

TEST DATA OF SPLFA30F-24

Regulated DC Power Supply
May 18, 2011

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COSEL CO.,LTD.

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Model

SPLFA30F-24

Item

Input Current (by Load Current)

Object

Temperature

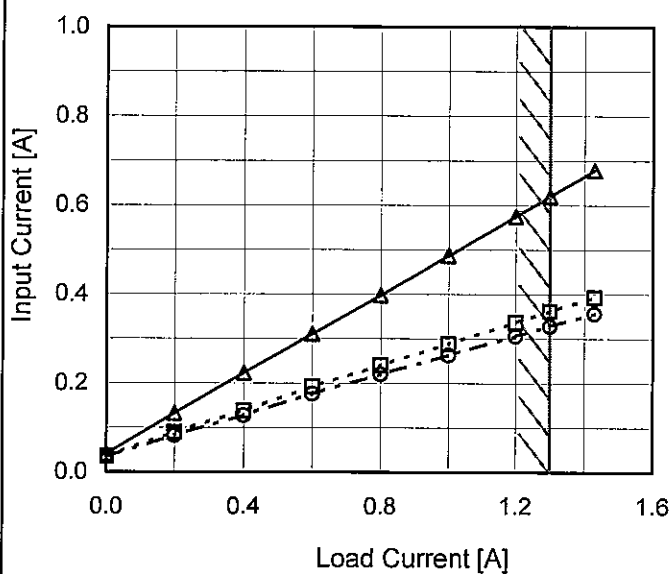
25°C

Testing Circuitry

Figure A

1. Graph

—△— Input Volt. 100V
 ---□--- Input Volt. 200V
 -○- Input Volt. 230V



Note: Slanted line shows the range of the rated load current.

2. Values

| Load Current [A] | Input Current [A] | | |
|------------------|--------------------|--------------------|--------------------|
| | Input Volt. 100[V] | Input Volt. 200[V] | Input Volt. 230[V] |
| 0.00 | 0.040 | 0.035 | 0.034 |
| 0.20 | 0.132 | 0.089 | 0.082 |
| 0.40 | 0.223 | 0.137 | 0.127 |
| 0.60 | 0.310 | 0.192 | 0.176 |
| 0.80 | 0.397 | 0.240 | 0.220 |
| 1.00 | 0.486 | 0.288 | 0.263 |
| 1.20 | 0.575 | 0.337 | 0.306 |
| 1.30 | 0.620 | 0.362 | 0.328 |
| 1.43 | 0.678 | 0.393 | 0.356 |
| -- | - | - | - |
| -- | - | - | - |

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| Model | | SPLFA30F-24 | | Temperature | | 25°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--------------------|-------------------------------|--------------------|---|--|----------|--|------------------|-----------------|--|--|--------------------|--------------------|--------------------|------|------|------|------|------|------|------|------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|----|---|---|---|----|---|---|---|
| Item | | Input Power (by Load Current) | | Testing Circuitry | | Figure A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Object | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.Graph | | | | 2.Values | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div><div><div><div><div></div><div></div></div><div></div></div><div><div><div></div><div></div></div><div></div></div><div><div><div></div><div></div></div><div></div></div></div><div>Input Volt. 100V</div><div>Input Volt. 200V</div><div>Input Volt. 230V</div></div> <div><p>Input Power [W]</p><p>Load Current [A]</p></div> <div>Note: Slanted line shows the range of the rated load current.</div> | | | | <table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Input Power [W]</th></tr><tr><th>Input Volt. 100[V]</th><th>Input Volt. 200[V]</th><th>Input Volt. 230[V]</th></tr><tr><td>0.00</td><td>1.60</td><td>2.10</td><td>2.20</td></tr><tr><td>0.20</td><td>6.90</td><td>7.40</td><td>7.50</td></tr><tr><td>0.40</td><td>12.60</td><td>12.50</td><td>12.70</td></tr><tr><td>0.60</td><td>18.10</td><td>18.50</td><td>18.70</td></tr><tr><td>0.80</td><td>23.70</td><td>23.80</td><td>24.10</td></tr><tr><td>1.00</td><td>29.40</td><td>29.20</td><td>29.40</td></tr><tr><td>1.20</td><td>35.20</td><td>34.60</td><td>34.80</td></tr><tr><td>1.30</td><td>38.10</td><td>37.30</td><td>37.50</td></tr><tr><td>1.43</td><td>42.00</td><td>40.80</td><td>41.00</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr></table> | | | | Load Current [A] | Input Power [W] | | | Input Volt. 100[V] | Input Volt. 200[V] | Input Volt. 230[V] | 0.00 | 1.60 | 2.10 | 2.20 | 0.20 | 6.90 | 7.40 | 7.50 | 0.40 | 12.60 | 12.50 | 12.70 | 0.60 | 18.10 | 18.50 | 18.70 | 0.80 | 23.70 | 23.80 | 24.10 | 1.00 | 29.40 | 29.20 | 29.40 | 1.20 | 35.20 | 34.60 | 34.80 | 1.30 | 38.10 | 37.30 | 37.50 | 1.43 | 42.00 | 40.80 | 41.00 | -- | - | - | - | -- | - | - | - |
| Load Current [A] | Input Power [W] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Input Volt. 100[V] | Input Volt. 200[V] | Input Volt. 230[V] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.00 | 1.60 | 2.10 | 2.20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.20 | 6.90 | 7.40 | 7.50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.40 | 12.60 | 12.50 | 12.70 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.60 | 18.10 | 18.50 | 18.70 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.80 | 23.70 | 23.80 | 24.10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.00 | 29.40 | 29.20 | 29.40 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.20 | 35.20 | 34.60 | 34.80 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.30 | 38.10 | 37.30 | 37.50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.43 | 42.00 | 40.80 | 41.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

-2-

BC-10564

Model

SPLFA30F-24

Item

Efficiency (by Input Voltage)

Object

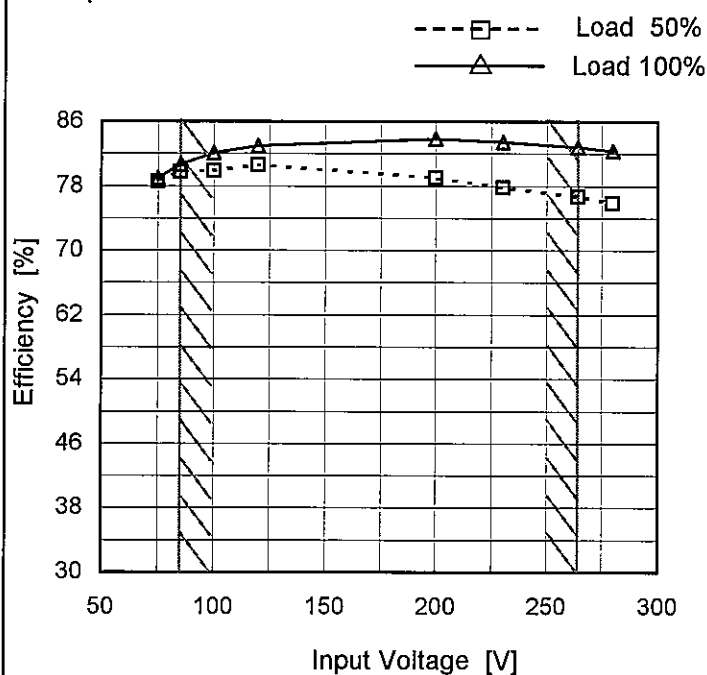
Temperature

25°C

Testing Circuitry

Figure A

1. Graph



Note: Slanted line shows the range of the rated input voltage.

