Newsletter

Industrial Automation Products

Contents

NEW DIAVH-PPC

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

2 Product update

2.1 NEW – User manual for VFD-ED

There is a new user manual for VFD-ED: DELTA_IA-MDS_VFD-ED_UM_EN_20200115.pdf.

2.2 NEW – Catalogue for VFD-DD

There is a new catalogue for VFD-DD: DELTA_IA-MDS_VFD-DD_C_EN_20200114_web.pdf.

2.3 NEW – User manual for CFP2000

There is a new user manual for CFP2000: DELTA_IA-MDS_CFP2000_UM_EN_20200116.pdf.

Delta Electronics (Netherlands) B.V., De Witbogt 20, 5652 AG Eindhoven, The Netherlands
☎ +31 (0)40 8003800   🖷 +31 (0)40 8003898 and 99

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2.4 NEW – AS FPFN02 PROFINET card

Delta will release AS FPFN02 PROFINET function card to enhance the system integration ability of AS PLC. It is very easy to connect AS PLC to Siemens PLC with this function card and there is no gateway device needed between Delta and Siemens CPU.
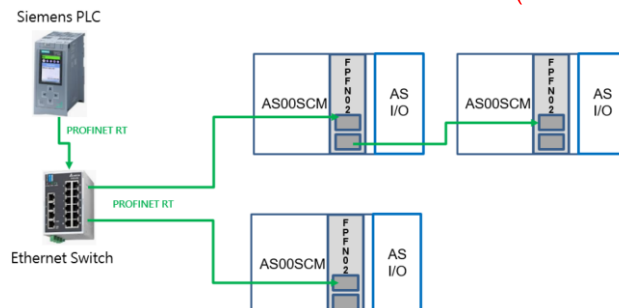
Features
- Built in R J45 x2 (Switch mode
- Supports PROFINET RT (Slave
- Max Ethernet connections: 16
- Max data capacity: 250 words (IN/OUT)
- Supports AS300 CPU only (Will support AS00SCM to work as RT U in 2020 Q2

Application scenario
AS FPFN02 is installed on AS300 CPU
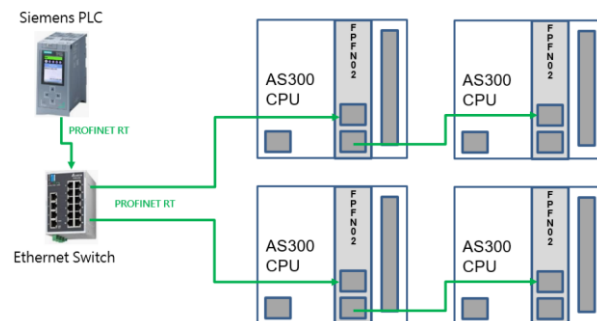
AS FPF N02 is installed on AS00SCM A (after 2020 Q2)

Specification AS FPFN02
- Built in RJ 45 x2 (Switch mode
- Supports PROFINET RT Slave only
- Connection : 16
- Max data length: 250 words IN/OUT)
- Can be installed on AS300 CPU
- Can be installed on AS00SCM A communication base module (RTU) 2020 Q2

Electrical specification

Item		Specifications
Internal Power Consumption	CPU	150mA
	Extension Module	Digital relay output <150mA, Other modules < 80mA
Operating Temperature		-20~60℃
Storage Temperature		-40~80℃
Operating Humidity		5~95%, non-condensing
Storage Humidity		5~95%, non-condensing
Vibration		IEC 61131-2, IEC 60068-2-6 (TEST Fc); 5Hz ≤f ≤ 8.4 Hz, constant amplitude 3.5 mm; 8.4 Hz ≤ f ≤ 150Hz, constant acceleration 1g
Shock		IEC 61131-2, IEC 60068-2-27 (TEST Ea); 15g peak, 11ms duration, half-sine
Operating Environment		Non-corrosive gas
Installation		Inside of the control panel
Pollution Degree		2
Protection Rating		IP20
Altitude		< 2,000 meters

Dimensions (in mm)   **Release**
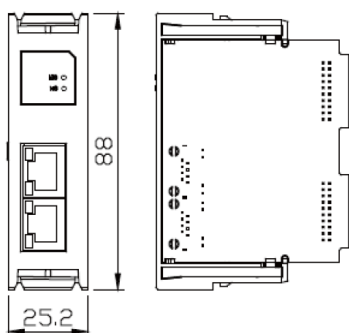
AS-FPFN02

