DELTA Newsletter

Industrial Automation Products

Edition 2017-11

Contents

1 News

1.1 ftp-site link

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

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

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

1.2 SPS/IPC/Drives in Nürnberg from 28-30 Nov 2017

Delta will exhibit at SPS Nurnberg **Hall 3-220** this year.

You are cordially invited to visit Delta Industrial Automation at SPS IPC Drives in Nuremberg, Germany on the 28th - 30th of November, 2017 and be amazed at how the complete range of Automation products can Change your World !

Please see below for the link for a free ticket:
https://www.mesago.de/en/sps/For_visitors/Register_for_free_season_ticket/index.htm?v_param=1712322981
With ticket code 1712322981

2 Product update

2.1 IMPORTANT UPDATE – DPM-D520I

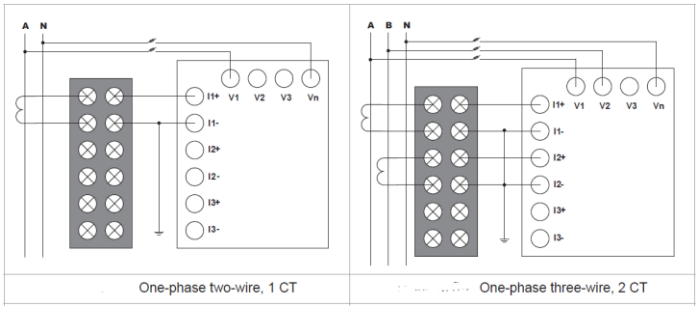
A new user manual for DPM-D520I has been published and you can find it on our ftp-site:
DELTA_IA-SI_DPM-D520I_UM_EN_20171027.pdf

The main correction is that in the previous manual it was suggested DPM-D520I has BACnet functionality.

DPM-D520I does NOT have BACnet functionality

In firmware v1.0206 the function of the switch USER-SETUP is correct. It was reversed in the previous versions.

Furthermore, DPM-D520I can also be used on 1-phase 2-wire and 2-phase 3-wire systems, just like DPM-C530A:



2.2 NEW – EtherNet/IP AH-RTU module

Product Information

To enhance the integration ability of AH series PLC and provide complete RIO solution, Delta releases the EtherNet/IP AH-RTU module to help users to build up the control system easier and faster.

Features

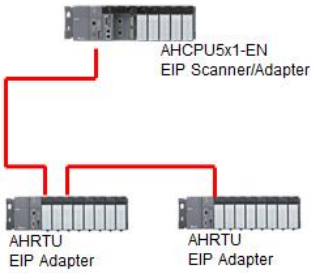
- Built-in Ethernet x2 (Switch mode)
- Supports EtherNet/IP (Adapter mode)
- Supports up to 7 expansion backplanes
- Supports DLR function
- Supports AH DIO/AIO/Temperature modules

Target

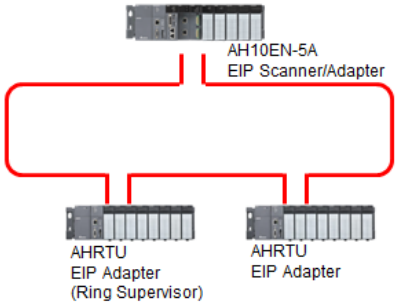
- Customers who need Ethernet RIO solution on AH series PLC
- Customers who need RIO ring redundancy solution (Need AH10EN v2.0)
- Customers who need long distance solution of RIO system (Need third-party optical fiber converter)
- Customers who accept to use third-party RIO in their control system like AB control system

Application Structure

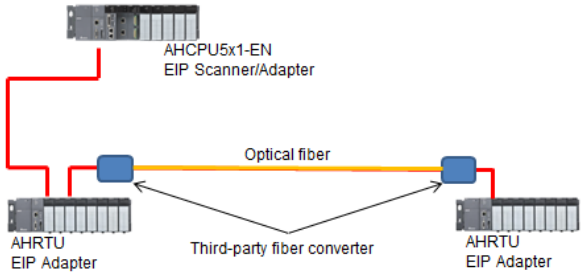
- AH CPU + AHETU-ETHN-5A (Line)
  (AH CPU firmware version must be higher than v2.0)



