

TEST DATA OF TEPS20F05

Regulated DC Power Supply
February 20, 2025

Approved by : Tetsuro Hirata
Design Manager

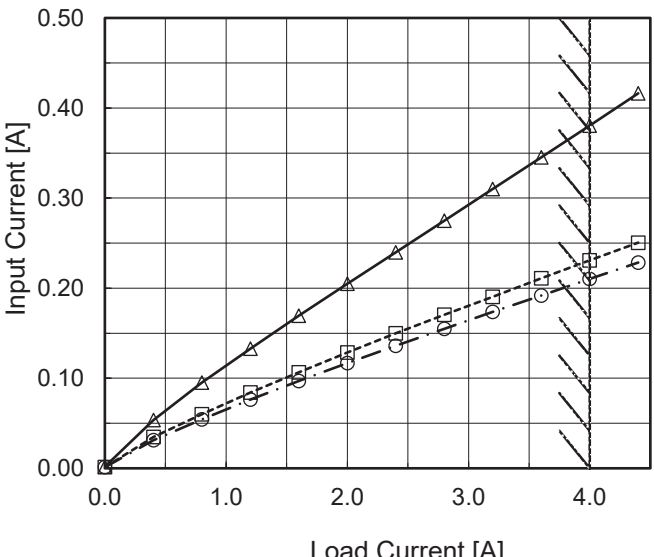
Prepared by : Junichi Otsubo
Design Engineer

COSEL CO.,LTD.

