



DOP-H07

High Color • Motion Inside •
User-Friendly HMI Products

Instruction Sheet

(1) Preface

Thank you for purchasing DOP-H07 of Delta. This instruction sheet will be helpful in the installation, wiring and inspection of Delta HMI product. Before using the product, please read this instruction sheet to ensure correct use. You should thoroughly understand all safety precautions before proceeding with the installation, wiring and operation. Place this instruction sheet at a safe location for future reference. Please observe the following precautions:

- Install the product in a clean and dry location free from corrosive and inflammable gases or liquids.
- Ensure that all wiring instructions and recommendations are followed.
- Ensure that HMI is correctly connected to the ground. The grounding method must comply with the electrical standard of the country (Please refer to NFPA 70: National Electrical Code, 2005 Ed.).
- Do not modify or remove wiring when power is applied to HMI.
- Do not touch the power supply during operation. Otherwise, it may cause electric shock.

If you have any questions during operation, please contact our local distributors or Delta sales representatives.

The content of this instruction sheet may be revised without prior notice. Please consult our distributors or download the latest version at <http://www.delta.com.tw/ia>.

(2) Safety Precautions

Carefully note and observe the following safety precautions when inspecting, installing, operating, maintaining and troubleshooting.

Installation



- Comply with quick start for installation. Otherwise it may cause equipment damage.
- Do not expose the product with the environment which containing water, corrosive gas, inflammable gas, etc. Or it may result in electric shock, fire, or explosion.
- Do not install the product in a location where temperatures will exceed specification for the HMI. Failure to observe this caution may result in abnormal operation or damage the product.
- This is KCC Class A product and has obtained the registration. It is for commercial or industrial use. If it is purchased or sold by mistake, please exchange it for home use which meets the requirement of KCC Class B.
- Do not use this product as an alarm device for disaster early warning that may result in personal injury, equipment damage, or system emergency stop.

Wiring



- Connect the ground terminals to class-3 ground system (Ground resistance should not exceed 100Ω). Improper grounding may result in communication error, electric shock or fire.

Operation



- When designing HMI programs, if the interface is not programmed well, it may cause the abnormal operation. Therefore, in order to prevent personal injury or equipment damage, be ensured the communication error caused by the interface, controller or equipment would not lead to the malfunction of the product.
- Please backup the screen data and HMI programs in case the data is lost.
- When not in use, please place the HMI at a flat surface or use the hook on the back to hang it properly to avoid risks of falling or crash.



- Do not modify wiring during operation. Otherwise it may result in electric shock or personal injury.
- Never use a sharp object to touch or hit the screen as doing this may damage the screen and cause malfunction of HMI.

Maintenance and Inspection



- Do not touch any internal or exposed parts of the HMI as this may damage the product or cause electric shock.
- Wait at least 10 minutes after power is removed before touching any HMI terminals or performing any wiring and/or inspection. Or the residual voltage may cause electric shock.

Wiring Method



- Do not use a voltage that will exceed specification for the HMI. Failure to observe this caution may result in electric shock, fire.
- If any cable is forced removed, please make sure to check the connection again and then restart.

Communication Wiring



- Comply with communication wiring specification for wiring.
- To avoid noise and interference, the communication cable, all power cables, and motor power cable should be placed in separate conduits.

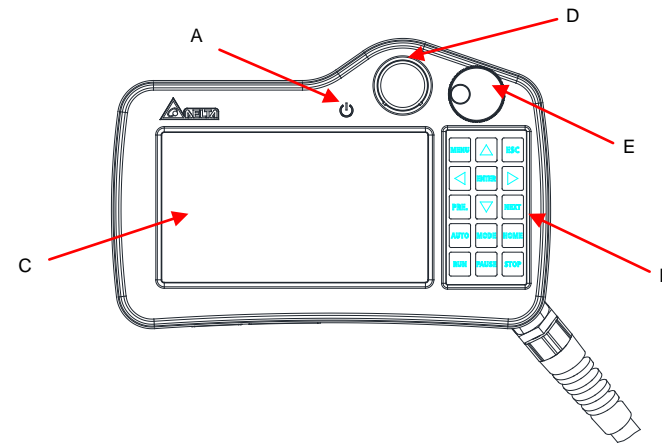
(3) Model Explanation

DOP	-	H	07	S	4	6	5
(1)		(2)	(3)	(4)	(5)	(6)	(7)