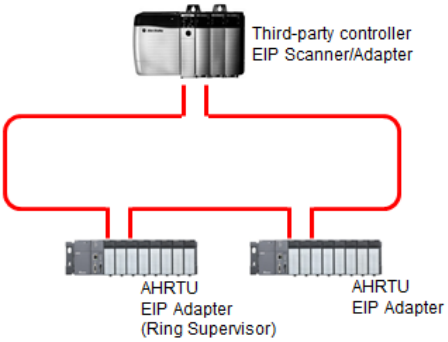
- AH CPU + AHETU-ETHN-5A (Ring)
  (AH10EN-5A firmware version must be higher than v2.0)



- AH CPU + AHETU-ETHN-5A (Optical Fiber)
  (AH CPU firmware version must be higher than v2.0)



- Third-party CPU + AHETU-ETHN-5A



RTU connection calculation

- All DIO modules will occupy one TCP connection
- Each AIO and temperature module will occupy one TCP connection
- Connection resource information of AH series PLC

Ethernet Connection Information

Connection type	AHCPU500/510/520/530-EN	AHCPU511/521/531-EN	AH08/10/20EMC-5A	AH10EN-5A	AHRTU-ETHN-5A
MODBUS (Server)	64	64	64	128	—
MODBUS (Client)	16/32/64/128	32/64/128	128	64	—
EtherNet/IP (TCP)	-	32/64/128	16	64	48
EtherNet/IP (CIP)	-	64/128/256	32	64	96

Software

- COMMGR v1.07 (Communication management software)
- EIP Builder v1.03 (EtherNet/IP configuration software)

Hardware Specification

- Supports IO connection and explicit message
- TCP connections=48, CIP connections=96
- RPI=1~1000ms

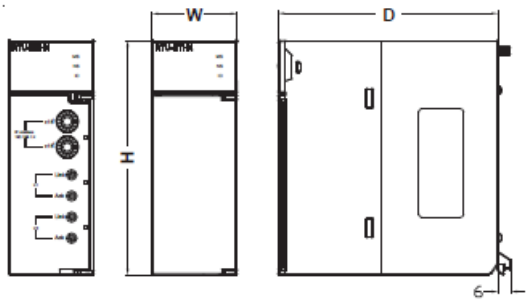
- PPS=10,000
- 250 words/connection
- Supports up to 7 expansion backplanes
- Built-in Ethernet x2 (Swith mode)
- Supports AH DIO, AIO and temperature modules

Environment specification

Item	Specifications
Operating Condition	▪ Temperature: -20 ~ 60℃ ▪ Relative Humidity: 5 ~ 95% (Non-Condensing)
Storage Condition	▪ Temperature: -40 ~ 70℃ ▪ Relative Humidity: 5 ~ 95% (Non-Condensing)
Certificates	CE cUL us

Dimensions

Model Name	H	W	D
New AHRTU-ETHN-5A	110	40	103



Ordering Information

Model	Function	Certification
AHRTU-ETHN-5A	EtherNet/IP RTU module	CE, UL

Documents and software (on ftp-site)

- Catalogue: DELTA_IA-PLC_AH500_C_EN_20170302_web.pdf
- Communication management software: COMMGR v1.07
- EtherNet/IP configuration software: EIP Builder v1.03
- AH500 module manual: DELTA_IA-PLC_AH500_MdM_EN_20170331.pdf
- EtherNet/IP operation manual: DELTA_IA-PLC_EtherNet-IP_OP_EN_20170331.pdf

2.3 NEW – DVP-ES2-E series PLC

We are happy to announce the release of the new DVP-ES2-E series PLC.

The newly upgraded DVP-ES2 series PLC has an embedded Ethernet port which works with Modbus TCP/IP and supports EtherNet/IP (adapter). This new series product complies with ODVA EtherNet/IP standard. Thus, it can be applied in the third party of EtherNet/IP networks. Moreover, Delta software, such as ISPSoft, EIPBuilder and COMMG are all available for programming and editing.

DVP-ES2-E series CPU has different I/O configurations. You can find detailed information on our ftp-site.

DVP-ES2-E series is now on stock and ready to be ordered. Please contact us if you have any questions.

