



Automation for a Changing World
Serving the Modern Industrial Environment for Today and Tomorrow

Global Leader in Industrial Automation Technology & Products

The Delta Advantage

Compact and cost-efficient automation products

Expertly designed portfolio enables OEMs to build smarter and greener machinery

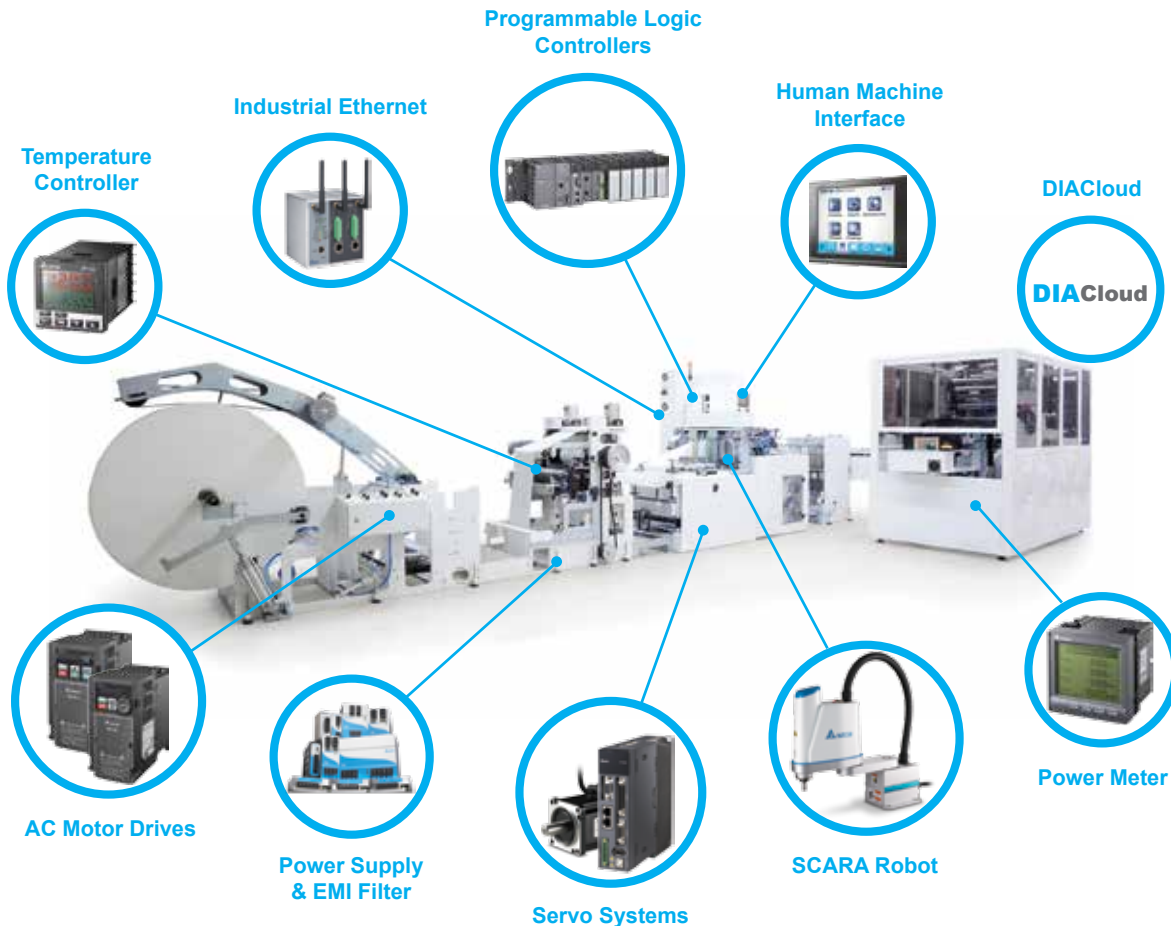
Architecture solutions for control scalability, code portability, and modular flexibility



www.delta-americas.com/ia



Integrated Technology Adds Value Without Sacrificing Performance



The Delta Portfolio of Industrial Automation Technology and Software Platforms Offers Unique Functionality

- lean architectures for compact, cost-efficient and superior engineering designs
- lower component costs
- lower total system costs



