

# **DELTA** Newsletter

## Industrial Automation Products

Edition 2018-11

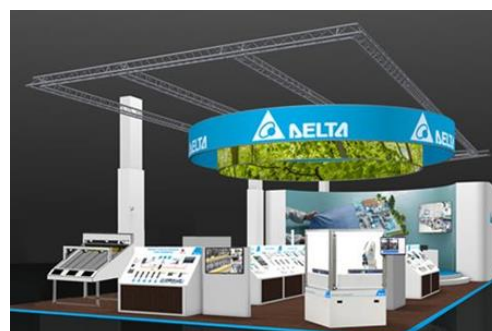
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27. - 29.11.2018  
Nuremberg

**sps ipc drives**  
smart and digital automation

## Booth 3-218



## 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, data sheets, 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

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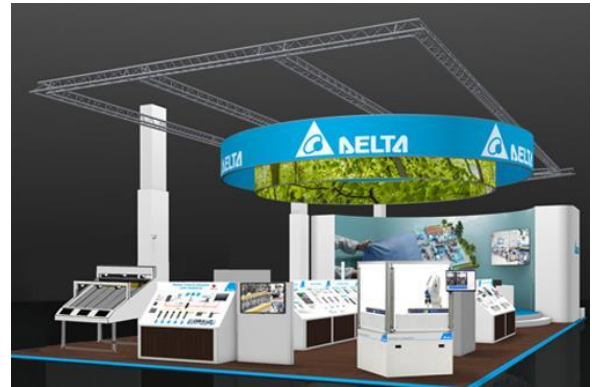
+31 (0)40 8003898 and 99

### 1.2 SPS/IPC/Drives, Nürnberg, Germany from 27-29 November 2018

Join Delta at SPS/IPC/Drives/Nuremberg 2018 for Innovative, Smart Automation Solutions for Industrial Upgrades

Date: **Nov. 27<sup>th</sup> – 29<sup>th</sup>, 2018**  
Venue: **Hall 3, Nürnberg Messe, Nuremberg, Germany**  
Delta booth: **3-218**

Delta is attending one of the most focused automation events of the year — the annual SPS/IPC/Drives/Nuremberg 2018 (SPS 2018) in Germany from November 27th to 29th. With the theme for this year “Smart Automation for Changing Industries”, Delta will focus on industrial requirements and present integrated solutions for various industries, including **woodworking, packaging and water treatment**. For advanced equipment, Delta's new **Motion Control Solution with CODESYS, 3D Stereo Vision System** and **Electric Servo Press** will satisfy customer needs for advanced automation solutions and smart manufacturing.



Delta's industrial solutions take advantage of its state-of-the-art automation products, software and technologies for the needs of global customers. The **Woodworking Solution** integrates Delta's **PC-based Panel Controller MP1 Series** as host controller with the EtherCAT servo motion system and peripheral devices for precise woodworking processes. The **Packaging Solution** adopts the **EtherCAT Motion Controller AH10EMC** as control core for motion control of packaging machines via EtherCAT. The AH10EMC also controls peripheral devices and conducts data exchange with a management platform through the EtherNet/IP network for remote monitoring to yield a smart machine.

Another highlighted solution at Delta's booth will be the **Water Treatment Solution**. Based on Delta's successful cooperation with water treatment plants in Europe and China, its Water Treatment Solution covers a management platform, advanced mid-range modular programmable logic controllers (PLCs), human machine interfaces (HMIs), and AC motor drives to handle the main water treatment processes such as water inflow, sedimentation, filtering, water outlet, and more. With its success stories in Europe and China, Delta's water treatment solution has proven to be reliable, highly efficient, and smart with full automation and management visualization.

For advanced equipment, Delta is to unveil the new **Motion Control Solution with CODESYS System**, integrating the new **IPC-Based Motion Controller MH2 Series**, CODESYS motion control platform, EtherCAT motion system and I/O modules to meet the needs for high speed, high precision and flexible motion solutions. In addition, Delta will showcase its **3D Stereo Vision System** and **Electric Servo Press**—newly launched in Taiwan in August—for the first time at this year's SPS.

We sincerely invite you to join Delta at booth 218, Hall 3 in Nürnberg Messe to experience our latest products and smart manufacturing solutions. Make your plans now and come visit Delta's automation technology showcase in Germany!

Register for a free ticket at:

[https://www.mesago.de/en/SPS/For\\_visitors/Register\\_for\\_free\\_season\\_ticket/index.htm](https://www.mesago.de/en/SPS/For_visitors/Register_for_free_season_ticket/index.htm)

and enter the code 1812323008

## 2 Product update

### 2.1 PHASE OUT – DOP-B series HMI

Please be informed that all DOP-B series HMI will be phased out by the end of 2018.

The major reason is that one of the fundamental hardware components inside DOP-B series HMI has been phased out. Therefore, instead of developing a new DOP-B series product, we decided to complete the family of DOP-100 series. With exactly the same panel cut-out and more advanced functions, DOP-B series HMI can be completely replaced by the new and improved DOP-100 series.

Please see below for the DOP-100 replacement models:

DOP-B Series	DOP-100 Series Replacement
DOP-B03E211	DOP-103WQ
DOP-B03S211	DOP-103BQ
DOP-B07S410	DOP-107BV
DOP-B07S411	DOP-107CV
DOP-B07S411K	
DOP-B07S415	
DOP-B07E411	DOP-107EV
DOP-B07E415	
DOP-B07PS415	
DOP-B05S111	DOP-107EG
DOP-B07E515	
DOP-B07S515	
DOP-B10S411	DOP-110CS
DOP-B10S615	
DOP-B10E615	
	DOP-110ES

Please be informed that it is easy to change DOP-B software program to DOP-100 program. It can be done within 5 minutes by updating the HMI program from DOPSoft 2.xx to DOPSoft 4.xx.

All new DOP-100 series HMI are ready. Please check with your sales representative for pricing information. As for the DOP-B series products, we still have stock in the warehouse.

**The last purchase date of DOP-B series HMI will be the December 31<sup>st</sup>, 2018.**

In order to have a smooth transition of the product replacement, please start to inform your customers. Please do not hesitate to contact us if you have any questions or requests.

### 2.2 UPDATE – VFD-C2000 software version upgraded from 2.02 to 2.04

Too much info (too many additions and improvements) to put in the newsletter.

Please refer to the announcement [116A-FE-xxC-17420-E-01-01\\_C2000 firmware v2.02 update to v2.04.pdf](#) on our ftp-site (folder Customer-Service\Industrial Automation Products\AMD\VFD-C2000\C2000 Presentations&Announcements).

### 2.3

### 2.3 NEW – KPC-CC01 keypad graphics change in 2019

The looks of the C/CP/CFP/CH2000 keypad will change to comply with the Delta corporate brand identity. The keypad itself and its functionality will not change.

The new KPC-CC01 will replace the old KPC-CC01 and the KPC-CC02 (on CFP2000).

The change will be gradual, depending on when the old KPC-CC01 are used up.



### 2.4 UPDATE – KPC-CC01 firmware upgraded from v1.22→v1.30→v1.31

Due to Start Wizard modification.  
Paired with C2000/CH2000 firmware v2.04.

Version	Series number	
V1.31	WJ	1832

#### Old firmware: Function item list

MENU	MENU	
1.Pr Setup	1.Parameter Setup	5. Copy PLC
2.Copy Pr	2.Copy Parameter	6. Fault Record
3.Keypad Lock	3.Keypad Locked	7. Quick Start
	4.PLC Function	8. Display Setup
		9. Time Setup
		10. Language Setup
		11. Start-up
		12. Main page
		13. PC Link

Item 1~4 are the common items for  
KPC-CC01 & KPC-CE01

#### New firmware: Function item list

MENU	MENU		
1:Pr Setup	1: Parameter Setup	6: Fault Record	11: Copy PLC
2:Quick Start	2: Quick Start	7: Language Setup	12: Display Setup
3:App Sel List	3: Application Selection List	8: Time Setup	13: Startup Menu
	4: Changed List	9: Keypad Locked	14: Main Page
	5: Copy Parameter	10: PLC Function	15: PC Link
			16: Start Wizard

### 3. Application Selection list

App Sel List

No Function

List PrNum =000

ENTER or ESC

This function allows user to select application and its parameters sets.

For example:  
Select 3: Application Selection List

MENU

1:Pr Setup

2:Quick Start

3:App Sel List

Press ENTER to go into the Application Selection List

13-00

0

No Function

0-10

Select Application

13-00

3

Fan

0-10

Press ENTER to enter the application selection screen, the selected application set will be "Fan".