2.4 NEW – DVS-328 series managed switch

We are happy to announce the release of the DVS-328 series managed switch (DVP-328R02-8SFP): Managed Industrial 20 10/100Base-T(X) + 4 10/100Base-T(X) combo 100Base-SFP + 4 10/100/1000Base-T combo 100/1000Base-SFP Rack Mount Ethernet Switch.

DVS-328 series are Layer 2 Industrial Ethernet Switches which work with original IPv4 and IPv6 network structure. They are equipped with SNMP, MODBUS TCP and EtherNet/IP management protocols for a more efficient management.

DVS-328 switches also support Delta ONE RING, ONE CHAIN and STP/RSTP/MSTP for network redundancy to optimize the system's reliability. Moreover, with its excellent ruggedized hardware design and LEVEL 3&4 of immunity to electromagnetic interference (EMI) offering, it provides superior reliability.

Main features:

- Supports EtherNet/IP and MODBUS TCP protocols that facilitates the remote management by the 3rd party software and other industrial devices
- Proprietary ONE RING and ONE CHAIN high end redundancy technology, easy to build multiple ring topology, self-healing recovery time < 20 ms
- IPv6 address suitable for larger network and neighbour discovery
- Automatic IP assignment by DHCP/BootP server for easy network construction
- Port-based DHCP server with IP and MAC binding makes IP maintenance much easier
- SNMP v1/v2c/v3 facilitates the exchange of management between network devices
- SNTP (simple network time protocol) for network clock synchronization
- Cable diagnostic provides the mechanism to detect and report potential cabling issues
- Compatible with various industrial protocols, including EtherNet/IP, Profinet, CC-LINK IE and DNP 3.0

You can find the documentation on the ftp-site.

DVS-328R02-8SFP is now on stock and ready to be ordered. Please contact your Sales Manager for the prices, and do not hesitate to contact us if you have any questions or requests.

2.5 NEW – DVP-ES2-E series PLC

We are happy to announce the release of the new DVP-ES2-E series PLC.

The newly upgraded DVP-ES2 series PLC has an embedded Ethernet port which works with Modbus TCP/IP and supports EtherNet/IP (adapter). This new series product complies with ODVA EtherNet/IP standard. Thus, it can be applied in the third party of EtherNet/IP networks. Moreover, Delta software, such as ISPSoft, EIPBuilder and COMMG are all available for programming and editing.

DVP-ES2-E series CPU has different I/O configurations. You can find detailed information in the documentation, that you can find on the ftp-site.

DVP-ES2-E series is now on stock and ready to be ordered. In addition, DVP-EX2-E series (Ethernet embedded CPU with analog I/O) will be released soon. Please contact your Sales Manager for the prices, and do not hesitate to contact us if you have any questions or requests.

2.6 UPDATE – DVP-12SE firmware version 1.90 is released

Modified functions:

- Issue: When data is sent with a set timer via COM2 and the communication cable is unplugged and plugged for several times, the data transmission can no longer be done as the timer set, even after the connection is restored.

  - Solution 1: Stop sending data with a set timer and use a timeout error flag to trigger the next transmission when a connection is lost.
  - Solution 2: Contact Delta or your distributor for a firmware upgrade for DVP-12SE (V1.89 or later versions).

Added functions:

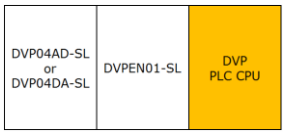
- New manual control modes K7 and K8 are added for PID instruction. Refer to PID instruction in the programming manual for more details.

Release date: W1738

2.7 UPDATE – Firmware 1.28 for DVP04AD-SL and DVP04DA-SL is released

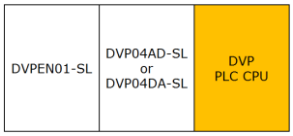
Modified functions:

- Issue: When the DVP PLC CPU is connected to DVPEN01-SL and then connected to other left-side extension modules, including DVP04AD-SL and DVP04DA-SL, after the DVP PLC CPU is supplied with power, chances (around 10%) are the PLC will not be able to detect all the left-side extension modules connected.



  Affected items are products manufactured during week 01~35 (marked as W1701~W1735) or with firmware version V1.26.

  -Solution 1: Use DVP04AD-SL or DVP04DA-SL as the first extension module to be connected to the left-side of the DVP PLC CPU and then connect to DVPEN01-SL.



