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DELTA ELECTRONICS, INC.

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DELTA ELECTRONICS, INC.
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Delta Industrial Automation
The Best Choice of Drive, Motion, Control Products

ASIA

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AMERICA

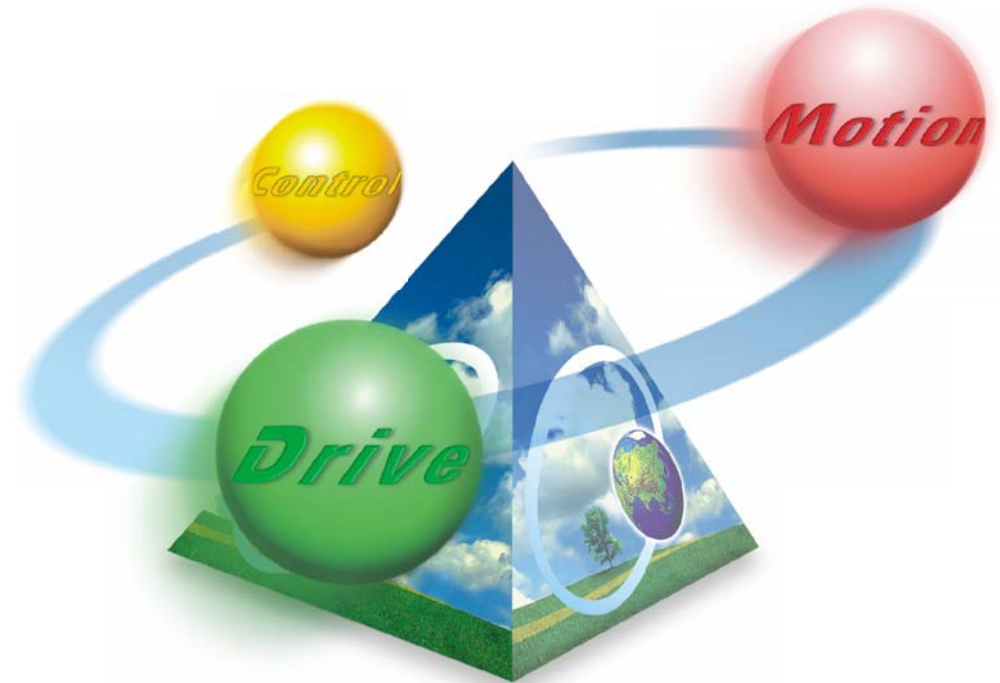**Delta Products Corporation (USA)**
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*We reserve the right to change the information in this catalogue without prior notice

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ABOUT US

Delta Electronics, Inc. is the world's leading provider of switching power supplies, and a major source for power management, components, visual displays, networking products and industrial automation. Delta's strength in power electronics and extensive knowledge in control technology has made us a leader in the industrial automation marketplace. Today, Delta has manufacturing plants in Taiwan and China, as well as R&D centers, sales and service offices throughout the world.

With over 10 years of design and manufacturing knowledge of industrial automation, Delta believes that everyone should benefit from the technology advancement. For this reason we offer our customers Quality, Reliability, and Excellence in each product we sell. Our mission continues to be:

"To improve the living environment, through advanced automation technology, with value added innovation."

Milestone
▲ 1995: AC Motor Drive (General purpose A series)
▲ 1999: Small PLC (DVP-ES block type PLC).
▲ 2003: Rotary optical encoders (ES/EH series)
　　　　Temperature Controller (DTA series)
　　　　AC Servo Drive (ASDA-A series)
▲ 2004: Human Machine Interface (5.7", 7.5", 10.4" DOP-A series)
▲ 2006: Timer/ Counter/ Tachometer (CTA series)
▲ 2007: Brushless DC Motors (BLDCM)

AC Motor Drive (P3-8)

BLDCM (P8)

AC Servo Drive (P9-12)

Encoder (P13-14)

PLC (P15-18)

HMI (P19-22)

Temperature Controller (P23-25)

Timer/ Counter/ Tachometer (P25)

Communication Module (P26)

Delta IABU profile

▲ **Headquarter in Taoyuan (Taiwan)**
▲ **Start manufacturing AC Motor Drives since 1995**
▲ **Manufacturing & RD Centers in Taoyuan (Taiwan), Tainan (Taiwan), Wujiang (China)**
▲ **Number of Employees: 2093 (251 people in R&D)**

Delta IABU (Industrial Automation Business Unit) began with the design and manufacturing of variable speed AC motor drives in 1995, focusing on Drive, Motion and Control (DMC) intergraded solution in industrial automation. We have currently hundreds of DMC products designed to meet the needs of all ODM/OEM customers and end-users.

