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Shenzhen SC: 002851

# MV810J Electro-hydraulic Servo Drive

## Power Solutions

☐ Telecom Power ☐ Server Power ☐ Electric Power ☐ Medical Power ☐ Display Power ☐ LED Power
☐ Laser Power ☐ OA Power ☐ Flat Panel Power ☐ Bi-directional Inverters for Portable Power
☐ Solar & BESS & EV Charging Solution

## Industry Automation

■ Servo System ☐ Control System ☐ Elevator Controller ☐ Linear Motors ☐ IOT Solution ☐ Encoder
☐ Variable Frequency Drive ☐ Internal Gear Pump

## New Energy Solutions

☐ Multiplexed EV Charging System(OBC & DC-DC) ☐ Power Electronic Unit(2-in-1, 3-in-1)
☐ E-Compressor ☐ TV EDU ☐ Motor Control Unit ☐ Construction Machinery Controller
☐ Intelligent Active Hydraulic Suspension (i-AHS) ☐ Railway A/C Controller ☐ Railway VFD
☐ Light Electric Vehicle Controller ☐ Thermal Mgmt. System

## Home Appliance Control Solutions

☐ Residential A/C Controller ☐ Commercial A/C Controller ☐ Heat Pump Controller
☐ Vehicle A/C Controller ☐ Solar A/C Controller ☐ Mini Compressor Controller
☐ Refrigerator Controller ☐ Washer/Dryer Controller ☐ Residential Microwave
☐ Industrial Microwave ☐ Smart Bidet ☐ RF Thawing System

## Precision Connection

☐ FFC ☐ FPC ☐ Coaxial Cable ☐ CCS ☐ Litz Wire ☐ Peek Wire


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# ABOUT MEGMEET

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MEGMEET is committed to creating a cleaner living environment for all human beings through more efficient energy utilization and improved manufacturing efficiency. MEGMEET aims to become the world leader in electrical automation and achieve the goal of MEGMEET EVERYWHERE.

**2800+**
R&D Staff

**10**
R&D Centers

**9**
R&D Manufacturing Bases

**7600+**
Total Employees

**1990+**
No. of Patents & IP Rights




# Contents

# Servo Drive Features

## High reliability and stability

- Wide power range, adapted to different grid environments
- EMC design, ensuring reliable operation in environments with electromagnetic interference
- Full series servo design, tailored for high dynamic and high-intensity applications in injection molding
- Built-in DCL, optional for 30 to 110 kW and standard for 132 to 160 kW
- Built-in braking unit for drives of 110 kW and below, facilitating installation and improving reliability
- PCB conformal coating, protecting the drive against moisture, oil mist, dust, particles and other harsh conditions
- Motor temperature detection and protection (both PTC and KTY84 supported), and pressure sensor power supply fault protection, ensuring safe and stable operation of the injection molding system

## Multi-pump convergent flow and distributed/convergent flow control

### Multi-pump convergent flow

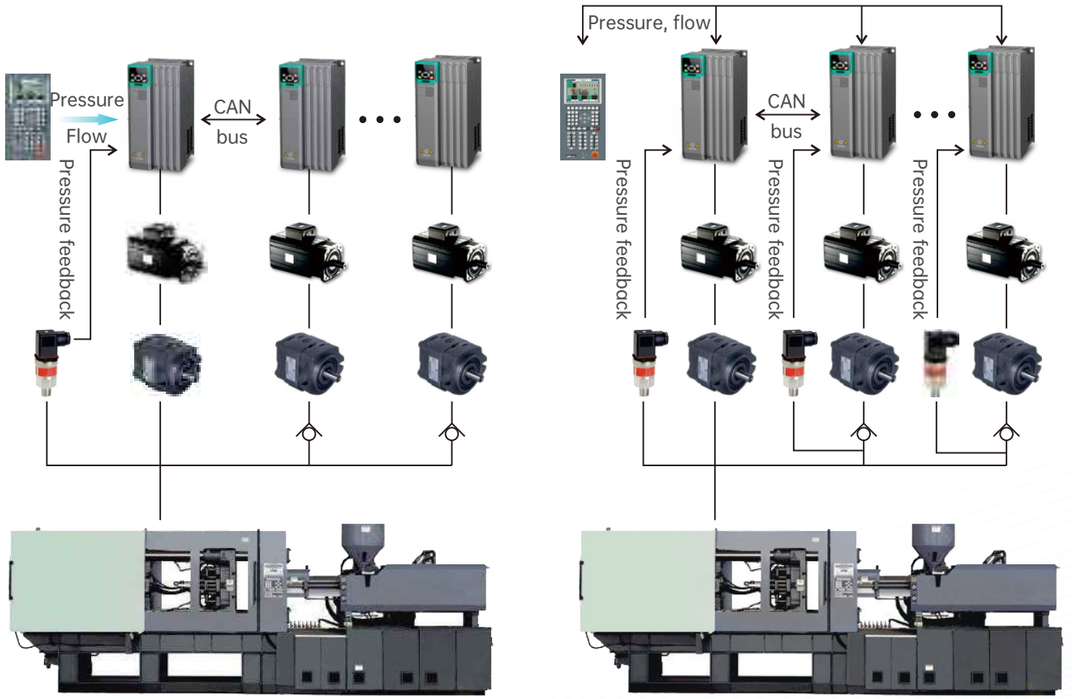
- Synchronous running for the same large unit
- Only required to set the master and the slave, communicated through high-speed CAN bus
- Simplified commissioning, oil pressure response entirely controlled by the master's PI, with the slave following the master's actions
- During pressure holding, the master can automatically disengage the slave for more energy-efficient operation
- Special handling for unstable motor speed during the plasticizing process when processing high-hardness materials

### Multi-pump distributed/convergent flow

In a multi-pump hydraulic injection molding machine system, an integrated control scheme combining convergent and distributed flow of multiple pumps can be employed. The injection molding system switches modes according to the actual process requirements, offering advantages such as greater energy efficiency and higher productivity compared to a pure multi-pump convergent flow system.

