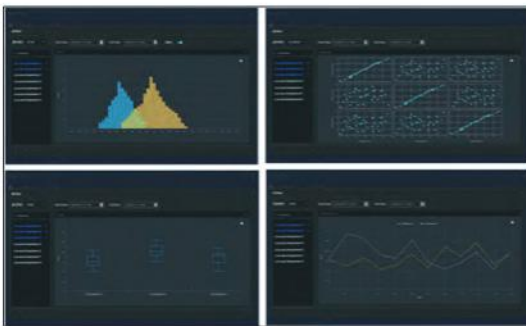
Fiber / Textile

## Data Insight Analytics Platform Miner<sup>+</sup> New

Miner<sup>+</sup> empowers data intelligence in process improvement, equipment inspection, production, and quality control. With a user-friendly interface and seamless integration with inData<sup>+</sup>, users can extract data insights from the production process

### User-friendly data analysis capabilities

- Provides data intelligence for process improvement, equipment inspection, production, and quality control
- Factor analysis considers time delays in continuous production

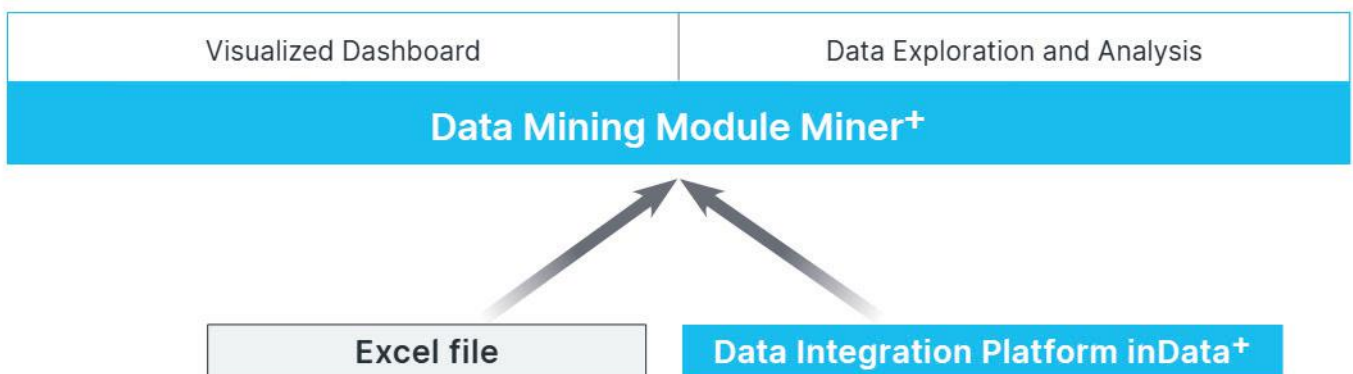


### Visualized dashboard

- Enables users to integrate data sources from the inData<sup>+</sup> Data Integration Platform to achieve process improvement, equipment operation tracking, and process status monitoring



### System Structure



### Applications

Petrochemical, Steel, Fiber / Textile industry, Other continuous production lines



Petrochemical



Steel



Fiber / Textile



# Smart SCADA

## Spectrum Analysis System SPAS<sup>+</sup> New

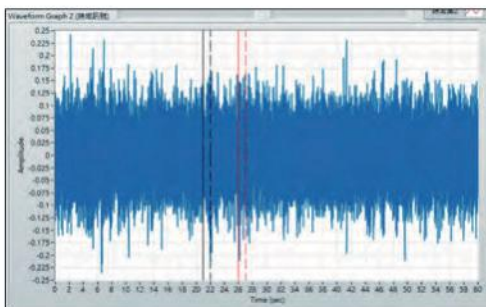
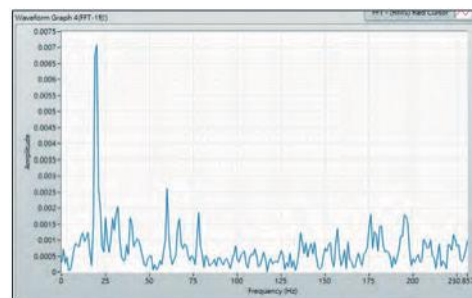
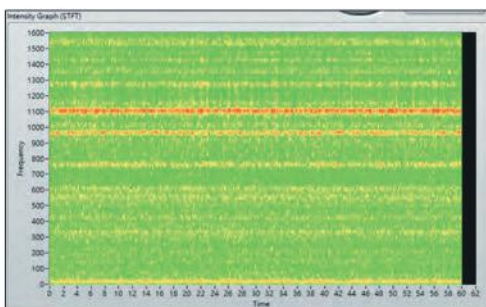
SPAS<sup>+</sup> is an advanced vibration signal analysis tool designed for time-domain, frequency-domain, and time-frequency signals. It allows custom filtering, including high-pass, low-pass, and band-pass filters, for precise capturing of target frequencies. The unique defect frequency database offers automatic fault annotation, enabling users to quickly identify issues. SPAS<sup>+</sup> supports database expansion to ensure the latest vibration data and effectively manages and analyzes vibration data to enhance equipment health monitoring efficiency

### Integration with PdM AI system

- Real-time data synchronization
- PdM case study & insights
- Remote diagnostics and troubleshooting

### Replaces traditional spectrum analysis

- User-friendly interface
- Historical data analysis and trend identification
- Customizable reporting and alarms
- Interactive data visualization & config tools



## Applications

Petrochemical, Steel, Fiber / Textile industry, Other continuous production lines



Petrochemical



Steel



Fiber/Textile

# Manufacturing Management Platform DIAWorks

## Statistical Process Control System

### DIASPC

DIASPC collects real-time measurement data in the manufacturing process, applies statistical methods and control rules to provide early warning of abnormal trends, monitors the manufacturing process, and stabilizes the manufacturing process for improved product quality. Complies with the IATF16949 international standard

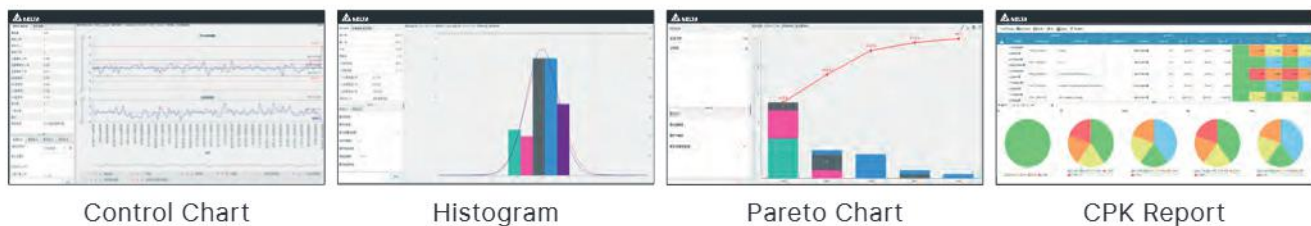
#### Alarms notify and ensure the stability of the process capability