Enabling OEMs to Build Smarter, Greener Machinery with Reduced Overall Control System Footprint

Delta Demonstrates Strength in Design of Architecture Solutions

CONTROL SCALABILITY	CODE PORTABILITY	MODULAR FLEXIBILITY
<ul style="list-style-type: none"> Scalability of controls from distributed stand-alone components centralize architecture systems Single-source supplier for: <ul style="list-style-type: none"> simple sequential stand-alone modules to complex machine systems line control with stringent motion and visualization requirements 	<ul style="list-style-type: none"> Program Code can be ported from the smallest Slim-style SS2 PLC CPU to the most flexible AH500 Rack-based Advanced PLC The same code used in these PLCs is portable to intelligent devices in the Delta portfolio that have PLCs built-in, such as C2000 and MH300/MS300 VFD or TP70P series HMI 	<ul style="list-style-type: none"> Centralized control flexibility leverages wide-range of plug-in modules for I/O, network communications, visualization, and remote connectivity Distributed control flexibility takes advantage of the built-in control capability of each intelligent device to offload processing power to the localized process allowing a low-end PLC to connect to other intelligent devices including A2 Servo, MH300 or C2000 VFD, or TP series integrated PLC/HMI



Delta

#1 Global
Power Supply
Manufacturer
Offering
Competency
in Innovative
Design & Quality
Manufacturing

7,850 patent
certifications awarded

16m square feet of in-service manufacturing space
across 8 countries and 3 continents

1982 – Established in USA and Americas

- 8 Americas based research and development centers
- 16 regional offices in the Americas, regional application engineering support and multiple stocking locations

70K+ employees worldwide

2018 – \$9.1 billion revenue

Manufacturing plants comply with environmental, safety and quality requirements
ISO 9001, 14001, 14064, 50001; OSHA 18001; TS 16949

Global Install Base

- VFD – 16.1m
- Servo – 5.6m
- Control – 4.7m

1971 – Established
in Taiwan

Product Technology

AC Motor Drives

General & Special Purpose VFD

C2000: IP20 & NEMA1 | Heavy Duty CT Ratings standard. VT Ratings available | V/F, SVC & FOC Ctrl | IM/PM Motors | Built-in MODBUS and CANopen | up to 600Hz | Fully integrated 10K step PLC | STO Safety (SIL2) | Intelligent & Programmable LCD Keypad | 2 option slots for communications, I/O expansion & feedback option cards, 230, 480, 600 & 690 VAC | 1-840 HP



CP2000: IP20 & NEMA1 | Special Purpose Fan & Pump VT applications | IM/PM Motors / Built-in MODBUS and BACnet | Cascade & Circulatory pump control | Sleep/Wake modes | Flying Start & Skip Frequencies | Fully integrated 10K step PLC | STO Safety (SIL2) | 2 options slots for communications & I/O expansion | 230, 480, 600 & 690 VAC | 1-675 HP

Power Quality

Active Front End

AFE2000: Active Front End | 100% Regen duty cycle | Unity Power Factor (@ 100% load) | Improves to <5% Harmonic Distortion to meet IEEE 519 standard | Can be applied to any VFD from any manufacturer | 230 & 480 VAC | 7.5 – 75 kW



Power Regeneration

REG2000: Power Regen Unit | Replaces traditional Regenerative Resistor design by connecting DC bus of VFD or Servo Drive to regen back to the AC line | Can be applied to any VFD from any manufacturer | 230 & 480 VAC | 7.5 - 55 kW



Compact / Micro Drive

MH300: IP20 Compact (Optional NEMA1) | Heavy Duty CT Ratings standard | V/F, SVC & FOC Ctrl | IM/PM Motor | Built-in MODBUS and CANopen | Up to 2000Hz | LCD Keypad with shuttle dial | 2 option slots for communications, I/O expansion & feedback | Fully integrated 5K step PLC | STO Safety (SIL2) | 115 & 230 VAC 1 phase, 230 & 480VAC 3 phase | 0.25 to 30 HP



MS300: IP20 Compact (Optional NEMA1) | Heavy Duty CT Ratings standard | V/F & SVC Control | IM/PM Motor | Built-in MODBUS and CANopen | Up to 1500Hz | 1 option slot for communication | Fully integrated 2K step PLC | STO Safety (SIL2) | 115 & 230 VAC 1 phase, 230 & 480 VAC 3 phase | 0.25 – 30 HP