## Dual-displacement pump control

- Appropriate displacement switching for greater energy efficiency
- Fast response, rapid cycling, and higher precision
- High-sensitivity overflow for enhanced reliability
- Power-saving configuration for greater environmental friendliness



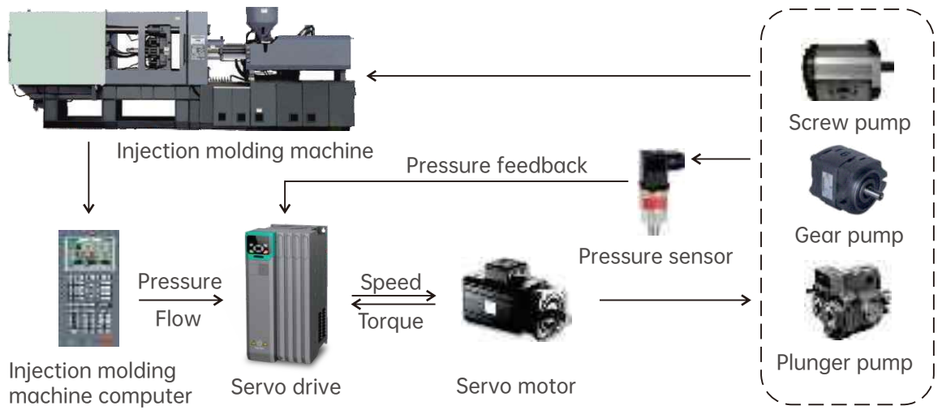

Multi-pump convergent flow | Multi-pump convergent/distributed flow

## Simplified parameter setting

- Frequently used default parameters, meeting over 90% of on-site operational requirements
- Multiple motor auto-tuning options available
- Rich parameter display on the operating panel
- Multiple sets of PIs, automatically switched to control system response and overshoot
- Convenient PC TOOLING debugging software

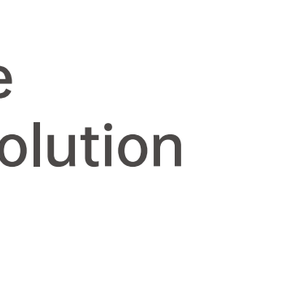
# Injection Molding Machine Hydraulic Servo System Solution

## Servo pump system components

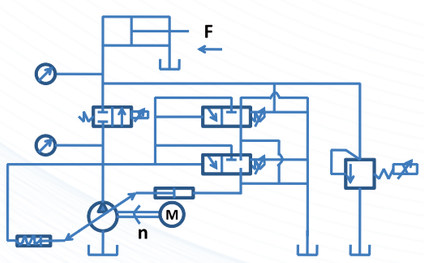



## Comparison of pump systems

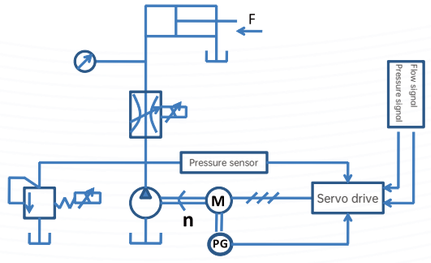
Traditional fixed-displacement pump injection molding machines suffer from significant energy waste. According to statistics, their maximum operational efficiency does not exceed 40%, making energy-saving modifications for these machines imperative.
Variable-displacement pump injection molding machines, from the perspective of hydraulic components, explore energy-saving potential in the oil circuit, thereby improving the efficiency of the hydraulic system. However, limited by their control methods, these systems cannot eliminate throttling and overflow losses.
Servo-driven injection molding machines, from the standpoint of electrical control, revamp the traditional oil circuit through speed regulation methods. Leveraging the precision, speed, and reliability of modern control system, they can eliminate throttling losses at the source and reduce overflow losses.



Fixed-displacement pump system



Variable-displacement pump system



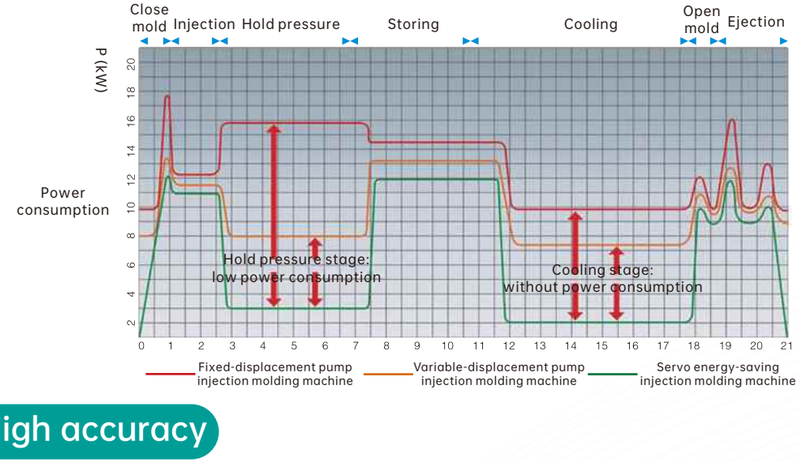
Servo pump system



# Injection Molding Machine Hydraulic Servo System Advantages

## Energy-saving

Servo drives utilize modern control technologies to fully leverage the speed regulation capabilities of servo motors. Combined with high-speed, high-response PID algorithms, they supply power on demand. Compared to traditional fixed-displacement or variable-displacement pump systems, the maximum energy-saving rate can exceed 80%.




## High accuracy

### High repeatability of position

The rapid response of the servo drive to pressure and flow ensures the precision of mold opening and closing in the injection molding machine. The end position error of injection can be controlled within 0.1 mm.

### High accuracy of pressure control

The servo drive employs a high-speed DSP, combined with optimized high-response, high-speed PID algorithms, ensuring system pressure stability. Pressure fluctuations can be controlled within ±0.5 bar.

## High efficiency

### High motor speed

Compared to traditional asynchronous motors, the higher speed of servo motors enhances the output of the oil pump, improving the overall efficiency of the injection molding machine.

### Fast response

The fastest response speed can reach 20 ms, effectively increasing the pressure build-up speed of the hydraulic system.

## Low noise

Relying on the optimized PID control algorithms of the servo drive and high-performance permanent magnet servo motors, the working noise of the injection molding machine is significantly reduced, achieving quiet operation and effectively improving the working environment.

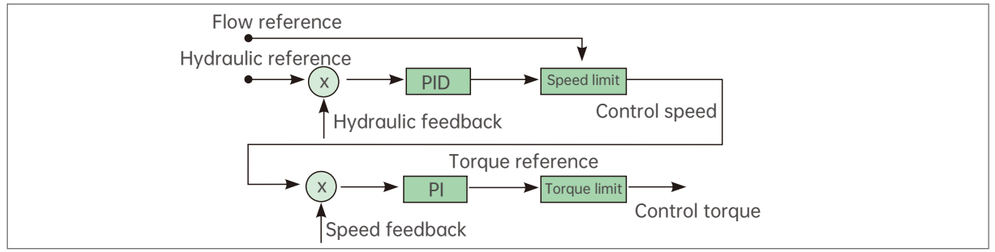
# MV810J Advantages

- The pressure sensor AI channel is a 12-bit AD, offering higher precision
- Soft decoding of motor resolver PG feedback provides stronger anti-interference capability
- Dual CAN channels are standard for 90 kW and above, while external CAN is optional for 75 kW and below, achieving more flexible system control
- The host controller USB debugging interface enables online hydraulic pressure monitoring
- Optimized hydraulic pressure loop and motor control algorithms
- Voltage stabilization accuracy can be controlled within ±0.5 bar
- A brand-new core hardware platform with a compact structure