2. Values

| Input Voltage [V] | Efficiency [%] | |
|-------------------|----------------|-----------|
| | Load 50% | Load 100% |
| 75 | 78.6 | 79.0 |
| 85 | 79.8 | 80.6 |
| 100 | 79.9 | 82.1 |
| 120 | 80.6 | 83.0 |
| 200 | 79.0 | 83.9 |
| 230 | 77.8 | 83.4 |
| 264 | 76.7 | 82.8 |
| 280 | 75.9 | 82.3 |
| -- | - | - |

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| Model | | SPLFA30F-24 | | Temperature 25°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--------------------|--|--------------------|----------------------------|--|------------------|----------------|--|--|--------------------|--------------------|--------------------|------|---|---|---|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----|---|---|---|----|---|---|---|
| Item | | Efficiency (by Load Current) | | Testing Circuitry Figure A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Object | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.Graph | | <div><div><div>—△—</div><div>Input Volt.</div><div>100V</div></div><div><div>- -□- -</div><div>Input Volt.</div><div>200V</div></div><div><div>- · -○- · -</div><div>Input Volt.</div><div>230V</div></div></div> <div>Efficiency [%]</div> <div>Load Current [A]</div> | | 2.Values | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | <table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Efficiency [%]</th></tr><tr><th>Input Volt. 100[V]</th><th>Input Volt. 200[V]</th><th>Input Volt. 230[V]</th></tr><tr><td>0.00</td><td>-</td><td>-</td><td>-</td></tr><tr><td>0.20</td><td>70.0</td><td>65.3</td><td>64.4</td></tr><tr><td>0.40</td><td>76.5</td><td>77.1</td><td>75.9</td></tr><tr><td>0.60</td><td>79.9</td><td>78.1</td><td>77.3</td></tr><tr><td>0.80</td><td>81.3</td><td>81.0</td><td>80.0</td></tr><tr><td>1.00</td><td>81.9</td><td>82.5</td><td>81.9</td></tr><tr><td>1.20</td><td>82.1</td><td>83.5</td><td>83.1</td></tr><tr><td>1.30</td><td>82.2</td><td>83.9</td><td>83.5</td></tr><tr><td>1.43</td><td>82.0</td><td>84.4</td><td>84.0</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr></table> | | | | Load Current [A] | Efficiency [%] | | | Input Volt. 100[V] | Input Volt. 200[V] | Input Volt. 230[V] | 0.00 | - | - | - | 0.20 | 70.0 | 65.3 | 64.4 | 0.40 | 76.5 | 77.1 | 75.9 | 0.60 | 79.9 | 78.1 | 77.3 | 0.80 | 81.3 | 81.0 | 80.0 | 1.00 | 81.9 | 82.5 | 81.9 | 1.20 | 82.1 | 83.5 | 83.1 | 1.30 | 82.2 | 83.9 | 83.5 | 1.43 | 82.0 | 84.4 | 84.0 | -- | - | - | - | -- | - | - | - |
| Load Current [A] | Efficiency [%] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Input Volt. 100[V] | Input Volt. 200[V] | Input Volt. 230[V] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.00 | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.20 | 70.0 | 65.3 | 64.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.40 | 76.5 | 77.1 | 75.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.60 | 79.9 | 78.1 | 77.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.80 | 81.3 | 81.0 | 80.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.00 | 81.9 | 82.5 | 81.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.20 | 82.1 | 83.5 | 83.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.30 | 82.2 | 83.9 | 83.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.43 | 82.0 | 84.4 | 84.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Note: Slanted line shows the range of the rated load current. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

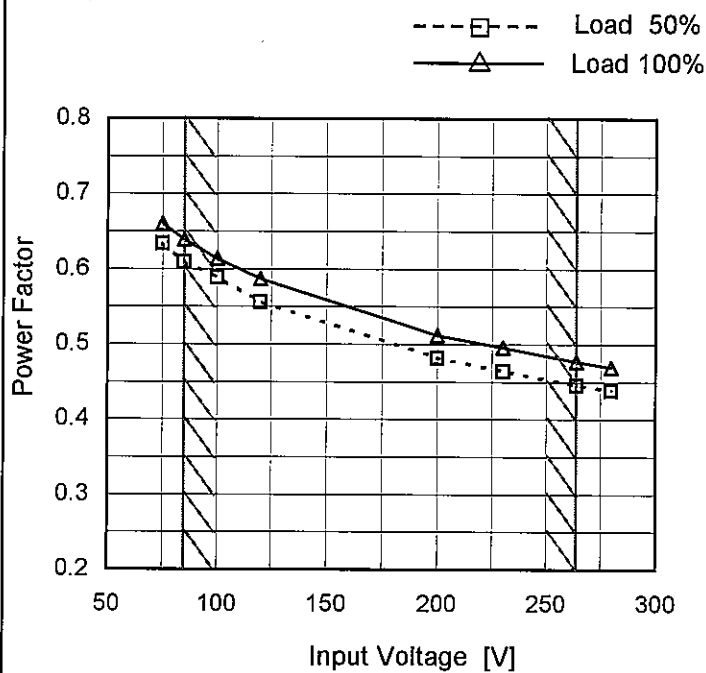
Model SPLFA30F-24

Item Power Factor (by Input Voltage)

