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

The Delta Commitment
Delta Demonstrates Strength in Design of Architecture Solutions

<table>
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<th>CONTROL SCALABILITY</th>
<th>CODE PORTABILITY</th>
<th>MODULAR FLEXIBILITY</th>
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<td>Scalability of controls from distributed stand-alone components centralize architecture systems</td>
<td>Program Code can be ported from the smallest Slim-style SS2 PLC CPU to the most flexible AH500 Rack-based Advanced PLC</td>
<td>Centralized control flexibility leverages wide-range of plug-in modules for I/O, network communications, visualization, and remote connectivity</td>
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| Single-source supplier for:  
  - simple sequential stand-alone modules to complex machine systems  
  - line control with stringent motion and visualization requirements | 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 | 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 |
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, 460, 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

**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 & FOC Ctrl | 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 & 480VAC 3 phase | 0.25 – 30 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

**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 | 10 Mbit/s Gigabit Ethernet | 512 Mbit/s I/O Expansion | 85-260VAC Powered | Removable Screw Terminals | Modbus | EtherNet/IP Adapter | Built-in Modbus RS232, 2 RS485

**DVP-ES2/EX2:** Industry Standard Micro Brick PLC | Expandable to 262 I/O | 85-260VAC Powered | Removable 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 | Removable wiring terminals | 16 point DI down to 0.1msec | 16 point DO at 0.5A ea | 4 channel AI/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

**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**

**BACnet**
**Product Technology**

### IIoT & 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 | PROFINET | 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 IIoT Router | RS-485 | RS-232 | Ethernet Port | Modbus Gateway/Server/Client | Cloud Data Storage with Mobile Interface

**DX-2300:** Ethernet Cloud IIoT 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 IIoT Router | IPSec | OpenVPN | PPTP | L2TP | GRE | RS-485 | RS-232 | 4 Ethernet LAN Ports | WAN Port | Modbus Gateway/Server/Client

### 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

**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

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**Award Winning**

- Commonwealth Magazine CSR Award
- Global Views Magazine CSR Award
- Dow Jones Sustainability Indices in Collaboration with RobecoSAM
- CDP Climate Disclosure Leader 2015
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.

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

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