  - Solution 2: Contact Delta or your distributor for a firmware upgrade for DVP04AD-SL and DVP04DA-SL (V1.27 or later versions).
- Issue: The default output mode for DVP04DA-SL is voltage. If users use current to connect, before the PLC is fully powered, it may output a small amount of current.
  - Solution: Contact Delta or your distributor for a firmware upgrade for DVP04AD-SL and DVP04DA-SL (V1.27 or later versions).

Release date: W1736

2.8 UPDATE – Firmware of DVP-EH3/DVP-EH3-L/ DVP-SV2 is updated from V2.06 to V2.20).

Modified Functions

1. Issue: When the high-speed axis is in the specific device (see the details on the below table), if the values have been modified before executing any high-speed instructions, the modified values cannot be retained, when an electrical power interruption occurs.

   Solution 1: After the value is modified, execute the high-speed output instruction first before stopping power supply to have the modified values retained.

   Solution 2: Contact the company or the technicians from the agents for a firmware upgrade (V2.09 or later).

Axis Number	Ouput Number	Device Number (32-bit value)	Affected Firmware Version	Affected Production Week
CH0	Y0	D1336/D1337	V2.06 & V2.08	W1730 - W1744
CH1	Y2	D1338/D1339		
CH2	Y4	D1375/D1376		
CH3	Y6	D1377/D1378		

New Functions

1. EH3-L and SV2 can read MAC addresses of the connected left side Ethernet modules. EH3 and EH3-L can read MAC addresses of the connected Ethernet communication cards.

   - **Example of reading MAC addresses:**

   Step 1

   Enter the module number to be read to D1400. The left side module numbers of the EN01-SL are K100 to K107. The number for DVP-FEN01 communication card is K108.

   Step 2
   Set M1145 to ON. When the PLC clears M1145, it indicates the reading is complete.

   Step 3
   An example of retrieving MAC addresses from D1401 to D1403: when the MAC address is in hexadecimal format, 12:34:56:78:AB:CD, the presentation of MAC address in D1401is H'1234, in D1402 is H'5678, and in D1403 is H'ABCD.

   Note: this function works for DVPEN01-SL with firmware V1.16 or later and for DVP-FEN01 with firmware V1.04 or later.

Release: (W1745)

2.9 UPDATE – DOP-H: Direction of FTP file setting function (FTP Client).

Applicable to DOP-H series.

- Function explanation:

Users can use this function to transfer data to FTP Server (FTP Client). Of course, including and account login, logout mechanism / file upload / file delete / file download / file management / Rename / directory (folder) management and other functions.

- Description:
  a. FTP file list element property.

b. FTP file setting property.
c. Description of macro command : FileSlotGetName / FileSlotGetID

For more details, refer to this document on our ftp-site:
DELTA_IA-HMI_FTP Client_UM-EN_20170808 (2).pdf

2.10 UPDATE – VFD-ED-S firmware version change v1.04 to v1.05

A. Corrections

	V1.04 Problem description	V1.05 Handling instructions
1	Some inverter parameters of the character format is not uniform, resulting in VFD SOFT Software is unable to read.	Frequency converter parameter character formats have been unite, VFD SOFT Software can be read properly.
2	Parameters in the modified, inverter need reset power for parameter storage function, Due to customer after you have set the parameter has no reset power, continue to take other actions, if updating firmware at this time, pre-set values are not stored, the parameters will keep last time a power outage on record, causing inconvenience to the customer.	Update software function, now even without power, also will carry out parameters are stored.
3	Panel KPC-CC01 The implementation of "all parameter copy" feature, set in some cases, replication is not successful , Error code SE2 。	Modified drive "parameter to copy" function, use KPC-CC01 Parameters of all copy successful
4	Field tests in an elevator, and found that the drive is not in accordance with the power generation mode operation. the reason:	Amended MO=32 (power mode) Should also take into account the following two output signals: 1. power generation / electric detection results 2. Pr.00-11 (driver output detection) settings
	When Pr.00-11 sets the drive output direction to "set reverse", the host computer to the "up" direction command, the drive will actually run "under", not running in the power generation direction.	The software Power generation / Parameters 00-11 Set value / Before correction / The corrected Up / And set to / Up / Up Up / Setting reverse / Up / Down Down / And set to / Down / Down Down / Setting reverse / Down / Up
5	Customers on the market applications, will operate at the rated frequency 5~10Hz , the need to Pr.01-00 (maximum operating frequency) of the minimum set value down correction.	Modify the minimum value of the parameter 01-00 (maximum operating frequency) to 5Hz.

