

# FS 10

## FS10 Series AC/DC Converters(Power tank)

**Total power** 10 Watts  
**Input voltages** AC85~264V or DC110~340V  
**#of outputs** Single, Dual Triple output



### SPECIAL FEATURES

- **UL, C-UL, CB, CE** Marking
- Encapsulated, compact case
- High efficiency
- Universal input
- Surface mounting technology
- Built - in EMI filter
- Inrush current limit
- 67kHz fixed frequency
- Fixed output voltage
- Thermal shutdown
- Output short circuit protection
- Low output ripple & noise
- Isolated output
- 2Years warranty

### ENVIRONMENTAL

- Operating temperature range ..... -10℃ ~ 60℃
- Storage temperature range ..... -20℃ ~ 70℃
- Humidity ..... 20%~90%RH
- Vibration ..... 10~55Hz at 10G 3minutes period
- Impact ..... 50G for 11ms, once on each X, Y and Z-axis
- Cooling method ..... Natural air
- MTBF ..... 3.5 × 10<sup>6</sup> hrs
- Safety (single output) \*Approved
  - UL (UL60950, CSA C22.2 NO.60950) : E227474 / CB (IEC 60950) / CE (EN 60950) - through TÜV
- EMC (Single output) \*Approved  
 EN 61204-3 class B / EN 61000-3-2 / EN 61000-3-3 - through TÜV

\* To meet the standard of EN61204-3 class-B, use the external noise filter Between L and N (Refer to manual)

### ELECTRICAL SPECIFICATIONS

|                              |  |
|------------------------------|--|
| <b>INPUT</b>                 | <ul style="list-style-type: none"> <li>• Voltage ..... AC85~264V (or DC 110~340V) (note1)</li> <li>• Current ..... 0.21A max. @ 110VAC / 0.11A max. @ 220VAC</li> <li>• Frequency ..... 47~440Hz max. (50~60Hz typ.)</li> <li>• Efficiency ..... 73% typ.</li> <li>• Inrush current (at cold start) ..... 30A max. @ 110VAC. / 60A max. @ 220VAC</li> <li>• Leakage current ..... 0.5mA max. @ 110VAC / 0.75mA max. @ 220VAC</li> </ul>  |
| <b>OUTPUT</b>                | <ul style="list-style-type: none"> <li>• Voltage tolerance ..... ±2% (single and uncomplementary dual)<br/>                     ±3% (complementary dual)</li> <li>• Ripple and noise ..... ±1% typ.</li> <li>• Line regulation ..... ±1% typ.</li> <li>• Load regulation ..... ±1% typ. @ Output1 / ±2% typ. @ Output2, 3</li> <li>• Dynamic load regulation ..... ±3% typ. @ Output1</li> <li>• Temperature drift ..... ±1% typ.</li> <li>• Rising time ..... 400ms max.</li> <li>• Holding time ..... 10ms min.</li> </ul> |
| <b>PROTECTION CIRCUIT</b>    | <ul style="list-style-type: none"> <li>• Output short circuit protection ..... Work at over 105% of rating &amp; recovers automatically</li> <li>• Over temperature protection ..... 145℃ typ.</li> </ul>  |
| <b>ELECTRICALLY ISOLATED</b> | <ul style="list-style-type: none"> <li>• Input - Output ..... AC 4.8kV, 1minute, 10mA / DC 500V, 100MOhms min.</li> <li>• Input - FG ..... AC 2kV, 1minute, 10mA / DC 500V, 100MOhms min.</li> <li>• Output - FG ..... AC 0.5kV, 1minute, 10mA / DC 500V, 70MOhms min.</li> </ul>  |

**NOTE** 1. For cases where conformance to various safety specs (UL, CSA, CE, CB etc) are required input voltage and frequency range will be 100-240 VAC, 50-60Hz.

