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Automation for a Changing World

Delta Human Machine Interface & Controller HMC Series

www.delta.com.tw/ia

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High Quality Display, Precise Control: The Optimum Combination of Display and Controller

Standard Type HMC08

- 64K Colors TFT
- DMCNET
- Digital I/O
- Manual Pulse Generator (MPG)
- Serial Communication
- Ethernet
- SD Card
- USB Disk
- Audio Output

Handheld Type HMC07

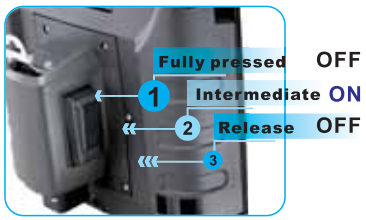
- 64K Colors TFT
- DMCNET
- Digital I/O
- Emergency Stop
- Serial Communication
- Ethernet
- SD Card
- USB Disk

Features HMC07

Emergency Stop

The emergency stop switch is connected to the emergency connector and is used to stop the machine immediately when an emergency or any circuit failure occurs.

3-Position Switch



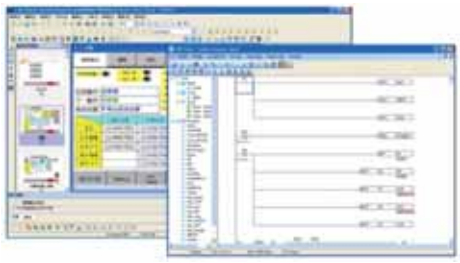
The 3-position switch is used to stop the operations when the functions of a machine need to be halted immediately due to a short-circuit or other malfunction. This switch allows users to control the machine without triggering the emergency stop.

Plug-in Quick Connector

A patented design and plug-in quick connector provides a fast and easy plug-and-play installation for reverse polarity protection and eliminating wiring mistakes.

DOPSoft, HMI Screen Editor & PLC Programming Software

DOPSoft provides a direct editing environment for fast and effective HMI screen editing and PLC programming which simplifies the design time and minimizes the cost.



Powerful Dual Processors

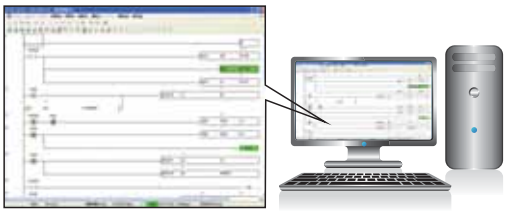
The HMC Series is equipped with two high-speed CPUs. One CPU is for the operation of the human machine interface. The other is a DSP (Digital Signal Processor) that serves as a motion processor for sequence control, which guarantees no worries for execution efficiency and the performance of the system when running large and complicated PLC programs. Up to 4 major PLC programs can be run simultaneously.

Direct Remote I/O Connection

I/O points are placed in the rear of the panel. Wiring and connection are complicated.

Direct remote I/O connection provides simple and effortless wiring. Only one communication cable is needed to complete I/O connection.

Quick PLC Ladder Monitoring



PLC ladder programs and registers can be monitored and changed in real time on a PC to greatly reduce the verification and debug time via Ethernet.