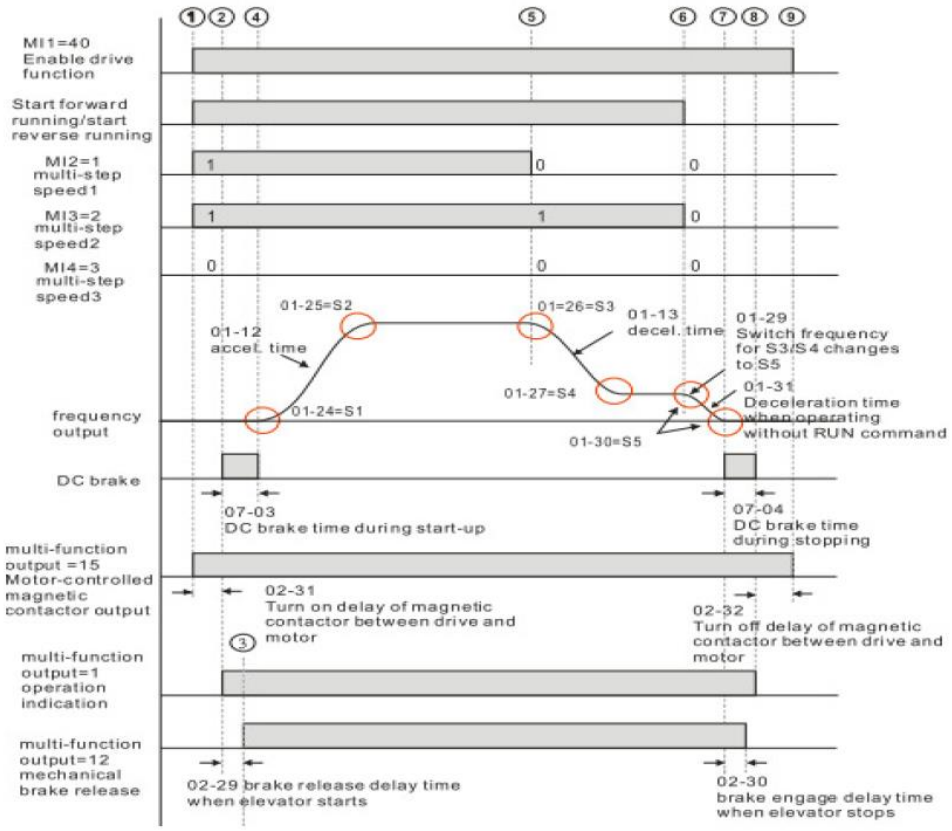
B. Modification

1. DC braking modes modified:

Problem:

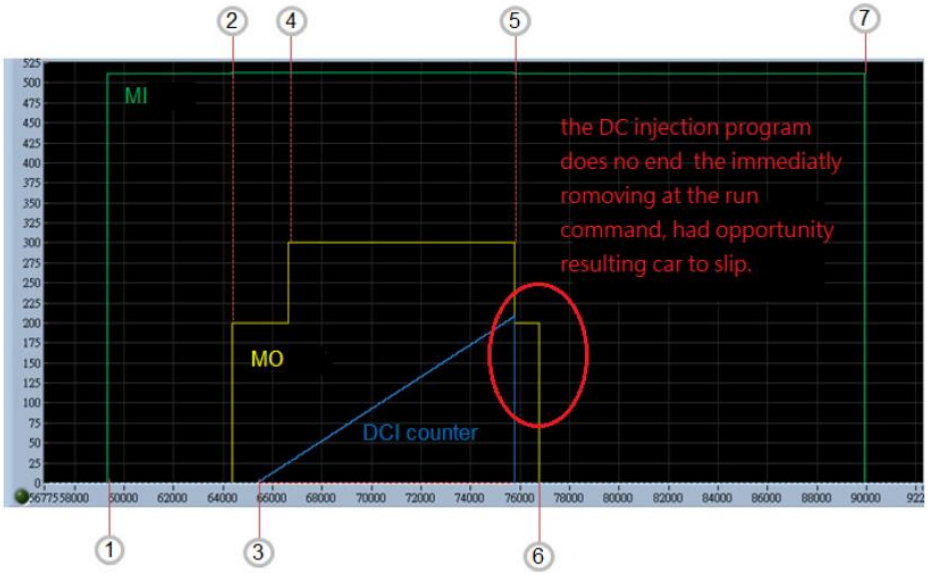
After running the command given at startup DC injection Program does not end then immediately removing at the run command, the drive will immediately end the output and output the brake signal, but the brake solenoid usually with magnetizing or demagnetizing time, resulting in had the opportunity to have a short time before the actual brake drive status with no output, resulting the car to slip.