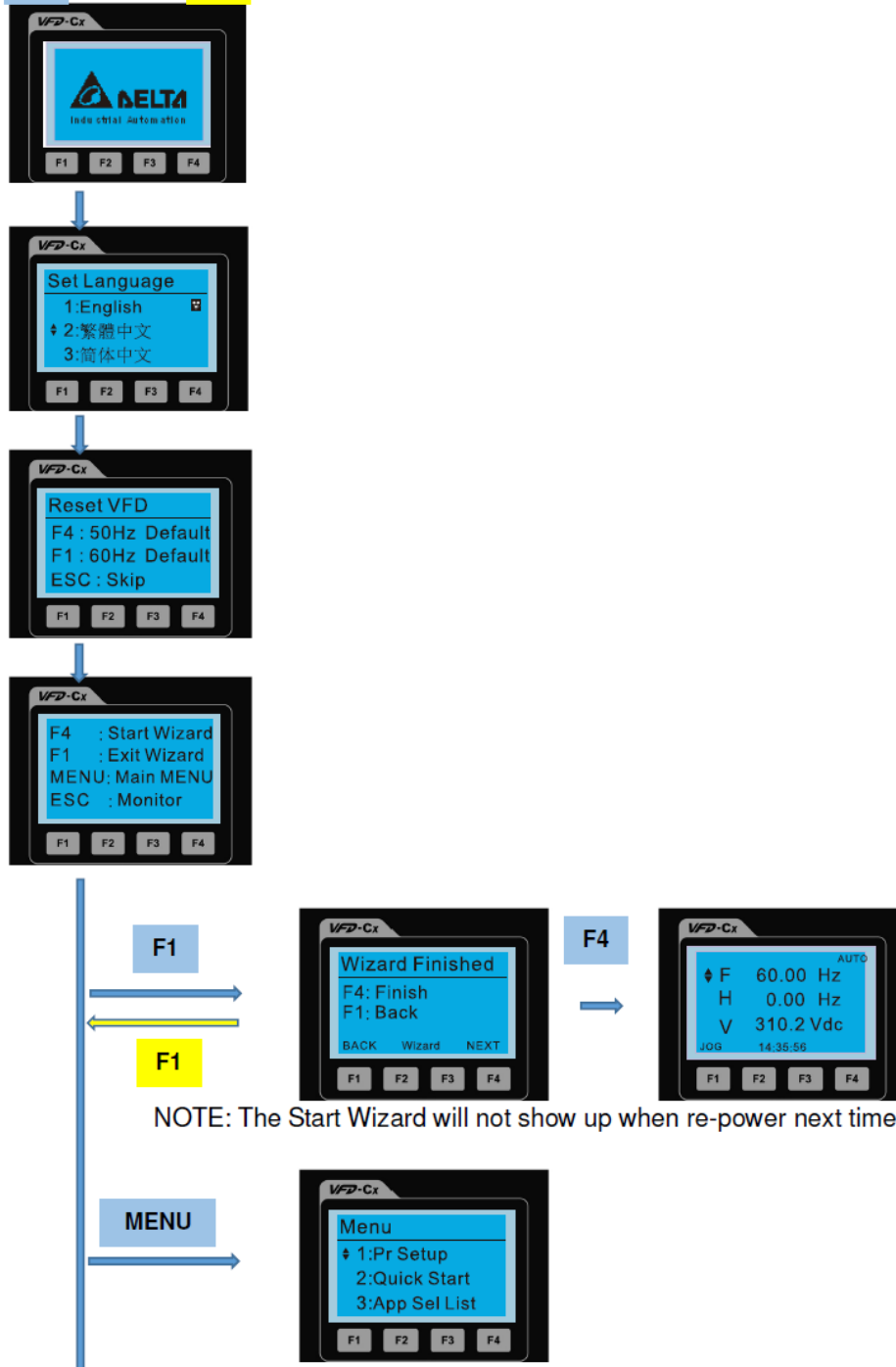
<div>App Sel List</div> <div>Fan</div> <div>List PrNum =033</div> <div>ENTER or ESC</div>	Press ENTER to enter the Fan application set screen.
<div>Map to : P00-11</div> <div>01: Velocity Mo</div> <div>02: Load Selecti</div> <div>03: Carrier FREQ</div>	Press Up/ Down key to select the parameter.
<div>Map to : P00-11</div> <div>01: Velocity Mo</div> <div>02: Load Selecti</div> <div>03: Carrier FREQ</div>	→
<div>Map to : P07-33</div> <div>31: Momentary Po</div> <div>32: Auto Restart</div> <div>33: Reset Resta</div>	
<div>00-16</div> <div>0</div> <div>Normal Duty</div> <div>0-1</div>	
Choose 0: Normal load or 1: Heavy load based on the needs, then press ENTER.	

#### 4. Changed list

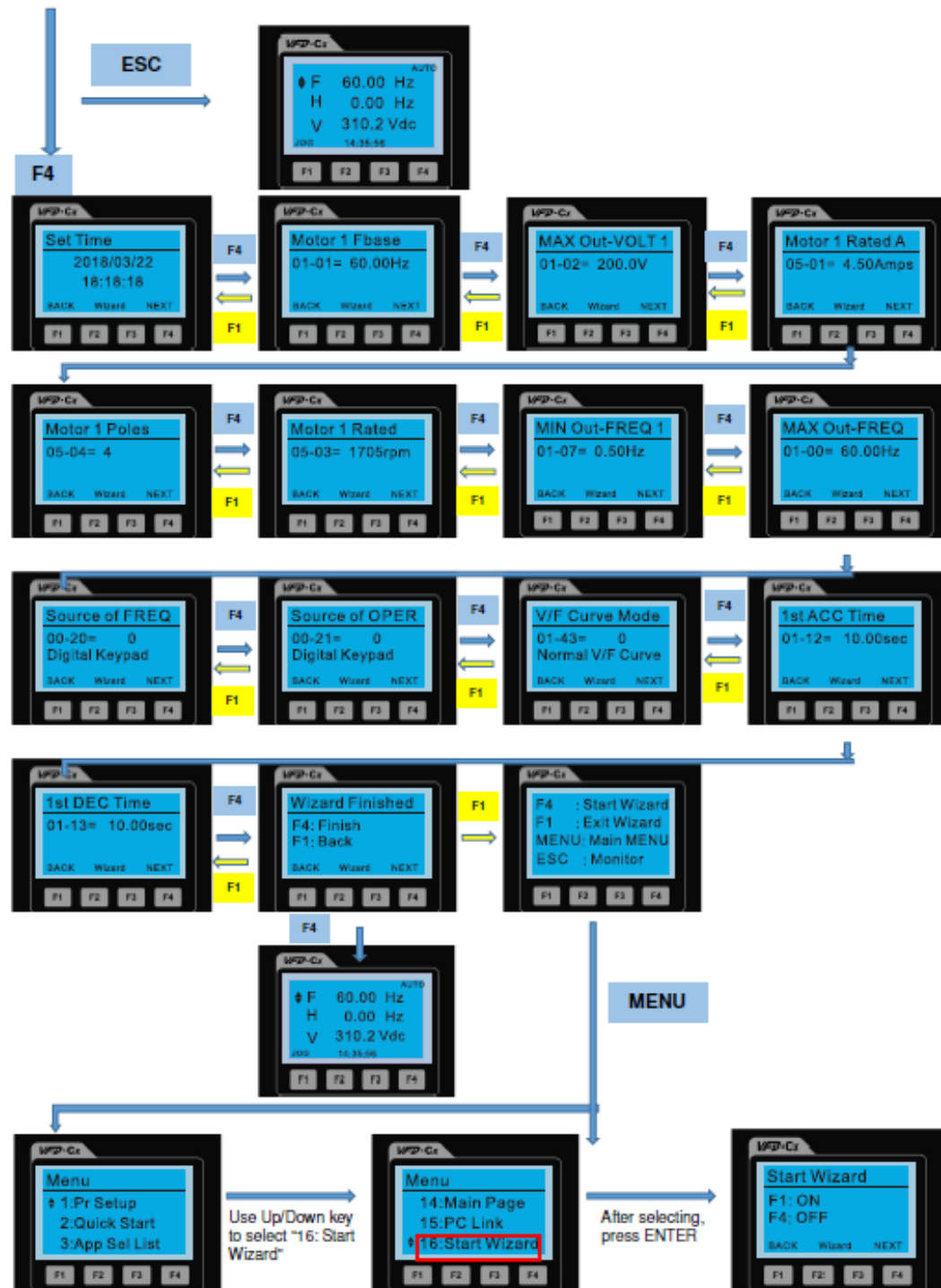
<div>Changed List</div> <div>Changed Pr</div> <div>List PrNum =026</div> <div>ENTER or ESC</div>	<p>This function displays the parameter that user has set.</p> <p>For example: Set Pr. 13-00 Application Selection = 3: Fan</p>
<div>13-00</div> <div>0</div> <div>No Function</div> <div>0-10</div>	→
<div>13-00</div> <div>3</div> <div>Fan</div> <div>0-10</div>	
Enter the changed list screen. List PrNum=026 means there are 26 parameters that have been changed.	
<div>Changed List</div> <div>Changed Pr</div> <div>List PrNum =026</div> <div>ENTER or ESC</div>	Press ENTER to enter the changed list screen.
<div>Map to : P00-17</div> <div>01: Carrier FREQ</div> <div>02: Source of FR</div> <div>03: Source of OP</div>	Use Up/ Down key to select the parameters that need to be checked or changed.
<div>00-17 KHz</div> <div>4</div> <div>Carrier FREQ</div> <div>2-15</div>	Press ENTER to enter the parameter.

### 16. Start Wizard

F1 : Next ; F1 : Back







NOTE: The "16: Start Wizard" on the menu is to set whether shows start wizard when start up the drive.

## 2.5 NEW – CliQ VA Series of DIN Rail Power Supply with Integrated LCD Display

Delta Electronics introduces the CliQ VA series of DIN rail power supply with integrated LCD display. The CliQ VA series display module offers three key functionalities:

- Display Mode will scroll through values such as output voltage, output current, cap life expectancy, power supply unit (PSU) temperature, etc.
- Maintenance Alarm Setting allows the user to set a pre-determined maintenance alarm before the power supply reaches the end of its expected cap life.

- Error Mode will display the type of error if the PSU enters and recover from OVP, OLP, SCP or OTP mode. This enables the user to quickly identify the cause of any abnormalities.



The CliQ VA series offer 24V output in three different power ratings: 120W (DRV-24V120W1PN), 240W (DRV-24V240W1PN) and 480W (DRV-24V480W1PN). They have a wide operating temperature range of -25°C to +70°C, providing full power up to +60°C at 5,000m or 16,400 ft. altitude. Other features include Power Boost 150% for 5 seconds as well as Advanced Power Boost (APB) that ensure system continuing operation when there is a large inrush current due to a faulty load in a multiple load operation.

Major safety approvals include IEC/EN/UL 60950-1 for Information Technology Equipment (ITE), UL 508 for Industrial Control Equipment (ICE) and OVC III according to IEC/EN 62477-1 / EN 60204-1 (clearance and creepage distances) and IEC 62103 (safety part); EMI comply with EN 55032 Class B, compliance with harmonic current IEC/EN 61000-3-2, Class A and fully compliant with RoHS Directive 2011/65/EU for environmental protection.

