

# Test Data


Model Number: UZP-220-18

Model Name: DC POWER SUPPLY

INPUT: 85V – 264V AC, 50 / 60 Hz

OUTPUT: 18V 10A (22.3 A<sub>peak</sub>)

Minimum load : 0W  
Rated load :180W  
Peak output power: 401.4W

Approved by :  (QA manager)  
Designed by : Kazuhiko Yamada (R&D engineer)  
Tested by : Hiroyuki Watanabe (Evaluation test engineer)

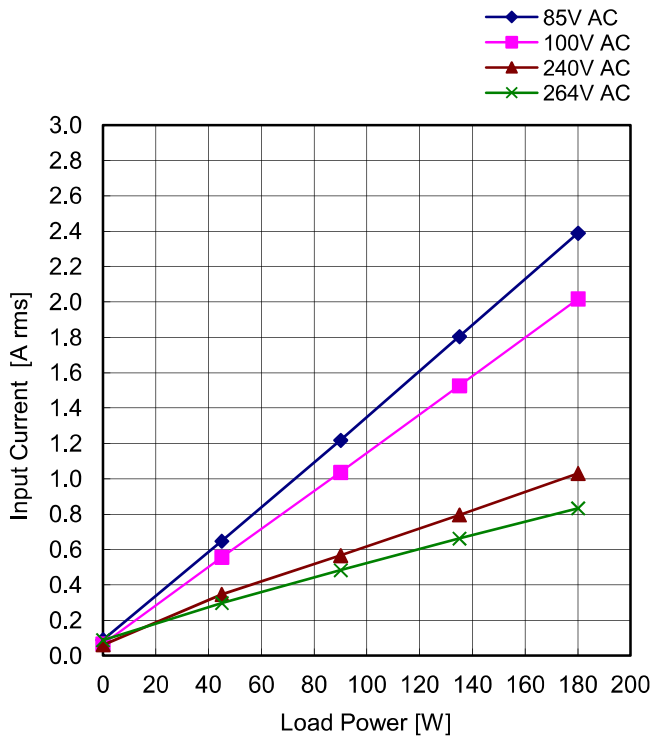
## CONTENTS

|   |       |
|---|-------|
| 1. Input Current (by Load Power) .....                            | 1     |
| 入力電流(負荷特性)  |       |
| 2. Efficiency .....   | 2     |
| 効率  |       |
| 3. Power Factor .....   | 3     |
| 力率  |       |
| 4. Line Regulation .....  | 4     |
| 静的入力変動  |       |
| 5. Load Regulation .....  | 5     |
| 静的負荷変動  |       |
| 6. Ambient Temperature Drift .....                                | 6     |
| 周囲温度変動  |       |
| 7. Output Rise Characteristics (at AC Power ON) .....             | 7     |
| 立ち上がり特性(AC 入力電圧投入時)   |       |
| 8. Output Rise Characteristics (at Remote ON) .....               | 8     |
| 立ち上がり特性(リモートオン時)  |       |
| 9. Output Fall Characteristics (at AC Power OFF) .....            | 9     |
| 立ち下がり特性(AC 入力電圧停止時)   |       |
| 10. Output Fall Characteristics (at Remote OFF) .....             | 10    |
| 立ち下がり特性(リモートオフ時)  |       |
| 11. Instantaneous Interruption Compensation (by Load Power) ..... | 11    |
| 瞬時停電保護  |       |
| 12. Start-Up Voltage .....  | 12    |
| 起動電圧  |       |
| 13. Input Voltage Sweep Up/Down .....                             | 13    |
| 入力電圧緩動試験  |       |
| 14. Dynamic Load Response .....                                   | 14    |
| 動的負荷変動  |       |
| 15. Ripple / Noise Voltage .....                                  | 15-16 |
| リップル電圧/ リップルノイズ   |       |
| 16. Over-Current Protection .....                                 | 17    |
| 過電流保護   |       |
| 17. Over-Voltage Protection .....                                 | 18    |
| 過電圧保護   |       |
| 18. Inrush Current .....  | 19    |
| 突入電流  |       |
| 19. Leakage Current .....   | 20    |
| 漏洩電流  |       |

Model UZP-220-18

Temperature: 25°C

Item Input Current (by Load Power)

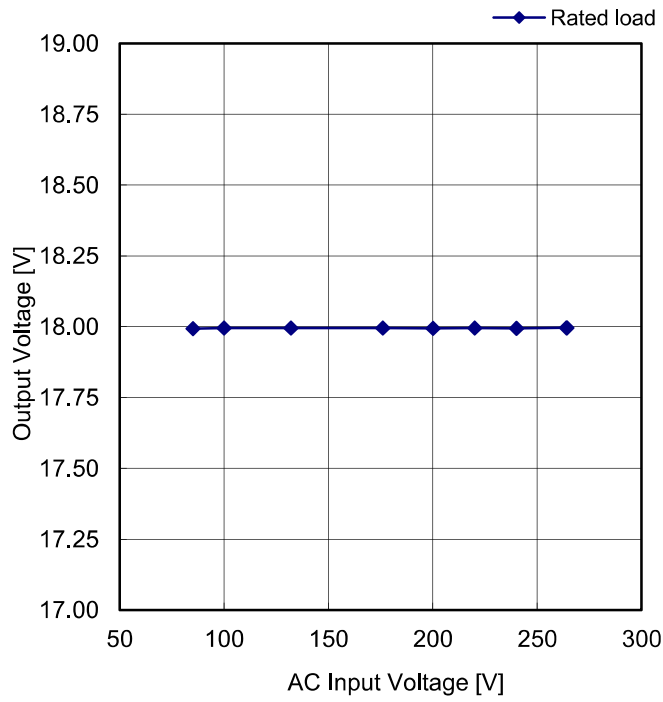


| Load Power [W] | Input Current [A rms] |                       |                       |                       |
|----------------|-----------------------|-----------------------|-----------------------|-----------------------|
|                | Input Voltage 85V AC  | Input Voltage 100V AC | Input Voltage 240V AC | Input Voltage 264V AC |
| 0.0            | 0.09                  | 0.07                  | 0.06                  | 0.09                  |
| 45.0           | 0.65                  | 0.56                  | 0.35                  | 0.30                  |
| 90.0           | 1.22                  | 1.04                  | 0.57                  | 0.48                  |
| 135.0          | 1.81                  | 1.53                  | 0.80                  | 0.66                  |
| 180.0          | 2.39                  | 2.02                  | 1.03                  | 0.83                  |

| Model   | UZP-220-18              | Temperature: 25°C         |                       |                       |                         |                           |    |       |                      |                       |                       |                       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|---|-------------------------|---------------------------|-----------------------|-----------------------|-------------------------|---------------------------|----|-------|----------------------|-----------------------|-----------------------|-----------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Item  | Efficiency              |                           |                       |                       |                         |                           |    |       |                      |                       |                       |                       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| <p>■ Efficiency(by Input Voltage)</p> <p>Legend: 50% Load (Blue diamonds), Rated Load (Pink squares)</p> <table border="1"> <thead> <tr> <th>AC Input Voltage [V]</th> <th>50% Load Efficiency [%]</th> <th>Rated Load Efficiency [%]</th> </tr> </thead> <tbody> <tr><td>85</td><td>87.25</td><td>88.52</td></tr> <tr><td>100</td><td>87.92</td><td>89.48</td></tr> <tr><td>132</td><td>88.84</td><td>90.47</td></tr> <tr><td>176</td><td>89.53</td><td>91.38</td></tr> <tr><td>200</td><td>90.02</td><td>91.73</td></tr> <tr><td>220</td><td>90.23</td><td>91.99</td></tr> <tr><td>240</td><td>90.51</td><td>92.27</td></tr> <tr><td>264</td><td>89.70</td><td>92.39</td></tr> </tbody> </table>  |                         |                           |                       | AC Input Voltage [V]  | 50% Load Efficiency [%] | Rated Load Efficiency [%] | 85 | 87.25 | 88.52                | 100                   | 87.92                 | 89.48                 | 132  | 88.84 | 90.47 | 176   | 89.53 | 91.38 | 200   | 90.02 | 91.73 | 220   | 90.23 | 91.99 | 240   | 90.51 | 92.27 | 264   | 89.70 | 92.39 |       |       |
| AC Input Voltage [V]  | 50% Load Efficiency [%] | Rated Load Efficiency [%] |                       |                       |                         |                           |    |       |                      |                       |                       |                       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 85  | 87.25                   | 88.52                     |                       |                       |                         |                           |    |       |                      |                       |                       |                       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 100   | 87.92                   | 89.48                     |                       |                       |                         |                           |    |       |                      |                       |                       |                       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 132   | 88.84                   | 90.47                     |                       |                       |                         |                           |    |       |                      |                       |                       |                       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 176   | 89.53                   | 91.38                     |                       |                       |                         |                           |    |       |                      |                       |                       |                       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 200   | 90.02                   | 91.73                     |                       |                       |                         |                           |    |       |                      |                       |                       |                       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 220   | 90.23                   | 91.99                     |                       |                       |                         |                           |    |       |                      |                       |                       |                       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 240   | 90.51                   | 92.27                     |                       |                       |                         |                           |    |       |                      |                       |                       |                       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 264   | 89.70                   | 92.39                     |                       |                       |                         |                           |    |       |                      |                       |                       |                       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| <p>■ Efficiency(by Load Power)</p> <p>Legend: 85V AC (Blue diamonds), 100V AC (Pink squares), 240V AC (Red triangles), 264V AC (Green crosses)</p> <table border="1"> <thead> <tr> <th rowspan="2">Load Power [W]</th> <th colspan="4">Efficiency [%]</th> </tr> <tr> <th>Input Voltage 85V AC</th> <th>Input Voltage 100V AC</th> <th>Input Voltage 240V AC</th> <th>Input Voltage 264V AC</th> </tr> </thead> <tbody> <tr><td>45.0</td><td>83.41</td><td>83.93</td><td>86.07</td><td>86.40</td></tr> <tr><td>90.0</td><td>87.25</td><td>87.92</td><td>90.51</td><td>89.70</td></tr> <tr><td>135.0</td><td>88.40</td><td>89.11</td><td>91.79</td><td>92.91</td></tr> <tr><td>180.0</td><td>88.52</td><td>89.48</td><td>92.27</td><td>92.39</td></tr> </tbody> </table> |                         |                           |                       | Load Power [W]        | Efficiency [%]          |                           |    |       | Input Voltage 85V AC | Input Voltage 100V AC | Input Voltage 240V AC | Input Voltage 264V AC | 45.0 | 83.41 | 83.93 | 86.07 | 86.40 | 90.0  | 87.25 | 87.92 | 90.51 | 89.70 | 135.0 | 88.40 | 89.11 | 91.79 | 92.91 | 180.0 | 88.52 | 89.48 | 92.27 | 92.39 |
| Load Power [W]  | Efficiency [%]          |                           |                       |                       |                         |                           |    |       |                      |                       |                       |                       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|   | Input Voltage 85V AC    | Input Voltage 100V AC     | Input Voltage 240V AC | Input Voltage 264V AC |                         |                           |    |       |                      |                       |                       |                       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 45.0  | 83.41                   | 83.93                     | 86.07                 | 86.40                 |                         |                           |    |       |                      |                       |                       |                       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 90.0  | 87.25                   | 87.92                     | 90.51                 | 89.70                 |                         |                           |    |       |                      |                       |                       |                       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 135.0   | 88.40                   | 89.11                     | 91.79                 | 92.91                 |                         |                           |    |       |                      |                       |                       |                       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 180.0   | 88.52                   | 89.48                     | 92.27                 | 92.39                 |                         |                           |    |       |                      |                       |                       |                       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

