



TEST DATA OF AEA600F-36

Regulated DC Power Supply
January 25, 2021

Approved by : Jun Uchida
Design Manager

Prepared by : Masaki Tosu
Design Engineer

COSEL CO.,LTD.



CONTENTS

1.Input Current (by Load Current) 1
2.Efficiency (by Load Current) 2
3.Power Factor (by Load Current) 3
4.Inrush Current 4
5.Leakage Current 5
6.Line Regulation 6
7.Load Regulation 7
8.Ripple-Noise 7
9.Dynamic Load Response 8
10.Rise and Fall Time 9
11.Hold-Up Time 10
12.Instantaneous Interruption Compensation 11
13.Overcurrent Protection 12
14.Ambient Temperature Drift 13
15.Minimum Input Voltage for Regulated Output Voltage 13
16.Oversvoltage Protection 13
17.Figure of Testing Circuitry 14

(Final Page 15)

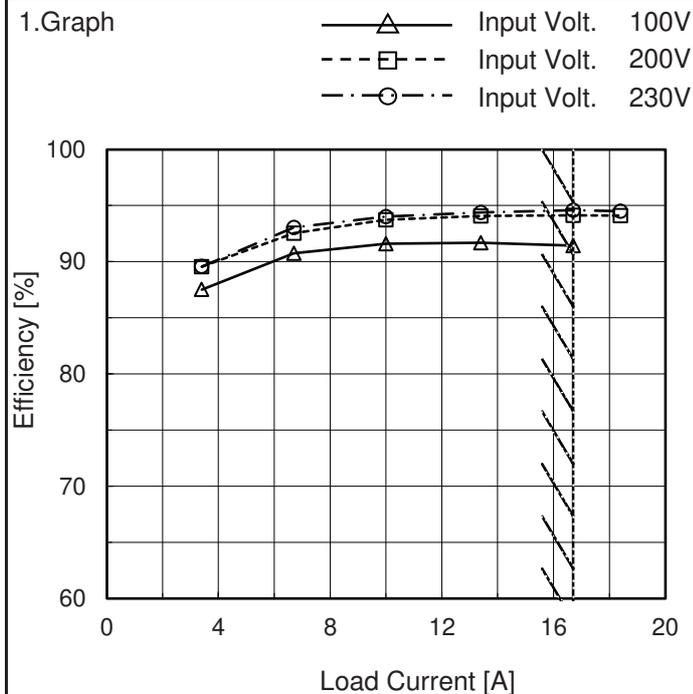


Model		AEA600F-36		Temperature 25°C																																																				
Item		Input Current (by Load Current)		Testing Circuitry Figure A																																																				
Object		_____																																																						
1.Graph		<p>—△— Input Volt. 100V</p> <p>- - -□- - - Input Volt. 200V</p> <p>- · - ○ - · - - Input Volt. 230V</p>		2.Values																																																				
		<table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="3">Input Current [A]</th> </tr> <tr> <th>Input Volt. 100[V]</th> <th>Input Volt. 200[V]</th> <th>Input Volt. 230[V]</th> </tr> </thead> <tbody> <tr><td>0.0</td><td>0.134</td><td>0.177</td><td>0.198</td></tr> <tr><td>3.4</td><td>1.501</td><td>0.788</td><td>0.709</td></tr> <tr><td>6.7</td><td>2.780</td><td>1.405</td><td>1.249</td></tr> <tr><td>10.0</td><td>4.040</td><td>2.027</td><td>1.784</td></tr> <tr><td>13.4</td><td>5.360</td><td>2.667</td><td>2.341</td></tr> <tr><td>16.7</td><td>6.660</td><td>3.290</td><td>2.885</td></tr> <tr><td>18.4</td><td>-</td><td>3.620</td><td>3.169</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td></tr> </tbody> </table>		Load Current [A]	Input Current [A]			Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]	0.0	0.134	0.177	0.198	3.4	1.501	0.788	0.709	6.7	2.780	1.405	1.249	10.0	4.040	2.027	1.784	13.4	5.360	2.667	2.341	16.7	6.660	3.290	2.885	18.4	-	3.620	3.169	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-		
Load Current [A]	Input Current [A]																																																							
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]																																																					
0.0	0.134	0.177	0.198																																																					
3.4	1.501	0.788	0.709																																																					
6.7	2.780	1.405	1.249																																																					
10.0	4.040	2.027	1.784																																																					
13.4	5.360	2.667	2.341																																																					
16.7	6.660	3.290	2.885																																																					
18.4	-	3.620	3.169																																																					
--	-	-	-																																																					
--	-	-	-																																																					
--	-	-	-																																																					
--	-	-	-																																																					
Note: Slanted line shows the range of the rated load current.																																																								



Model	AEA600F-36
Item	Efficiency (by Load Current)
Object	_____

Temperature 25°C
Testing Circuitry Figure A



2.Values

Load Current [A]	Efficiency [%]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.0	-	-	-
3.4	87.5	89.6	89.6
6.7	90.7	92.5	93.1
10.0	91.6	93.7	94.0
13.4	91.7	94.1	94.4
16.7	91.4	94.1	94.6
18.4	-	94.1	94.5
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