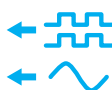
VFD-EL: IP20 Micro V/F | IM motor | Built-in RS-485 MODBUS, EMI filter & LED Keypad | 115, 230 & 480 VAC | 0-25 – 5 HP



Servo Motion

Servo Systems

A2-M, A2-E: Intelligent servo drive | Built-in Motion Macros for stand-alone motion including advanced eCAM | 2nd Closed loop input | 20-Bit Positioning | Auto-ID motor | INC or ABS motor | Anti-vibration | On-board I/O | EtherCAT & CANopen | 230 & 480VAC | 50W-15kW



B2: Value-Line analog & Pulse control servo drive | 60W regen resistor built-in | 160kppr INC resolution | Multi-drop RS-485 | 230VAC | 100W-3kW

ECMA: 1.28Mppr INC & 160kppr ABS encoder | 10 pole rotor | spring-bound shaft seal | IP65 & optional IP67 Intercontec connectors | 50W-15kW



Product Technology

Control

HMI

DOP-W: Large size TFT touch screen | 10.1"-15" | Aluminum hardened bezel | 1GHz processor | 256M ROM memory | Video playback | 2 built-in Ethernet Ports



DOP-100: 4.3"-10.4" IP65 TFT touch screen | 256 MB ROM | SD card or USB Program load | 800 MHz Processor | Up to 512 MB RAM | Ethernet Capability | Remote Monitoring | Email | Alarms | History | Recipes | FTP | VNC



TP04P/TP70P: Economy level HMI with built-in PLC & I/O | 4 line text panel | 7" touch screen models



PLC & Motion



AH500: Scalable Hot Swappable Mid-range PLC | Rack-based | Expandable local & remote I/O up to 133k | EtherNet/IP Scanner | Modbus | Expandable Networks | Dual Core Processor | Integrated Motion control with Built-in PLC | 32+ Synchronized Motion Axis over EtherCAT | 6+ axis Pulse output | PLCopen Function blocks and G-Code | eCAM

AS Series: Compact Modular Mid-range PLC | 6 Axis Pulse Control @ 200 kHz | 2 Axis Differential Pulse Control @ 4 MHz | 6 Channels 200 kHz High-speed counter | EtherNet/IP Scanner | Ethernet Standard | Modbus | CANopen up to 8-axis Point-to-Point Positioning Control with Delta A2 Servo | Expandable to 1024 I/O | External Terminal Block Support | => High speed execution up to 40k steps/ms | Micro SD card | Patented DIN Rail Mounting



DVP-ES2/EX2: Industry Standard Micro Brick PLC | Expandable to 262 I/O | 85-260VAC Powered | Removeable Screw Terminals | Modbus | EtherNet/IP Adapter | Built-in Modbus RS232, 2 RS485



DVP-SS2/SA2/SX2/SE/SV2: Slim Style Modular rack-less PLC | 24VDC powered | Expandable to 512 I/O and networks | Removable terminal blocks | Modbus | EtherNet/IP support | BACnet MS/TP Slave



LC: Load Cell technology module | Designed for on-the-fly weighing belt weighing belt-conveyor application | Stand-alone and PLC module for DVP & AS300 | 18-bit resolution | 2.5msec response time | RS-485/232 Modbus

R1-EC: EtherCAT Remote I/O modules IP20 | DIN mount | 24VDC powered EBUS up to 2A per stack | Removeable wiring terminals | 16 point DI down to 0.1msec | 16 point DO at 0.5A ea, sink/source | 4 channel AI/AO 16-bit resolution | Single-axis pulse output for stepper control with integrated encoder feedback



Platforms

DIACloud Service

Delta's IIoT Platform | VPN level security | End-to-End device protection | API Calls | Real-time Device Monitoring | Remote Updates | Device Status | Visualization Platform | Email Alarms | Text Alarms | Data Storage & Logging