Product	Model	Release date (dd/mm/yyyy)	Region	MOQ (pcs)
AS function card	AS-FPFN02	31/12/2019	Global	6

2.5   PHASE-OUT – Cables UN-03PF-0xA and UC-PF01Z-01A

Type	Discontinuation		Last order (YYYY/MM)	Discontinuation (YYYY/MM)
	Model No.	Description		
Accessory	UN-03PF-01A	PROFIBUS Connector (90°)	Closed	2019/12
	UN-03PF-02A	PROFIBUS Connector (90° with Prog. port)		
	UN-03PF-03A	PROFIBUS Connector (180°)		
	UC-PF01Z-01A	PROFIBUS Cable		

2.6   PHASE-OUT – IFD9507
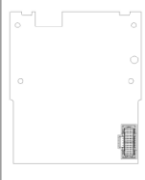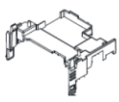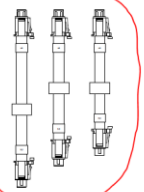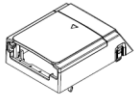
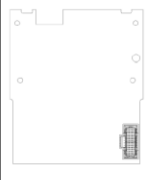| Type	Discontinuation		Recommended		Last order (YYYY/MM)	Discontinuation (YYYY/MM)
	Model No.	Description	Model No.	Description		
IFD	IFD9507	EtherNet/IP-MODBUS Converter	IFD9506 (FW >= v2.04)	MODBUS TCP & EtherNet/IP-MODBUS Converter	Closed	2019/12

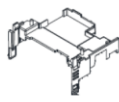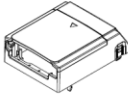## 2.7   UPDATE – MS/MH300 option cards version 01 to 02

The option cards for MS/MH300, incl. EMM-BPS001, have been changed to version 02.

The cards themselves have not changed but the package has. The previously included cables have to be purchased separately.
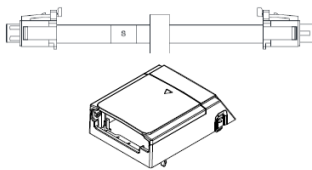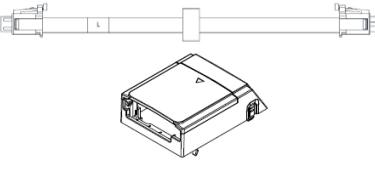
Version 01

Option card	Support Frame	Ground terminal	Communication cable	Option card package	Screw

Version 02

Option card	Support Frame	Ground terminal	Option card package	Screw

Cables for version 02

Material number	Package content	Description
CBM-CL01A		Option card is directly installed inside the drive and used in Frame A / B models
CBM-CC01A (The wire is the same as CBM-CL01A, but the part number comes with option card mounting box)		Use option card package (this installation method will increase the depth of the whole machine), used in Frame A models
CBM-CL02A		Option card is directly installed inside the drive and used in Frame C / D / E / F models
CBM-CC02A (The wire is the same as CBM-CC02A, but the part number comes with option card mounting box)		Use option card package (this installation method will increase the depth of the whole machine), used on Frame B / C / D models

See MS/MH300 series option card packaging.pdf on ftp-site, folder Customer-Service\Industrial Automation Products\AMD-Options\AMD Fieldbus options

2.8 NEW – DIAVH-PPC series product announcement

In response to the market demands for industrial information management, Delta presents the industrial PCs: Industrial box PC (IPC) and Industrial Panel PC (PPC).

Main features

- Industrial Fanless design, robust design with 24/7
- Support Panel and VESA 100 arm mounting
- Operating temperature -10~50°C
- IP65 rated front panel
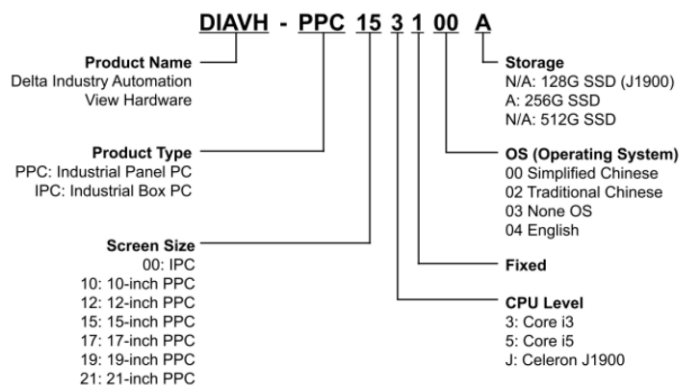- Fanless design with solid aluminium alloy enclosure