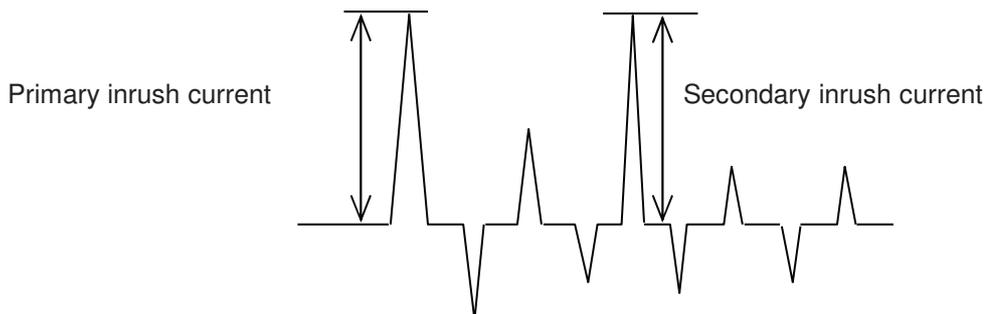
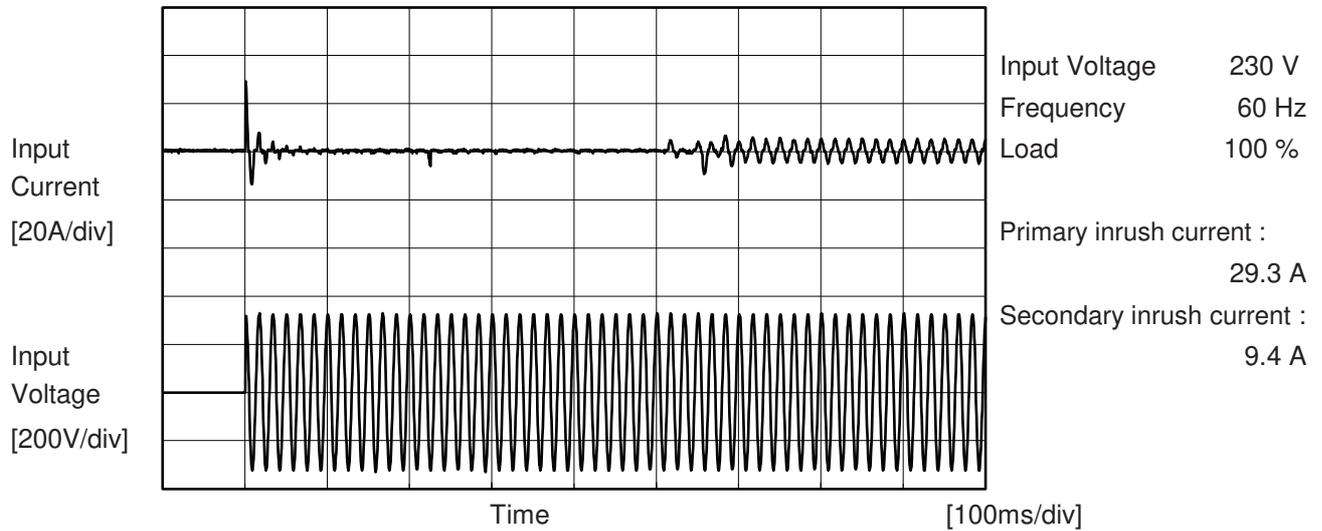
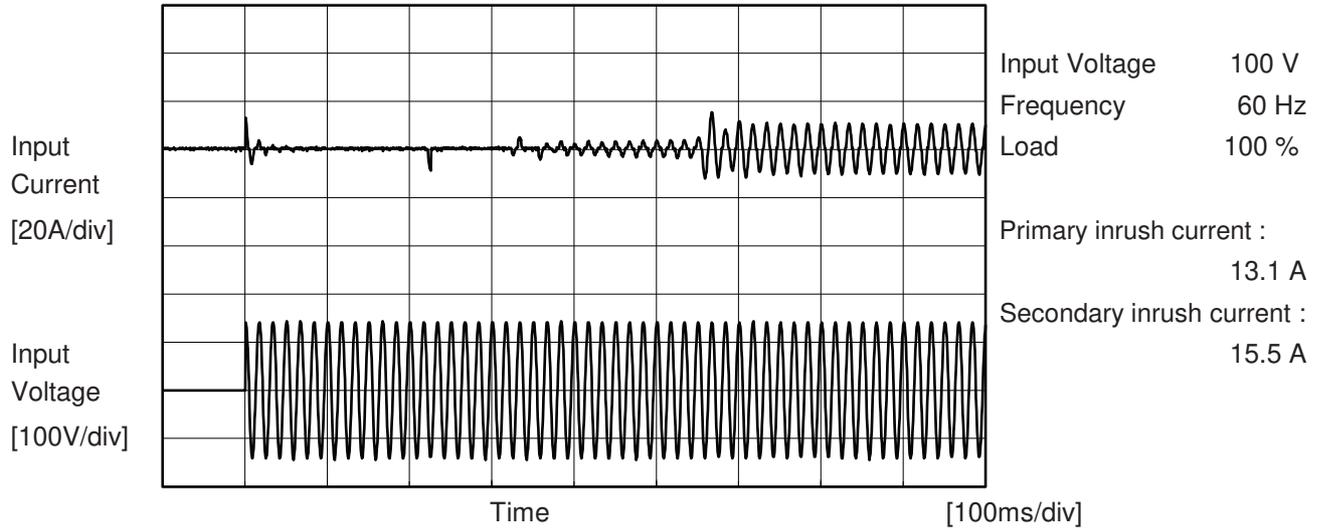
Note: Slanted line shows the range of the rated load current.



