

Digitized Automation for a Changing World

All-Electric Injection Molding Machine Solution

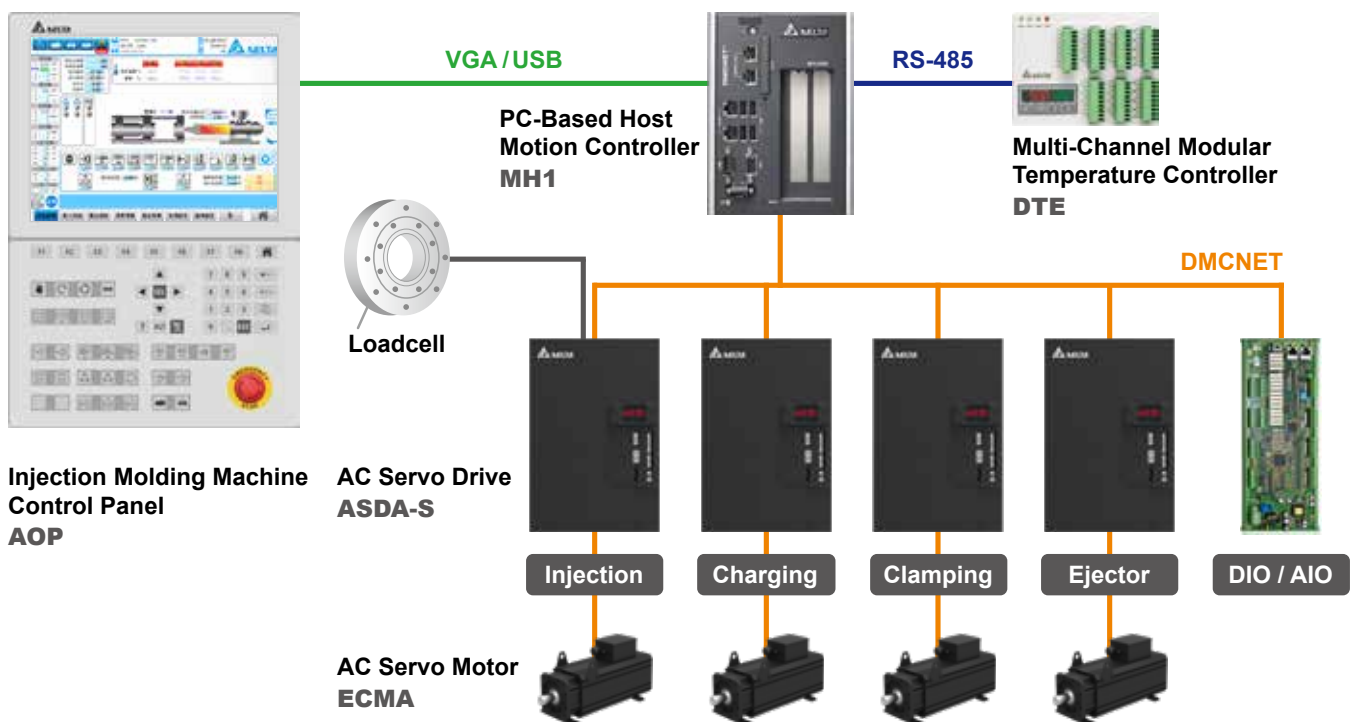


All-Electric Injection Molding Machine Solution

Due to the rapid advancement of mold design techniques, manufacturers require high-end injection molding machines with higher speed and precision to produce refined plastic and rubber products. Compared with traditional systems, all-electric injection molding systems feature higher precision and reproducibility, as well as energy-savings, low noise, and eco-friendliness, and have become a new trend in the industry.

Delta has launched the All-Electric Injection Molding Solution to fulfill customer needs for cutting-edge machinery. This solution adopts a distributed control structure and provides a flexible control system that allows customized development for various customers. The built-in smart injection functions of the ASDA-S Series servo drives enhance system response speed and deliver high performance, high precision and high stability for injection molding control.

