DELTA Newsletter

Industrial Automation Products

Edition 2018-03

Contents

1 News

1.1 ftp-site link

Just to let you know (again), you can find the latest info about our products (manuals, pictures, catalogues, application notes, presentations, software, etc.) on our ftp-site.

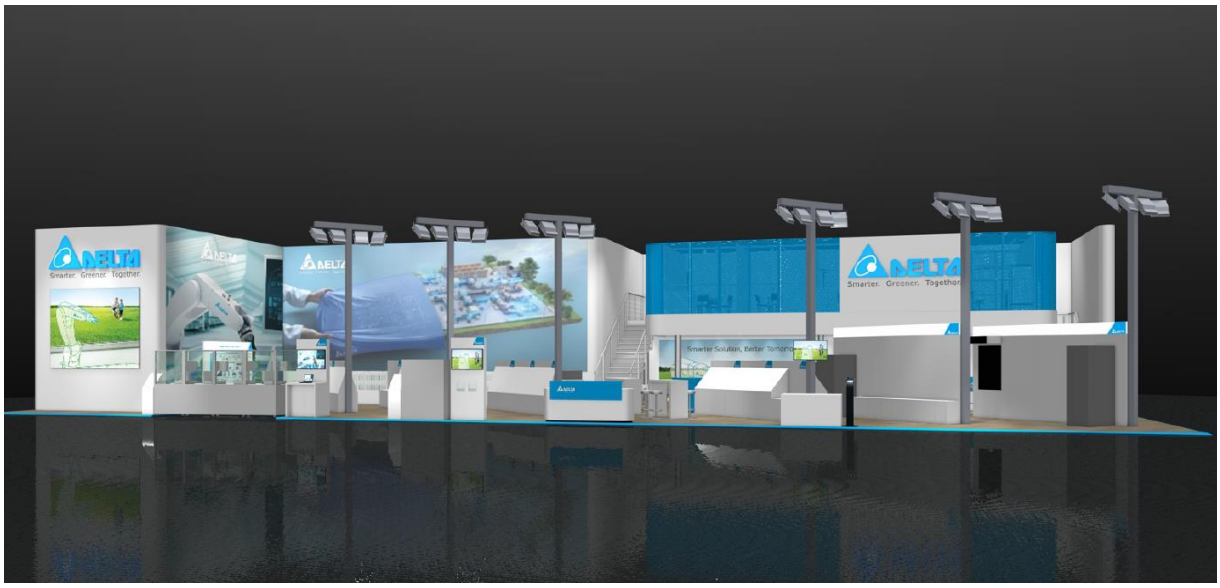
ftp://den-eindhoven:BuPd2175@ftp2.delta-europe.com/deltronics-eindhoven/customer-service

Name and password are included in the link.
Name: den-eindhoven
Password: BuPd2175

1.2 Hannover Messe 2018, April 23~27 Hall 11 A57

HANNOVER MESSE Get new technology first Deutsche Messe

Delta is set to impress global visitors again at Hannover Messe 2018 from April 23rd ~ 27th with smart manufacturing solutions at **Stand no. A57, Hall 11**. This year, Delta is ready to build the most advanced, smart and flexible machines, production lines and factories for global customers. At Hannover Messe Delta will showcase a new smart production line demo which allows on-site ordering, customized production and real-time monitoring, as well as 3D vision detection technology, a highly-integrated motion control solution, and other high-efficiency automation products.



Our new smart production line demo will be more vivid and true-to-life than ever before. It combines three robot workstations and a smart conveyer to simulate a flexible, multi-tasking production line that manufactures customized products. The robot workstations execute feeding, pick-and-place, packaging, stocking, and delivery, and the smart conveyor flexibly sends work pieces to different workstations for simultaneous, multi-tasking processes. With a manufacturing management platform, network, cloud and IIoT technology, this demo will accept orders from visitors at the fairground, and execute production of customized products along with real-time operation and equipment monitoring and visualization.

Another highlight at Delta's booth will be the brand new 3D vision detection solution, which can rapidly and precisely capture images of items on-the-fly and identify shapes and dimensions. This solution enhances the efficiency of product detection for the following sorting and packaging processes, and reduces labor cost for production lines and logistics.

Seeing the needs for open structure and flexible motion control system among production equipment, Delta will present the latest PLC-based and PC-based motion control solutions, which allow users to easily add or remove motion function blocks with an open, highly user-friendly editing platform to fulfill machine operation requirement. In addition, this solution includes Delta's motion controllers and PLCs, servo drives and motors, remote I/O modules and AC motor drives to provide seamless motion control systems and one-stop-shop service for global customers.

Delta will also present its compact / IP55 AC motor drives, servo systems, sensors, barcode scanners and many other new industrial automation products, as well as CNC solutions, elevator drive& energy saving solution and injection molding solutions, to fulfill customer needs for a variety of industries.

Delta cordially invites you to join us and learn about our smart manufacturing at this special industrial automation show in April. Please contact your local service team for more information about Delta's booth. We hope to see you soon in Germany!

1.3 Training agenda

We are pleased to invite you to attend our training courses for the next half year.

This year, the basic level training will be held for 3 days, which includes a one-day training for the general introduction of all IA product lines, one-day basic level training courses of Drive and Motion products and another full day training focused on Control products. This basic level training is aimed to provide a basic understanding of Delta products, introduction to how products work and simple field applications.

As for the advanced level training, the training duration will depend on the product line and training course you select. It is designed for participants who have a technical background. Various options of each product line are provided. We have no fixed training dates for the advanced level training. The training will most likely take place in the last week of each month, but the exact training date will be determined once we have more than three participants enrolling for the same course. After participating in the basic level training, you can then choose the advanced level training courses you are interested in.

Training dates:
May 28~29
June 25~27

Please complete the online registration form and register for the training course at least three weeks before the training.
https://docs.google.com/forms/d/e/1FAIpQLSdenBY25eQGLDkuyoHJgGSdbrw-GRi2mUBuwhfLz8L53RRD_A/viewform

or send mail to:
IABG Training iabgtraining@deltaww.com, Ms. Justine Sun JSun@deltaww.com, or Mr. Kevin Lu kyclu@deltaww.com

An email confirmation will be sent to confirm your enrollment. Please also be kindly informed that you will need to book your own accommodations.