#### Highlights & Features

- Universal AC input voltage range
- LCD display monitoring output current / voltage / peak current and PSU temperature
- Lifetime expectancy monitoring and alarm signal
- Built-in active PFC with up to 94% efficiency
- Power Boost of 150% for 5 seconds
- Advanced Power Boost (APB) for breaking the fuse
- DC OK Contact and LED indicator for DC OK/ Overload
- Conformal coating on PCBAs to protect against common dust and chemical pollutants

## 2.6 **NEW** – Vision sensor VIS100



We are pleased to announce the release of Delta's new vision sensor, the VIS100.

The VIS100 series vision sensor has embedded development tools with user-friendly interfaces. Users can easily set up its inspection functions via web browsers. These include bar code reading, object positioning and detection. This sensor also has built-in LED lighting, which can be used as the flashlight. Users can complete the setting through the software. Moreover, it features advanced embedded systems for high-speed inspection and average time setting. With its compact size and strong metal housing, the VIS100 can be applied in several industries, such as; the food & beverage industry, pharmaceutical industry and the plastic industry.

The VIS100 is on stock and ready to be ordered.

## 2.7 **NEW** – DOP-100 models

We are happy to announce the release of the new DOP-100 models: DOP-107BV, DOP-107CV, DOP-107EV and the DOP-110CS.

With the release of these four new models, we are very close to completing the release of the full range of the DOP -100, which can be swapped with the DOP B Series HMI. We now have more DOP-100 models available offering you a wide and complete range of choice. Please see below for the DOP-B models that can be swapped with the new DOP-100 models.



- DOP-107BV can be swapped with DOP-B07S410
- DOP-107CV can be swapped with DOP-B07S411 and DOP-B07S415
- DOP-107EV can be swapped with DOP-B07E411 and DOP-B07E415
- DOP-110CS can be swapped with DOP-B10S411 and DOP-B10S615

Same as the other DOP-100 models, it is very easy to change DOP-B software program to DOP-100 program by updating the HMI program from DOPSoft 2.xx to DOPSoft 4.xx. However, please do not hesitate to contact your sales manager or FAE team if you have any problems.

Please see below for the available models:

	3-inch Model	7-inch Model	10-inch Model
Basic		DOP-107BV	
Standard	DOP-103BQ	DOP-107CV	DOP-110CS
Ethernet		DOP-107EV	
Ethernet Narrow Border	DOP-103WQ	DOP-107WV	DOP-110WS
Ethernet Squared		DOP-107EG	

### Main features of DOP-100 series:

- FTP and Cloud are both available for accessing historical data and recipes
- VNC remote monitoring: users can monitor register via smart devices and web browser
- User/password access system: operations to log
- PDF reader available
- Quick program compiling and downloading
- Improved picture library
- New functions on History curve, including zoom in/out function and scroll bar
- Enhanced recipe and alarm management function
- Animated gif available

All these four models are now on stock and ready to be ordered. Please contact your Sales Manager for pricing information.

## 2.8 UPDATE – Fans for C2000 frame H


Chapter 7 Optional Accessories | C2000

**Frame H**

Heat sink Fan Model "MKC-HFKM"

Applicable Model  
Following models use 2 sets of MKC-HFKM fan kit.

VFD2800C43A/43E; VFD3150C43A/43E;  
VFD3550C43A/43E; VFD4500C43A/43E;  
VFD2800C43E-1; VFD3150C43E-1; VFD3550C43E-1;  
VFD4500C43E-1




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**Frame H**

Heat sink Fan Model "MKC-HFKM1"

Applicable Model  
Following models use two sets of MKC-HFKM1:  
VFD4000C63B-00; VFD4000C63B-21

Following models use three sets of MKC-HFKM1:  
VFD4500C63B-00; VFD4500C63B-21;  
VFD5600C63B-00; VFD5600C63B-21;  
VFD6300C63B-00; VFD6300C63B-21



The next user manual will be updated with this info.

### 2.9 UPDATE – DVP-12SE firmware is updated from V1.90 to V1.92

Series	Models	Firmware Version	Release Date
DVP	DVP-12SE11T	V1.92	2018.07.30
	DVP-12SE11R	V1.92	(W1831)

#### Changes:

- Added new special devices (D1229-D1231) to show MAC address. For instance, if the MAC address (in hexadecimal format) is 12:34:56:78:9A:BC, D1229=H'1234, D1230=H'5678, D1231=H'9ABC.
- Added a new parameter K15 for the DTM instruction (API68). You can use K15 to calculate the local time for sunrise and sunset. Refer to the attachment (marked in blue) for more details.
- Added a new function to auto-identify if the slave supports the communication codes that read/write synchronously during data mapping through Ethernet. So that you do not need to change the function code after you found out the codes that read/write synchronously cannot be supported by the slave.
- Added a new communication mode (receive only) for the ETHRS instruction (API337). You can use more communication modes for more Ethernet applications. Refer to the attachment (marked in blue) for S2 explanation in descriptions of the ETHRS instruction.

You can find more details in [DELTA\\_SE\\_V1.92\\_T\\_EN\\_20180730-ATT1.pdf](#) on our ftp-site in the folder:

Customer-Service\Industrial Automation Products\PLC Programmable Logic Controllers\DVP\DVP Technical announcements-BU\2018

### 2.10 UPDATE – REG2000 firmware upgraded from v1.05 to v1.06

#### Function correction

	Version 1.05 problem	Version 1.06 correction
1	After a long time operating (6 months) without turn off power, the REG2000 might will trip up an ORP error because of "error value" accumulation (No "error value" accumulation if power has been turn off once).	The optimal calculation method, to reset error value at every time calculation. Thus, no ORP false alarm that trip up because of cumulative error.

#### Function modify

- To optimize the phase lock completion time during "Power ON" status.
- Add "Power off detection function" at the "Power ON" stage. Once the power anomaly is detected, to stop the voltage command update for prevent the voltage command become too low because of power loss during Power ON.

Version	Series number	
V1.06	Taiwan	1830

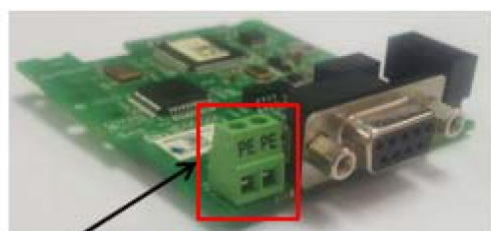
### 2.11 UPDATE – MS300 series communication cards revision

The MS300 communication cards will be revised:

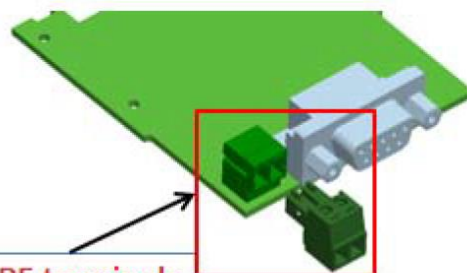
#### Improved communication immunity to interference

- Cable line optimization
- Hardware layout optimization
- Firmware communication mechanism optimization

#### PE terminal changed to removable terminal block



PE terminals



New PE terminals

### Old and new version numbers:

Communication cards	Old version board numbers	New version board numbers
CMM-DN01	294548100 <sup>2</sup>	294548100 <sup>3</sup>
CMM-COP01	294548110 <sup>0</sup>	294548110 <sup>1</sup>
CMM-EIP01	294548140 <sup>0</sup>	294548140 <sup>1</sup>
CMM-MOD01	294548140 <sup>0</sup>	294548140 <sup>1</sup>
CMM-PD01	294548150 <sup>2</sup>	294548150 <sup>3</sup>
CMM-EC01	PVT	294548680 <sup>0</sup>

CMM-EIP01, CMM-COP01, CMM-MOD01 are already in production.

### New control board

In order to achieve optimal anti-high frequency interference performance, the latest version upper control board of drive must be used. Differences between NEW and OLD control board (upper board CB2) numbers:

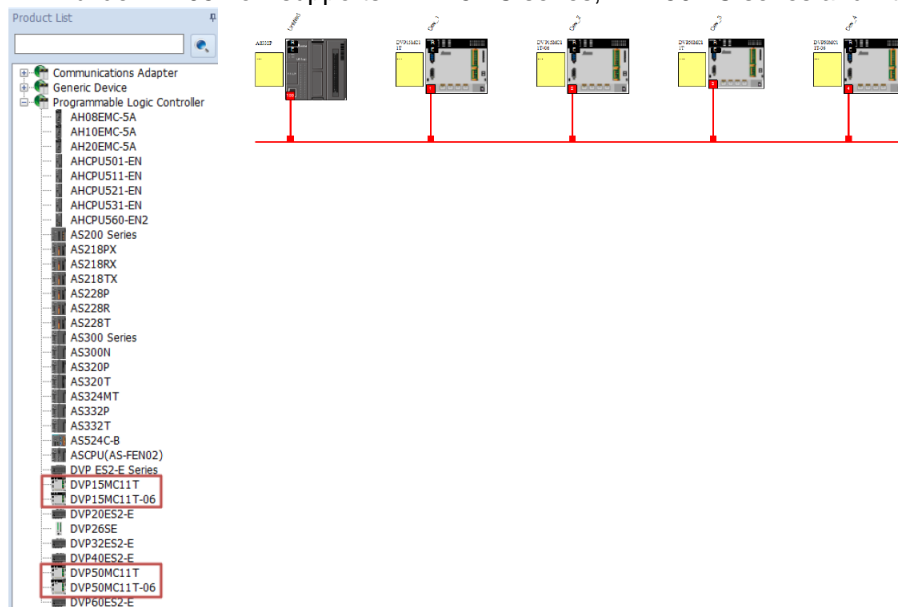
The control board can be determined from the board number, and the last two digits of the board number is upgraded to 03. The corresponding serial number and board number are as follows:

CB2 serial numbers	Old version of the control board (CB2) board numbers	New version of the control board (CB2) board numbers
5503017603(gold finger PCB)	294547400 <sup>1</sup>	294547400 <sup>3</sup>
5503017703(Flexible flat cable)	294547410 <sup>1</sup>	294547410 <sup>3</sup>