- Various variable, attributed data, and control rules effectively monitor process capability and prevent anomalies
- Quickly finds stratifications and provides anomaly analysis
- 3 real-time monitoring tools, including alarm board, e-mail notification, and monitoring dashboard, for anomaly quality events

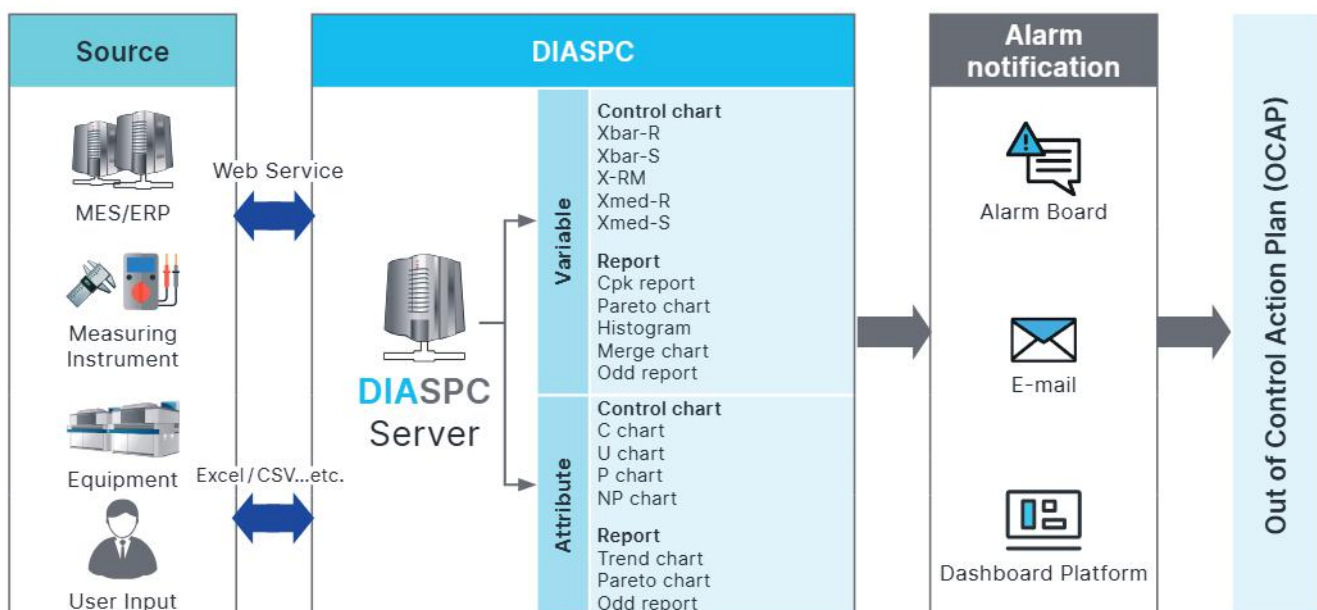
#### PDCA management cycle used to continuously optimize production quality

- Users can import the excel file to build the basic setting data and measurement data quickly
- Tracks and manages the quality status anomaly, provides Out of Control Action Plan (OCAP)
- Provides version history tracking for control limit and specification limit versions
- Flexible export format for users to quickly create certificate of analysis reports and quality assurance certificates

#### Provides a variety of charts and reports for analysis and control



### System Architecture





# Manufacturing Management Platform **DIAMES**

## Manufacturing Execution System

### DIAMES

**DIAMES** is the core of the smart factory, coordinating upper-level planning and management systems with equipment control in the lower-level workshop. Through data transmission of production activities, from order to completion, **DIAMES** optimizes manufacturing process management. It is the key to factory digital transformation

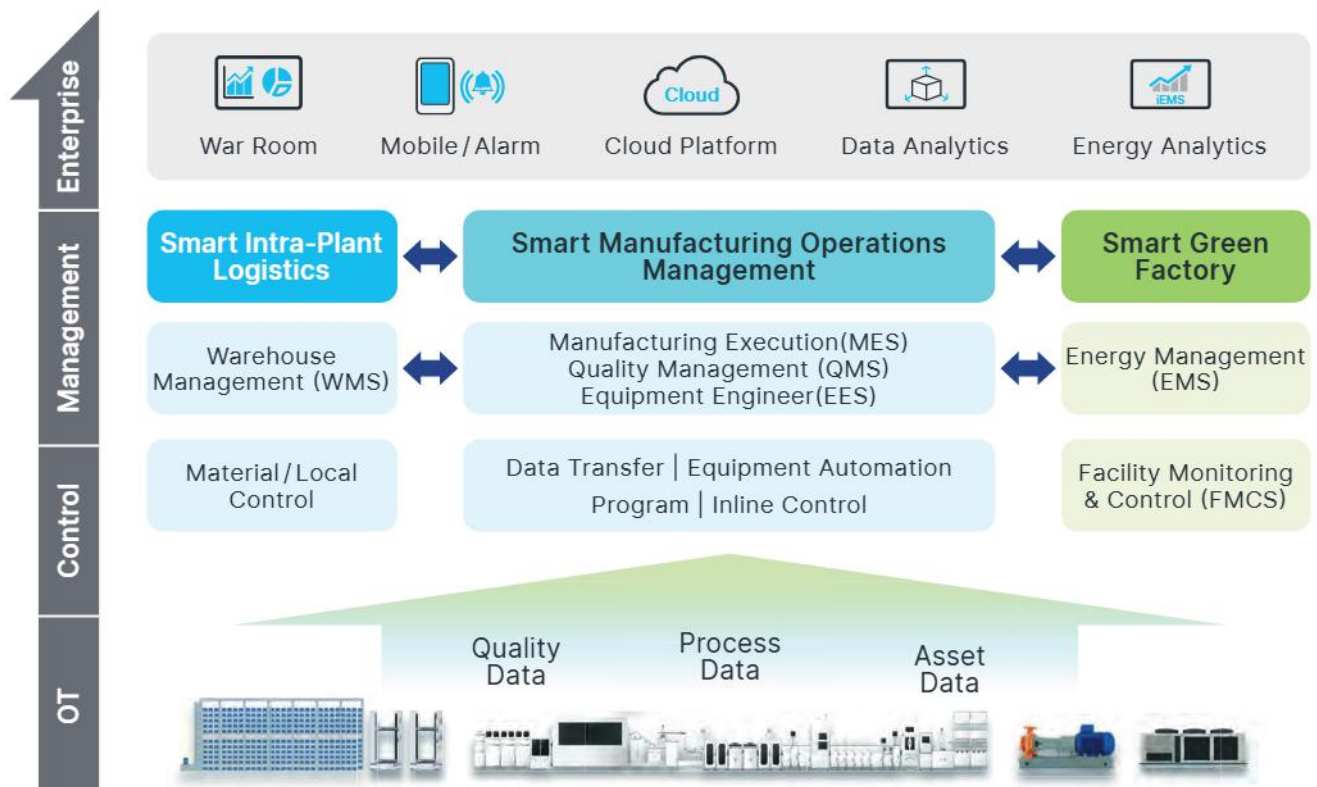
#### Compliant with ISA-95 Standards: Integrated cyber-physical manufacturing management system