Delta Total Solution



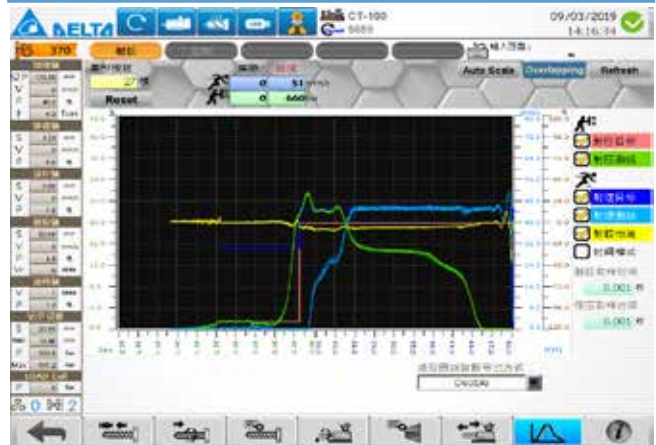
- High-speed DMCNET fieldbus with response speed <math>< 1\text{ms}</math>
- Loadcell signal feedback is directly sent to the servo drives with Delta's distributed control system. $62.5\ \mu\text{s}$ high-speed response provides real-time adjustment of injection according to back pressure for precise molding
- 24-bit high resolution absolute encoder for high-precision and reproducibility
- S-curve function stabilizes vibration during motor start/stop to achieve smooth operation
- Adopts low-inertia high-torque motors to enhance acceleration for injection axes
- Standard program templates for various applications: horizontal, vertical, multiple-component injection molding, and secondary injection unit
- Open platform for secondary development of HMI and PLC
- OPC UA/Euromap77 supported. Users are able to adopt DIAeBox for mold management and production monitoring

Programming Interfaces (Templates for the Injection Molding Industry)

1. System Monitoring



2. Curve Monitoring



3. Temperature Curves



4. Operation Logs

Time	Event	Status	Action	Set Value	Actual Value
15:46:22	10/25/2016 7	3	3	Set Val	0
15:45:57	10/25/2016 7	1	1	Set Val	120.0
15:44:48	10/25/2016 7	1	1	Set Val	0
15:44:04	10/25/2016 7	1	1	Set Val	1.00
15:43:52	10/25/2016 7	1	1	Set Val	1.84
15:43:38	10/25/2016 7	1	1	Set Val	0
15:37:43	10/25/2016 7	1	1	Set Val	1
15:35:44	10/25/2016 7	1	1	Set Val	100
15:35:27	10/25/2016 7	1	1	Set Val	0
15:35:20	10/25/2016 7	1	1	Set Val	0
15:32:48	10/25/2016 7	1	1	Set Val	0
15:32:39	10/25/2016 7	1	1	Set Val	14.50
15:32:31	10/25/2016 7	1	1	Set Val	60.00
15:32:31	10/25/2016 7	1	1	Set Val	0
15:32:31	10/25/2016 7	1	1	Set Val	0
15:32:31	10/25/2016 7	1	1	Set Val	0
15:32:31	10/25/2016 7	1	1	Set Val	15.00

5. Molding Database

Time	Event	Status	Action	Set Value	Actual Value
15:46:22	10/25/2016 7	3	3	Set Val	0
15:45:57	10/25/2016 7	1	1	Set Val	120.0
15:44:48	10/25/2016 7	1	1	Set Val	0
15:44:04	10/25/2016 7	1	1	Set Val	1.00
15:43:52	10/25/2016 7	1	1	Set Val	1.84
15:43:38	10/25/2016 7	1	1	Set Val	0
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15:35:44	10/25/2016 7	1	1	Set Val	100
15:35:27	10/25/2016 7	1	1	Set Val	0
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15:32:31	10/25/2016 7	1	1	Set Val	60.00
15:32:31	10/25/2016 7	1	1	Set Val	0
15:32:31	10/25/2016 7	1	1	Set Val	0
15:32:31	10/25/2016 7	1	1	Set Val	0
15:32:31	10/25/2016 7	1	1	Set Val	15.00

6. Production Project

Time	Event	Status	Action	Set Value	Actual Value
15:46:22	10/25/2016 7	3	3	Set Val	0
15:45:57	10/25/2016 7	1	1	Set Val	120.0
15:44:48	10/25/2016 7	1	1	Set Val	0
15:44:04	10/25/2016 7	1	1	Set Val	1.00
15:43:52	10/25/2016 7	1	1	Set Val	1.84
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15:32:31	10/25/2016 7	1	1	Set Val	0
15:32:31	10/25/2016 7	1	1	Set Val	0
15:32:31	10/25/2016 7	1	1	Set Val	0
15:32:31	10/25/2016 7	1	1	Set Val	15.00

Control System

- 15-inch 16M colors TFT touch screen
- CPU: Intel Atom E3845 Processor Quad Core 1.91GH
- Delta DMCNET high-speed motion communication protocol, response speed within 1ms
- DIO/AIO expansion cards for users to adjust the hardware I/O based on demands, achieving system flexibility
- Ladder as programming language
- Real-time online monitoring function and sequence diagnosis tools for quick program debugs
- User-friendly display editor for interface customization

Specifications



Model	MH1-A12D-A03DH
CPU	Intel Atom Processor E3845 Quad Core 1.91GH
RAM	DDR3L-1333, 4GB
Operating System	Windows 7 Embedded
Storage Device	32G CFast
USB	4 ports
Communication Port	RS232 × 1



Model	AOP-J115P
Display	15"
Resolution	1024 × 768
Touch Screen	Resistive touch screen
Expansion Port	VGA × 1, USB × 3

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