We very much look forward to hearing from you and seeing you in Eindhoven!

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www.delta-emea.com
iabgtraining@deltaww.com

2 Product update

2.1 UPDATE – WPLSoft version 2.46 is released

Changes:

1. EF can be used to modify the instruction RST when using the parameters Y/M/S.
2. The limit of editing lines in ladder programing is increased to 32767.
3. Fixed the issue that if uploading/downloading a program with more than 15872 steps, an error occurs.
4. WPLSoft V2.46 updates auxiliary functions:
   - LCSoft V1.12
   - AIO Wizard
   - Extension Module Wizard
   - Extension Module Monitor
5. Fixed the ICS security vulnerability issue.

It can be downloaded from
http://www.deltaww.com/services/DownloadCenter2.aspx?secID=8&pid=2&tid=0&CID=06&itemID=060301&typeID=1&downloadID=,&title=--%20Select%20Product%20Series%20--&dataType=8;&check=1&hl=en-US

or from our ftp-site.

2.2 NEW – AS series area sensor

We are pleased to announce the release of the AS series area sensor.

This sensor has no-dead-zone curtains for detection. It features an effective aperture angle (<2.5°), it has a strong structure, and it has a self-diagnosis function available. Next to that it is also IP67 rated.

Furthermore, three different pitches are available: 10 mm, 20 mm and 40 mm. The protection height ranges from 160mm to 1920mm and the maximum sensing distance is 10m. These all allow Delta's AS series area sensors to be applied in various applications, such as: electronics industries, machine tool industries, warehousing and food and beverage.

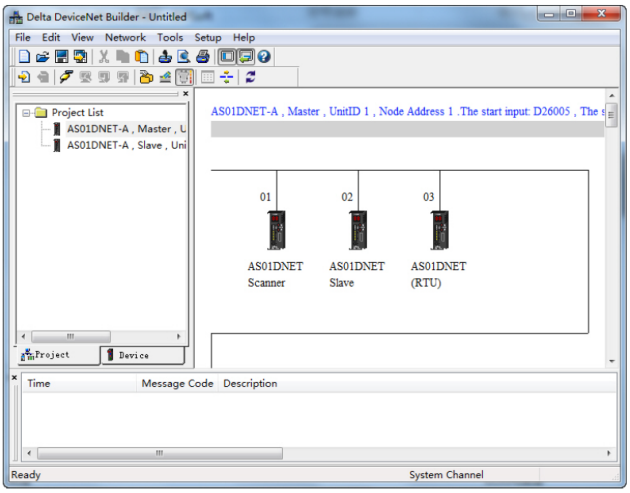
The AS series area sensor is on stock and ready to be ordered.

More info on our ftp-site, folder: Customer-Service\Industrial Automation Products\Smart Sensors\Area Sensor, AS

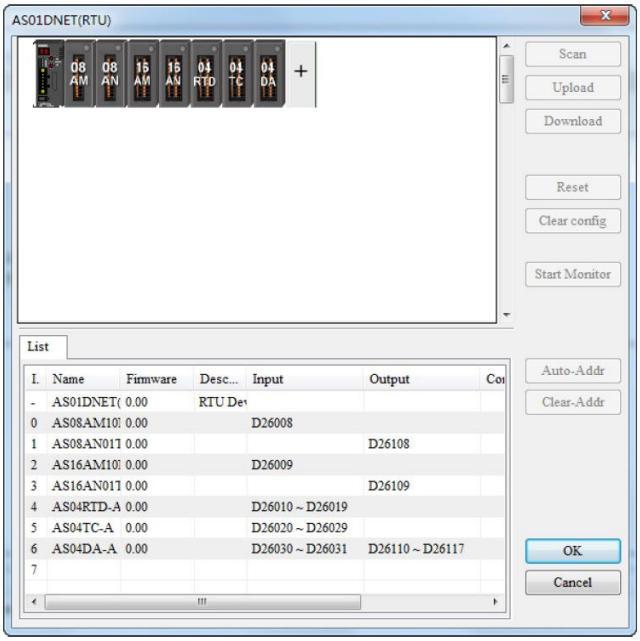
2.3 DeviceNet Builder V2.04 is released

Changes:

1. The EDS file of AS01DNET-A has been added to the DeviceNet Builder software. AS01DNET-A can work in master mode, slave mode and RTU mode as shown in the following figure.

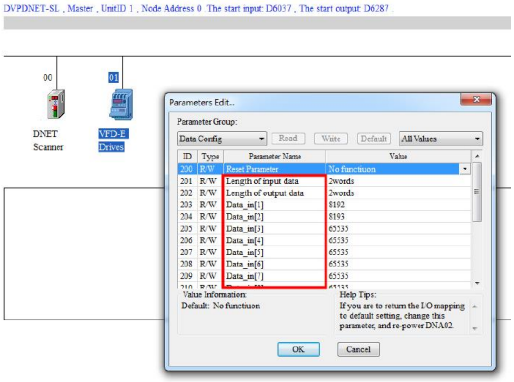


2. When AS01DNET-A (in RTU mode) has AS-series IO modules connected to its right side, the DeviceNet Builder software can be used for the configuration, scan, upload, download, status monitor, parameter monitor and parameter value modification of AS-series digital and analog modules.

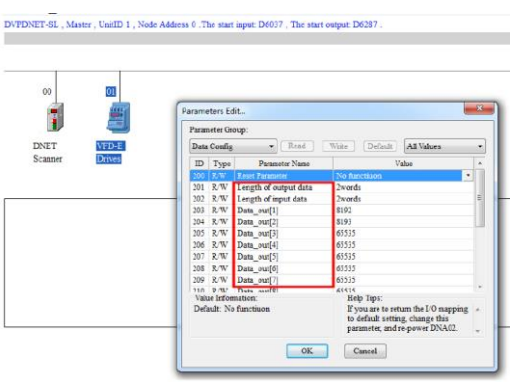


3. The EDS file of VFD-E has been changed for the connection with CME-DN01 and IFD9502 Below are the data configuration interfaces before and after modification.

