

## Servo motor 『MP series』



- We utilize servo technology has proven extensive in-house industrial robots worldwide market share.
- This servo has the advantage of low cost motor knowledge of the world's top consumer market share.
- Servo motor has its own factory in China more than two million units per month.
- Servo motor encoder is a product developed internally.

### ★Motor

Press case adoption

It is lineup as for □42 (50W/100W) □62 (200W/400W) □80 (750W)

### ★Encoder

1x Magnetics absolute encoder (12 bit/multi turn)

This encoder becomes possible so far making to the gap wider than the type, and secures high productivity and reliability.

### ★Driver

Board type to separate power supply and drive in consideration of multi axis servo application.

Drive circuit is One model of 750W.

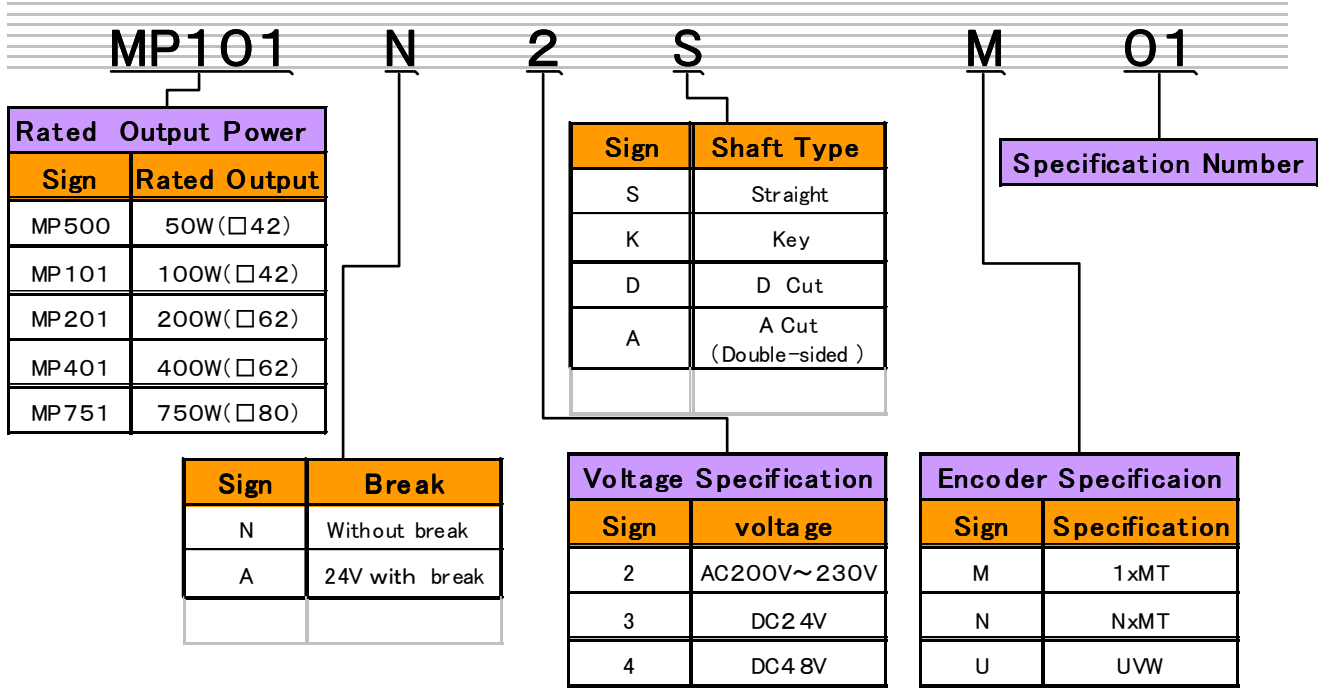
Power supply circuit is Three models of ~200W/~400W/~750W.

The case optional is set.

### [Applications]

■ Robot ■ textile machinery ■ general industrial machinery ■ semiconductor and of device related to liquid crystal manufacturing food manufacturing machine etc

◆ Motor Model



◆ Motor Specification

AC200V~230V

| Item                            | Unit                                | Specification                  |                                      |         |         |         |       |       |
|---------------------------------|-------------------------------------|--------------------------------|--------------------------------------|---------|---------|---------|-------|-------|
| <b>Voltage</b>                  |                                     | 200V                           |                                      |         |         |         |       |       |
| <b>Motor Model (MP□□□□□□□□)</b> |                                     | 500□2□M                        | 101□2□M                              | 201□2□M | 401□2□M | 751□2□M |       |       |
| <b>Flange</b>                   |                                     | □42                            | □42                                  | □62     | □62     | □80     |       |       |
| <b>Driver Model</b>             |                                     | DJ23D01                        |                                      |         |         |         |       |       |
| Basic<br>Spec                   | <b>Ratead Output</b>                | W                              | 50                                   | 100     | 200     | 400     | 750   |       |
|                                 | <b>Rated Torque</b>                 | N·m                            | 0.159                                | 0.318   | 0.637   | 1.273   | 2.387 |       |
|                                 | <b>Rated Instanteous Max Torque</b> | N·m                            | 0.477                                | 0.955   | 1.910   | 3.820   | 7.162 |       |
|                                 | <b>Rated Speed</b>                  | rpm                            | 3000                                 |         |         |         |       |       |
|                                 | <b>Max Rated Speed</b>              | rpm                            | 5000                                 |         |         |         | 4500  |       |
|                                 | <b>Rotor Inertia</b>                | <b>Without Brake</b>           | kg·m <sup>2</sup> × 10 <sup>-4</sup> | 0.020   | 0.034   | 0.127   | 0.196 | 1.563 |
|                                 |                                     | <b>with Brake</b>              |                                      | 0.027   | 0.041   | 0.175   | 0.244 | 1.867 |
|                                 | <b>Admit load</b>                   | <b>Radial(P direction) N</b>   |                                      | 75      | 75      | 220     | 240   | 310   |
|                                 |                                     | <b>Thrust</b>                  |                                      | 70      | 70      | 80      | 115   | 170   |
|                                 |                                     | <b>Thrust (B direction) N</b>  |                                      | 120     | 120     | 165     | 200   | 270   |
| <b>Encoder</b>                  |                                     | 12bit ABS serial communication |                                      |         |         |         |       |       |

