

# FSB series(10,20,30A)

FSB -30 -324 -□

① ② ③ ④



The terminal cover is retracted inside the unit

## Features of FSB series

### EMI/EMC Filter for motor drive system (AC servo)

- Improve saturation resistance (There is such as performance improvement type “-254-HU”)
- Book type (Space-saving type)
- Quick and easy push-down terminal  
Just connect the wires, push-down and tighten the screws with a screwdriver

### Specifications

| No. | Items  | FSB-10-324  | FSB-20-324 | FSB-30-324 |
|-----|--|---|------------|------------|
| 1   | Rated Voltage[V]                               | AC Three Phase 500 (voltage range:528 max) 50/60Hz *3 *4                        |            |            |
| 2   | Rated Current[A]                               | 10  | 20         | 30         |
| 3   | Test Voltage (Terminal-Mounting Plate)         | 2,800 VDC (Cutoff Current = 10mA), 1minute at room temperature and humidity *5  |            |            |
| 4   | Isolation Resistance (Terminal-Mounting Plate) | 500 VDC 100MΩ min at room temperature and humidity *6                           |            |            |
| 5   | Leakage current 250/500V 60Hz                  | 12mA/24mA max   |            |            |
| 6   | DC resistance                                  | 100mΩ max   | 38mΩ max   | 20mΩ max   |
| 7   | Safety agency approval temperatures            | -25 to +85°C (Refer to Derating Curve)  |            |            |
| 8   | Operating temperature                          | -40 to +85°C (Refer to Derating Curve)  |            |            |
| 9   | Operating humidity                             | 20 to 95%RH (Non condensing)  |            |            |
| 10  | Storage temperature/humidity                   | -40 to +85°C/20 to 95%RH (Non condensing)                                       |            |            |
| 11  | Vibration                                      | 10 to 55Hz, 19.6m/s <sup>2</sup> (2G), 3min. Period, 1hour each X, Y and Z axis |            |            |
| 12  | Impact   | 196.1m/s <sup>2</sup> (20G), 11ms Once each X, Y and Z axis                     |            |            |
| 13  | Safety agency approvals                        | UL1283, CSA C22.2 No.8 (C-UL), DIN EN60939 VDE0565 Teil 3-1, ENEC               |            |            |
| 14  | Case size (without projection)                 | 66 X 100 X 240 mm (W X H X D)<br>[2.60 X 3.94 X 9.45 inches] (W X H X D)        |            |            |
| 15  | Weight   | 1.8kg max   |            |            |

\*3 Only capacitor code “355”, Three Phase Δ-connection : 400 (440 max), Y-connection : 500 (528 max)  
 \*4 Only “FSB-□□□□□□□□-U”, Three Phase 250 (275 max)  
 \*5 Only capacitor code “203”, “573”, “693”, “104”, 2,500VAC (Cutoff Current = 100mA), 1minute at room temperature and humidity.  
 \*6 Only capacitor code “335”, “355”, Isolation resistance specification is deleted.

- ① Model Name
- ② Rated Current
- ③ Line to ground capacitor code: See table 1.1.

table1.1 Line to ground capacitor code

| Code   | Leakage Current *1<br>Upper row : Δ-connection<br>Lower row : Y-connection | Line to ground capacitor CY1 (nominal value) | Line to ground capacitor CY2 (nominal value) |
|--------|--|--|--|
| 203    | 1.0mA/2.0mA max<br>0.1mA/0.2mA max   | 0.01μF                                       | 0.01μF                                       |
| 573 *2 | 2.5mA max/Not applicable<br>0.35mA max/Not applicable                      | 0.01μF                                       | 0.047μF                                      |
| 693    | 2.5mA/5.0mA max<br>0.35mA/0.7mA max  | 0.022μF                                      | 0.047μF                                      |
| 104    | 3.5mA/7.0mA max<br>0.5mA/1.0mA max   | 0.033μF                                      | 0.068μF                                      |
| 254 *2 | 12mA max/Not applicable<br>1.5mA max/Not applicable                        | 0.033μF                                      | 0.22μF                                       |
| 324    | 12mA/24mA max<br>1.5mA/3.0mA max   | 0.1μF  | 0.22μF                                       |
| 335 *2 | 160mA max/Not applicable<br>20mA max/Not applicable                        | 0.033μF                                      | 3.3μF  |
| 355    | 180mA/270mA max<br>25mA/50mA max   | 0.22μF                                       | 3.3μF  |

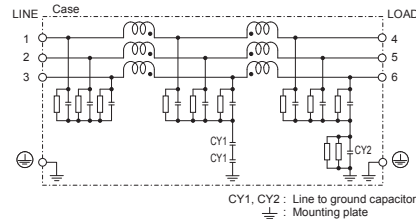
- \* When the line to ground capacitor code is different, the attenuation characteristic is different.
- \*1 Input 250/500V 60Hz (Only Δ-connection of “355” is 250/400V 60Hz)
- \*2 Only “U” type is applied.
- ④ Option  
 H : Ultra high-attenuation type  
 U : Improve differential mode attenuation (Rated voltage 250V)  
 Only “573”, “254”, “335” is applied.

### Circuit Diagram

(1) Line to ground capacitor code : 203, 693, 104, 324



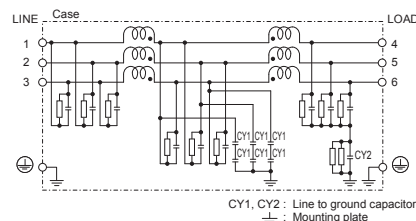
(2) Line to ground capacitor code : 355



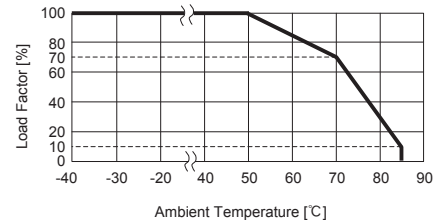
(3) Line to ground capacitor code : 573, 254  
Option : U



(4) Line to ground capacitor code : 335  
Option : U



### Derating Curve

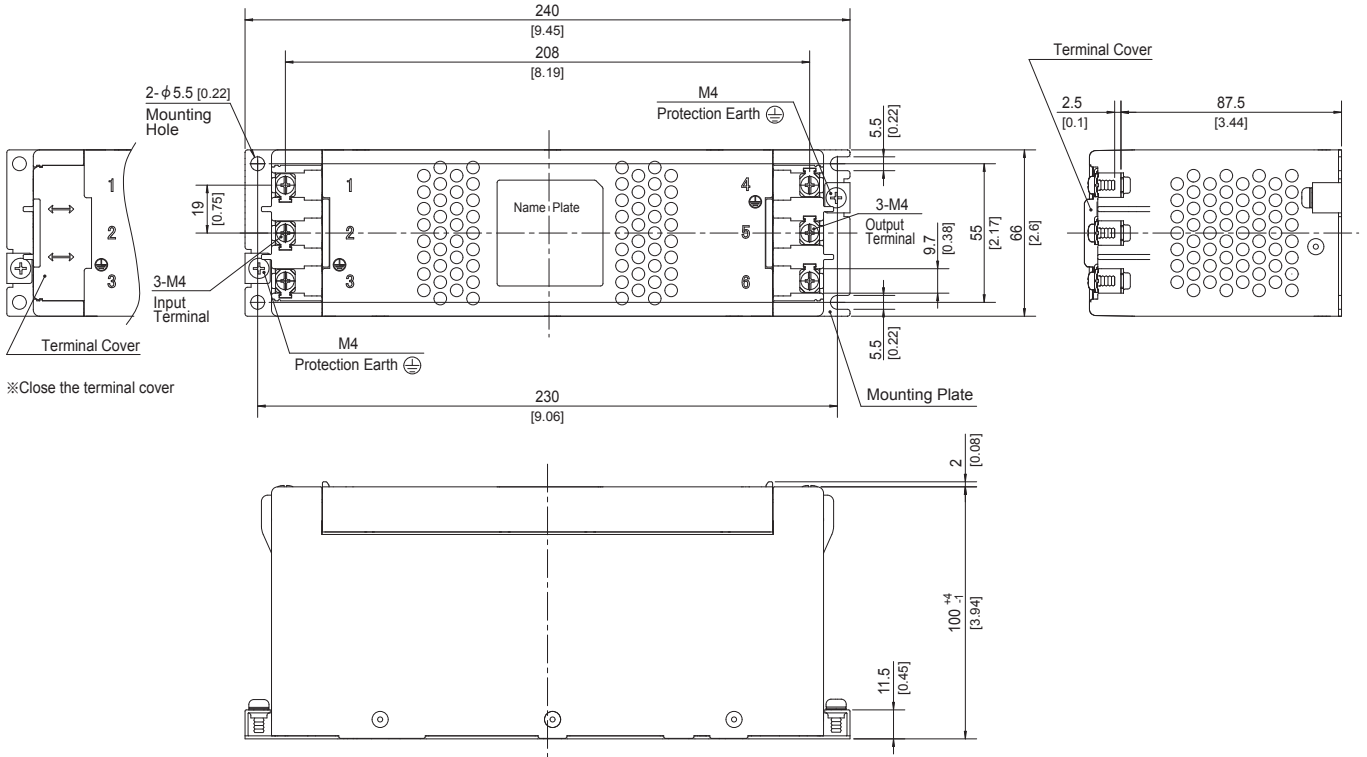


\* Keep free ventilation holes for cooling.

## External view

As this product is adopted push-down type terminal block, this appearance is as follows.

- ① The terminal cover is retracted inside the unit.
- ② The screws for connecting the terminals are held in the up right position.



※Close the terminal cover

- ※ Tolerance : ±1 [±0.04]
- ※ Weight : 1.8kg max
- ※ Mounting Plate : Hot-dip Galvanized Steel board t=1.2 [0.05]
- ※ Case : PBT
- ※ Dimensions in mm, [ ]=inches
- ※ Terminal block screw tightening torque M4 : 1.6N·m (16.9kgf·cm)max
- ※ Can not be mounted upside-down (mounted the top surface)
- ※ Keep free ventilation holes for cooling

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## Cosel:

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[FSB-30-573-HU](#) [FSB-20-254-U](#) [FSB-20-203-H](#) [FSB-20-324](#) [FSB-10-573-HU](#) [FSB-10-335-HU](#) [FSB-30-573-U](#) [FSB-](#)  
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[FSB-30-203](#) [FSB-30-324](#) [FSB-20-355-H](#) [FSB-10-355-H](#) [FSB-30-355](#) [FSB-20-693](#) [FSB-20-355](#) [FSB-30-693](#) [FSB-](#)  
[20-573-HU](#) [FSB-10-335-U](#)



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