Lift start-stop - Normal action sequence diagram



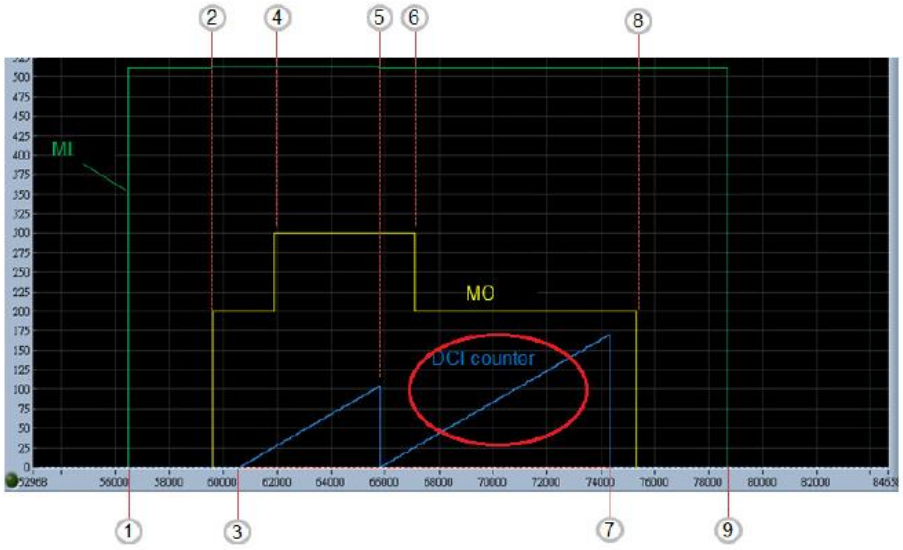
{Problem situation } Starts the process of DC braking, when the program has not yet finished remove Run command, DC brake immediately closed may cause the brake solenoid too late to respond, resulting the car to slip.

[Before] The action sequence before modification



Step1 ➔ MI Enter Enable Signal
Step2 ➔ Enter the Run,MO solenoid valve control signal output Motors
Step3 ➔ Delayed 02-31 solenoid valve closing delay time counting starts after DCI
Step4 ➔ Delayed 02-29 brake release delay time is output when the elevator starts MO signal
Step5 ➔ Remove Run Command, DCI Count end (DC brake release brake solenoid valve has not been action, resulting the car to slip.)
Step6 ➔ Delay 02-30 Brake the brake delay time has passed when the elevator stops output MO Signal
Step7 ➔ The end of Enable Signal input

[After] Revised time series



Step1 ➔MI Enter Enable Signal
Step2 ➔Enter the Run,MO solenoid valve control signal output Motors
Step3 ➔Delayed 02-31 solenoid valve closing delay time counting starts after DCI
Step4 ➔Delayed 02-29 brake release delay time is output when the elevator starts MO signal
Step5 ➔Remove Run command and added count stops DCI timing (to Avoiding the brake solenoid valve is not action)
Step6 ➔Delayed 02-30 brake the brake delay time has passed when the elevator stops output MO signal
Step7 ➔When DCI time count ends
Step8 ➔Delayed 02-32 solenoid valve opening delay time ends after MO output
Step9 ➔The end Enable signal input

C. New function

1. CAN Communications added UCMP Brake clamp detection function :
UCMP Brake clamp detection function required for use with elevator controller, if necessary details, please contact the original contact.