Object

 Temperature 25°C
 Testing Circuitry Figure A

1. Graph



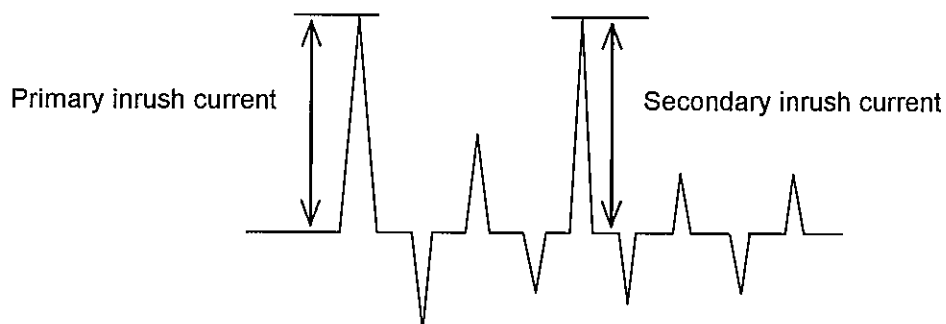
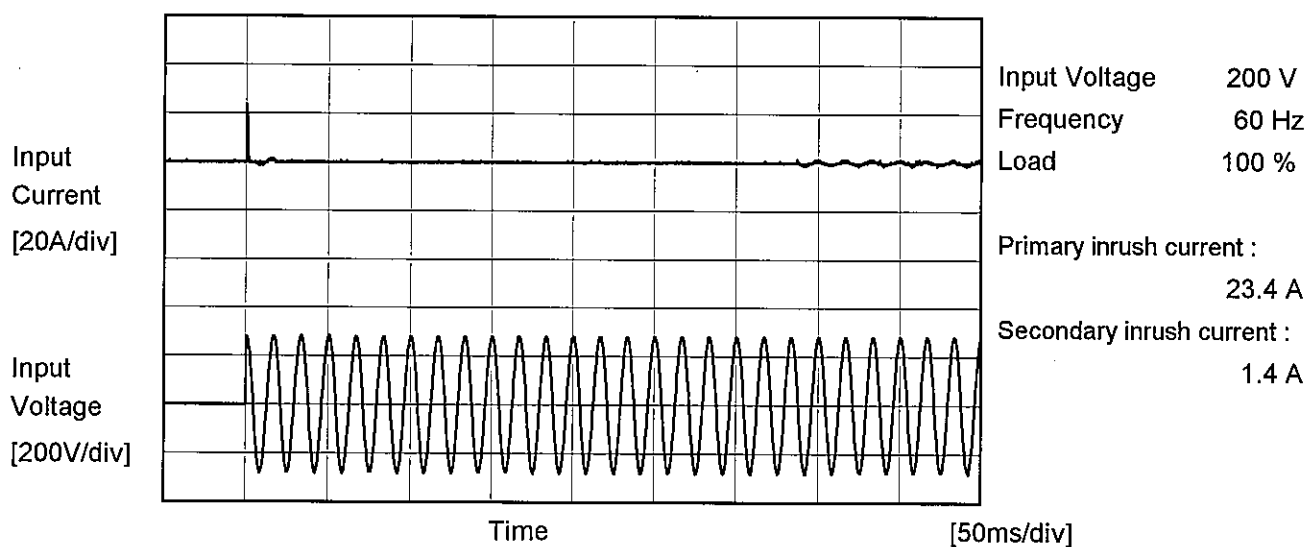
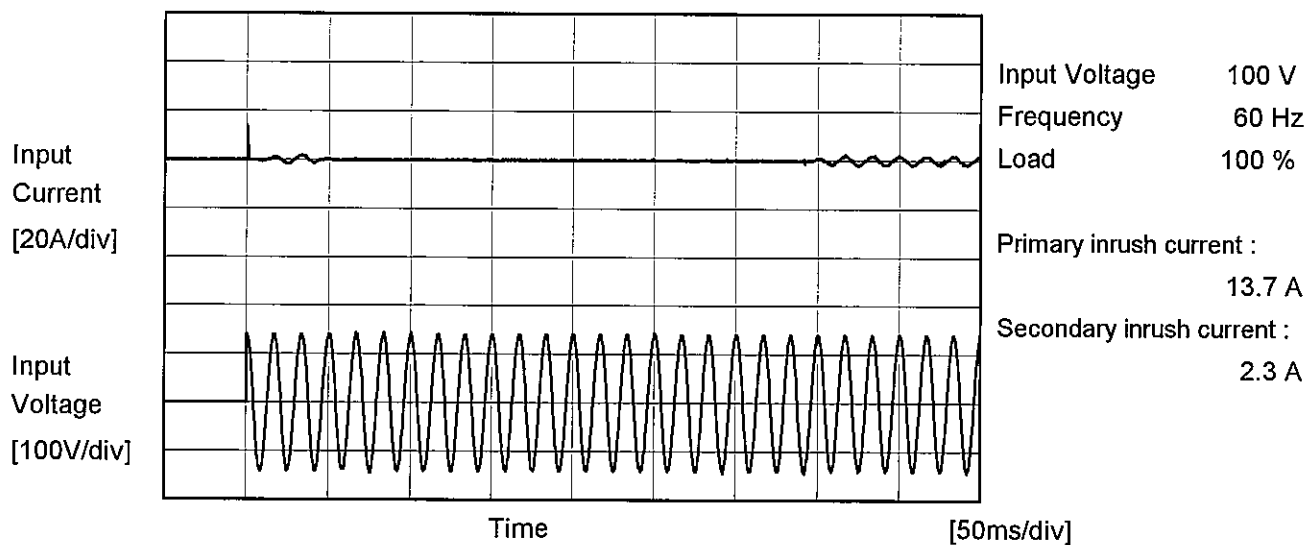
2. Values

| Input Voltage [V] | Power Factor | |
|-------------------|--------------|-----------|
| | Load 50% | Load 100% |
| 75 | 0.634 | 0.660 |
| 85 | 0.609 | 0.639 |
| 100 | 0.589 | 0.614 |
| 120 | 0.556 | 0.587 |
| 200 | 0.482 | 0.512 |
| 230 | 0.464 | 0.495 |
| 264 | 0.445 | 0.477 |
| 280 | 0.438 | 0.469 |
| -- | - | - |

| Model | | SPLFA30F-24 | | Temperature | | 25°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--------------------|--|--------------------|-------------------|--|------------------|--------------|--|--|--------------------|--------------------|--------------------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|----|---|---|---|----|---|---|---|
| Item | | Power Factor (by Load Current) | | Testing Circuitry | | Figure A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Object | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.Graph | | <div><div>—△—</div>Input Volt. 100V</div> <div><div>---□---</div>Input Volt. 200V</div> <div><div>-·-○-·-</div>Input Volt. 230V</div> | | 2.Values | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div><div><div>Power Factor</div><div>0.8</div><div>0.7</div><div>0.6</div><div>0.5</div><div>0.4</div><div>0.3</div><div>0.2</div></div><div><div>0.00.40.81.21.6</div><div>Load Current [A]</div></div></div> | | <table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Power Factor</th></tr><tr><th>Input Volt. 100[V]</th><th>Input Volt. 200[V]</th><th>Input Volt. 230[V]</th></tr><tr><td>0.00</td><td>0.400</td><td>0.296</td><td>0.278</td></tr><tr><td>0.20</td><td>0.523</td><td>0.416</td><td>0.397</td></tr><tr><td>0.40</td><td>0.565</td><td>0.455</td><td>0.436</td></tr><tr><td>0.60</td><td>0.584</td><td>0.483</td><td>0.462</td></tr><tr><td>0.80</td><td>0.595</td><td>0.496</td><td>0.476</td></tr><tr><td>1.00</td><td>0.605</td><td>0.506</td><td>0.486</td></tr><tr><td>1.20</td><td>0.612</td><td>0.513</td><td>0.494</td></tr><tr><td>1.30</td><td>0.615</td><td>0.515</td><td>0.497</td></tr><tr><td>1.43</td><td>0.619</td><td>0.518</td><td>0.501</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr></table> | | | | Load Current [A] | Power Factor | | | Input Volt. 100[V] | Input Volt. 200[V] | Input Volt. 230[V] | 0.00 | 0.400 | 0.296 | 0.278 | 0.20 | 0.523 | 0.416 | 0.397 | 0.40 | 0.565 | 0.455 | 0.436 | 0.60 | 0.584 | 0.483 | 0.462 | 0.80 | 0.595 | 0.496 | 0.476 | 1.00 | 0.605 | 0.506 | 0.486 | 1.20 | 0.612 | 0.513 | 0.494 | 1.30 | 0.615 | 0.515 | 0.497 | 1.43 | 0.619 | 0.518 | 0.501 | -- | - | - | - | -- | - | - | - |
| Load Current [A] | Power Factor | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Input Volt. 100[V] | Input Volt. 200[V] | Input Volt. 230[V] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.00 | 0.400 | 0.296 | 0.278 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.20 | 0.523 | 0.416 | 0.397 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.40 | 0.565 | 0.455 | 0.436 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.60 | 0.584 | 0.483 | 0.462 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.80 | 0.595 | 0.496 | 0.476 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.00 | 0.605 | 0.506 | 0.486 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.20 | 0.612 | 0.513 | 0.494 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.30 | 0.615 | 0.515 | 0.497 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.43 | 0.619 | 0.518 | 0.501 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -- | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Note: Slanted line shows the range of the rated load current. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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| | | | |
|--------|----------------|-------------------|----------|
| Model | SPLFA30F-24 | Temperature | 25°C |
| Item | Inrush Current | Testing Circuitry | Figure A |
| Object | _____ | | |



| | | | |
|--------|--|-----------------|--|
| Model | | SPLFA30F-24 | Temperature 25°C Testing Circuitry Figure B |
| Item | | Leakage Current | |
| Object | | _____ | |

1.Results

[mA]

| Standards | | Input Volt. | | | Note |
|------------|---------------|-------------|---------|---------|-----------|
| | | 100 [V] | 200 [V] | 240 [V] | |
| DEN-AN | Both phases | 0.15 | 0.25 | 0.34 | Operation |
| | One of phases | 0.20 | 0.48 | 0.53 | Stand by |
| IEC60950-1 | Both phases | 0.15 | 0.28 | 0.39 | Operation |
| | One of phases | 0.20 | 0.49 | 0.54 | Stand by |

The value for "One of phases" is the reference value only.