Drive

System Solution Software & Communication

Motion
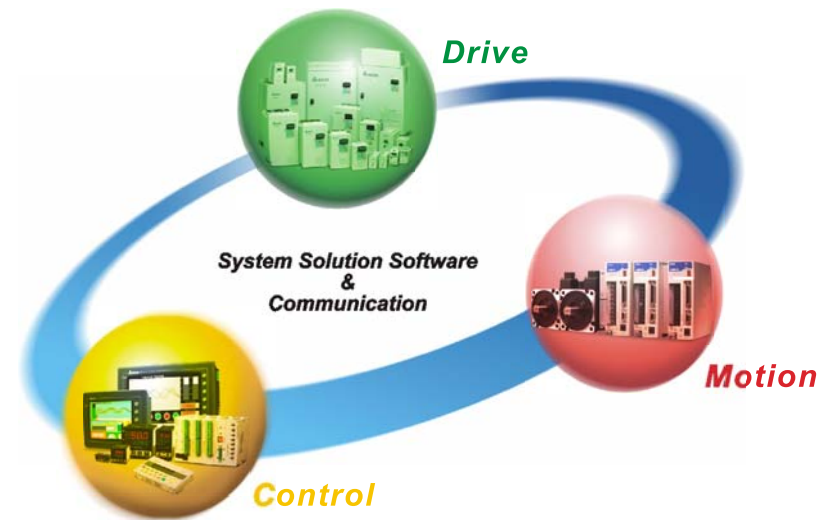
Control

AC Motor Drive

VFD-VE

High Performance Field Oriented Control AC Drive

- ▲ Output frequency: 0~ 600Hz
- ▲ 4-point adjustable V/f curve, Sensorless Vector Control, Field-Oriented Control
- ▲ Position/Speed/Torque control mode
- ▲ Sensorless Vector Contol 150% torque at 0.5Hz
- ▲ 150% holding torque with speed feedback
- ▲ Overload: 150% for 1 minute and 200% for 2 seconds
- ▲ Dynamic/Static auto-tuning for motor parameters and auto-tuning for load inertia
- ▲ Excellence torque limit in all 4 quadrants operation
- ▲ Dual RS-485 port, fieldbus and PC software tools for applications

Applications

Woodcarving machine, crane hoisting, drilling machine, CNC lathe, tooling machine, middle/low-speed passenger elevator, and PCB routing machine

Power Range	750W 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	30kW 40HP	37kW 50HP	45kW 60HP	55kW 75HP	75kW 100HP
VFD-VE	230V 3-phase														
	460V 3-phase														

VFD-VL NEW

Elevator Drive

- ▲ Output frequency: 0~ 120Hz with 0.01Hz resolution
- ▲ 4-point adjustable V/f curve, Field-Oriented Control
- ▲ 5-point adjustable S curve
- ▲ 150% holding torque with PG feedback
- ▲ IM/PM common drive
- ▲ Flange & wall mounting
- ▲ Built-in brake unit
- ▲ Optional PG feedback - ABZ & Heidenhain encoder
- ▲ RS-485 & CANbus serial interface
- ▲ Support for Emergency Power Supply(EPS) to operate at low voltage DC 48/96V
- ▲ Optional LCD copy keypad & PC software for easy application
- ▲ Slim design: 136mm depth for 11kW; 168mm depth for 22kW

VFD-B

General Purpose Drive

- ▲ Output frequency: 0.1 ~ 400 Hz
- ▲ Adjustable V/f curve and vector control
- ▲ 16-step speed control and 15-step preset speed process control
- ▲ Built-in PID feedback control
- ▲ Auto torque boost & slip compensation
- ▲ Built-in Modbus communication up to 38400 bps
- ▲ Optional communication modules (DN-02, LN-01, PD-01)

VFD-F

Fan and Pump Applications

- ▲ Output frequency: 0.1 ~ 120 Hz
- ▲ Adjustable V/f curve
- ▲ 16-step speed control and 15-step preset speed process control
- ▲ Built-in PID feedback control
- ▲ Time/ fix amount circulation control
- ▲ Built-in Modbus communication up to 38400 bps
- ▲ Optional communication modules (DN-02, LN-01, PD-01)

Power Range	750W 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	30kW 40HP	37kW 50HP	45kW 60HP	55kW 75HP	75kW 100HP	......	220kW 300HP
VFD-VL			230V 3-phase														
			460V 3-phase														
VFD-B	230V 1-phase																
	230V 3-phase																
	460V 3-phase																
	575V 3-phase																
VFD-F			230V 3-phase														
			460V 3-phase														

AC Motor Drive

VFD-E

High Performance / Flexible Options / Micro Type AC Drive

▲ Output frequency: 0.1~600Hz
▲ 3-point adjustable V/f curve, vector control
▲ Carrier frequency up to 15kHz
▲ Modular & compact design
▲ Built-in PLC function
▲ Built-in EMI filter (230V 1-phase / 460V 3-phase)
▲ Optional fieldbus modules (DeviceNet, Profibus, LonWorks and CANopen)
▲ RFI-switch for IT mains
▲ Easy DC BUS sharing
▲ Flexible extension
▲ Complete protection

Applications

Small size crane drive and swivel, washing machine, treadmill, robot arm of injection machine (clamp), elevator, grinding machine, drilling machine, wood machine, webbing loom, air conditioner for large buildings, and water supply system for large buildings

Power Range	200W 0.25HP	400W 0.5HP	750W 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						Under development						
460V 3-phase									Under development			

VFD-EL

Multiple Functions/Micro Type AC Drive

▲ Output frequency: 0.1 ~ 600Hz
▲ 3-point adjustable V/f curve
▲ Carrier frequency up to 12kHz
▲ Side-by-side installation
▲ DIN rail mounting
▲ Built-in PID controller for process control
▲ Built-in EMI filter(230V 1-phase/460V 3-phase)
▲ Built-in RS-485 serial interface
▲ Optional copy keypad & PC software for easy application
▲ Compatible with optional fieldbus modules of VFD-E series

VFD-S

Small and Easy Used Drive

▲ Output frequency: 1.0 ~ 400 Hz
▲ Adjustable V/f curve
▲ Carrier frequency up to 10 kHz
▲ Built-in PID feedback control
▲ Built-in Modbus communication up to 38400 bps
▲ Restart fanction for momentary power failure or fault
▲ Built-in sleep/revival function
▲ Optional communication modules (DN-02, LN-01, PD-01)