DC24V~48V

| 項目                              | 單位                                  | 仕様                             |                                      |         |         |         |         |       |       |
|---------------------------------|-------------------------------------|--------------------------------|--------------------------------------|---------|---------|---------|---------|-------|-------|
| <b>Voltage</b>                  |                                     | DC24V                          |                                      |         | DC48V   |         |         |       |       |
| <b>Motor Model (MP□□□□□□□□)</b> |                                     | 500□3□M                        | 101□3□M                              | 500□4□M | 101□4□M | 201□4□M | 401□4□M |       |       |
| <b>Flange</b>                   |                                     | □42                            | □42                                  | □42     | □42     | □62     | □62     |       |       |
| <b>Driver Model</b>             |                                     | DJ33D01                        |                                      |         | 後日発表予定  |         |         |       |       |
| Basic<br>Spec                   | <b>Ratead Output</b>                | W                              | 50                                   | 100     | 50      | 100     | 200     | 400   |       |
|                                 | <b>Rated Torque</b>                 | N·m                            | 0.159                                | 0.318   | 0.159   | 0.318   | 0.637   | 1.273 |       |
|                                 | <b>Rated Instanteous Max Torque</b> | N·m                            | 0.477                                | 0.955   | 0.477   | 0.955   | 1.910   | 3.820 |       |
|                                 | <b>Rated Speed</b>                  | rpm                            | 3000                                 |         |         | 3000    |         |       |       |
|                                 | <b>Max Rated Speed</b>              | rpm                            | 4500                                 |         |         | 4500    |         |       |       |
|                                 | <b>Rotor Inertia</b>                | <b>Without Brake</b>           | kg·m <sup>2</sup> × 10 <sup>-4</sup> | 0.020   | 0.034   | 0.020   | 0.034   | 0.127 | 0.196 |
|                                 |                                     | <b>with Brake</b>              |                                      | 0.027   | 0.041   | 0.027   | 0.041   | 0.175 | 0.244 |
|                                 | <b>Admit load</b>                   | <b>Radial(P direction) N</b>   |                                      | 75      | 75      | 75      | 75      | 220   | 240   |
|                                 |                                     | <b>Thrust</b>                  |                                      | 70      | 70      | 70      | 70      | 115   | 115   |
|                                 |                                     | <b>Thrust (B direction) N</b>  |                                      | 120     | 120     | 120     | 120     | 200   | 270   |
| <b>Encoder</b>                  |                                     | 12bit ABS serial communication |                                      |         |         |         |         |       |       |

|                |                       |  |
|----------------|-----------------------|--|
| 使用<br>周囲<br>条件 | Time rating           | Continuous   |
|                | Operating Temperature | 0°C~40°C(Non-condensing)                             |
|                | Storage Temperature   | -20°C~65°C(Non-condensing)                           |
|                | Operating Humidity    | 20~85%Rh(Non-condensing)                             |
|                | Store atmosphere      | No corrosive gas                                     |
|                | Vibration class       | V 15 (JEC2121)                                       |
|                | Durability Vibration  | 10~150Hz Acceleration 100m/s <sup>2</sup>            |
|                | Durability Shock      | Motor 200m/s <sup>2</sup> XYZ Each direction 3 Times |
|                | IP Rating             | IP50   |

※ The ambient conditions, AC200V ~ 230V DC24V · 48V and a common design.

## ◆ Encoder Specification

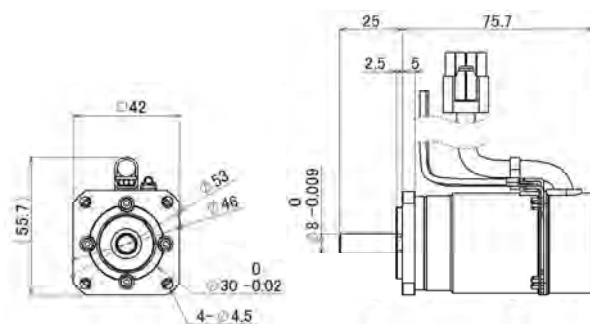
### Basic specification

| 項目                                  | 単位      | 仕様                |
|-------------------------------------|---------|-------------------|
| Voltage                             | V       | DC5±10%           |
| Current Consumption                 | mA      | 20 below          |
| Operating Temperature               | °C      | 0~75              |
| Operating Temperature               | %RH     | 20~80(No Dewfal)  |
| Storage Temperature                 | %RH     | -10~90(No Dewfal) |
| External magnetic field disturbance | mT      | Within ±2         |
| Magnet momrnt Inertia               | g · cmf | 0.85              |
| Mass                                | g       | 11.5 below        |