2. Added PWM Mode selection (Pr.11-20):
Due to customer demand in the running a sound environment and we hope to reduce the operation of high frequency noise. Additional parameters (Pr.11-20), can provide SVPWM (space vector modulation) modulation mode, can inhibit the High frequency noise audio.

Parameter	Parameter name	Setting range	Initial value
11-20	PWM Mode selection	0: Digital Pulse Width modulation modes (DPWM mode) 1: Space vector modulation modes (SVPWM mode)	0

3. Added over-acceleration protection mechanisms :

Users can add new parameters Pr.10-32、Pr.10-33, we can set acceleration protection level for elevator, elevator if the purpose faster than this level set, the resulting error warning.

Step: ⇨

Setting Pr.10-32 Over acceleration level
Setting Pr.10-33 acceleration detecting time
Setting Pr.11-01 Elevator rate speed

↓

It is detected that the elevator acceleration exceeds pr10-32 set value and the duration exceeds pr10-33 set time.

↓

Failure action: Elevator over acceleration

Parameter	Parameter name	Setting range	Initial value
10-32	Over-acceleration level	0.05~5.00 sec	0.05
10-33	Over-acceleration detection time	0~1, 0:always detect 1:detect during run	0
11-01	Lift the rated speed	0.10~4.00 m/s	1.00

4. Add a star sealed contactor sequence:

This feature to improve security for the client, it's function through the parameter set can be VFD-ED-S Added a Multi-Output function of stars sealed contactors in the elevator control sequence.

Step: ⇨

Setting Pr.02-11 ~02-16 = 48
Setting Pr.02-38 Star sealed contactor closing delay
Setting Pr.02-39 Star sealed contactor opening delay

↓

The drive receives the Run / Stop command and outputs the signal from the MO terminal.

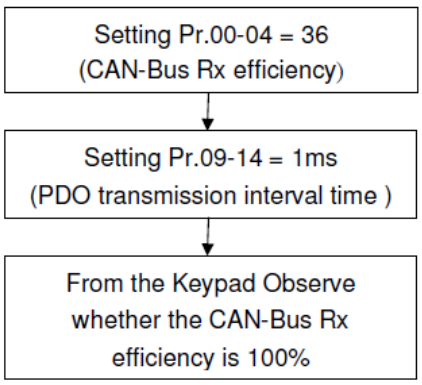
Parameter	Parameter name	Setting range	The default value
02-11 ↓ 02-16	Multifunction Relay / Output	0~48 , 48: Star sealed contactor output	0
02-31	Star sealed contactor closing delay	0.000~65.000 sec	0.200
02-32	Star sealed contactor opening delay	0.000~65.000 sec	0.200

5. Added CAN Communications interference index (CAN-Bus Rx efficiency):

This function is mainly to provide a CAN-Bus receive a compliance rate of quantitative data to the user, which confirmed CAN-Bus There is no packet loss, the signal loss quantification value is displayed in %.

This quantitative data as percentage units (%), 100% on behalf of its receiving effective rate of 100, if there is packet loss data, this data will be less than 100%, and on this basis will be able to explore the CAN-Bus there is no packet loss, the data is updated every 1 second.

Step:



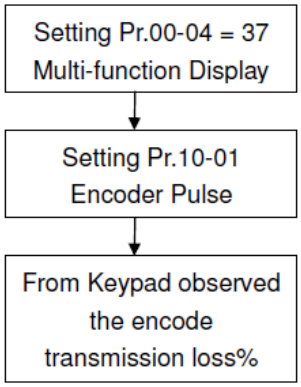
Parameter	Parameter name	Setting range	Initial value
00_04	User value	0~37, 36: CAN Communications interference index	0
09-14	PDO Transmission interval	0~65.000 sec	1ms

6. Added Encoder feedback interference index:

This function is mainly to provide the user, can be set through parameters and from keypad observe the encoder is a loss of signal, the signal loss quantification value is displayed in %.

By setting parameters 00-04 Multi- display options and parameters 10-02 Points per revolution of the encoder, can be followed by keypad get the encoder to transmission loss rate and display 0% For the best no signal loss.