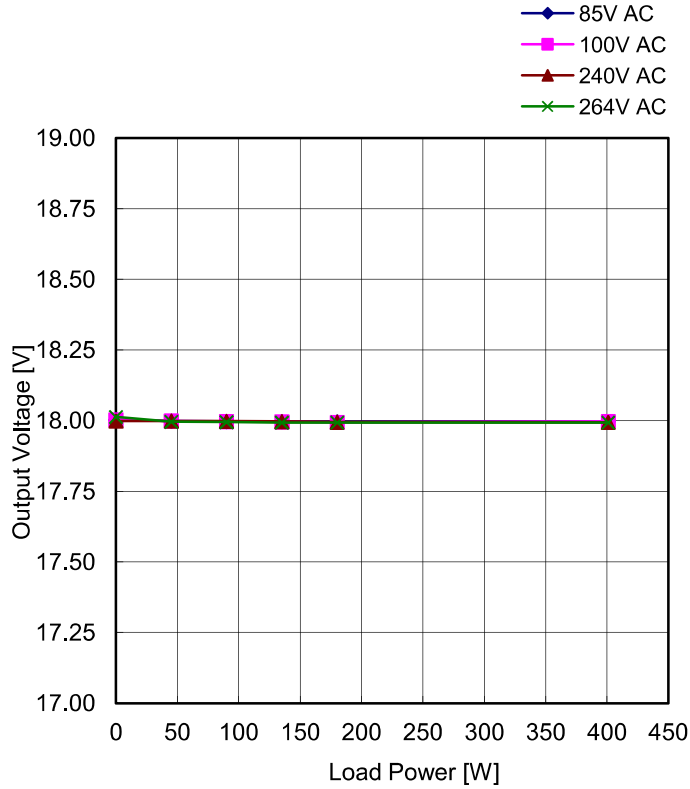
| Model   | UZP-220-18           | Temperature: 25°C     |                       |                       |                  |            |    |      |                      |                       |                       |                       |      |      |      |      |      |       |      |      |      |      |       |      |      |      |      |       |      |      |      |      |
|---|----------------------|-----------------------|-----------------------|-----------------------|------------------|------------|----|------|----------------------|-----------------------|-----------------------|-----------------------|------|------|------|------|------|-------|------|------|------|------|-------|------|------|------|------|-------|------|------|------|------|
| Item  | Power Factor         |                       |                       |                       |                  |            |    |      |                      |                       |                       |                       |      |      |      |      |      |       |      |      |      |      |       |      |      |      |      |       |      |      |      |      |
| <p>■ Power Factor (by Input Voltage)</p> <table border="1"> <thead> <tr> <th>AC Input Voltage [V]</th> <th>50% Load</th> <th>Rated Load</th> </tr> </thead> <tbody> <tr><td>85</td><td>98.8</td><td>99.7</td></tr> <tr><td>100</td><td>97.9</td><td>99.3</td></tr> <tr><td>132</td><td>95.8</td><td>98.2</td></tr> <tr><td>176</td><td>91.2</td><td>96.2</td></tr> <tr><td>200</td><td>87.7</td><td>94.7</td></tr> <tr><td>220</td><td>83.8</td><td>93.3</td></tr> <tr><td>240</td><td>80.6</td><td>91.3</td></tr> <tr><td>264</td><td>77.6</td><td>88.2</td></tr> </tbody> </table>  |                      |                       |                       | AC Input Voltage [V]  | 50% Load         | Rated Load | 85 | 98.8 | 99.7                 | 100                   | 97.9                  | 99.3                  | 132  | 95.8 | 98.2 | 176  | 91.2 | 96.2  | 200  | 87.7 | 94.7 | 220  | 83.8  | 93.3 | 240  | 80.6 | 91.3 | 264   | 77.6 | 88.2 |      |      |
| AC Input Voltage [V]  | 50% Load             | Rated Load            |                       |                       |                  |            |    |      |                      |                       |                       |                       |      |      |      |      |      |       |      |      |      |      |       |      |      |      |      |       |      |      |      |      |
| 85  | 98.8                 | 99.7                  |                       |                       |                  |            |    |      |                      |                       |                       |                       |      |      |      |      |      |       |      |      |      |      |       |      |      |      |      |       |      |      |      |      |
| 100   | 97.9                 | 99.3                  |                       |                       |                  |            |    |      |                      |                       |                       |                       |      |      |      |      |      |       |      |      |      |      |       |      |      |      |      |       |      |      |      |      |
| 132   | 95.8                 | 98.2                  |                       |                       |                  |            |    |      |                      |                       |                       |                       |      |      |      |      |      |       |      |      |      |      |       |      |      |      |      |       |      |      |      |      |
| 176   | 91.2                 | 96.2                  |                       |                       |                  |            |    |      |                      |                       |                       |                       |      |      |      |      |      |       |      |      |      |      |       |      |      |      |      |       |      |      |      |      |
| 200   | 87.7                 | 94.7                  |                       |                       |                  |            |    |      |                      |                       |                       |                       |      |      |      |      |      |       |      |      |      |      |       |      |      |      |      |       |      |      |      |      |
| 220   | 83.8                 | 93.3                  |                       |                       |                  |            |    |      |                      |                       |                       |                       |      |      |      |      |      |       |      |      |      |      |       |      |      |      |      |       |      |      |      |      |
| 240   | 80.6                 | 91.3                  |                       |                       |                  |            |    |      |                      |                       |                       |                       |      |      |      |      |      |       |      |      |      |      |       |      |      |      |      |       |      |      |      |      |
| 264   | 77.6                 | 88.2                  |                       |                       |                  |            |    |      |                      |                       |                       |                       |      |      |      |      |      |       |      |      |      |      |       |      |      |      |      |       |      |      |      |      |
| <p>■ Power Factor (by Load Power)</p> <table border="1"> <thead> <tr> <th rowspan="2">Load Power [W]</th> <th colspan="4">Power Factor [%]</th> </tr> <tr> <th>Input Voltage 85V AC</th> <th>Input Voltage 100V AC</th> <th>Input Voltage 240V AC</th> <th>Input Voltage 264V AC</th> </tr> </thead> <tbody> <tr><td>50.0</td><td>97.2</td><td>95.5</td><td>74.8</td><td>65.7</td></tr> <tr><td>100.0</td><td>98.8</td><td>97.9</td><td>87.7</td><td>77.6</td></tr> <tr><td>135.0</td><td>99.2</td><td>98.9</td><td>92.6</td><td>83.7</td></tr> <tr><td>180.0</td><td>99.7</td><td>99.3</td><td>94.7</td><td>88.2</td></tr> </tbody> </table> |                      |                       |                       | Load Power [W]        | Power Factor [%] |            |    |      | Input Voltage 85V AC | Input Voltage 100V AC | Input Voltage 240V AC | Input Voltage 264V AC | 50.0 | 97.2 | 95.5 | 74.8 | 65.7 | 100.0 | 98.8 | 97.9 | 87.7 | 77.6 | 135.0 | 99.2 | 98.9 | 92.6 | 83.7 | 180.0 | 99.7 | 99.3 | 94.7 | 88.2 |
| Load Power [W]  | Power Factor [%]     |                       |                       |                       |                  |            |    |      |                      |                       |                       |                       |      |      |      |      |      |       |      |      |      |      |       |      |      |      |      |       |      |      |      |      |
|   | Input Voltage 85V AC | Input Voltage 100V AC | Input Voltage 240V AC | Input Voltage 264V AC |                  |            |    |      |                      |                       |                       |                       |      |      |      |      |      |       |      |      |      |      |       |      |      |      |      |       |      |      |      |      |
| 50.0  | 97.2                 | 95.5                  | 74.8                  | 65.7                  |                  |            |    |      |                      |                       |                       |                       |      |      |      |      |      |       |      |      |      |      |       |      |      |      |      |       |      |      |      |      |
| 100.0   | 98.8                 | 97.9                  | 87.7                  | 77.6                  |                  |            |    |      |                      |                       |                       |                       |      |      |      |      |      |       |      |      |      |      |       |      |      |      |      |       |      |      |      |      |
| 135.0   | 99.2                 | 98.9                  | 92.6                  | 83.7                  |                  |            |    |      |                      |                       |                       |                       |      |      |      |      |      |       |      |      |      |      |       |      |      |      |      |       |      |      |      |      |
| 180.0   | 99.7                 | 99.3                  | 94.7                  | 88.2                  |                  |            |    |      |                      |                       |                       |                       |      |      |      |      |      |       |      |      |      |      |       |      |      |      |      |       |      |      |      |      |