<p>Model AEA600F-36</p>		<p>Temperature 25°C Testing Circuitry Figure A</p>																																																			
Item	Power Factor (by Load Current)																																																				
Object	_____	<p>2.Values</p> <table border="1"> <thead> <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> </thead> <tbody> <tr> <td>0.0</td> <td>0.565</td> <td>0.195</td> <td>0.138</td> </tr> <tr> <td>3.4</td> <td>0.937</td> <td>0.871</td> <td>0.842</td> </tr> <tr> <td>6.7</td> <td>0.959</td> <td>0.928</td> <td>0.904</td> </tr> <tr> <td>10.0</td> <td>0.975</td> <td>0.947</td> <td>0.934</td> </tr> <tr> <td>13.4</td> <td>0.983</td> <td>0.961</td> <td>0.950</td> </tr> <tr> <td>16.7</td> <td>0.988</td> <td>0.970</td> <td>0.958</td> </tr> <tr> <td>18.4</td> <td>-</td> <td>0.974</td> <td>0.963</td> </tr> <tr> <td>--</td> <td>-</td> <td>-</td> <td>-</td> </tr> </tbody> </table>	Load Current [A]	Power Factor			Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]	0.0	0.565	0.195	0.138	3.4	0.937	0.871	0.842	6.7	0.959	0.928	0.904	10.0	0.975	0.947	0.934	13.4	0.983	0.961	0.950	16.7	0.988	0.970	0.958	18.4	-	0.974	0.963	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
Load Current [A]	Power Factor																																																				
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]																																																		
0.0	0.565	0.195	0.138																																																		
3.4	0.937	0.871	0.842																																																		
6.7	0.959	0.928	0.904																																																		
10.0	0.975	0.947	0.934																																																		
13.4	0.983	0.961	0.950																																																		
16.7	0.988	0.970	0.958																																																		
18.4	-	0.974	0.963																																																		
--	-	-	-																																																		
--	-	-	-																																																		
--	-	-	-																																																		
--	-	-	-																																																		
<p>1.Graph</p> <p> —△— Input Volt. 100V - - - □ - - Input Volt. 200V - · - ○ - · - Input Volt. 230V </p> <p>Note: Slanted line shows the range of the rated load current.</p>																																																					



Model		AEA600F-36	
Item		Inrush Current	
Object		_____	
		Temperature	25°C
		Testing Circuitry	Figure A





COSEL		Temperature 25°C Testing Circuitry Figure B
Model	AEA600F-36	
Item	Leakage Current	
Object	_____	

1.Results

[mA]

Standards	Testing Circuitry	Measuring Method	Input Volt.			Note
			100 [V]	230 [V]	240 [V]	
DEN-AN	Figure B-1	Both phases	0.07	0.19	0.20	Operation
		One of phases	0.14	0.36	0.39	Stand by
IEC62368-1	Figure B-2	Both phases	0.07	0.19	0.20	Operation
		One of phases	0.14	0.36	0.39	Stand by
	Figure B-3	Both phases	0.07	0.19	0.20	Operation
		One of phases	0.14	0.36	0.39	Stand by
IEC60601-1	Figure B-4	Both phases	0.07	0.19	0.20	Operation
		One of phases	0.14	0.36	0.39	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.



COSEL																																		
Model	AEA600F-36																																	
Item	Line Regulation	Temperature 25°C Testing Circuitry Figure A																																
Object	+36V16.7A																																	
<p>1. Graph</p> <p style="text-align: right;"> ---□--- Load 50% —△— Load 100% </p> <p>Note: Slanted line shows the range of the rated input voltage.</p>		<p>2. Values</p> <table border="1"> <thead> <tr> <th rowspan="2">Input Voltage [V]</th> <th colspan="2">Output Voltage [V]</th> </tr> <tr> <th>Load 50%</th> <th>Load 100%</th> </tr> </thead> <tbody> <tr> <td>85</td> <td>36.090</td> <td>36.082 *1</td> </tr> <tr> <td>90</td> <td>36.090</td> <td>36.082 *2</td> </tr> <tr> <td>100</td> <td>36.090</td> <td>36.082 *2</td> </tr> <tr> <td>200</td> <td>36.090</td> <td>36.081</td> </tr> <tr> <td>230</td> <td>36.090</td> <td>36.081</td> </tr> <tr> <td>264</td> <td>36.090</td> <td>36.082</td> </tr> <tr> <td>280</td> <td>36.090</td> <td>36.082</td> </tr> <tr> <td>--</td> <td>-</td> <td>-</td> </tr> <tr> <td>--</td> <td>-</td> <td>-</td> </tr> </tbody> </table> <p style="text-align: right;"> *1 : Load 60% *2 : Load 80% </p>	Input Voltage [V]	Output Voltage [V]		Load 50%	Load 100%	85	36.090	36.082 *1	90	36.090	36.082 *2	100	36.090	36.082 *2	200	36.090	36.081	230	36.090	36.081	264	36.090	36.082	280	36.090	36.082	--	-	-	--	-	-
Input Voltage [V]	Output Voltage [V]																																	
	Load 50%	Load 100%																																
85	36.090	36.082 *1																																
90	36.090	36.082 *2																																
100	36.090	36.082 *2																																
200	36.090	36.081																																
230	36.090	36.081																																
264	36.090	36.082																																
280	36.090	36.082																																
--	-	-																																
--	-	-																																