Step: ⇨



Parameter	Parameter name	Setting range	Initial value
00_04	User value	0~37, 37: CAN Encoder feedback interference index.	0
10-01	Points per revolution of the encoder	1~25000 ppr	600

Release

Firmware version	Change			
V1.05	Taoyuan	T1734	Wu Jiang	W1736

2.11 NEW – DRM-24V960W1PN

Delta New 960W DIN Rail Power Supply Slim Design With Maritime Approval is released for sales.
Delta Electronics has added a new 24V/40A output to the CliQ M series of DIN rail power supply. The CliQ M series has the highest power density among the CliQ family and is also the first series in the CliQ family to feature Advanced Power Boost (APB). APB works to protect the system by ensuring continuous operation when a large inrush current is detected due to faulty load on a multiple load connection. The DRM-24V960W1PN allows remote shut-down using an external switch or voltage as well as adjustment of the output voltage. With a protected microcontroller inside the power supply, it acquires and stores operating data during the life of the power supply, which can be used for troubleshooting analysis.

Like the rest of the other models in the CliQ M series, it includes major international approvals such as maritime approval (environmental category: C, EMC 2), IEC/EN 61558-2-16 (safety of power supplies), IEC/EN 61010-1 (electrical equipment for measurement, control) and UL 508 (Industrial

Control Equipment); Conforms to harmonic current IEC/EN 61000-3-2, Class A. All models are fully compliant with RoHS Directive 2011/65/EU for environmental protection.

Highlights & Features

- Universal AC input voltage range
- Built-in active PFC with up to 95.5% efficiency
- Full power from -25°C to +60°C @ 5,000m (16,400 ft.)
- Power Boost of 150% up to 7 seconds
- Advanced Power Boost (APB) – Prevents system shutdown due to faulty load on a multiple loads connection
- DNV GL and ABS approvals for maritime applications
- Built-in DC OK Contact and LED indicator for DC OK/ Overload
- Conformal coating on PCBAs to protect against common dust and chemical pollutants
- Current sharing for parallel connection / Output Voltage remote adjustment / Internal Data Logging for troubleshooting

3 Application

3.1 NEW – Application Notes

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

- Aquaculture industry notification - Smart aquaculture control system_20171030_EN.pdf
- Food drug making industry notification - Delta IA M-R Application on Material Sorting Lines_EN_REV.pdf
- Packaging Industry Notification-AS300 Automatic Edgeboard Machine.pdf
- Pipe Gallery Industry Notification-ACU Climate Control System.pdf
- Robots Industry Notification - Application of Delta IA products on gluing of electric irons_EN_REV2.pdf
- Rubber and Platics industry notification - Delta application on full-electric blow molding machine solution_REV.pdf
- Textile Industry Notification - Spinning Machine.pdf
- Electronics Industry Notification-Workpiece Appearance Inspection Solution .pdf

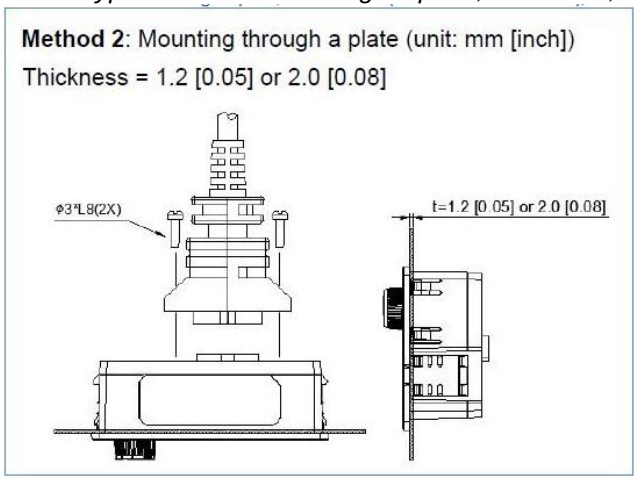
4 FAQ

4.1 VFD-series AC Motor drives

MS300

Q **What is the IP of the keypad?**

A *If the keypad is mounted through a plate, like below, it is IP40.*



4.2 Power supplies

Q **Which power supplies are marine certified?**

A *All DRM series power supplies are DNV GL certified.*

DRM-24V80W1PN(y)
DRM-24V120W1PN(y)
DRM-24V240W1PN(y)
DRM-24V480W1PN(y)
DRM-24V960W1PN(y)

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Location classes:

Temperature	**B**
Humidity	**B**
Vibration	**A**
EMC	**A**
Enclosure	**A**