|       |                 |                   |
|-------|-----------------|-------------------|
| Model | UZP-220-18      | Temperature: 25°C |
| Item  | Line Regulation |                   |



| AC Input Voltage [V] | Output Voltage [V] |
|----------------------|--------------------|
| 85                   | 17.993             |
| 100                  | 17.995             |
| 132                  | 17.995             |
| 176                  | 17.995             |
| 200                  | 17.994             |
| 220                  | 17.995             |
| 240                  | 17.994             |
| 264                  | 17.996             |

|       |                 |                   |
|-------|-----------------|-------------------|
| Model | UZP-220-18      | Temperature: 25°C |
| Item  | Load Regulation |                   |

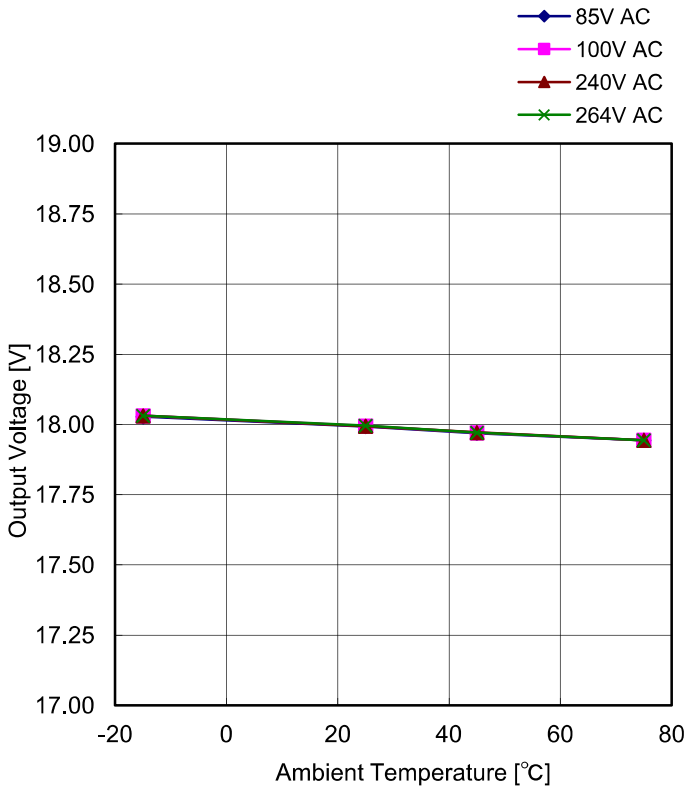


| Load Power [W] | Output Voltage [V]   |                       |                       |                       |
|----------------|----------------------|-----------------------|-----------------------|-----------------------|
|                | Input Voltage 85V AC | Input Voltage 100V AC | Input Voltage 240V AC | Input Voltage 264V AC |
| 0.0            | 18.003               | 18.003                | 17.999                | 18.013                |
| 45.0           | 17.998               | 17.999                | 17.999                | 17.996                |
| 90.0           | 17.997               | 17.997                | 17.998                | 17.995                |
| 135.0          | 17.997               | 17.996                | 17.997                | 17.993                |
| 180.0          | 17.996               | 17.994                | 17.995                | 17.993                |
| 400.8          | 17.997               | 17.997                | 17.994                | 17.993                |

| Load Power [W] | Load Condition   |  |
|----------------|------------------|--|
|                | Load Current [A] |  |
|                | 18V              |  |
| 0.0            | 0.00             |  |
| 45.0           | 2.50             |  |
| 90.0           | 5.00             |  |
| 135.0          | 7.50             |  |
| 180.0          | 10.00            |  |
| 401.4          | 22.30            |  |

|       |            |
|-------|------------|
| Model | UZP-220-18 |
|-------|------------|

|      |                           |
|------|---------------------------|
| Item | Ambient Temperature Drift |
|------|---------------------------|



| Ambient Temp. (°C) | Output Voltage [V]   |                       |                       |                       |
|--------------------|----------------------|-----------------------|-----------------------|-----------------------|
|                    | Input Voltage 85V AC | Input Voltage 100V AC | Input Voltage 240V AC | Input Voltage 264V AC |
| -15                | 18.028               | 18.031                | 18.031                | 18.031                |
| 25                 | 17.993               | 17.995                | 17.994                | 17.996                |
| 45                 | 17.969               | 17.971                | 17.972                | 17.971                |
| 75                 | 17.944               | 17.944                | 17.944                | 17.944                |

### Load Condition

| Ambient Temp. (°C) | Load Current [A] |
|--------------------|------------------|
|                    | 18V              |
| -15                | 10.00            |
| 25                 | 10.00            |
| 45                 | 10.00            |
| 75                 | 5.56             |

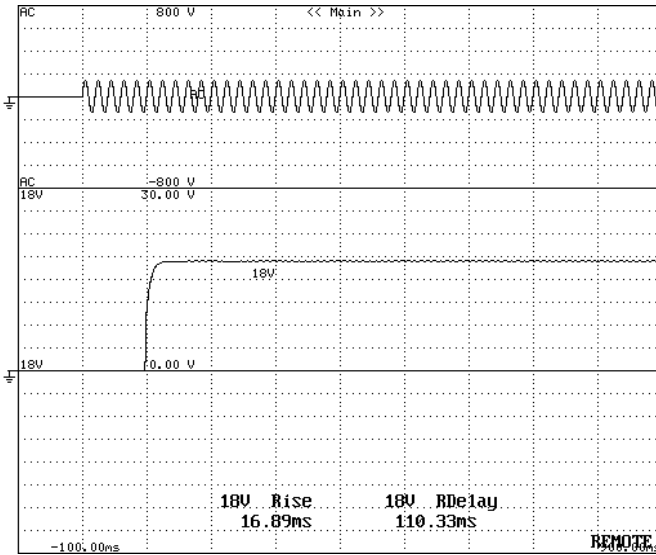


|       |  |                   |
|-------|--|-------------------|
| Model | UZP-220-18                                   | Temperature: 25°C |
| Item  | Output Rise Characteristics (at AC Power ON) |                   |