2.Condition

Leakage current value is concluded after measuring both phases of AC input and by choosing the larger one.

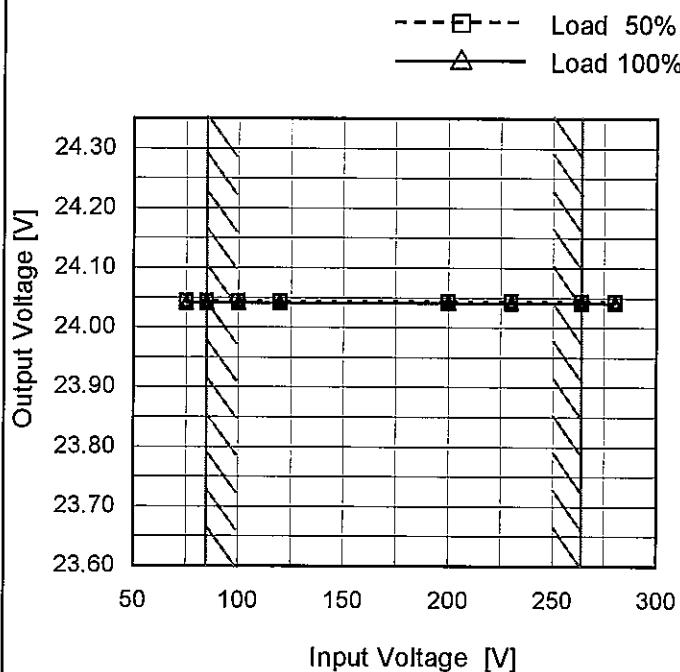
Model SPLFA30F-24

Item Line Regulation

Object +24V1.3A

 Temperature 25°C
 Testing Circuitry Figure A

1. Graph



2. Values

| Input Voltage [V] | Output Voltage [V] | |
|-------------------|--------------------|-----------|
| | Load 50% | Load 100% |
| 75 | 24.044 | 24.041 |
| 85 | 24.044 | 24.041 |
| 100 | 24.044 | 24.041 |
| 120 | 24.044 | 24.041 |
| 200 | 24.044 | 24.041 |
| 230 | 24.044 | 24.041 |
| 264 | 24.044 | 24.041 |
| 280 | 24.044 | 24.041 |
| -- | - | - |

Model SPLFA30F-24

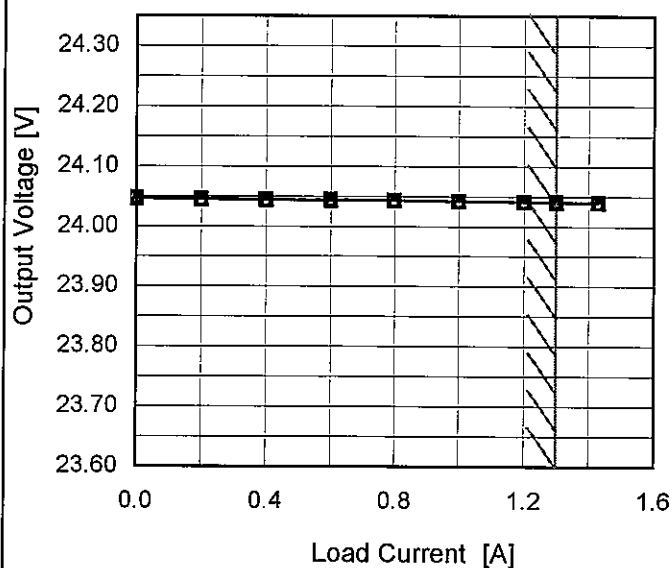
Item Load Regulation

Object +24V1.3A

 Temperature 25°C
 Testing Circuitry Figure A

1. Graph

—△— Input Volt. 100V
 ---□--- Input Volt. 200V
 -·-○-·- Input Volt. 230V



Note: Slanted line shows the range of the rated load current.

2. Values

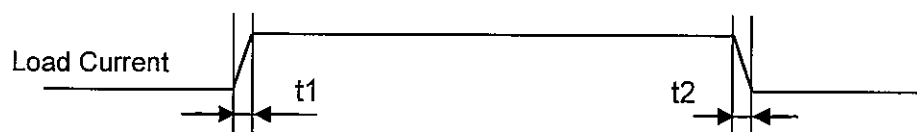
| Load Current [A] | Output Voltage [V] | | |
|------------------|--------------------|--------------------|--------------------|
| | Input Volt. 100[V] | Input Volt. 200[V] | Input Volt. 230[V] |
| 0.00 | 24.047 | 24.047 | 24.047 |
| 0.20 | 24.046 | 24.046 | 24.046 |
| 0.40 | 24.045 | 24.045 | 24.045 |
| 0.60 | 24.044 | 24.044 | 24.044 |
| 0.80 | 24.043 | 24.043 | 24.043 |
| 1.00 | 24.042 | 24.042 | 24.042 |
| 1.20 | 24.041 | 24.041 | 24.041 |
| 1.30 | 24.041 | 24.041 | 24.041 |
| 1.43 | 24.040 | 24.040 | 24.040 |
| -- | - | - | - |
| -- | - | - | - |



| | | | |
|--------|-----------------------|----------------------------------|------------------|
| | | | |
| Model | SPLFA30F-24 | Temperature Testing Circuitry | 25°C Figure A |
| Item | Dynamic Load Response | | |
| Object | +24V1.3A | | |

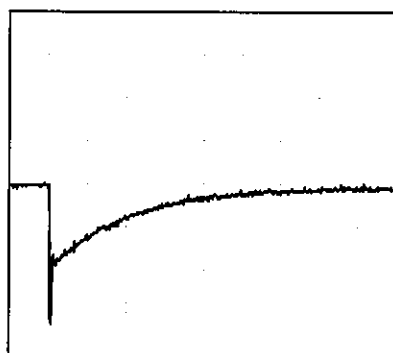
Input Volt. 100 V
Cycle 1000 ms

Response. $t_1=t_2=50\mu\text{s}$. Typ

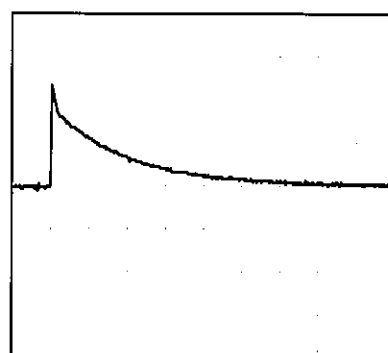


Min. Load (0A) \longleftrightarrow
Load 100% (1.3A)

100 mV/div



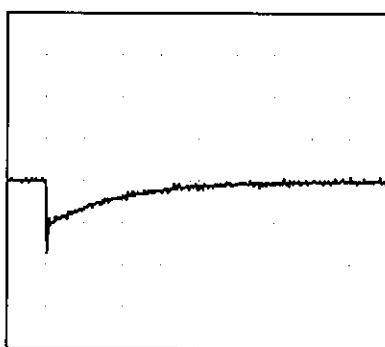
4 ms/div



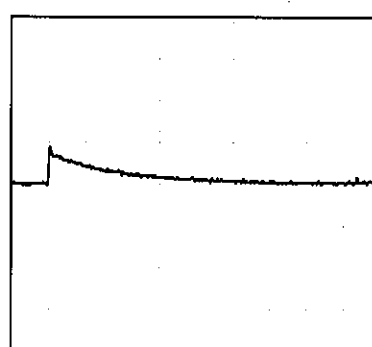
4 ms/div

Min. Load (0A) \longleftrightarrow
Load 50% (0.65A)