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Model		TEPS20F05		Temperature Testing Circuitry	25°C Figure A																																																								
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Object		_____																																																											
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				<table><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><tr><td>0.0</td><td>0.002</td><td>0.001</td><td>0.001</td></tr><tr><td>0.4</td><td>0.054</td><td>0.035</td><td>0.031</td></tr><tr><td>0.8</td><td>0.095</td><td>0.060</td><td>0.054</td></tr><tr><td>1.2</td><td>0.133</td><td>0.084</td><td>0.076</td></tr><tr><td>1.6</td><td>0.169</td><td>0.107</td><td>0.097</td></tr><tr><td>2.0</td><td>0.205</td><td>0.128</td><td>0.117</td></tr><tr><td>2.4</td><td>0.240</td><td>0.150</td><td>0.136</td></tr><tr><td>2.8</td><td>0.275</td><td>0.171</td><td>0.155</td></tr><tr><td>3.2</td><td>0.310</td><td>0.190</td><td>0.174</td></tr><tr><td>3.6</td><td>0.345</td><td>0.211</td><td>0.192</td></tr><tr><td>4.0</td><td>0.380</td><td>0.231</td><td>0.210</td></tr><tr><td>4.4</td><td>0.416</td><td>0.251</td><td>0.228</td></tr></table>			Load Current [A]	Input Current [A]			Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]	0.0	0.002	0.001	0.001	0.4	0.054	0.035	0.031	0.8	0.095	0.060	0.054	1.2	0.133	0.084	0.076	1.6	0.169	0.107	0.097	2.0	0.205	0.128	0.117	2.4	0.240	0.150	0.136	2.8	0.275	0.171	0.155	3.2	0.310	0.190	0.174	3.6	0.345	0.211	0.192	4.0	0.380	0.231	0.210	4.4	0.416	0.251	0.228
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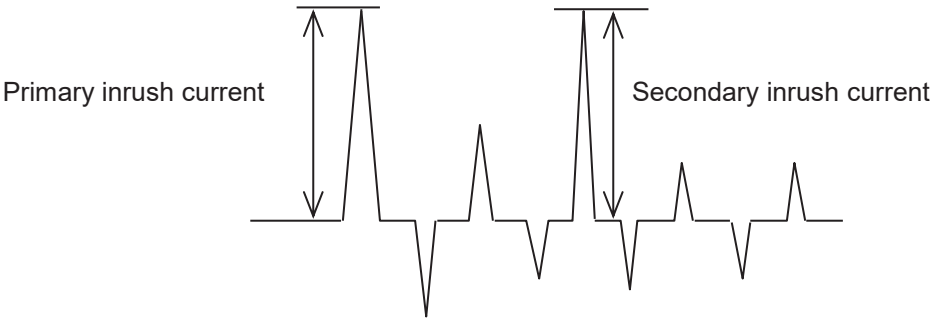
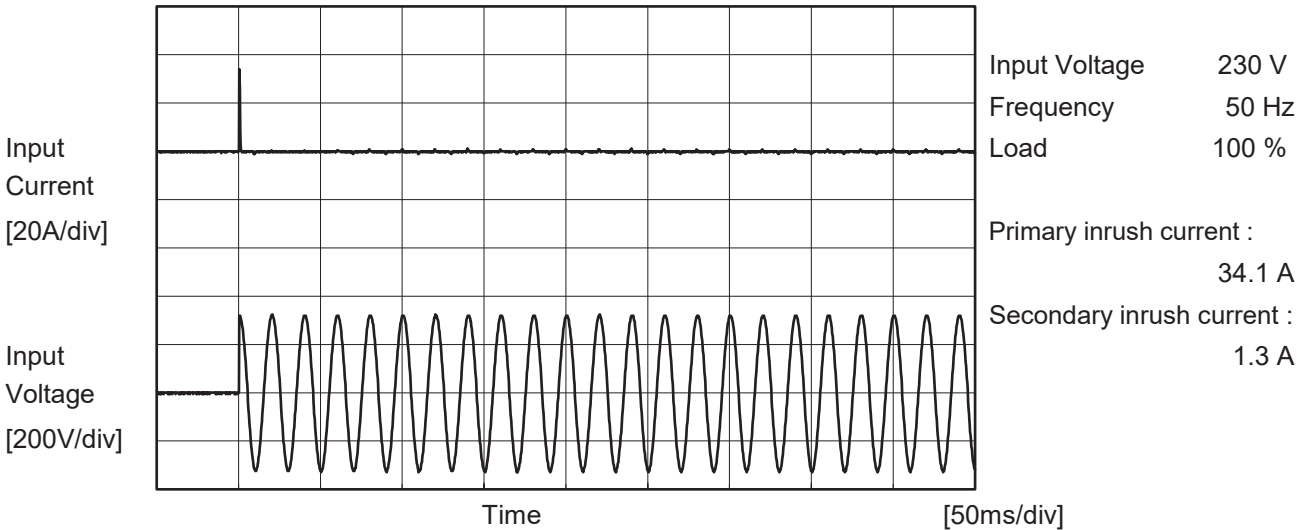
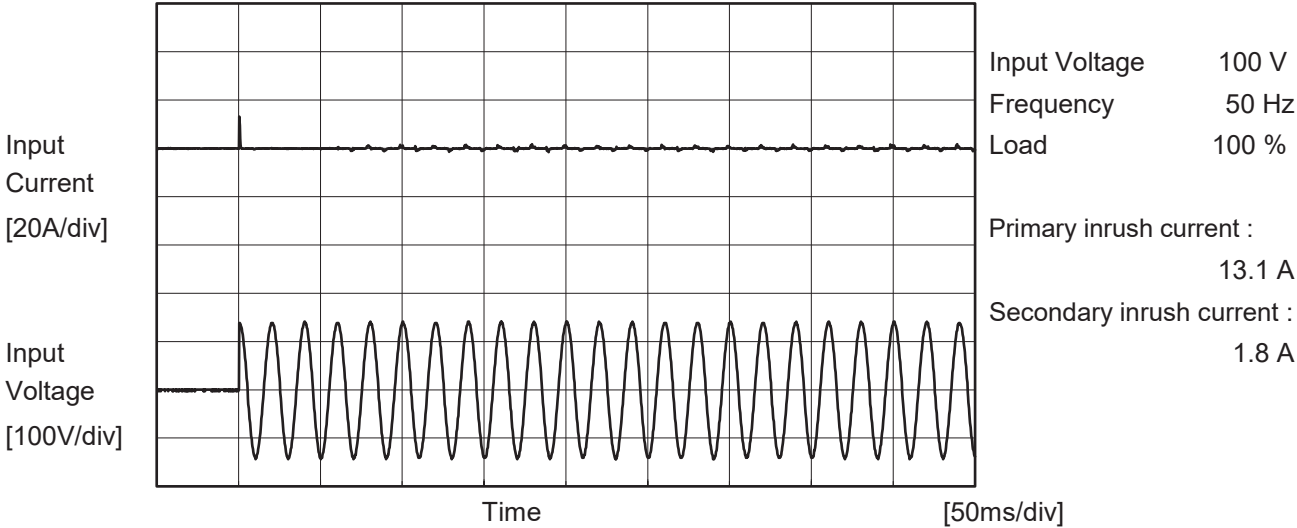
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Model		TEPS20F05	
Item		Inrush Current	Temperature 25°C Testing Circuitry Figure A
Object			