Before

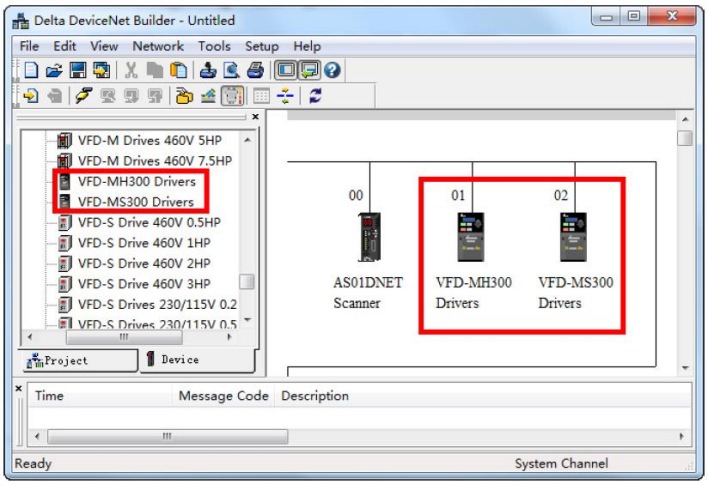


After

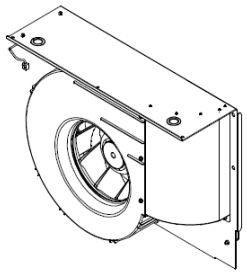
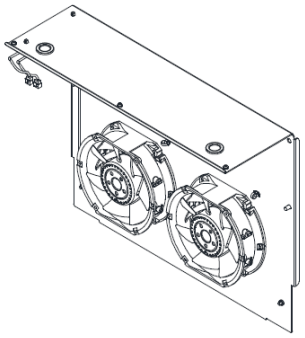
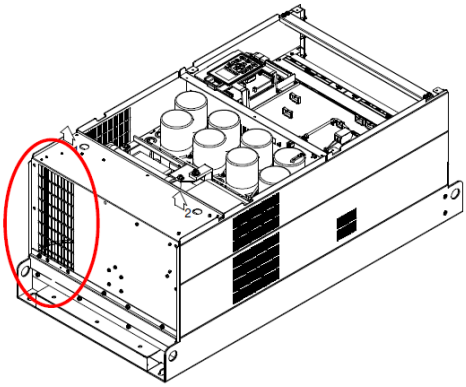
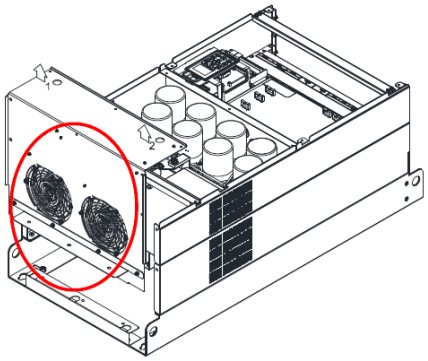


As shown:
Length of input data → Length of output data,
Length of output data → Length of input data
Data_in → Data_out.

4. The EDS files of MS300 and MH300 series AC motor drives have been added.



2.4 UPDATE – The VFD-C family Frame G heat sink fan changed from 1 DC blower to 2 15cm DC fans

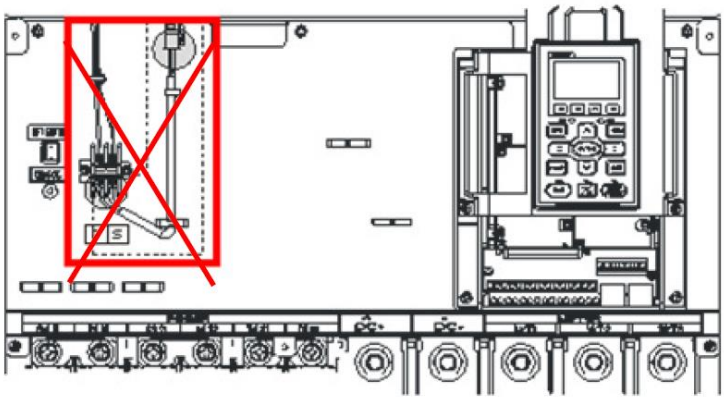
Before	After
Heat sink Fan Model 『MKC-GFKM』	Heat sink Fan Model 『MKC-GFKM』
	
	

In production

Factory	Changed week	
TW	Frame G	T1740
WJ	Frame G	W1745

2.5 UPDATE – VFD-C family model frame E~H AC electromagnetic contactor has changed by DC relay

The “r s” terminals (shown below in red frame) will be taken out.



Advantage:
An extra AC power connection for the contactor is no longer required when supplying DC power to the drive DC-bus.

Change

Factory	Changed week	
TW	Frame E~H	T1728
WJ	Frame EF	W1748
WJ	Frame G	W1741
WJ	Frame H	W1739

2.6 NEW – DVP80ES2

To increase the market share and competitiveness of DVP ES2ES2, Delta releases the new DVP 80ES2 CPU with built-in 80 I/O points and fulfill the low-end OEM market with functions, performance and price.with functions, performance and price.

Features
- Built in 40 DI & 40 DO
- Built -in RS232 & RS485 COM ports
- Supports MODBUS protocol

Specification

CPU
- 32-bit CPU
- Built-in 40 DI + 40 DO
- Program capacity: 16k steps, Data: 10k words
- Built-in RS232 & RS485 (master/slave)
  - Supports MODBUS ASCII/RTU & PLC Link
- High speed output (PTO)
  - 100k Hz x2 or
  - 100K Hz x2 + 10K Hz x2 (without direction)
- High speed input (HSC)
  - 100k Hz x2 and
  - 10k Hz x6

Electrical

	AC
Power Supply Voltage	100~240 V_{AC} (-15%~10%), 50/60Hz ±5%
Fuse Capacity	2A/250 V_{AC}
Spike Voltage Durability	1500 V_{AC} (Primary-secondary); 1500 V_{AC} (Primary-PE); 500 V_{AC} (Secondary-PE)
Insulation Impedance	>5 MΩ (all I/O point-to-ground: 500 V_{DC})
Noise Immunity	ESD: 8 kV Air Discharge EFT: Power Line, 2 kV Digital I/O: 1 kV Analog & Communication I/O: 1 kV RS: 26 MHz~1 GHz, 10 V/m
Earth	The diameter of grounding wire shall not be shorter than that of the power supply cable. (When many PLCs are in use at the same time, please make sure every PLC is properly grounded.)
Storage/Operation	Storage: -25 °C~70 °C (temperature); 5%~95% (humidity) Operation: 0 °C~55 °C (temperature); 5%~95% (humidity); pollution degree 2

Ordering information

Model	Power (Vac)	DI Pts.	DO Pts.	DO Type	Certificates
DVP80ES200R	100~240	40	40	Relay	CE, UL
DVP80ES200T	100~240	40	40	Transistor (NPN)	CE, UL

2.7 NEW – DVP02TU□-S DVP PLC temperature control module.

Features

- DVP02TU modules integrate the temperature input and DO/AO output in one module, so it's can reduce the solution cost.
- All PID calculations are done by modules not DVP CPU, so user can get fast response and better controlability.
- Supports configuration wizard and no programming needed.