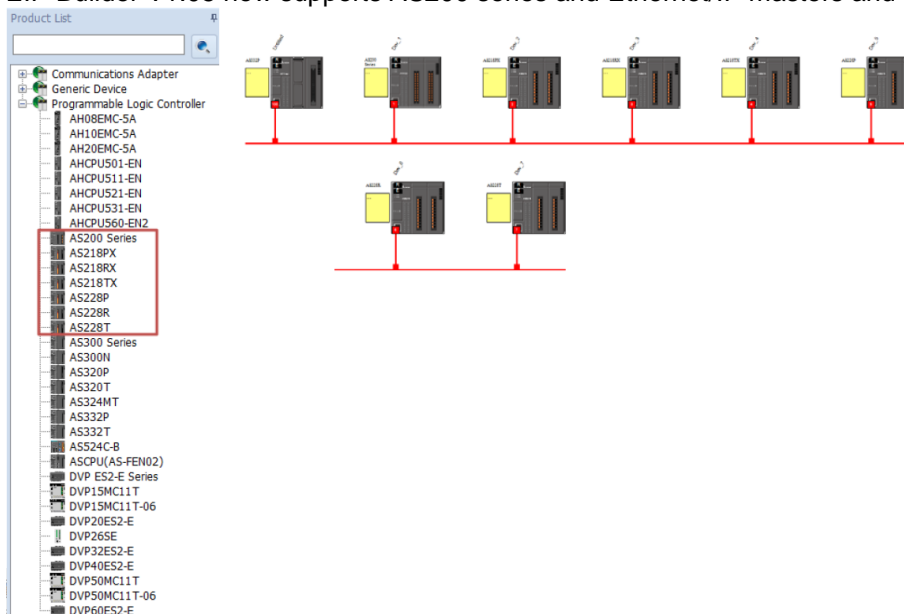
### 2.12 EIP Builder V1.05 released

#### Changes

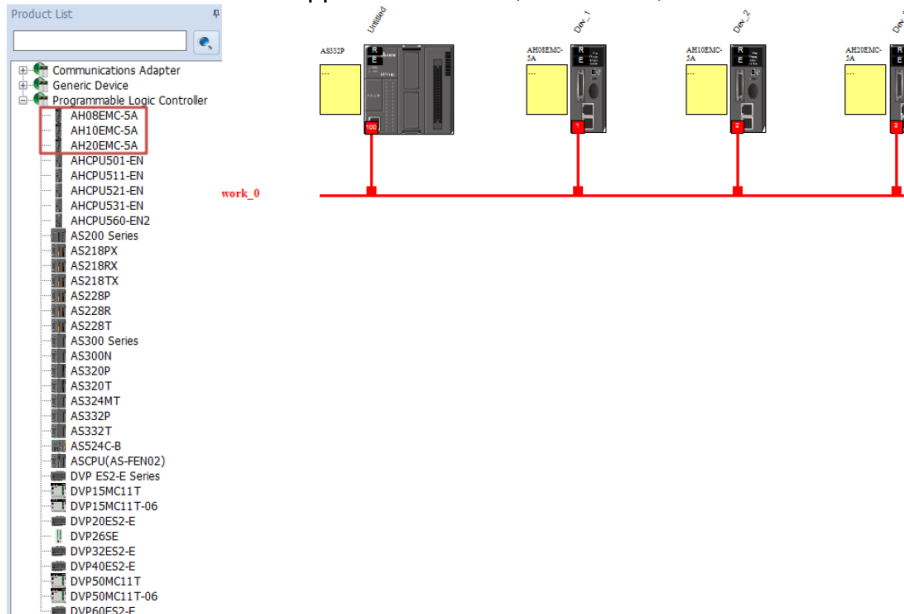
- EIP Builder V1.05 now supports DVP15MC series, DVP50MC series and Ethernet/IP slaves



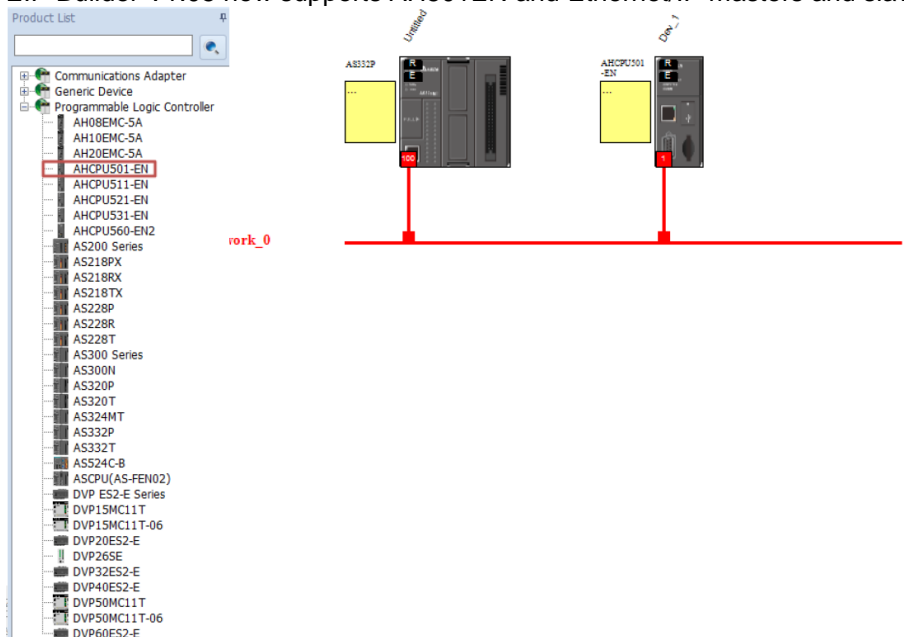
- EIP Builder V1.05 now supports AS200 series and Ethernet/IP masters and slaves



- EIP Builder V1.05 now supports AH08EMC, AH10EMC, AH20EMC and Ethernet/IP slaves



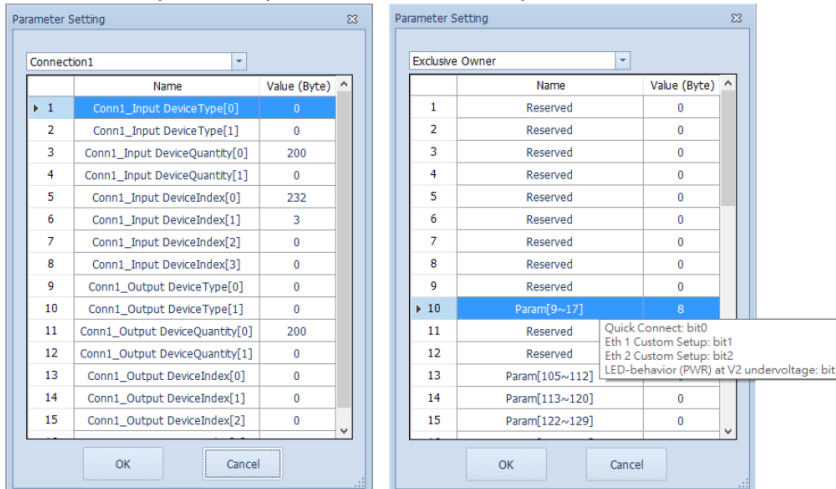
- EIP Builder V1.05 now supports AH501EN and Ethernet/IP masters and slaves



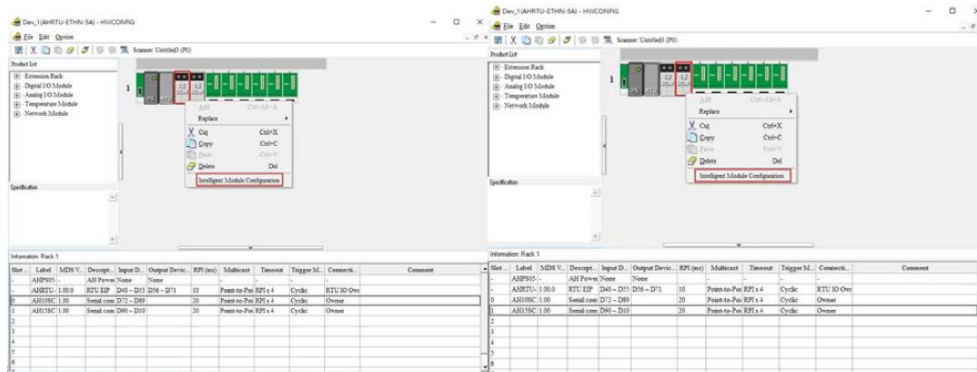
- Added PPS (Packet Per Second) in data mapping - Property Setting page

Enable	TAG	IP Address
<input checked="" type="checkbox"/>	<input type="checkbox"/>	192.168.1.1
<input checked="" type="checkbox"/>	<input type="checkbox"/>	

- Added descriptions of parameter name and parameter number in the Parameter Setting page



- AHRTU now supports AH10SCM and AH15SCM. And Intelligent Module Configuration is also available



You can download the software from our ftp-site in the folder:

Customer-Service\Industrial Automation Products\PLC Programmable Logic Controllers\PLC Software

## 2.13 NEW – AH series redundant PLC

We are happy to announce the release of the new AH series redundant PLC, which include the redundant CPU, main/extension backplanes and synchronization fibre cables.

The AHCPU560-EN2 supports the redundant function. It also can be used as a general CPU. Its shortest switchover time is 20ms and it has 1M steps (4 MB) of program capacity. Besides that, it has two built-in Ethernet ports (switch mode) and supports Ethernet/IP DLR.