Selling points

- Delta industrial PPC supports 10"/12"/15"/17"/19"/21" for user selection
- Powered by Intel® Core 6th Gen. i3 i5 CPU and Intel® Celeron J1900 2.42GHz CPU
- DIAVH P PC17x10x/ DIAVH PPC21x10x/ DIAVH PPC19J10x/ DIAVH PPC21J10x provide good performance and optimal memory and peripheral I/O support
- Peripheral I/O support in serial ports and USB 2.0/3.0
- The PPC is suitable for applications in the rubber machinery, solar photovoltaic, automotive control and other industrial fields.
- Adopts a flat touch screen with IP65 front panel protection

Ordering info

Product	CPU	Model name	Description	Specification							
				CPU	Size	Memory	Storage	COM	LAN	USB	Operating system
PPC	Intel® Core i3	DIAVH-PPC173103	Fanless Resistive Touch screen Panel PC	Intel® Core i3	17-inch	4GB RAM	512G	4	2	4	PPC hardware only
		DIAVH-PPC173103A			17-inch		256G				PPC hardware only
		DIAVH-PPC173104			17-inch		512G				Win10-Professional
		DIAVH-PPC173104A			17-inch		256G				Win10-Professional
	Intel® Core i5	DIAVH-PPC175103		Intel® Core i5	17-inch		512G				PPC hardware only
		DIAVH-PPC175103A			17-inch		256G				PPC hardware only
		DIAVH-PPC175104			17-inch		512G				Win10-Professional
		DIAVH-PPC175104A			17-inch		256G				Win10-Professional
	Intel® Celeron J1900	DIAVH-PPC19J103		Intel® Celeron J1900	19-inch	4GB RAM	128G	4	2	4	PPC hardware only
		DIAVH-PPC19J104			19-inch						Win10-Professional
		DIAVH-PPC21J103		Intel® Celeron J1900	21-inch	4GB RAM	128G	4	2	4	PPC hardware only
		DIAVH-PPC21J104			21-inch						Win10-Professional
	Intel® Core i3	DIAVH-PPC213103		Intel® Core i3	21-inch	4GB RAM	512G	4	2	4	PPC hardware only
		DIAVH-PPC213103A			21-inch		256G				PPC hardware only
		DIAVH-PPC213104			21-inch		512G				Win10-Professional
		DIAVH-PPC213104A			21-inch		256G				Win10-Professional
	Intel® Core i5	DIAVH-PPC215103		Intel® Core i5	21-inch		512G				PPC hardware only
		DIAVH-PPC215103A			21-inch		256G				PPC hardware only
		DIAVH-PPC215104			21-inch		512G				Win10-Professional
		DIAVH-PPC215104A			21-inch		256G				Win10-Professional

DIAVH - PPC 15 3 1 00 A

Product Name
Delta Industry Automation
View Hardware

Product Type
PPC: Industrial Panel PC
IPC: Industrial Box PC

Screen Size
00: IPC
10: 10-inch PPC
12: 12-inch PPC
15: 15-inch PPC
17: 17-inch PPC
19: 19-inch PPC
21: 21-inch PPC

CPU Level
3: Core i3
5: Core i5
J: Celeron J1900

Fixed

OS (Operating System)
00 Simplified Chinese
02 Traditional Chinese
03 None OS
04 English

Storage
N/A: 128G SSD (J1900)
A: 256G SSD
N/A: 512G SSD

Global release: 9-1-2020

2.9   NEW – TKSoft version 1.06 released

Changes:

1. The transducer now supports two more types "-100~100 mV" and "4~20 mA (Quick 5 ms)" on the Channel 1 setting page. The modes with Quick description are only available for Channel 1. The options of modes with Quick description are not presented for Channel 2.

2. The transducer now supports one more type "-100~100 mV" on the Channel 2 setting page.

2.10 NEW – ISPSoft version 3.10 released

For detailed info please refer to DELTA_ISPSoft_V3.10_T_EN_20200312.pdf on out ftp site.