- Systematically establishes standard production processes and specifications, conducts real-time checks to prevent faults and record production history
- Collects production data such as personnel, machinery, materials, methods, environment, and measurements; Monitors production in real time with visualization platforms

#### Smart production and quality control solutions

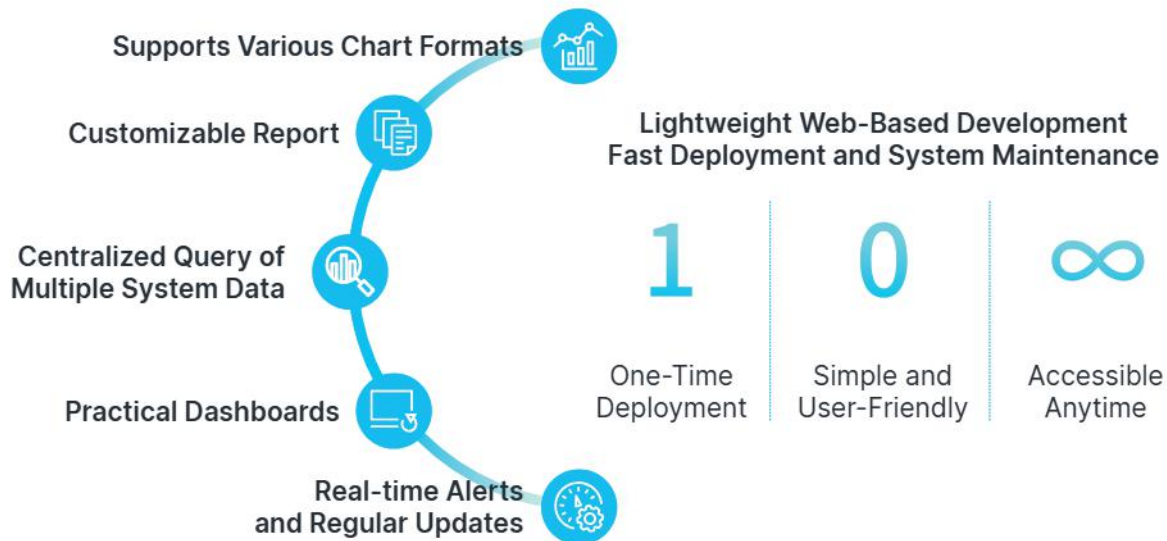
- With production management at its core, **DIAMES** integrates quality, equipment, material storage and logistics management to enhance efficiency
- Provides work-in-progress (WIP) management items, including serial number tracking, batch tracking, lot tracking, and carrier tracking
- Flexibly set quality inspection rules tailored to different industries; Integrates with **DIASPC** to achieve real-time control for customized solutions

### System Architecture



Provides a centralized factory production information visualization management platform. It integrates big data analytics to enable remote monitoring and decision-making

Simple configuration for rapid report development and swift deployment



### Supports diverse data sources: Seamless integration for smart operations

Harnessing the power of data, the system seamlessly integrates SQL queries, stored procedures, and external computing modules (e.g., AI, SPC), driving intelligent operational management

- Flexible Integration: Access cross-system data to minimize data silos
- Intelligent Analytics: Leverage AI modules for data insights and predictions
- Real-Time Response: Process data in real time to accelerate decision-making
- High Scalability: Easily adaptable to complex scenarios

#### Production Efficiency



#### Real-time Dynamics



### Applications

Electronics assembly, Electronic components, Printed circuit boards, Semiconductor, Metal processing, Home appliances, Automotive parts, Food processing, Flat panel displays and materials, and other industries



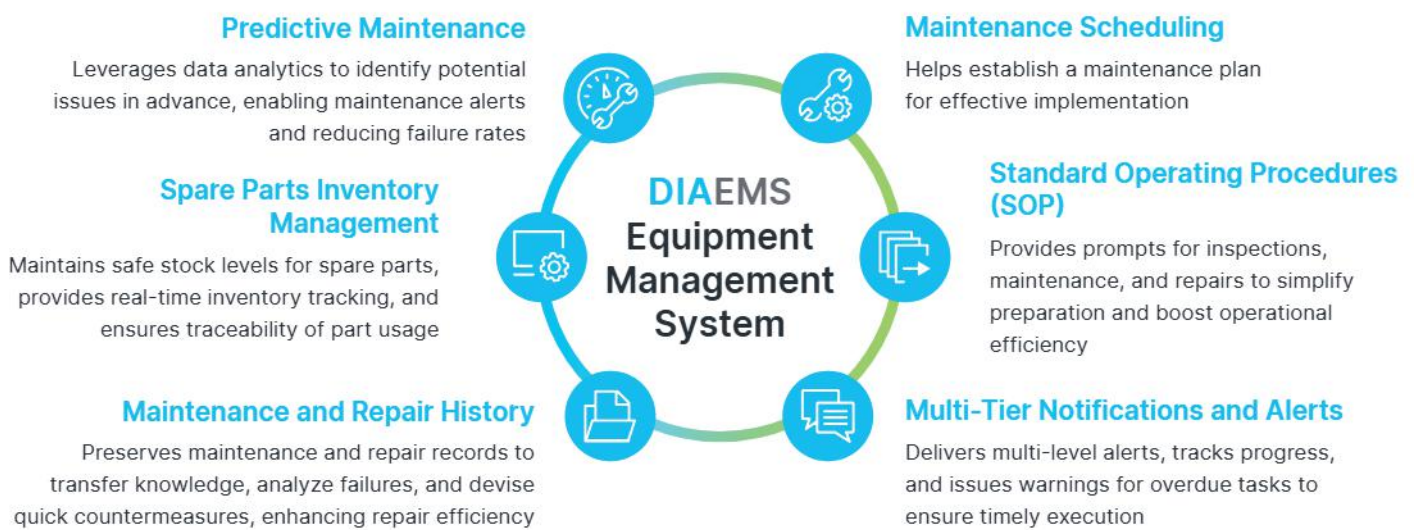
# Manufacturing Management Platform **DIAWorks**