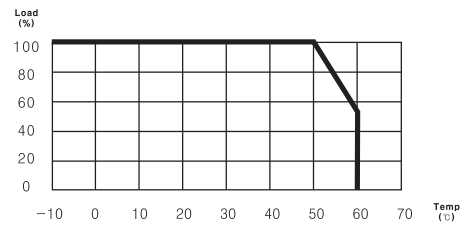
## Ordering Information

| Input                              | Output1   | Output2                  | Output3                  | Maximum Power                            | Ripple&Noise max                                       | Efficiency Typ.                 | Model Number   |
|------------------------------------|---|--------------------------|--------------------------|--|--|---------------------------------|--|
| AC 85 ~ 264V<br>or<br>DC 110 ~340V | 3.3V@2.0A<br>5V@2.0A<br>12V@0.9A<br>15V@0.7A<br>24V@0.45A |                          |                          | 6.6W<br>10.0W<br>10.8W<br>10.5W<br>10.8W | 80mVp-p<br>80mVp-p<br>120mVp-p<br>150mVp-p<br>200mVp-p | 73%<br>73%<br>75%<br>75%<br>75% | <b>FS10-3R3</b><br><b>FS10-5</b><br><b>FS10-12</b><br><b>FS10-15</b><br><b>FS10-24</b> |
|                                    | +12V@0.45A<br>+15V@0.35A                                  | -12V@0.45A<br>-15V@0.35A |                          | 10.8W<br>10.5W                           | 120/120mVp-p<br>150/150mVp-p                           | 75%<br>75%                      | <b>FSD10-1212</b><br><b>FSD10-1515</b>   |
|                                    | 5V@1.5A<br>5V@1.5A  | +12V@0.15A<br>+15V@0.12A | -12V@0.15A<br>-15V@0.12A | 11.1W<br>11.1W                           | 80/120/120mVp-p<br>80/150/150mVp-p                     | 75%<br>75%                      | <b>FST10-522M</b><br><b>FST10-5FFM</b>   |

## Pin assignments

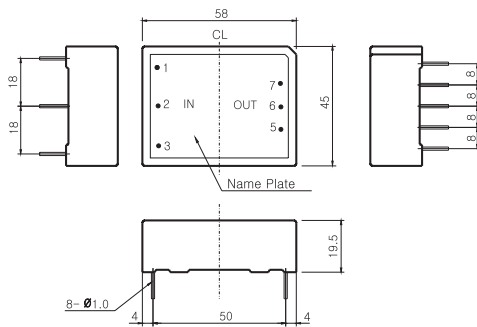
| Single Output  | Dual Output  | Triple Output   |
|--|--|---|
| 1. FG<br>2. AC(N)<br>3. AC(L)                                | 1. FG<br>2. AC(N)<br>3. AC(L)                                  | 1. FG<br>2. AC(N)<br>3. AC(L)                                 |
| 4. No pin<br>5. Output 1<br>6. No pin<br>7. Gnd<br>8. No pin | 4. No pin<br>5. Output 1<br>6. Gnd<br>7. Output 2<br>8. No pin | 4. Output 1<br>5. Gnd<br>6. Output 2<br>7. Gnd<br>8. Output 3 |

## Derating curve

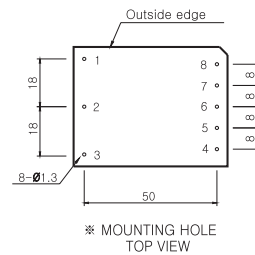
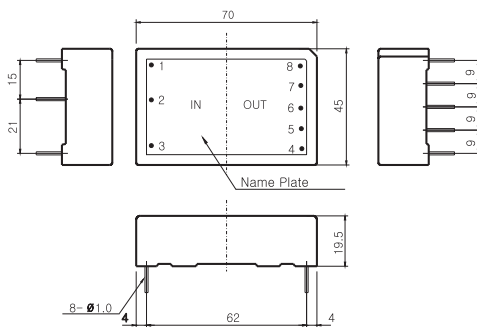


## Dimensions

### ► Single, Dual Output



### ► Triple Output



### NOTES

1. All dimensions are mm.
2. Weight : 90g or less (single, dual)  
100g or less (triple)