Summary of changes:
1. New HWCONFIG UI for AS Series PLC
2. Set up AS02LC-A in LC Wizard. (applicable for FWV01.04.00 or later)
3. HWCONFIG 4.0 supports reading firmware version of the Function Card in AS300/AS200 projects.
4. A new option "Manual + Flag" is added under the item "I/O allocation setting when Power On" in HWCONFIG 4.0.
5. New option "Delta Device Parameter Restore Setting" is added in HWCONFIG 4.0.
6. HWCONFIG 4.0 now supports the function card AS-FPFN02 for AS300 PLC CPU.
7. HWCONFIG 4.0 now supports IFD8540 bluetooth gateway configuration, hardware parameters upload and download.
8. New functions for DVP15MC/50MC.
9. Data Unit Type (DUT) now supports UNION data type.
10. The function of Backup / Restore Servo Parameter is added for AH EMC Series PLC.
11. Search function is optimized.
12. Updated the function of CARD Utility – Backup and Restore
13. Fixed an issue that for DVP Series PLC, the attribute of a TASK is not easy to find.
14. For an easier communication configuration, added a COMMGR button on the Communication Setting window.
15. New instructions SPLIT, SPLITP, MERGE and MERGEP are added for AH EMC Series PLC. (available for PLC with FW V2.03 or later).
16. New function blocks DFB_TOF and DFB_TON are added in Delta Library for AS Series PLC.
17. Update Delta Library for AH EMC Series PLC to fix the compatibility issue.
18. The following issues are fixed and functions are modified:
    (1) Fixed an issue that opening EIP Builder via AH10EN-5A of the AH EMC project in HWCONFIG, the IP address of AH10EN-5A somehow restores to its default value.
    (2) Fixed an issue that after uploading AH EMC project, the IP address of AH10EN-5A is changed to its default value.
    (3) Changed the name of AS Series Module "Motion Control Module" to "Positioning / Counter Module" in HWCONFIG.
    (4) Positioning modules and counting modules can only be installed on the right side of PLC CPU locally but not on the right-side of the remoted CPUs.
    (5) Presented more information such as AD/DA corresponding range of SR devices in normal exchange area of AS300/AS200.
    (6) The system checks if the register range in HWCONFIG is already used by EIP RTU in the AS project. If the range of the registers is already taken by EIP RTU, a warning shows up.
    (7) Some of the PLC communication error message are not so clear. Now if a syntax error occurs after downloading the project, the system will direct you to the incorrect programming step so that you can fix the error directly.
    (8) When programming in ST language, if a WORD device is assigned to a DWORD symbol, monitoring the WORD device will show the value in DWORD format. For example, when VarDW is a DWORD symbol programmed by ST language, during monitoring, the value in D0 is in DWORD format. (VARDW: =D0;)
    (9) Fixed an issue that AS Series PLC CPU system log exceeds the packet limit. (available for AS Series PLC CPU: FW V1.06.50 or later, CDA-J / ES3 Series PLC CPU: V0.40.10 or later)
    (10) Fixed an issue when the option "Automatically" is selected in Monitoring Data Format for DVP Series PLC, the value of counter device in 32-bit format cannot be monitored.
    (11) Fixed an issue that for DVP Series PLC, if the initial value in array symbol is set in a function block, an error message shows when downloading the initial values.
    (12) Fixed an issue that when the initial value in array symbol is declared incorrectly, the system does NOT check during compiling and then shows an error message afterwards.
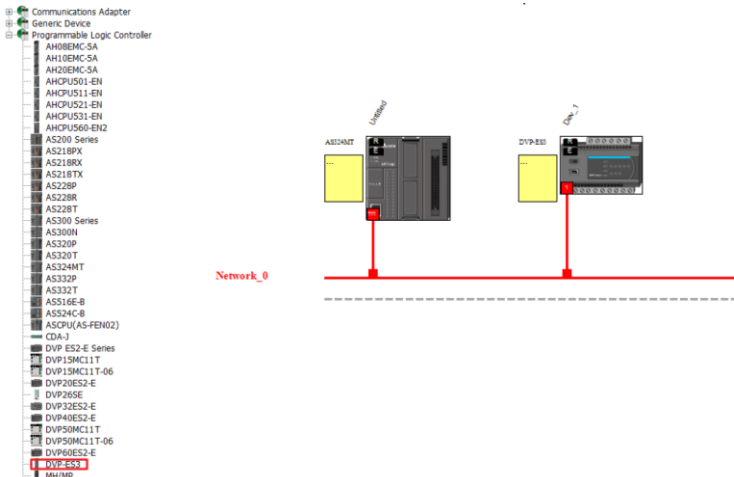
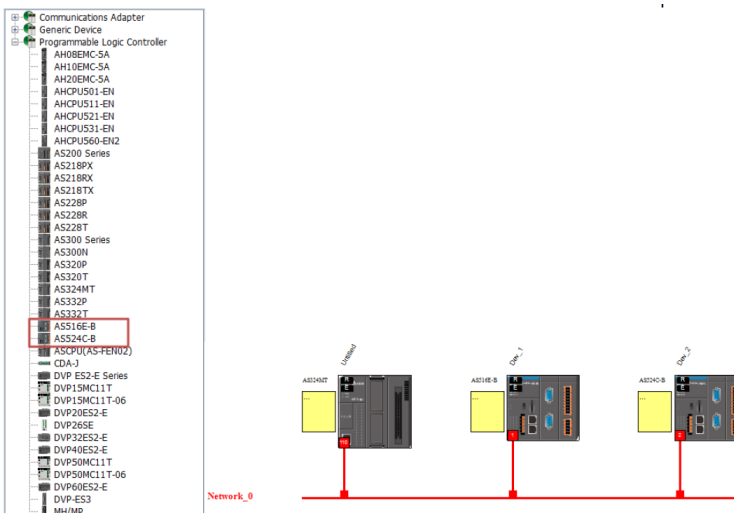## 2.11 NEW – EIP Builder software version 1.07 released.