Ethernet

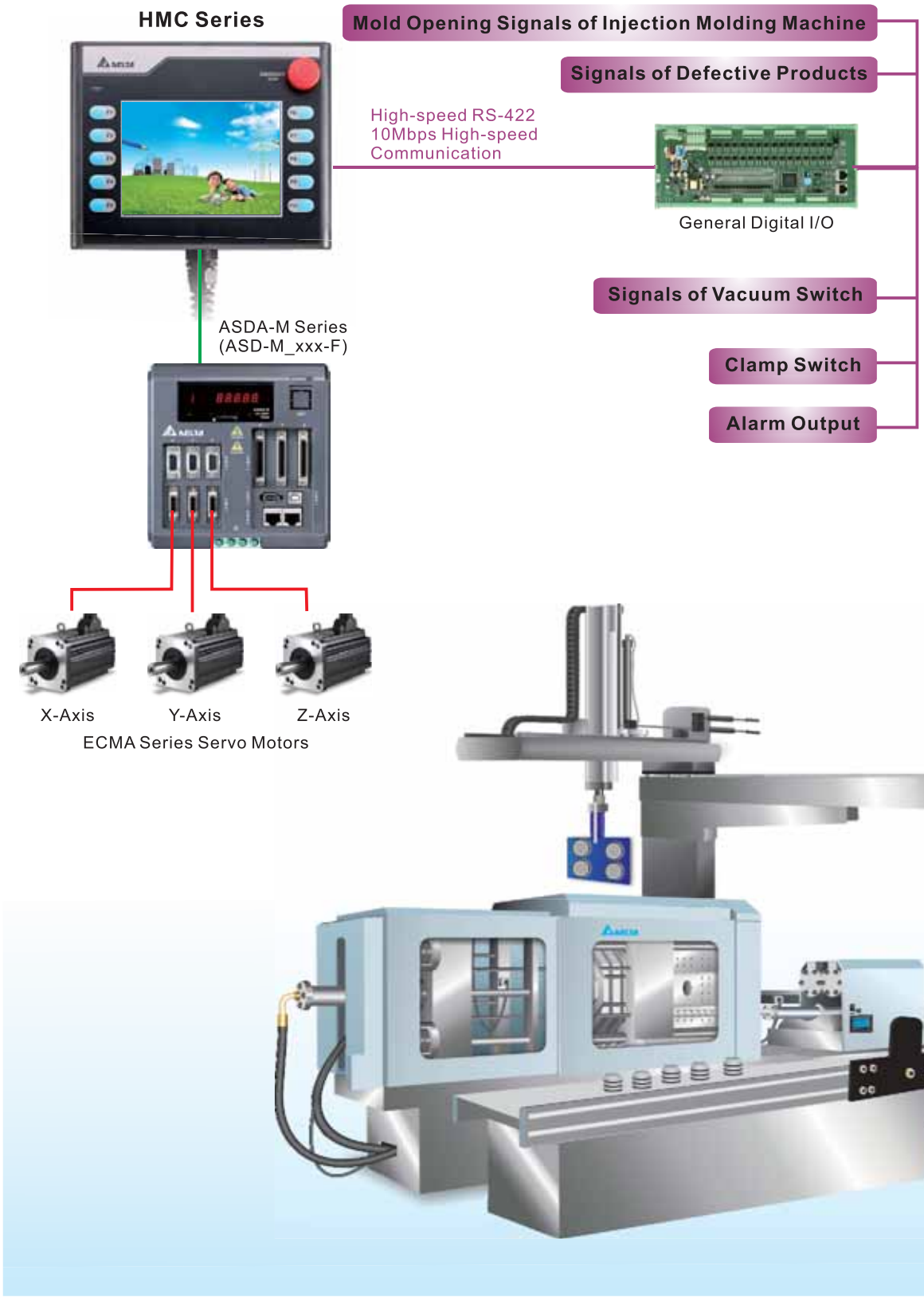
Built-in PLC ladder monitor devices allow users to display programs in real time and confirm machine operations without using a PC.