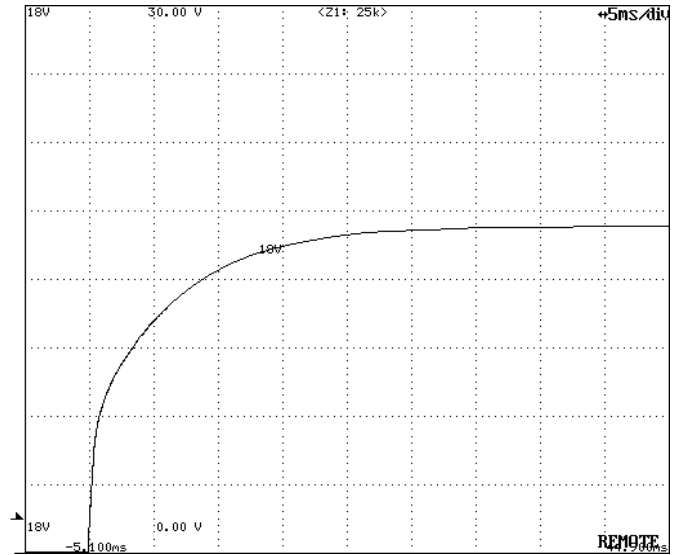
Input: 100V AC  
Load: Rated Load

Timebase Range: 100ms/div

Vertical Sensitivity: 3.75V/div  
Timebase Range: 5ms/div



All Output Start-up Sequence

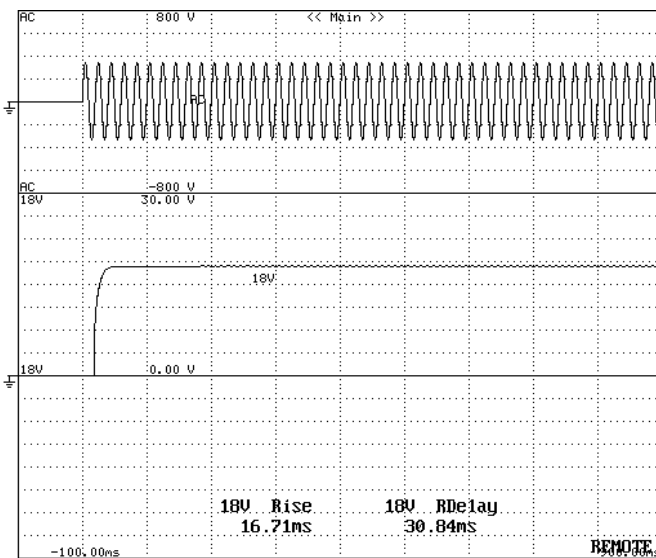


18V DC Output Rise Characteristics

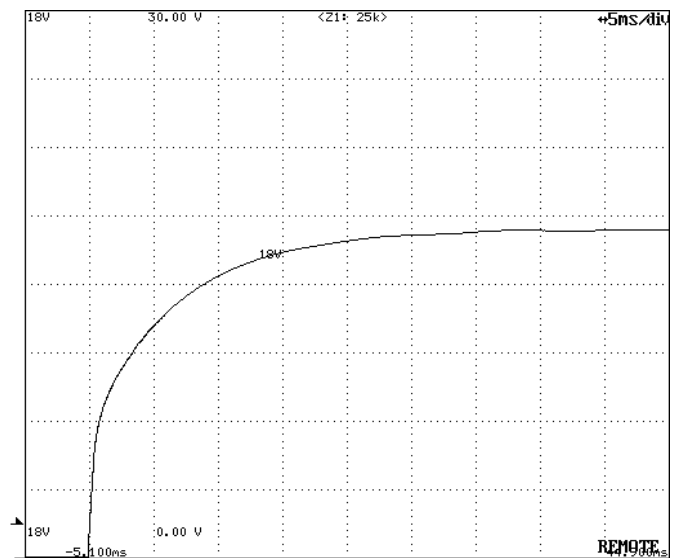
Input: 240V AC  
Load: Rated Load

Timebase Range: 100ms/div

Vertical Sensitivity: 3.75V/div  
Timebase Range: 5ms/div



All Output Start-up Sequence



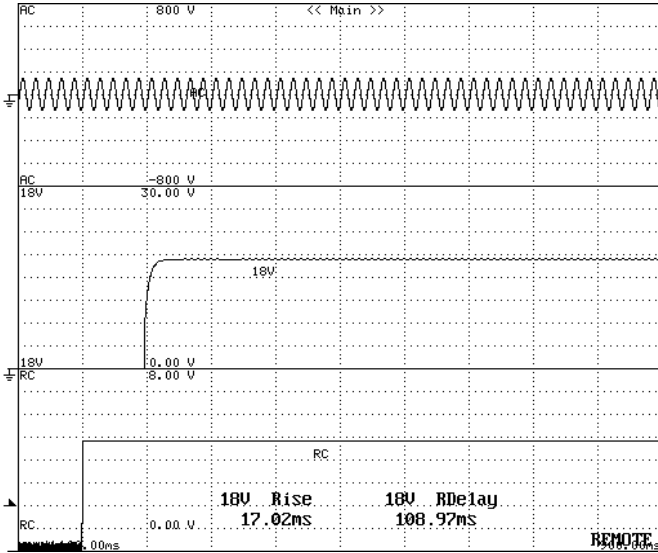
18V DC Output Rise Characteristics

|       |  |                   |
|-------|--|-------------------|
| Model | UZP-220-18                                 | Temperature: 25°C |
| Item  | Output Rise Characteristics (at Remote ON) |                   |

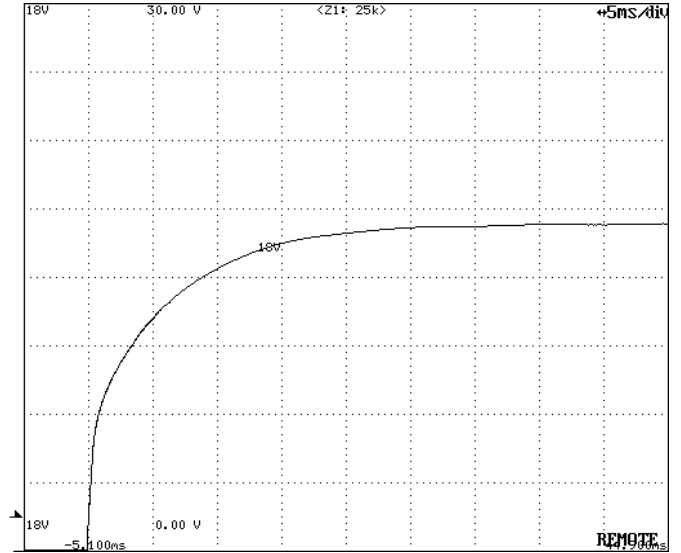
Input: 100V AC  
Load: Rated Load

Timebase Range: 100ms/div

Vertical Sensitivity: 3.75V/div  
Timebase Range: 5ms/div



All Output Start-up Sequence

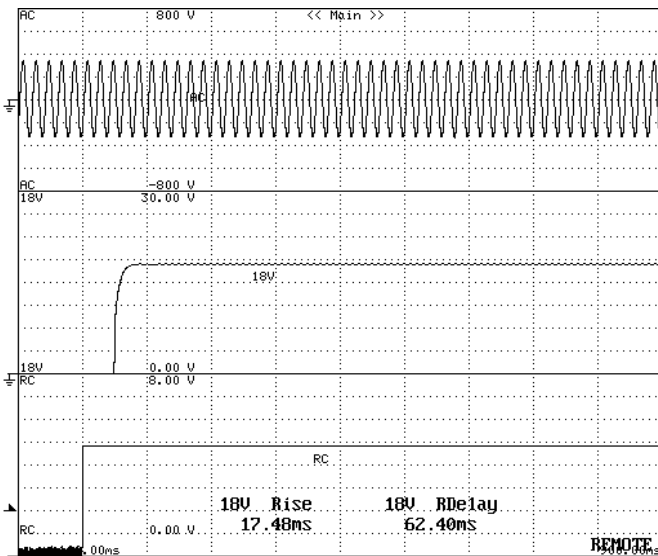


18V DC Output Rise Characteristics

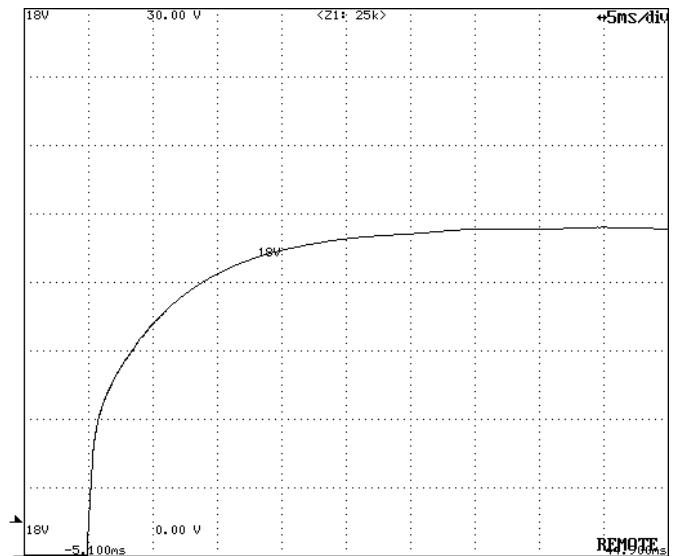
Input: 240V AC  
Load: Rated Load

Timebase Range: 100ms/div

Vertical Sensitivity: 3.75V/div  
Timebase Range: 5ms/div



All Output Start-up Sequence

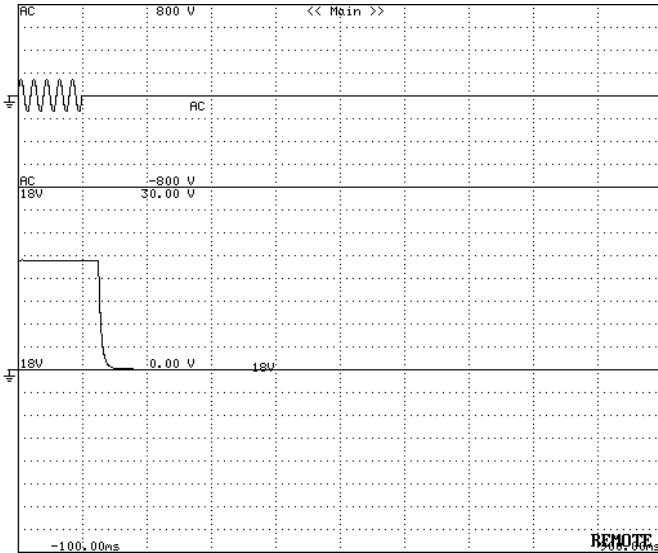


18V DC Output Rise Characteristics

|       |   |                   |
|-------|---|-------------------|
| Model | UZP-220-18                                    | Temperature: 25°C |
| Item  | Output Fall Characteristics (at AC Power OFF) |                   |