Model		TEPS20F05	Temperature 25°C Testing Circuitry Figure C
Item		Leakage Current	
Object		_____	

1.Results

[μA]

Standards	Testing Circuitry	Measuring Method	Input Volt.			Note
			100 [V]	230 [V]	264 [V]	
DEN-AN	Figure C-1	Both phases	23	47	54	Operation
		One of phases	28	70	81	Stand by
IEC62368-1	Figure C-2	Both phases	19	44	52	Operation
		One of phases	28	69	80	Stand by
	Figure C-3	Both phases	19	45	52	Operation
		One of phases	28	69	81	Stand by

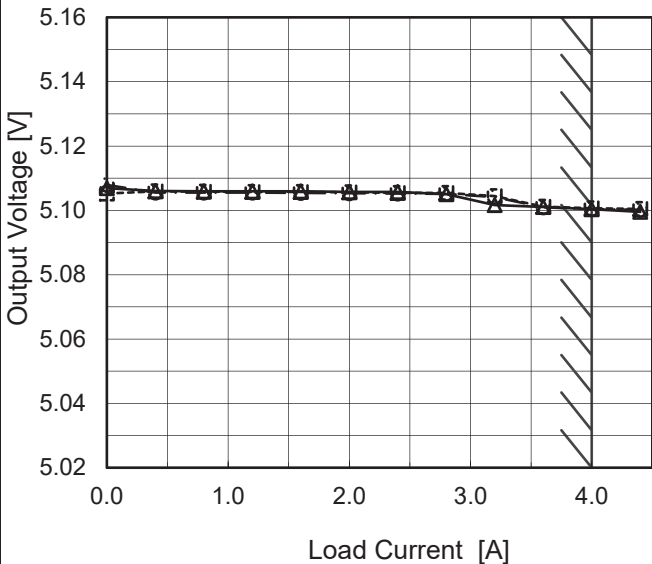
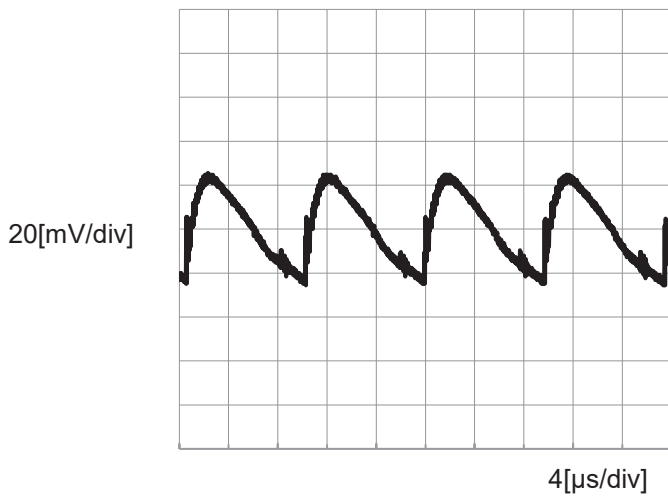
The value for "One of phases" is the reference value only.

2.Condition

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

<div>LOREL</div>																																			
Model	TEPS20F05																																		
Item	Line Regulation	Temperature	25°C																																
Object	+5V4A	Testing Circuitry	Figure A																																
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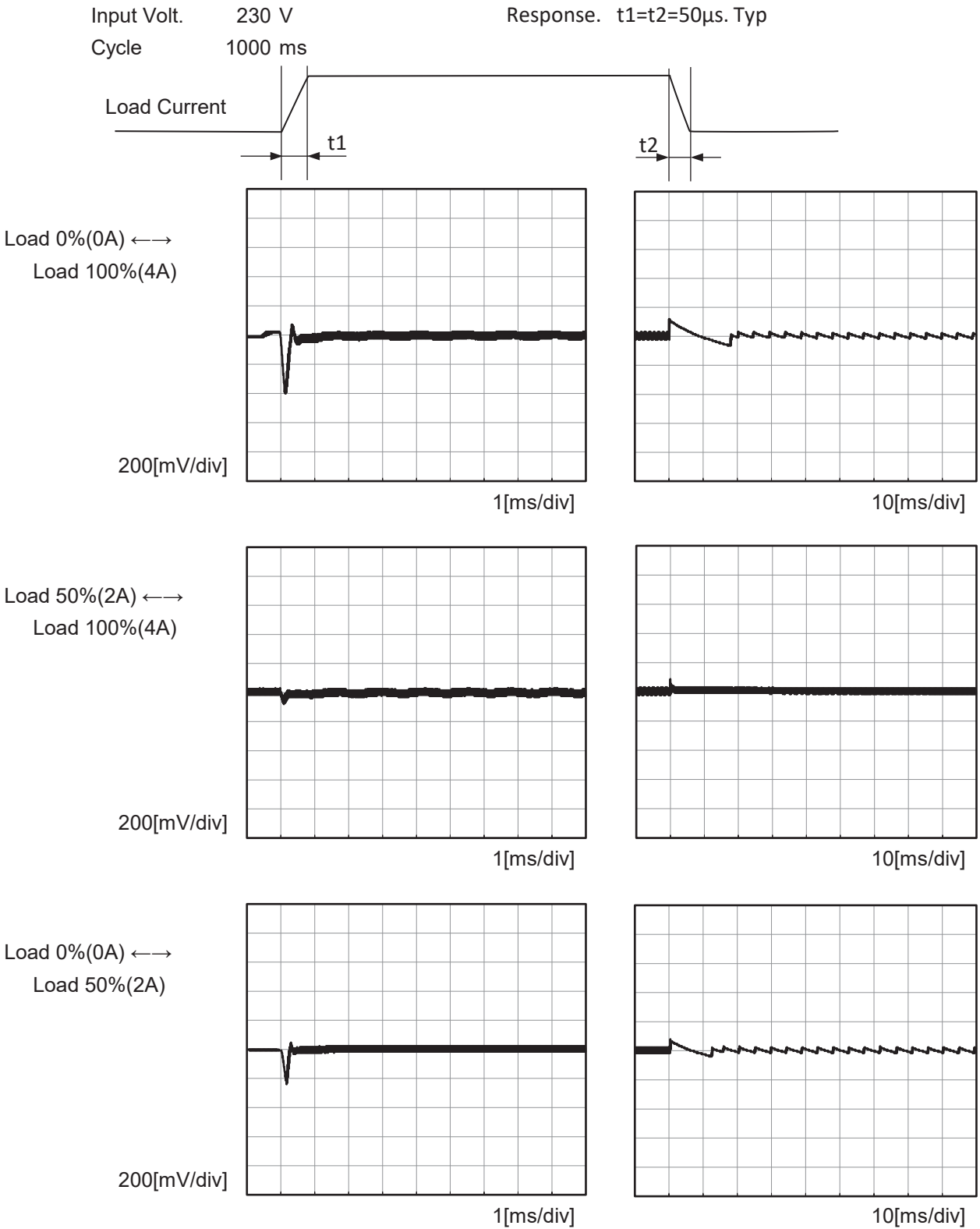
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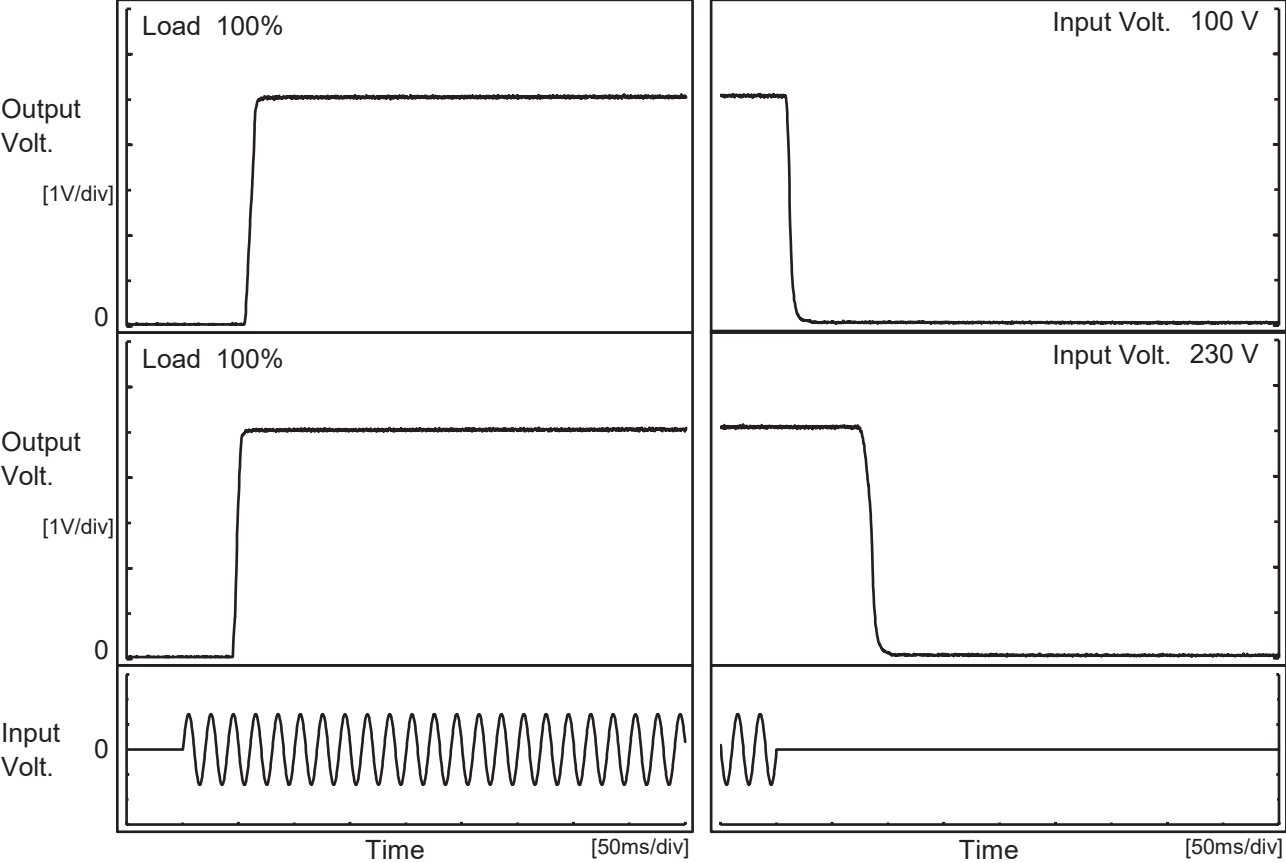
Model		TEPS20F05	Temperature 25°C Testing Circuitry Figure A
Item		Dynamic Load Response	
Object		+5V4A	