Changes:

1. DVP15 / 50 MC now can work as EtherNet/IP Communication Adapters.
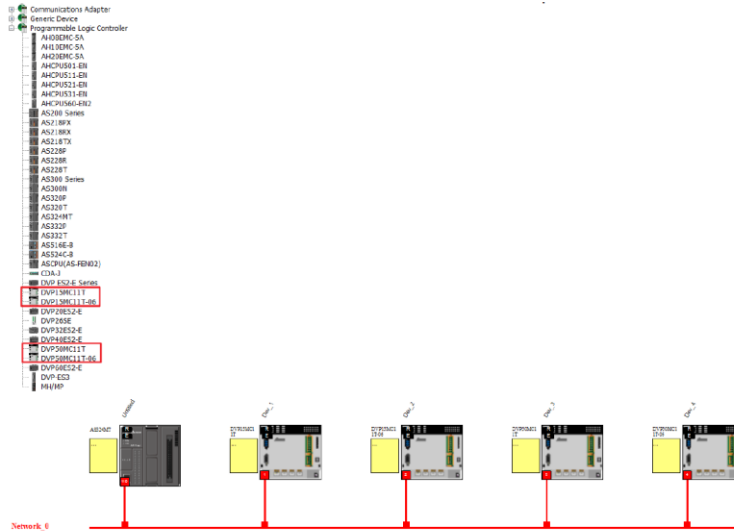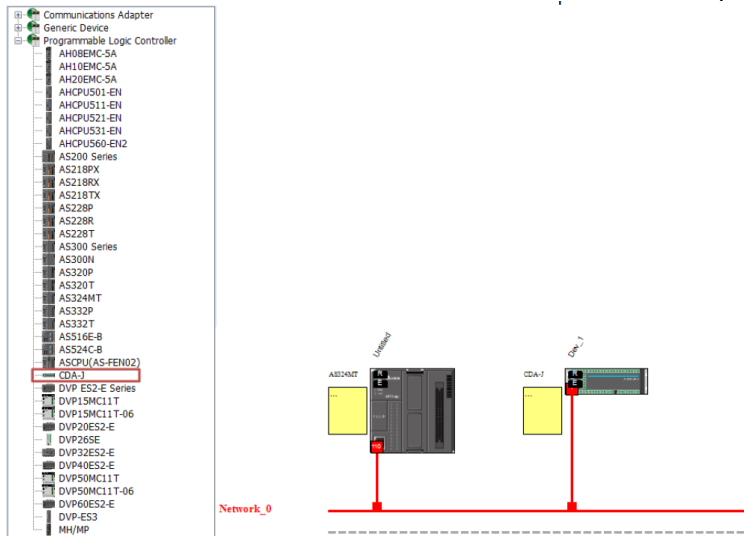

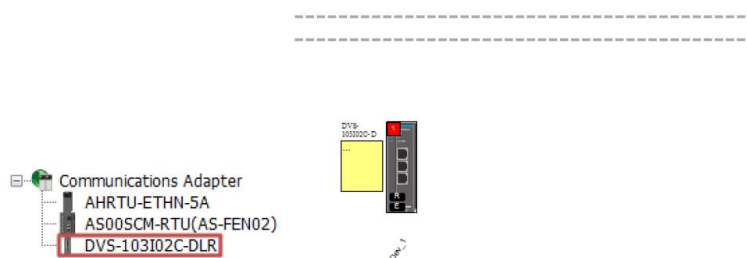2. DVPES3 now can work as an EtherNet/IP Communication Adapter.

