DELTA Newsletter

Industrial Automation Products

Edition 2015-10

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, etc) on our ftp-site.

Note: The ftp-site can normally not be accessed via Google Chrome, only via Internet Explorer. See below

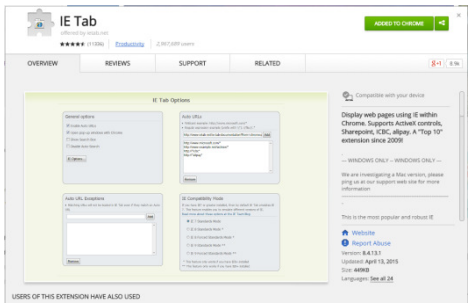
ftp://den-eindhoven:BuPd2175@ftp2.delta-europe.com/deltronics-eindhoven/customer-service

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

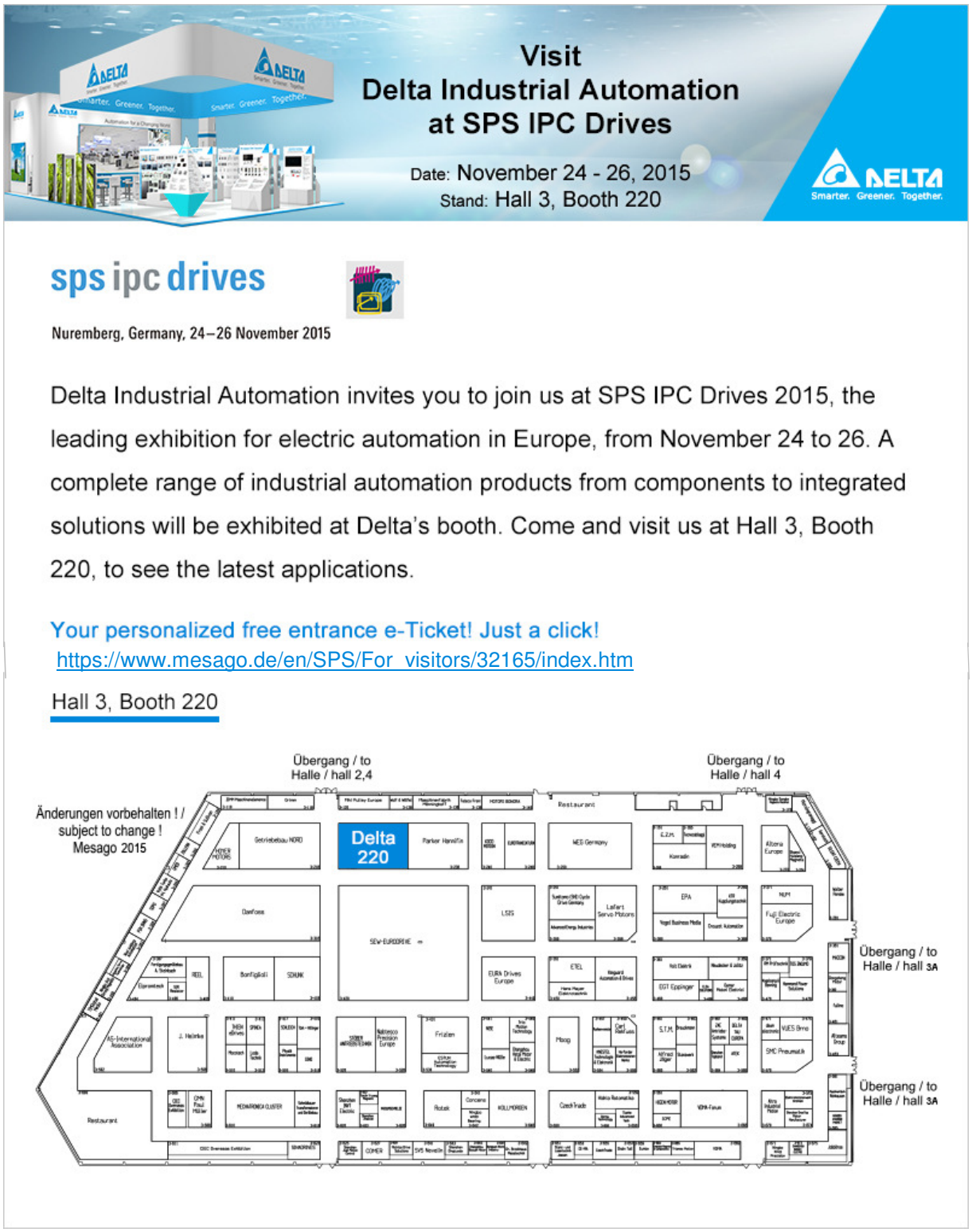
1.2 ftp-site link (access in Google Chrome)

Internet Explorer compatibility in Chrome.