## Equipment Management System

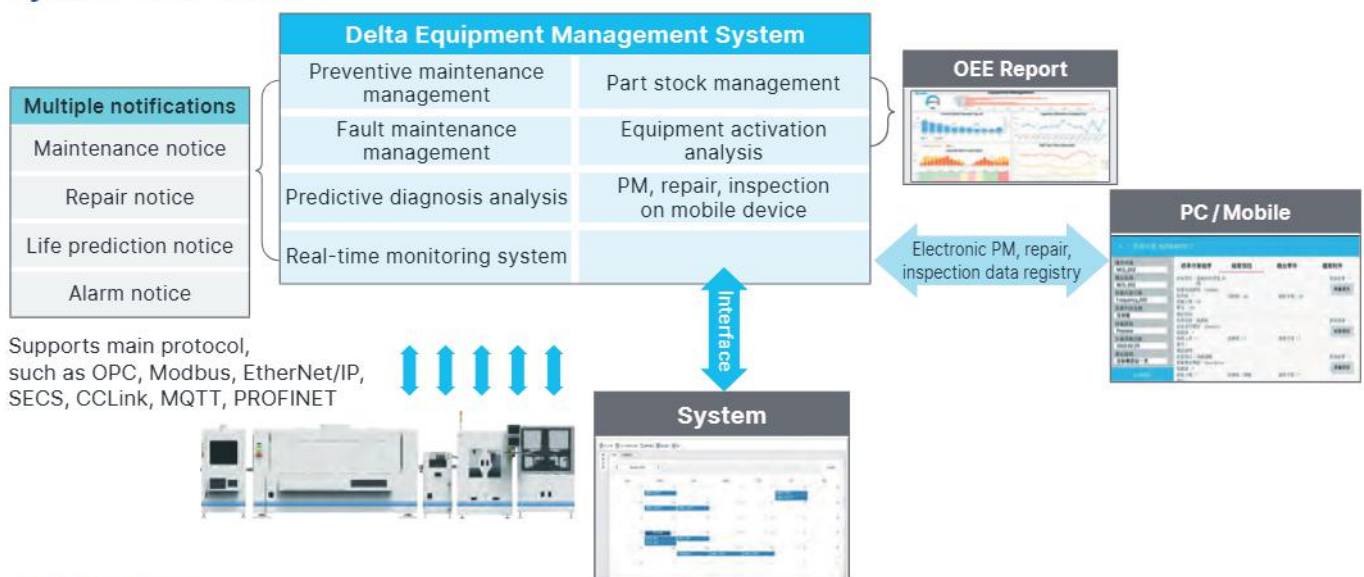
### **DIAEMS**

Comprehensive equipment maintenance effectively enhances equipment utilization and anomaly diagnosis, reducing management workload and enhancing efficiency. By integrating IT and OT, the solution unifies specifications and communication across heterogeneous equipment, simplifying management and ensures seamless execution of equipment management

### IT + OT: Integrated Communication for Seamless Interfacing Enabled by Heterogeneous Equipment and Predictive Diagnostics



### System Architecture



### Applications

Electronics assembly, Electronic components, Printed circuit boards, Semiconductor, Metal processing, Home appliances, Automotive parts, Food processing, Flat panel displays and materials, and other industries

# Automation Integration Platform DIAAuto

## Equipment Automation Program

### DIAEAP<sup>+</sup>

Integrates diverse specifications and protocols, leveraging edge computing to achieve smart manufacturing. Enables effective production management.

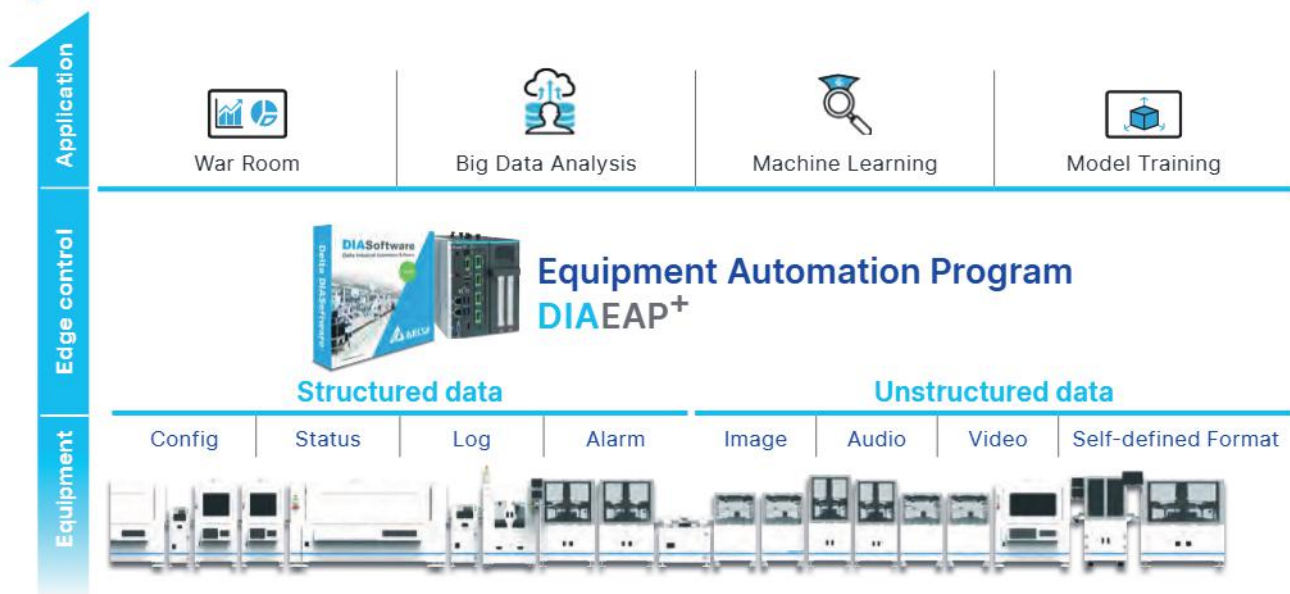
#### Simple web UI design, low-code development platform, rapid deployment

- Edge computing enables faster response times and reduces the loading on upper level systems
- Supports standard communication protocols, such as OPC UA, Modbus, SECS, CFX, and more
- No-Code/Low-Code platforms enable rapid data acquisition, management, and AI applications
- One-stop consulting service covers requirement analysis, spec development, system implementation, and maintenance
- Standardized assistance tool, Factory Automation Suite, ensures smooth deployment

#### Applications tailored to each industry

- Industry key parameter analysis, deep integration of production procedures
- Industry-specific modules for rapid deployment
- Monitoring visualization provides real-time device status for quick troubleshooting
- Independent operation to control equipment and production flow, ensuring seamless production despite anomalies in upper-level systems

### System Architecture



### System Functions

Production Monitoring



Centralized Monitoring



Data Intelligence



Issue Tracking



AI Services



### Applications

Printed circuit boards, Electronics assembly, Electronic components, Semiconductor, Chemical



# Automation Integration Platform DIAAuto

## Equipment Automation Program for Injection Molding Manufacturing Applications

### DIAEAP-IMM

Integrates diverse specifications and protocols, leveraging edge computing to achieve IIoT for enhanced production line efficiency