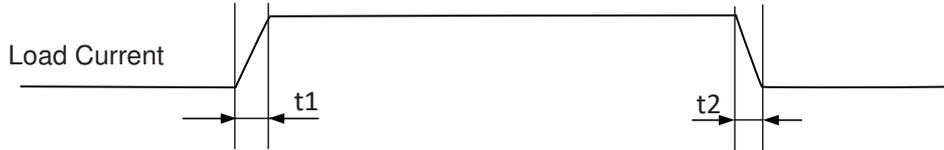


<p>Model AEA600F-36</p>		<p>Temperature 25°C Testing Circuitry Figure A</p>																																																			
<p>Item</p>	<p>Load Regulation</p>																																																				
<p>Object</p>	<p>+36V16.7A</p>																																																				
<p>1.Graph</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 60%;"> </div> <div style="width: 35%;"> <p>—△— Input Volt. 100V - - -□- - - Input Volt. 200V - - -○- - - Input Volt. 230V</p> </div> </div>		<p>2.Values</p> <table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="3">Output Voltage [V]</th> </tr> <tr> <th>Input Volt. 100[V]</th> <th>Input Volt. 200[V]</th> <th>Input Volt. 230[V]</th> </tr> </thead> <tbody> <tr><td>0.0</td><td>36.102</td><td>36.102</td><td>36.102</td></tr> <tr><td>3.4</td><td>36.077</td><td>36.077</td><td>36.077</td></tr> <tr><td>6.7</td><td>36.074</td><td>36.074</td><td>36.075</td></tr> <tr><td>10.0</td><td>36.071</td><td>36.071</td><td>36.071</td></tr> <tr><td>13.4</td><td>36.068</td><td>36.068</td><td>36.068</td></tr> <tr><td>16.7</td><td>36.065</td><td>36.065</td><td>36.065</td></tr> <tr><td>18.4</td><td>-</td><td>36.063</td><td>36.063</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td></tr> </tbody> </table>	Load Current [A]	Output Voltage [V]			Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]	0.0	36.102	36.102	36.102	3.4	36.077	36.077	36.077	6.7	36.074	36.074	36.075	10.0	36.071	36.071	36.071	13.4	36.068	36.068	36.068	16.7	36.065	36.065	36.065	18.4	-	36.063	36.063	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
Load Current [A]	Output Voltage [V]																																																				
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]																																																		
0.0	36.102	36.102	36.102																																																		
3.4	36.077	36.077	36.077																																																		
6.7	36.074	36.074	36.075																																																		
10.0	36.071	36.071	36.071																																																		
13.4	36.068	36.068	36.068																																																		
16.7	36.065	36.065	36.065																																																		
18.4	-	36.063	36.063																																																		
--	-	-	-																																																		
--	-	-	-																																																		
--	-	-	-																																																		
--	-	-	-																																																		
<p>Note: Slanted line shows the range of the rated load current.</p>																																																					
<p>Item</p>	<p>Ripple-Noise</p>	<p>Temperature 25°C Testing Circuitry Figure C</p>																																																			
<p>Object</p>	<p>+36V16.7A</p>																																																				
<p>1.Graph</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 60%;"> </div> <div style="width: 35%;"> <p>Input Voltage 200V Load 100%</p> </div> </div>																																																					

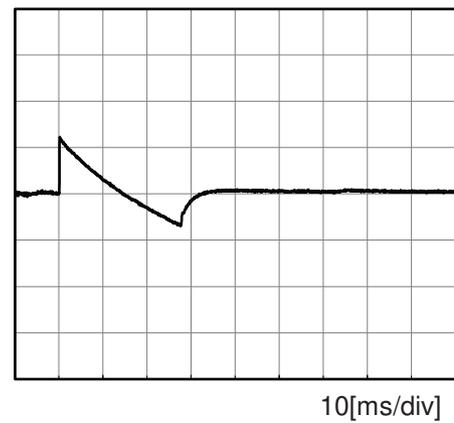
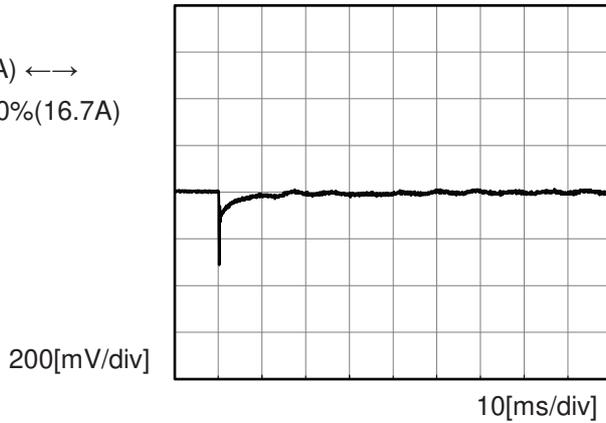


Model		AEA600F-36	
Item		Dynamic Load Response	
Object		+36V16.7A	
		Temperature	25°C
		Testing Circuitry	Figure A

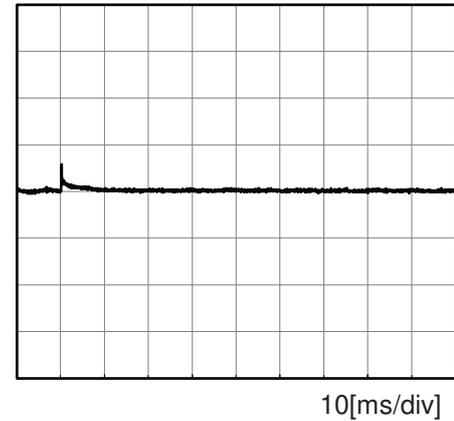
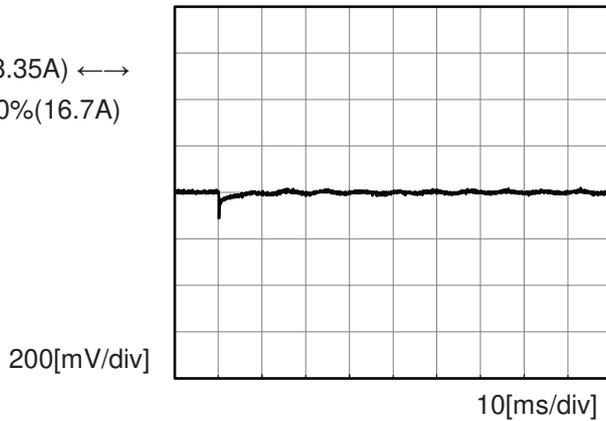
Input Volt. 200 V
 Cycle 1000 ms
 Response. $t_1=t_2=50\mu\text{s}$. Typ