VFD-L

Compact and Panel-installation Drive

▲ Output frequency: 1.0 ~ 400Hz
▲ Adjustable V/f curve
▲ Carrier frequency up to 10 kHz
▲ Auto torque boost and slip compensation
▲ Built-in Modbus communication up to 9600 bps
▲ Built-in EMI filter

Power Range	200W 0.25HP	400W 0.5HP	750W 1HP	1.5kW 2HP	2.2kW 3HP	3.7kW 5HP
VFD-EL 115V 1-phase						
230V 1-phase						
230V 3-phase						
460V 3-phase						
VFD-S 115V 1-phase						
230V 1-phase						
230V 3-phase						
460V 3-phase						

Power Range	25W	100W	200W 0.25HP	400W 0.5HP	750W 1HP	1.5kW 2HP
VFD-L1 115V 1-phase						
230V 1-phase						
VFD-L2 115V/1-phase						
230V 1-phase						
230V 3-phase						

BLDCM

High Performance Brushless DC Motor and Drive

IBLM

- ▲ Power range:250-750W
- ▲ Speed range:150-1750rpm
- ▲ Square-wave PWM control mode, feedback signal of Hall sensor
- ▲ Easy maintenance, low noise and electromagnetic interference
- ▲ Constant output torque for easy control
- ▲ Its high efficiency is greater than the induction motor
- ▲ Integrated driver with digital I/O and RS-485 communication
- ▲ Over-current/over-voltage/overload protections

NEW

✳ **Customization to meet your applications**

Applications
Elevator door (250W), HVAC (750W), sawing machine, drilling machine, mixer, conveyer, label machine, food machine, packer, washing machine, and treadmill

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AC Motor Drive

VFD-M

Sensorless Vector Contxol Micro Drive

- ▲ Output frequency: 0.1 ~ 400 Hz
- ▲ Adjustable V/f curve and vector control
- ▲ Carrier frequency up to 15 kHz
- ▲ Auto torque boost & slip compensation
- ▲ Built-in PID feedback control
- ▲ Built-in Modbus communication up to 38400 bps
- ▲ Zero speed holding function
- ▲ Built-in sleep/revival function
- ▲ Optional communication modules (DN-02, LN-01, PD-01)

VFD-M-Z

Treadmill Drive

- ▲ Output frequency: 0.1~400Hz
- ▲ PWM output by 16-bit microprocessor
- ▲ Smooth and high torque at low speed due to sensorless vector control
- ▲ Low-noise, carrier frequency up to 16kHz

VFD-M-D

Elevator Door Drive

- ▲ Simple elevator door control system
- ▲ Multiple control methods
- ▲ Use with external control by specific inputs/outputs
- ▲ Various protection functions, safety and reliability

Applications
Packing machine, dumpling machine, treadmill, temperature/humidity control fan for agriculture and aquaculture, mixer for food processing, grinding machine, drilling machine, small size hydraulic lathe, elevator, coating equipment, small size milling machine, robot arm of injection machine (clamp), wood machine (two-side woodworking planer), and edge bending machine

Power Range	200W 0.25HP	400W 0.5HP	750W 1HP	1.5kW 2HP	2.2kW 3HP	3.7kW 5HP	5.5kW 7.5HP	7.5kW 10HP
VFD-M	115V 1-phase							
		230V 1-phase						
		230V 3-phase						
				460V 3-phase				
				575V 3-phase				

Motion

AC Servo Drive and Motor

ASDA-AB

Advanced Type for General Purpose Applications

Power range: 0.1kW~2kW

▲ Input Power: AC 200V~230V,
  1-phase/3-phase or 3-phase
▲ Input Power: AC 100V~120V, 1-phase
  (100W, 200W, 400W).
▲ Built-in Position / Speed / Torque modes.
▲ Provides internal position mode for
  single axis control.
▲ Provides four special functions for various
  applications (Feed step control, Homing,
  Auto-running control, and Position teaching).
▲ Supports Modbus communication protocol
  (Interface: RS-485/RS-422/RS-232).

NEW

CE CE Mark Safety Approved | UL/cUL Safety Approved | c-TICK Mark Safety Approved | By Illuminant Product Safety | QUALITY

In Adhesive Dispenser | In Printing machine | In Filling machine | In Cutting machine

ASDA-A

Advanced Type for General Purpose Applications

Power range: 0.1kW~3kW

▲ Input Power: AC 200V~230V,
  1-phase/3-phase or 3-phase
▲ Built-in Position / Speed / Torque modes
▲ Provides internal position mode
  (8 internal memorized position settings)
▲ Provides four special functions for various applications
  (Feed step control, Homing, Auto-running control,
  and Position teaching).
▲ Supports Modbus communication protocol
  (Interface: RS-485/RS-422/RS-232)

ASDA-B

Standard Type for General Purpose Applicantions

Power range: 0.1kW~2kW

▲ Input Power: AC 200V~230V,
  1-phase/3-phase or 3-phase
▲ Provides Position / Speed / Torque modes
▲ Memory unit built in digital keypad,
  capable of saving parameters.
▲ Convenient and easy gain tuning function
  (upon software or set by digital keypad)
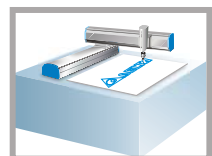▲ Supports Modbus communication protocol
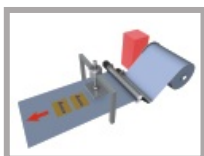 (Interface: RS-485/RS-232)