Built-in Motion Commands

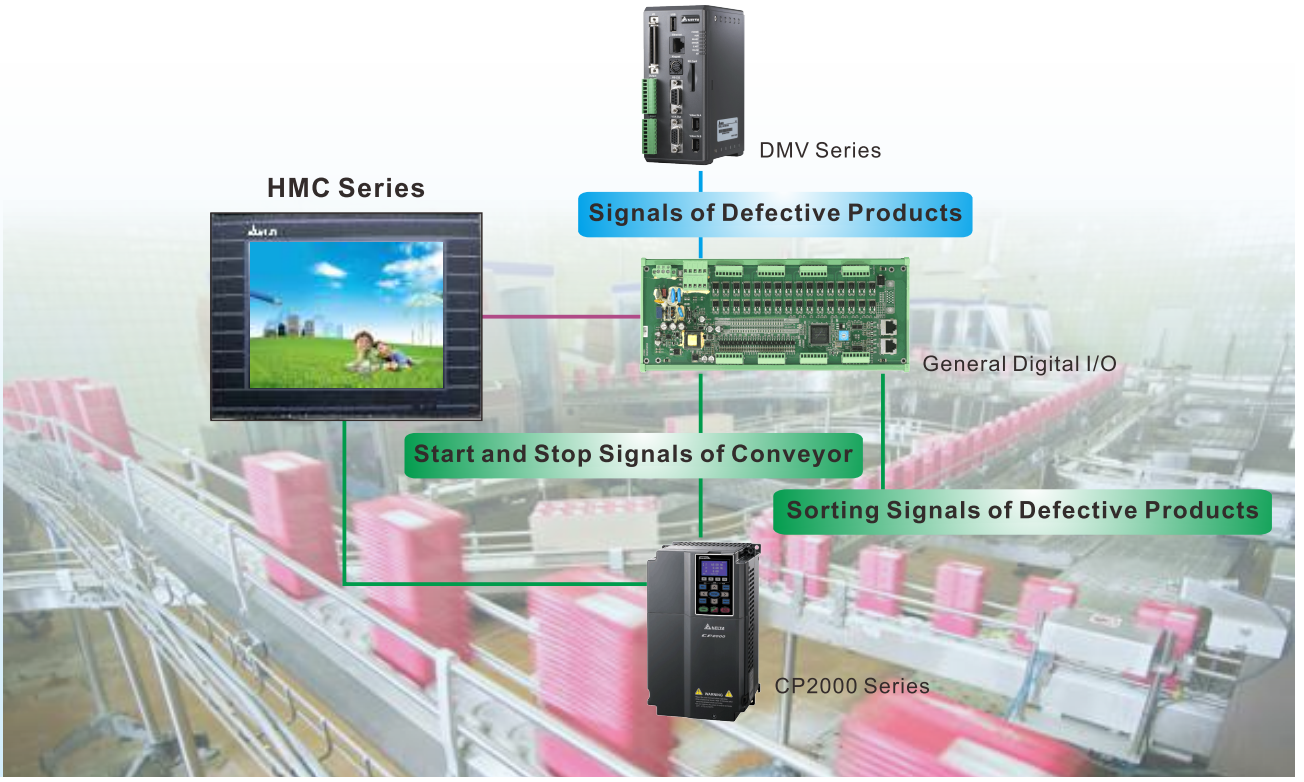
No additional communication commands are required. Users can setup servo parameters directly and change motion commands quickly.The HMC Series supports Delta's ASDA Series Servo Systems.