Load 0%(0A) \longleftrightarrow
 Load 100%(16.7A)



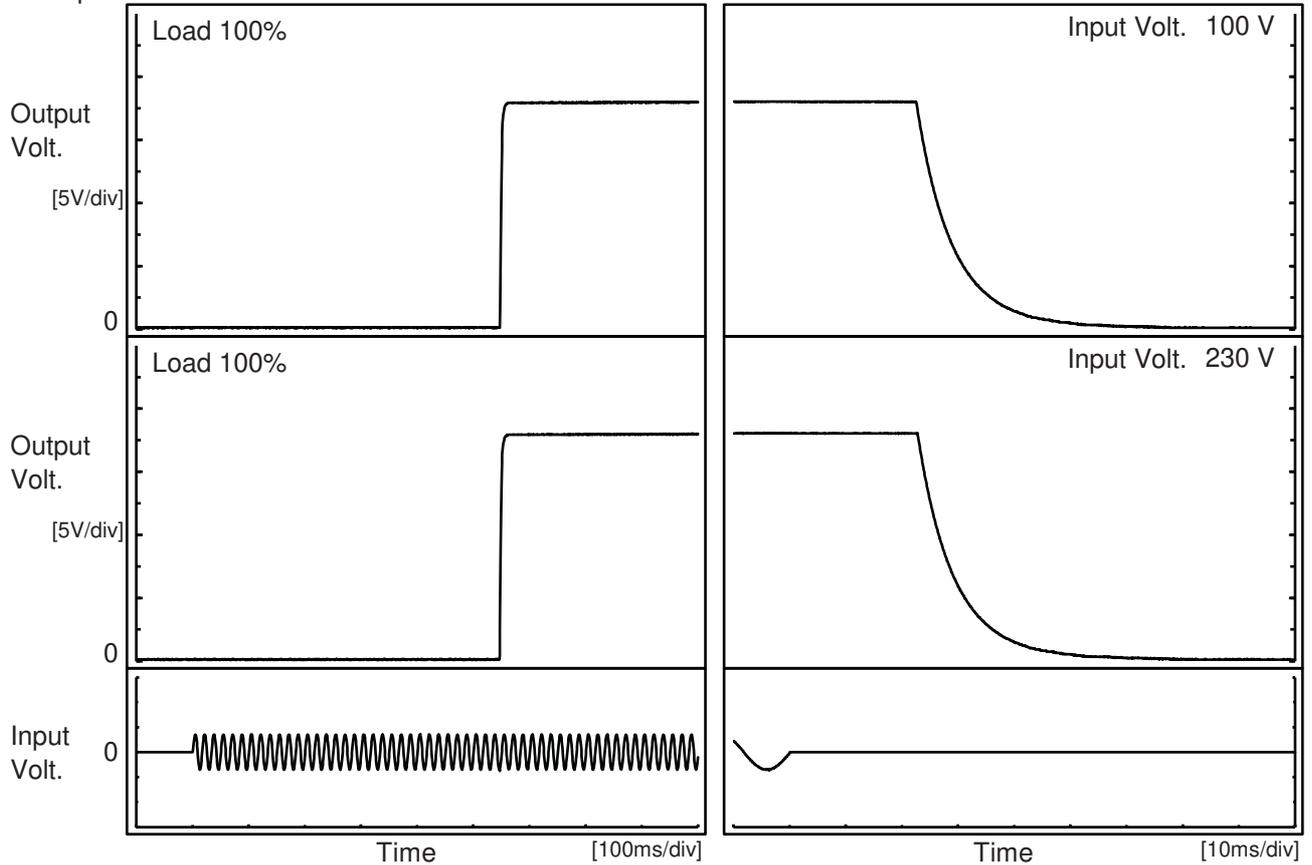
Load 50%(8.35A) \longleftrightarrow
 Load 100%(16.7A)





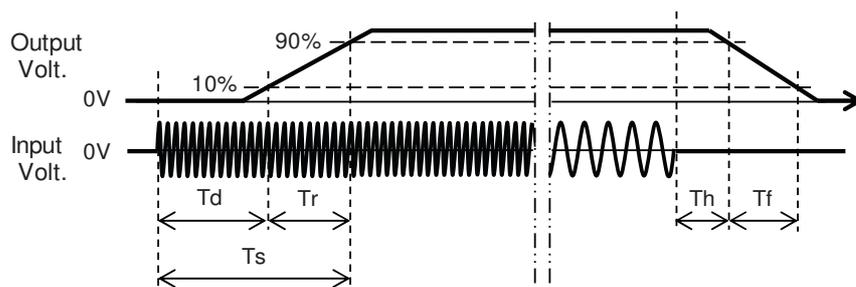
Model	AEA600F-36	Temperature	25°C
Item	Rise and Fall Time	Testing Circuitry	Figure A
Object	+36V16.7A		

1. Graph



2. Values

Input Volt. \ Time	Td	Tr	Ts	Th	Tf
100 V	548.5	4.0	552.5	23.2	14.7
230 V	547.5	4.0	551.5	23.4	14.8