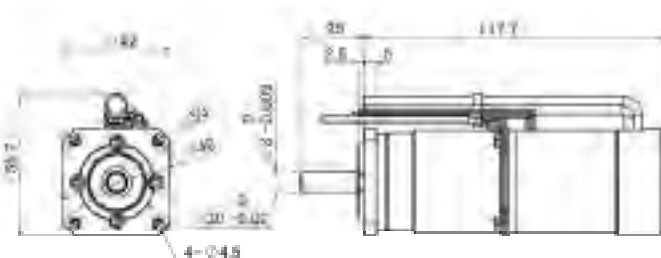
## ◆ Externals size • Torque Rotation Characteristic

### ■ 50W

#### [Standard]

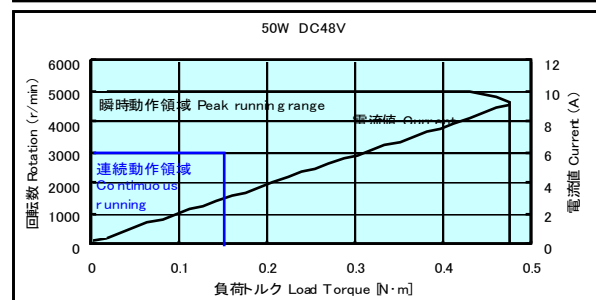
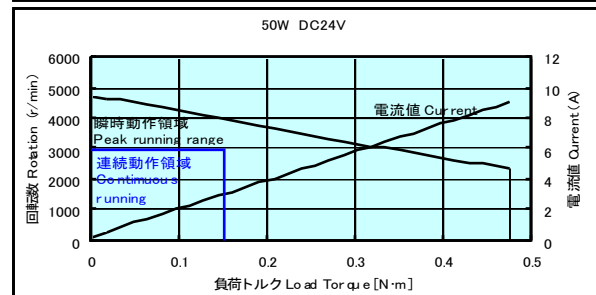
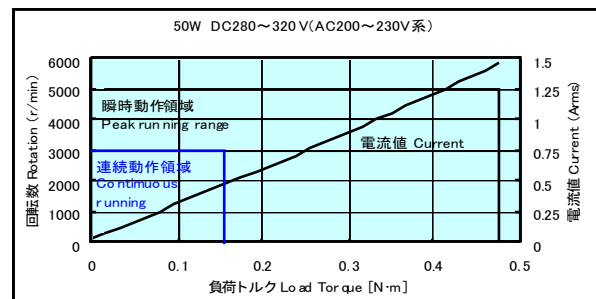


#### [With brake付]



### ■ 配線仕様

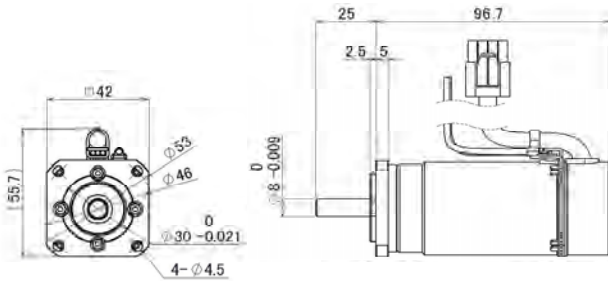
| Pin No | Terminal | I / O | Contents             |
|--------|----------|-------|----------------------|
| 1      | VCC      | -     | Main power           |
| 2      | GND      | -     | Blind Signals        |
| 3      | CAP      | -     | External capacitor   |
| 4      | BAT      | -     | External Battery     |
| 5      | +REQ     | IN    | +Data Request        |
| 6      | -REQ     | IN    | -Data Request        |
| 7      | +CLK     | OUT   | +Communication clock |
| 8      | -CLK     | OUT   | -Communication clock |
| 9      | +DO      | OUT   | +Communication data  |
| 10     | -DO      | OUT   | -Communication data  |
| 11     | NC       | -     |                      |
| 12     | FG       | -     |                      |



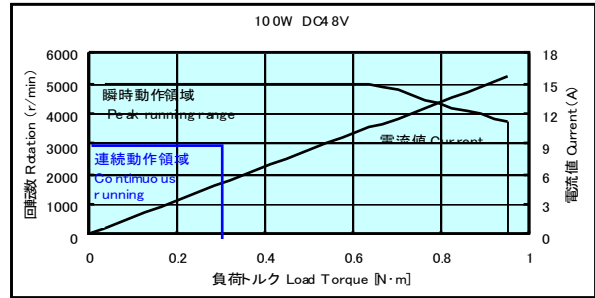
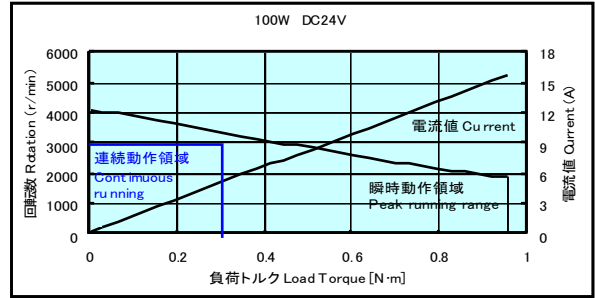
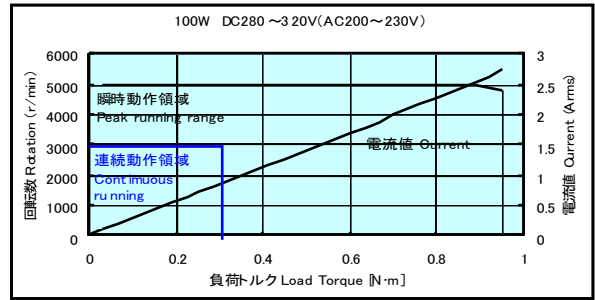
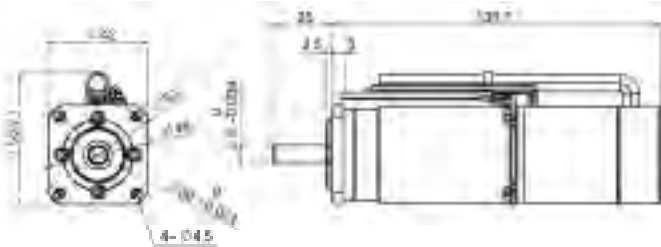
◆ Externals size  
 • Torque Rotation Characteristic