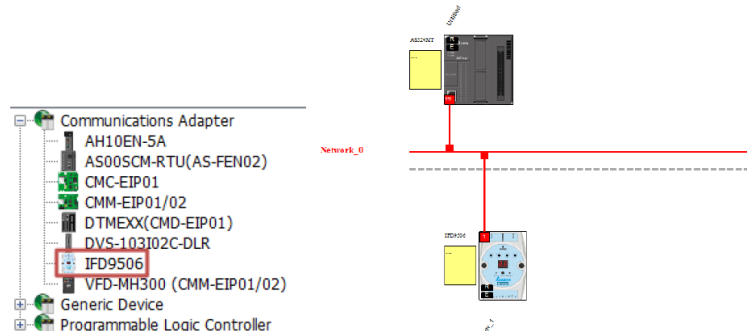3. AS516E-B and AS524C-B now can work as EtherNet/IP Communication Adapters.

4. CDA-J now can work as an EtherNet/IP Communication Adapter.

5. DLR-SWITCH now can work as an EtherNet/IP Communication Adapter.
    It does not matter if the PLC CPU is from Delta Electronics or not, you can configure this device.

6. DLR-SWITCH now can work as an EtherNet/IP Communication Adapter.

7. DTME08/04 temperature controller now can work as EtherNet/IP Communication Adapters.
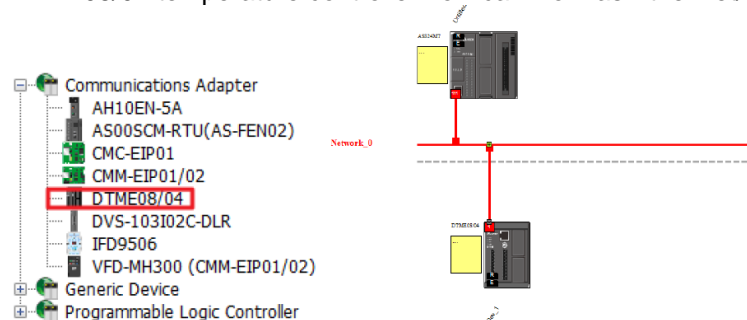
8. Added new setting page, IP Setting Tool.
    When there are multiple devices connected and you need to edit their IP addresses, you can use

this IP Setting Tool and you can set the IP configuration to Static or DHCP.
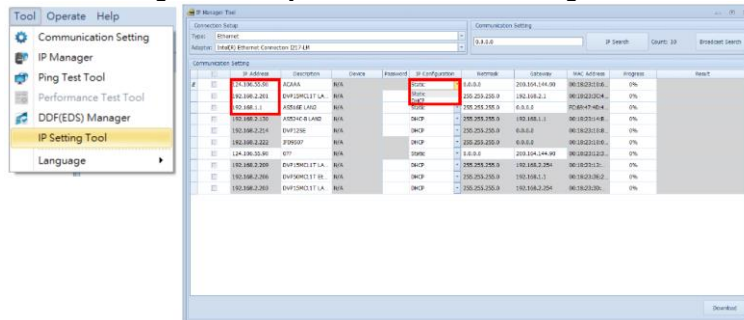
9. Newly added functions, Parameter Backup and Restore, for CMC-EIP01.
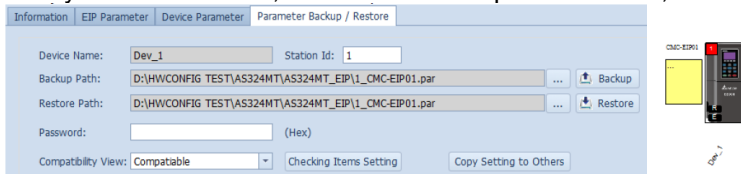
2.12 NEW – ECAT Builder software version 1.06 released

Changes:

1. ECAT Builder V1.06 now supports configurations for Modular Device that complies with EtherCAT protocol.
   - You can import Modular Device typed .esi files.
   - You can upload / download Modular Device typed slaves.
   - You can scan Modular Device typed slaves. (should work with FM V2.03 or later)

