

# DELTA Newsletter

## Industrial Automation Products

Edition 2016-10

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## 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 SPS/IPC/drives in Nuremberg



**Visit**  
**Delta Industrial Automation**  
**at SPS IPC Drives 2016**

Date: November 22 - 24, 2016  
Stand: Hall 3, Booth 220



**sps ipc drives**

Nuremberg, Germany, 22–24 November 2016

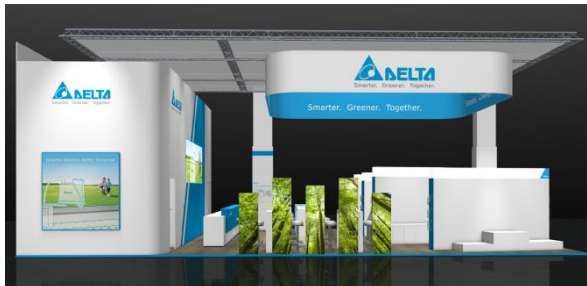
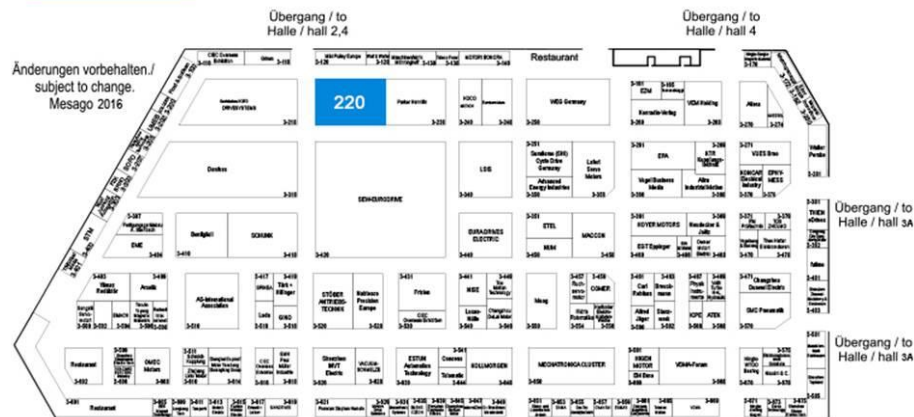
Join Delta to see the state-of-the-art industrial automation technology for future manufacturing at the leading exhibition in Europe—SPS IPC Drives 2016! The event will take place from November 22nd to 24th, and Delta will display a complete range of industrial automation products and integrated solutions for smart manufacturing at booth **no. 3-220 in Hall 3**.

Come visit our event website to see the up-to-date exhibits showcased at the Delta booth in advance at: <http://www.deltaww.com/event/SPS/>

Apply your personal free 3-day entrance e-Ticket with registration number **1512320381** at:

[https://www.mesago.de/en/SPS/For\\_visitors/Register\\_for\\_free\\_season\\_ticket/index.htm?sid=6a8768a873871c2c82b204c0dd82b16d&stamp=1444620616](https://www.mesago.de/en/SPS/For_visitors/Register_for_free_season_ticket/index.htm?sid=6a8768a873871c2c82b204c0dd82b16d&stamp=1444620616)

### Hall 3, Booth 220



We cordially invite you to visit us. If you make an appointment with Monique Appeldoorn, tel +31 40 8003880, e-mail [mappeldoorn@deltaww.com](mailto:mappeldoorn@deltaww.com), you'll be sure we'll be there at your most convenient time.

## 2 Product update

### 2.1 NEW – VFDSOft 1.542 (updated from 1.54)

In the previous edition 2016-09 we announced VFDSOft 1.54. It appeared that it could only connect to a drive in RTU protocol. This issue has now been solved in version VFDSOft 1.542 in which also the .xls save format is re-implemented.

### A. New Function

VFD drive support USB port communication connection models: MS300 ; MH300 ; ED-S ; DD-S ; DD-V .

1. Add USB driver into install path, and manually install the driver by the following guideline.

Step1: Open file browser and enter **install path** of VFDSOft.



Step2: Choose you OS version-x86(32 bit) or x64(64 bit)



Step3.1: If you choose x86, then execute **dpinst.exe**. Ignore all warning messages, and click “yes” till the end.



