

DOP-H07

High Color • Motion Inside •
User-Friendly HMI Products

No.18, Xinglong Rd., Taoyuan City
33068, Taiwan

Instruction Sheet

(1) Preface

Thank you for purchasing DOP-H07. This instruction sheet provides information about DOP-H07 series. Before using the product, please read through this manual carefully in order to ensure the correct use of the product. In addition, please place this manual safely for quick reference whenever is needed. Please follow the rules below if you have not finished reading this manual yet.

- 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 national electrical standard (Please refer to NFPA 70: National Electrical Code, 2005 Ed.).
- Do not modify the wiring when HMI is connected to the power.
- Do not touch the power supply during operation. Otherwise, it may cause electric shock.

If you have any enquiry 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.

(2) Safety Precautions

Carefully note and observe the following safety precautions during inspecting, installation, operating, maintenance and troubleshooting.

Installation

- Comply with the instruction mentioned in this instruction sheet for installation. Otherwise it may damage the equipment.
- Do not expose the product to the environment which containing water, corrosive gas, inflammable gas. 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 to the product. Please refer to the specifications that listed on the second page.
- This product has the approval of KCC Class A, which is for commercial or industrial use only. Home use product is classified as KCC Class B. If the KCC Class A product is purchased or sold for home use, please return the product to local distributors.
- Do not place this product where that may result in personal injury or equipment damage.

Wiring

- Connect the ground terminals to class-3 ground system (Ground resistance should not exceed 100 Ω). Improper grounding may result in communication error, electric shock or fire.
- Do not connect to other wire rods to extend the cable length. Or it may cause poor communication or malfunction.

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, make sure that 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 the 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 parts of the HMI as this may damage the product or cause electric shock.
- Wait at least 10 minutes after the 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

- The voltage applied shall not exceed the specification for the HMI. Failure to observe this caution may result in electric shock or fire.
- If any cable is forced removed, please make sure to check the connection again before resuming the operation.

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.

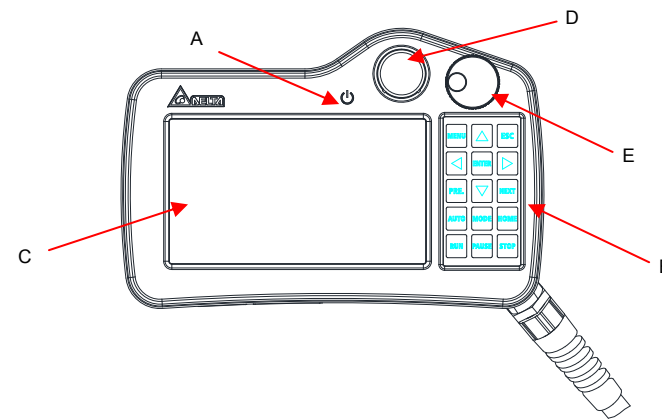
(3) Model Explanation

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 Card	Reserved		
		2		●			
		6	●	●			
(7)	Cable Length	5: 5 m		A: 10 m			

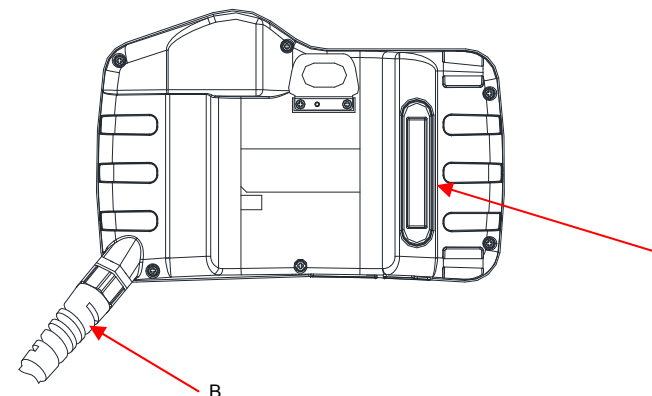
(4) Parts Names

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



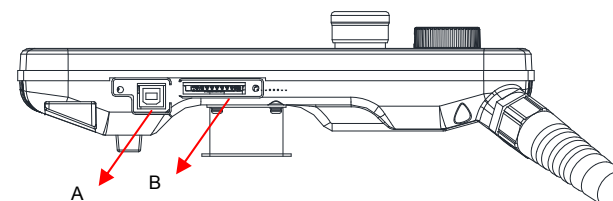
A	LED Power Indicator	B	Function Keys
C	Touch Screen / Display	D	Emergency Stop
E	Handwheel		