DIACloud



ISPSOFT Software

IEC 61131-3 Software with Support for All 5 Languages | Built-in motion control capability | Function Blocks with Support for up to 32 Level Depth | User Libraries | Simplified Network Configuration | Visual Hardware Configuration | Cyclic Task Control | I/O, External, and Timer Interrupts (and more) | 3D Tracing | Motion Position Planning | Data Tracing | Data Logging | Support for Windows XP, Vista, 7, 8, and 10

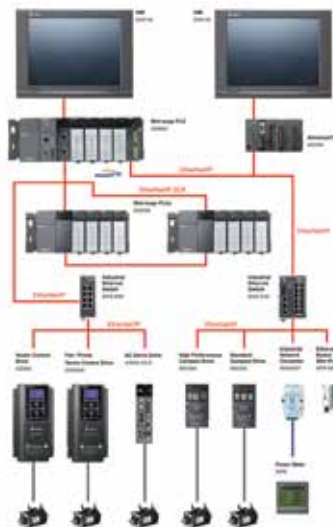
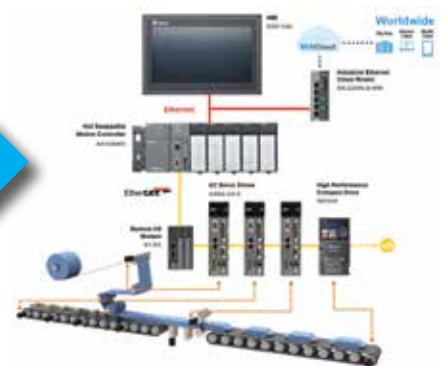
One software used to program & configure all series PLC DVP/AS300/AH500. Portability to products with built-in PLCs including TP series HMI, C2000 & MH300/MS300 VFD

Network Platform Solutions

Delta supports a wide-range of industrial network protocols including legacy to provide connectivity and architecture solutions for digitizing the factory: EtherCAT, EtherNet/IP, DeviceNet, CANopen, PROFIBUS, Modbus TCP, Modbus Serial, BACnet



EtherCAT Solution for Complete Machine Control



EtherNet/IP Solution for Information Connectivity

Product Technology

IloT & Fieldbus

Industrial Network

IFD: Network converter module | Modbus serial | DeviceNet | CANopen | Modbus TCP | EtherNet/IP | USB Converters



RTU: Network coupler modules for remote I/O | Ethernet Modbus TCP | PROFIBUS | DeviceNet | RS485 Modbus | EtherCAT

Industrial Ethernet Switch

DVS: Managed and Unmanaged | 5, 8 & 16 port | Units compatible with EtherNet/IP | PROFINET | EtherCAT (not junction) | CClink IE and DNP 3.0



DVW: Wireless AP/WDS/Client/Gateway | 802.11n up to 450Mbps | Multiple wireless modes: AP, Client CPE, WDS P-T-P & P-T-MP, Repeater | Supports 2-port RS



VPN & Cloud Routers



All provide: Secure Networking Environment | SPI | DOS Prevention | NAT | Port Triggering | Custom Alarm Emails

DX-2100: 3G Cloud IloT Router | RS-485 | RS-232 | Ethernet Port | Modbus Gateway/Server/Client | Cloud Data Storage with Mobile Interface



DX-2300: Ethernet Cloud IloT Router | RS-485 | RS-232 | 4 Ethernet LAN Ports | WAN Port | Modbus Gateway/Server/Client | Cloud Data Storage with Mobile Interface

DX-3001: 3G VPN IloT Router | IPSec | OpenVPN | PPTP | L2TP | GRE | RS-485 | RS-232 | 4 Ethernet LAN Ports | WAN Port | Modbus Gateway/Server/Client



Award Winning



Commonwealth Magazine CSR Award



Global Views Magazine CSR Award

MEMBER OF
Dow Jones Sustainability Indices
In Collaboration with RobecoSAM



Field Devices

Temperature Controllers

DTB: 1/32-1/4DIN frame | Thermocouple, RTD & Analog input | Relay, Voltage, Current & Analog output | Dual Loop control | Programmable Ramp and Soak | 4 PID's | RS485 standard | 100-240VAC or 24VDC input



DTC: DIN rail mount | Stackable up to 8 inputs | Thermocouple, RTD & Analog input | Relay, Voltage, Current & Analog output | Dual Loop control | Programmable Ramp and Soak | 4 PID's | RS485 standard | 24VDC input