Specification

DVP02TU-S		
Supply voltage		24VDC (20.4VDC~28.8VDC) (-15% ~ +20%)
Max. rated power consumption		3W, supplied by external power source
Connector Type		European standard removable terminal block (Pin pitch: 3.5mm)
Operation/storage temperature		Operation: 0°C ~ 55°C (temperature), 5 ~ 95% (humidity), Pollution degree 2 Storage: -25°C ~ 70°C (temperature), 5 ~ 95% (humidity)
Vibration/Shock resistance		International standards: IEC61131-2, IEC 68-2-6 (TEST Fc) / IEC61131-2 & IEC 68-2-27 (TEST Ea)
Connection to DVP-PLC		The modules are numbered from 0 to 7 automatically by their distance from DVP-PLC. Max. 8 modules are allowed to connect to DVP-PLC and will not occupy any digital I/O points.
I/O points		2 points of universals analog inputs (CH1, CH2), 2 analog outputs (OUT1, OUT2) or 4 digital outputs (OUT1~OUT4)
General Analog Input		
Input	CH1, CH2	Thermal resistance: PT100, JPT100, PT1000, Ni100, Ni1000, Cu50, Cu100, GNi1000 Thermocouple : J, K, R, S, T, E, N, B, U, L, TXK (L), C, PL II Voltage input: 0~+50mV, 0~+5V, 0~+10V Current input: 0mA~+20mA, 4~+20 mA
Hardware Resolution		16 bits
Distance		100 meters
Input disconnection detection		Supported by exceeded temperature input range
Analog / Digital Output		
Analog	OUT1、OUT2	Analog output, 12-bit: 0~+10V, 0/4~+20mA
Digital	OUT1~OUT4	4 channels digital output, 240VAC/24VDC, 2A, Relay 4 channels digital output, Voltage pulse output, 24VDC, 300mA

A/D Function Specification

Analog / Digital	Voltage Input	
Maximum rated input	0V~10V	0V~5V
Overall accuracy (normal temperature)	±0.5%	
Overall accuracy (full temperature range)	±1%	
Hardware resolution	16 bits	
Input impedance	650KΩ	
Analog / Digital	Current Input	
Maximum rated input	0mA~20mA	4mA~20mA
Overall accuracy (normal temperature)	±0.5%	
Overall accuracy (full temperature range)	±1%	
Hardware resolution	16 bits	
Input impedance	249Ω	

Analog / Digital	Temperature Input	
Maximum rated input	Thermocouple	Thermistor
Overall accuracy (normal temperature)	±0.4%	
Overall accuracy (full temperature range)	±0.8%	
Hardware resolution	24 bits	
Input impedance	2MΩ	

DVP02TUL-S D/A Function Specification

Analog / Digital	Voltage Output
Maximum rated input	0V~10V
Overall accuracy (normal temperature)	±0.5%
Overall accuracy (full temperature range)	±1%
Hardware resolution	12 bits
Allowable load impedance	1kΩ ~ 2MΩ at 0V~10V

Analog / Digital	Current Output	
Maximum rated output	0mA~20mA	4mA~20mA
Overall accuracy (normal temperature)	±0.5%	
Overall accuracy (full temperature range) (average number of 100 times)	±1%	
Hardware resolution	12 bits	
Allowable load impedance	≦550Ω	

DVP02TUN-S DO Function Specification

Item \ Model		DVP02TUR-S	DVP02TUN-S
Output points		4	4
Connector Type		Removable terminal block	
Output point type		Relay-R	Transistor-T (NPN)
Voltage specification		Below 250VAC, 30VDC	12~30VDC
Maximum load	Resistive	2A/1point (3A/COM)	0.3A/1 point (0.6A/COM)
	Inductive	Life curves*1	7.2W (24VDC)
	Lamp	20W (24VDC) 100W (230VAC)	2W (24VDC)
Maximum output frequency	Resistive	1Hz	100Hz
	Inductive	0.5Hz	0.5Hz
	Lamp	1Hz	10Hz
Maximum response time	OFF→ON	10ms	0.5ms
	ON→OFF		

Ordering information

DVP 02 TU N - S

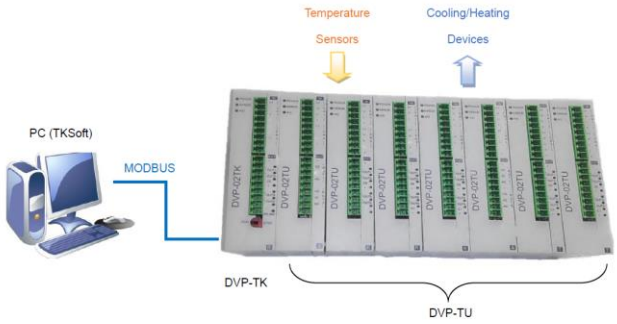
- Slim type
- N: NPN transistor output * 4
- R: Relay output * 4
- L: Analog output 0~10V, 0~20mA, 4~20mA * 2
- TU: Temperature control unit
- Number of channels 02: 2 AI
- DVP series

2.8 NEW – DVP02T K□-S remote temperature control modules

that support right-side expansion for DVP02TU□-S modules.