ECMA

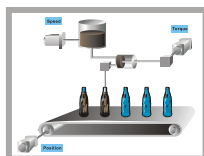### Standard Type for General Purpose Applicantions

Power range: 0.1kW~7.5kW

▲ Permanent magnet motor
▲ Maximum Current: 2.7A ~ 118.8A
▲ Maximum Torque: 0.96 N-m ~ 119.36 N-m
▲ Speed Range: 1000 r/min ~ 5000 r/min
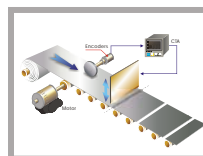▲ Options: Brake, Oil seal, Absolute encoder
▲ Shaft Type: Round shaft, Key way

Applications

Cutting control of machining center, rotary indexing machine, sealing machine, shearing machine, feeding machine, carving machine, lathe, high-speed winding machine, testing / inspecting machine, cutting machine, SMT machine
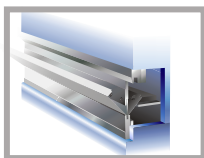
Motion

AC Servo Drive

ASDA-A+

Advanced Type for General Purpose Applications

Power range: 4.5kW, 5.5kW, 7.5kW

NEW

- ▲ Input power: AC 200V ~ 230V, 3-phase.
- ▲ ECMA series motor maximum torque range from 57.29 N-m to 119.36 N-m.
- ▲ Used with incremental encoder of 20-bit resolution.
- ▲ Provides line receiver pulse input (4Mpps) for motion controller.
- ▲ Supports Modbus communication protocol (Interface: RS-485/RS-422/RS-232)
- ▲ CE, UL, cUL approvals recognized.
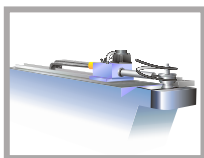
In Tube Bending Machine   In Bending Machine   In Spring Machine

Applications

Filling and bottling equipment, feeding machine, electric discharge machines (EDM), lathe, printing equipment, warp crochet knitting system

ASDA-A2

High-Resolution Type For Communication Network Applications
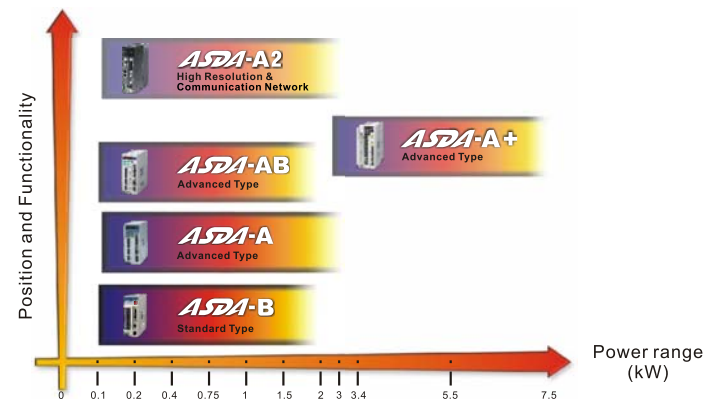
Power range: 0.2kW~3kW

- ▲ Input Power: AC 200V~230V, 1-phase/3-phase or 3-phase.
- ▲ Supports full-closed loop control for optical ruler and encoder signals
- ▲ Incremental encoder of 20-bit resolution for high precision application.
- ▲ Provides high-speed communication network control for CANopen(1M bps) and FlexRay (20M bps).
- ▲ External module creates a variety of functions for meeting the customization requirements.
- ▲ Built-in easy motion control mode (position control function).
- ▲ Electronic CAM control function for setting the best moving path of the machine. Maximum 720 points can be programmable.

NEW

ASDA-Soft

| Select Servo Drive | Read/Write Parameters | Choose Control Mode | Adjust Gains and Offsets | Monitor Operation | Complete Tuning |

ASDA Product Position

Position and Functionality

ASDA-A2 High Resolution & Communication Network

ASDA-AB Advanced Type

ASDA-A+ Advanced Type

ASDA-A Advanced Type

ASDA-B Standard Type

Power range (kW)

0   0.1   0.2   0.4   0.75   1   1.5   2   3 3.4   5.5   7.5

Rotary Optical Encoder

ROE-ES/EH/ETA

Incremental Type

- ▲ ES series: solid shaft model with outer diameter of 36.6mm and 50mm
- ▲ EH series: hollow shaft model with outer diameter of 36.6mm and 50mm
- ▲ ET series: through hole shaft model with outer diameter of 100mm
- ▲ Light and compact, high reliability.
- ▲ Resolution: 100~5000 ppr
- ▲ Output type: open collector, voltage output, line driver and push pull
- ▲ Power voltage range: 5~24V
- ▲ Responsiveness: 300kHz max.

ROE-AS/AH

Absolute Type

- ▲ AS series: solid shaft model with outer diameter of 50mm
- ▲ AH series: hollow shaft model with outer diameter of 50mm
- ▲ Absolute encoder (Gray Code)
- ▲ Resolution: 5~10-bit
- ▲ Output type: voltage output, open collector
- ▲ Power voltage range: 5~12V
- ▲ Responsiveness: 20kHz max.

ROE-MH/MT

Servo Motor Commutation Type

- ▲ MH series: hollow shaft model with outer diameter of 38.7mm
- ▲ MT series: through hole shaft model with outer diameter of 38.7mm
- ▲ Resolution: 2500 ppr
- ▲ Output type: line driver
- ▲ Power voltage range: 5V
- ▲ Responsiveness: 300kHz max.