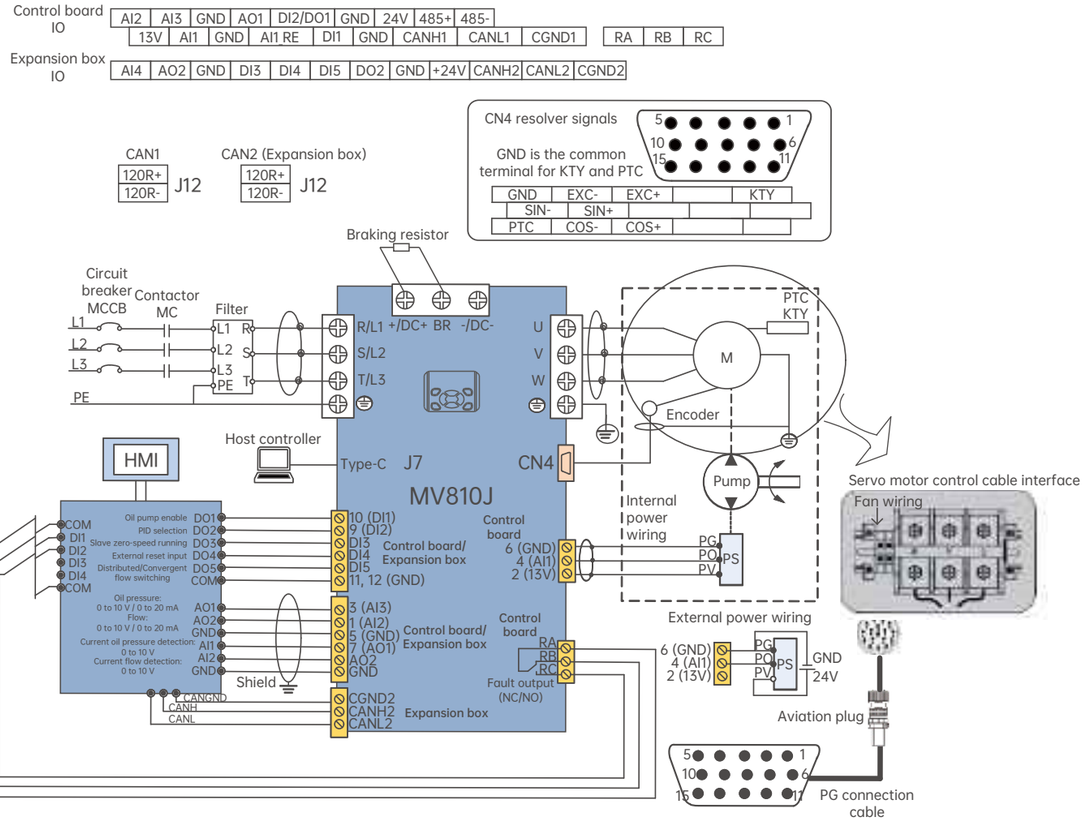
# MV810J Single System Control

## Pressure and flow control algorithm

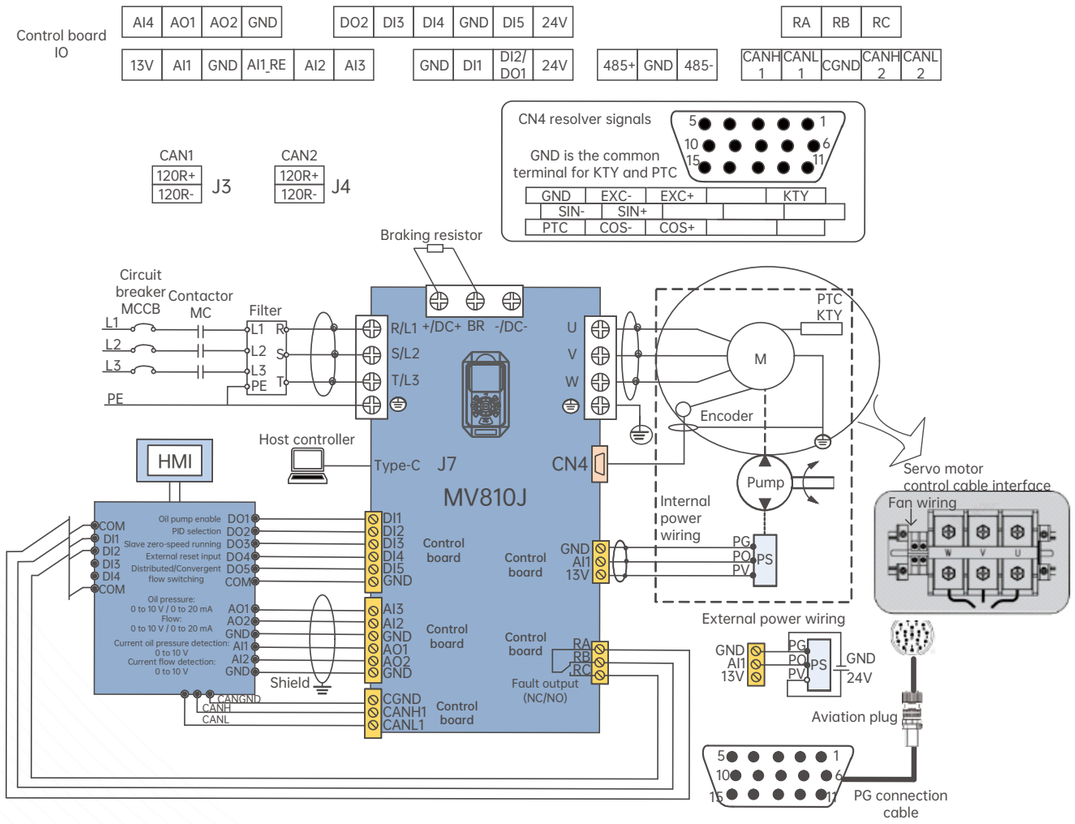



Pressure and flow control algorithm

## Main circuit and control circuit terminal wiring (Small control board + Expansion box)

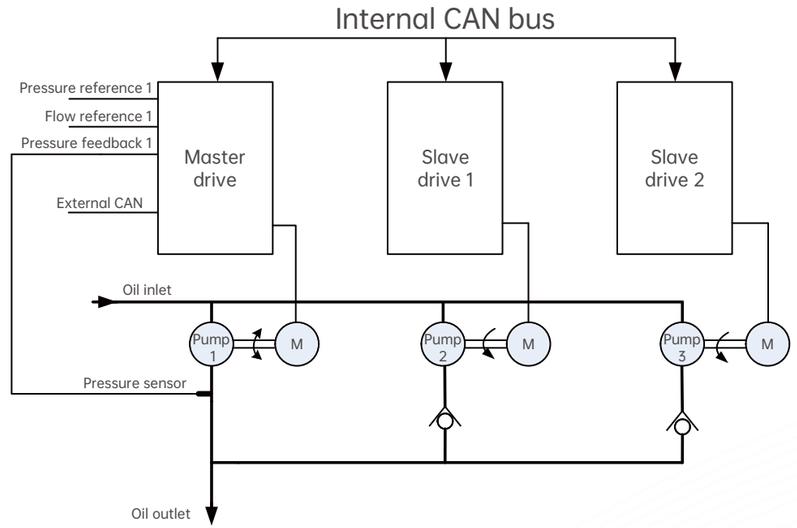


## Main circuit and control circuit terminal wiring (Large control board)

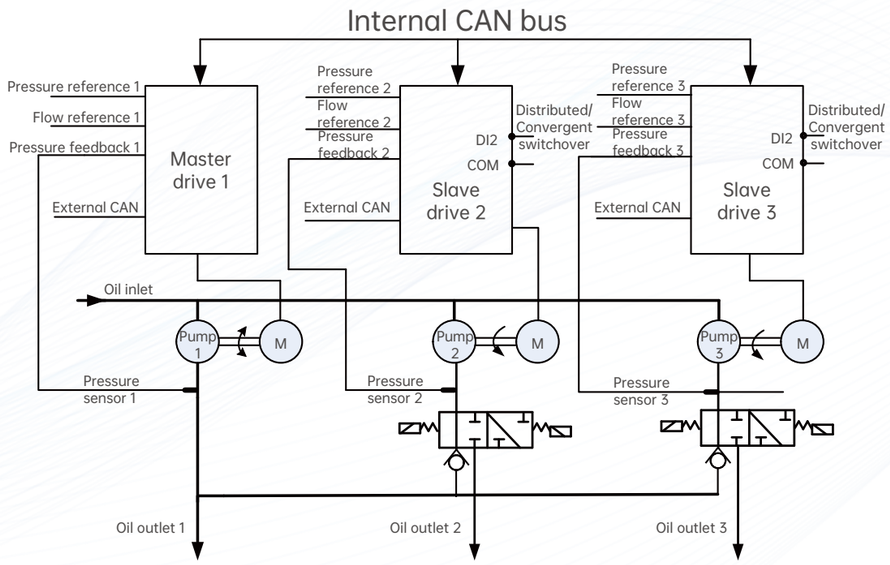



# MV810J Multi-System Control

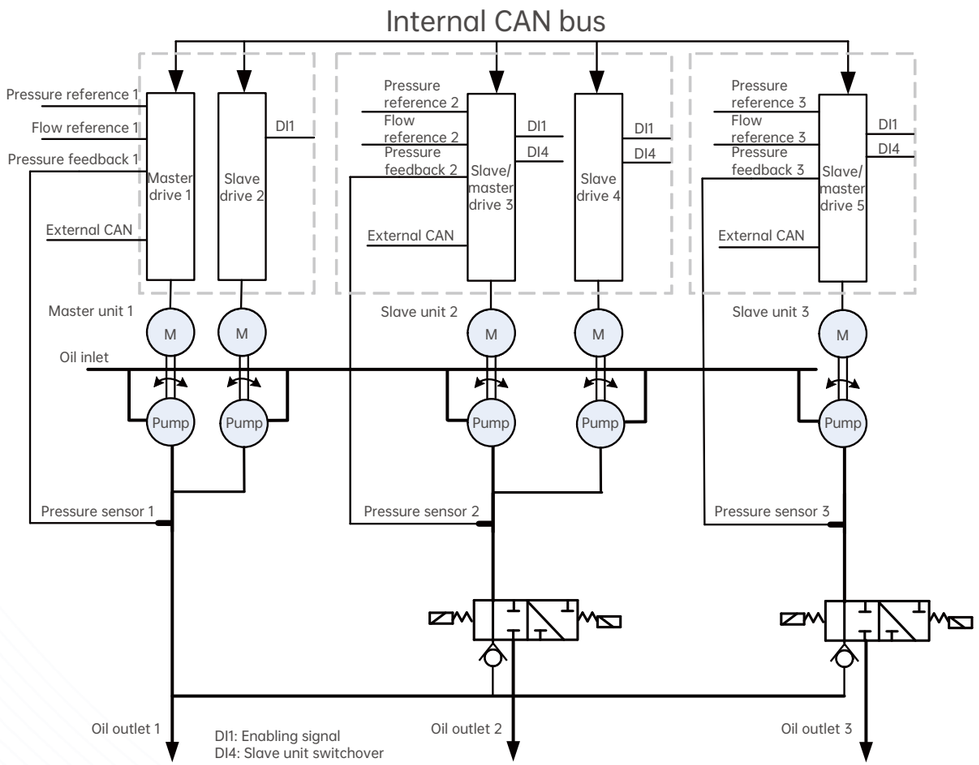
## Single-master multi-slave compound




## Single-master multi-slave distributed/convergent flow



## Multi-master multi-slave convergent flow




# Field Test Waveforms

### Building pressure


Building pressure time of 175 bar is 64.5 ms.

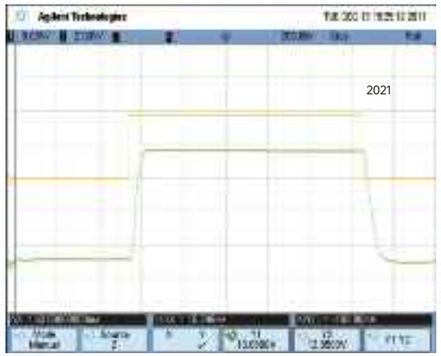
### Unloading pressure


Unloading pressure time of 175 bar is less than 100 ms.

### Holding pressure


Pressure sensor range 250 bar, 0 to 10 V output.
During pressure holding at 175 bar,
the pressure fluctuation is ±0.65 bar.

### Full cycle




Fast response to cyclical building pressure,
holding pressure, unloading pressure commands.