Features

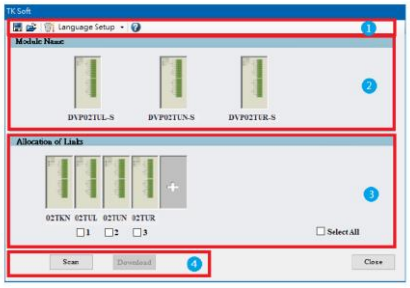
- Supports mA, V, PT and TC temperature inputs in the same module.
- Supports transistor, relay and analog outputs in different modules.
- Provide high speed calculation and higher control ability.
- Operating independently without any CPU module.
- Built-in RS-485 port and could be connected with other controllers.
- Supports up to 8 DVP02TU□-S temperature control modules on the right side.



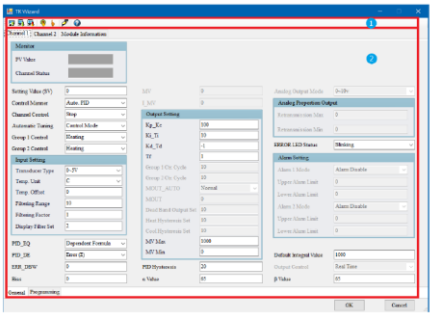
Configuration software – TKSoft

Delta provides a new software tool, TKSoft, to help user to configure the TK temperature control modules faster with easy-to-use user interface.

- **Module configuration page**
  1. Toolbar : Save/open file or setting the communication.
  2. Module Name : List all configurable modules.
  3. Configuration area : Configure the modules on the right side of the TK module.
  4. Communication : Scan the modules or download the configuration.



- **Parameter setting page**
  1. Toolbox : Provide upload, download, online, etc.
  2. Parameter setting area : Setting the parameters of channel 1 and 2.



Specification

Product Name	Description	Model Name
Remote Temperature Control Module	• 2 points of universal analog input: 0~10 V, 0~20 mA, 4~20 mA; Thermocouple: J, K, R, S, T, E, N, B, C, L, U, TXK, PLII; RTD: Pt100, JPt100, Pt1000, Cu50, Cu100, Ni100, Ni1000, LG-Ni1000 • Resolution: analog 16-bit; Sensor: 0.1°C • 4 points of NPN transistor output: 24V_{DC}/ 300mA • Output point: built-in PID program control/manual control	DVP02TKN-S New
	• 2 points of universal analog input: 0~10 V, 0~20 mA, 4~20 mA; Thermocouple: J, K, R, S, T, E, N, B, C, L, U, TXK, PLII; RTD: Pt100, JPt100, Pt1000, Cu50, Cu100, Ni100, Ni1000, LG-Ni1000 • Resolution: analog 16-bit; Sensor: 0.1°C • 4 points of relay output: 24V_{AC}/3A • Output point: built-in PID program control/manual control	DVP02TKR-S New
	• 2 points of universal analog input: 0~10 V, 0~20 mA, 4~20 mA; Thermocouple: J, K, R, S, T, E, N, B, C, L, U, TXK, PLII; RTD: Pt100, JPt100, Pt1000, Cu50, Cu100, Ni100, Ni1000, LG-Ni1000 • Resolution: analog 16-bit; Sensor: 0.1°C • 2 points of analog output: 0~10 V, 0~20 mA, 4~20 mA • Output point: built-in PID program control/manual control	DVP02TKL-S New

Ordering information

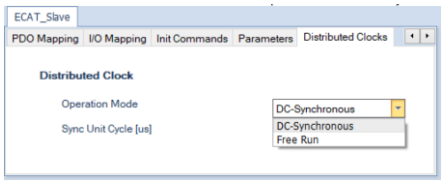
DVP 02 TK N - S

- DVP Slim series
- N: Transistor output x4
  R: Relay output x4
  L: Analog output x2
- TK: Remote temperature control module
- 02: 2 CHs
- DVP series

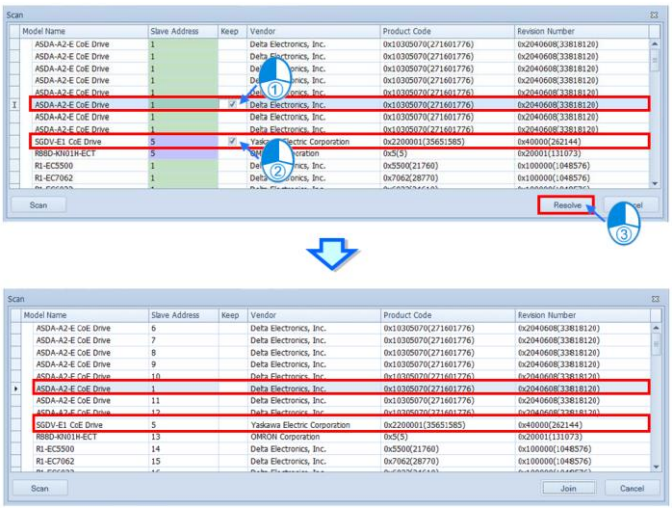
2.9 NEW – ECAT Builder software version 1.03 released

Changes:

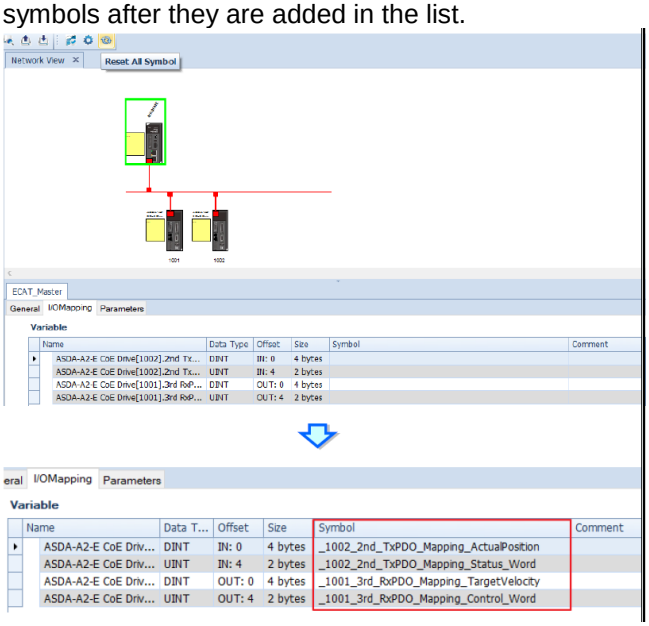
1. A **Distributed Clock** function is added to edit operation mode and sync unit cycle for slaves.