Field Applications

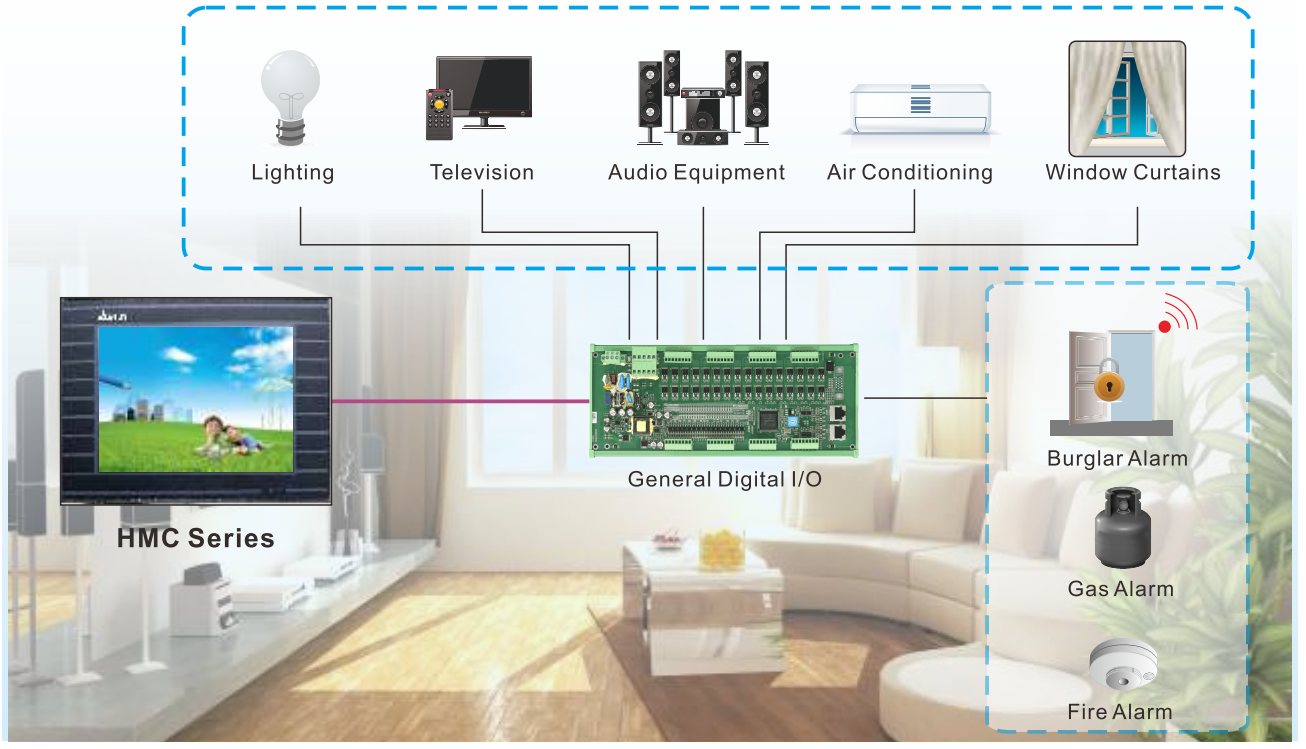
Cartesian Robotic Arms



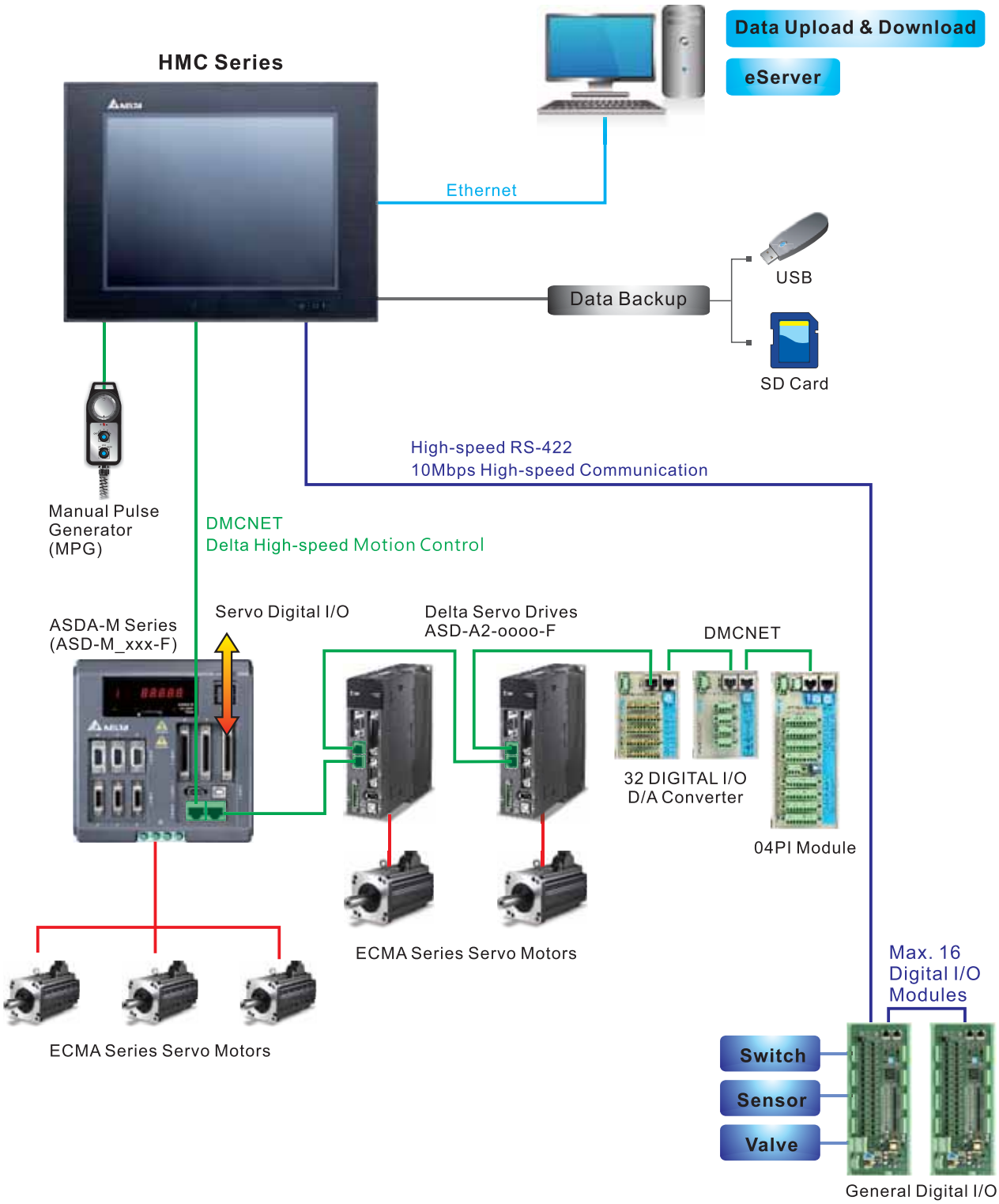
Conveyors



Smart Household Appliances



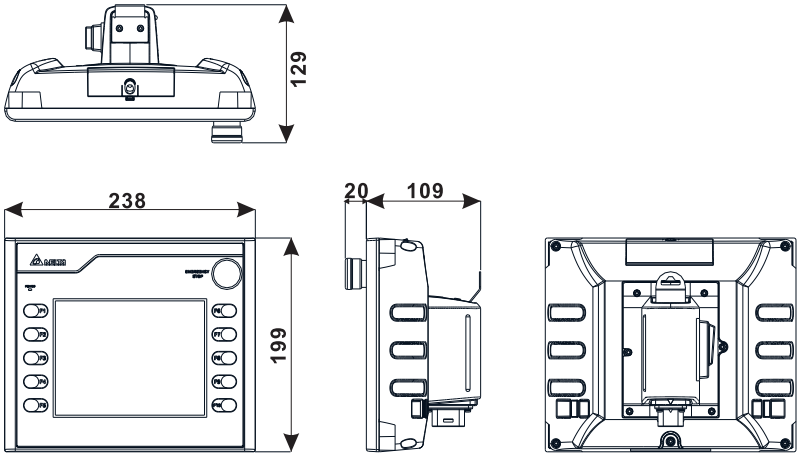
Complete Total Solution



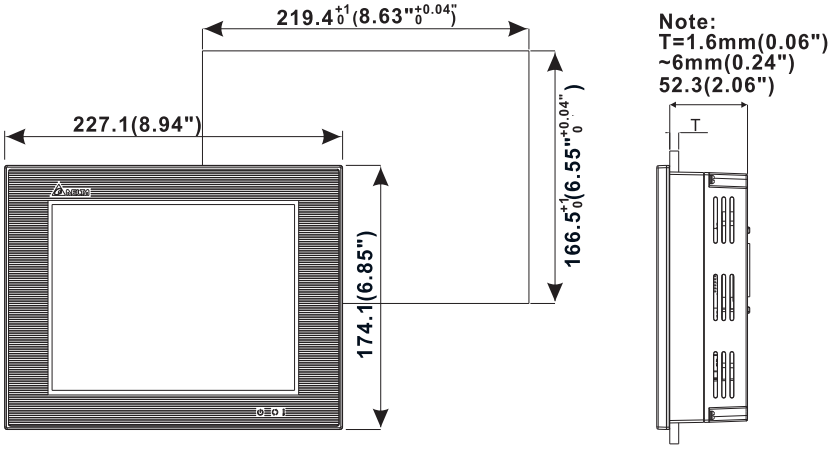
Dimensions

Units:mm(inches)

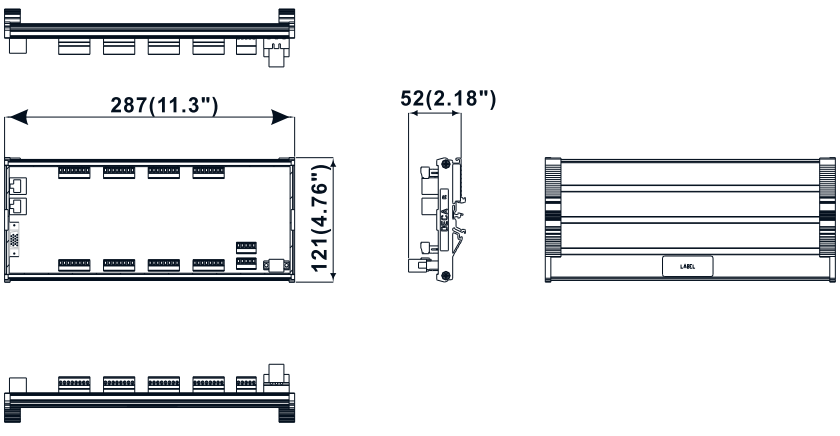
HMC07



HMC08



Remote I/O Module



Specifications

MODEL		HMC07-N500H52	HMC08-N500S52
LCD MODULE	Display Type	7" TFT LCD (65535 colors)	8" TFT LCD (65536 colors)
	Resolution	800 x 600 pixels	
	Backlight	LED Back Light (less than 20,000 hours half-life at 25°C)(Note 1)	
	Display Size	141 x 105.75mm	162 x 121.5mm
Operation System		Delta Real Time OS	
MCU		32-bit RISC Micro-controller + DSP	