100 mV/div



4 ms/div



4 ms/div

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| | | | |
|---------|--|----------------------------------|--|
| Model | | SPLFA30F-24 | |
| Item | | Ripple Voltage (by Load Current) | |
| Object | | +24V1.3A | |
| 1.Graph | | 2.Values | |

—△— Input Volt. 100V
- -○- - Input Volt. 200V

Ripple Voltage [mV]

Load Current [A]

| Load Current [A] | Ripple Voltage [mV] | |
|------------------|---------------------|---------------------|
| | Input Volt. 100 [V] | Input Volt. 200 [V] |
| 0.00 | 15 | 15 |
| 0.20 | 15 | 15 |
| 0.40 | 20 | 20 |
| 0.60 | 25 | 25 |
| 0.80 | 25 | 25 |
| 1.00 | 30 | 30 |
| 1.20 | 30 | 30 |
| 1.30 | 30 | 30 |
| 1.43 | 35 | 30 |
| -- | - | - |
| -- | - | - |

Measured by MHz Oscilloscope.

Ripple Voltage is shown as p-p in the figure below.

Note: Slanted line shows the range of the rated load current.

T1: Due to AC Input Line
T2: Due to Switching

Ripple [mVp-p]

Fig. Complex Ripple Wave Form

COSEL

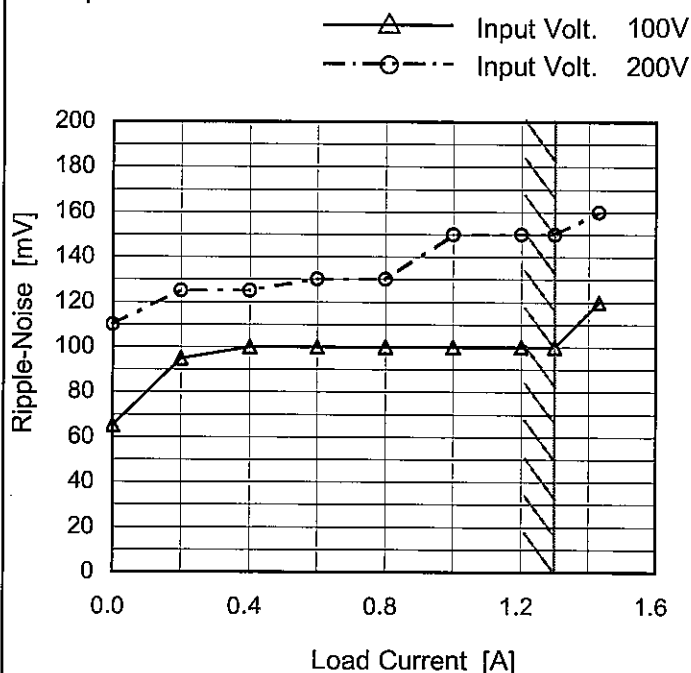
Model SPLFA30F-24

Item Ripple-Noise

Object +24V1.3A

 Temperature 25°C
 Testing Circuitry Figure A

1. Graph



Measured by MHz Oscilloscope.
 Ripple-Noise is shown as p-p in the figure below.
 Note: Slanted line shows the range of the rated load current.

2. Values

| Load Current [A] | Ripple-Noise [mV] | |
|------------------|---------------------|---------------------|
| | Input Volt. 100 [V] | Input Volt. 200 [V] |
| 0.00 | 65 | 110 |
| 0.20 | 95 | 125 |
| 0.40 | 100 | 125 |
| 0.60 | 100 | 130 |
| 0.80 | 100 | 130 |
| 1.00 | 100 | 150 |
| 1.20 | 100 | 150 |
| 1.30 | 100 | 150 |
| 1.43 | 120 | 160 |
| -- | - | - |
| --- | - | - |

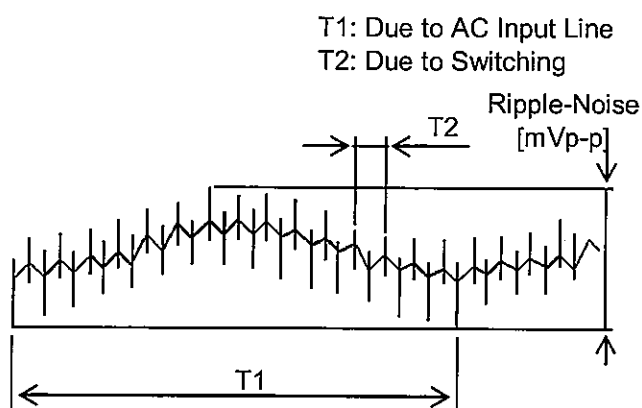


Fig. Complex Ripple Wave Form

| | | | |
|---------|--|-----------------------------------|--|
| Model | | SPLFA30F-24 | |
| Item | | Ripple Voltage (by Ambient Temp.) | |
| Object | | +24V1.3A | |
| 1.Graph | | 2.Values | |

</

Model SPLFA30F-24

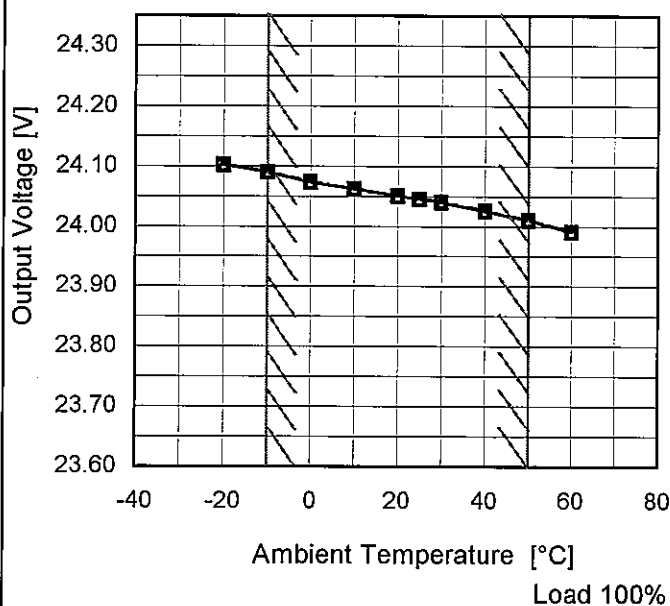
Item Ambient Temperature Drift

Object +24V1.3A

Testing Circuitry Figure A

1. Graph

—△— Input Volt. 100V
 ---□--- Input Volt. 200V
 ---○--- Input Volt. 230V



Note: Slanted line shows the range of the rated ambient temperature.

2. Values

| Ambient Temperature [°C] | Output Voltage [V] | | |
|--------------------------|--------------------|--------------------|--------------------|
| | Input Volt. 100[V] | Input Volt. 200[V] | Input Volt. 230[V] |
| -20 | 24.102 | 24.103 | 24.103 |
| -10 | 24.090 | 24.090 | 24.090 |
| 0 | 24.074 | 24.074 | 24.074 |
| 10 | 24.062 | 24.063 | 24.062 |
| 20 | 24.050 | 24.051 | 24.051 |
| 25 | 24.045 | 24.046 | 24.046 |
| 30 | 24.040 | 24.041 | 24.041 |
| 40 | 24.026 | 24.026 | 24.026 |
| 50 | 24.010 | 24.011 | 24.011 |
| 60 | 23.991 | 23.991 | 23.991 |
| -- | - | - | - |

| | | |
|--------|-------------------------|----------------------------|
| | | Testing Circuitry Figure A |
| Model | SPLFA30F-24 | |
| Item | Output Voltage Accuracy | |
| Object | +24V1.3A | |

1. Output Voltage Accuracy

This is defined as the value of the output voltage, regulation load, ambient temperature and input voltage varied at random in the range as specified below.