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



A	3-Position Operation Switch
B	Cable

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



A	USB Slave	B	SD Card
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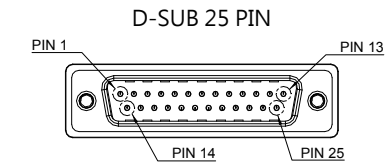
(5) Ambient Conditions of Installation and Storage

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 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 pack and place the product 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; and should have solid foundation and no vibration.

(6) Wiring Method

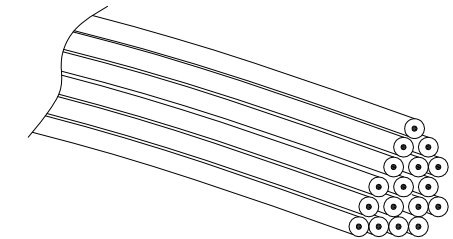
Wire of D-SUB



Cable Definition of DOP-H07E4xxZM (D-SUB)

Corresponding 25 Pins of D-SUB	Function
1	LAN RD+
2	LAN RD-
3	Reserved
7	Emergency Stop – NO(A)
8	Emergency Stop – NO(A)
9	Emergency Stop – NC(B)
10	Emergency Stop – NC(B)
13	0V
14	LAN TD+
15	LAN TD-
18	DOP-H07x46x only: External power input of Handwheel
20	DOP-H07x46x only: Handwheel Output A
21	DOP-H07x46x only: Handwheel Output B
22	3-Position Operation Switch – NO(A)
23	3-Position Operation Switch – NO(A)
25	DC 24V

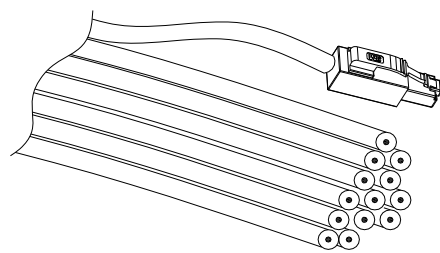
Wire of DOP-H07S4xx



Cable Definition of DOP-H07S4xx

DOP-H07S4xx Color of Skinned Wire	Corresponding Wire (wire with the same letter are wired together)	Function
White & Orange	A	RS422 TX+ / RS485 D+
White & Black		SG(RS422, RS485)
White & Green	B	RS422 RX+ (with a label marked 12)
Brown		3-Position Operation Switch – NO(A)
Orange	A	RS422 TX- / RS485 D-
Green	B	RS422 RX-
White & Brown		3-Position Operation Switch – NO(A)
Red		DC 24V
Black		0V
White		FGND (Power Ground)
Yellow	C	DOP-H07S46x only: Handwheel Output A
White & Yellow	C	DOP-H07S46x only: Handwheel Output B
White & Purple	D	Emergency Stop – NC(A)
White & Green	D	Emergency Stop – NC(A)
White & Red		DOP-H07S46x only: External power input of Handwheel
Blue	E	Emergency Stop – NC(B)
White & Blue	E	Emergency Stop – NC(B)