Flash ROM		Flash ROM 128 MB (OS System: 30MB / Backup: 16MB / User Application: 82MB)	
Backup Memory (Bytes)		16Mbytes	
Sound Effect Output	Buzzer	Multi-Tone Frequency (2K ~ 4K Hz) / 85dB	
	AUX	-	Stereo output
Ethernet Interface		10/100 Mbps auto-sensing (has built-in isolated power circuit)(Note 3)	
Memory Card		SD Card (supports SDHC)	
USB		1 USB Host(Note 2) Ver 1.1 / 1 USB Client Ver 2.0	
Serial COM Port	COM1	RS-232 / RS-422 / RS-485	RS-232
	COM2	-	RS-232 / RS-422 / RS-485
	COM3	-	RS-232 / RS-422 / RS-485
Emergency Stop Switch		▪ Push-lock switch 2 contacts a-contact (normally open): 1 contact b-contact (normally closed): 1 contact ▪ Rated voltage: DC30V ▪ Maximum rated current: 500mA ▪ Minimum allowable load: DC5V, 1mA ▪ IEC60947-5-1, EN60947-5-1, IEC60947-5-5, EN60947-5-5, UL508 (UL Approval), CSA C22.2 No.14 (UL Approval)	-
3-Position Operation Switch		▪ Output switch 1 contact a-contact (normally open): 1 contact ▪ Rated voltage: DC30V ▪ Maximum rated current: 500mA ▪ Minimum allowable load: DC3V, 5mA ▪ IEC60497-5-8, EN60497-5-8, IEC60947-5-1, EN60947-5-1, JIS C8201-5-1, UL508 (UL Approval), CSA C22.2 No.14 (UL Approval), ISO12100-1, ISO12100-2 / EN60204-1, EN60204-2, IEC60204-1 / EN60204-1, ISO11161/prEN11161, ISO10218/EN775, ANSI/RIA R15.06, ANSI B11.19	-
Function Key		10 function keys	N/A
Perpetual Calendar		Built-in	
Cooling Method		Natural air circulation	
Safety Approval		CE / UL(Note 4) / KCC(Note 4)	
Waterproof Degree		IP65 / NEMA4	IP65 / NEMA4 (Touchscreen only)
Operation Voltage		DC +24V (-10% ~ +15%)(has built-in isolated power circuit)(Note 3)	