ROE-CS

NEW

CNC Spindle Type

- ▲ CS series: solid shaft model with frame size of 68mmx68mm
- ▲ Resolution: 1024~2500 ppr
- ▲ Output type: line driver
- ▲ Power voltage range: 7~24V
- ▲ Responsiveness: 300kHz max.

Applications
Label printing machine, detecting machine, elevator, auto bottling machine, fixed length cutting machine, elevator door

Programmable Logic Controller

DVP-EH2

High Performance MPU

- ▲ MPU points: 16 / 20 / 32 / 40 / 48 / 64 / 80
- ▲ Max. I/O points: 512
- ▲ Program capacity: 16k steps
- ▲ Instruction execution speed: 0.24μs (basic instruction)
- ▲ Communication port: built-in RS-232 and RS-485, compatible with Modbus ASCII / RTU communication protocol
- ▲ Data register: 10,000 words
- ▲ File register: 10,000 words
- ▲ High-speed pulse output: 20-point and 32-point models support 2-point 200kHz pulse output (Y0, Y2); 40-point models support 4 points 200kHz pulse output (Y0, Y2, Y4, Y6)
- ▲ Built-in 4 groups of hardware high-speed counters

NEW

Applications
High-speed 3-axis servo welding machine, high-speed cutting machine, bar feeder, and distributed monitor system for production line

DVP-PM

Professional Motion Control MPU

NEW

- ▲ MPU points：16
- ▲ Max. I/O points：512
- ▲ Program capacity：64k steps
- ▲ Communication port：built-in RS-232 and RS-485, compatible with Modbus ASCII/RTU communication protocol
- ▲ Data register：10,000 words
- ▲ File register：10,000 words
- ▲ 2-axis linear/arc interpolation motion control
- ▲ Pulse output up to 500kHz
- ▲ Support G-Code/M-Code
- ▲ Bulit-in 2 A/B phase differential signal output
- ▲ Support MPG input directly

Applications
2-axis servo positioning control, carving machine, material cutting machine

DVP-ES / EX

Sequential Control Standard MPU/Integrated Analog I/O MPU

- ▲ MPU points：ES：14/24/32/40/60
  EX：20 (8DI/6DO，4AI/2AO)
- ▲ Max. I/O points：ES：256
- ▲　　　　　　　　EX：238
- ▲ Program capacity：4k steps
- ▲ Communication port：built-in RS-232 and RS-485, compatible with Modbus ASCII/RTU communication protocol
- ▲ High-speed pulse output：support 2-point （Y0,Y1）output of up to 10kHz
- ▲ Built-in 4-point high-speed counter

Applications
Spinning machine, packaging machine, and landscape fountain.

Programmable Logic Controller

DVP-SV

Slim Left-Side Extension MPU

- ▲ MPU points: 28
- ▲ Max. I/O points: 512
- ▲ Program capacity: 16k steps
- ▲ Instruction execution speed: $0.24\mu s$ (basic instruction)
- ▲ Communication port: built-in RS-232 and RS-485, compatible with Modbus ASCII / RTU communication protocol
- ▲ Data register: 10,000 words
- ▲ File register: 10,000 words
- ▲ High-speed pulse output: support 4 points of 200kHz pulse output (Y0, Y2, Y4, Y6)
- ▲ Built-in 4 groups of hardware high-speed counters

NEW

Applications

2-axis servo positioning control, material cutting machine (high-speed servo control), main hoist of crane, and material clip controlled by servo.

DVP-SS

Slim Standard MPU

- ▲ MPU points: 14
- ▲ Max. I/O points: 238
- ▲ Program capacity: 4k steps
- ▲ Communication port: built-in RS-232 and RS-485, compatible with Modbus ASCII / RTU communication protocol
- ▲ High-speed pulse output: support 2-point (Y0, Y1) independent high-speed pulse output of up to 10kHz
- ▲ Built-in high-speed counter

DVP-SA

Slim Advanced MPU

- ▲ MPU points: 12
- ▲ Max. I/O points: 236
- ▲ Program capacity: 8k steps
- ▲ Communication port: built-in RS-232 and RS-485, compatible with Modbus ASCII / RTU communication protocol
- ▲ High-speed pulse output: support 2-point independent high-speed pulse output (Y0 of up to 50 kHz and Y1 of up to 10kHz).
- ▲ Built-in high-speed counter

DVP-SX

Slim Mixed-Analog MPU

- ▲ MPU points: 10 (4DI/2DO, 2AI/2AO)
- ▲ Max. I/O points: 230
- ▲ Program capacity: 8k steps
- ▲ Communication port: built-in RS-232 and RS-485, compatible with Modbus ASCII / RTU communication protocol
- ▲ High-speed pulse output: support 2-point independent high-speed pulse output (Y0 of up to 50kHz and Y1 of up to 10kHz)
- ▲ Built-in high-speed counter

DVP-SC

Slim Motion Control MPU

- ▲ MPU points: 12
- ▲ Max. I/O points: 236
- ▲ Program capacity: 8k steps
- ▲ Communication port: built-in RS-232 and RS-485, compatible with Modbus ASCII / RTU communication protocol High-speed pulse output: support 2-point (Y10, Y11) independent high-speed pulse output of up to 100kHz
- ▲ Built-in 2-point hardware high-speed counter of up to 100kHz

Human Machine Interface

Control

DOP-AS

Simple and Compact Model

- ▲ LCD size: 3.8", 5.7"
- ▲ Display color: 8 shades of blue STN, 256 Color STN
- ▲ Resolution: 320x240 pixels
- ▲ Built-in 2MB Flash ROM
- ▲ 128K bytes SRAM
- ▲ Supports USB Host for USB flash Drive, Printer, mouse

Applications

Major applications include: A wide range of industrial monitoring systems, such as HVAC, Printing Machine, Exposure Machine and Product Line Monitoring Equipment.