Please see below for the available redundant backplanes and available synchronization fibre cables:

### Redundant backplanes

- Main backplane: AHBP04MR1-5A (2 power slots and 4 slots for communication modules)
- Expansion backplane: AHBP06ER1-5A (2 power slots and 6 I/O slots) and AHBP08ER1-5A (2 power slots and 8 I/O slots) both support redundant communication function

### Synchronization fibre cables

- UC-FB010-01A: Single mode, 1 m
- UC-FB030-01A: Single mode, 3 m
- UC-FB010-02A: Multi-mode, 1 m
- UC-FB030-02A: Multi-mode, 3 m

You can find more info on our ftp-site in the folder:



Customer-Service\Industrial Automation Products\PLC Programmable Logic Controllers\AH500\AH500  
Technical announcements\2018

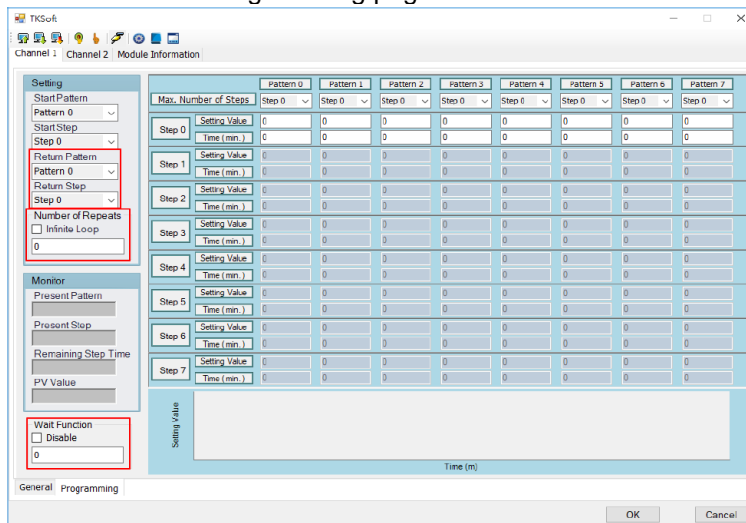
The new redundant CPU, main/extension backplanes and synchronization fiber cables are now on stock and ready to be ordered. Please contact your Sales Manager for pricing information. Please do not hesitate to contact us if you have any questions or requests.

### 2.14 NEW – TKSoft version 1.04 released

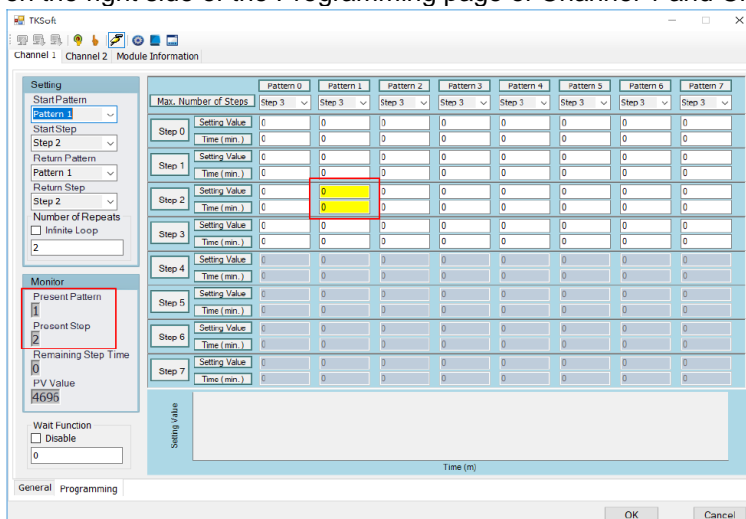
The modified and added functions are described below:

#### Added new functions

- **Return Pattern, Return Step, Number of Repeats (Infinite Loop) and Disable option for Wait Function** on the Programming page of Channel 1 and Channel 2

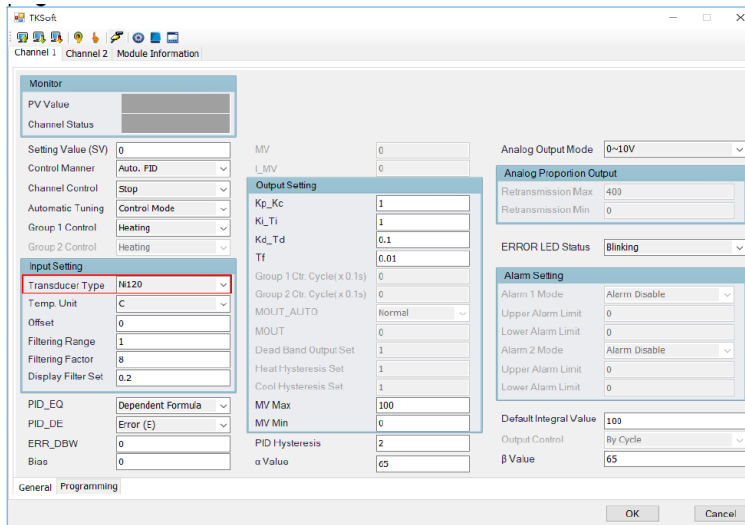


- While monitoring the present pattern and present step, the corresponding sections are highlighted on the right side of the Programming page of Channel 1 and Channel 2

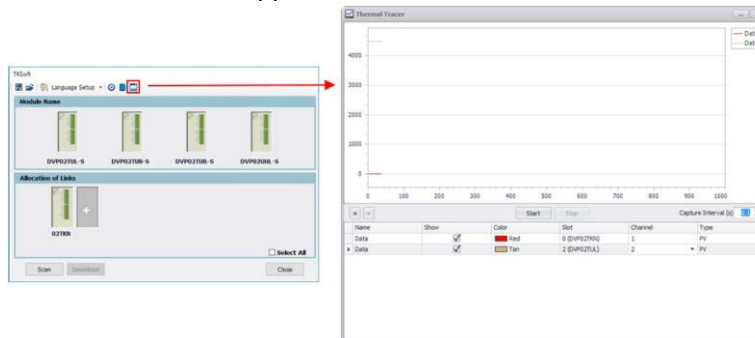


- TKSoft V1.04 now supports DVP02UHL-S

- Added a new option **Ni120** for Transducer Type in the input setting section on the General page of Channel 1 and Channel 2



- TKSoft V1.04 now supports Thermal Tracer



You can download the software from our ftp-site in the folder:  
Customer-Service\Industrial Automation Products\PLC Programmable Logic Controllers\PLC Software

## 2.15 **NEW** – DVS series layer 3 rack-mount Industrial Ethernet Switch DVS-G928W01 released



We are happy to announce the release of the new DVS series layer 3 rack-mount Industrial Ethernet Switch, the DVS-G928W01.

The DVS-G928W01 is a layer 3 rack-mount Industrial Ethernet Switch. It can route and determine the network paths and can correctly transmit packets to the designated IP address for exchanging data among different subnets. Combining the new CPU and its software, this layer 3 switch provides the enhanced routing functionality and can be applied in rugged industrial environment.

Available slot modules for this switch are DVS-G900-8GF, DVS-G900-8GE, DVS-G900-6GM12 and DVS-G900-4GF.

**Target industries and applications are:**

- Power substations
- Intelligent Traffic Systems (ITS)
- Renewable energy industry
- Railway applications

Detailed technical information can also be found on our ftp-site in the folders:

- Customer-Service\Industrial Automation Products\Industrial Ethernet Switches\DVS Announcements\2018
- and
- Customer-Service\Industrial Automation Products\Industrial Ethernet Switches\DVS Presentations

The DVS-G928W01 is on stock and ready to be ordered. Please contact your Sales Manager for pricing information. Please do not hesitate to contact us if you have any questions or requests.

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**2.16 NEW – New Delta Standard Power Supplies Catalog and Leaflets (October 2018 Edition)**

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Delta's October 2018 edition of Standard Power Supplies catalog and leaflets are now available. In this latest edition, the catalog combines all Industrial, Medical and LED power supplies into one that includes 12 new series; 5 Industrial series, 4 Medical series and 2 series of LED drivers. The Augmented Reality (AR) feature is also updated with more 3D images for the new series. You can view the 3D product images using the DeltaPSU AR app. You can zoom in or out or even rotate all angles to explore in greater detail. Go to the Apple App Store or Android Play Store to download.

Delta Electronics promotes sustainability by minimizing waste in printing, packaging and transporting printed materials. We encourage you to download the PDF version of the catalog from our website under Marketing Resources section.

You can also find them on our ftp-site in the folder:

Customer-Service\Industrial Automation Products\Power supplies\Power supplies general\Power supplies Catalogue

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**2.17 UPDATE – Firmware of DVP06AD-S, DVP04DA-S, DVP04TC-S and DVP06PT-S is updated**

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**Changes**

- Added the resetting function for control registers (CRs). Write 0x4352 into CR#0 and then have the power of CPU and module turned off and then turn the powers on again; all parameters in CRs, including communication parameters are restored to factory defaults.

- Added new RS485 communication format settings, including data length selections, 7/8 and Stop bit 1/2; see the following part in red for more information.

#32	H'40E8	○	R/W	Communication format settings	Communication baud rate: 4,800 / 9,600 / 19,200 bps / 38,400 bps / 57,600 bps / 115,200 bps					
					Communication formats: ASCII: 7,E,1 / 7,O,1 / 8,E,1 / 8,O,1 / 8,N,1					
					RTU: 8,E,1 / 8,O,1 / 8,N,1					
					Factory defaults: ASCII,9600,7,E,1 (CR#32=H'0002)					
					b15 ~ b12		b11 ~ b8		b7 ~ b0	
					ASCII/RTU, exchange low and high byte of CRC check code		Data format		Baud rate	
					Description					
					H'0	ASCII	H'0	7,E,1*1	H'01	4800 bps
					H'8	RTU, do not exchange low and high byte of CRC check code	H'1	8,E,1	H'02	9600 bps
							H'2	reserved	H'04	19200 bps
H'C	RTU, exchange low and high byte of CRC check code	H'3	8,N,1	H'08	38400 bps					
		H'4	7,O,1*1	H'10	57600 bps					
		H'5	8,O,1	H'20	115200 bps					
Note										
*1: This is only available for ASCII format.										
Ex: Write H'C310 into CR#32 for a result of RTU, exchange low and high byte of CRC check code, 8,N,1 and baud rate at 57600 bps.										