(1)	Product Name	DOP: Delta Operator Panel(HMI)					
(2)	Series	H: Handle (Hand-held Series)					
(3)	Size	07: 7.0"					
(4)	Type	E: Ethernet			S: Standard		
(5)	Display Resolution	4: WVGA					
(6)	External Device	Code	Handwheel	SD	Reserve		
		2		●			
		6	●	●			
(7)	Cable Length	5: 5 m		A: 10 m			

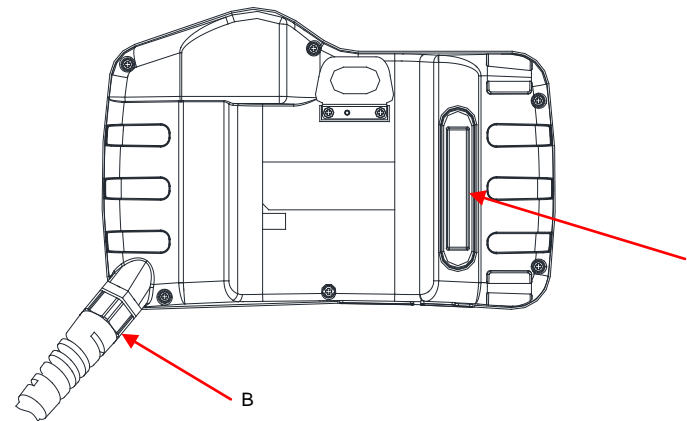
(4) Parts Names

DOP-H07S42x / DOP-H07S46x / DOP-H07E42x / DOP-H07E46x (Front View)



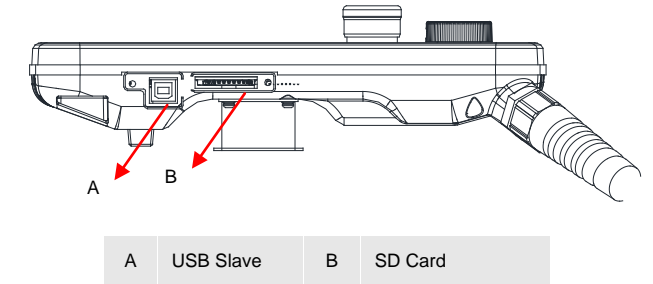
A	LED Power Indicator	B	Function Keys
C	Touch Screen / Display	D	Emergency Stop
E	Handwheel		

DOP-H07S42x / DOP-H07S46x / DOP-H07E42x / DOP-H07E46x (Rear View)



A	3-Position Operation Switch
B	Cable

DOP-H07S42x / DOP-H07S46x / DOP-H07E42x / DOP-H07E46x (Bottom View)



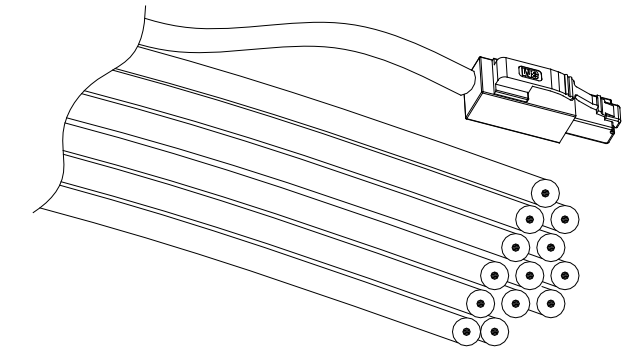
(5) Ambient Conditions of Installation and Storage

The product should be kept in the shipping carton before installation. In order to retain the warranty coverage, the HMI should be stored properly when it is not to be used for an extended period of time. Some storage suggestions are:

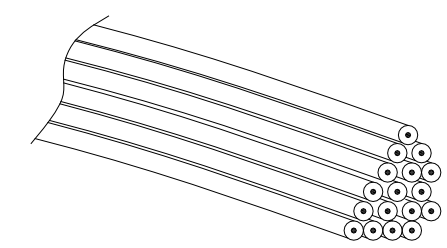
- Store in a clean and dry location
- Store within an ambient temperature range of -10°C to +60°C (-14°F to 140°F).
- Store within a relative humidity range of 10% to 90% and in a non-condensing environment.
- Do not store the HMI in a place subjected to corrosive gases and liquids.
- Correctly packaged and placed on a solid and durable surface.
- The ambient conditions of installation should NOT include: over-heat device; water drop, vapor, dust and oily dust; corrosive and inflammable gas and liquid; airborne dust and metal particles; interference of electromagnetic noise; should have solid foundation and no vibration;

(6) Wiring Method

Wire of DOP-H07E4xx



Wire of DOP-H07S4xx



DOP-H07x4 Series Cable Definition

DOP-H07E4xx Pin of the Quick Connector	DOP-H07x4xx Color of Skinned Wire	Corresponding Wire (wire with the same letter are wired together)	Function
1	H07E: RJ45 pin1 H07S: White / Orange	A	DOP-H07E: LAN RD+ DOP-H07S: RS422 TX+ RS485 D+
2	White / Black		DOP-H07S: SG(RS422, RS485)
3	H07E: RJ45 pin3 H07S: White / Green	B	DOP-H07E: LAN TD+ DOP-H07S: RS422 RX+(with a label marked 12)
4	Brown		3-Position Operation Switch – NO(A)
5	H07E: RJ45 pin2 H07S: Orange	A	DOP-H07E: LAN RD- DOP-H07S: RS422 TX- RS485 D-
6	H07E: RJ45 pin6 H07S: Green	B	DOP-H07E: LAN TD- DOP-H07S: RS422 RX-
7	White / Brown		3-Position Operation Switch – NO(A)
8	Red		DC 24V
9	Black		0V
10	White		FGND (Power Ground)
11	Yellow	C	DOP-H07x46x only: Handwheel Output A
12	White / Yellow	C	DOP-H07x46x only: Handwheel Output B
13	White / Purple	D	Emergency Stop – NO(A)
14	White / Green	D	Emergency Stop– NO(A)
15	White / Red		DOP-H07x46x only: External power input of Handwheel (< DC 24V)
16	Blue	E	Emergency Stop– NC(B)
17	White/Blue	E	Emergency Stop– NC(B)

(7) Basic Inspection

Item	Content
General Inspection	<ul style="list-style-type: none"> Periodically inspect the screws of the connection between the HMI and device. Ensure the correct installation and the control panel should be free from airborne dust, harmful gases or liquids.
Inspection before operation (power is not applied)	<ul style="list-style-type: none"> Make sure that all wiring is correct to avoid damage and malfunction. Visually check and ensure that no unused screws, metal strips, any conductive or inflammable materials are inside the HMI. Lower electromagnetic interference when devices are influenced by it. Ensure that the external applied voltage to HMI is correct and matched to the controller.
Inspection before operation (power is applied)	<ul style="list-style-type: none"> Check if power indicator lights up. Check if the communication among devices is normal. Please contact our local distributors or Delta sales representative if there are any abnormal conditions.

