

# 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

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

table 1.1 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.

## 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)                 | 66×100×240 mm (W×H×D)<br>[2.60×3.94×9.45 inches] (W×H×D)                        |            |            |
| 15  | Weight                                         | 1.8kg max                                                                       |            |            |

\*3 Only capacitor code “355”, Three Phase Δ-connection : 400 (440 max), Y-connection : 500 (528 max)

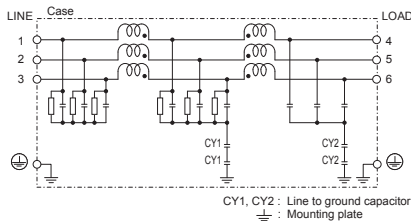
\*4 Only “FSB-□□□□□□□□-U”, Three Phase 250 (275 max)

\*5 Only capacitor code “203”, “573”, “693”, “104”, 2,500VAC (Cutoff Current = 100mA), 1minute at room temperature and humidity.

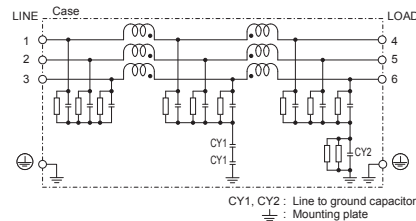
\*6 Only capacitor code “335”, “355”, Isolation resistance specification is deleted.

## Circuit Diagram

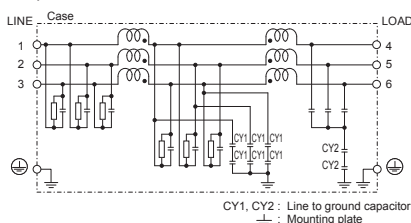
(1) Line to ground capacitor code : 203, 693, 104, 324



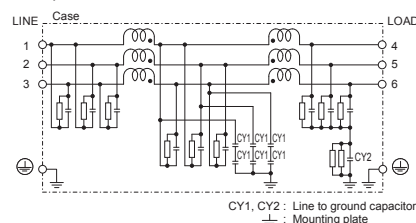
(2) Line to ground capacitor code : 355



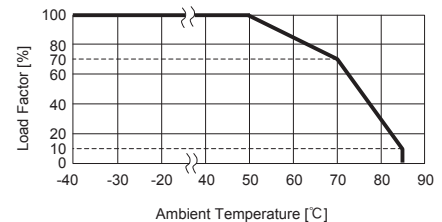
(3) Line to ground capacitor code : 573, 254  
Option : U



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



## Derating Curve

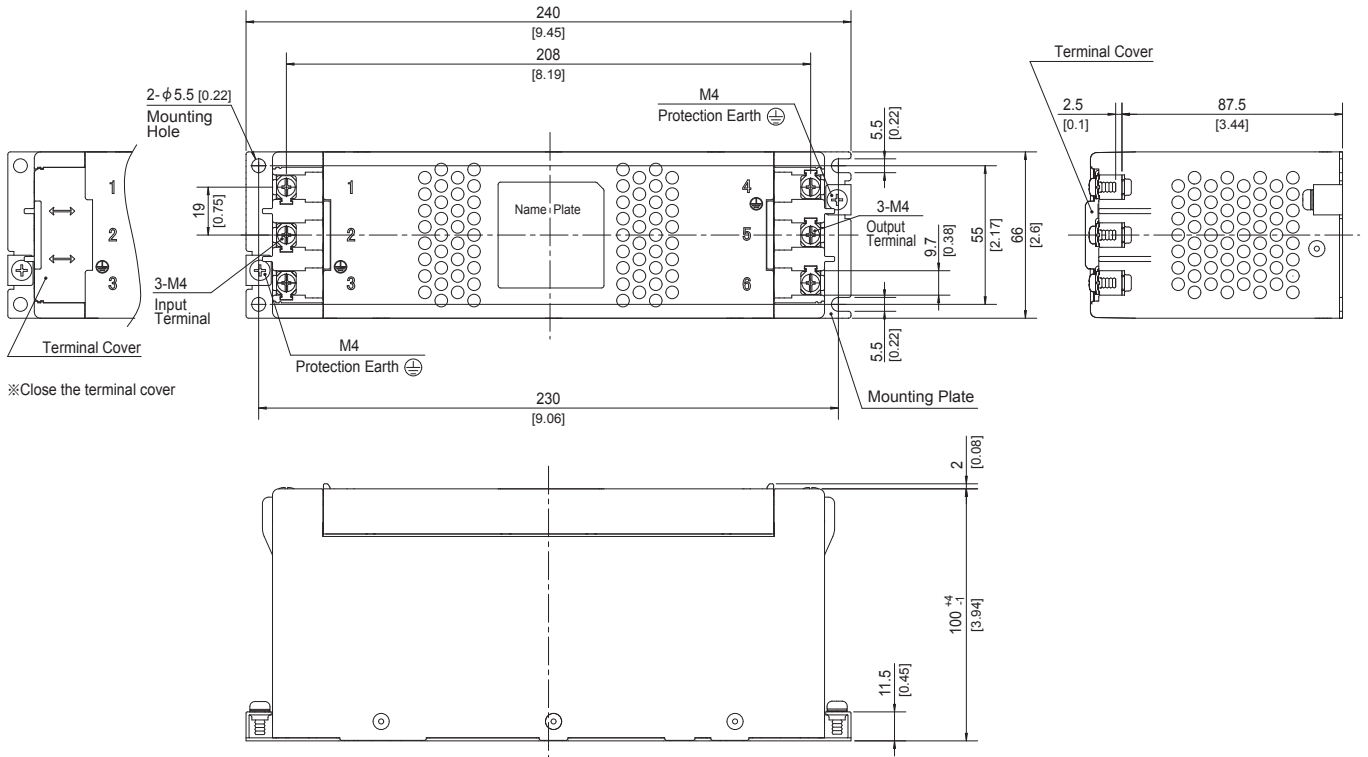


\* Keep free ventilation holes for cooling.

## External view

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

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



※Close the terminal cover

- ※ Tolerance :  $\pm 1$  [ $\pm 0.04$ ]
- ※ 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 :  $1.6N \cdot m$  (16.9kgf·cm)max
- ※ Can not be mounted upside-down (mounted the top surface)
- ※ Keep free ventilation holes for cooling

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