COSEL																																		
Model	AEA600F-36																																	
Item	Hold-Up Time	Temperature 25°C Testing Circuitry Figure A																																
Object	+36V16.7A																																	
<p>1. Graph</p> <p style="text-align: right;"> ---□--- Load 50% —△— Load 100% </p>		<p>2. Values</p> <table border="1"> <thead> <tr> <th rowspan="2">Input Voltage [V]</th> <th colspan="2">Hold-Up Time [ms]</th> </tr> <tr> <th>Load 50%</th> <th>Load 100%</th> </tr> </thead> <tbody> <tr> <td>85</td> <td>45</td> <td>40 *1</td> </tr> <tr> <td>90</td> <td>45</td> <td>30 *2</td> </tr> <tr> <td>100</td> <td>45</td> <td>31 *2</td> </tr> <tr> <td>200</td> <td>45</td> <td>23</td> </tr> <tr> <td>230</td> <td>46</td> <td>23</td> </tr> <tr> <td>264</td> <td>45</td> <td>23</td> </tr> <tr> <td>280</td> <td>47</td> <td>23</td> </tr> <tr> <td>--</td> <td>-</td> <td>-</td> </tr> <tr> <td>--</td> <td>-</td> <td>-</td> </tr> </tbody> </table> <p style="text-align: right;"> *1 : Load 60% *2 : Load 80% </p>	Input Voltage [V]	Hold-Up Time [ms]		Load 50%	Load 100%	85	45	40 *1	90	45	30 *2	100	45	31 *2	200	45	23	230	46	23	264	45	23	280	47	23	--	-	-	--	-	-
Input Voltage [V]	Hold-Up Time [ms]																																	
	Load 50%	Load 100%																																
85	45	40 *1																																
90	45	30 *2																																
100	45	31 *2																																
200	45	23																																
230	46	23																																
264	45	23																																
280	47	23																																
--	-	-																																
--	-	-																																
<p>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.</p>																																		



<p>Model AEA600F-36</p>		<p>Temperature 25°C Testing Circuitry Figure A</p>																																																			
<p>Item Instantaneous Interruption Compensation</p>																																																					
<p>Object +36V16.7A</p>																																																					
<p>1.Graph</p> <p> </p> <p> △ Input Volt. 100V □ Input Volt. 200V ○ Input Volt. 230V </p> <p style="transform: rotate(-90deg); position: absolute; left: -50px; top: 50%; font-size: 0.8em;">Instantaneous Compensation Time [ms]</p> <p style="text-align: center;">Load Current [A]</p>		<p>2.Values</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="3">Time [ms]</th> </tr> <tr> <th>Input Volt. 100[V]</th> <th>Input Volt. 200[V]</th> <th>Input Volt. 230[V]</th> </tr> </thead> <tbody> <tr><td>0.0</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>3.4</td><td>65</td><td>66</td><td>68</td></tr> <tr><td>6.7</td><td>54</td><td>47</td><td>55</td></tr> <tr><td>10.0</td><td>37</td><td>37</td><td>37</td></tr> <tr><td>13.4</td><td>27</td><td>27</td><td>23</td></tr> <tr><td>16.7</td><td>22</td><td>22</td><td>21</td></tr> <tr><td>18.4</td><td>-</td><td>20</td><td>20</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td></tr> </tbody> </table>	Load Current [A]	Time [ms]			Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]	0.0	-	-	-	3.4	65	66	68	6.7	54	47	55	10.0	37	37	37	13.4	27	27	23	16.7	22	22	21	18.4	-	20	20	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
Load Current [A]	Time [ms]																																																				
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]																																																		
0.0	-	-	-																																																		
3.4	65	66	68																																																		
6.7	54	47	55																																																		
10.0	37	37	37																																																		
13.4	27	27	23																																																		
16.7	22	22	21																																																		
18.4	-	20	20																																																		
--	-	-	-																																																		
--	-	-	-																																																		
--	-	-	-																																																		
--	-	-	-																																																		
<p>Note: Slanted line shows the range of the rated load current.</p>																																																					

COSEL

Model	AEA600F-36		
Item	Ambient Temperature Drift	Testing Circuitry Figure A	
Object	+36V16.7A		
1.Values		Load 100%	
Ambient Temperature[°C]	Output Voltage [V]		
	Input Volt. 100V	Input Volt. 200V	Input Volt. 230V
-20	35.952	35.952	35.952
25	36.065	36.065	36.065
50	36.109	36.109	36.107
Item	Minimum Input Voltage for Regulated Output Voltage	Testing Circuitry Figure A	
Object	+36V16.7A		
1.Values			
Ambient Temperature[°C]	Input Voltage [V]		
	Load 50%	Load 100%	
-20	74	81	
25	74	82	
50	75	82	
Item	Oversvoltage Protection	Testing Circuitry Figure A	
Object	+36V16.7A		
1.Values		Load 0%	
Ambient Temperature[°C]	Operating Point [V]		
	Input Volt. 100V	Input Volt. 230V	
-20	47.03	46.97	
25	49.07	48.95	
50	50.12	50.12	

