

PS-24

■ Model PS-241/PS-242

DC24V Power supply for ROBO Cylinder



Features

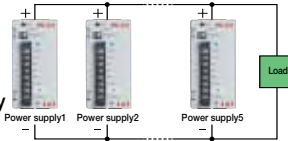
1 Maximum Momentary Output of 17A

Up to 17A of maximum momentary output current is possible at 8.5A rated output current. This lets you select an appropriate power-supply capacity based on the total rated current of actuators, without having to consider the maximum momentary current that may be generated by the actuators during acceleration. Because you no longer need to use an expensive high-capacity power supply, cost can be reduced substantially.

* The maximum momentary output current must be considered if the actuator operating conditions are tight. See the "Selection Guide" at right for details.

2 Parallel Operation Enabled

Up to 5 units can be operated in parallel. Therefore, even if the power capacity is insufficient with one unit, this can be easily remedied by adding one unit, without the need to replace the unit with a larger capacity power supply.



3 Load Detection Function

Load percentage can be detected by the RDY (Ready) display lamp and the RDY output signal.

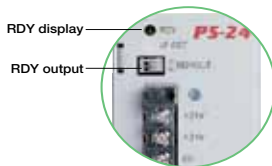


Table 1. PS-24 Rated Current and Allowable Maximum Momentary Electric Current

| No. of Connected units | Rated current [A] | Max. momentary current [A] |
|------------------------|-------------------|----------------------------|
| 1 | 8.5 | 17 |
| 2 | 15.3 | 30.6 |
| 3 | 22.95 | 45.9 |
| 4 | 30.6 | 61.2 |
| 5 | 38.25 | 76.5 |

Note: For the second and subsequent units, add a 10% safety buffer (loss).

Selection target Number of actuators connected

When selecting a power-supply unit for operating multiple actuators, normally a unit with a capacity equal to or exceeding the total maximum current of all actuators is chosen. However, actuators generate their maximum current only momentarily during acceleration, etc., and in many cases the power-supply is over-specified.

On the other hand, the PS-24 power supply provides the following advantages:

1. Supporting maximum momentary current of up to twice the rated current.
2. If you need more power-supply capacity, you can simply add an extra unit or units.

The above features let you select an optimal power-supply capacity.

Number of Power-Supply Units

Basically, how many power-supply units you need should be determined in such a way that the total rated current of all actuators will remain within the rated current of the PS-24. If the load condition is tight, however, the power-supply capacity may still become inadequate. In such cases, add an extra power supply or supplies.

"Severe load conditions" refers to:

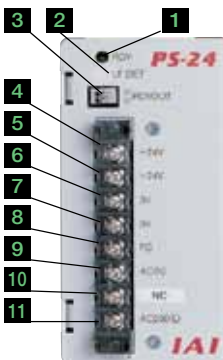
- Large load (load is approaching the rated load capacity)
- High acceleration/deceleration
- High speed
- Simultaneous operation of multiple axes
- Use of the RCS2-SRA7 series (Structurally these actuators allow maximum current to flow for a longer period).

Table 2. Actuator vs. Power Supply Current

| Controller Type | Actuator Type | Power supply current [A] | Number of Connectable Units for PS-24 (Reference)*1 | |
|-----------------------|--|--------------------------|---|--|
| | | | If the servo is on for all axes simultaneously | If the servo is NOT on for all axes simultaneously |
| ERC2 | ERC2 | | | |
| PSEP RPCON PCON | All models of RCP3/RCP2 (* Excluding the 5 models below) | Rated (=Maximum) 2 | 8 | 8 |
| PCON-CF | RCP2-HS8C / RCP2-HS8R RCP2-RA10C RCP2W-RA10C / RCP2W-SA16C | Rated (=Maximum) 6 | 2 | 2 |
| ASEP RACON ACON | SA4, SA5 (20W) | Rated 1.3 | 3 | 6 |
| | | Maximum 4.4 | | |
| | SA6 (30W) | Rated 1.3 | 4 | 6 |
| | | Maximum 4 | | |
| | RA3 (20W) | Rated 1.7 | 3 | 5 |
| | | Maximum 5.1 | | |
| RA4 (20W) | Rated 1.3 | 3 | 6 | |
| | Maximum 4.4 | | | |
| RA4 (30W) | Rated 1.3 | 4 | 6 | |
| | Maximum 4 | | | |

*1 The figures in "Number of Connectable Units for PS-24 (Reference)" are calculated based on the following: When supplying power to multiple controllers, make sure that the sum of the rated current for the individual axes stays LOWER than the PS-24's rated current (8.5A). Exceptions: For RCP3/RCP2/RCP2W, make sure that the sum of the rated current for the individual axes is LOWER than the PS-24's maximum momentary current (17A). For PSEL/ASEL, this varies with number of axes used and the model. Please ask for details.

Names



1 Ready indicating light (RDY)

2 Level setting dial for over load detection (LF.DET)

*Appropriate value settled at shipment. Operation not needed.

3 Ready output signal (RDYOUT)

4 5 + 24V Output terminal (+ 24V)

*④⑤ connected internally.

6 7 0V Output terminal (0V)

*⑥⑦ connected internally.

8 Frame ground terminal (FG)

Terminal for ground.

9 AC input terminal (AC (N))

10 AC input terminal (AC100V) (AC100 (L))

11 AC input terminal (AC200V) (AC200 (L))

*AC100V input type should be connected to ⑨ and ⑩ interval, AC200V to ⑨ and ⑪. Unavailable for combined use.

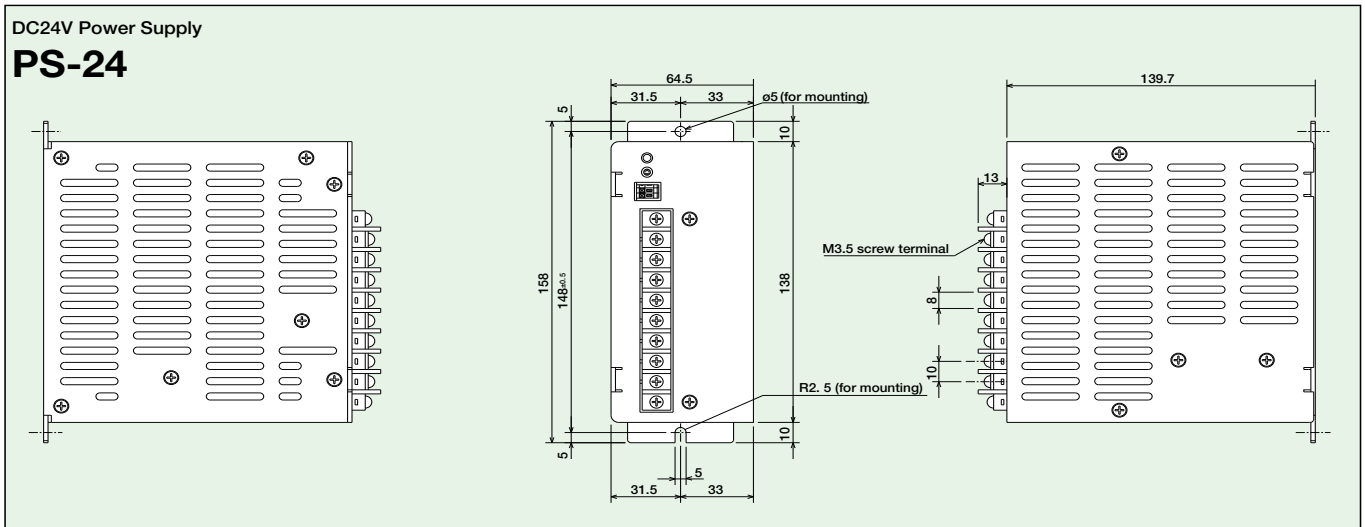
List of Models

| Model | PS-241 | PS-242 |
|----------------|--------|--------|
| Standard Price | - | - |

Specification List

| Item | PS-241 | PS-242 |
|-----------------------------------|--|--------------------------|
| Rated DC output voltage | 24V±10% (varied depending on the load) | |
| Rated DC output current | 8.5A | |
| Instantaneous max. output current | 17A | |
| Rated output capacity | 204W | |
| Efficiency | 80% | 80% |
| Rated input (frequency) | AC100~115V (50/60Hz) | AC200~230V (50/60Hz) |
| Input voltage range | AC85~125V | AC170~250V |
| Input current | 3.50A (100VAC full load) | 1.80A (200VAC full load) |
| Output holding time | 20 [msec] (Ambient temperature 25°C under rated input/output condition) | |
| Protection circuit | Protection from overcurrent, overvoltage, overheating and overload. | |
| Parallel operation | Possible | |
| Operating temperature | 0~50°C (derated) | |
| Operating humidity | 30~85%RH (non-condensing) | |
| Cooling method | Natural, air cooling | |
| Voltage resistance | Between input/output...2.0kVA per minute (20mA) Between cabinets...2.0kVA per minute (20mA) | |
| Insulation resistance | Output - 100MΩ or more between cabinets at 500 VDC | |
| Circuit method | Separate excitation type flyback converter | |
| Weight | Aprox. 0.9kg | |

Outer dimensions



Caution:

- The PS-24 is not a constant voltage power supply. The output voltage changes with the load (voltage decreases according to the load percentage). Therefore, do not connect any equipment other than ROBO Cylinder actuators.
- Up to 5 units can be operated in parallel. Do not use any power supplies other than the PS-24 at the same time for parallel operation.
- Note that serial operations are not possible.
- As a rule, when operating multiple units in a row, allow at least 20mm space between each power supply.
- This is a natural air-cooled power supply. Please give due consideration to natural convection so that heat does not build up around the power supply.
- The case of this product also has heat a dissipating effect. Do not touch the case after installation as it may result in severe burns.