   - You can configure the remote IO of Modular Devices.
     a. Module configuration page
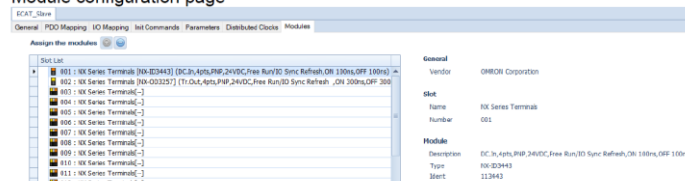
     b. Choose a module
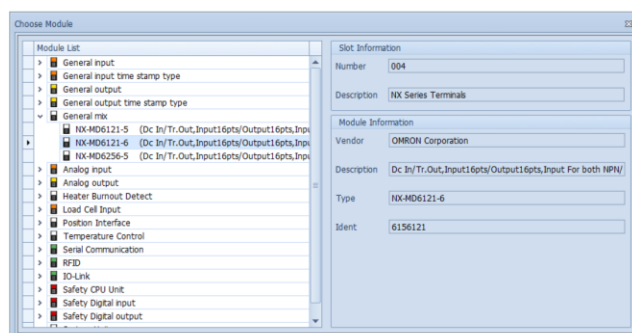
c. Added one more node "Slot" under the option of Slave.
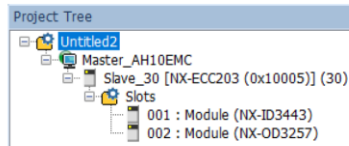
d. You can check PDO parameters on the PDO Mapping page.

e. You can set up Tags for the module PDO on the I/O Mapping page.

2. You can disable all the slaves without changing the network configurations. (This should work with FM V2.03 or later)

a. Tick the option "When downloading the project, notify the PLC CPU to disable all the slaves" to disable all the slaves.


b. Confirmation to disable all the slaves.
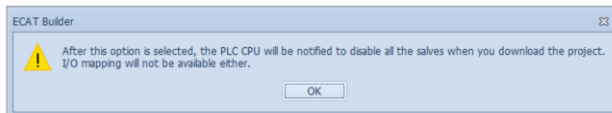
c. Once the option "When downloading the project, notify the PLC CPU to disable all the slaves" is confirmed, the network configuration looks like below.
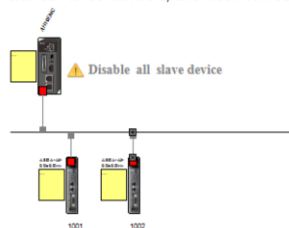
d. Once you click **Download** button for downloading the project, the system will notify you that The option "When downloading the project, notify the PLC CPU to disable all the slaves." is selected. All the slaves will be disabled after downloading the project.
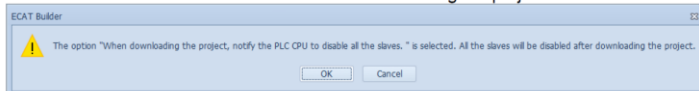
3. ECAT Builder V1.06 is compatible with ETG. 2000 EtherCAT Slave Information (ESI) Specification Version 1.0.11.


3 Application

3.1 NEW – Application Notes

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

- Fluid Industry Notification - Variable Frequency Water Lubricated Air Lubricated Air Compressor Solution.pdf

- Food Processing Industry Notification - Coffee Capsule Rotary Packaging Machine Solution.pdf

- Packaging Industry Notification - Film Cutter Solution.pdf

- Printing Industry Notification - Gravure Press Solution.pdf

- Robot Industry Notification - 5-Axis SCARA-Based Follow-Up Glue Dispensing.pdf

- Robot Industry Notification - Cotton Swabs Automatic Inspection and Inspection and Packaging Machine.pdf

- Stage Industry Notification - Lift Stage System Control Solution.pdf

- The Marking/Fixed Slope Function of DVP Series PLCs.pdf

- DEN_IA_VFD_PTC_AN_EN_20200305.pdf

- Electronics Industry Notification - Inductor Coil Winding Machine.pdf

3.2 NEW – PTC to VFD

Delta always uses an analogue input to measure the connected PTC.