Download and install IEtab in Google Chrome:
https://chrome.google.com/webstore/detail/ie-tab/hehijbfgiekmjfkfjpbkbammjbdenadd?hl=en



1.3 SPS/IPC/drives in Nuremberg



1.4 Upcoming events

FORUMECCATRONICA

October 29th, 2015

FMB
THE SUPPLIER SHOW FOR MECHANICAL ENGINEERING

November 4th -6th, 2015

INTERCLIMA+ELEC
PARIS NORD VILLEPINTE 02→06 NOV 2015

2 Product update

2.1 NEW – Manual for CP2000

A new manual for CP2000 has been published. You can download it from our website or from our ftp-site.

- DELTA_IA-MDS_CP2000_UM_EN_20150515.pdf

2.2 UPDATE – Filters for C200

The latest info, the manual will be updated.

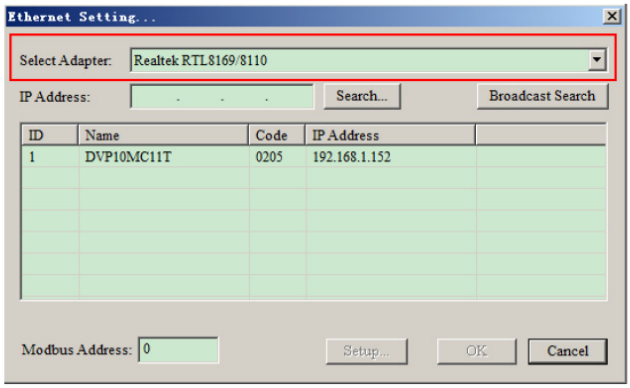
Drive	EMI Filter	Output Core	test result			
			Conducted Emission		Radiated Emission	
C200			C1(50m)	C2(100m)	C1(50m)	C2(100m)
VFD004CB21A	EMF011A21A	RF008X00A	pass	pass	fail	pass
VFD007CB21A			pass	pass	fail	pass
VFD015CB21A	EMF023A21A		pass	pass	fail	pass
VFD022CB21A			pass	pass	fail	pass
VFD004CB23A	EMF014A23A		pass	pass	fail	pass
VFD007CB23A			pass	pass	fail	pass
VFD015CB23A			pass	pass	fail	pass
VFD022CB23A	EMF021A23A		pass	pass	fail	pass
VFD037CB23A			pass	pass	fail	pass
VFD007CB43A	EMF014A43A		pass	pass	fail	pass
VFD015CB43A			pass	pass	fail	pass
VFD022CB43A			pass	pass	fail	pass
VFD037CB43A			pass	pass	fail	pass
VFD040CB43A	EMF018A43A		fail	pass	fail	pass
VFD055CB43A			fail	pass	fail	pass
VFD075CB43A			fail	pass	fail	pass

2.3 NEW – CANopen Builder V5.01 is released

The following functions have been added:

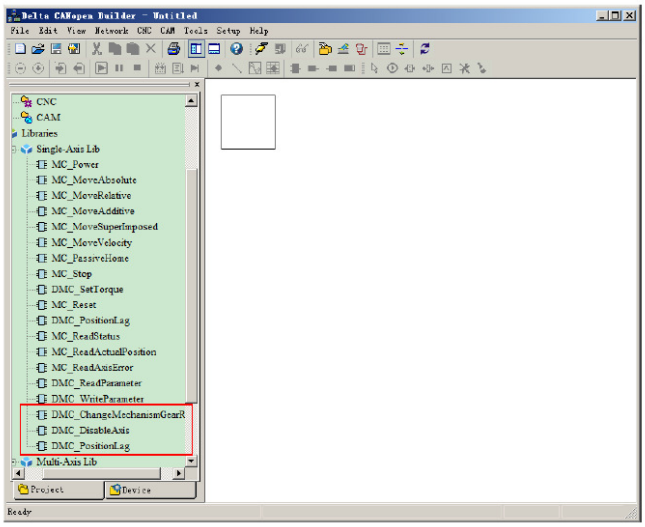
1. **The "Select Adapter" item is added to the Ethernet Setting interface, as marked in the following red box.**

   Select the desired network card at the location of the following red box when there are many network cards for option in the PC. For more details, refer to section 10.1.1 of the CANopen builder help file.