DOP-A

Standard Function Model

- ▲ LCD size: 5.7", 8.0", 10.4"
- ▲ Display color: 8 shades of blue STN, 16 shades of gray FSTN, 256 colors STN / 65536 colors TFT
- ▲ Resolution: 320x240/ 640x480 pixels
- ▲ USB Client for high-speed screen data download
- ▲ Built-in 4MB/8MB Flash ROM
- ▲ 256K bytes SRAM

DOP-AE

Advanced Extension Model

- ▲ LCD size: 5.7", 8.0", 9.4", 10.4"
- ▲ Display color: 8 shades of blue STN, 256 Color STN 16 shades of gray FSTN, 65536 colors TFT
- ▲ Resolution: 320x240/ 640x480 pixels
- ▲ USB Client for high-speed screen data download
- ▲ Built-in 4MB/8MB Flash ROM
- ▲ 512K bytes SRAM
- ▲ Supports USB Host for USB flash drive, printer, mouse
- ▲ Provides extension slot for extension modules

DOP Extension Module

Offer various kinds of optional extension modules to extend the HMI functionality

DOP-EXIO28RAE	DOP-EXIO14RAE	DOP-EXLNHJ1AE	DOP-EXPM110
Extension Digital I/O Module 28 points (16 Digital Inputs / 12 Digital Outputs)	Extension Digital I/O Module 14 points (8 Digital Inputs / 6 Digital Outputs)	Extension Ethernet Module	Extension Printer Module

Human Machine Interface

DOP-B

Wide & Colorful Panel

- ▲ 7" TFT LCD 65536 colors
- ▲ Resolution: 480 x 234 pixels
- ▲ Built-in 4M flash memory
- ▲ 256K Bytes SRAM
- ▲ Supports CF/SD card
- ▲ USB Client for high-speed screen data download
- ▲ USB Host for USB flash drive, printer, mouse, keyboard
- ▲ Supports Ethernet
- ▲ Supports Audio output

Applications

Major applications include: a wide range of industrial monitoring systems, such as HVAC, printing machine, exposure machine and product line monitoring equipment.

Delta Text Panel is known for it's simple operation and control function. The whole series supports various communication protocols. It has the advantages of light-weight, cost-effective price and good flexibility in use, which can help the users to quickly control the system and improve working efficiency.

TP05 / TP08

NEW

Multiple Functions Terminal Panel

- ▲ 3.8" STN LCD
- ▲ Resolution: 160x80 dots (TP05)
           240x128 dots (TP08)
- ▲ Built-in 1024kB flash memory
- ▲ Provides 24 function keys to control signal input
- ▲ Built-in RS-232/RS-485/RS-422 communication ports
- ▲ Supports recipe & marco

TP02 / TP04

Simple type Text Panel

- ▲ STN LCD: 72*22mm (TP02), 3 inches (TP04)
- ▲ Resolution: 160x32 dots (TP02)
           128x64 dots (TP04)
- ▲ Built-in 256kB flash memory
- ▲ Provides 16 function keys to control signal input
- ▲ Built-in RS-232/RS-485/RS-422 communication ports
- ▲ Password function available

TP TPEditor

- ▲ Property table setting
- ▲ Operator keys
- ▲ System power on marco setting
- ▲ Provides page program self-debug
- ▲ Page management
- ▲ Real time clock
- ▲ User security level
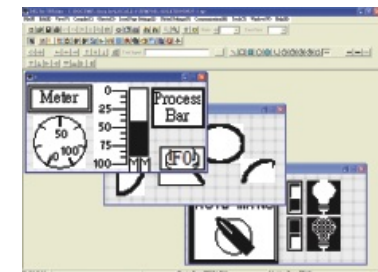
Temperature Controller

DTA

Standard Model

- ▲ Sensor type: thermocouple and RTD
- ▲ Control output: relay, current and voltage pulse output
- ▲ Control mode: support PID, ON/OFF and manual control
- ▲ Support PID auto-tuning function
- ▲ 2 alarm outputs, with 12 alarm modes

DTB

Dual Output Loop Control

- ▲ Sensor type: thermocouple, RTD, voltage and current
- ▲ Control output: relay, current, voltage pulse output and linear voltage output
- ▲ Control mode: support PID, ON/OFF, Ramp/Soak program and manual control
- ▲ Support PID auto-tuning function and valve control
- ▲ Built-in RS-485 communication and supports Modbus ASCII and RTU protocol

Applications
Blower coil pipe in central air-conditioning system, heating system

DTC

Modular Design Concept

- ▲ PID / ON-OFF / manual input / programmable control modes
- ▲ 2 groups of outputs for auto-tuning 2 groups of PID parameters
- ▲ Able to connect to various thermocouples (B, E, J, K, L, N, R, S, T, U, TXK), platinum RTD (PT100, JPT100), analog current (0 ~ 20mA, 4 ~ 20mA) and linear voltage (0 ~ 5V, 0 ~ 10V)
- ▲ Maximum 2 groups of alarm switches are available, with 12 alarm modes each
- ▲ LED status display
- ▲ °C or °F temperature display
- ▲ Built-in RS-485 communication interface (Modbus ASCII, RTU, baud rate: 2,400 ~ 38,400)
- ▲ Sampling time of thermocouple/ platinum RTD: 0.4 second/ time; sampling time of analog input: 0.15 second/ time
- ▲ Programmable logic controller is able to set up 64 sets of temperature and control time.
- ▲ 3 levels of password protection, wire saving, synchronous communication protocol setting, ID auto setting.