# Servo Drive Quick Selection

## Calculate the torque required by the pump to select the motor

To generate certain pressure p (bar) for a pump with a rated displacement q (ml/rev), according to the hydraulic theory, the torque required to drive the pump is calculated as follows:

$$T_{pump}=0.0159*p*q\ (N\cdot m)$$

Considering that the motor has a certain overload capacity, and the injection molding machine is not always operating at maximum torque, the rated torque of the pump motor is calculated as follows:

$$T_{motor}=T_{pump}/1.4\sim1.6$$

Refer to the relevant motor parameter table and first select the motor torque. Based on data provided by different motor manufacturers, there are typically three speed ranges for a given motor torque: 1500 rpm, 1700 rpm, and 2000 rpm. Select the appropriate speed based on the system's configured pump to finalize the motor.

## Calculate the drive's rated current to select the drive

Once the motor is determined, calculate the maximum current required by the drive based on the motor's kt value:

$$I_{drive\ max}=T_{pump}/kt$$

Calculate the drive's rated current based on 1.5 times overload for 1 minute:

$$I\ rated=1.2 * I_{drive\ max}/1.5$$

Note: Due to variations in the accuracy of parameters provided by different motor and oil pump manufacturers, a safety factor of 1.2 should be applied during drive selection to enhance system safety and stability.