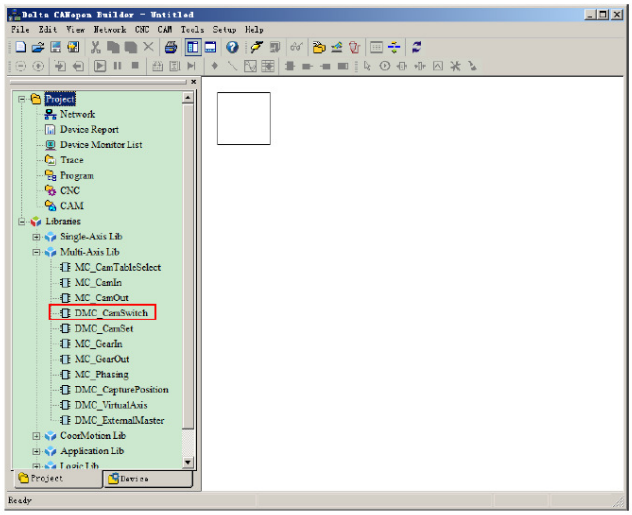
2. **Three single-axis instructions are added under Single-Axis Lib of CANopen Builder Libraries.**

   The three newly added instructions are DMC_ChangeMechanismGearRatio, DMC_DisableAxis and DMC_PositionLag, as marked in the following red box. For detailed explanation of them, refer to section 14.1.16~14.1.18 of the CANopen Builder help file.



3. **One multi-axis instruction is added under Multi-Axis Lib of CANopen Builder Libraries.**

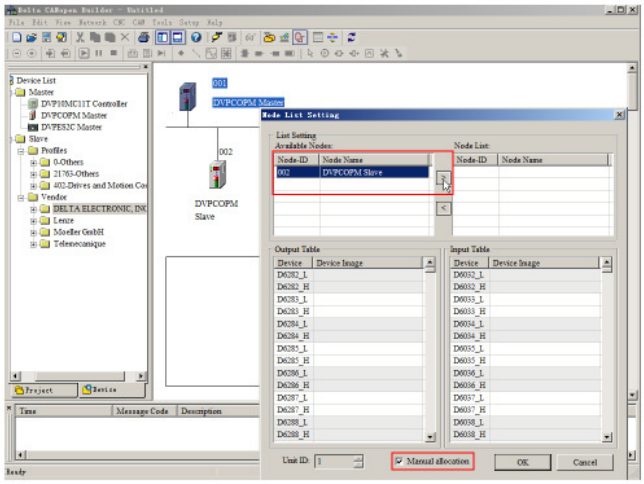
   The newly added instruction DMC_CamSwitch is displayed in the following red box. For detailed explanation of it, refer to section 14.2.11 of the CANopen Builder help file.

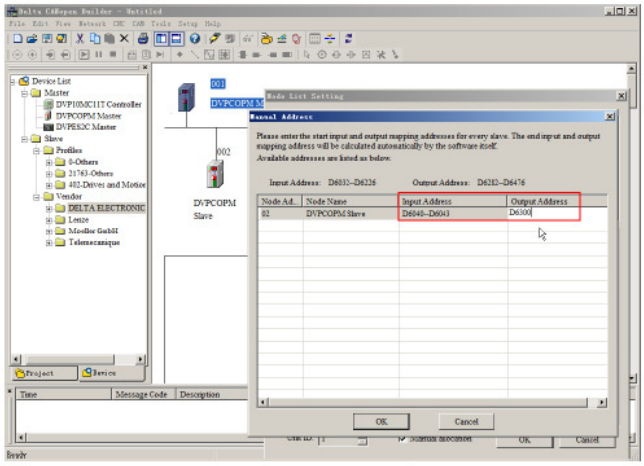


4. **The "Manual allocation" function is added.**

   The start input address and start output address which the master allocates to the slave for parameter mapping are specified by users when "Manual allocation" function is used.

   Users could enter the start input mapping address and start output mapping address allocatec to the slave after selecting the check box beside "Manual allocation" and moving the node under "Available Nodes" to "Node List" as shown in the following figures.





You can find it on our ftp-site.

2.4 NEW – FW ES2/EX2/SS2/SA2/SX2/SE upgraded

The following bug is repaired:

Bug: If the online editing function of software is used, the PLC program will probably not be preserved, that is, the PLC program will be cleared after the PLC is disconnected and powered again.

Modification: Modifying the procedure for restoring the PLC program

Solutions: (Users can choose either of them.)

Solution 1: After using the online mode, please exit the online editing mode, and download the PLC program again according to the normal program downloading procedure.