Temperature : -10 - 50°C

Input Voltage : 85 - 264V

Load Current : 0 - 1.3A

* Output Voltage Accuracy = $\pm(\text{Maximum of Output Voltage} - \text{Minimum of Output Voltage}) / 2$

* Output Voltage Accuracy (Ratio) = $\frac{\text{Output Voltage Accuracy}}{\text{Rated Output Voltage}} \times 100$

2. Values

| Item | Temperature [°C] | Input Voltage[V] | Output | | Output Voltage Accuracy | |
|-----------------|---------------------|---------------------|------------|------------|-------------------------|-----------|
| | | | Current[A] | Voltage[V] | Value [mV] | Ratio [%] |
| Maximum Voltage | -10 | 264 | 0 | 24.096 | ±43 | ±0.2 |
| Minimum Voltage | 50 | 85 | 1.3 | 24.010 | | |

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| | | | |
|---|--|------------------|--|
| Model | | SPLFA30F-24 | |
| Item | | Time Lapse Drift | |
| Object | | +24V1.3A | |
| 1.Graph | | 2.Values | |
| <div><div><div>Output Voltage [V]</div><div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></di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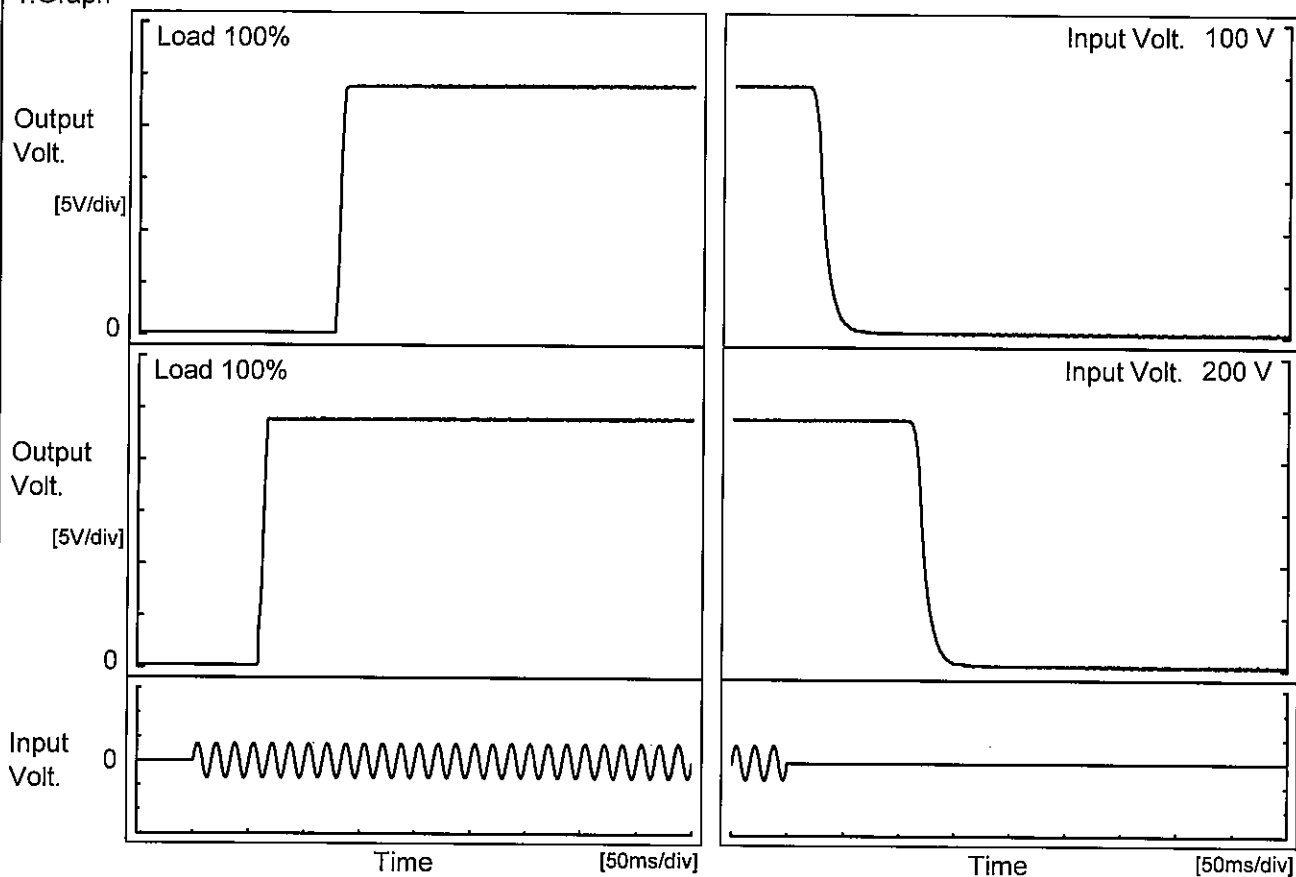
Model SPLFA30F-24

Item Rise and Fall Time

Object +24V1.3A

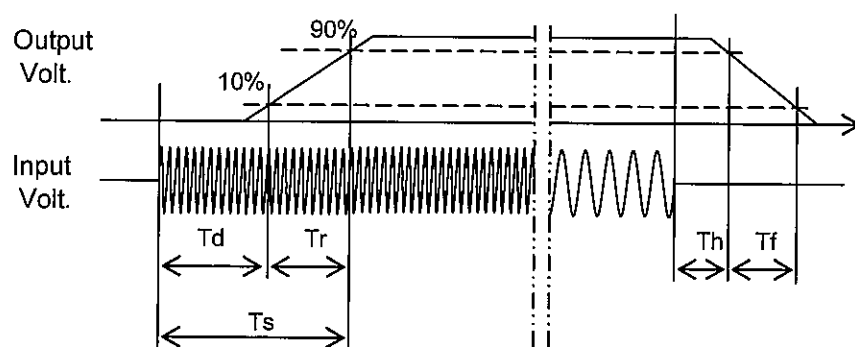
Temperature 25°C
Testing Circuitry Figure A

1. Graph



2. Values

| | | [ms] | | | | |
|-------------|------|-------|-----|-------|-------|------|
| Input Volt. | Time | Td | Tr | Ts | Th | Tf |
| 100 V | | 127.3 | 6.3 | 133.6 | 23.5 | 19.3 |
| 200 V | | 58.3 | 6.5 | 64.8 | 114.8 | 19.8 |



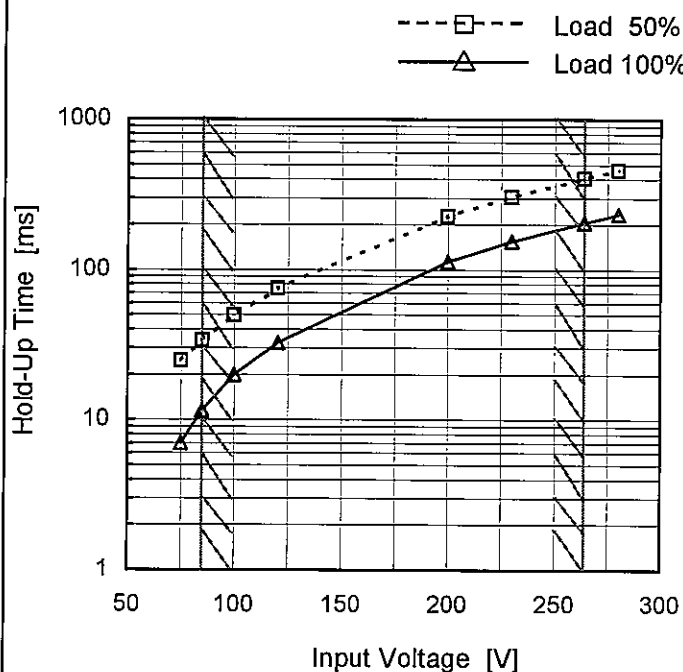
Model SPLFA30F-24

Item Hold-Up Time

Object +24V1.3A

 Temperature 25°C
 Testing Circuitry Figure A

1. Graph



This duration covers from Shut-off of input voltage to the moment when output voltage descends to the rated range of voltage accuracy.
 Note: Slanted line shows the range of the rated input voltage.

2. Values

| Input Voltage [V] | Hold-Up Time [ms] | |
|-------------------|-------------------|-----------|
| | Load 50% | Load 100% |
| 75 | 25 | 7 |
| 85 | 34 | 12 |
| 100 | 50 | 20 |
| 120 | 75 | 33 |
| 200 | 227 | 113 |
| 230 | 304 | 155 |
| 264 | 406 | 206 |
| 280 | 460 | 234 |
| -- | - | - |

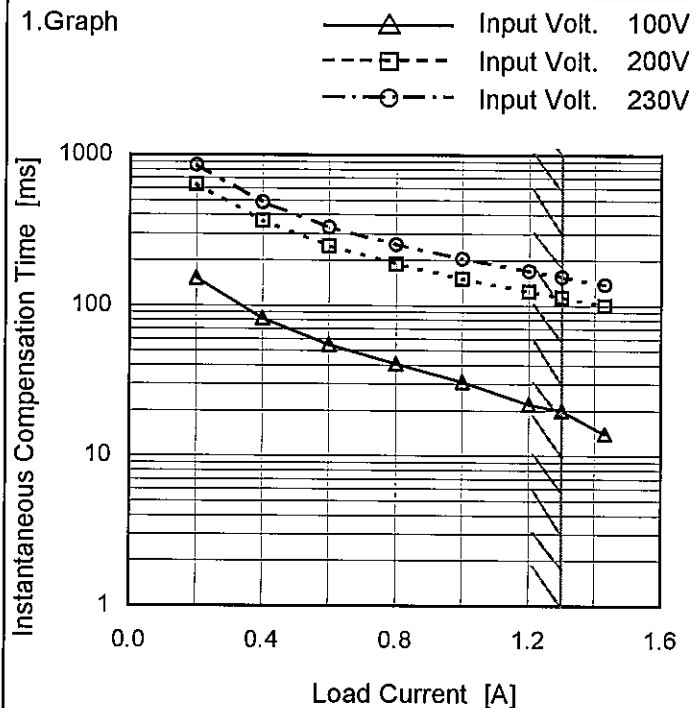
Model SPLFA30F-24

Item Instantaneous Interruption Compensation

Object +24V1.3A

Temperature 25°C
Testing Circuitry Figure A

1. Graph



Note: Slanted line shows the range of the rated load current.

2. Values

| Load Current [A] | Time [ms] | | |
|------------------|--------------------|--------------------|--------------------|
| | Input Volt. 100[V] | Input Volt. 200[V] | Input Volt. 230[V] |
| 0.00 | - | - | - |
| 0.20 | 152 | 639 | 851 |
| 0.40 | 82 | 363 | 486 |
| 0.60 | 55 | 248 | 331 |
| 0.80 | 41 | 189 | 254 |
| 1.00 | 31 | 151 | 204 |
| 1.20 | 22 | 124 | 169 |
| 1.30 | 20 | 113 | 155 |
| 1.43 | 14 | 100 | 138 |
| -- | - | - | - |
| -- | - | - | - |

Model

SPLFA30F-24

Item

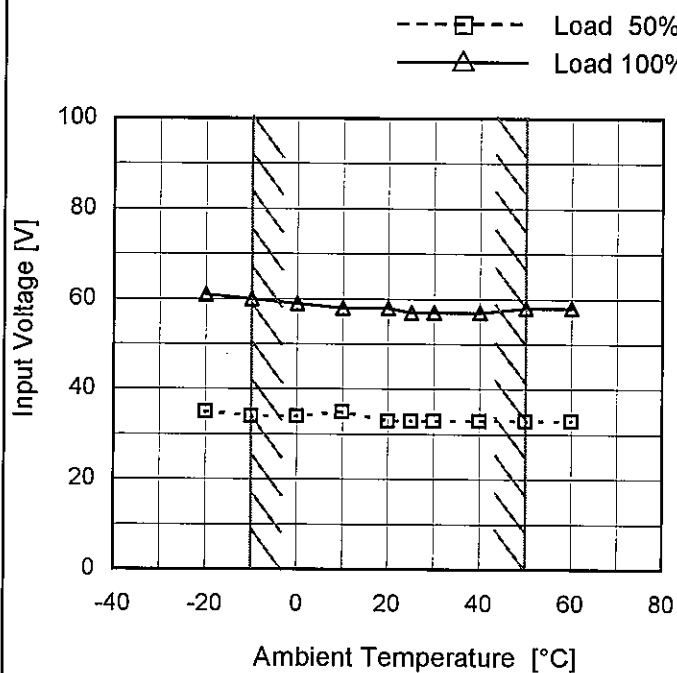
Minimum Input Voltage
for Regulated Output Voltage

Object

+24V1.3A

Testing Circuitry Figure A

1. Graph



Note: Slanted line shows the range of the rated ambient temperature.

2. Values

| Ambient Temperature [°C] | Input Voltage [V] | |
|-----------------------------|----------------------|-----------|
| | Load 50% | Load 100% |
| -20 | 35 | 61 |
| -10 | 34 | 60 |
| 0 | 34 | 59 |
| 10 | 35 | 58 |
| 20 | 33 | 58 |
| 25 | 33 | 57 |
| 30 | 33 | 57 |
| 40 | 33 | 57 |
| 50 | 33 | 58 |
| 60 | 33 | 58 |
| -- | - | - |

Model

SPLFA30F-24

Item

Overcurrent Protection

Object

+24V1.3A

1.Graph

Input Volt. 100V

Input Volt. 200V

Output Voltage [V]

30

20

10

0

0.0

1.0

2.0

3.0

Load Current [A]

Note: Slanted line shows the range of the rated load current.

Intermittent operation occurs when the output voltage is from 22V to 0V.