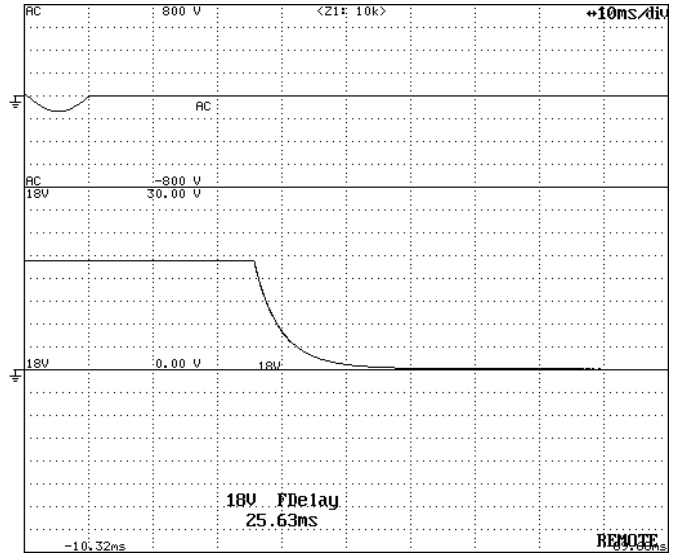
Input: 100V AC  
Load: Rated Load

Timebase Range: 100ms/div



Output Fall Characteristics

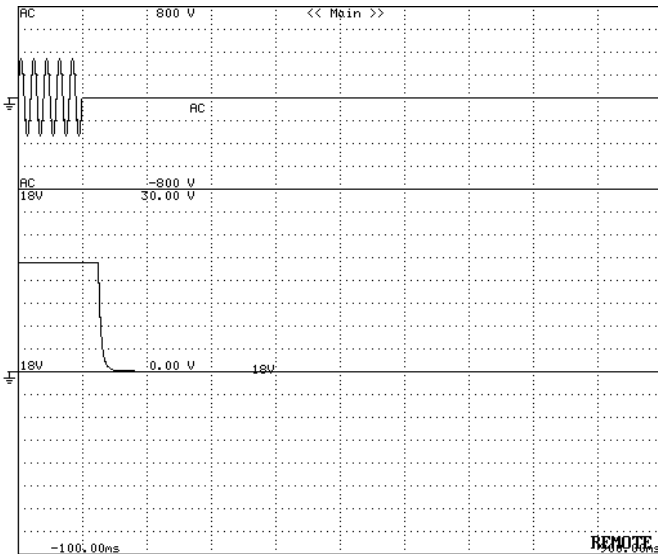
Timebase Range: 10ms/div



Output Fall Characteristics (magnification)

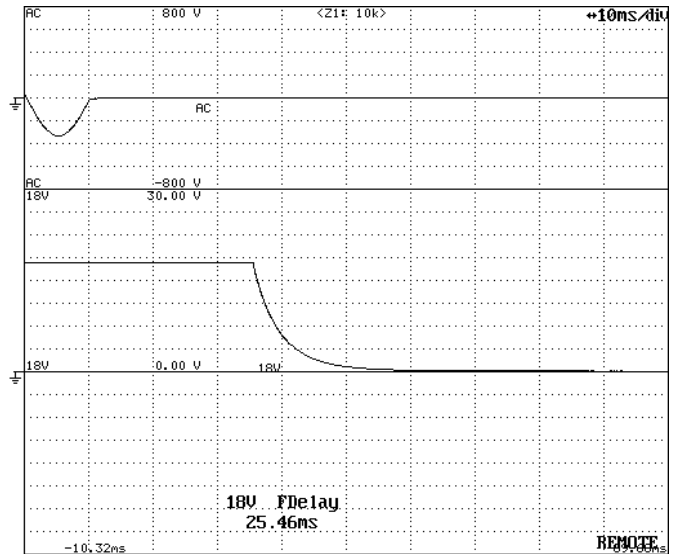
Input: 240V AC  
Load: Rated Load

Timebase Range: 100ms/div



Output Fall Characteristics

Timebase Range: 10ms/div

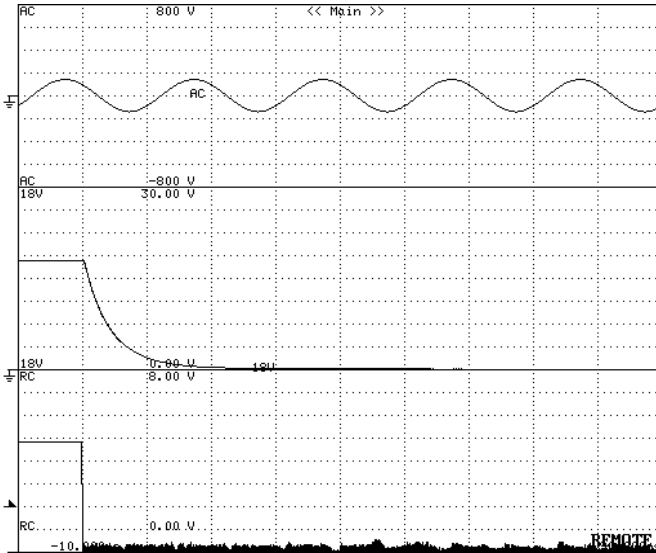


Output Fall Characteristics (magnification)

|       |   |                   |
|-------|---|-------------------|
| Model | UZP-220-18                                  | Temperature: 25°C |
| Item  | Output Fall Characteristics (at Remote OFF) |                   |

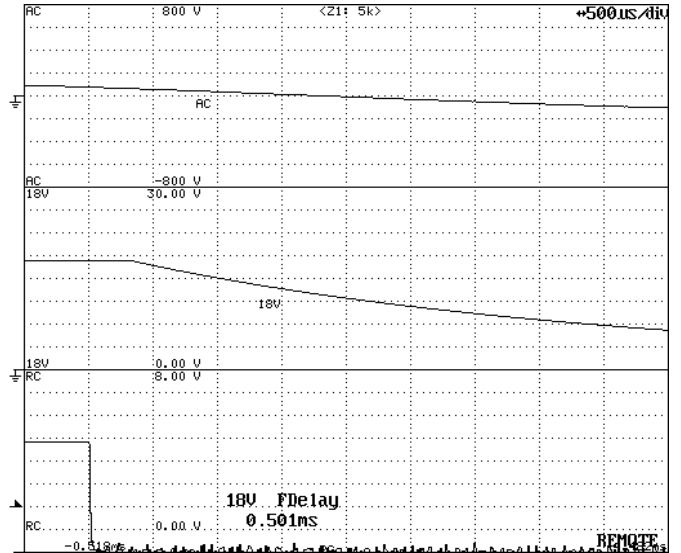
Input: 100V AC  
Load: Rated Load

Timebase Range: 10ms/div



Output Fall Characteristics

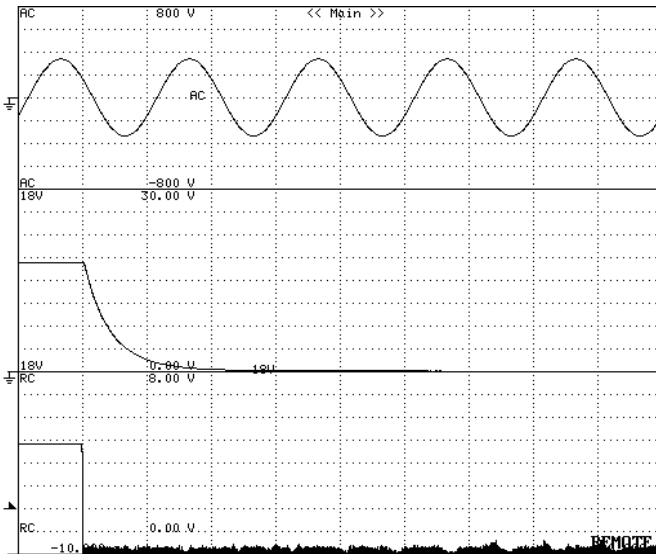
Timebase Range: 500 μs/div



Output Fall Characteristics (magnification)