#### Injection molding know-how and equipment IIoT

- Deep industry knowledge, quickly builds injection molding machine networking interface
- Supports multiple communication protocols, such as MQTT, Modbus TCP/IP, OPC UA, WebSocket, Restful WebAPI
- Standard modular design supports centralized and decentralized system architecture, reducing costs, manpower; Rapid deployment

#### Data analysis and visualization, process optimization, cost saving

- Data analytics, reports and trend charts
- Injection Wizard
- Records and accumulates the production experience, and optimizes the processes continuously
- Edge computing tech enables fast response and lower implementation costs

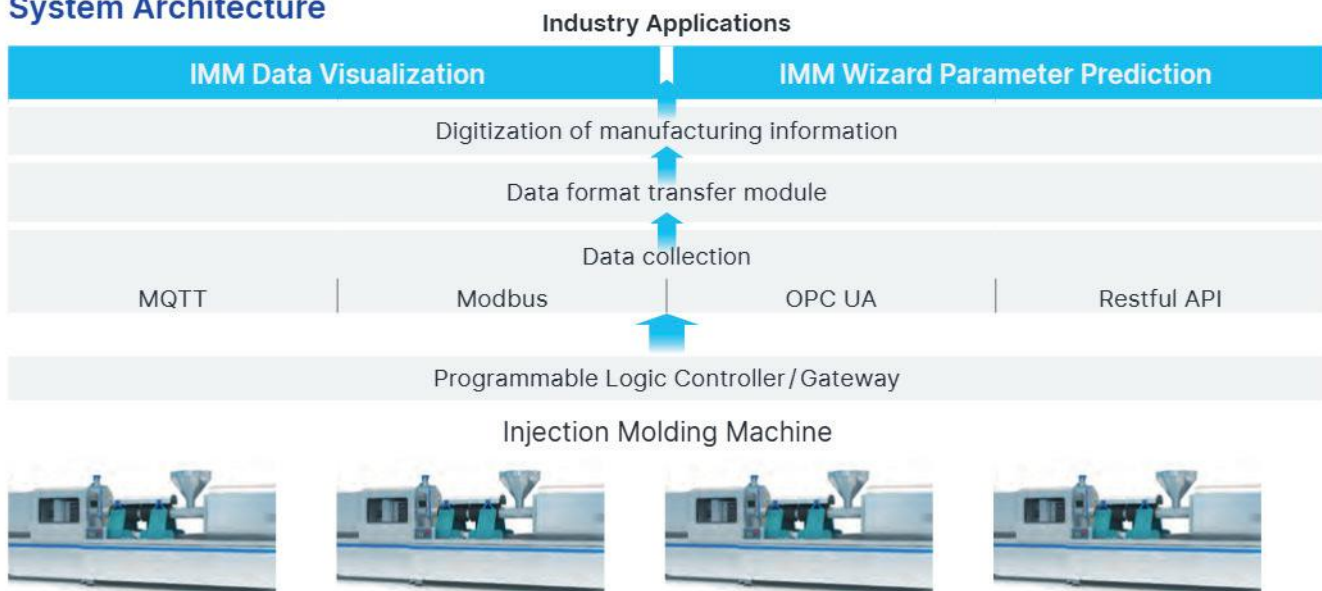
Production/Equipment Visual Interface



Production Information Monitoring & Alarm



### System Architecture



### System Functions

Production Monitoring



Parameter Management



Production Data Collection



Issue Tracking



WIP Management



# Equipment Automation Program for Precision Machining Manufacturing Applications

## DIAEAP-PMM

Integrates diverse specifications and protocols, leveraging edge computing to achieve IIoT for enhanced production line efficiency

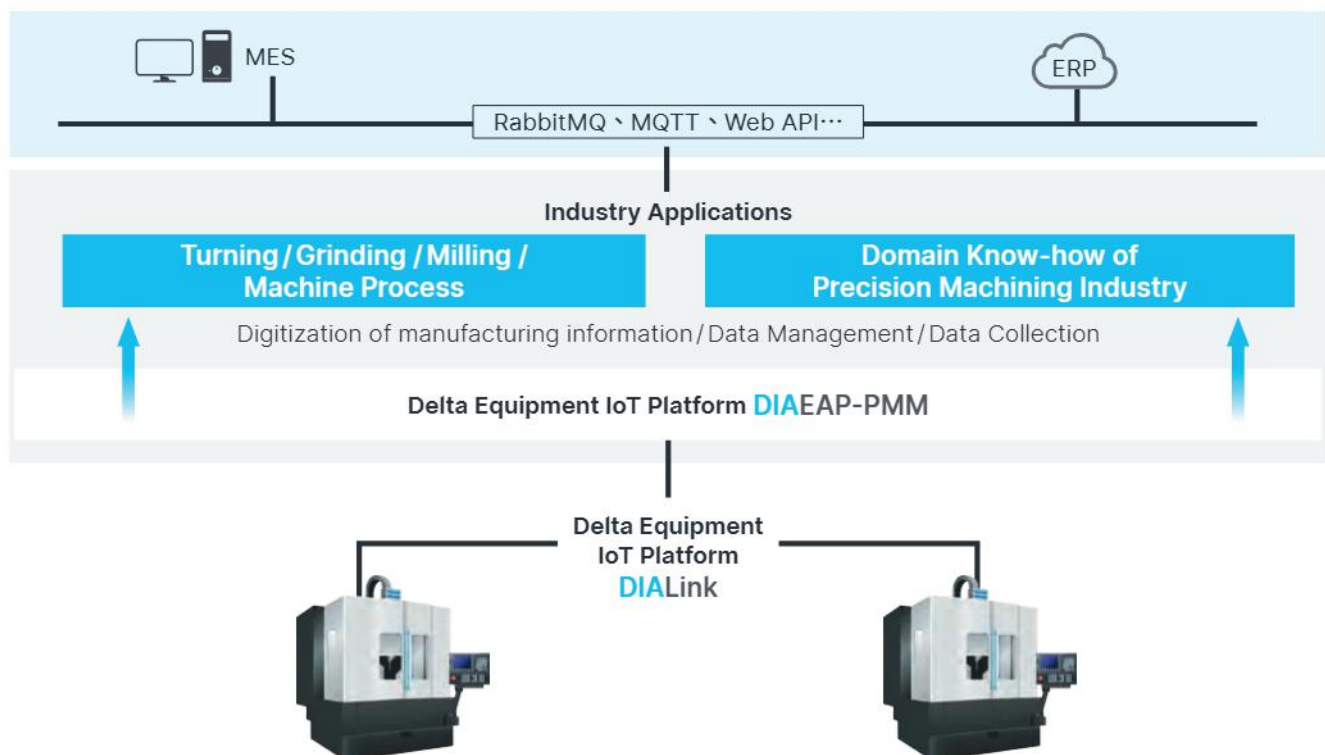
### Precision machining manufacturing know-how