Counter / Timer / Tachometer

CTA: 3 in 1 device | 1/16DIN | 10Kcps counter | 1&2 stage, batch, total counting | 2 outputs | PNP, NPN | Two line LCD display | 100-240VAC or 24VDC input



Sensors



DPA: Pressure sensor with 3 color dual line display | M5 or NPT input | Analog & NPN or PNP output | Copy Function | Face or Bracket Mount | 24VDC input

PS: Slim sensor design | Inductive Prox 2-25mm sensing distance, Isolation & non-isolation type in M8/12/18/30 sizes | Photo electric 30mm-12m sensing distance, Diffuse / Retro-Reflect / Through-beam type | IP67 rated | 12-24VDC input



Power Meter



DPM: C520 model multi-function 3-phase applications | Power quality and energy management | 96x96 mount with Large 7 segment display | 1/16DIN | WiFi wireless version | Current/ Voltage unbalance & THD | Industrial grad door mount IP52 | RS-485 Modbus RTU with param grouping | Class 0.5S accuracy of IEC62053 & CNS14607 standards for active energy | Display 10 time stamped alarm types | -20 to +70C operating temp | 80-265VAC input

Power Supply

DVP: DIN Rail mount for DVP PLC | 24VDC 24W/48W/120W | 1ph 110-230VAC input



DRP: CLIQ series DIN Rail Mount | 12V-48VDC output | 15W-960W | Models available with: Class 2, ATEX, Class 1 Div 2, Power Boost, Cold Start -40C | 1ph & 3ph 85-264VAC & 320-600VAC input



PMC: Panel Mount | IP20 & front face connectors | 5V-48VDC output | 15W-600W | Available with: Active PFC | 1ph 85-264VAC & 125-375VDC input

Custom Panel & Control Solutions

Industrial Automation Product Technology

Delta and its authorized network of systems integrators and panel builder partners collaborate with OEM and customer engineering staff to conceptualize, design, develop and manufacture cost-efficient automation solutions.

Software integration, panel fabrication, layout and electrical designs meet UL508A standards and range in functional use as localized stand-alone control to remote monitoring via the cloud.

These solutions are offered as standardized or OEM custom control panels for industry specific applications such as C2000 Pump Package for Oil & Gas and CP2000 Bypass package for HVAC.

Delta offers a wide-range of products, robust systems, and staff expertise. Delta and its partner network make it possible to configure many applications in unique ways to maximize value and keep machinery applications on the cutting-edge of technology.

Committed to the advancement of smart, green manufacturing automation initiatives.

Oil & Gas

C2000 Pump Package

NEMA3R UL508A

C2000 installed in outdoor rated panel with control and power components | door mounted keypad | 460V up to 375 HP | 230V up to 125 HP | fused disconnect | UL rated



HVAC

CP2000 Bypass Package

UL508A

Frames A-D 100k AIC & 5k AIC

230V: CP2000 1-60hp

460V: CP2000 1-125hp

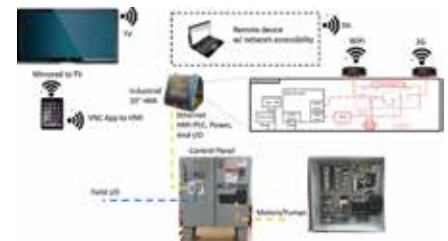
600V: C2000 2-100hp (max 65k AIC)

Frames A-D NEMA1 enclosure

Custom OEM Solutions

Concept to Product

Using Delta Industrial Automation product technology as a core foundation, Delta collaborates to transform concepts to product solutions by leveraging its value-added innovation & engineering expertise. The result is a custom integrated control solution for OEM specific applications.



Elite System
Integrator



Elite
Panel Builder



System Integrator and Panel Builder Program

Tiered membership benefits.
Partner web portal with 24/7 content.
Software & demo unit offering.
Factory level support.
Industry specialty focus.

Demonstrated Industry Competency

Crane and Hoist	Industrial Robot	Packaging
Elevator	Machine Tool	Water/Wastewater
Food and Beverage	Material Handling	Woodworking
HVAC Fluid	Oil and Gas	

Product Selection Tool

Create a complete BOM using the
On-Line Product Selection Tool

www.deltaPST.com



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