■ 100W

[Standard]

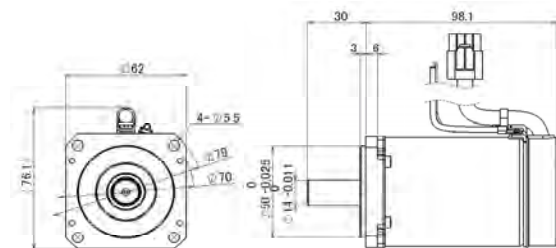


[With Brake]

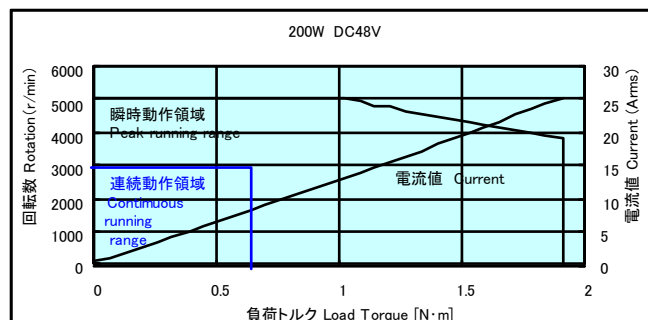
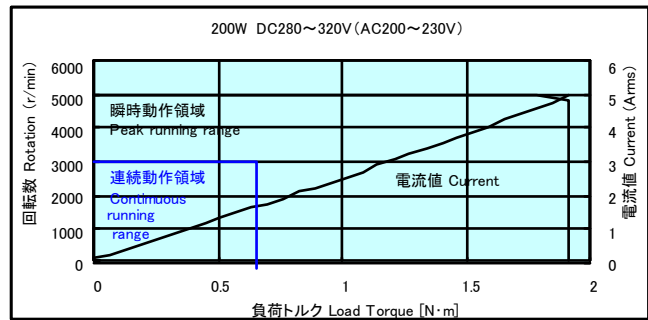
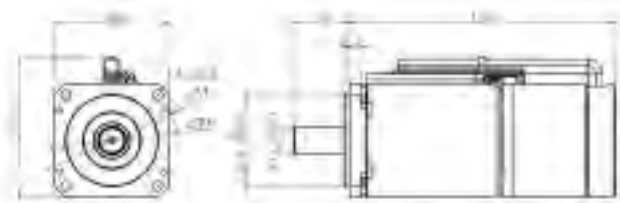


■ 200W

[Standard]



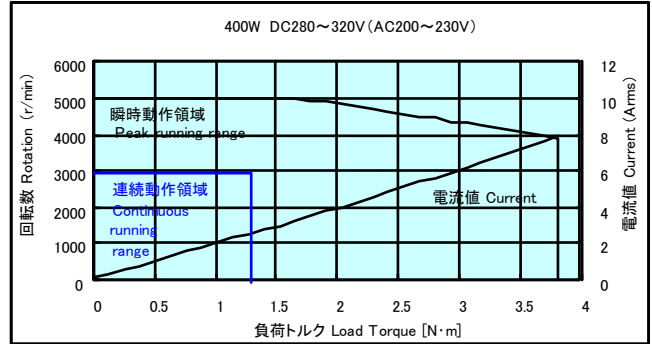
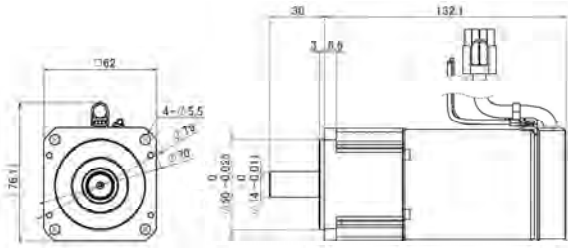
[With Brake]