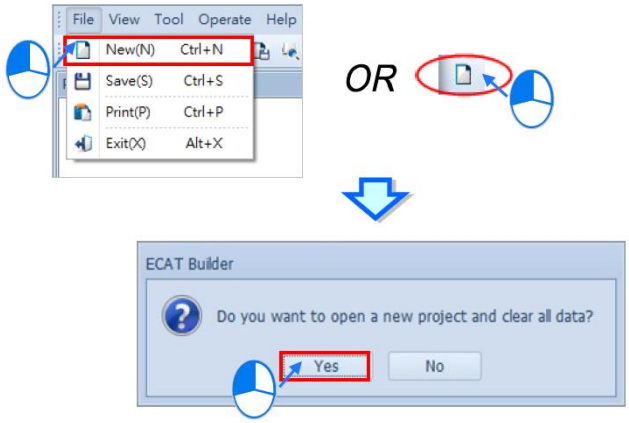
2. A **Resolve function** is added to fix address conflicts. When there are duplicated slave addresses, you can select which one you want to keep the address and then click Resolve to keep the same address for the selected one and other duplicated ones will be distributed with new slave addresses.



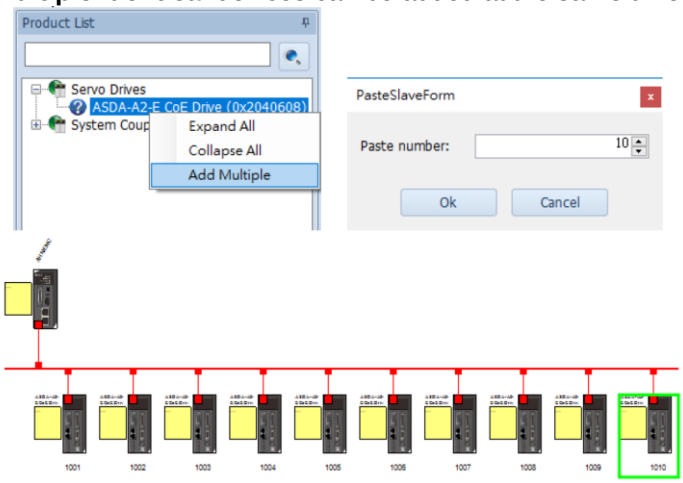
3. A **Reset All Symbol** function is added to include symbols for the variables. Thus, you do not need to input symbols one by one for the variables manually and you can even edit the symbols after they are added in the list.



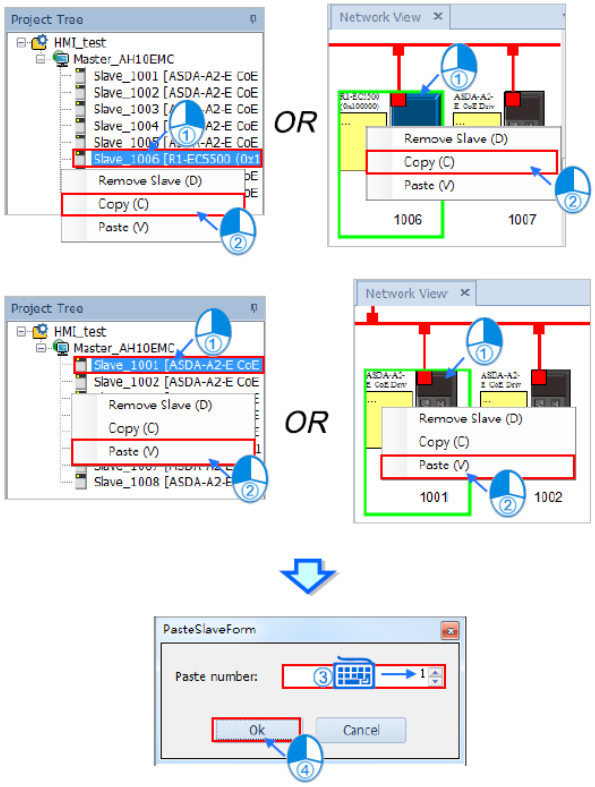
4. A **New** project function is added. There is only ONE project in ECAT Builder. When you create a new project, the old one will be erased. You can use this creating-new-project method to delete the old project.



5. **Multiple identical** devices can be added at the same time.



6. **Copy and paste** functions are added for you to add more identical devices from the Project Tree.



7. **Undo** (Ctrl +Z) and **Redo** (Ctrl +Y) functions are added. You can use these two shortcut function keys during any operation in ECAT Builder.

Download the software at
http://www.deltaww.com/services/DownloadCenter2.aspx?secID=8&pid=2&tid=0&CID=06&itemID=060301&typeID=1&downloadID=,&title=--%20Select%20Product%20Series%20--&dataType=8;&check=1&hl=en-US

or from our ftp-site.

2.10 NEW – AHxxEMC-5A EtherCAT motion controllers

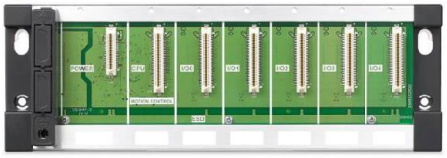
AH08EMC-5A , AH10EMC-5A and AH20EMC-5A are Delta EtherCAT motion and designed for high and designed for high-end automation machines and production lines. These modules can be installed on CPU slot with specific motion main backplanes like -5A, AHBP05M25A, AHBP05M2-5A, and AHBP07M2-5A, and support up to 32 axes.

ISPSoft v3.02 (or later) supports these AHxxEMC modules and provides many convenient functions like IEC61131 programming languages, PLCopen v2.0 motion FBs, E -Cam, path simulation, axis structure tag, etc.
Delta also releases the EtherCAT configuration software, ECAT Builder, to help users fast configure the EtherCAT topology and device parameters.

Besides motion control functions, AHxxEMC modules support MOSBUS, MODBUS TCP and EtherNet/IP (adapter) on serial/Ethernet ports to fulfill system integration markets.