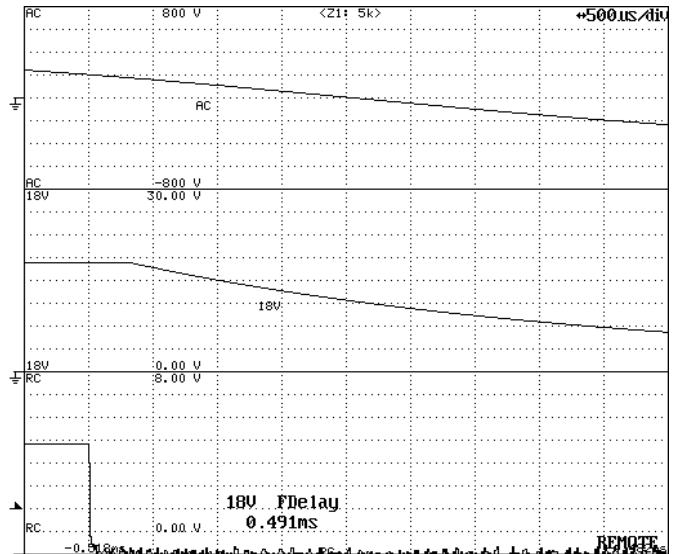
Input: 240V AC  
Load: Rated Load

Timebase Range: 10ms/div



Output Fall Characteristics

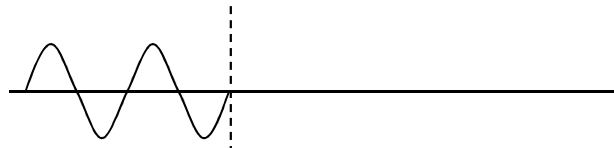
Timebase Range: 500 μs/div



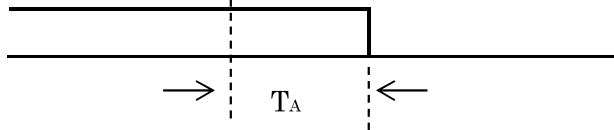
Output Fall Characteristics (magnification)

|       |   |                   |
|-------|---|-------------------|
| Model | UZP-220-18  | Temperature: 25°C |
| Item  | Instantaneous Interruption Compensation (by Load Power) |                   |

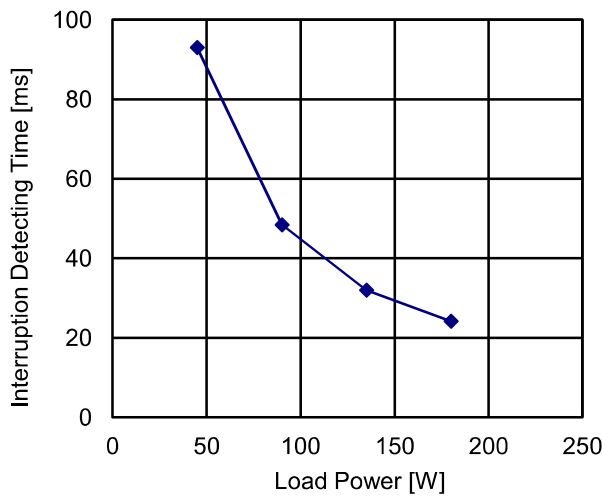
**Input Voltage**



**Output Voltage**

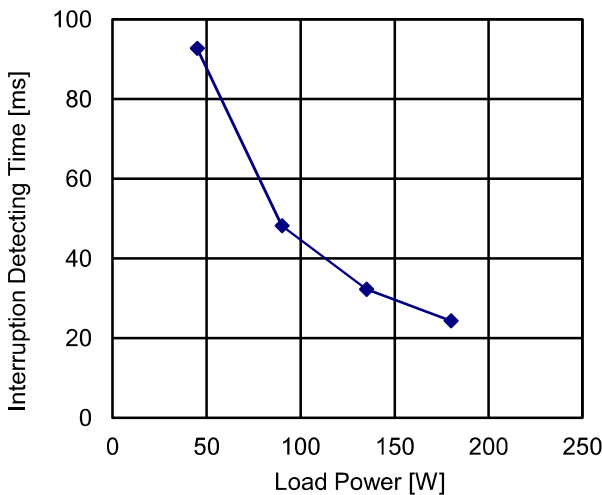


### Input Voltage:100V AC



| Load Power [W] | Interruption Detecting Time [ms] |
|----------------|----------------------------------|
|                | Output Voltage                   |
|                | T <sub>A</sub>                   |
| 45.00          | 93.1                             |
| 90.0           | 48.5                             |
| 135.00         | 32.0                             |
| 180.0          | 24.2                             |

### Input Voltage:240V AC

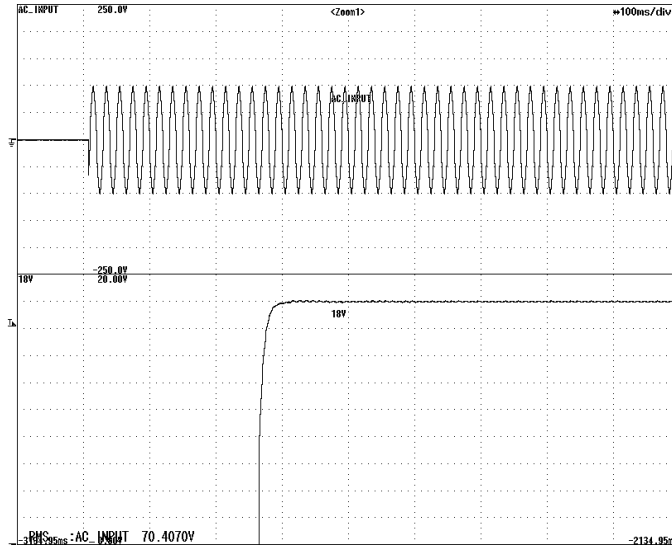


| Load Power [W] | Interruption Detecting Time [ms] |
|----------------|----------------------------------|
|                | Output Voltage                   |
|                | T <sub>A</sub>                   |
| 45.00          | 92.8                             |
| 90.0           | 48.2                             |
| 135.00         | 32.3                             |
| 180.0          | 24.4                             |

|       |                  |                   |
|-------|------------------|-------------------|
| Model | UZP-220-18       | Temperature: 25°C |
| Item  | Start-Up Voltage |                   |

**Timebase Range: 100ms/div  
Load: Rated Load**

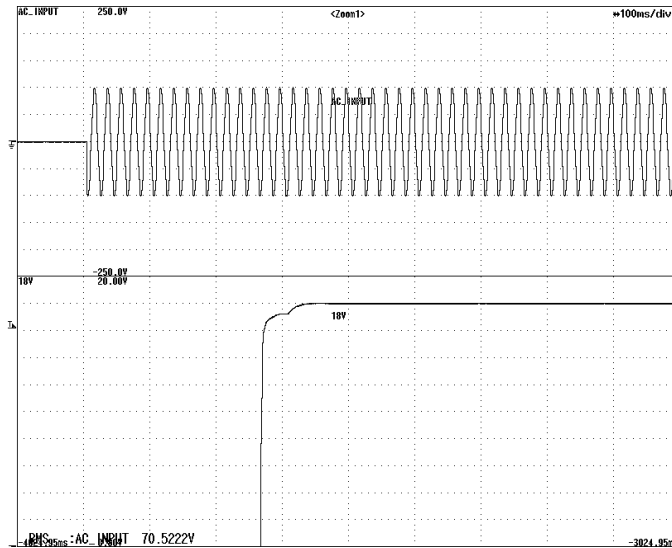
**AC Input**



**Start-up Voltage: 70.4V AC**

**Timebase Range: 100ms/div  
Load: Minimum Load**

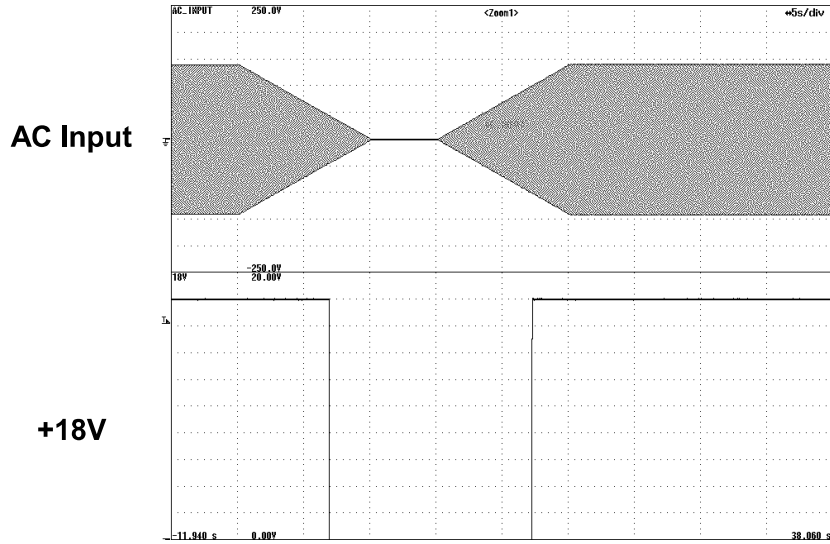
**AC Input**



**Start-up Voltage: 70.5V AC**

|       |                             |                   |
|-------|-----------------------------|-------------------|
| Model | UZF-220-18                  | Temperature: 25°C |
| Item  | Input Voltage Sweep Up/Down |                   |