- CNC machine data collection and precision machining applications
- Tool, spindle and servo axis monitoring
- Alarm setting, compensation parameter monitoring and response

### Turning/grinding/milling/precision machining production process optimization

- Equipment operation, production indicators, work orders, and tools monitoring to enhance efficiency
- Monitors value setting/OOC (Out of Control limit), improves the product quality
- Visualization of manufacturing information, production inspections, reduces manpower and cost

### System Architecture



### System Functions

Production Monitoring



Parameter Management



Production Data Collection



Issue Tracking



WIP Management



Production / Equipment  
Visual Interface



Process Parameters  
Real-time Monitoring





# Industrial Communication Protocol Solution **DIAComm**

## Semiconductor Equipment Standard Communication and Control Application Software

### **DIASECS**

It offers highly-automated configuration tool setting to quickly import SECS / GEM standards, and is applicable to semiconductors, printed circuit boards, photovoltaics, LEDs, displays, and other electronic components.

#### Complies with SEMI standards, high performance, easy to use

- Fully complies with SEMI standard
- Communication rate can reach 300 transactions per second
- User friendly API, provides simulator for functional verification and stress testing, quickly imports SECS / GEM

#### High integration, user-friendly, issue tracking

- Highly automated integration of SECS / GEM specifications, supports most PLC communication protocols
- Quickly completes parameter configuration and settings for quick start
- Provides complete SECS event log to track anomaly effectively

#### SECS / GEM Library & Runtime

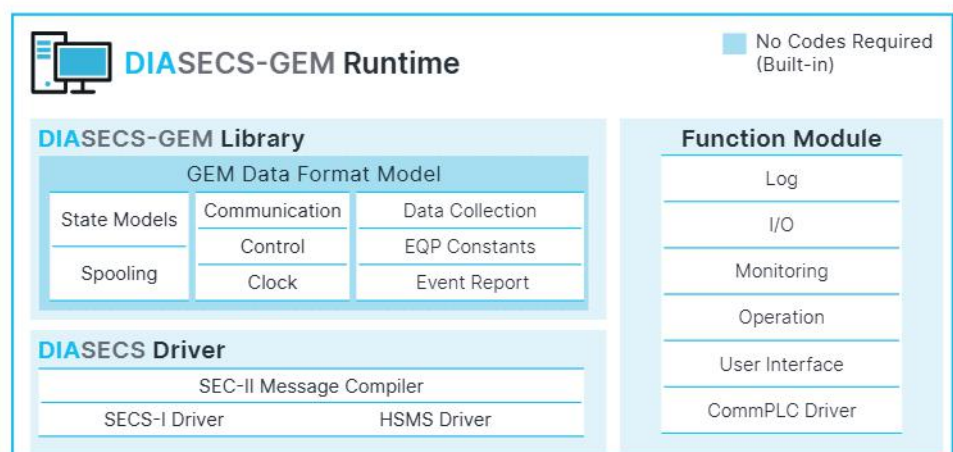


#### SECS / GEM gateway



#### Software Architecture

##### DIASECS-GEM RunTime



# Electronics Assembly Equipment Standard Communication and Control Application Software DIACFX

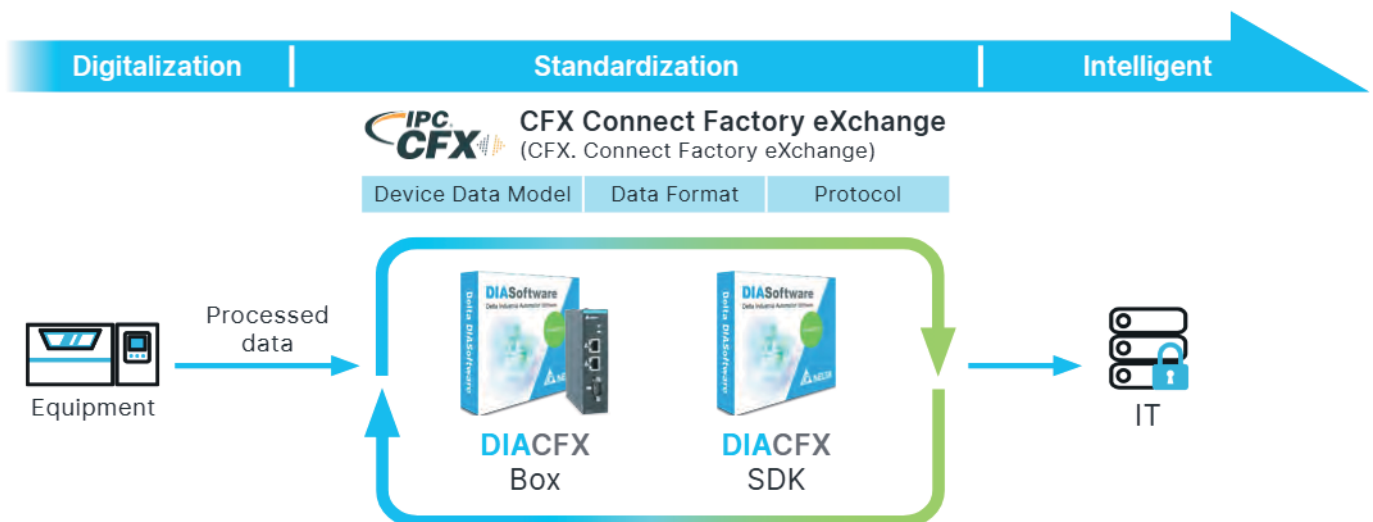
Supports machine makers in quickly implementing the IPC-2591, Connected Factory Exchange (CFX) standard. **DIACFX** solves the problem of high customization costs, and closes the gap between OT and IT. Applications include the electronics assembly industry, such as for SMT and assembly equipment.