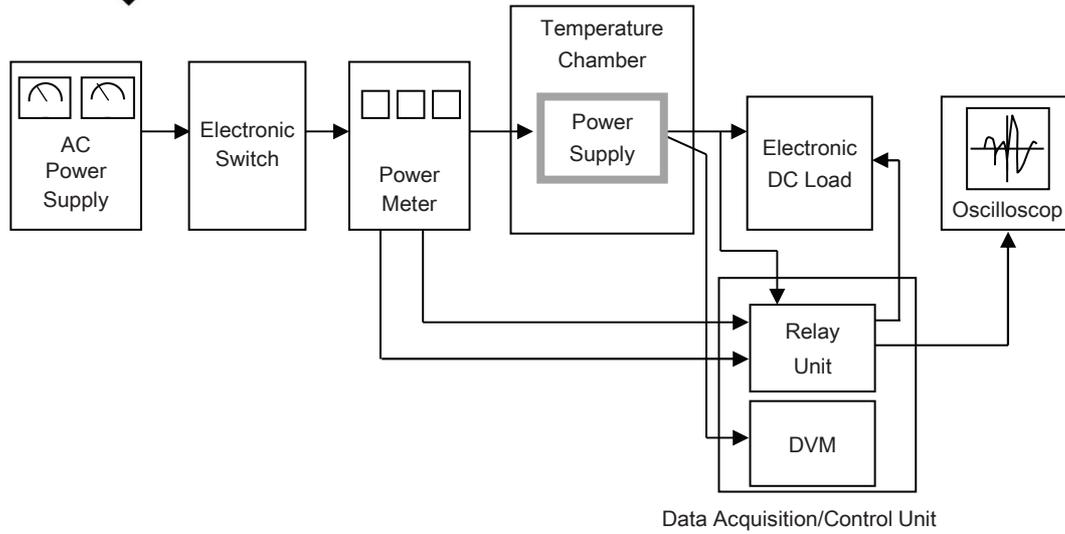


Figure A

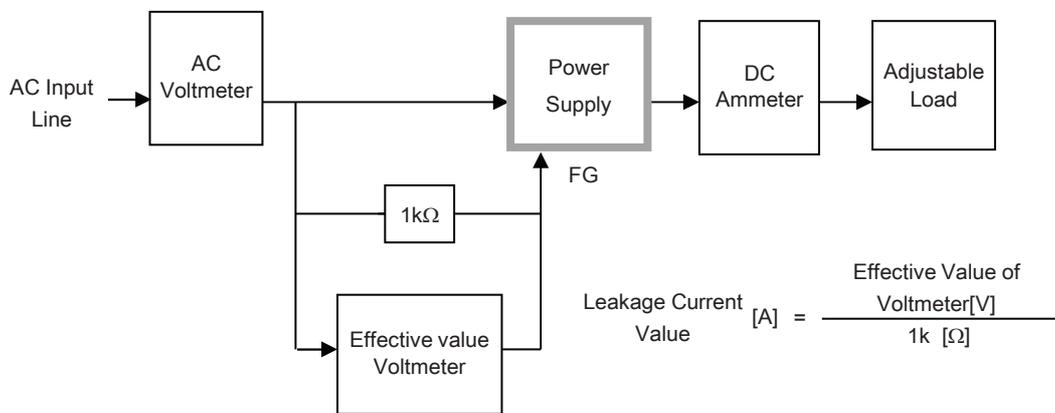


Figure B-1 (DEN-AN)

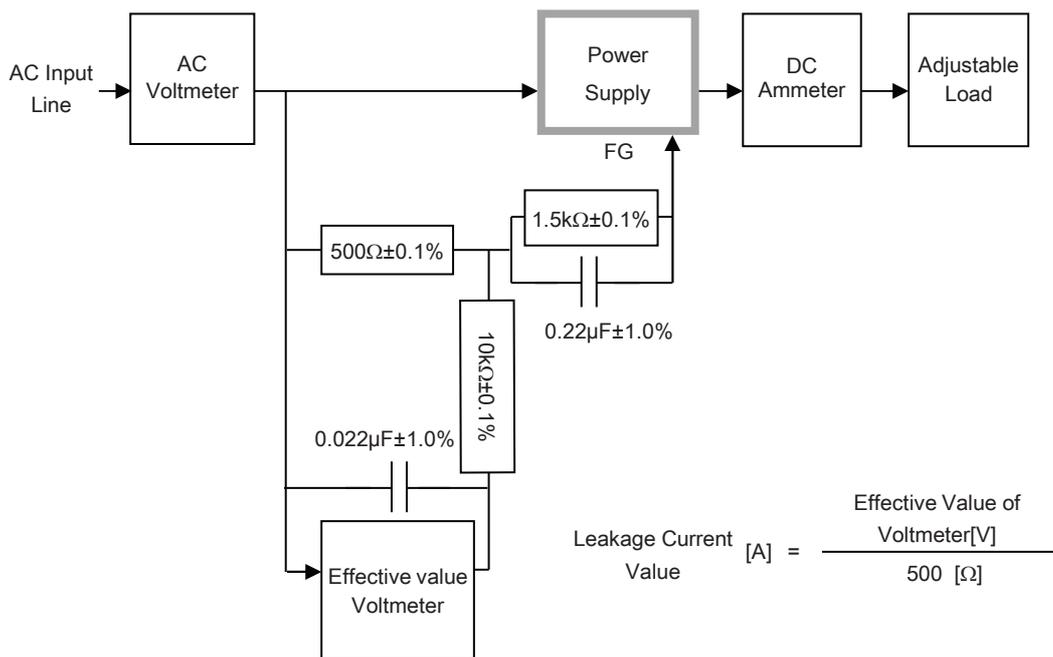


Figure B-2 (IEC62368-1 refer to IEC60990 Fig.4)