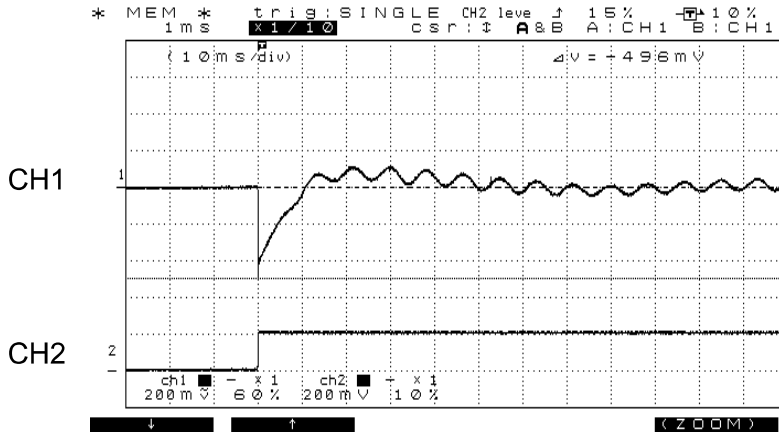
**Timebase Range: 5s/div  
Load: Rated Load**



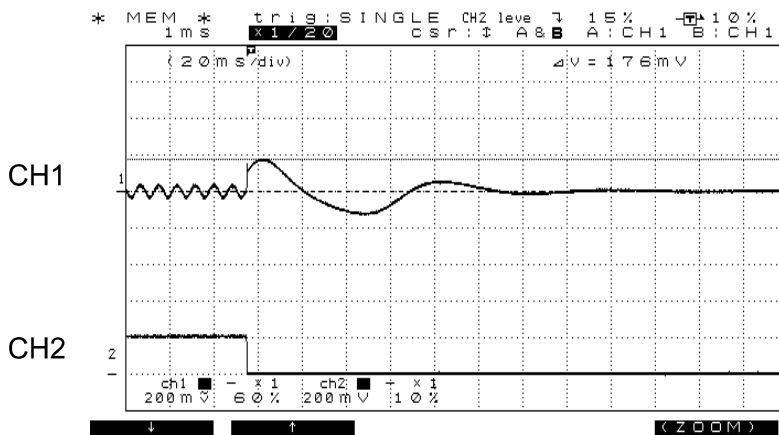
**Sweep Rate: 10Vave/sec**

|       |                       |                   |
|-------|-----------------------|-------------------|
| Model | UZP-220-18            | Temperature: 25°C |
| Item  | Dynamic Load Response |                   |

## +18V DC Output Transient Response Waveforms



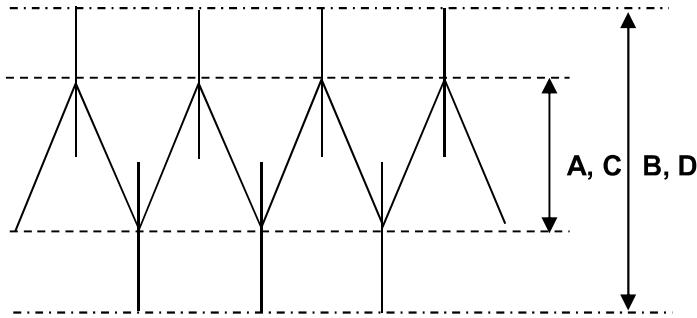
| Waveform 1                                     |                                       |
|--|---------------------------------------|
| CH1  | Measuring Point:<br>DC Output Voltage |
|  | Vertical Sensitivity:<br>200mV/div    |
| CH2  | Measuring Point:<br>DC Output Current |
|  | Vertical Sensitivity:<br>10A/div      |
| Timebase<br>Range                              | 5ms/div                               |
| Condition                                      | Input: 100V AC                        |
| Note:<br>Minimum load(0A)<br>→ Rated Load(10A) |                                       |



| Waveform 2                                     |                                       |
|--|---------------------------------------|
| CH1  | Measuring Point:<br>DC Output Voltage |
|  | Vertical Sensitivity:<br>200mV/div    |
| CH2  | Measuring Point:<br>DC Output Current |
|  | Vertical Sensitivity:<br>10A/div      |
| Timebase<br>Range                              | 10ms/div                              |
| Condition                                      | Input: 100V AC                        |
| Note:<br>Rated Load(10A)<br>→ Minimum load(0A) |                                       |



|       |                        |                  |
|-------|------------------------|------------------|
| Model | UZP-220-18             | Load: Rated Load |
| Item  | Ripple / Noise Voltage |                  |



**at 100V AC**

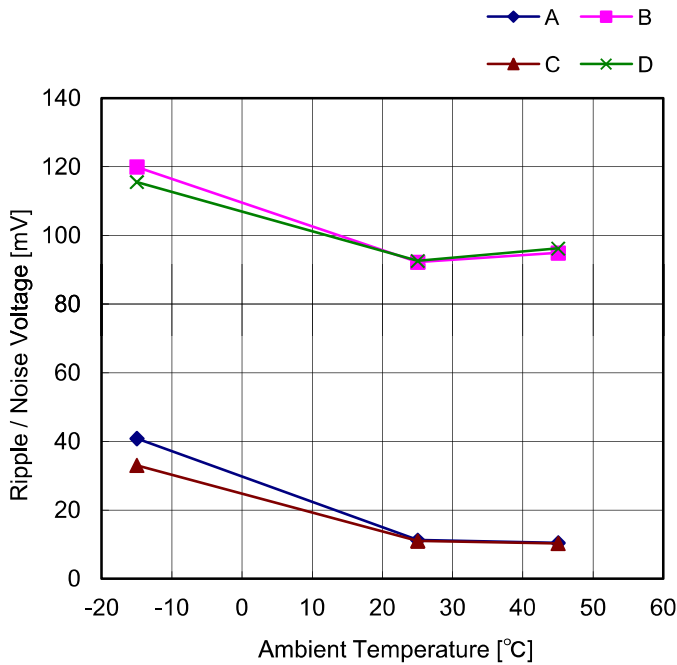
A: Ripple Voltage (mV<sub>P-P</sub>)

B: Noise Voltage (mV<sub>P-P</sub>)

**at 240V AC**

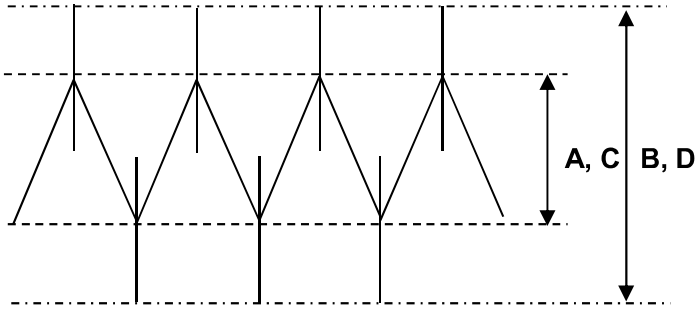
C: Ripple Voltage (mV<sub>P-P</sub>)

D: Noise Voltage (mV<sub>P-P</sub>)



| Ambient Temp. [°C] | Ripple / Noise Voltage [mV] |       |      |       |
|--------------------|-----------------------------|-------|------|-------|
|                    | A                           | B     | C    | D     |
| -15                | 40.8                        | 119.9 | 33.0 | 115.5 |
| 25                 | 11.2                        | 92.2  | 10.9 | 92.6  |
| 45                 | 10.4                        | 94.9  | 10.2 | 96.2  |

|       |                        |                    |
|-------|------------------------|--------------------|
| Model | UZP-220-18             | Temperature : 25°C |
| Item  | Ripple / Noise Voltage |                    |

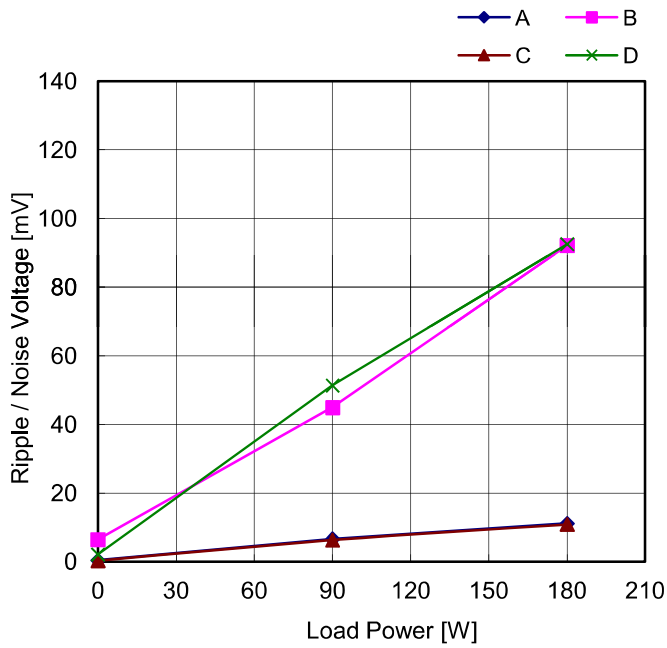


**at 100V AC**

A: Ripple Voltage (mVP-P)  
B: Noise Voltage (mVP-P)