2.Values

| Output Voltage [V] | Load Current [A] | |
|--------------------|--------------------|--------------------|
| | Input Volt. 100[V] | Input Volt. 200[V] |
| 24.0 | 1.30 | 1.30 |
| 22.8 | - | - |
| -- | - | - |
| -- | - | - |
| -- | - | - |
| -- | - | - |
| -- | - | - |
| -- | - | - |
| -- | - | - |
| -- | - | - |
| -- | - | - |
| -- | - | - |
| -- | - | - |

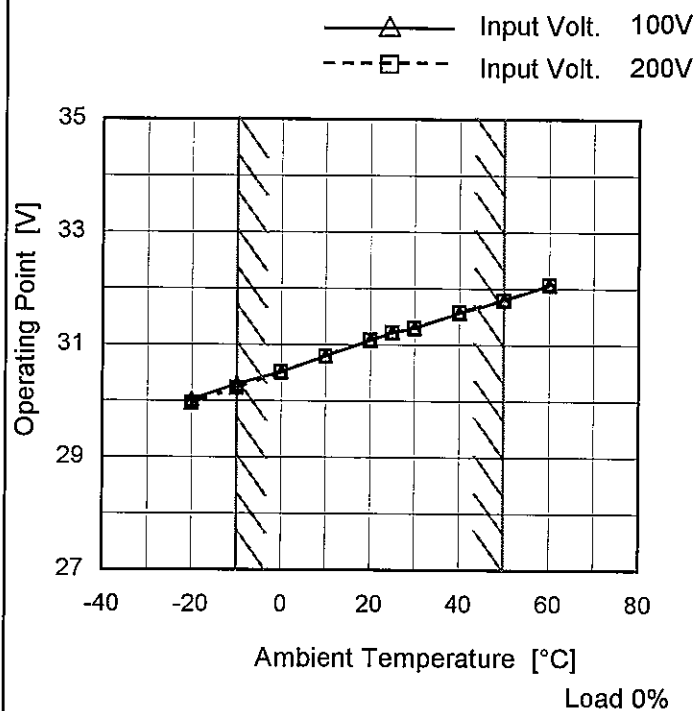
Model SPLFA30F-24

Item Overvoltage Protection

Object +24V1.3A

Testing Circuitry Figure A

1. Graph



Note: Slanted line shows the range of the rated ambient temperature.

2. Values

| Ambient Temperature [°C] | Operating Point [V] | |
|--------------------------|---------------------|--------------------|
| | Input Volt. 100[V] | Input Volt. 200[V] |
| -20 | 30.02 | 29.95 |
| -10 | 30.30 | 30.23 |
| 0 | 30.51 | 30.51 |
| 10 | 30.80 | 30.80 |
| 20 | 31.08 | 31.08 |
| 25 | 31.22 | 31.22 |
| 30 | 31.29 | 31.29 |
| 40 | 31.57 | 31.58 |
| 50 | 31.79 | 31.79 |
| 60 | 32.07 | 32.07 |
| -- | - | - |

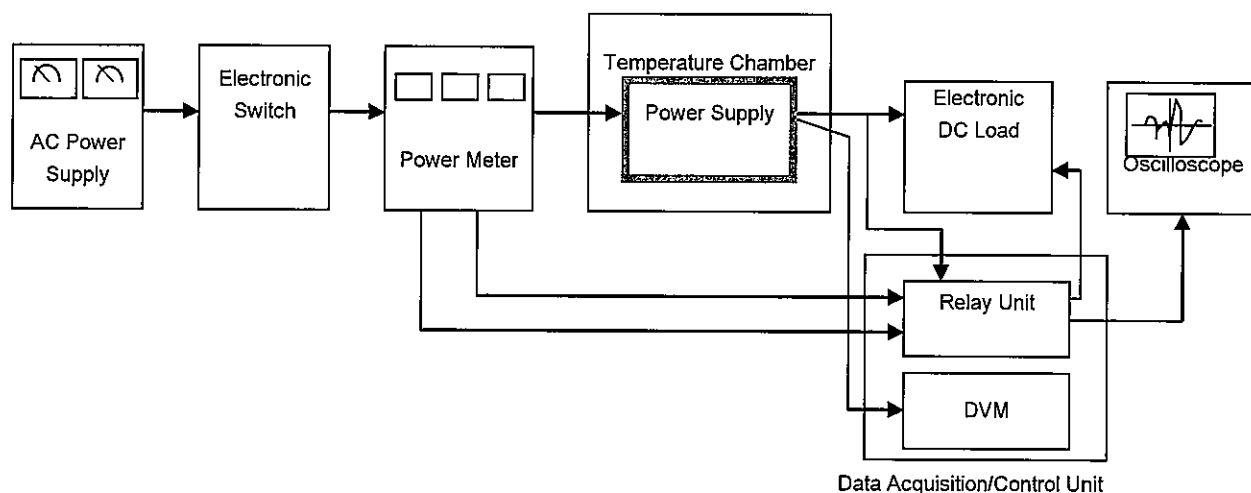


Figure A

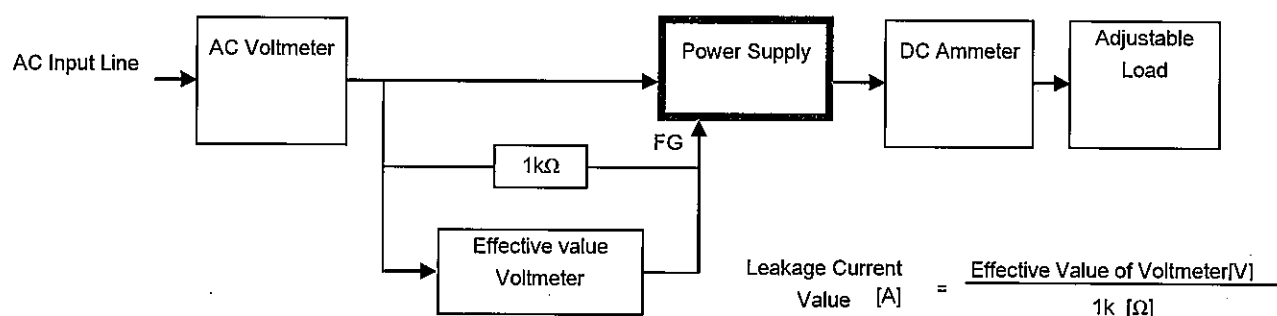


Figure B (DEN-AN)

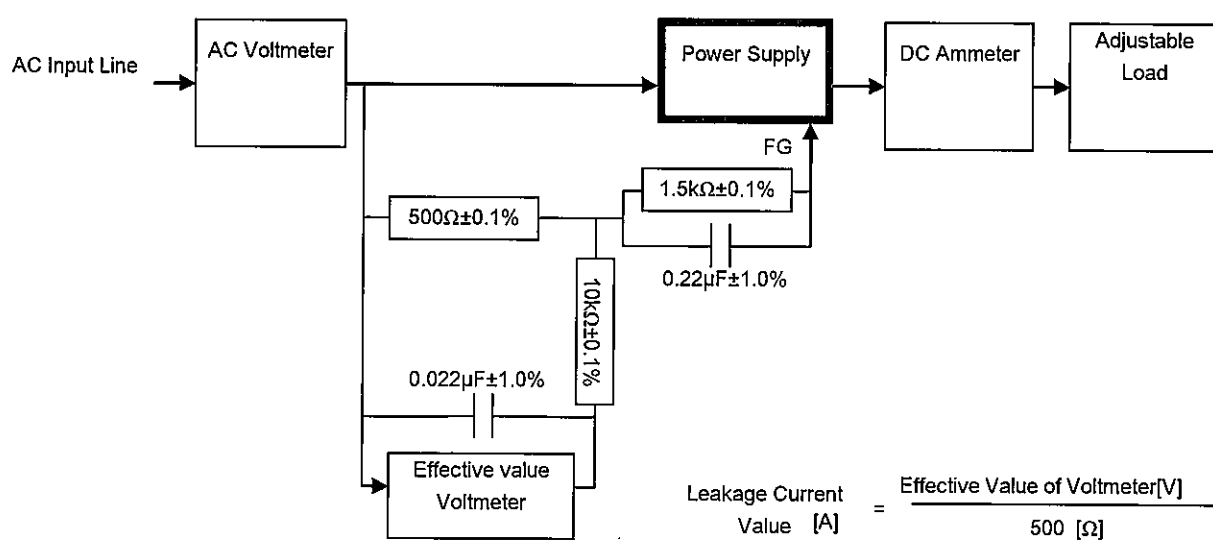


Figure B (IEC60950-1)