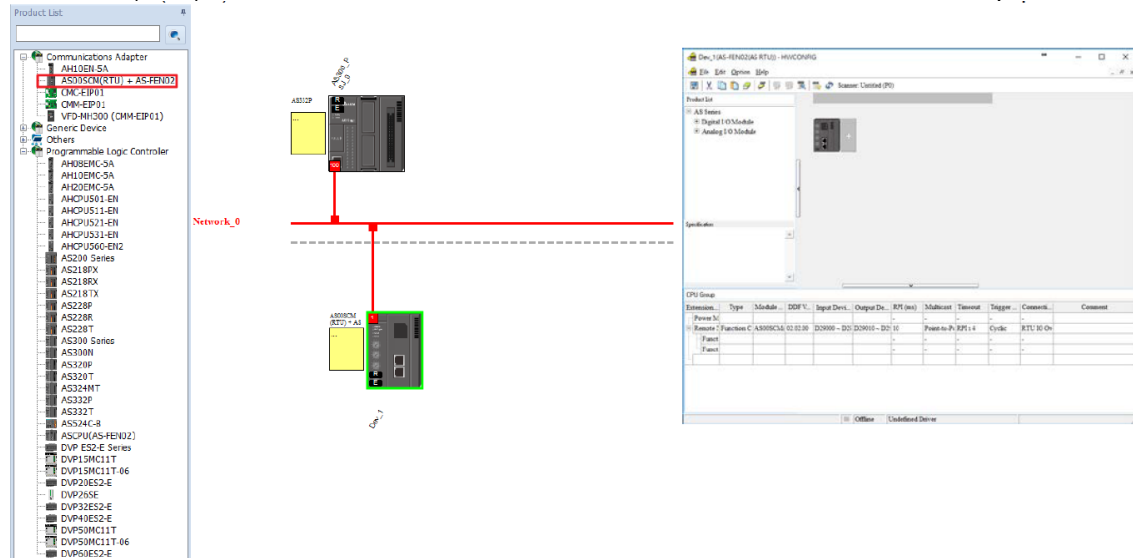
- DVP06AD-S, DVP04DA-S, DVP04TC-S, DVP06PT-S Added write protection for the control registers (CRs) to fix the issue that before the communication between modules and the PLC is established, the internal parameters may be affected by interfering signals.
- DVP04TC-S
  - Fixed the issue that when a hardware error occurs, its Error LED does not respond.
  - Fixed the issue that CR#30 (Error Status Value) cannot be displayed normally.

Series	Models	Firmware Version	Release Date
Slim	DVP06AD-S	V4.12→ V4.14	Oct. 19, 2018 (W1842)
	DVP04DA-S	V4.10→ V4.12	
	DVP04TC-S	V4.16→ V4.18	
	DVP06PT-S	V4.12→ V4.14	

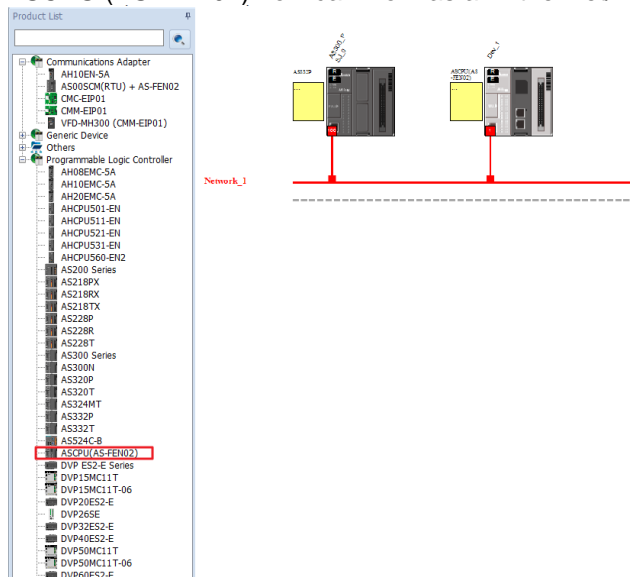
### 2.18 UPDATE – EIP Builder software version 1.06 is released

#### Changes

- AS00SCM(RTU) + AS-FEN02 now can work as an EtherNet/IP Communication Adapter



- ASCPU (AS-FEN02) now can work as an EtherNet/IP Communication Adapter



- Numbers of CIP connections, TCP connections, and EIP theoretical rate are displayed

<div> <div>Sort:</div> <div>CIP connection used: 3</div> <div>TCP connection used: 2</div> <div>EIP theoretical rate: 300 packets per second (pps)</div> </div>									
Enable	TAG	IP Address	Adapter Name	CPU Address/TAG		Adapter Address/Parameter/TAG	Length (Byte)	Property	
1	<input checked="" type="checkbox"/>	192.168.1.1	Dev_1	D0	←→	D1000	200	...	
				D0	→	D0	200	...	
2	<input checked="" type="checkbox"/>	192.168.1.1	Dev_1	D100	←→	D1100	200	...	
				D100	→	D100	200	...	
3	<input checked="" type="checkbox"/>	192.168.1.2	Dev_2	D200	←→	D1000	200	...	
				D200	→	D0	200	...	

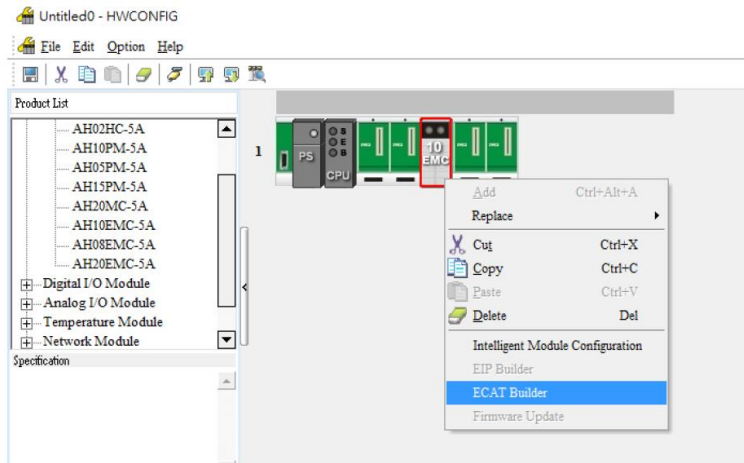
You can download it from our ftp-site in the folder:

Customer-Service\Industrial Automation Products\PLC Programmable Logic Controllers\PLC Software

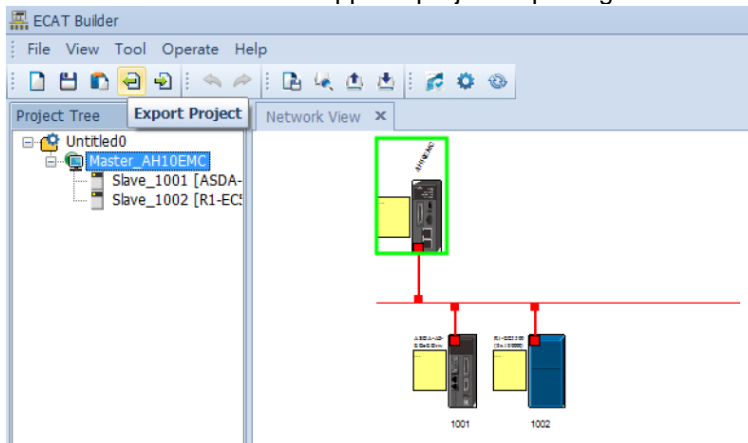
### 2.19 UPDATE – ECAT Builder software version 1.04 is released

#### Changes

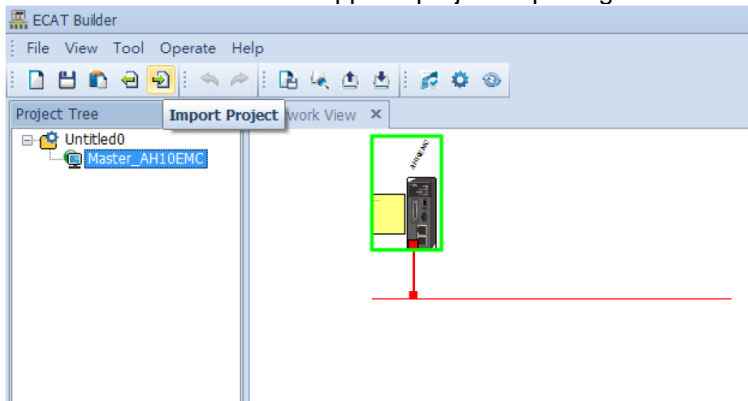
- ECAT Builder V1.04 now supports EMC series when it is installed as a right-side module, you can edit its topology from the ECAT Builder in HWCONFIG of ISPSOft



- ECAT Builder V1.04 now supports project exporting



- ECAT Builder V1.04 now supports project importing





- ECAT Builder V1.04 now supports I/O mapping file exporting

ECAT\_Master  
General IOMapping Parameters

Variable	Name	Data Type	Offset	Size	Symbol	Comment
ASDA-A2-E CoE Drive[1001].1R Tx...	ASDA-A2-E CoE Drive[1001].1R Tx...	UBIT	Rc: 0	2 bytes		
ASDA-A2-E CoE Drive[1001].1R Tx...	ASDA-A2-E CoE Drive[1001].1R Tx...	DBIT	Rc: 2	4 bytes		
ASDA-A2-E CoE Drive[1001].1R Tx...	ASDA-A2-E CoE Drive[1001].1R Tx...	DBIT	Rc: 6	4 bytes		
ASDA-A2-E CoE Drive[1001].1R Tx...	ASDA-A2-E CoE Drive[1001].1R Tx...	INT	Rc: 10	2 bytes		
ASDA-A2-E CoE Drive[1001].1R Tx...	ASDA-A2-E CoE Drive[1001].1R Tx...	SINT	Rc: 12	1 bytes		
ASDA-A2-E CoE Drive[1001].1R Rx...	ASDA-A2-E CoE Drive[1001].1R Rx...	UBIT	OUT: 0	2 bytes		
ASDA-A2-E CoE Drive[1001].1R Rx...	ASDA-A2-E CoE Drive[1001].1R Rx...	DBIT	OUT: 2	4 bytes		
ASDA-A2-E CoE Drive[1001].1R Rx...	ASDA-A2-E CoE Drive[1001].1R Rx...	DBIT	OUT: 6	4 bytes		
ASDA-A2-E CoE Drive[1001].1R Rx...	ASDA-A2-E CoE Drive[1001].1R Rx...	INT	OUT: 10	2 bytes		
ASDA-A2-E CoE Drive[1001].1R Rx...	ASDA-A2-E CoE Drive[1001].1R Rx...	SINT	OUT: 12	1 bytes		