- The normal way is to connect an external 5k6 resistor.
  This is explained in the previous application notes for E, EL, C/CP/CFP2000 and ME/MS/MH300.
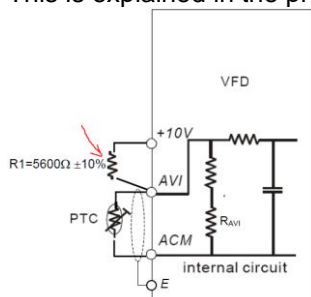
For E/EL/ME300 this is still the only way.

- For C/CP/CFP2000 and MS/MH300 it is possible to connect a PTC without using this resistor, just a wire bridge instead.
  In these drives the analogue output AFM can be set to a constant current, causing a voltage drop over the PTC, which can be read by the analogue input.
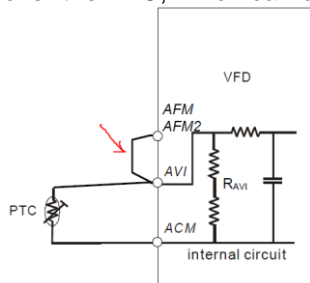
You can find the updated application note, with background info, calculations and parameter settings, DEN_IA_VFD_PTC_AN_EN_20200305.pdf on the ftp-site,
Folder: Customer-Service\Industrial Automation Products\AMD\General-VFD\VFD-General Applications

4 FAQ

4.1 VFD Series AC Motor Drives

CP/CFP2000

Q   How to use the Bypass functionality?

A   The Bypass function only works in combination with Fire Mode functionality in the CP/CFP2000.

In Fire mode the drive can ignore most drive fault codes and can continue running (the complete list of faults ignored is in the manual). If bypass is enabled the drive can use one of its relays to automatically switch the motor directly to the mains supply when a particular fault occurs. Below is the complete list of faults which can trigger the bypass function:

Code	Error name	Enable bypass function
1	Over-current during acceleration (ocA)	V
2	Over-current during deceleration (ocd)	V
3	Over-current during constant speed (ocn)	V
4	Ground Fault (GFF)	V
5	IGBT short circuit (occ)	V
6	Over-current during stop (ocS)	V
7	Over-voltage during acceleration (ovA)	V
8	Over-voltage during deceleration (ovd)	V
9	Over-voltage during constant speed (ovn)	V
10	Over-voltage during stop (ovS)	V
15	Input phase loss (OrP)	V
16	Over-heat 1 (oH1)	V
17	Over-heat 2 (oH2)	V
18	Thermistor 1 open (tH1o)	V
19	Thermistor 2 open (tH2o)	V
24	Over heat 3 (oH3)	V
82	U-phase output phase loss (OPHL)	V
83	V-phase output phase loss (OPHL)	V
84	W-phase output phase loss (OPHL)	V
89	RoPd initial rotor position detection error	V

*The minimum settings required to enable this function are:*
- Pr06-82=1 and Pr06-83≠0

✗	06-82	Enable bypass on fire mode	0: Disable bypass 1: Enable bypass	0
✗	06-83	Bypass delay time on fire mode	0.0–6550.0 sec.	0.0

- One relay output must be set to function 54.
This will be the function that controls the contactors that switch the motor to mains supply

54	Bypass fire mode indication	The contact works when bypass function is enabled in the fire mode.

- Parameter 06-83 is the delay time from when a fault occurs to when the drive enables Bypass:
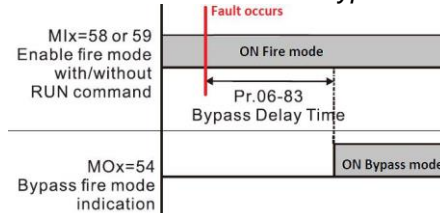
- In addition, the drive can attempt to auto-reset the fault that occurred during fire mode and prevent it from going into Bypass mode. This can be programmed using parameters Pr06-84 and Pr06-85:

⚡	06-84	Number of times of reset in fire mode	0–10	0
⚡	06-85	Length of time of reset in fire mode	0.0–6000.0 sec.	60.0

When Pr06-84=0 this function is disabled meaning that if a fault from the above list occurs the drive will inevitably go into Bypass mode (after the time set in pr06-83).
If for example Pr06-84=3 then the drive will reset a fault up to 3 times.
If a fault occurs 4 times within the time set in pr06-85 then the drive will no longer attempt to reset the fault and will switch to Bypass mode.

MS300
Q   **How to use the TORQ command in the PLC?**
A   *The TORQ command works in the same way as in C2000.*
         The info will be added in the next version of the user manual.

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