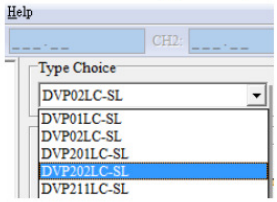
Solution 2: Upgrading the firmware in the PLC

Release

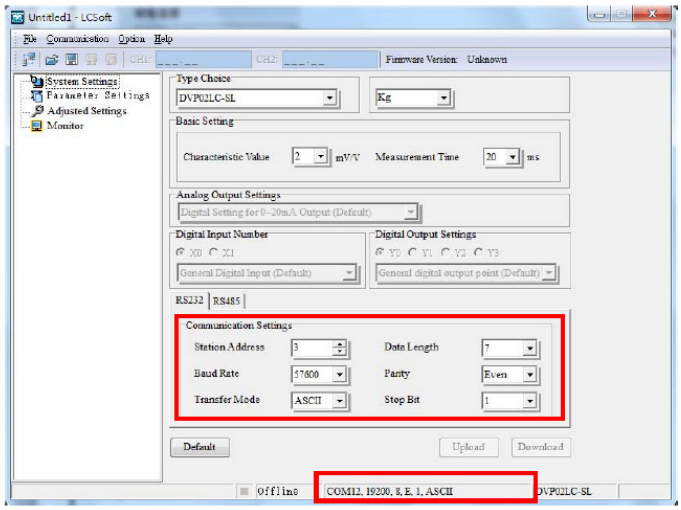
PLC model name	Version of the firmware affected	Produnction week affected	New firmware version	Effective week
ES2/EX2	V3.40 & V3.42	W1419~W1536	V3.46	W1537
SS2	V3.28	W1442~W1536	V3.40	
SA2	V2.84 & V2.86	W1419~W1536	V2.88	
SX2	V2.84 & V2.86	W1419~W1536	V2.88	
SE	V1.68 & V1.80	W1442~W1522	V1.82	W1523

2.5 NEW – LCSoft version 1.11 released

1. DVP202LC-S is supported by LCSoft version 1.11.



2. All the information about a communication protocol is displayed, and the function of changing the protocol in online mode is maintained.



The software can be downloaded from our ftp-site or the Delta website.

This document introduces marking actions (front marking actions and back masking) and fixed slopes. Delta DVP series PLCs are used in this document.

3 Application

3.1 NEW – Application Notes

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

- Electronics Industry Notification--Application of AH500 PLC in Plastic Vacuum Forming Machine.pdf
- Fluid Industry Notification -- Oil field water injection pump solution.pdf
- Fluid Industry Notification-Water Chiller Unit.pdf
- Food & Pharmaceuticals Industry Notification-Cylinder type soft capsule encapsulating machine.pdf
- Power Quality Industry Notification-Intelligent Group Control Solution for Power Quality Field.pdf
- Printing Industry Notification-High-speed Cutting Machine.pdf
- Robot Industry Notification- Delta Robot.pdf
- Energy Industry Notification-Application of Delta multifunctional electric power meter in oil field.pdf

3.2 UPDATE – Overload of drives

We received the following overview. It will be incorporated in the manuals from now on.

Type	Output		Over Load Capability				Hardware		Software	
							Current Clamp	Over Current	Over-current Stall Prevention during (Acceleration/Operation)	
							CC	OC	OC Stall	
			60 Seconds	Duty	3 seconds	Duty	Level	Level	Setting	default
VE	Normal Duty	ND	150		200 (2 seconds)		220	300		
B	Normal Duty	ND	150				200	300		
E	Normal Duty	ND	150				190	260	0 - 250	170
EL	Normal Duty	ND	150				200	300	20 - 250	170
C2000	Normal Duty	ND	120	1+4 minutes	160	3+27 seconds	170-175	240	0 - 160	120
	Heavy Duty	HD	150	1+4 minutes	180	3+27 seconds	180-185		0 - 180	150
CP2000 Ver A&B	Light Duty	LD	120	1+4 minutes	130	3+20 seconds	130-135	200	0 -130	120
	Normal Duty	ND	120	1+4 minutes	160	3+20 seconds	170-175	240	0 -160	120
C200	Normal Duty	ND	120	1+4 minutes	160	3+27 seconds	170-175	240	0 - 160	120
	Heavy Duty	HD	150	1+4 minutes	180	3+27 seconds	180-185		0 - 180	150

3.3 Marking/Fixed Slope Function of DVP Series PLCs

An Application Note DELTA_IA-PLC_Mark_AN_EN_20150903.pdf has been released.

Applicable model	DVP-EH3 series, DVP-SV2 series, DVP-ES2/EX2 series, DVP-SX2 series, DVP-SA2 series, DVP-SS2 series
Keyword	Marking function, fixed slope

Marking is a function that, high-speed output will immediately decrease and stop according to deceleration time or the number of deceleration pulses if an external interrupt occurs during a high-speed output process. It is applicable to labelling or similar control requirements.

A fixed slope depends on a starting frequency, a closing frequency, the maximum frequency of the fixed slope, acceleration time, and deceleration time. It does not vary with a target frequency, and can be used to drive step motors.

Application Note Table of Contents

The following DVP-series are updated with new firmware:

Model / Function	EH3/SV2	ES2/EX2	SA2	SX2	SS2
Modification of marking	V1.88	V3.28	V2.82	V2.82	V3.28
Fixed slope	V1.88	V3.28	V2.82	V2.82	V3.24

3.4 DPID/DPIDE in AH500 Series

Examples of temperature control

Applicable model	AH500 series
Keyword	DPID function, DPIDE function

PID controller are widely used in the field of engineering for more than 60 years. It is a main technical tool used in industrial control systems because its structure is simple, it is stable and reliable, and it can be easily adjusted.
If users use PID control for the first time, they may not be familiar with the characteristics of the PID control. The document helps users understand the principle and the usage of PID control.

Application Note Table of Contents

4 FAQ

4.1 VFD-series AC Motor drives

C/CP2000

Q **How to read the kWh value in Pr05-28~05-30?**

A *Pr05-28 shows the Wh value in xxx.x Wh. When it exceeds 1000.0Wh, Pr05-28=0 and Pr05-29 is incremented.*
Pr05-29 is kWh low word from 0~65535 (the decimal point has no meaning). When it exceeds 65535, it becomes 0 and Pr05-30 is incremented.
Pr05-30 is kWh high word, also from 0~65535.

Basically Pr05-29 and 05-30 are just 2 binary words that show the total kWh

xxxxxxxxxxxxxxxx xxxxxxxxxxxxxxxx
high word low word
Pr05-29 Pr05-30

So the reading
Pr05-29= 4.060,8 means 40608kWh
*Pr05-30= 1,1 means 11*65535=720885kWh*

Total 720885+40608=761493kWh

Q **What is the minimum response time of the digital inputs?**

A *The minimum response time of the digital inputs MIx is 1ms.*

Exception: When in C2000 MI8 is used for single-phase encoder feedback (Pr10-00=5) the max frequency is 30kHz. and Pr02-11 is not valid for MI8.

CP2000

Q **How to disable PID control in HAND mode?**

A *In HAND mode PID control can be disabled by Bit2 of Pr00-28 (Firmware 1.21 and up)*

00 - 28 Switching from Auto mode to Hand mode

Factory Setting: 0

Settings 0 ~ 65535
Bit0 : Sleep Function Control Bit
0: Cancel sleep function
1: Sleep function and Auto mode are the same
Bit1 : Unit of the Control Bit
0: Unit of the Control Bit
1: Same unit as the Auto mode
Bit2 : PID Control Bit
0: Cancel PID control
1: PID control and Auto mode are the same.
Bit3: Frequence Source Control Bit
0: Frequency command set by parameter, if multi-step speed is activate, then multi-step speed has the priority
1: Frequency command set by parameter 00-30

VFD-E

Q **How to reset VFD-E with a Modbus Multi-write instruction?**

A *01 10 2000 0003 06 0011 1388 0002 Doesn't allow to reset the drive, gives error message.*
01 10 2000 0003 06 0000 1388 0002 Allows to reset the drive.

VFD series

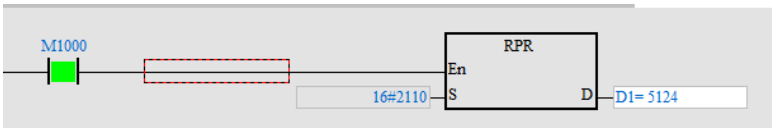
Q **How to read the drive series by serial comm?**

A *You can read register 2110h to obtain the series and model.*

The High Byte is the VFD series identification:

VFD M=0
VFD-S=1
VFD-B=2
VFD-L=3
VFD-V=4
VFD-F=5
VFD-E=6
VFD-E-C=7
VFD-EL=8
VFD-VL=9
C2000=20
CP2000=21
C200=25

The Low Byte is the Model information as in Pr00-00.



2110h contains 5124d=0001.0100-0000.0100b

So, high byte in decimal is 20d that means it's a C2000 series drive.
Low byte is 4d and that means it's a 0.75kW 230V model.