Based on the drive's rated current, the drive model can be preliminarily selected.



# Servo Drive Naming Rule and Specifications

MV810 J 1 - 4 T 30 A
1 2 3 4 5 6 7

**1 Product series**
MV810:
MV810 series platform

**2 Industry**
J: Hydraulic servo
G: General
S: Servo positioning
T: Tension control
L: Lifting

**3 Product iteration**
1: First-generation

**4 Input voltage class**
2: 220 V
4: 380 V

**5 Input voltage phase**
T: Three-phase

**6 Power rating**
(15 to 160 kW)
30: 30 kW

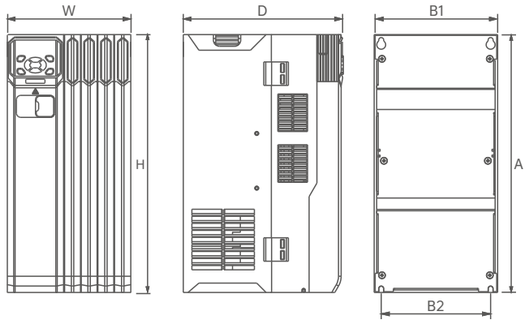
**7 Expansion box**
A: Without box
B: With box
Null: Already integrated

Note:
The small control board and expansion box are suitable for 4T15 to 75. The expansion box is an option (expansion box will be included when you select B for the model name).
The large control board is suitable for 4T90 to 160, and the large control board already integrates all terminal functions of the expansion box.

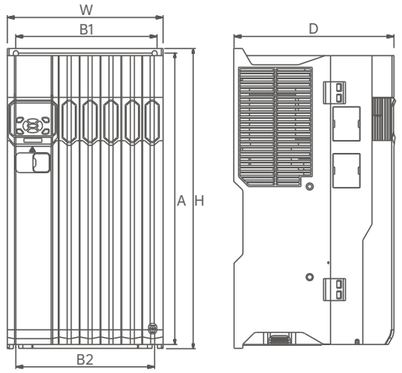
| Drive model | Rated capacity (kVA) | Rated input current (A) | Rated output current (A) | Recommended braking resistor (Ω) | Braking torque (%) | Braking unit | Note |
|---|---|---|---|---|---|---|---|
| Three-phase 380 V to 480 V, ±10% | | | | | | | |
| MV810J1-4T15* | 21.0 | 35.0 | 32.0 | 38 | 120 | Built-in | Plastic |
| MV810J1-4T18.5* | 24.0 | 49.0 | 37.0 | 33 | 120 | Built-in | Plastic |
| MV810J1-4T22* | 30.0 | 58.0 | 45.0 | 27 | 120 | Built-in | Plastic |
| MV810J1-4T30* | 39.0 | 62.0 | 60.0 | 20 | 120 | Built-in | Plastic |
| MV810J1-4T37* | 49.0 | 76.0 | 75.0 | 16 | 120 | Built-in | Plastic |
| MV810J1-4T45* | 59.0 | 92.0 | 90.0 | 13 | 120 | Built-in | Plastic |
| MV810J1-4T55* | 72.0 | 113.0 | 110.0 | 10.5 | 120 | Built-in | Plastic |
| MV810J1-4T75* | 100.0 | 157.0 | 152.0 | 7.7 | 120 | Built-in | Plastic |
| MV810J1-4T90 | 115.0 | 180.0 | 176.0 | 5.1 | 120 | Built-in | Sheet metal |
| MV810J1-4T110 | 138.0 | 214.0 | 210.0 | 4.0 | 120 | Built-in | Sheet metal |
| MV810J1-4T132 | 166.0 | 256.0 | 253.0 | 3.4 | 130 | MDBU-4-132 | Sheet metal |
| MV810J1-4T160 | 200.0 | 307.0 | 304.0 | 1.4 | 140 | MDBU-4-200 | Sheet metal |

# Servo Drive Dimensions

## Enclosure E

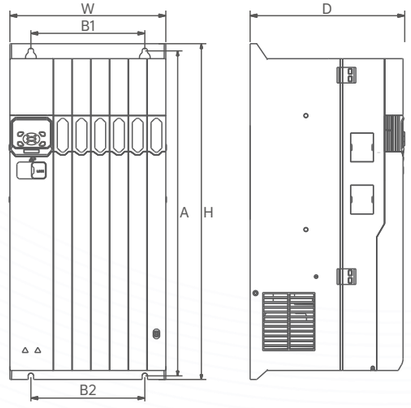



## Enclosure F




| Enclosure | Drive model | A (mm) | B1 (mm) | B2 (mm) | H (mm) | W (mm) | D (mm) | Mounting hole diameter (mm) |
|---|---|---|---|---|---|---|---|---|
| E | MV810J1-4T15*<br>MV810J1-4T18.5*<br>MV810J1-4T22* | 318 | 140 | 140 | 330 | 158 | 204.8 | 6 |
| F | MV810J1-4T30*<br>MV810J1-4T37* | 412 | 196 | 196 | 424 | 220 | 229 | 7 |

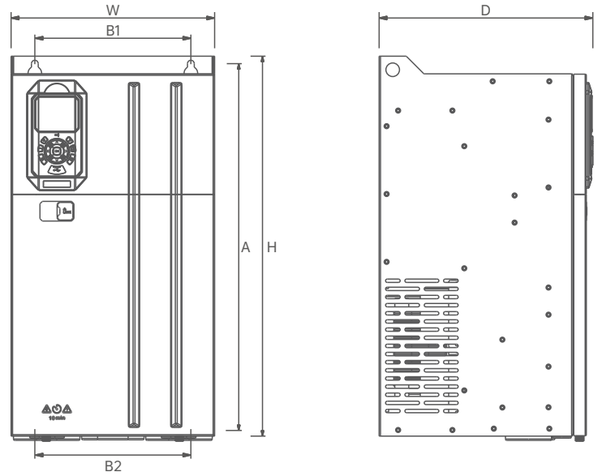
## Enclosure G




| Enclosure | Drive model | A (mm) | B1 (mm) | B2 (mm) | H (mm) | W (mm) | D (mm) | Mounting hole diameter (mm) |
|---|---|---|---|---|---|---|---|---|
| G | MV810J1-4T45*<br>MV810J1-4T55*<br>MV810J1-4T75* | 542 | 190 | 190 | 560 | 260 | 255 | 9 |