## Complies with IPC-2591, CFX Standard

- Reduces high customization costs, accelerates data integration

## Supports PC and PLC-based equipment

- For PC-based equipment, programmers only need to input the parameters defined by SDK, which will standardize the data model and protocol to comply with IPC CFX
- For PLC-based equipment, programmers only need to write data with their familiar PLC registers. The **DIACFX** Box supports plug and play for easy connection
- Supports various PLCs, and provides simulation tools to reduce the amount of testing required



Target User	Assembly Equipment Manufacturers	
	DIACFX SDK	DIACFX Box
Equipment Type	PC based	PLC based
	Programming C#	Programming PLC
Standard	IPC CFX 1.6 Standard	
Protocol	AMQP 1.0	
Web UI	-	Supports
Compiler Version	Supports .Net Framework Ver. 4.6.2 above, Net core Ver 3.1 above	-
OS	Windows 7, Windows 8, Window 10, Window 11, Windows Server 2003 above, Linux	-
Programmable	C#	Low-code tools
Compatible PLC	-	Delta, Fanuc, Siemens, Mitsubishi, Omron, and more
Simulation Tools	✓	



# Industrial Communication Protocol Solution **DIAComm**

## Equipment IoT Platform

### DIALink

#### Equipment Monitoring and Data Acquisition

##### Features

- Supports connection to CNCs/PLCs and various equipment brands
- Real-time data access/visualization/storage
- Cloud computing via OPC UA/MQTT
- Edge computing with M2M connection
- Machine data collection
- Machine anomaly and idle time monitoring



##### Applications

- Real-time equipment data collection
- Remote monitoring and control

##### Rapid, Seamless and Secure Data Transfer

- Supports Modbus slaves, JSON, MQTT data formats
- Open web API for development

##### System Architecture



##### Applications

Electric vehicle assembly, Hardware manufacturing, Electronics and appliances assembly, Industrial robots

# Intra-Plant Logistics Platform **DIATrans**

## Warehouse Management System

### **DIAWMS**

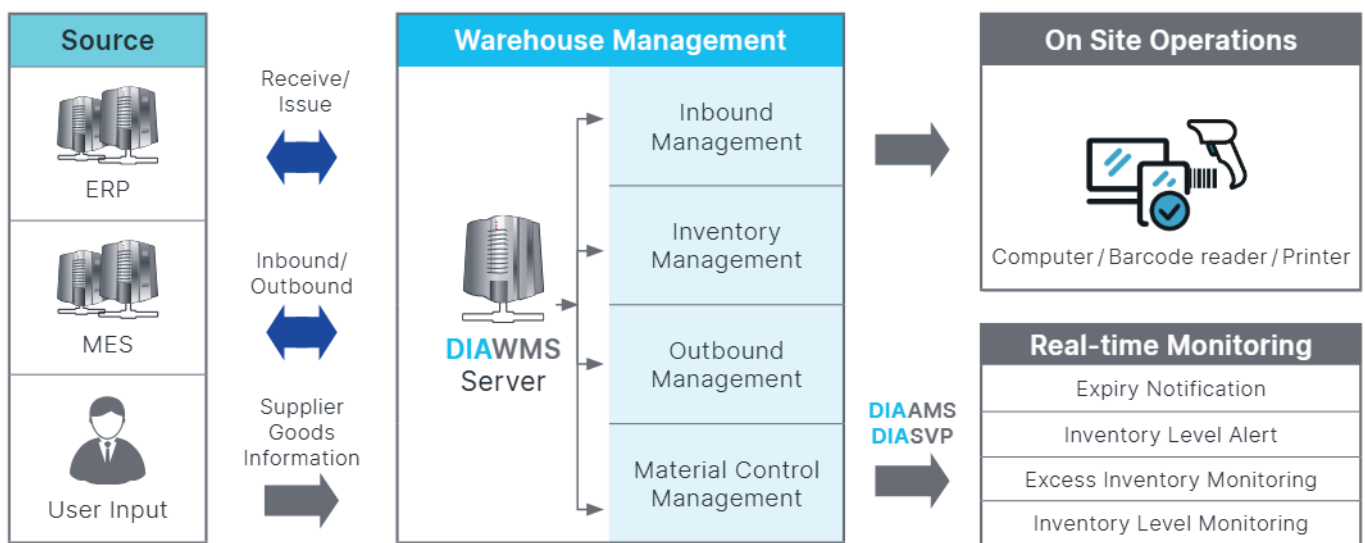
**DIAWMS** integrates inbound/outbound operations with warehouse management. It improves resource management and monitors material status, reducing inventory costs, and effectively improving inventory turnover and operational efficiency.

#### Systemizes dynamic management, increasing inventory transparency

- Ensures inventory data accuracy in picking, taking stock, and allocation; implements safety inventory, excess monitoring, and FIFO
- Provides the tracing of material destinations and querying important information
- Offers exception management such as material unpacked, packed, merging/batching, material control disabling, expiration date extension, allowing flexible adaptation to various requirements
- Merges multiple work orders into a pick list according to production schedules, enhancing preparation efficiency

#### System integration to achieve automated warehousing and intelligent logistics

- Provides standard interfaces for the integration of commands and equipment, optimizing real-time scheduling of production resources
- Supports smartphones, tablets, PDAs, and other mobile devices, allowing real-time connection to the system on site



### System Functions

#### Goods Receiving



Attaches barcode for quality control of received materials; permits entry to the warehouse