Wire of DOP-H07E4xx



Cable Definition of DOP-H07E4xx

DOP-H07E4xx Color of Skinned Wire	Corresponding Wire (wire with the same letter are wired together)	Function
RJ45 pin1	A	LAN RD+
White & Black		Reserved
RJ45 pin3	B	LAN TD+
Brown		3-Position Operation Switch – NO(A)
RJ45 pin2	A	LAN RD-
RJ45 pin6	B	LAN TD-
White & Brown		3-Position Operation Switch – NO(A)
Red		DC 24V
Black		0V
White		FGND (Power Ground)
Yellow	C	DOP-H07E46x only: Handwheel Output A
White & Yellow	C	DOP-H07E46x only: Handwheel Output B
White & Purple	D	Emergency Stop – NC(A)
White & Green	D	Emergency Stop – NC(A)
White & Red		DOP-H07E46x only: External power input of Handwheel
Blue	E	Emergency Stop – NC(B)
White & Blue	E	Emergency Stop – NC(B)

(7) Basic Inspection

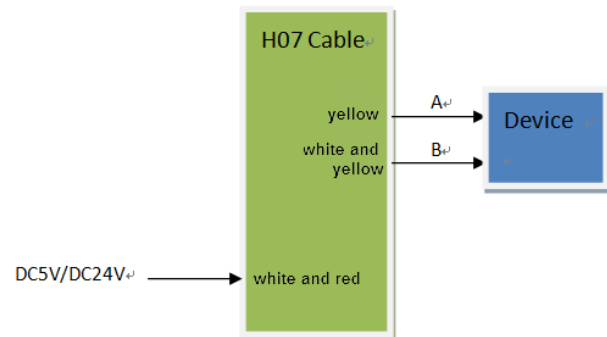
Item	Content
General Inspection	<ul style="list-style-type: none"> Periodically inspect the screws of the connection between HMI and devices. Ensure the correct installation and the control panel should be free from airborne dust, harmful gases or liquids.
Inspection before operation (power is not applied)	<ul style="list-style-type: none"> Make sure that all wiring is correct to avoid damages and malfunction. Visually check and ensure that no unused screws, metal strips, any conductive or inflammable materials are inside the HMI. Use calibration instrument to lower the electromagnetic interference. 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 representatives if any abnormality occurs.

(8) Descriptions of Handwheel Output

Electrical Specifications

Input Voltage (White & red cable)	Output Current
DC 5V +/- 5%	20mA (Max)
DC 24V +/- 5%	30mA (Max)

Configuration



Notes

- When wishing to connect to more than one devices for handwheel control, please refer to the electrical specifications of handwheel output to avoid malfunction.
- It supports DC 5V and DC 24V device that receives pulse. Make sure it complies with the required voltage or it may damage the equipment.

(9) Specifications

Model	DOP-H07S425 DOP-H07S42A	DOP-H07S465 DOP-H07S46A	DOP-H07E425 DOP-H07E425ZM DOP-H07E42A	DOP-H07E465 DOP-H07E465ZM DOP-H07E46A
LCD	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	16 Mbytes ROM, 128 Kbytes SRAM			
Buzzer	Multi-Tone Frequency (2K ~ 4K Hz) / 85 dB			
Ethernet Interface	N/A		10/100 Mbps Mbps auto-sensing (with built-in isolated power circuit) ^(Note 2)	
Serial COM Port	RS-422 / RS-485		N/A	
External Memory	SD / SDHC			
USB	1 USB Client Ver 2.0			
Emergency Stop	A-contact: 1 / B-contact: 1 Rated voltage: < DC 30V Maximum rated current: 1 A Minimum allowable load: DC 5V / 1 mA Complies with IEC60947-5-1, EN60947-5-1, IEC60947-5-5, EN60947-5-5, UL 508, 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 3V / 5 mA Complies with EN/IEC60947-5-8, IEC60947-5-1, EN60947-5-1, JIS C8201-5-1, UL508, 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 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 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 Keys	15 Function Keys			
Cable Length	End of Model Name 5: 5 M End of Model Name A: 10 M			
Perpetual Calendar	Built-in			
Cooling Method	Natural cooling			
Safety Approval	CE ^(Note 3)			
Waterproof Level of Panel Display	IP55			
Operation Voltage	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			



- 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 for 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.
- Isolated power supply is recommended.
- DOPSoft, the program editor for DOP-H series products and user manuals can be downloaded at our website. In addition, the content of this instruction sheet may be revised without prior notice.

ООО "РусАвтоматизация"

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