(8) Specifications

Model	DOP-H07S42x	DOP-H07S46x	DOP-H07E42x	DOP-H07E46x	
LCD MODULE	Display Type	7" TFT LCD (65535 colors)			
	Resolution	800 x 480 pixels			
	Backlight	LED Back Light (less than 20,000 hours half-life at 25°C) ^(Note 1)			
	Display Size	154.08 x 85.92 mm			
Operation System	Delta Real Time OS				
MCU	32-bit RISC Micro-controller				
Flash ROM	Flash ROM 128 MB(OS System: 30 MB / Backup: 16 MB / User Application: 82 MB)				
Backup Memory (Bytes)	16 Mbytes ROM, 128 Kbytes SRAM				
Buzzer	Multi-Tone Frequency (2K ~ 4K Hz) / 85 dB				
Ethernet Interface	N/A	10/100 Mbps auto-sensing (with built-in isolated power circuit) ^(Note 2)			
Serial COM Port	RS-422 / RS-485	N/A			
Memory Card	SD / SDHC				
USB	1 USB Client Ver 2.0				
Emergency Stop	A-contact: 1 / B-contact: 1 Rated voltage: DC 30V Maximum rated current: 1A Minimum allowable load: DC 5V/1 mA Complies with IEC60947-5-1, EN60947-5-1, IEC60947-5-5, EN60947-5-5, UL 508, and CSA C22.2 No.14, GB 14085.5				
3-Position Operation Switch	A-contact: 1 Rated voltage: DC 30V Maximum rated current: 700 mA Minimum allowable load : DC 3 V/5mA Complies with EN/IEC60947-5-8, IEC60947-5-1, EN60947-5-1, JIS C8201-5-1, UL508, and CSA C22.2 NO. 14 Applicable standards for use with ISO12100-1, -2/EN12100-1, -2, IEC60204-1/EN60204-1, ISO11161/prEN11161, ISO10218/EN775, ANSI/RIA R15.06, ANSI B11.19				
Handwheel	N/A	Rated Voltage: <DC 24V in Resolution: 50(P/R) Output Pulse: Square Output Phase: A, B Phase difference of A and B: 90° ± 45° Max. Frequency response: 200 Hz	N/A	Rated Voltage: <DC 24V in Resolution: 50(P/R) Output Pulse: Square Output Phase: A, B Phase difference of A and B: 90° ± 45° Max. Frequency response: 200 Hz	
Function Key	15 Function Keys				
Cable Length & Type	End of Model Name: 5-5M, A-10M				
Perpetual Calendar	Built-in				
Cooling Method	Natural cooling				
Safety Approval	CE ^(Note 3)				

Waterproof Level of Panel Display	N/A
Operation Voltage ¹	DC +24V (±15%) (with built-in isolated power circuit) ^(Note 2)
Voltage Endurance	AC500V for 1 minute (between charging (DC24V terminal) and FG terminals)
Power Consumption	5.6 W ^(Note 4)
Backup Battery	3V lithium battery CR2450 × 1
Backup Battery Life	About 5 years or more at 25°C but subjects to the temperature and the conditions during usage.
Operation Temperature	0°C ~ 40°C
Storage Temperature	-10°C ~ +60°C
Operating Environment	10% ~ 90% RH [0 ~ 40°C] ; 10% ~ 55% RH [41 ~ 50°C] ; Pollution Degree 2
Vibration	Conforms to IEC61131-2; Continuous: 5Hz ~ 8.3Hz 3.5 mm, 8.3Hz ~ 150Hz 1G
Shock	Conforms to IEC60068-2-27; 11ms, 15G Peak , X, Y, Z direction for 6 times
Dimension (W) x (H) x (D) mm	257.4 x 170.3 x 71.8 (Emergency stop switch and hook are included.)
Weight	750 g (cable excluded)



- The half-life of backlight is defined as original luminance being reduced by 50% when the maximum driving current is supplied to HMI. The life of LED backlight shown here is an estimated value under 25°C normal temperature and humidity conditions.
- The withstand voltage of the isolated power circuit is 1500 V peak for 1 minute.
- Some models are in the process of application to certification. For more information, please consult our distributors.
- Power consumption of HMI is the power consumed when not connecting to any peripheral devices. The power supply of which capacity is 1.5 ~ 2 times the power consumption is recommended to ensure normal operation.
- DOPSoft, the program editor for DOP-H series products and user manuals can be downloaded at our website, <http://www.delta.com.tw/ia>.
- The content of this instruction sheet may be revised without prior notice. Please consult our distributors or download the latest version at <http://www.delta.com.tw/ia>.
- Isolated power supply is recommended.