#### Picking Strategy



Flexible picking strategy to enhance workflow efficiency

#### Inbound



Provides the designated bin to facilitate inbound operations

#### Outbound / Goods Issuing



Schedules and picks materials according to the shipping order

#### Inventory Management



Monitors the inventory expiration date to reduce waste and boost turnover

#### Dashboards / Reports



Provides dashboards and reports to analyze the current status of inventory



# Intra-Plant Logistics Platform **DIATrans**

## Material Control System

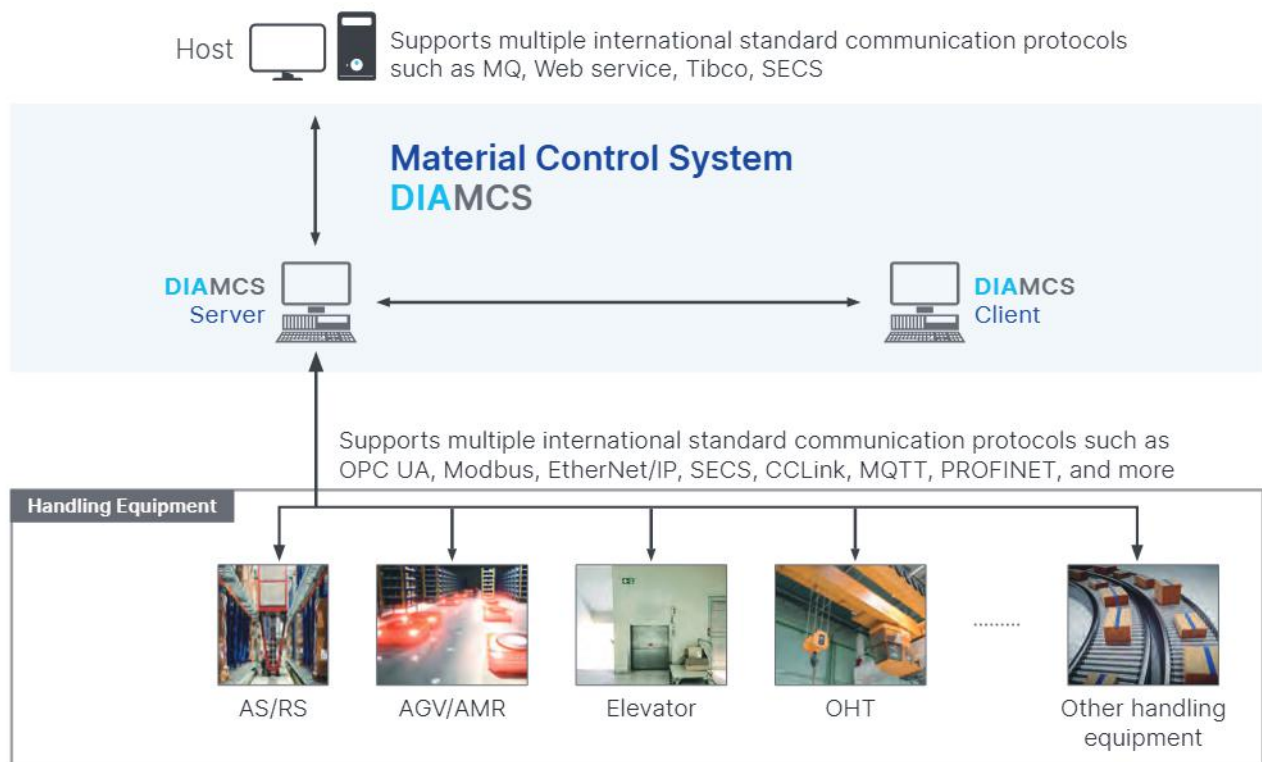
### **DIAMCS**

**DIAMCS** provides system integration of factory material control equipment and warehouse equipment. It enhances transportation efficiency and real-time production scheduling.

#### Optimal transportation routes for equipment efficiency and bin balance

- Manages material handling and warehouse equipment; plans optimal routes for enhanced bin balance
- Provides a monitoring dashboard for warehouse, query histories handling records; Easy material control and tracking
- Offers statistical analysis of equipment efficiency and utilization rates, reducing ineffective material handling
- Supports multiple international standard communication protocols such as OPC UA, Modbus, EtherNet/IP, SECS, CCLink, MQTT, PROFINET, and more
- Accepts dispatch and warehouse orders from management systems to control handling equipment; Provides real-time handling report

### System Architecture



### System Functions

Dispatch Orders	Topology	Optimal Route	Statistical Analysis	Dispatch Monitoring
Dispatches orders for all storage locations/Material handling orders	Provides real-time command execution to monitor status on site	Optimizes/plans dispatch routes	Statistical analysis of material control efficiency	Real-time tracking of the path of conveyed materials

## Note



# Global Operations

## ASIA (Taiwan)



Taoyuan  
Technology Center  
(Green Building)



Taoyuan Plant 1



Tainan Plant  
(Diamond-rated Green Building)

## ASIA (China)



Wujiang Plant 3



Shanghai Office

## ▲ 10 Factories



## ASIA (Japan)



Tokyo Office

## ASIA (India)



Rudrapur Plant  
(Green Building)

## EUROPE



Amsterdam, the Netherlands

## AMERICA

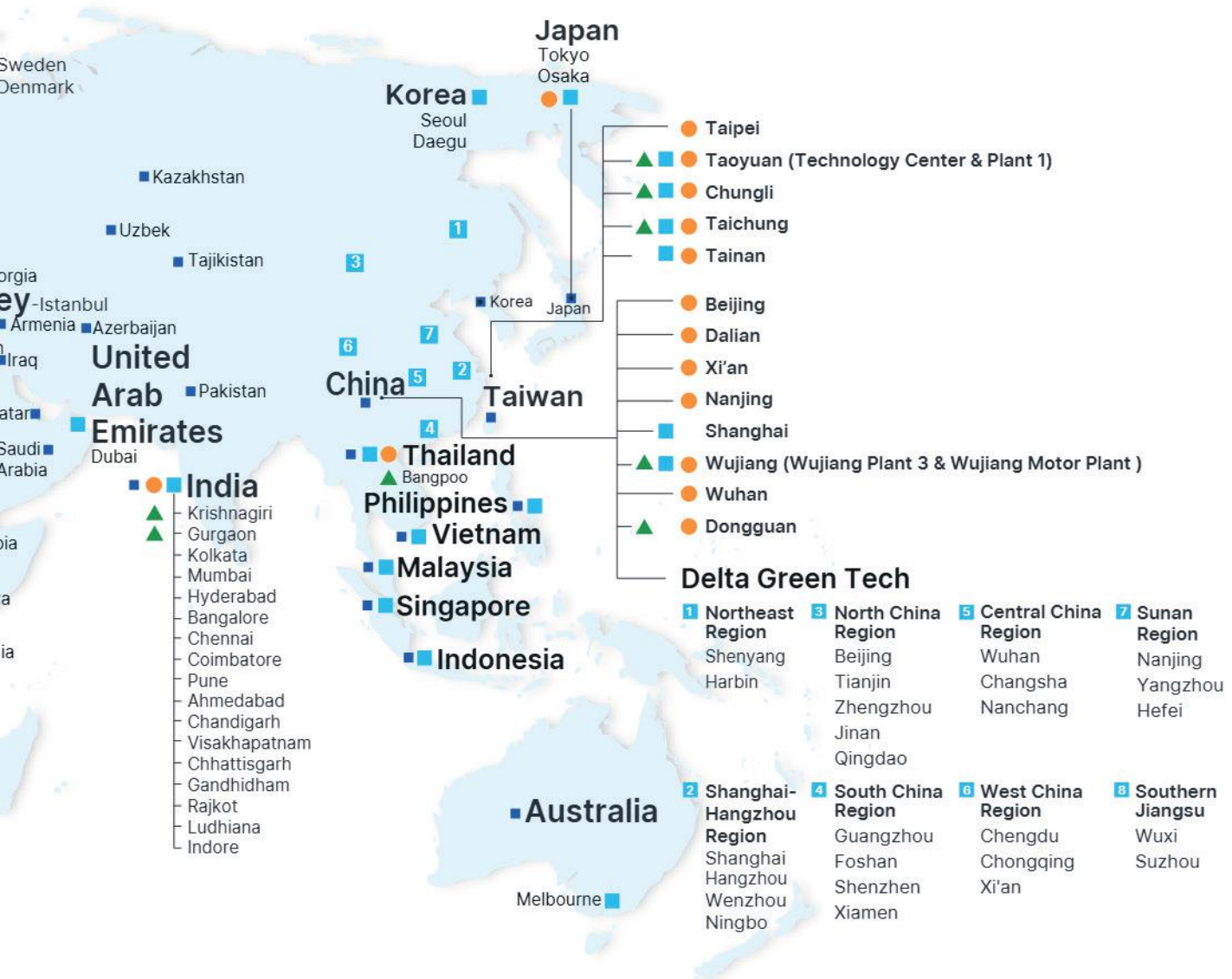


Research Triangle Park, U.S.A.

94 Branch Offices

23 R&D Centers

992 Distributors





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