Import Export

- ECAT Builder V1.04 now supports I/O mapping file importing

ECAT\_Master  
General IOMapping Parameters

Variable	Name	Data Type	Offset	Size	Symbol	Comment
ASDA-A2-E CoE Drive[1001].1R Tx...	ASDA-A2-E CoE Drive[1001].1R Tx...	UBIT	Rc: 0	2 bytes		
ASDA-A2-E CoE Drive[1001].1R Tx...	ASDA-A2-E CoE Drive[1001].1R Tx...	DBIT	Rc: 2	4 bytes		
ASDA-A2-E CoE Drive[1001].1R Tx...	ASDA-A2-E CoE Drive[1001].1R Tx...	DBIT	Rc: 6	4 bytes		
ASDA-A2-E CoE Drive[1001].1R Tx...	ASDA-A2-E CoE Drive[1001].1R Tx...	INT	Rc: 10	2 bytes		
ASDA-A2-E CoE Drive[1001].1R Tx...	ASDA-A2-E CoE Drive[1001].1R Tx...	SINT	Rc: 12	1 bytes		
ASDA-A2-E CoE Drive[1001].1R Rx...	ASDA-A2-E CoE Drive[1001].1R Rx...	UBIT	OUT: 0	2 bytes		
ASDA-A2-E CoE Drive[1001].1R Rx...	ASDA-A2-E CoE Drive[1001].1R Rx...	DBIT	OUT: 2	4 bytes		
ASDA-A2-E CoE Drive[1001].1R Rx...	ASDA-A2-E CoE Drive[1001].1R Rx...	DBIT	OUT: 6	4 bytes		
ASDA-A2-E CoE Drive[1001].1R Rx...	ASDA-A2-E CoE Drive[1001].1R Rx...	INT	OUT: 10	2 bytes		
ASDA-A2-E CoE Drive[1001].1R Rx...	ASDA-A2-E CoE Drive[1001].1R Rx...	SINT	OUT: 12	1 bytes		

Import Export

- Add "Reserve" setting option for PDO Entries in case some modules need zero padding

Add PDO Entry

**General**

Name:

Comment:

Swapping:

**Settings**

Index:  Subindex:

Datatype:  Bit Length:

**CoE Object-Dictionary**

Index	Name	Type
0x0000	Reserve	-
0x2000	DRV's Parameter P0-00	UINT
0x2001	DRV's Parameter P0-01	UINT
0x2002	DRV's Parameter P0-02	UINT
0x2003	DRV's Parameter P0-03	UINT
0x2004	DRV's Parameter P0-04	UDINT
0x2005	DRV's Parameter P0-05	UDINT
0x2006	DRV's Parameter P0-06	UDINT
0x2007	DRV's Parameter P0-07	UDINT
0x2008	DRV's Parameter P0-08	UINT
0x2009	DRV's Parameter P0-09	UDINT
0x200A	DRV's Parameter P0-10	UDINT
0x200B	DRV's Parameter P0-11	UDINT
0x200C	DRV's Parameter P0-12	UDINT
0x200D	DRV's Parameter P0-13	UDINT
0x200E	DRV's Parameter P0-14	UINT
0x200F	DRV's Parameter P0-15	UINT

Ok Cancel

You can download it from our ftp-site in the folder:  
Customer-Service\Industrial Automation Products\PLC Programmable Logic Controllers\PLC Software

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## **2.20 UPDATE – Firmware of AS00SCM-A is updated from V2.00 to V2.02)**

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### **Added functions**

- Added a new option for RTU lost connection management “Master Disconnected Handling”.
- The RTU mode is now available for the function card, AS-FEN02.
- You can control the I/O module on the right side of RTU module with a third party device through CANopen DS301 protocol.
- The RTU mode is now available for the load cell module, AS02LC-A.

### **Modified functions**

- Fixed the compatibility issue on the right-side I/O module. If the actual firmware version of the right-side I/O module is lower than its parameter version in HWCONFIG, the module cannot be used. But now it can be used but an error message will be sent.

**Released on 15-10-2018.**

## **3 Application**

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### **3.1 NEW – Application Notes**

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

- [Food and Pharmaceutical Industry Notification - Automatic Capping Machine.pdf](#)
- [IoT Industry Notification - Delta Recipe Management and Material Distribution Monitoring Solution.pdf](#)
- [Machine Tool \(Metal Processing\) Industry Notification - Steel Forming Machine.pdf](#)
- [Packaging Industry Notification - Automatic Labelling Machine Solution.pdf](#)
- [Robotics Industry Notification - Power Adapter Labelling System Solution.pdf](#)
- [Delta Injection Moulding Machine Direct Drive Control Solution.pdf](#)
- [Robotics Industry Notification - Delta Robot Controller MS 6-Axis Robot.pdf](#)

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### **3.2 NEW – Demo kits**

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The following Demo kits have just been released for sales. All the new demo kits come with the newly released HMI DOP100. The demo kits get delivered inside a case and include all the accessories needed to power up and setup communication.



### C2000 Demo Kit:



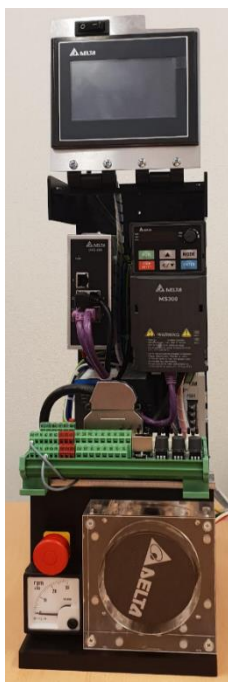
This demo kit can be used to test the closed loop control functionalities of the C2000. It comes with an ECMA-C3 servo motor which uses a Delta incremental encoder (2500ppr). The commutation signals (for the initial magnetic angle detection) are read through the ABZ channels at first power-up. To read the encoder pulses a EMC-PG01U encoder card is used (with the FSW1 dip-switch set to D for Delta encoders).

The demo kit is ready to be connected to a CANopen network either as a master or a slave device.



Part number	Specification	No.	Category	P.N	Description	Qty
%D-C2000DOPIPMA	HMI+C2000+PM motor integration demo kit	1	Delta Standard Product	VFD007C23A	AC Motor Drive	1
		2		EMC-PG01U	PG Card	1
		3		EMC-COP01	CANopen Card	1
		4		TAP-CN03	CANopen Box	1
		5		UC-CMC003-01A	RJ45 ↔ RJ45 (0.3m)	1
		6		ECMA-C30602ES	B type 200W Servo Motor	1
		7		DOP-103WQ	DOP-100 3"HMI	1
		8		UC-PRG015-02A	USB Communication Cable	1
		9		DVPPS01	24W,DC24V	1
		10		IFD6530	USB/RS485 Communication interface with keypad supply	1
		11		UC-CMC020-01A	Ethernet cable 2m	1
		12		-	I/O Terminal board	1
		13	Outsourced	-	Case, support panel and mechanical fixtures	1
		14		-	50Pin MDR connector, 0.75m	1

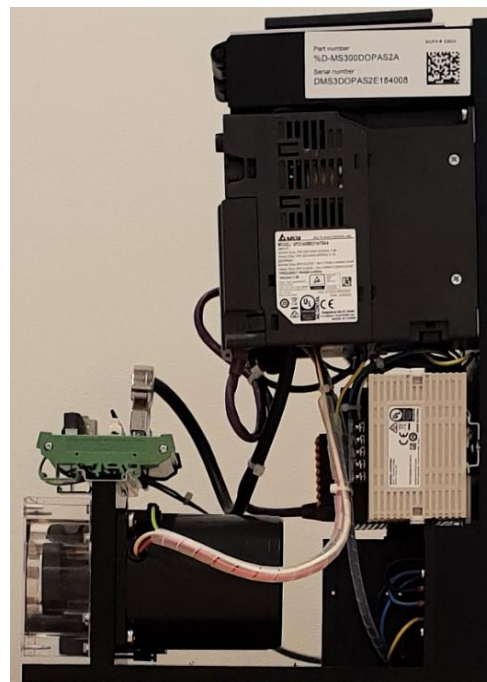
### MS300 Demo Kit:



This demo kit uses the new AS200 mid-range PLC with Built-in EtherNet/IP. A CMM-EIP01 EtherNet option card is installed on the MS300 drive.

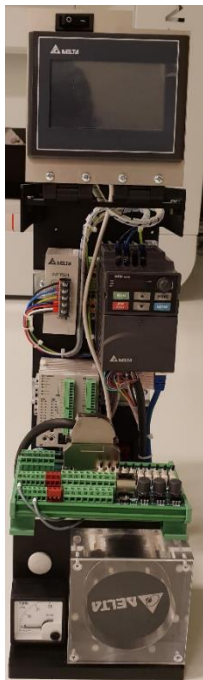
Everything is connected to the 5-port switch DVS-005I00 and the user can directly connect to all the EtherNet/IP devices from this demo (PLC, VFD and HMI)

The demo kit uses a 60W 2 pole 230V induction motor which allows the user to test the most common functions of the MS300 drive.



Part number	Specification	No.	Category	P.N	Description	Qty
%D-MS300DOPAS2A	HMI+AS200 PLC +MS300 integration demo kit	1	Delta Standard Product	VFD1A6MS21AFSAA	AC Motor drive	1
		2		CMM-EIP01	Ethernet card for MS300	1
		3		DOP-103WQ	HMI	1
		4		AS228T-A	PLC	1
		5		DVPPS01	24W,DC24V	1
		6		DVS-005I00	5-port switch	1
		7		UC-CMC003-01A	Ethernet cable. Length 30cm	2
		8		UC-CMC020-01A	Ethernet cable 2m	1
		9		UC-PRG015-02A	USB Communication Cable	1
		10		-	I/O Terminal board	1
		11	Outsourced	-	Case, support panel and mechanical fixtures	1
		12		5IK60A-TW2	Induction Motor - 60W 2 pole IM	1
		13		-	Hz Connector - 50Pin MDR connector, 0.75m	1
		14		-	0.25m angled ethernet cable UP	1

### VFD-E Demo Kit:



This demo kit allows users to test the VFD-E compact drive in combination with the DVP20SX2 slim PLC. This demo is suitable for gaining knowledge in Modbus communication and for testing the most common functionalities of the VFD-E.