Step3.2: If you choose x64, then execute **dpinst64.exe**. Ignore all warning messages, and click “yes” till the end.



### B. Modified Function

	Problems found in v1.54	Solution in v1.542
1	Modbus ASCII protocol always lost package and let VFDSOft dumped.	Adjust the Rx(reception) timer interval to ensure the whole Modbus ASCII package is received.

You can download it from our ftp-site, folder Customer-Service\Industrial Automation Products\AMD-Options\AMD Software\VFDSOft

## 2.2 NEW – Datasheet AFE2000

The datasheet for AFE2000 has been published on our ftp-site.  
[Datasheet AFE2000 Version1 Sept2016.pdf](#)

## 2.3 NEW – Datasheet REG2000

The datasheet for REG2000 has been published on our ftp-site.  
[Datasheet REG2000 Version1 Sept2016.pdf](#)

## 2.4 NEW – VFD-ED-S firmware 1.04

A new firmware 1.04 for VFD-ED-S has been released to replace 1.03.

### A. Modifications

	Issued in V1.03	Modification in V1.04
1	There setting in the input type of encoder ( Pr. 10-02) might be inconsistent to the setting in encoder type(Pr. 10-00).	Add foolproof function to prevent inconsistent setting in the input type of encoder ( Pr. 10-02) after encoder type(Pr. 10-00) has been set before.
2	Customer requested to select enable or disable the GFF protection function.	Add Pr.06-45 bit2 to let customer enable or disable the GFF software protection.
3	When setting Pr. 03-03& Pr. 03-05 by on board key pad. If the value set in Pr03-03 was negative, it would show -100 and no longer for further setting.	Negative value could be set in Pr. 03-03& Pr. 03-05 successfully.
4	Pr 03-17 =21 should be "power output" not "power factor".	Pr 03-17 =21 is corrected to "power output"
5	If the actual angle between magnetic pole and PG origin is close to 0 degree. It is very likely to be identified as 180 degree after auto-tuning magnetic pole.	Modified the detection method and made the angle after auto-tuning is correct.
6	Easy to fail when auto-tuning.(AUE)	It is cause by other faults might occurred during auto-tuning and forced the tuning stop but keep displaying "AUE" error to make customer thought it is unknown reason caused tuning failed. Modified that other errors occurred during auto-tuning would not be blocked by "AUE" error and let user know the reason.



7	Incorrect information displayed in Group 13 parameters when using keypad KPC-CC01.	Correct information could be displayed on KPC-CC01.
8	No information about the status when fault occurred in Fault Record menu when using KPC-CC01.	Information about the status when fault occurred in Fault Record menu could be displayed successfully.
9	Fault code" PGF5" contains not only one kind of fault which made user hard to identify the specific fault and its root cause.	Break PGF5 into 3 fault codes: 1.PGF5: PG hardware error 2.PGAF: PG Z phase signal error 3.PGHL: PG loss pin is pulled low
10	Format in Pr.02-10& Pr. 02-23 is decimal not hexadecimal which is be used more frequently.	Format in Pr.02-10& Pr. 02-23 have been modified to hexadecimal.
11	User defined parameters in Group 12 could not be viewed in parameters in Group 13 on board keypad KPE-LE01.	User defined parameters in Group 12 could be viewed in parameters in Group 13 on board keypad KPE-LE01.
12	The default value in Pr. 10-01 is not common for customer's application.	The default value is changed to 2048 which is correspond to the ERN1387 encoder.
13	When the encoder position is at angle of 0 degrees, it may cause false triggering PGAF error.	Correct the condition for the judgment of the PGAF error signal.
14	The STO error code does not match standard model.	The modified STO error code is the same as the standard model.