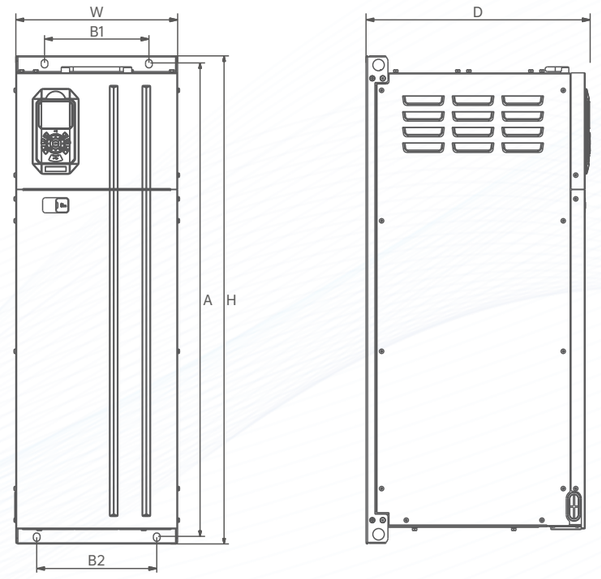


## Enclosure H




| Enclosure | Drive model | A (mm) | B1 (mm) | B2 (mm) | H (mm) | W (mm) | D (mm) | Mounting hole diameter (mm) |
|---|---|---|---|---|---|---|---|---|
| H | MV810J1-4T90<br>MV810J1-4T110 | 539 | 230 | 230 | 560 | 300 | 300 | 10 |

## Enclosure I




| Enclosure | Drive model | A (mm) | B1 (mm) | B2 (mm) | H (mm) | W (mm) | D (mm) | Mounting hole diameter (mm) |
|---|---|---|---|---|---|---|---|---|
| I | MV810J1-4T132<br>MV810J1-4T160 | 875 | 230 | 230 | 900 | 310 | 429 | 10 |

# Servo Motor Advantages
# High Precision & Fast Response
# High Efficiency & Energy Saving

- The embedded permanent magnet structure enhances weak magnetic overspeed and anti-demagnetization capabilities, meeting various operational requirements.
- An industry-leading design platform provides motors with compact size, lightweight, low noise, strong overload capacity, and excellent electromagnetic performance.
- A mature production and manufacturing system, with robust processes and quality standards, guarantees stable and reliable product quality.
- Permanent magnets sourced from leading domestic manufacturers offer high performance, low loss, high efficiency, low temperature rise, small current and high torque.
- Built-in PTC and KTY temperature sensors provide more protection.
- Non-standard customization is available.
- A 9-core, 6-meter-long encoder cable is included as an accessory.

# Motor Naming Rule

SPM - T I R 20 15D - F J

1 2 3 4 5 6 7 8

**1 Product series**
SPM:
SPM series servo motor

**2 Rated voltage**
S: 220 V
T: 380 V

**3 Rated speed**
D: 1500 rpm
E: 2000 rpm
I: 1700 rpm

**4 Encoder type**
A:
17-bit multi-turn optical encoder
B:
23-bit multi-turn optical encoder
L:
5000-line full-line incremental encoder
M:
2500-line full-line incremental encoder
N: No encoder
R: Rotary encoder

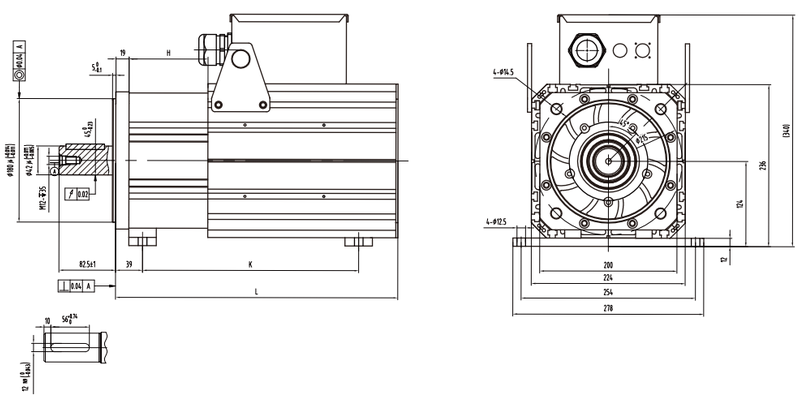
**5 Frame dimensions**
20: 200*200 mm
26: 264*264 mm
36: 365*365 mm

**6 Rated motor power (number & letter)**
A: Number × 1
B: Number × 10
C: Number × 100
D: Number × 1000
E: Number × 10000

**7 Cooling method**
F: Air cooling
Y: Liquid cooling
A: Self cooling

**8 Design version**
J: Version J

# Servo Motor Dimensions (200*200 frame)

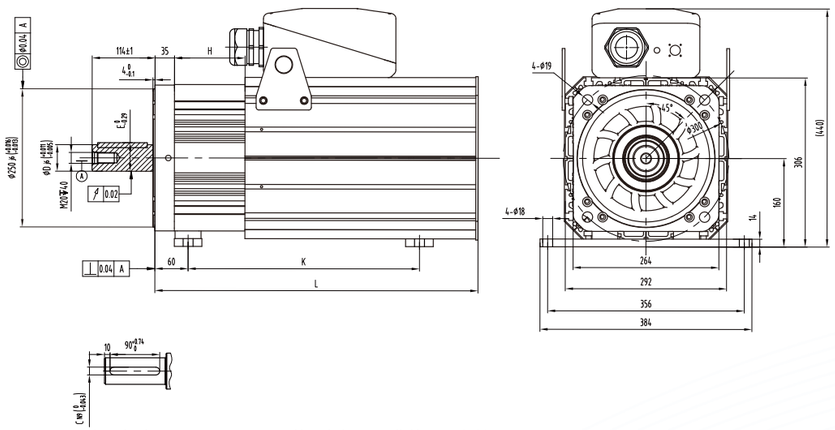



Standard accessory: Type A round head plain parallel key 12×8×56
Reference: GB/T 1096

| Motor model | SPM-TDR2086C | SPM-TDR2013D | SPM-TDR2017D | SPM-TDR2020D | SPM-TDR2025D | SPM-TDR2028D | SPM-TDR2032D |
|---|---|---|---|---|---|---|---|
| | SPM-TIR2010D | SPM-TIR2015D | SPM-TIR2019D | SPM-TIR2023D | SPM-TIR2028D | SPM-TIR2031D | SPM-TIR2037D |
| | SPM-TER2011D | SPM-TER2017D | SPM-TER2022D | SPM-TER2027D | SPM-TER2033D | SPM-TER2036D | SPM-TER2041D |
| L (mm) | 342 | 377 | 411 | 446 | 482 | 519 | 553 |
| K (mm) | 265 | 285 | 310 | 350 | 395 | 430 | 470 |
| Weight (kg) | 37 | 45 | 52 | 59 | 66 | 73 | 80 |



# Servo Motor Dimensions (264*264 frame)




Standard accessory: Type A round head plain parallel key 14×9×90
Reference: GB/T 1096

| Motor model | SPM-TDR2635D | SPM-TDR2639D | SPM-TDR2647D | SPM-TDR2659D | SPM-TDR2669D | SPM-TDR2679D | SPM-TDR2688D |
|---|---|---|---|---|---|---|---|
| | SPM-TIR2640D | SPM-TIR2645D | SPM-TIR2653D | SPM-TIR2666D | SPM-TIR2677D | SPM-TIR2689D | SPM-TIR2699D |
| | SPM-TER2646D | SPM-TER2652D | SPM-TER2662D | SPM-TER2677D | SPM-TER2690D | SPM-TER2610E | SPM-TER2612E |
| L (mm) | 523.5 | 560 | 585 | 637 | 689 | 740 | 791 |
| K (mm) | 365.5 | 365.5 | 419 | 473 | 526 | 600 | 653 |
| C (mm) | $14^{\ 0}_{-0.027}$ | $14^{\ 0}_{-0.027}$ | $14^{\ 0}_{-0.027}$ | $14^{\ 0}_{-0.027}$ | $14^{\ 0}_{-0.027}$ | $18^{\ 0}_{-0.027}$ | $18^{\ 0}_{-0.027}$ |
| D (mm) | $48^{+0.011}_{-0.005}$ | $48^{+0.011}_{-0.005}$ | $48^{+0.011}_{-0.005}$ | $48^{+0.011}_{-0.005}$ | $48^{+0.011}_{-0.005}$ | $60^{+0.03}_{-0.011}$ | $60^{+0.03}_{+0.011}$ |
| Weight (kg) | 122 | 135 | 141 | 158 | 175 | 195 | 217 |

# Motor Parameters

## 1500 rpm

| Motor model | Rated power (kW) | Rated current (A) | Rated torque (N·m) | Rated speed (rpm) | Rated frequency (Hz) | Back-EMF (V) | Kt Thermal state | Pole number 2P | Peak speed (rpm) | Peak torque (N·m) | Peak current (A) | Inertia (kg·cm²) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SPM-TDR2009D-F | 8.6 | 16.3 | 55 | 1500 | 100 | 316 | 3.37 | 8 | 2200 | 88 | 27.5 | 60 |
| SPM-TDR2013D-F | 13.2 | 24.6 | 84 | 1500 | 100 | 316 | 3.41 | 8 | 2200 | 145 | 45 | 75 |
| SPM-TDR2017D-F | 17 | 31.8 | 108 | 1500 | 100 | 316 | 3.4 | 8 | 2200 | 195 | 63 | 90 |
| SPM-TDR2020D-F | 20.4 | 39.2 | 130 | 1500 | 100 | 320 | 3.32 | 8 | 2200 | 248 | 83 | 105 |
| SPM-TDR2025D-F | 24.5 | 44.7 | 156 | 1500 | 100 | 316 | 3.49 | 8 | 2200 | 300 | 104 | 120 |
| SPM-TDR2028D-F | 28.3 | 52 | 180 | 1500 | 100 | 316 | 3.46 | 8 | 2200 | 360 | 120 | 137 |
| SPM-TDR2032D-F | 32.2 | 61.8 | 205 | 1500 | 100 | 331 | 3.32 | 8 | 2200 | 400 | 140 | 15 |
| SPM-TDR2635D-F | 35.4 | 66 | 225 | 1500 | 100 | 316 | 3.42 | 8 | 2200 | 355 | 152 | 296 |
| SPM-TDR2639D-F | 39.2 | 73.3 | 250 | 1500 | 100 | 320 | 3.41 | 8 | 2200 | 400 | 165 | 345 |
| SPM-TDR2647D-F | 47.2 | 89.5 | 300 | 1500 | 100 | 316 | 3.35 | 8 | 2200 | 500 | 180 | 368 |
| SPM-TDR2659D-F | 58.8 | 112 | 375 | 1500 | 100 | 320 | 3.34 | 8 | 2200 | 600 | 228 | 434 |
| SPM-TDR2669D-F | 69.1 | 129 | 440 | 1500 | 100 | 316 | 3.41 | 8 | 2200 | 675 | 230 | 500 |
| SPM-TDR2679D-F | 79 | 149 | 503 | 1500 | 100 | 316 | 3.39 | 8 | 2200 | 750 | 260 | 576 |
| SPM-TDR2688D-F | 87.9 | 170 | 560 | 1500 | 100 | 320 | 3.3 | 8 | 2200 | 830 | 292 | 640 |



# Motor Parameters

## 1700 rpm

| Motor model | Rated power (kW) | Rated current (A) | Rated torque (N·m) | Rated speed (rpm) | Rated frequency (Hz) | Back-EMF (V) | Kt Thermal state | Pole number 2P | Peak speed (rpm) | Peak torque (N·m) | Peak current (A) | Inertia (kg·cm²) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SPM-TIR2010D-F | 9.8 | 18.5 | 55 | 1700 | 113.3 | 307 | 2.97 | 8 | 2500 | 89 | 32.5 | 60 |
| SPM-TIR2015D-F | 15 | 28.3 | 84 | 1700 | 113.3 | 319 | 2.97 | 8 | 2500 | 147 | 54 | 75 |
| SPM-TIR2019D-F | 18.7 | 35.3 | 105 | 1700 | 113.3 | 306 | 2.97 | 8 | 2500 | 202 | 74 | 90 |
| SPM-TIR2023D-F | 23 | 44.8 | 129 | 1700 | 113.3 | 319 | 2.88 | 8 | 2500 | 247 | 89 | 105 |
| SPM-TIR2028D-F | 27.8 | 53.3 | 156 | 1700 | 113.3 | 319 | 2.93 | 8 | 2500 | 302 | 110 | 120 |
| SPM-TIR2031D-F | 31.3 | 61.5 | 176 | 1700 | 113.3 | 314 | 2.86 | 8 | 2500 | 375 | 138 | 137 |
| SPM-TIR2037D-F | 36.5 | 70 | 205 | 1700 | 113.3 | 306 | 2.93 | 8 | 2500 | 425 | 157 | 15 |
| SPM-TIR2640D-F | 39.7 | 75.8 | 223 | 1700 | 113.3 | 320 | 2.94 | 8 | 2500 | 440 | 162 | 296 |
| SPM-TIR2645D-F | 44.5 | 67.6 | 250 | 1700 | 113.3 | 324 | 2.98 | 8 | 2500 | 460 | 170 | 345 |
| SPM-TIR2653D-F | 52.7 | 99.3 | 296 | 1700 | 113.3 | 324 | 2.98 | 8 | 2500 | 510 | 180 | 368 |
| SPM-TIR2666D-F | 65.9 | 128 | 370 | 1700 | 113.3 | 320 | 2.9 | 8 | 2500 | 600 | 225 | 434 |
| SPM-TIR2677D-F | 77.4 | 149 | 435 | 1700 | 113.3 | 307 | 2.92 | 8 | 2500 | 670 | 255 | 500 |
| SPM-TIR2689D-F | 89 | 173 | 500 | 1700 | 113.3 | 328 | 2.9 | 8 | 2500 | 755 | 280 | 576 |
| SPM-TIR2699D-F | 98.6 | 206 | 554 | 1700 | 113.3 | 307 | 2.68 | 8 | 2500 | 830 | 340 | 640 |

# Motor Parameters

## 2000 rpm

| Motor model | Rated power (kW) | Rated current (A) | Rated torque (N·m) | Rated speed (rpm) | Rated frequency (Hz) | Back-EMF (V) | Kt Thermal state | Pole number 2P | Peak speed (rpm) | Peak torque (N·m) | Peak current (A) | Inertia (kg·cm²) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SPM-TER2011D-F | 11.3 | 21 | 54 | 2000 | 133.3 | 311 | 2.57 | 8 | 2600 | 88 | 36 | 60 |
| SPM-TER2017D-F | 17.4 | 31.6 | 82 | 2000 | 133.3 | 316 | 2.59 | 8 | 2600 | 145 | 62 | 75 |
| SPM-TER2022D-F | 21.8 | 38.3 | 104 | 2000 | 133.3 | 321 | 2.72 | 8 | 2600 | 194 | 80 | 90 |
| SPM-TER2027D-F | 26.8 | 51.3 | 128 | 2000 | 133.3 | 326 | 2.5 | 8 | 2600 | 248 | 110 | 105 |
| SPM-TER2033D-F | 32.5 | 60.9 | 155 | 2000 | 133.3 | 331 | 2.55 | 8 | 2600 | 310 | 140 | 120 |
| SPM-TER2036D-F | 36.4 | 66.8 | 174 | 2000 | 133.3 | 316 | 2.6 | 8 | 2600 | 355 | 154 | 137 |
| SPM-TER2041D-F | 40.8 | 74 | 195 | 2000 | 133.3 | 321 | 2.64 | 8 | 2600 | 400 | 185 | 15 |
| SPM-TER2646D-F | 46 | 86.7 | 220 | 2000 | 133.3 | 316 | 2.54 | 8 | 2600 | 440 | 200 | 296 |
| SPM-TER2652D-F | 51.5 | 92 | 245 | 2000 | 133.3 | 320 | 2.6 | 8 | 2600 | 460 | 210 | 345 |
| SPM-TER2662D-F | 61.6 | 109 | 294 | 2000 | 133.3 | 321 | 2.7 | 8 | 2600 | 510 | 222 | 368 |
| SPM-TER2677D-F | 77 | 146 | 368 | 2000 | 133.3 | 326 | 2.52 | 8 | 2600 | 595 | 273 | 434 |
| SPM-TER2690D-F | 90 | 170 | 430 | 2000 | 133.3 | 331 | 2.53 | 8 | 2600 | 670 | 308 | 500 |
| SPM-TER2610E-F | 104 | 187 | 498 | 2000 | 133.3 | 316 | 2.66 | 8 | 2600 | 755 | 330 | 576 |
| SPM-TER2612E-F | 115 | 206 | 550 | 2000 | 133.3 | 321 | 2.67 | 8 | 2600 | 810 | 345 | 640 |



# Recommended Servo System Configuration

| Pump displacement (cc) | System pressure (Mpa) | Max. speed (rpm) | Motor model | Drive model |
|---|---|---|---|---|
| 40 | 14 | 2200 | SPM-TIR2015D | MV810J1-4T15* |
| 50 | 14 | 2200 | SPM-TIR2019D | MV810J1-4T18.5* |
| 63 | 14 | 2200 | SPM-TIR2023D | MV810J1-4T22* |
| 80 | 14 | 2200 | SPM-TIR2028D | MV810J1-4T30* |
| 100 | 14 | 2200 | SPM-TIR2037D | MV810J1-4T37* |
| 125 | 14 | 2200 | SPM-TIR2645D | MV810J1-4T45* |
| 160 | 14 | 2200 | SPM-TIR2653D | MV810J1-4T55* |

| Pump displacement (cc) | System pressure (Mpa) | Max. speed (rpm) | Motor model | Drive model |
|---|---|---|---|---|
| 32 | 17.5 | 2200 | SPM-TIR2015D | MV810J1-4T15* |
| 40 | 17.5 | 2200 | SPM-TIR2019D | MV810J1-4T18.5* |
| 50 | 17.5 | 2200 | SPM-TIR2023D | MV810J1-4T22* |
| 63 | 17.5 | 2200 | SPM-TIR2028D | MV810J1-4T30* |
| 80 | 17.5 | 2200 | SPM-TIR2037D | MV810J1-4T37* |
| 100 | 17.5 | 2200 | SPM-TIR2645D | MV810J1-4T45* |
| 125 | 17.5 | 2200 | SPM-TIR2653D | MV810J1-4T55* |
| 160 | 17.5 | 2200 | SPM-TIR2666D | MV810J1-4T75* |

| Pump displacement (cc) | System pressure (Mpa) | Max. speed (rpm) | Motor model | Drive model |
|---|---|---|---|---|
| 32 | 21 | 2200 | SPM-TIR2019D | MV810J1-4T18.5* |
| 40 | 21 | 2200 | SPM-TIR2023D | MV810J1-4T22* |
| 50 | 21 | 2200 | SPM-TIR2028D | MV810J1-4T30* |
| 63 | 21 | 2200 | SPM-TIR2037D | MV810J1-4T37* |
| 80 | 21 | 2200 | SPM-TIR2645D | MV810J1-4T45* |
| 100 | 21 | 2200 | SPM-TIR2653D | MV810J1-4T55* |
| 125 | 21 | 2200 | SPM-TIR2666D | MV810J1-4T75* |
| 160 | 21 | 2200 | SPM-TIR2677D | MV810J1-4T90 |

# Industrial Automation Solutions

## Communication Layer

EtherNet/IP
Modbus TCP


2G/3G/4G/Ethernet


PC


Supervisory Control and Data Acquisition (SCADA)


Enterprise Resource Planning (ERP)


Manufacturing Execution System (MES)


Computer-Aided Manufacturing Artwork System (CAM)

## Control Layer

EtherCAT
CANopen
EtherNet/IP
Modbus TCP


MC6000 Series Medium PLC


MC5000 Series Medium PLC


MC700 Series Controller


MU300 Series PLC


MU200 Series PLC


Industrial Power supply


HMI


MC5000S-ET Remote Module


MC5000S-EIP Remote Module


MC5000S-PN Remote Module


MTCW Thermostat


MDT Thermostat


MQT Thermostat


MCP Injection Molding Machine Controller


Visual System

## Drive Layer

EtherCAT
CANopen
Modbus TCP
PROFINET
MECHATROLINK

General Purpose Servo Drive


M6 M5 SVM

General Purpose AC Drive


MV800 MV260

Air Conditioning


MHP260

Lifting Industry


MV600L SMILE3000

Machine Tool Industry


SPS S6

Engineering Vehicles


Meter L6

Plastic Machine Industry


MV600J Electro-Hydraulic Servo

## Execution Layer

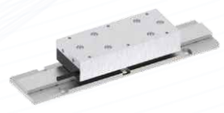

SPM Servo Motor


L6 Motor


Motor Spindle


Asynchronous Motor


DD Motor


Linear Motor


Encoder


Internal Gear Pump