Part number	Specification	No.	Category	P.N	Description	Qty
%D-VFD-EDOPDVPA	HMI+DVP PLC+ VFD-E integration demo kit	1	Delta Standard Product	VFD002E21T	AC Motor driver	1
		2		KPE-LE02	VFD-E Keypad	1
		3		DOP-103WQ	HMI	1
		4		UC-PRG020-12A	Cable to program the DVP and the DOP	1
		5		DVP20SX211S	PLC	1
		6		DVPPS01	DC Power Supply	1
		7		IFD6500	USB/RS485 Communication interface	1
		8		UC-PRG015-02A	USB Communication Cable	1
		9		-	I/O Terminal board	1
		10	Outsourced	-	Case, support panel and mechanical fixtures	1
		11		5IK60A-TW2	Induction Motor - 60W 2 pole IM	1
		12		-	50Pin MDR connector, 0.75m	1

## 4 FAQ

### 4.1 VFD Series AC Motor Drives

#### C/CP2000

**Q** Can the status of HAND/AUTO and LOCAL/REMOTE be read in the PLC?  
**A** In C2000 this is already implemented. Later CP2000 will follow.

	HOA mode		LOC/REM mode		HOA mode OFF
	HAND-ON	AUTO-ON	LOC-ON	REM-ON	
M1090=	0	0	0	0	1
M1091=	1	0	0	0	0
M1092=	0	1	0	0	0
M1100=	0	0	1	0	0
M1101=	0	0	0	1	0

### VFD-E

Q

**How does OPL work and which parameters to set?**

A

See user manual but some parameter descriptions and explanations are not correct.

06.13	Action for detected Output Phase Loss (OPHL)		Factory Setting: 3
Settings	0	Warn and keep operation	
	1	Warn and ramp to stop	
	2	Warn and coast to stop	
	3	No warning	

will be done by DC-braking.

Ramping

06.14	Deceleration Time of Output Phase Loss	Unit: second
Settings	0.0 ~120.0 seconds	Factory Setting: 0.5

Same as

Pr06-46 in C20000/MS300.

It should be "**Detection** Time of Output Phase Loss"

06.15	Detected Current Bandwidth	Unit: %
Settings	2 ~100.0 %	Factory Setting: 2


This is


"**Detection Current Level**". 100% is drive rated current.

Setting range 0~100.0% with default 2.0%.

**When the setting is 0.0%, there's no OPL detection.**

06.16	Detected DC Brake Time of Output Phase Loss	Unit: second
Settings	0.0 ~120.0 seconds	Factory Setting: 0.1

 Set Pr.06.13~06.16 can detect the driver output is disconnected or not.

 Open this function may cause misjudgment due to load or starting voltage is too small, here we can extend the detection time appropriately (Pr.06.14&Pr.06.16) or set Pr.06.15 value smaller.

When Pr06-13=1, the drive will decelerate (ramp down) by DC-braking. (This is the only way because only 2 phases are available)

The DC-brake current level is set in Pr08-00.

During DC-braking (also when set acc. to Pr08-01 ~ Pr08-03) there's no OPL detection.

### Summary

- When the phase current is <Pr06-15 for Pr06-14 time, you get OPL with action acc. to Pr06-13.

- Ramping down (decelerating) is done by DC-braking with current level acc. to Pr08-00.

- During DC-braking action or when Pr06-15=0, there's no OPL detection.

### MS300

Q

**How to calculate and set the OPL level?**

A

In Pr06-47 the trigger level for Output Phase Loss is set as a percentage of drive rated current =100%.

If one the output phase currents >Pr06-47\*Rated current for Pr06-46 time, OPL fault is generated.

Example:

VFD rated current: 10A

Pr06-47=10%

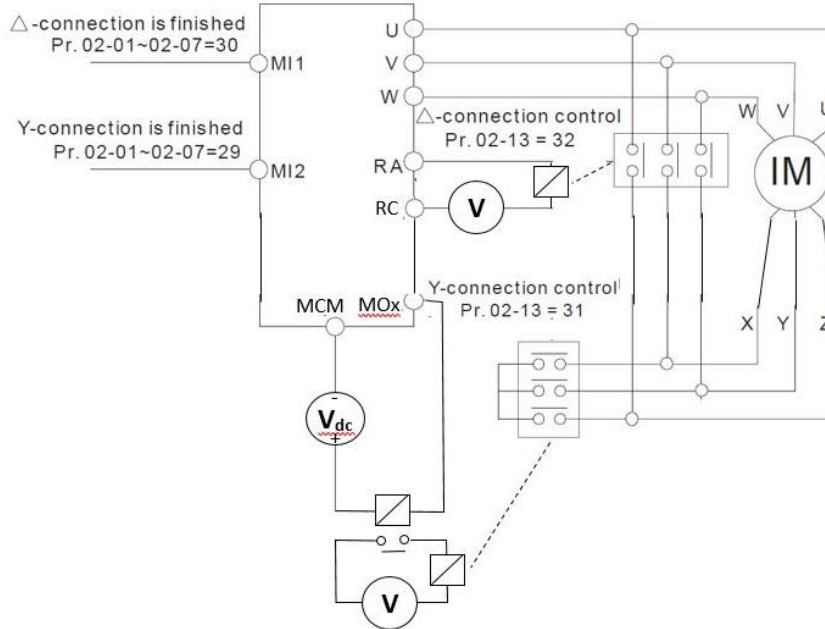
One of three phase current < 1A for >Pr06-46 time, OPL is generated.



**Q How to wire for Y-Δ switch-over?**

**A** The picture as shown for Pr05-25 in the user manual is for indication only and is not complete.

Here's how it should be connected.



**This applies also to C/CP/CFP2000.**

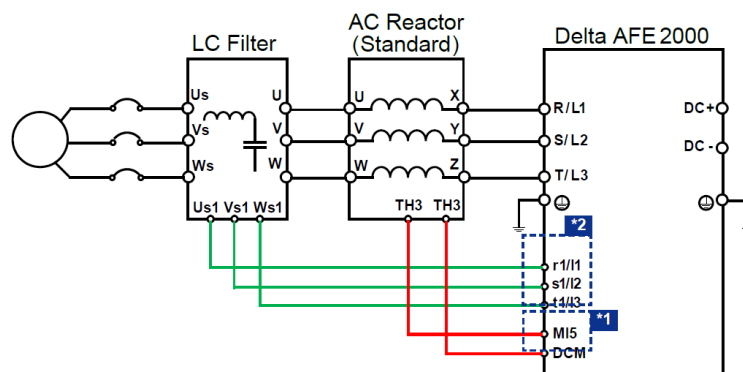
**AFE2000**

**Q Why do we get ocn fault?**

**A** When the recommended LC-filter is used, please connect r1,s1,t1 to the LC-filter Us1,Vs1,Ws1 and not to the RC reactor so the AFE can lock to the mains..

### LC Filter Wiring Diagram

The AFE LC filter enhances system power efficiency and suppresses frequency interference when matched with standard reactors and active front end units.



\*1 Delta's AC reactor (standard installation accessory) is equipped with a thermal protection function. The TH3 terminal will have the AFE2000 send out a warning message when the reactor temperature exceeds 120°C.

\*2 For installing an LC filter, please connect the AFE's power input terminals (r1/l1, s1/l2, t1/l3) to the LC filter's AC detection terminals (Us1, Vs1, Ws1).

### 4.2 DPM Power Meters

#### DPM-C520

**Q** How does Unlock Function Operation work?

**A** The info is not in the user manual

1. Default page is "Home". Click "Back" to switch to option page. (Fig.1)
2. Hold "UP" or "Down" for approximate 5 seconds. (Fig.2)
3. The option (TIM & DAT) appears. Option can be changed by clicking "Next". (Fig.3)



Fig. 1



Fig. 2



Fig. 3

### 4.3 ASDA Servo Drives

#### ASD-A2 series

**Q** Which item should I order if I need the battery for the servo motor with an absolute encoder?

**A** The PN of the battery is ASD-CLBT0100 and the specification is listed in Chapter 12.1.1 in the ASD-A2 user manual.

However, it's not possible to connect it to the encoder cable directly.  
Therefore, we suggest to order the battery box below with either 1pc battery or 2pcs batteries included, so it's more convenient for the connection.

Battery box with 1pc battery: ASD-MDBT0100

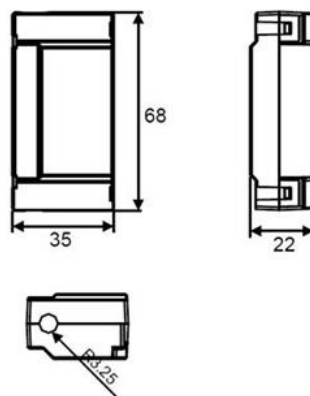
Battery box with 2pcs batteries: ASD-MDBT0200

#### ASD-MDBT0100

##### 12.1.2 Battery Box Dimensions

Single Battery Box

Delta Model Number: ASD-MDBT0100



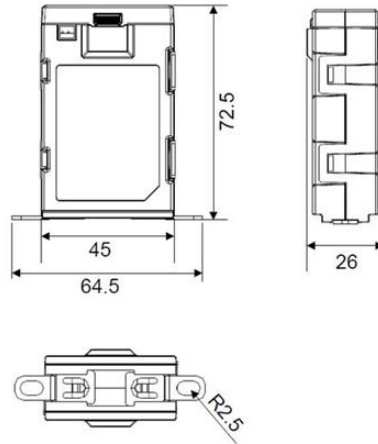
Weight
44 g

Units: mm

### ASD-MDBT0200

Dual Battery Box

Delta Model Number: ASD-MDBT0200



Weight

80 g

Units: mm