MODEL	HMC07-N500H52	HMC08-N500S52
Voltage Endurance	AC500V for 1 minute (between charging (DC24V terminal) and FG terminals)	
Power Consumption (Note 5)	8W	11W
Backup Battery	3V lithium battery CR2032 x 1	
Backup Battery Life	It depends on the temperature used and the conditions of usage, about 3 years or more at 25℃	
Operation Temperature	0℃ ~ 50℃	
Storage Temperature	-20℃ ~ +60℃	
Ambient Humidity	10% ~ 90% RH【0 ~ 40℃】· 10% ~ 55% RH【41 ~ 50℃】· Pollution Degree 2	
Vibration	IEC 61131-2 compliant 5Hz ~ 8.3Hz = Continuous: 3.5mm, 8.3Hz ~ 150Hz = Continuous: 1.0g	
Shock	IEC 60068-2-27 compliant 15g peak for 11 ms duration X, Y, Z directions for 6 times	
Dimensions (W)x(H)x(D)mm	237.9 x 199 x 129	227.1 x 174.1 x 61
Panel Cutout (W)x(H)mm	-	219.4 x 166.5
Weight	Approx. 1500g	Approx.1228g

1) The half-life of backlight is defined as original luminance being reduced by 50% when the maximum driving current is supplied to HMI.
2) USB Host port can provide up to 5V/ 500mA of power.
3) The isolated power circuit can withstand a 1500V voltage peak for 1 minute.
4) Some models are in the process of application for UL and KCC certification. For more information, please consult our distributors.
5) The value of the power consumption indicates the electrical power consumed by HMI with no peripheral devices connected. To ensure normal operation, it is recommended using a power supply with a capacity 1.5 ~2 times the value of the power consumption.
6) Users can download the DOPSoft, the HMI screen editor & PLC programming software of Delta HMC product and the user manual via the following link: http://www.delta.com.tw/ia.
7) The content of this catalogue may be revised without prior notice. Please consult our distributors or download the most updated version at http://www.delta.com.tw/ia .

Electrical Specifications of Remote I/O Modules

Items / Model Name	Power Supply	Input Unit		Output Unit	
		Points	Type	Points	Type
HM-RIO3232T12	24VDC	32	Sink	32	Transistor

		Input Point Electrical Specifications	Output Point Electrical Specifications		
Input Impedance		4.7KΩ	Max. Switching Frequency		500kHz
Max. Switching Frequency		100kHz	Maximum Loading	500kHz	2A / 1 Point
Active Level	OFF → ON	> 16.5VDC	Response Time	OFF→ON	Approx. 3us
	ON→ OFF	< 5VDC		ON→OFF	
Response Time	OFF → ON	< 3μs	-		
	ON → OFF	< 40μs	-		

Optional Accessories

Model Name	Descriptions
HMC-CA3203A0	3m connection cable for HMC07 models
HMC-CA3205A0	5m connection cable for HMC07 models
HMC-CA3210A0	10m connection cable for HMC07 models
NC-CAB-DMC003	DMCNET / Remote I/O connection cable (0.3m)
NC-CAB-DMC015	DMCNET / Remote I/O connection cable (1.5m)
NC-CAB-DMC050	DMCNET / Remote I/O connection cable (5.0m)
NC-CAB-DMC100	DMCNET / Remote I/O connection cable (10.0m)