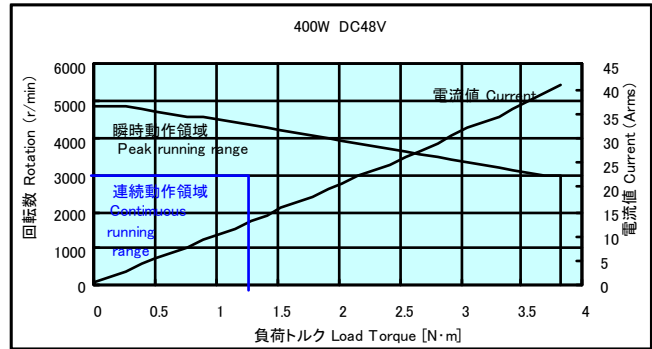
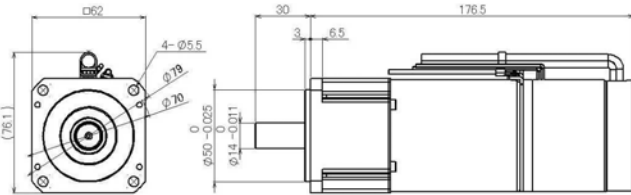
◆ Externals size  
 • Torque Rotation Characteristic

■ 400W

[Standard]

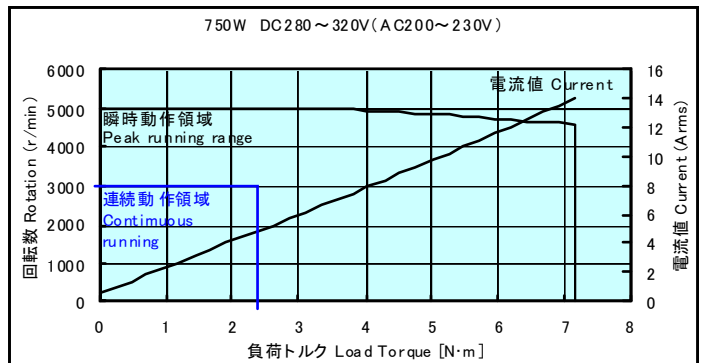
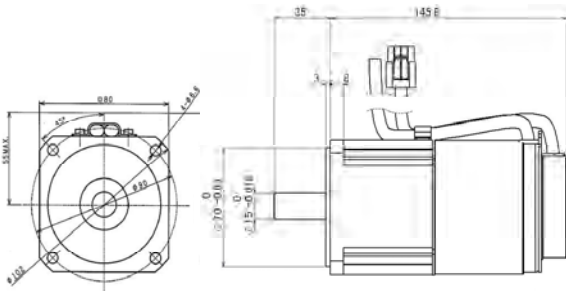


[With Brake]

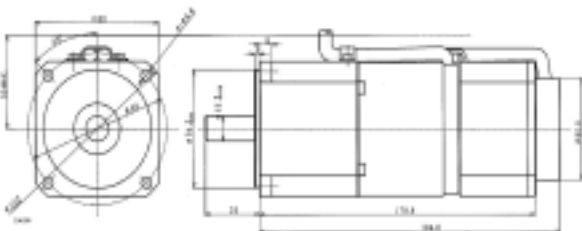


■ 750W

[Standard]



[With Brake]



# Servo Driver - Power Supply

**DRIVER 【DJ23D01】**



**POWER SUPPLY 【DP21P01】**



**POWER SUPPLY 【DP21P02】**



**POWER SUPPLY 【DP21P03】**



◆ **OPTION**



**Driver Case**

型番： AP00101



**Power Supply Case**

型番： AP00301



**Configuration tool**

型番： AP00601



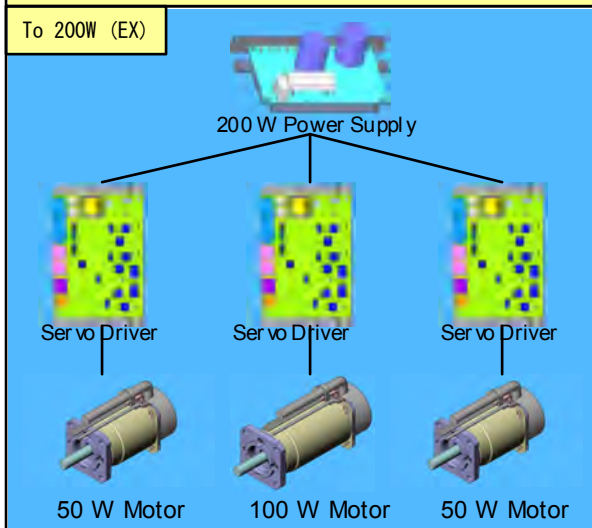
**Heat Sink**

型番： AP00201

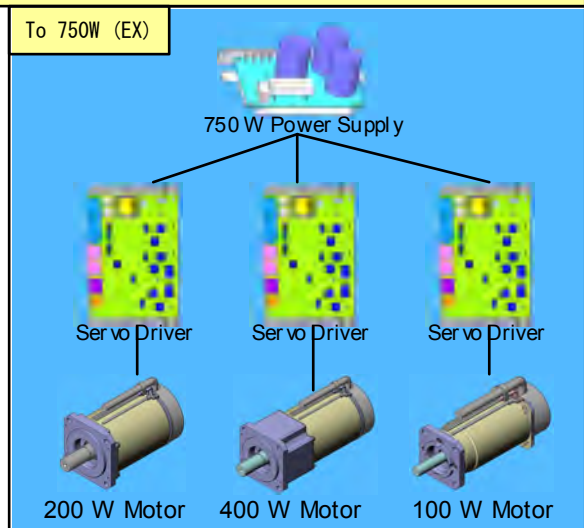
◆ **MOTOR · DRIVER · POWER SUPPLY COMBINATION (Example)**

To 200W, To400W to750W power supply will be controlled by one until the motor.