**at 240V AC**

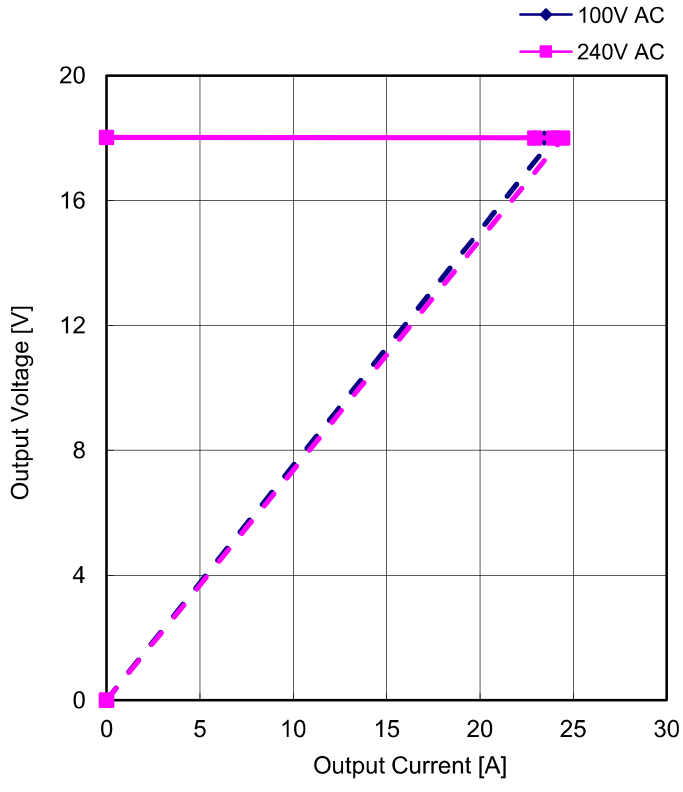
C: Ripple Voltage (mVP-P)  
D: Noise Voltage (mVP-P)



| Load Power [W] | Ripple / Noise Voltage [mV] |      |      |      |
|----------------|-----------------------------|------|------|------|
|                | A                           | B    | C    | D    |
| 0              | 0.4                         | 6.4  | 0.3  | 2.1  |
| 90.0           | 6.6                         | 44.9 | 6.3  | 51.4 |
| 180.0          | 11.2                        | 92.2 | 10.9 | 92.6 |

|       |                         |                   |
|-------|-------------------------|-------------------|
| Model | UZP-220-18              | Temperature: 25°C |
| Item  | Over-Current Protection |                   |

## V-I Characteristics of 18V O.C.P



| Input Voltage: 100V AC |                    | Input Voltage: 240V AC |                    |
|------------------------|--------------------|------------------------|--------------------|
| Output Current [A]     | Output Voltage [V] | Output Current [A]     | Output Voltage [V] |
| 0.00                   | 18.01              | 0.00                   | 18.01              |
| 22.92                  | 18.00              | 22.92                  | 18.00              |
| 23.43                  | 18.00              | 23.94                  | 18.00              |
| 23.94                  | 18.00              | 24.42                  | 18.00              |

|       |                         |                    |
|-------|-------------------------|--------------------|
| Model | UZP-220-18              | Load: Minimum Load |
| Item  | Over-Voltage Protection |                    |

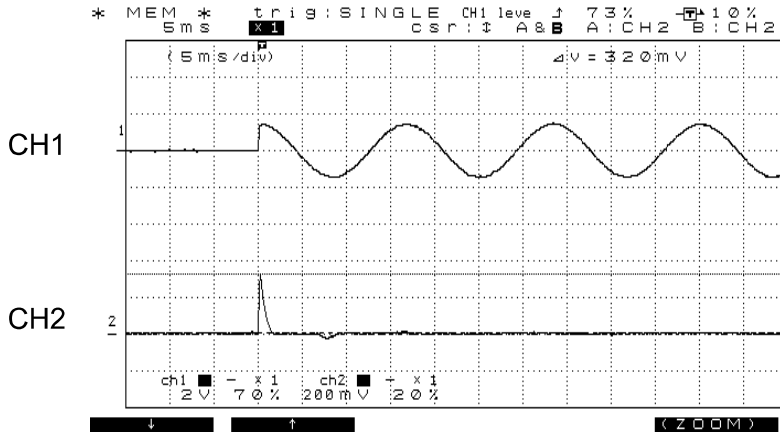
Legend:  
◆ 100V AC  
■ 240V AC

| Ambient Temp. [°C] | 100V AC [V] | 240V AC [V] |
|--------------------|-------------|-------------|
| -15                | 23.56       | 23.61       |
| 25                 | 24.36       | 24.36       |
| 45                 | 24.58       | 24.52       |
| 75                 | 24.89       | 24.89       |

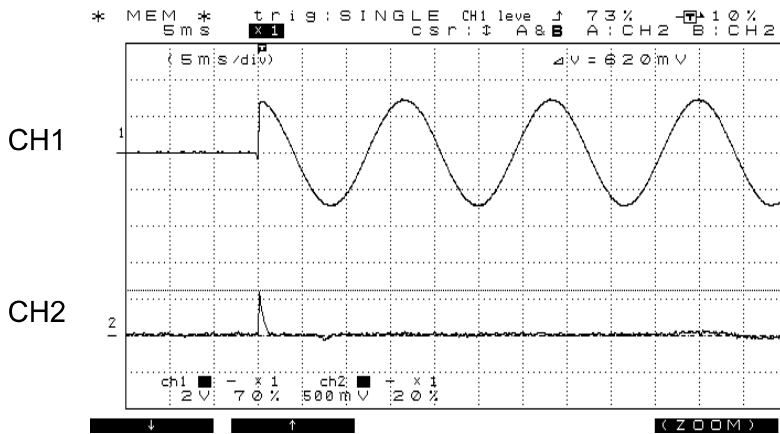
| Ambient Temp. [°C] | Output Voltage [V] |         |
|--------------------|--------------------|---------|
|                    | 100V AC            | 240V AC |
| -15                | 23.56              | 23.61   |
| 25                 | 24.36              | 24.36   |
| 45                 | 24.58              | 24.52   |
| 75                 | 24.89              | 24.89   |

|       |                |                   |
|-------|----------------|-------------------|
| Model | UZP-220-18     | Temperature: 25°C |
| Item  | Inrush Current | Load: Rated Load  |

## Inrush Current Waveforms



| Waveform 1                     |                                      |
|--------------------------------|--------------------------------------|
| CH1                            | Measuring Point:<br>AC Input Voltage |
|                                | Range: 200V/div                      |
| CH2                            | Measuring Point:<br>AC Input Current |
|                                | Range: 10A/div                       |
| Timebase<br>Range              | 5ms/div                              |
| Condition                      | Input: 100V AC<br>Load: Rated Load   |
| Note:<br>Inrush Current: 16.0A |                                      |



| Waveform 2                     |                                      |
|--------------------------------|--------------------------------------|
| CH1                            | Measuring Point:<br>AC Input Voltage |
|                                | Range: 250V/div                      |
| CH2                            | Measuring Point:<br>AC Input Current |
|                                | Range: 25A/div                       |
| Timebase<br>Range              | 5ms/div                              |
| Condition                      | Input: 200V AC<br>Load: Rated Load   |
| Note:<br>Inrush Current: 31.0A |                                      |

| Model  | UZP-220-18           | Load: Rated Load  |                      |                      |    |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |
|--|----------------------|---|----------------------|----------------------|----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|
| Item   | Leakage Current      |   |                      |                      |    |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |
| <p>The graph plots Leakage Current [mA] on the y-axis (0 to 1) against AC Input Voltage [V] on the x-axis (50 to 300). The data points show a linear increase in leakage current as the input voltage increases.</p> |                      | <table border="1"> <thead> <tr> <th>AC Input Voltage [V]</th> <th>Leakage Current [mA]</th> </tr> </thead> <tbody> <tr> <td>85</td> <td>0.04</td> </tr> <tr> <td>100</td> <td>0.05</td> </tr> <tr> <td>132</td> <td>0.07</td> </tr> <tr> <td>176</td> <td>0.09</td> </tr> <tr> <td>200</td> <td>0.10</td> </tr> <tr> <td>220</td> <td>0.11</td> </tr> <tr> <td>240</td> <td>0.12</td> </tr> <tr> <td>264</td> <td>0.14</td> </tr> </tbody> </table> | AC Input Voltage [V] | Leakage Current [mA] | 85 | 0.04 | 100 | 0.05 | 132 | 0.07 | 176 | 0.09 | 200 | 0.10 | 220 | 0.11 | 240 | 0.12 | 264 | 0.14 |
| AC Input Voltage [V]   | Leakage Current [mA] |   |                      |                      |    |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |
| 85   | 0.04                 |   |                      |                      |    |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |
| 100  | 0.05                 |   |                      |                      |    |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |
| 132  | 0.07                 |   |                      |                      |    |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |
| 176  | 0.09                 |   |                      |                      |    |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |
| 200  | 0.10                 |   |                      |                      |    |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |
| 220  | 0.11                 |   |                      |                      |    |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |
| 240  | 0.12                 |   |                      |                      |    |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |
| 264  | 0.14                 |   |                      |                      |    |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |