

TEST DATA OF PDA15F-5

Regulated DC Power Supply
November 22, 2023

Approved by : _____ Tetsukazu Okamoto

Design Manager

Prepared by : _____ Takaaki Sekiguchi

Design Engineer

COSEL CO.,LTD.



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(Final Page 15)

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Model	PDA15F-5																																																					
Item	Input Current (by Load Current)	Temperature 25°C	Testing Circuitry Figure A																																																			
Object	_____																																																					
1.Graph			2.Values																																																			
<p>The graph shows the relationship between Input Current [A] on the Y-axis (0.0 to 0.5) and Load Current [A] on the X-axis (0.0 to 3.5). Three curves are plotted for different input voltages: 100V (solid line with open triangle markers), 200V (dashed line with open square markers), and 230V (dash-dot line with open circle markers). All curves start at (0,0) and increase monotonically. A slanted line is drawn through the origin, representing the rated load current range.</p>			<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>0.011</td><td>0.008</td><td>0.007</td></tr> <tr> <td>0.6</td><td>0.086</td><td>0.054</td><td>0.049</td></tr> <tr> <td>1.2</td><td>0.149</td><td>0.093</td><td>0.085</td></tr> <tr> <td>1.8</td><td>0.211</td><td>0.129</td><td>0.117</td></tr> <tr> <td>2.4</td><td>0.272</td><td>0.164</td><td>0.149</td></tr> <tr> <td>3.0</td><td>0.333</td><td>0.199</td><td>0.181</td></tr> <tr> <td>3.3</td><td>0.364</td><td>0.217</td><td>0.196</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	0.011	0.008	0.007	0.6	0.086	0.054	0.049	1.2	0.149	0.093	0.085	1.8	0.211	0.129	0.117	2.4	0.272	0.164	0.149	3.0	0.333	0.199	0.181	3.3	0.364	0.217	0.196	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
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Note: Slanted line shows the range of the rated load current.

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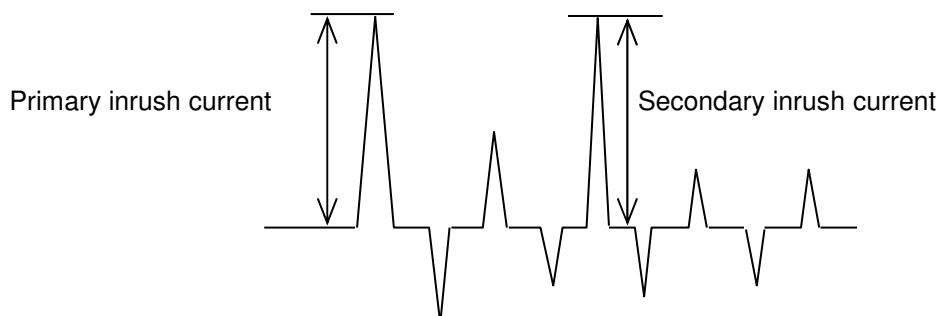
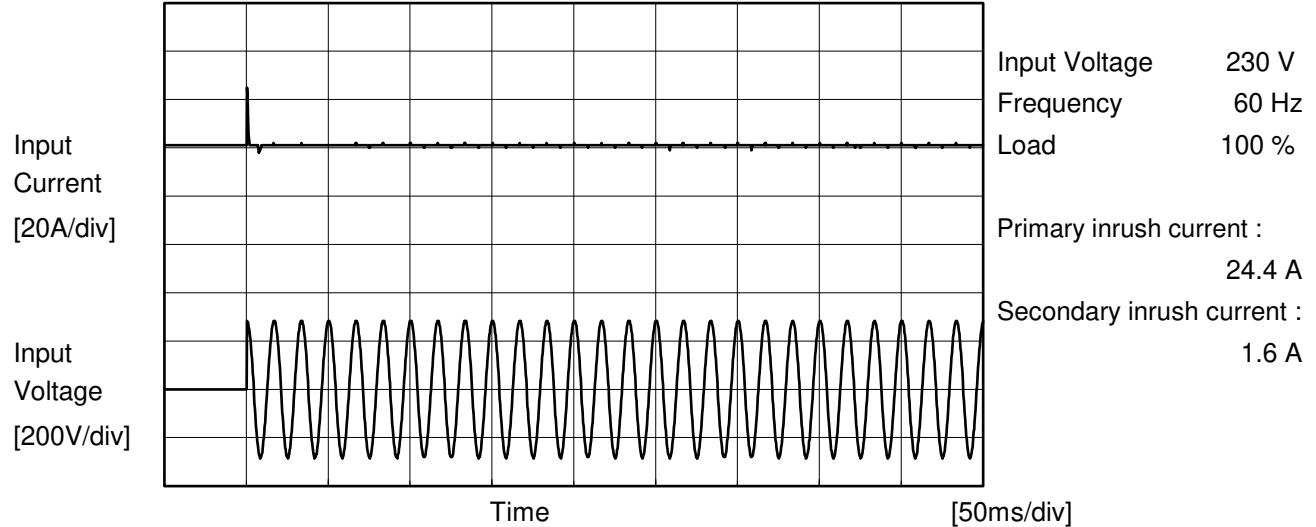
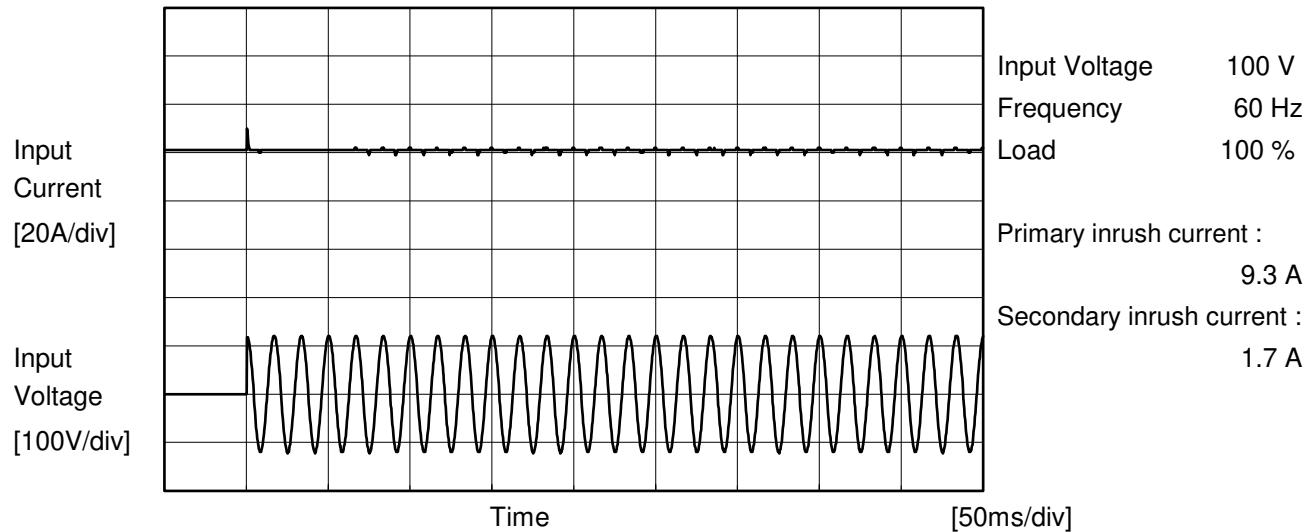
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Model	PDA15F-5	Temperature	25°C
Item	Inrush Current	Testing Circuitry	Figure A
Object	_____		





Model	PDA15F-5	Temperature	25°C
Item	Leakage Current	Testing Circuitry	Figure C
Object	_____		

1. Results

[mA]

Standards	Testing Circuitry	Measuring Method	Input Volt.			Note
			100 [V]	230 [V]	240 [V]	
DEN-AN	Figure C-1	Both phases	0.06	0.14	0.15	Operation
		One of phases	0.08	0.21	0.22	Stand by
IEC62368-1	Figure C-2	Both phases	0.06	0.14	0.15	Operation
		One of phases	0.08	0.21	0.22	Stand by
	Figure C-3	Both phases	0.06	0.14	0.15	Operation
		One of phases	0.08	0.21	0.22	Stand by

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

2. Condition

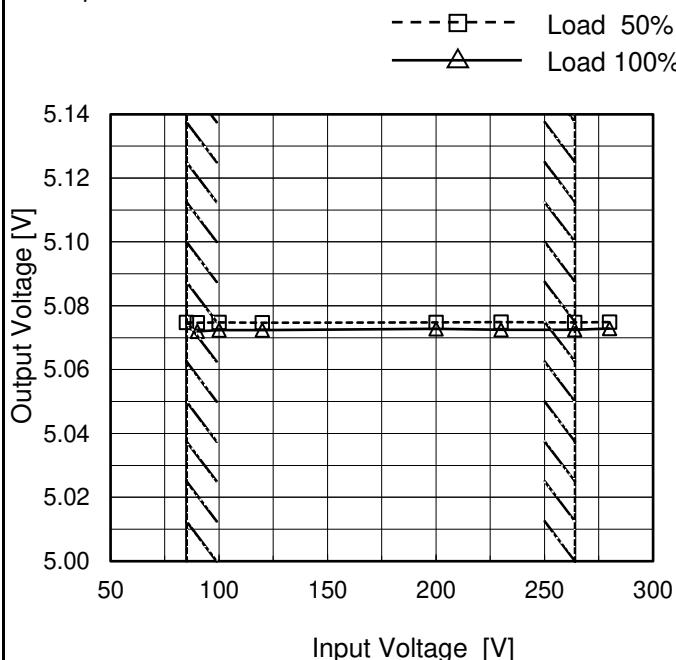
Leakage current value is concluded after measuring both phases of AC input and by choosing the larger one.

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Model	PDA15F-5
Item	Line Regulation
Object	+5V3A

 Temperature 25°C
 Testing Circuitry Figure A

1. Graph

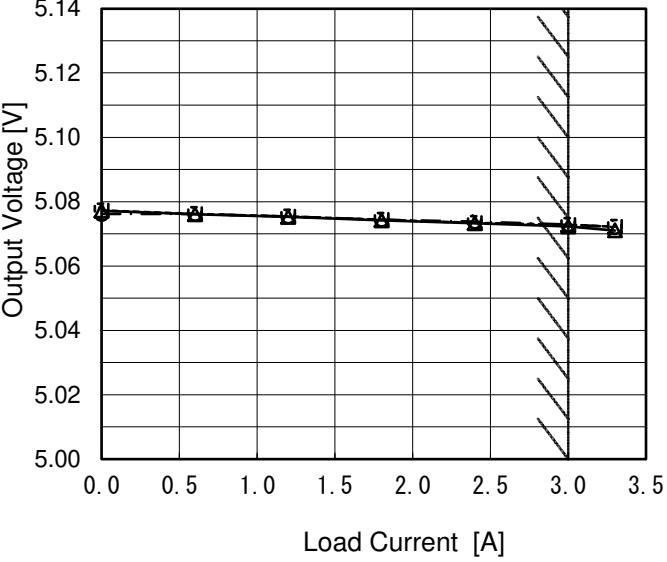
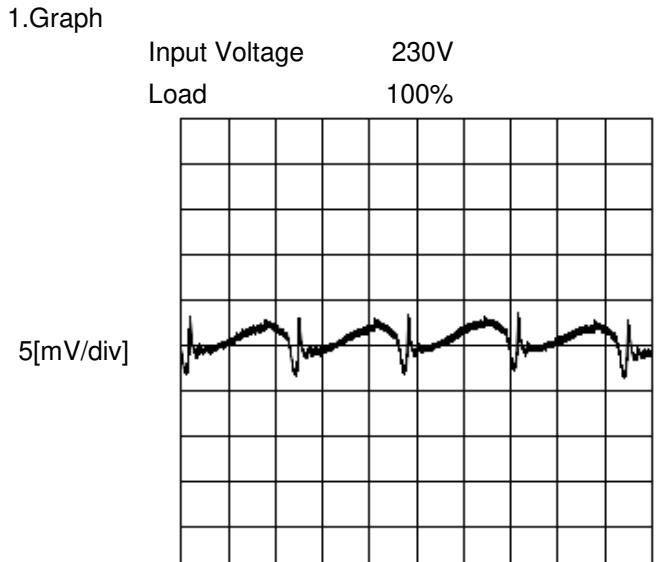


2. Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
85	5.075	-
90	5.075	5.072
100	5.075	5.072
120	5.075	5.072
200	5.075	5.073
230	5.075	5.073
264	5.075	5.073
280	5.075	5.073
--	-	-

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

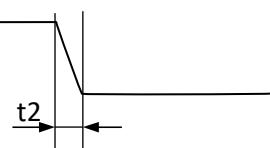
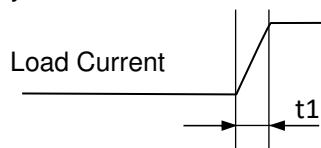
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Object	+5V3A	Testing Circuitry	Figure B																																																			
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<p>Input Voltage 230V Load 100%</p> 																																																						

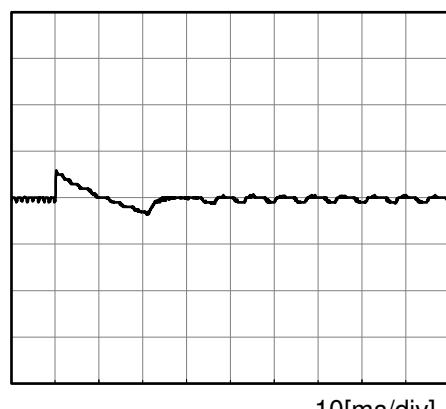
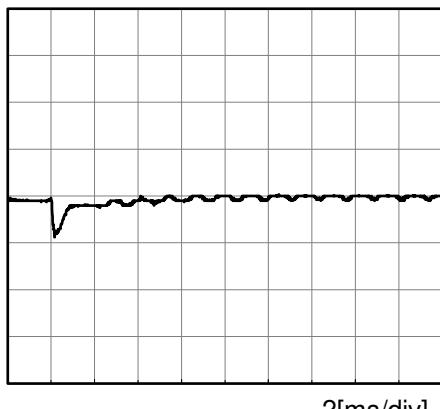
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Model	PDA15F-5	Temperature	25°C
Item	Dynamic Load Response	Testing Circuitry	Figure A
Object	+5V3A		

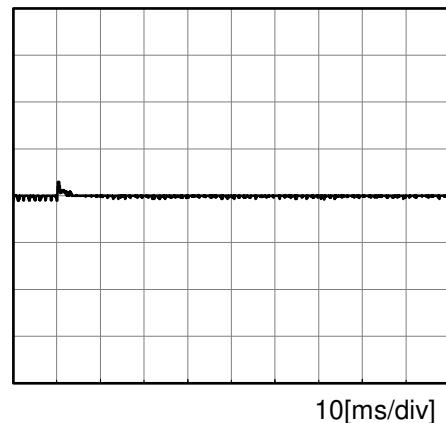
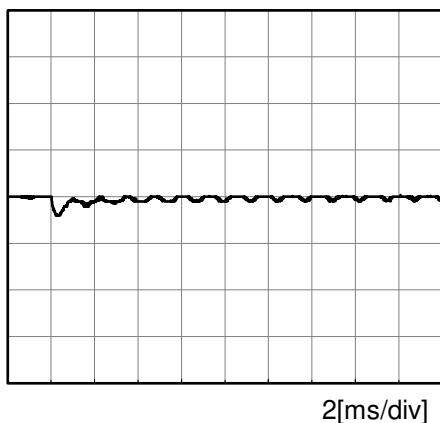
Input Volt. 230 V
 Cycle 1000 ms

Response. $t_1=t_2=50\mu s$. Typ

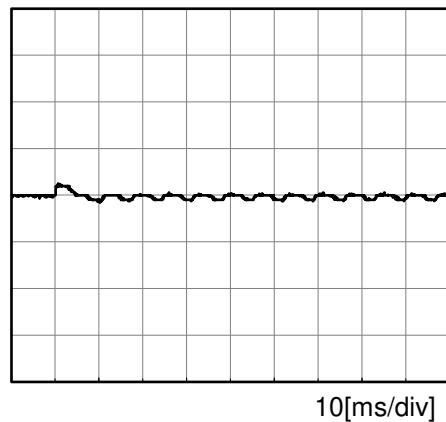
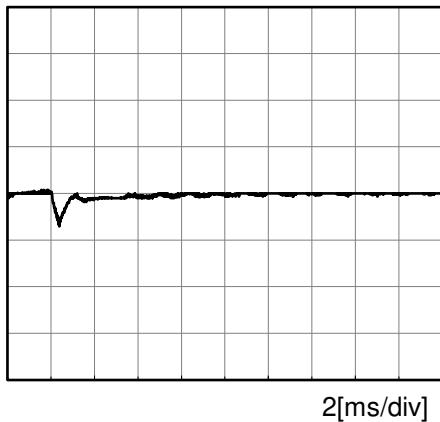
Load 0%(0A) \longleftrightarrow
 Load 100%(3A)



Load 50%(1.5A) \longleftrightarrow
 Load 100%(3A)



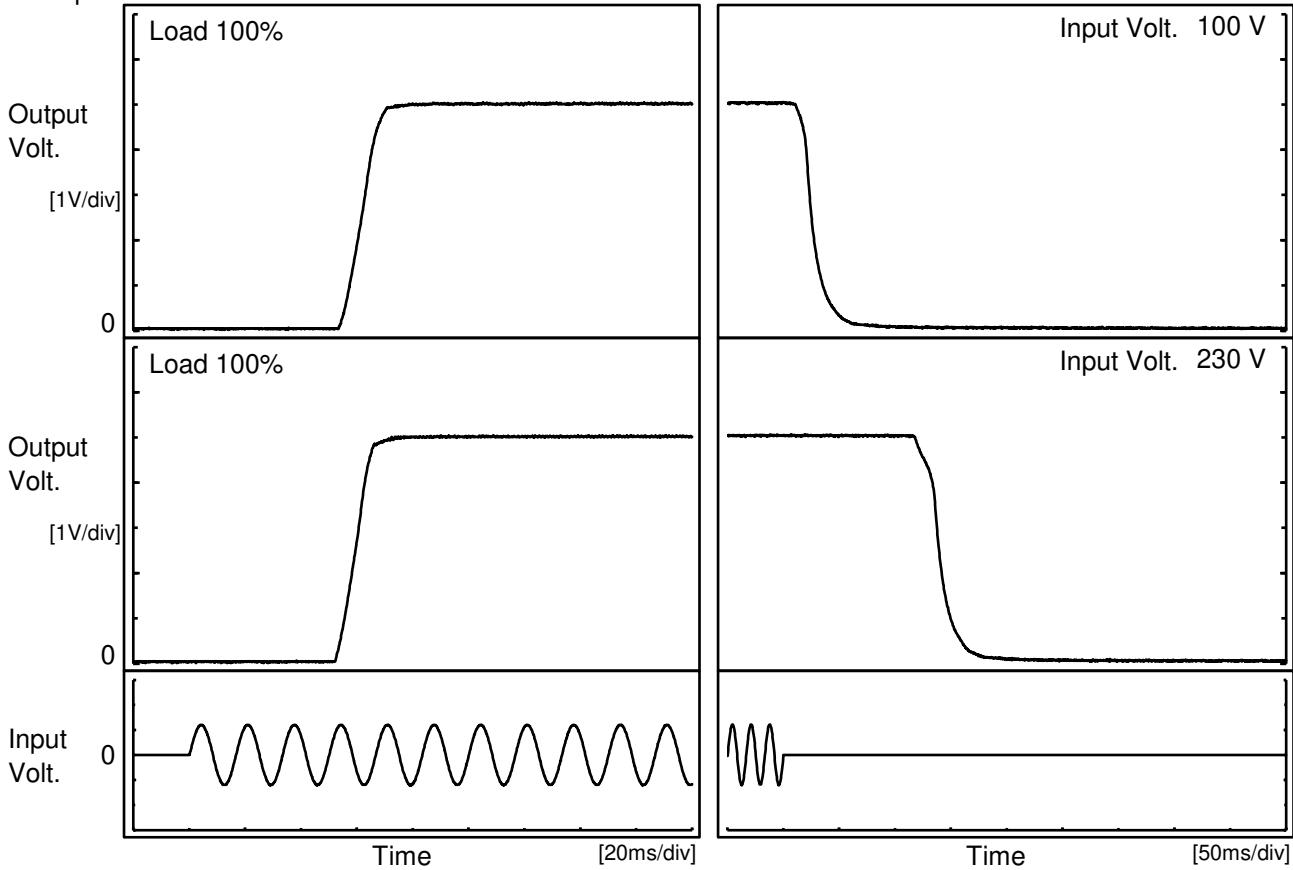
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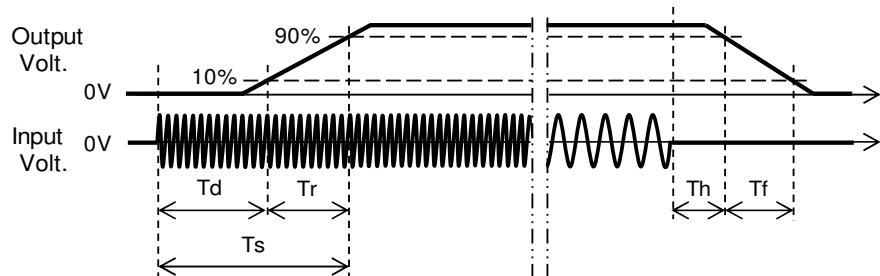
Model	PDA15F-5	Temperature	25°C
Item	Rise and Fall Time	Testing Circuitry	Figure A
Object	+5V3A		

1. Graph



2. Values

Input Volt.	Time	Td	Tr	Ts	Th	Tf	[ms]
100 V		55.9	11.8	67.7	28.0	26.8	
230 V		54.3	10.4	64.7	175.0	32.8	



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Model	PDA15F-5	Temperature	25°C																																
Item	Hold-Up Time	Testing Circuitry	Figure A																																
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<p>Graph showing Hold-Up Time [ms] vs Input Voltage [V]. The Y-axis is logarithmic, ranging from 1 to 1000 ms. The X-axis is linear, ranging from 50 to 300 V. Two curves are plotted: Load 50% (dashed line with square markers) and Load 100% (solid line with triangle markers). Both curves show an increase in hold-up time as input voltage decreases below the rated range (indicated by a slanted line between approximately 85V and 264V).</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>39</td> <td>-</td> </tr> <tr> <td>90</td> <td>45</td> <td>16</td> </tr> <tr> <td>100</td> <td>58</td> <td>24</td> </tr> <tr> <td>120</td> <td>87</td> <td>45</td> </tr> <tr> <td>200</td> <td>264</td> <td>130</td> </tr> <tr> <td>230</td> <td>356</td> <td>175</td> </tr> <tr> <td>264</td> <td>476</td> <td>235</td> </tr> <tr> <td>280</td> <td>540</td> <td>265</td> </tr> <tr> <td>--</td> <td>-</td> <td>-</td> </tr> </tbody> </table>	Input Voltage [V]	Hold-Up Time [ms]		Load 50%	Load 100%	85	39	-	90	45	16	100	58	24	120	87	45	200	264	130	230	356	175	264	476	235	280	540	265	--	-	-
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<p>This duration covers from Shut-off of input voltage to the moment when output voltage descends to the rated range of voltage accuracy.</p> <p>Note: Slanted line shows the range of the rated input voltage.</p>																																			

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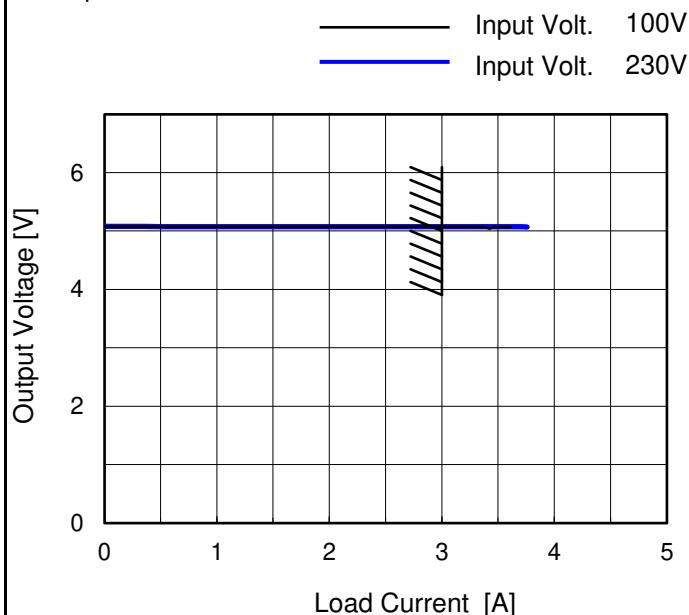
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2.Values	<table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="3">Time [ms]</th> </tr> <tr> <th>Input Volt. 100[V]</th> <th>Input Volt. 200[V]</th> <th>Input Volt. 230[V]</th> </tr> </thead> <tbody> <tr> <td>0.0</td><td>-</td><td>-</td><td>-</td></tr> <tr> <td>0.6</td><td>145</td><td>629</td><td>840</td></tr> <tr> <td>1.2</td><td>73</td><td>328</td><td>441</td></tr> <tr> <td>1.8</td><td>46</td><td>218</td><td>294</td></tr> <tr> <td>2.4</td><td>31</td><td>160</td><td>216</td></tr> <tr> <td>3.0</td><td>20</td><td>116</td><td>163</td></tr> <tr> <td>3.3</td><td>14</td><td>85</td><td>123</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	-	-	-	0.6	145	629	840	1.2	73	328	441	1.8	46	218	294	2.4	31	160	216	3.0	20	116	163	3.3	14	85	123	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
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Note:	Slanted line shows the range of the rated load current.																																																					

COSEL

Model	PDA15F-5
Item	Overcurrent Protection
Object	+5V3A

 Temperature 25°C
 Testing Circuitry Figure A

1.Graph



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

Overcurrent protection is Hiccup mode.

2.Values

Output Voltage [V]	Load Current [A]	
	Input Volt. 100[V]	Input Volt. 230[V]
5.00	3.61	3.76
4.75	-	-
4.50	-	-
4.00	-	-
3.50	-	-
3.00	-	-
2.50	-	-
2.00	-	-
1.50	-	-
1.00	-	-
0.50	-	-
0.00	-	-

COSEL

Model	PDA15F-5	
Item	Ambient Temperature Drift	Testing Circuitry Figure A
Object	+5V3A	

1.Values

Load 100%

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 100V	Input Volt. 200V	Input Volt. 230V
-10	5.058	5.059	5.059
25	5.072	5.073	5.073
55	5.070	5.070	5.071

Item	Minimum Input Voltage for Regulated Output Voltage	Testing Circuitry Figure A
Object	+5V3A	

1.Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-10	33	69
25	33	68
55	32	67

Item	Overvoltage Protection	Testing Circuitry Figure A
Object	+5V3A	

1.Values

Load 0%

Ambient Temperature [°C]	Operating Point [V]	
	Input Volt. 100V	Input Volt. 230V
-20	6.30	6.30
25	6.30	6.30
55	6.30	6.30

COSEL

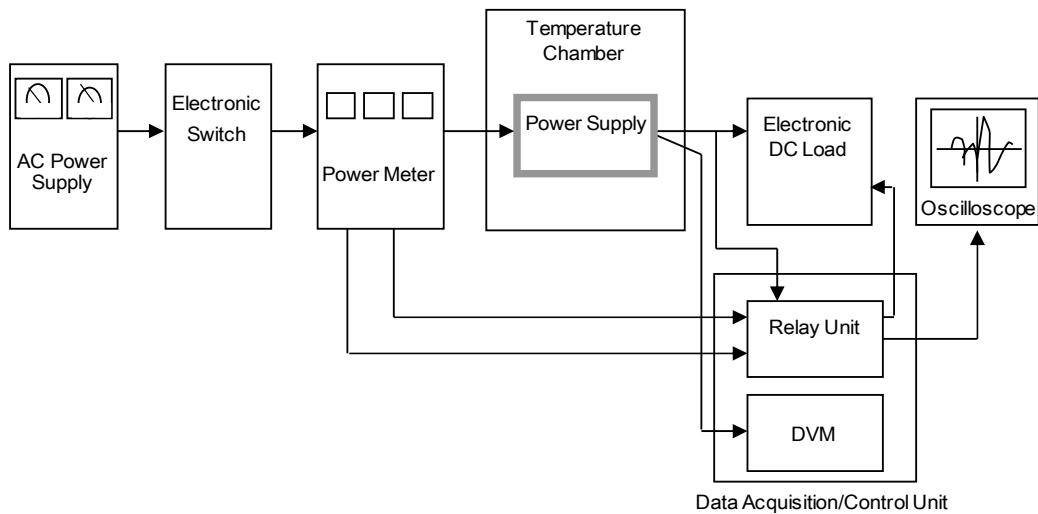


Figure A

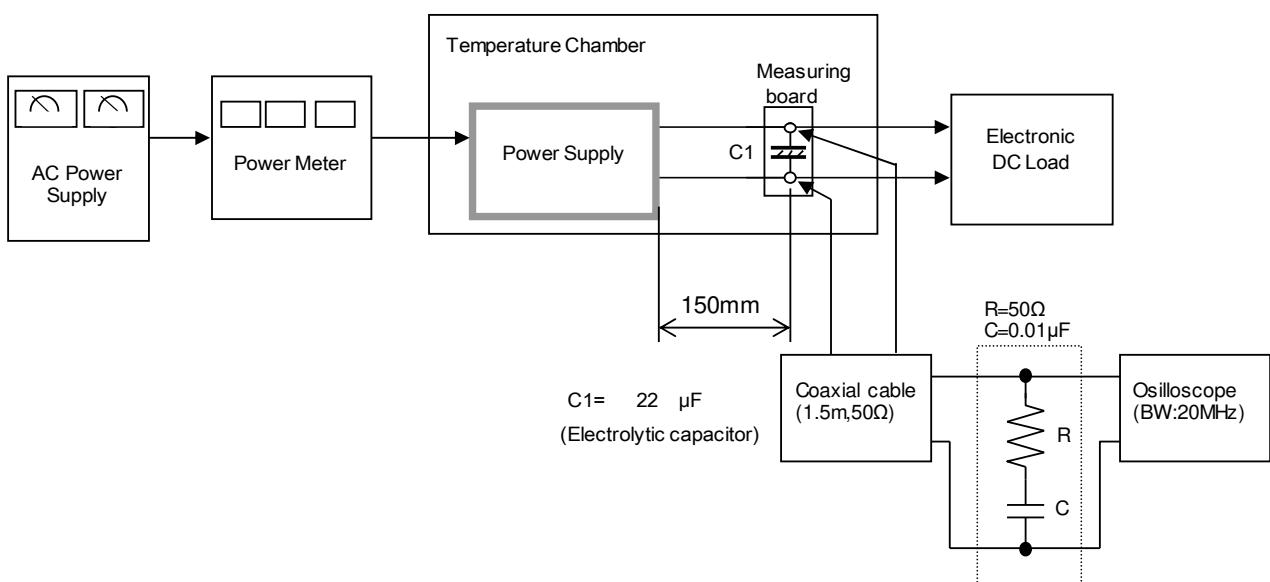


Figure B

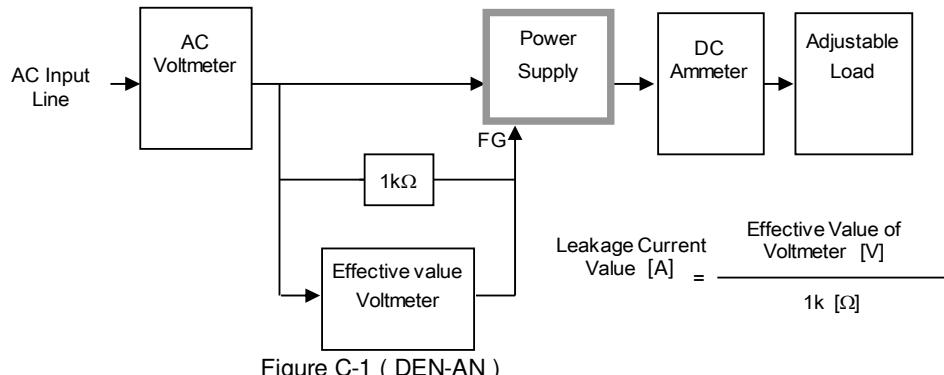


Figure C-1 (DEN-AN)

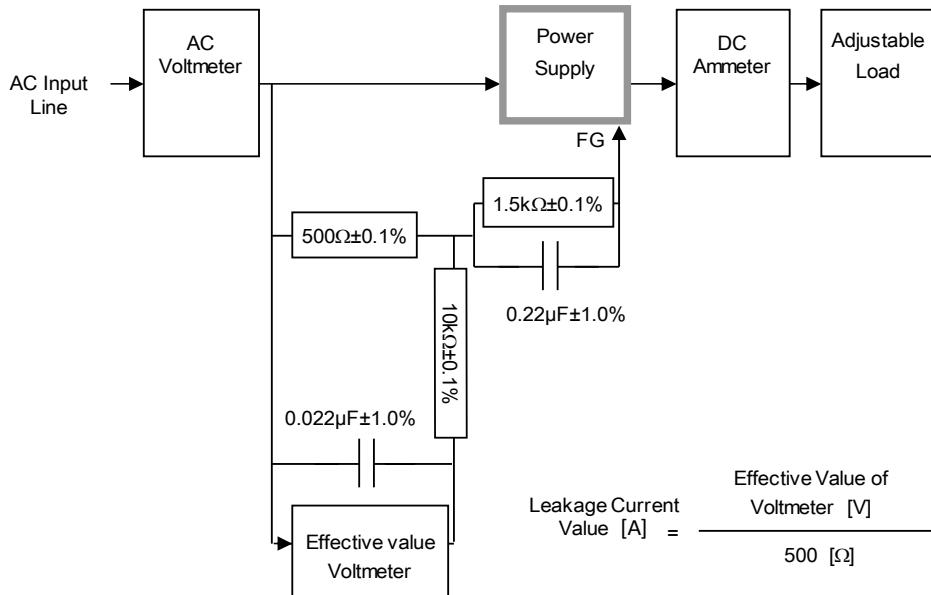


Figure C-2 (IEC62368-1 refer to IEC60990 Fig.4)

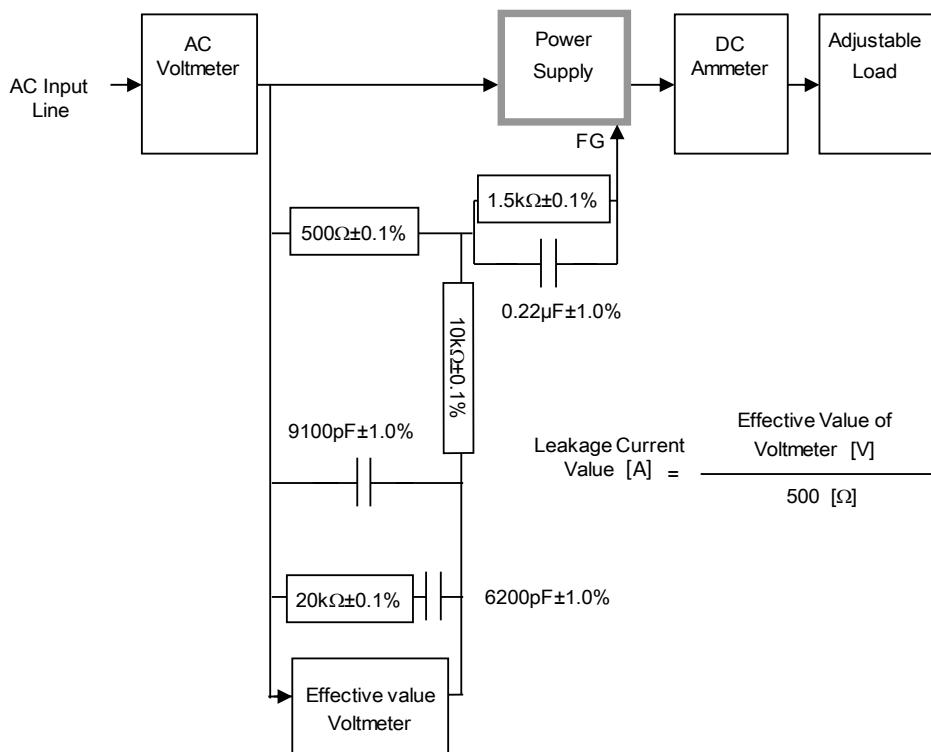


Figure C-3 (IEC62368-1 refer to IEC60990 Fig.5)