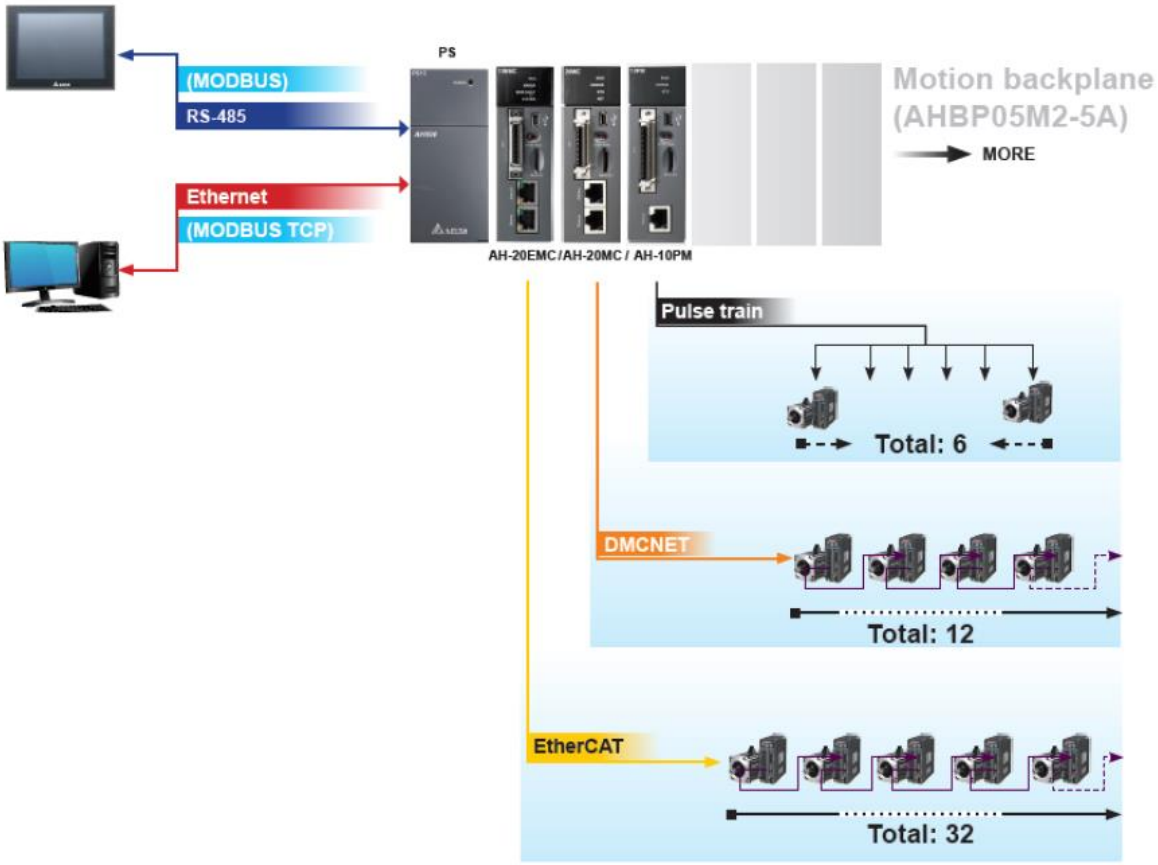
AH08EMC-5A (8-axis)
AH10EMC-5A (16 -axis)
AH20EMC-5A (32 -axis)

AHBP03M2-5A (3-slot)
AHBP05M2-5A (5-slot)
AHBP07M2-5A (7-slot)



ECAT Builder v1.0

System structure



Module specification

Model	Channels /Axes	Terminal block type	Power consumption (Internal)	Accessories (optional)	Specifications	
AH08EMC-5A	8	HDC	3.3w	UC-ET010-13B UB-10-IO22C	• EtherCAT communication motion control (100 Mbps) • Min. synchronization time at 8/16/32 axes is 0.5/1/2 ms • Supports 2~6-axis linear interpolation, 2-axis arc interpolation and 3-axis helical interpolation • Built in Ethernet communication port • Supports Micro SD card • Supports EtherNet/IP - Adapter mode - Supports I/O connection & explicit message - Connections: TCP=16 ; CIP=32 - RPI: 2~1,000 ms - PPS: 3,200 - 250 words/connection • CPU execution speed: LD instruction @ 0.08 μs	• Program capacity: 256 k steps • Data register: D=64 k words/L=64 k words • Supports UD/PD/AB/4AB input modes • Built-in Mini USB programming communication port • Supports G-code • Supports hot-swapping function • Diagnosis function • Module status LED indicator • Supports installation on CPU slot of motion backplane and working as CPU (Note) • Max. quantity of FB instance is 4096
AH10EMC-5A	16					
AH20EMC-5A	32					

Note: Supports DIO(except interrupt module), AIO, MC, PM, HC, COPM and SCM modules in the first stage.

Install:

AHxxEMC motion modules could only be installed on the CPU slot of motion main backplanes at this moment. And will support installed on I/O slot in Q3, 2018.

Protocol:

- MODBUS / MODBUS TCP
- EtherNet/IP (Adapter Mode)

EtherCAT:

- Max. 32 axes + 96 EtherCAT devices
- Supports Delta EtherCAT servo & VFD
- Supports third-party devices (current tested devices are listed as below)
  - Omron: GX series IO, G5 series servo and MX2 series VFD
  - Yaskawa: Sigma 5 series servo

PLCopen:

Compatible with PLCopen v2.0

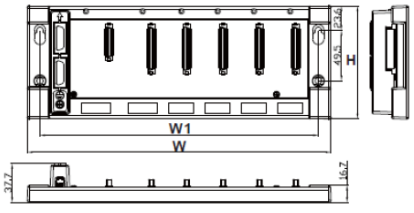
Compliance Statement of MC Suppliers

Supported Datatypes

Defined datatypes with MC Library	Motion Control specification:	Product:	BOOL	INT	WORD	REAL	ENUM	UINT
Delta Electronics	Part 1 (v 2.0)	AH08EMC/AH10EMC/AH20EMC	Yes	Yes	Yes	Yes	Yes	Yes

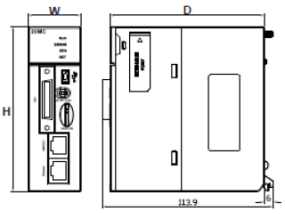
Backplanes

Model Name	H	W	W1
AHBP03M2-5A	110	257	232.4
AHBP05M2-5A	110	328	303
AHBP07M2-5A	110	399	374

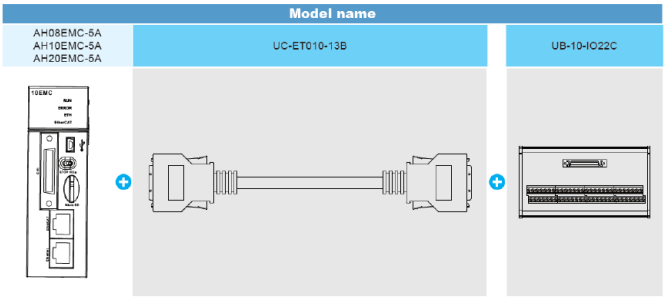


Motion Control Module

Model Name	H	W	D
AH08EMC-5A	110	35	103
AH10EMC-5A	110	35	103
AH20EMC-5A	110	35	103



Accessories



Software

Software	Description
ISPSoft v3.04	Configuration/Programming
ECAT Builder v1.02	EtherCAT configuration
EIP Builder v1.04	EtherNet/IP configuration

2.11 NEW – AH-EMC, Delta's new PLC-based EtherCAT motion controller

We are happy to announce the release of the new PLC-based EtherCAT motion controller, the AH-EMC series.

AH-EMC is a standalone motion controller, which integrates the PLC instruction, and PLCopen motion function block in one CPU and it can be installed in the CPU slot on the main motion backplane. The programmers can custom design their project in ISPSoft, which offers more convenience for project management and enhances the programming efficiency.

The main motion functions of AH-EMC include the E-Cam function, the general point-to-point control and the multi-axis interpolation control such as; linear, circular and helix.

Moreover, the built-in Ethernet port can be used with the Ethernet IP – adaptor and the Modbus TCP for industrial communication. Several communication modules are also available, including Profibus Master/Slave, DeviceNet and CANopen.

Technical features

- Short communication time of EtherCAT motion bus
- Up to 128 stations of EtherCAT slave devices
- Compatible with PLCOpen motion Part 1 V2.0
- One software for PLC and motion programming (ISPSoft V3.04)
- Supports third party EtherCAT slave devices (ECAT builder V1.03)

Please also check product-related documentation and software on our ftp-site.

2.12 NEW – 3 new R1-EC EtherCAT modules

We are pleased to announce the release of three new R1-EC EtherCAT modules:
R1-EC70A2D0
R1-EC70E2D0
R1-EC70F2D0

These three digital output modules expand the existing Delta R1-EC product range, which already includes EtherCAT bus coupler, digital input, digital output, analog input, analog output and motion module with pulse train control and incremental encoder interface.

Please see below for the main features of the three new modules:

- The R1-EC70A2D0 module: 16-channels digital output module (PNP) with 0.5 A at each channel
- The R1-EC70E2D0 module: 16-channels digital output module (NPN) with 0.5 A at each channel with non-volatile function
- The R1-EC70F2D0 module: 16-channels digital output module (PNP) with 0.5 A at each channel with non-volatile function

The R1-EC modules can be used with Delta EtherCAT controllers or any other 3rd-party EtherCAT master. They also have EMC immunity based on ESD, EFT, RS (IEC 61131-2, IEC 61000-4-2) and high vibration resistance which complies to EN 60068-2-6 and EN 60068-2-27/29.

2.13 DVP models phased out

The following DVP models will be phased out. Alternatives are given:

Type	Discontinuation		Recommended		Last order (YYYY/MM)	Discontinuation (YYYY/MM)
	Mode No.	Description	Mode No.	Description		
CPU	DVP20EX00R2	8DI, 6DO, 4AI, 2AO, Relay out	DVP20EX200R	8DI, 6DO, 4AI, 2AO, Relay out	2018/06	2018/07
	DVP20EX00T2	8DI, 6DO, 4AI, 2AO, NPN out	DVP20EX200T	8DI, 6DO, 4AI, 2AO, NPN out		
I/O	DVP08XP11T	4DI, 4DO, NPN out	DVP08XP211T	4DI, 4DO, NPN out	2018/06	2018/07
	DVP08XN11T	8DO, NPN out	DVP08XN211T	8DO, NPN out		
	DVP16XN11T	16DO, NPN out	DVP16XN211T	16DO, NPN out		
	DVP24XP11T	16DI, 8DO, NPN out	DVP24XP200T	16DI, 8DO, NPN out		
	DVP24XN11T	24DO, NPN out	DVP24XN200T	24DO, NPN out		
	DVP32XP11T	16DI, 16DO, NPN out	DVP32XP200T	16DI, 16DO, NPN out		
Card	DVP-F232S	RS232 card	DVP-F232	RS232 card	Already stop	2018/01
	DVP-F485S	RS485 card	DVP-F485	RS485 card		
	DVP-F4IP	4-DI card	--	--		
	DVP-F2OT	2-DO card	--	--		
	DVP-F8ID	8-switch card	--	--		
	DVP-F6VR	6-VR card	--	--		
	DVP-F2FR	Freq. card	--	EH3 built-in		

3 Application

3.1 NEW – Application Notes

New application notes have been published recently on our ftp-site:

- Bending Machine Solution_EN.pdf
- Breeding Industry Notification - Smart Environmental Control System for swine pens.pdf
- Packaging Industry Notification - Delta Automatic Diagonal Window Patching Machine Solution.pdf
- Packaging industry notification - Three-layer film blowing machine.pdf
- Delta High-order Vector Driver Breakdown Miller Solution_EN.pdf
- Machine Tool Industry Notification - Convex Glass Processing Machine Solution.pdf

4 FAQ

4.1 VFD Series AC Motor Drives

VFD-E

Q **Why does Pr07-01 go back to default after power off/on?**

A *When Pr07-01 is changed it will be set to default value after power off/on. This is a bug in 1.23/2.23 and will be solved in the next version.*

C/CP2000

Q **AFM shows wrong values, why?**

A *In CP2000 FW 2.03 and C2000 FW 2.02, when Pr03-31/Pr03-34=1 (AFM is 4~20mA) the AFM output has an offset of ca. 0.8mA (output is 0.8mA too high).*
This will be corrected in the next firmware versions.

You can compensate this offset only for AFM2 by setting Pr03-27 AFM2 Bias.
To compensate 0.8mA (subtracting) set Pr03-27= -4.00% (0.8/20=4%)