DTD

Economical Type

- ▲ Offering PID, ON/OFF, manual and PID programmable control, for multiple applications.
- ▲ A group of alarm output with 8 modes.
- ▲ Analogy input, available
- ▲ The key-locking function makes the controller safer than other controllers.
- ▲ Waterproof panel (IP66)

DTV

Valve Control Type

- ▲ Single key for switching between auto and manual mode.
- ▲ Additional left key for adjusting the number, making parameter settings faster and handier.
- ▲ Displaying output percentage for the user to acquire the openness of the valve immediately.
- ▲ Control methods are designed entirely for the features of electronic valve.
- ▲ 2 groups 5 of alarm output with 17 modes.
- ▲ Support Modbus ASCII/RTU protocol.

Temperature Controller

DTE

Modular Multi-Channel Model

- ▲ PID, ON/OFF, Programmable PID or manual control are available.
- ▲ RS-485 digital communication; supports Modbus ASCII and Modbus RTU
- ▲ Extendable to maximum 7 DTC2000 digital controllers
- ▲ Synchronous communication protocol and auto ID function.
- ▲ Channels: modular sensor input, control output channels, digital I/O units
- ▲ Support modular display and input unit setup. Support CT functions, over-current and off-line alarm

CTA Timer/ Counter/ Tachometer

3-in-1 Design

- ▲ Mixed timer/ counter functions
- ▲ 6-digit, dual line LCD display
- ▲ Maximum speed of counter: 10Kcps
- ▲ Pre-scale function
- ▲ NPN or PNP signal input available at input terminal
- ▲ Counting type: 1-stage, 2-stage, batch, total, dual
- ▲ Timer unit: from 0.01 second to 1 hour

Applications
Label printers, cut-to-length machines

Communication Module

Most industrial equipment has built-in serial communication ports. Delta provides RS-232/422/485 converters and repeaters for users.

IFD 8500

- ▲ RS-232 to RS-422/485 isolated converter

IFD 8510

- ▲ RS-422/485 isolated repeater
- ▲ Extends the communication distance to 1,200m or the number of communication node to 32.

IFD 8520

- ▲ RS-485/422 to RS-232 addressable isolated converter
- ▲ Support address encoding function by using software. In this way, the user can indicate specific device for data transforming.

DNA02

- ▲ DeviceNet to RS-485 communication converter

COA02

- ▲ CANopen to RS-485 communication converter
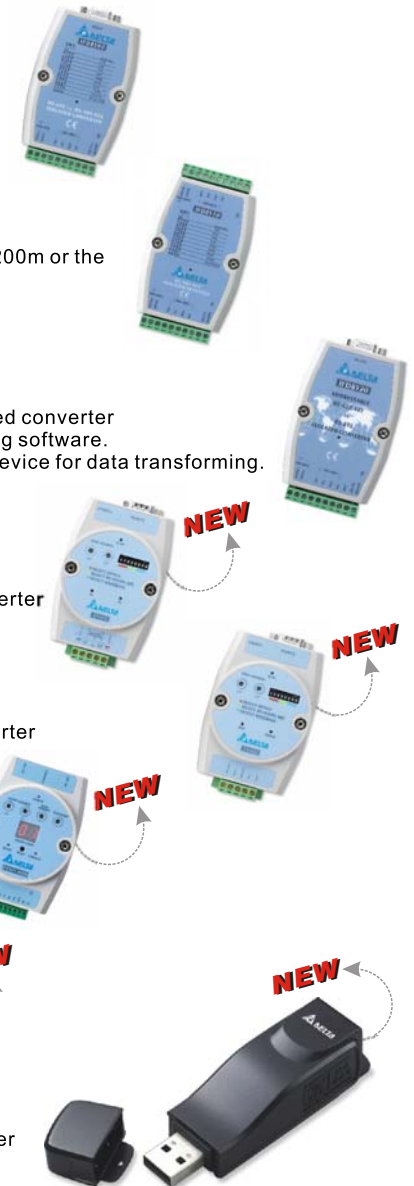
ENA01-MOD