### B. New Functions

- New added "Auto reset" function : Faults like ovA ; ovd ; ovn ; ovS ; LvA ; Lvd ; Lvn ; LvS ; PHL could be auto reset conditionally, refer to the following new added parameters:  
Pr. 06-50: Fault output operation from MO during auto reset  
Pr. 06-51: Fault re-try times  
Pr. 06-52: Fault re-try time interval
- Fault " MBF" statue could be memorized and could be reset manually only not by re-power again. It is designed to satisfy EN81-1/EN81-20.
- New options in Pr06-49:  
Pr. 06-49= 2: STO Alarm Latch(Operation command could be recorded during stop and alarm still exist)  
Pr. 06-49= 3: STO Alarm not latch(Operation command could be recorded during stop and alarm still exist)
- Auto loading default value in Pr. 05-05( no-load current for IM motor) depends on different power rating to provide more accurate control in slip compensation.
- Separate DC brake current level for two situations. Original Pr. 07-02 is changed to DC brake current level **during start-up**; new added Pr. 07-30 is changed to DC brake current level **during stop**. Default value of these two parameters is the same.
- New added Pr. 10-31 to let user could interchange the C+/C- pin for encoder ENR1387 instead of re-wiring for the C+/C- pin.
- Several new added parameters for direct stop functions. Because this is not standard function for general elevator application. Please contact Delta for further information.

Firmware 1.04 goes in production in Wujiang, China in 2016 WK43.

## **2.5 NEW – Encoder card EMED-PGHSD-2 for VFD-ED**

EMED-PGHSD-2 is a new PG-Card (encoder card) for elevator drive VFD-ED. It is almost the same as the existing PG card EMED-PGHSD-1. Only the connector for the speed feedback signal is changed from sub-D to terminal block type. It provides another option for users for increased wiring flexibility.



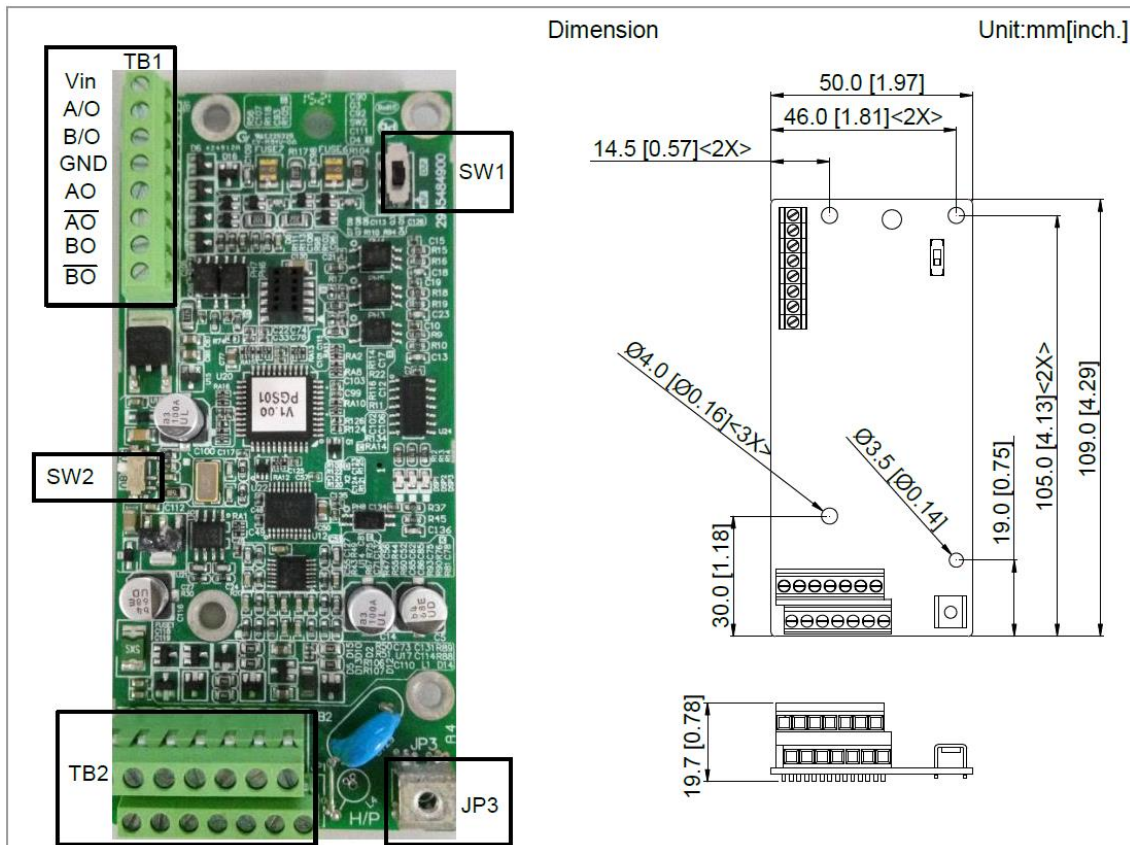
EMED-PGHSD-1




EMED-PGHSD-2

**Applicable encoders:**

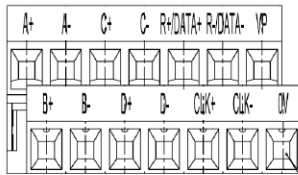
- Sine-wave: Heidenhain ERN1387
- EnDat2.1: Heidenhain EQN425, EQN1325, ECN113, ECN413, ECN1113, ECN1313
- SICK HIPERFACE: SRS50/60



※ SupportHeidenhain ERN1387, EnDat2.1, HIPERFACE

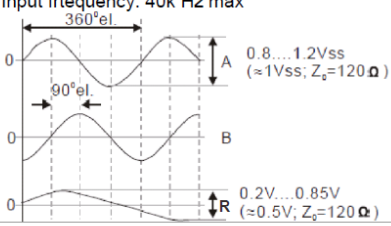
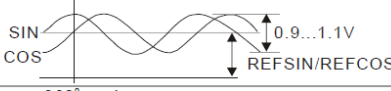
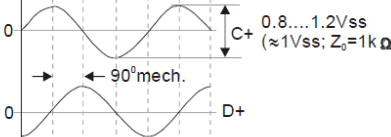
Terminals		Descriptions
TB1	Vin	Voltage Input: (to adjust output voltage amplitude of the push-pull pulse) Max. input voltage: 24VDC Max. input current: 30mA
	GND	Common power input/ signal output terminal
	A/O, B/O	Push-Pull Voltage Output Max. output frequency: 50kHz
	AO, /AO, BO, /BO	Line Driver RS422 Max. input frequency 100kHz
TB2		Encoder signal input terminal
JP3		PG Shielding
SW1		Frequency divider output power terminal selection INP: Power supplied by PG card EXP: Power from an external source
SW2		Frequency divider output power terminal selection 5V: 5Vdc 8V: 8Vdc

EMEDPGHSD-2(Terminal J3) pin definition correspond to each ENCODER type

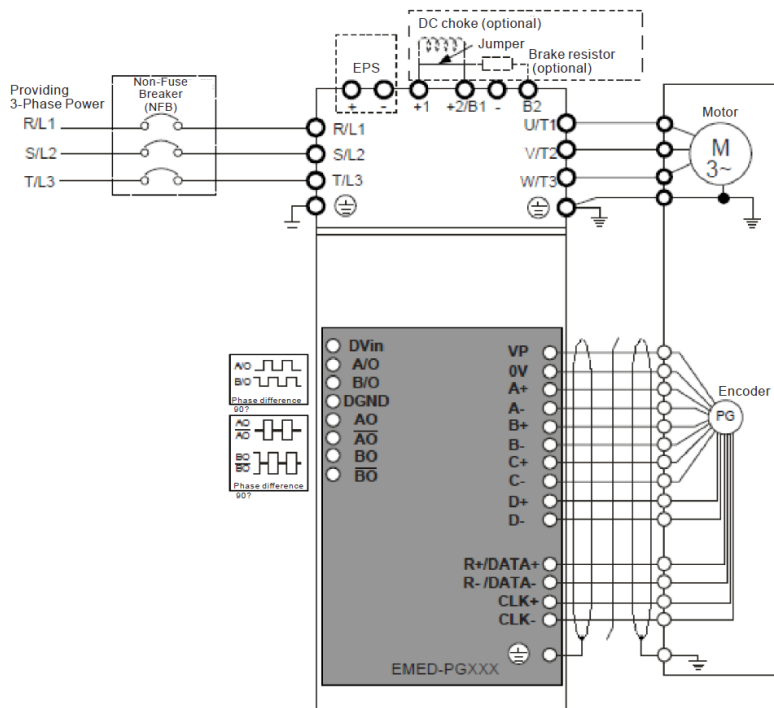


Terminals	Heidenhain ERN1387	Heidenhain ERN1313	HIPERFACE®
B-	B-	B-	REFSIN
	-	-	-
R+/DATA+	R+	DATA	DATA+
R-/DATA-	R-	/DATA	DATA-
A+	A+	A+	+COS
A-	A-	A-	REFCOS
0V	0V	0V	GND
B+	B+	B+	+SIN
VP	UP	UP	+12V
C-	C-	-	-
C+	C+	-	-
D+	D+	-	-
D-	D-	-	-
CLK-	-	/CLOCK	-
CLK+	-	CLOCK	-

### Terminal Function

Terminals	Descriptions	Specifications
UP(VP)	Encoder voltage input Use SW2 to set +5V/+8V	Voltage: +5.1Vdc $\pm$ 0.3V; +8.4Vdc $\pm$ 1.5V Current: 200mA max.
0V	Encoder common power terminal	Reference level of encoder's power.
A+, A-, B+, B-, R+, R-	Encoder sine wave differential signal input (Incremental signal)	Input frequency: 40k Hz max. 
+SIN, +COS, REFSIN, REFCOS	Encoder sine wave differential signal input (Incremental signal)	Input frequency: 20k Hz max. 
C+, C-, D+, D-	Encoder sine wave differential signal input (Absolute signal)	
DATA+(DATA), DATA-(/DATA)	RS485 communication interface	Terminal resistance is about 130Ω
CLOCK, /CLOCK	CLOCK differential output for ENDAT	Line Driver RS422 Level output





EMED-PGHSD-2 is available for ordering in 2016 WK42.

### 3 Application

#### 3.1 NEW – Application Notes

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

- [CNC Lathe Control Solution.pdf](#)
- [Packaging Industry Notification --Roller wrapper.pdf](#)
- [Electronic Industry Notification-AOI Machine.pdf](#)
- [Printing and Packing Industry Notification--Hot Melt Coating Machine.pdf](#)
- [Printing Industry Notification- Four-color printing press for woven bag.pdf](#)
- [Robot Industry Notification-SCARA Robot\(ASDA-MS\).pdf](#)
- [Water Treatment Industry Notification-Applications of reverse osmosis and ultrafiltration in wastewater treatment.pdf](#)

#### 3.2 UPDATE – RFI or EMI or EMC?

Different expressions are used by customers and even filter manufacturers.

Epcos – EMC  
 EPA – RFI  
 Block – EMI  
 Schaffner – EMC/EMI  
 Rasmi – EMC/RFI  
 Enerdoor – EMI/RFI  
 Emikon - EMI

**RFI=Radio Frequency Interference**

This is an older expression for electromagnetic noise, mostly radiated (because in the old days you could hear it on your AM radio). The LW (Long Wave band) begins at 150kHz, that's probably why the measurements begin at 150kHz.)

**EMI=ElectroMagnetic Interference**

This is the general (and to our opinion correct) term for electromagnetic noise, radiated and conducted, emitted or received.

**EMC=ElectroMagnetic Compatibility**

This expression means how compatible the product (drive) is within its environment. How much noise it produces (conducted, radiated) and how much noise it can withstand (radiated, conducted). And if it keeps the limits acc. to the relevant standards.

In practice all 3 expression are used "at random" or by company standard/habit and all 3 are used for overall Electromagnetic noise and compatibility solutions.

So EMI(-filter), EMC(-filter), RFI(-filter) all mean the same in our drives world.

## **4 FAQ**

### **4.1 VFD-series AC Motor drives**

**VFD General****Q Preset speeds and master frequency via Modbus**

A When Frequency command by RS485 and preset speeds are active all drives will accept a change of the master frequency via RS485 without 04 error, except VFD-E.

**VFD-E****Q Preset speeds and master frequency via Modbus**

A When Pr02-00=3 (Frequency command by RS485) and preset speeds are active (Pr04-05 to -08, Pr05-00 to -14, MI3~6 active) the drive doesn't accept a change of the master frequency via RS485 and gives 04 error. It keeps the last frequency command value before preset speeds were activated.

**History Message:**

```
25/10/2016 17:02:36 > Setup Com Port and Protocol
25/10/2016 17:03:16 > CE 4 : Comm. error 04
```

Only when MI3~MI6 are off (no preset speed selected) you can change the master frequency by RS485.

**CP2000****Q What is the function of Pr08-15?**

A This parameter has no function (reserved). The manual is wrong and will be corrected.

**VFD-EL****Q What is the temperature for OH1?**

A OH1 happens when IGBT temperature >105°C  
It can be reset when <72°C