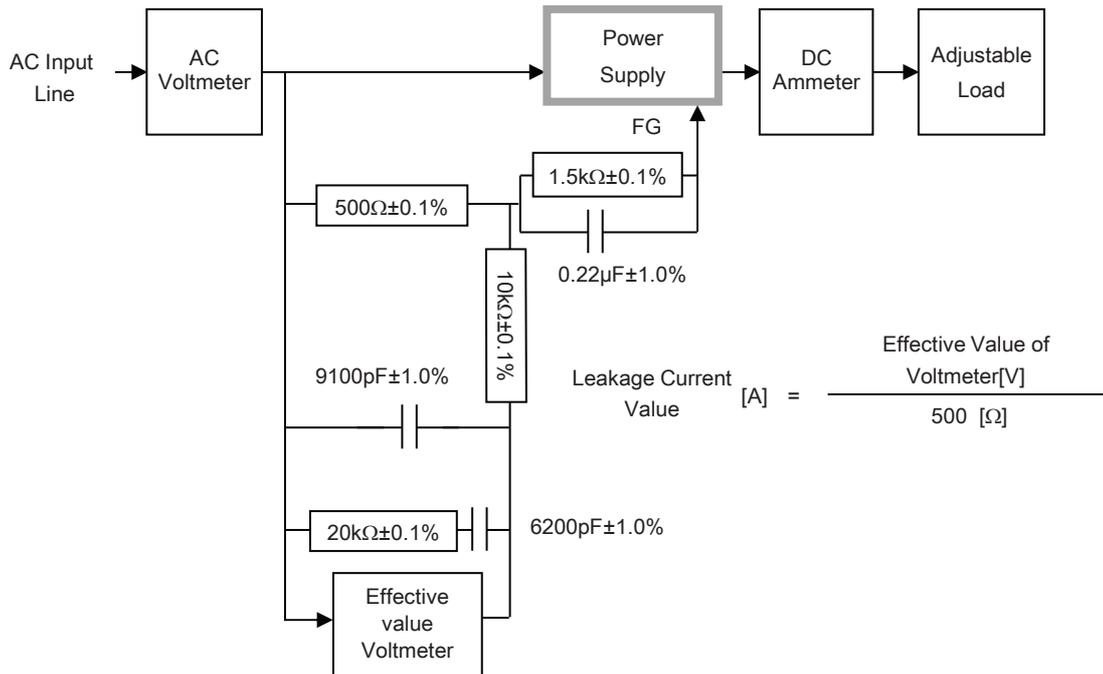


Figure B-3 (IEC62368-1 refer to IEC60990 Fig.5)

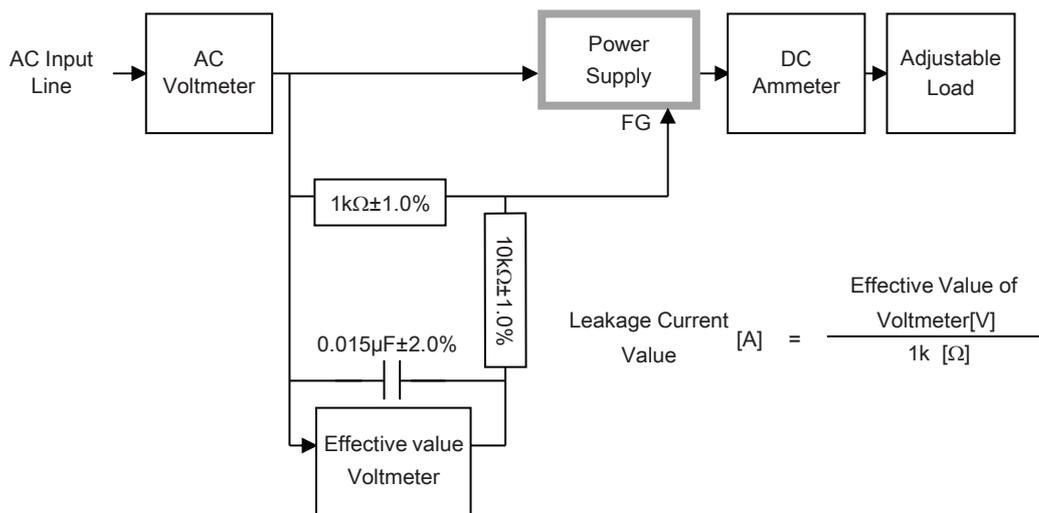


Figure B-4 (IEC60601-1)

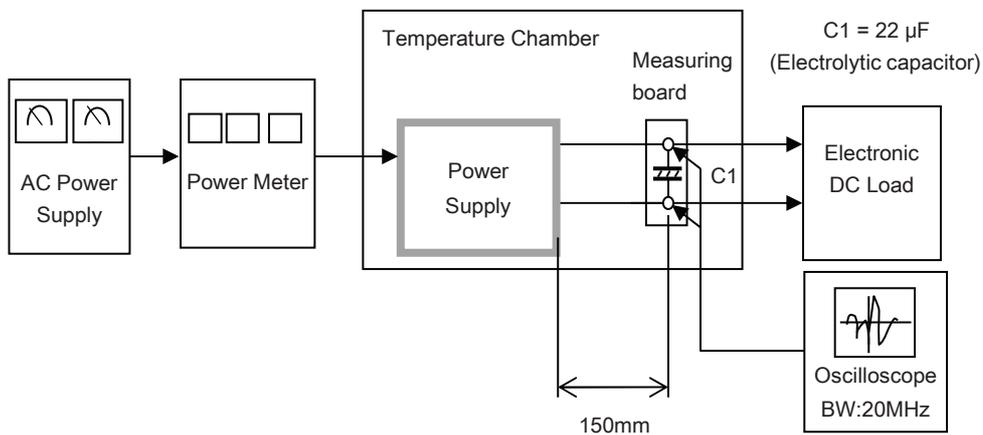


Figure C