- ▲ Modbus TCP Gateway

ENA01-EIP

- ▲ Ethernet IP Gateway

VFD-USB01

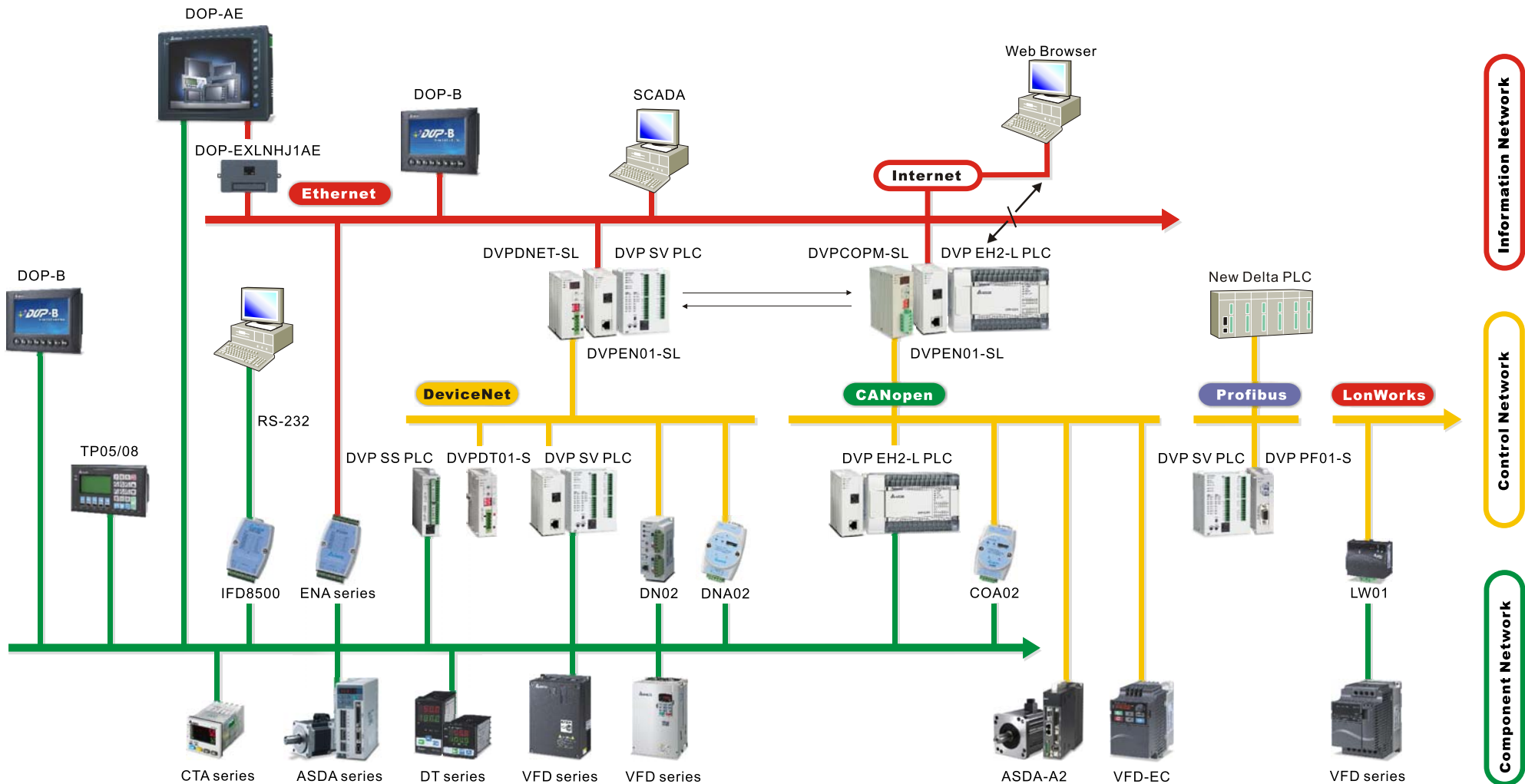- ▲ USB2.0 to RS-485 communication converter

Our industrial network structure

Information Network: The high-grade PLC and HMI complete data uploading and real-time monitoring on the Internet/Intranet.

Control Network: The network supports CANopen, DeviceNet, Profitbus-DP, LonWorks and so on for achieving high responding speed and real-time data transmission.

Component Network: All of our industrial automation products are equipped with Modbus protocol and therefore are able to complete data transmission and procedure monitoring through RS-232/422/485 communication ports.

DOP-AE

Web Browser

DOP-B

SCADA

DOP-EXLNHJ1AE

Ethernet

Internet

DVPDNET-SL   DVP SV PLC   DVPCOPM-SL   DVP EH2-L PLC

Information Network

DOP-B

New Delta PLC

DVPEN01-SL   DVPEN01-SL

RS-232

DeviceNet   CANopen   Profibus   LonWorks

Control Network

TP05/08

DVP SS PLC DVPDT01-S DVP SV PLC   DVP EH2-L PLC   DVP SV PLC DVP PF01-S

IFD8500   ENA series   DN02 DNA02   COA02   LW01

Component Network

CTA series   ASDA series   DT series   VFD series   VFD series   ASDA-A2   VFD-EC   VFD series

27   28

Global Operation

▲ Factory ■ Branch Office ◉ R&D Center ✤ Distributor

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Raleigh

Montreal
Toronto

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Puerto Rico
Jamaica
Guatemala
EL Salvador
Costa Rica
Venezuela
Colombia
Ecuador
Peru

Brazil

Chile
Argentina

Finland
Sweden
UK
Estonia
Lithuania
Russia
Denmark
The Netherlands Poland
Czech
Germany Serbia Belarus
Switzerland Romania
France Hungary Bulgaria
Portugal
Spain Turkey Iran
Italy Greece
Syria
Morocco Lebanon
Cyprus Israel
Egypt
Saudi Arabia UAE
Pakistan
Sudan
Ethiopia
Kenya
South Africa

South Korea
Japan
Shanghai
Wuijang ▲ ■ ◉ **Taoyuan**
◉ **Tainan**
Bangladesh
Myanmar
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Vietnam
✤ **India**
Srilanka
Malaysia
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Singapore
Australia

ASIA

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Taoyuan1

Delta Electronics (Jiang Su) Ltd.
Wujiang Plant3

Delta Electronics (Japan), Inc.
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AMERICA

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