Model Explanation

ASDA-M Series Servo Drives

ASD - M - 07 21 - F

- **Product Name** : AC Servo Drive
- **Series** : M
- **Rated Output Power**
  07 : 750W
  15 : 1.5kW
  20 : 2.0kW
- **Input Voltage and Phase**
  21 : 220V 1 phase
  23 : 220V 3 phase
- **F** : DMCNET

ECMA Series Servo Motors

ECM A - C1 06 02 E S

- **Product Name**
  ECM : Electrical Commutation Motor
- **Driving Type**
  A : AC Servo Motor
- **Standard Shaft Dimension:**
  S
  Specified Shaft Dimension:
  7=14mm
  3=42mm

Shaft Type and Oil Seal	W/O Brake W/O Oil Seal	With Brake W/O Oil Seal	W/O Brake With Oil Seal	With Brake With Oil Seal
Round Shaft (with screw hole)	A	B	C	D
Keyway	E	F	G	H
Keyway (with screw hole)	P	Q	R	S

- **Series**
  Rated Voltage / Rated Speed
  C : 220V / 3000r/min E : 220V / 2000r/min
  F : 220V / 1500r/min G : 220V / 1000r/min
  J : 400V / 3000r/min K : 400V / 2000r/min
  L : 400V / 1500r/min

  Encoder Type
  1: Incremental encoder, 20-bit
  2: Incremental encoder, 17-bit
  A: Absolute encoder ,
  Single-turn:17-bit Multi-turn:16-bit

- **Motor Frame Size**
  04 : 40mm 10 : 100mm
  06 : 60mm 13 : 130mm
  08 : 80mm 18 : 180mm
  09 : 86mm 22 : 220mm

- **Rated Output Power**
  01 : 100W 10 : 1kW
  02 : 200W 15 : 1.5kW
  03 : 300W 20 : 2kW
  04 : 400W 30 : 3kW
  05 : 500W 45 : 4.5kW
  06 : 600W 55 : 5.5kW
  07 : 750W 75 : 7.5kW
  09 : 900W 1B : 11kW
  1F : 15kW

ASDA-A2 Series Servo Drives

ASD - A2 - 04 21 - F

- **Product Name** : AC Servo Drive
- **Series** : A2
- **Input Voltage and Phase**
  21 : 220V 1-phase / 3-phase
  23 : 220V 3-phase
  43 : 400V 3-phase
- **Rated Output Power**
  01 : 100W 20 : 2kW
  02 : 200W 30 : 3kW
  04 : 400W 45 : 4.5kW
  07 : 750W 55 : 5.5kW
  10 : 1kW 75 : 7.5kW
  15 : 1.5kW 1B : 11kW
  1F : 15kW
- **F** : DMCNET

DMCNET Extension I/O Modules

Distributed Remote Extension Module	Descriptions
ASD-DMC-RM32MN	32 Digital Inputs (NPN/PNP)
ASD-DMC-RM32NT	32 Digital Output (Transistor Output)
ASD-DMC-RM64MN	64 Digital Inputs (NPN/PNP)
ASD-DMC-RM64NT	64 Digital Output (Transistor Output)
ASD-DMC-RM04AD	4-Channel Analog Inputs
ASD-DMC-RM04DA	4-Channel Analog Outputs
ASD-DMC-RM04PI	4-Channel Pulse Interface

Centralized Remote Extension Module (Gateway Extension Module)	Descriptions
ASD-DMC-GA01	Gateway Main Station
ASD-DMC-GE16MN	16 Digital Inputs (NPN/PNP)
ASD-DMC-GE16NT	16 Digital Output (Transistor Output)
ASD-DMC-GE01PH	1-Channel High-speed Pulse Output

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