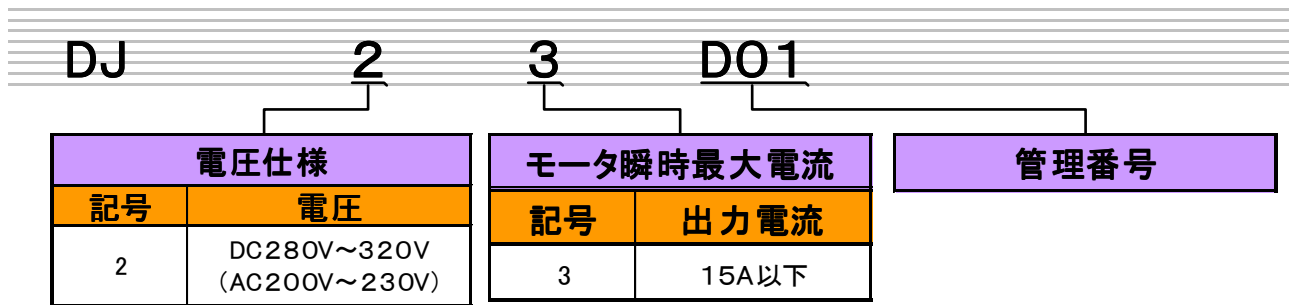
To 200W (EX)



To 750W (EX)



◆ ドライバ型番の見方

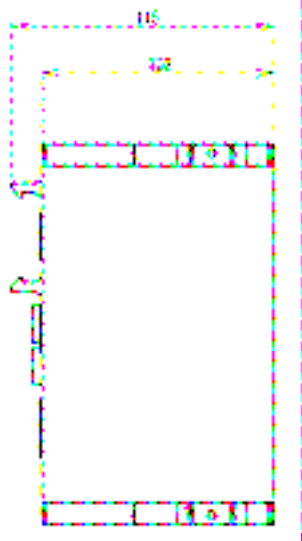
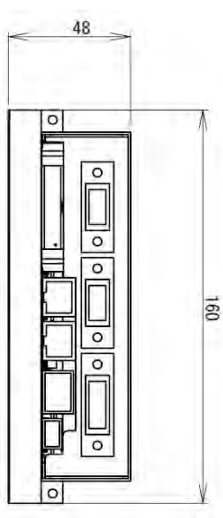
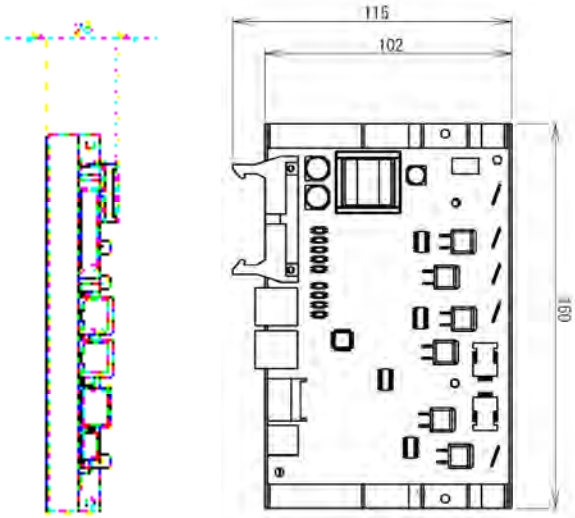


◆ Specifications of Servo drive

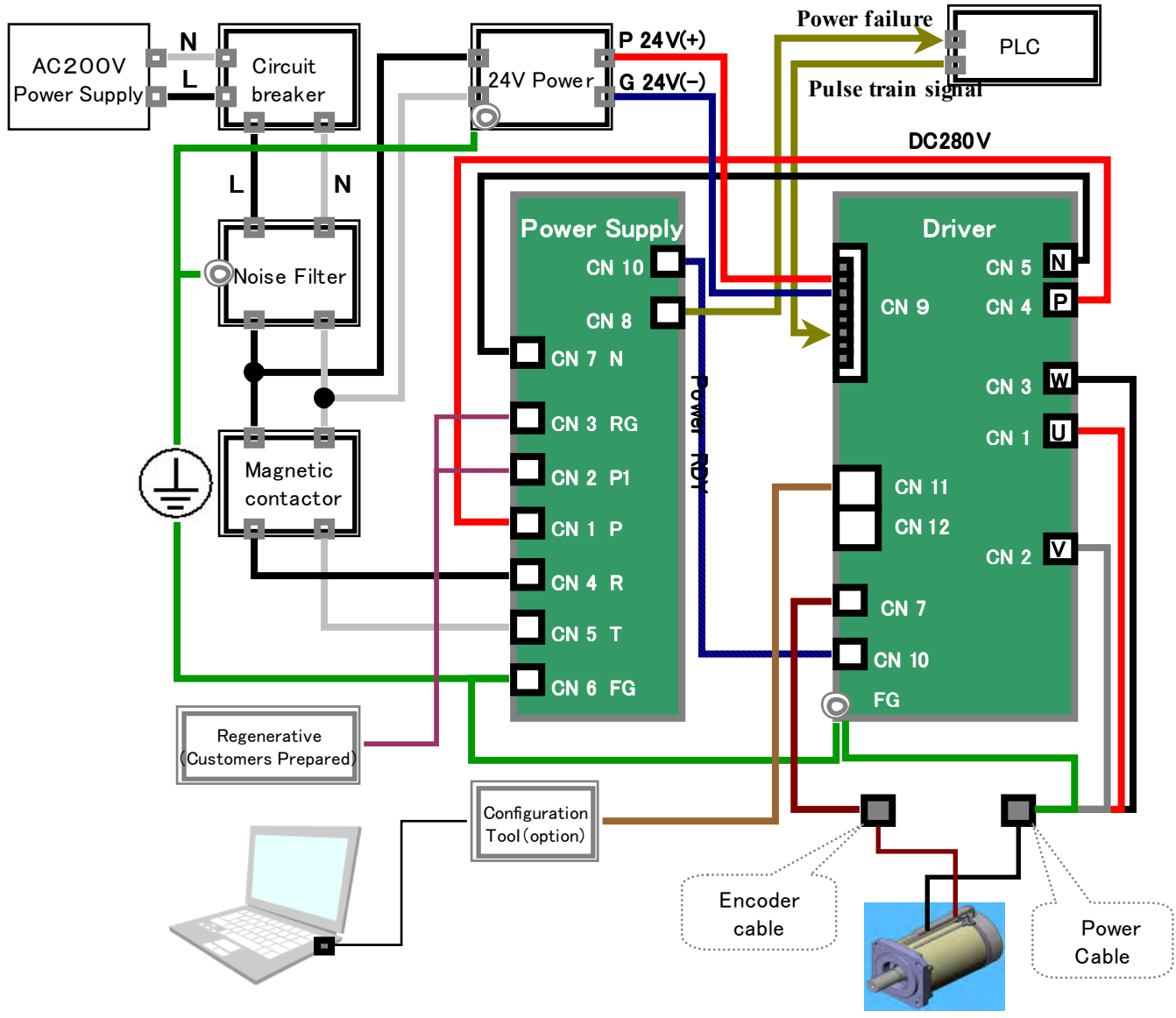
| Items                       |                                 | 仕様  |
|-----------------------------|---------------------------------|---|
| Input Power Supply          | Main Circuit Power Supply       | DC280~320V -15%~+10%<br>(AC200~230V -15%~+10% 相当)   |
|                             | Power Control Circuit           | DC24V ±10% 100mA(Typ.)  |
| Control mode                |                                 | Position Control  |
| Control Input               |                                 | Servo ON, error reset, ready supply, command pulse input is disabled, the deviation counter clear, P / PI control switching |
| Control Output              |                                 | Servo mode, errors, Positioning completion  |
| Input Pulse                 | maximum command pulse frequency | 2Mpps   |
|                             | Input pulse signal form         | Position command pulse / direction  |
| Output Pulse                | Output pulse signal form        | Position pulse encoder<br>(AB-phase quadrature pulse signal, Z-phase pulse index)   |
| Tuning                      |                                 | Chuningumente nansufu to 『HPSMT』 more coordinated   |
| Protective Function         |                                 | Overvoltage, overspeed, overcurrent, overload, overheat, encoder error, excessive position deviation, parameter error       |
| Alarm trace-back capability |                                 | Alarm History feature information   |
| Control scheme              |                                 | Three-phase sine wave PWM inverter drive  |
| Encoder Feedback            |                                 | Absolute encoder (up to 12 bit)<br>※Additional batteries available ※ Multi-turn   |
| Control signal              | In-put                          | Photocoupler input (24V isolated system, 5 points)  |
|                             | Out-put                         | Open collector output (24V system insulation, 3 pts)  |
| Pulse signal                | In-put                          | Position command signal (point 1), EIA-422 differential   |
|                             | Out-put                         | Position encoder signal (point 1), EIA-422 differential   |
| Communication function      |                                 | Half-duplex asynchronous serial communication 1ch (multi-drop) EIA-485 differential   |
| Dynamic Brake               |                                 | Built-in  |
| Temperature                 | Operating                       | 0~55°C (No freezing)  |
|                             | Storage                         | -20~65°C (guaranteed maximum temperature: 17 humidity hours but less than 72 °C 80% RH)                                     |
| humidity                    | Operating                       | 20~85%Rh or less (Non-condensing)   |
|                             | Storage                         | 20~85%Rh or less (Non-condensing)   |
| Altitude                    |                                 | 1000m or below  |
| Vibration                   |                                 | 5.8m/s <sup>2</sup> (0.6G)以下 10~60Hz ((not available in continuous resonant frequency))                                     |

◆ Dimensions

◆ Case

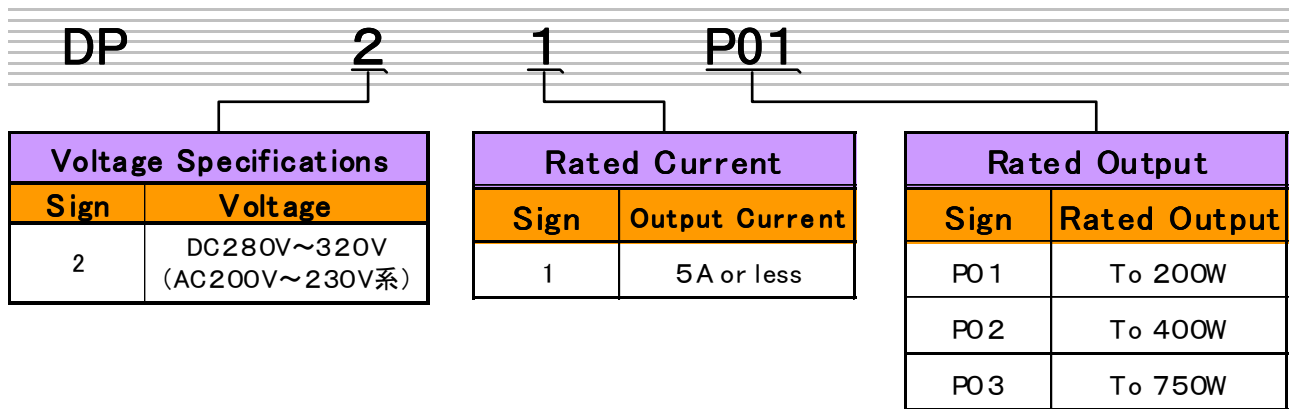


◆ Wiring Diagrams





◆ Model

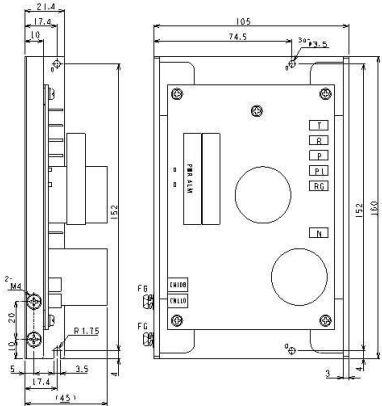


◆ Specification of Power Supply

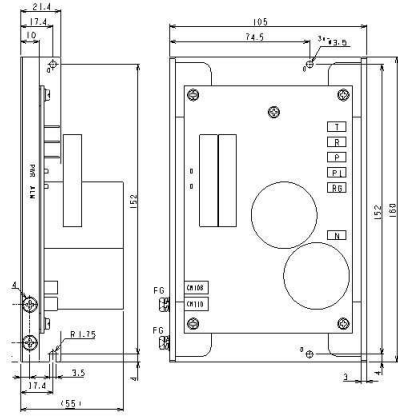
| Item                                 |                         | Specification   |         |         |
|--------------------------------------|-------------------------|---|---------|---------|
| Model                                |                         | DP21P01   | DP21P02 | DP21P03 |
| Motor                                |                         | 200W  | 400W    | 750W    |
| Input                                | Voltage                 | AC200V~230V   |         |         |
|                                      | Frequency               | 50Hz/60Hz   |         |         |
|                                      | Power Capacity          | 約0.5KVA   | 約0.9KVA | 約1.4KVA |
|                                      | Circuit Breaker         | 10A   | 10A     | 15A     |
| Output                               | Rated DC output current | 1.5A  | 2.5A    | 4A      |
| Regenerative resistance (Connection) |                         | — (*1)  | 47Ω     | 47Ω     |
| Regenerative Power Capacity          |                         | — (*1)  | 20W     | 20W     |
| Temperature                          | Opreating               | 0~55°C (No Freezing)  |         |         |
|                                      | Storage                 | -20°C~65°C (guaranteed maximum temperature: 17 humidity hours but less than 72 °C 80% Rh) |         |         |
| Humidity                             | Opreating               | 20~85%Rh or less (non-condensing)   |         |         |
|                                      | Storage                 | 20~85%Rh or less (non-condensing)   |         |         |
| Storage Atmosphere                   |                         | No corrosive and explosive gases.   |         |         |
| Altitude                             |                         | 1000m or less above sea level   |         |         |
| proof vibration                      |                         | 5.8m/s <sup>2</sup> (0.6G)以下10~60Hz(Continuous use of non-resonant frequency)             |         |         |
| Dielectric strength voltage          |                         | Primary - ground between AC1500V, 1 minute (sensitivity current 20mA) can withstand       |         |         |

◆ Dimensions

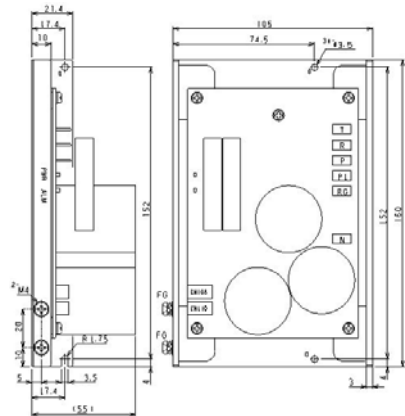
DP21P01 (To 200W)



DP21P02 (To 400W)



DP21P03 (To 750W)

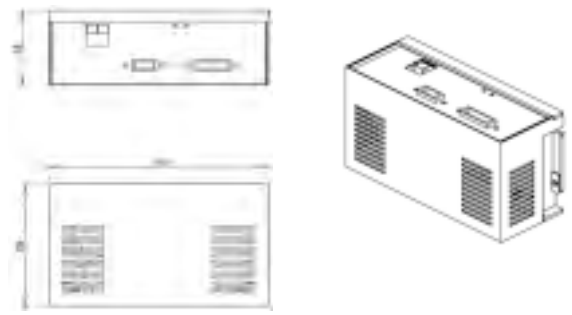


◆ Option

Driver Case  
(Model: AP00101)



Power Supply Case  
(Model: AP00301)



Heat Sink  
(機種名: AP00201)



< 販売元 >

< 開発・製造元 >

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