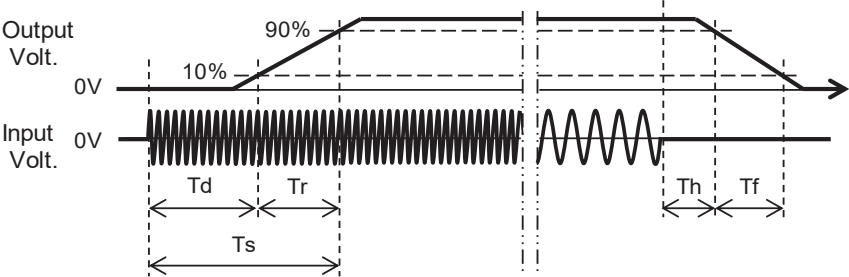
Model		TEPS20F05	Temperature 25°C Testing Circuitry Figure A
Item		Rise and Fall Time	
Object		+5V4A	

1.Graph



2.Values

		[ms]				
Input Volt.	Time	Td	Tr	Ts	Th	Tf
100V		56.8	8.0	64.8	10.3	6.0
230V		45.5	6.3	51.8	79.3	11.0



Model		TEPS20F05	Temperature 25°C Testing Circuitry Figure A
Item		Hold-Up Time	
Object		+5V4A	
1.Graph		<div><div><div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div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Model		TEPS20F05	Temperature Testing Circuitry	25°C Figure A																																																						
Item		Instantaneous Interruption Compensation																																																								
Object		+5V4A																																																								
1.Graph		<div><div>—△—</div>Input Volt. 100V</div> <div><div>- - □ - -</div>Input Volt. 200V</div> <div><div>- · ○ - ·</div>Input Volt. 230V</div> <p>Instantaneous Compensation Time [ms]</p> <p>Load Current [A]</p>	2.Values																																																							
		<table><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><tr><td>0.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>0.4</td><td>146</td><td>629</td><td>840</td></tr><tr><td>0.8</td><td>71</td><td>320</td><td>426</td></tr><tr><td>1.2</td><td>46</td><td>212</td><td>285</td></tr><tr><td>1.6</td><td>33</td><td>158</td><td>212</td></tr><tr><td>2.0</td><td>26</td><td>125</td><td>168</td></tr><tr><td>2.4</td><td>21</td><td>104</td><td>139</td></tr><tr><td>2.8</td><td>17</td><td>86</td><td>118</td></tr><tr><td>3.2</td><td>14</td><td>74</td><td>101</td></tr><tr><td>3.6</td><td>11</td><td>63</td><td>87</td></tr><tr><td>4.0</td><td>9</td><td>54</td><td>76</td></tr><tr><td>4.4</td><td>7</td><td>45</td><td>65</td></tr></table>		Load Current [A]	Time [ms]			Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]	0.0	-	-	-	0.4	146	629	840	0.8	71	320	426	1.2	46	212	285	1.6	33	158	212	2.0	26	125	168	2.4	21	104	139	2.8	17	86	118	3.2	14	74	101	3.6	11	63	87	4.0	9	54	76	4.4	7	45	65
Load Current [A]	Time [ms]																																																									
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Model		TEPS20F05		Temperature Testing Circuitry	25°C Figure A																																																							
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Output Voltage [V]	Load Current [A]																																																											
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Model	TEPS20F05		
Item	Ambient Temperature Drift		Testing Circuitry Figure A
Object	+5V4A		
1.Values Load 100%			
Ambient Temperature[°C]		Output Voltage [V]	
		Input Volt. 100V	Input Volt. 200V
		Input Volt. 230V	
-20	5.111	5.112	5.111
25	5.103	5.104	5.103
60	5.094	5.094	5.093
Item	Minimum Input Voltage for Regulated Output Voltage		Testing Circuitry Figure A
Object	+5V4A		
1.Values			
Ambient Temperature[°C]		Input Voltage [V]	
		Load 50%	Load 100%
-20	45	67	
25	44	65	
60	44	63	
Item	Overvoltage Protection		Testing Circuitry Figure A
Object	+5V4A		
1.Values Load 0%			
Ambient Temperature[°C]		Operating Point [V]	
		Input Volt. 100V	Input Volt. 230V
-20	6.23	6.16	
25	6.17	6.17	
60	6.16	6.16	

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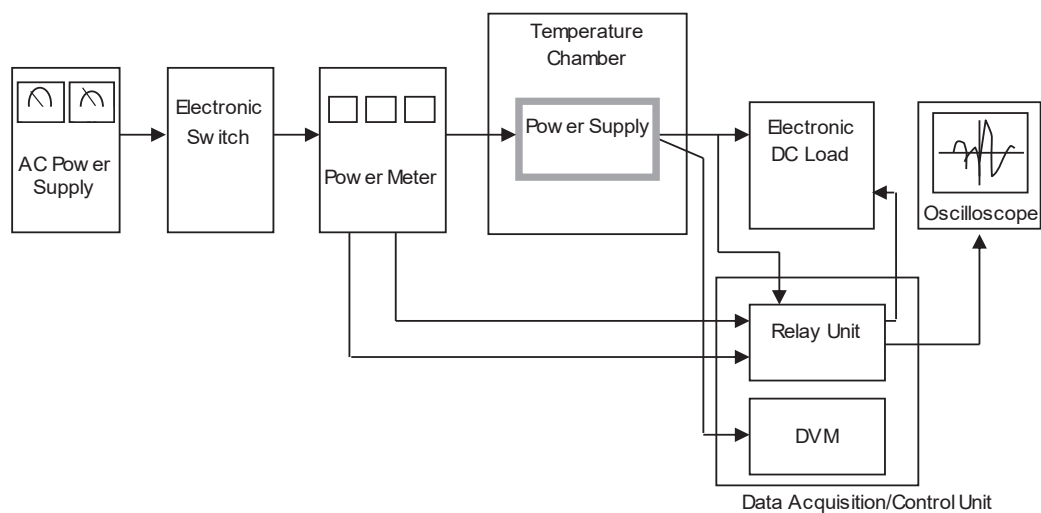


Figure A

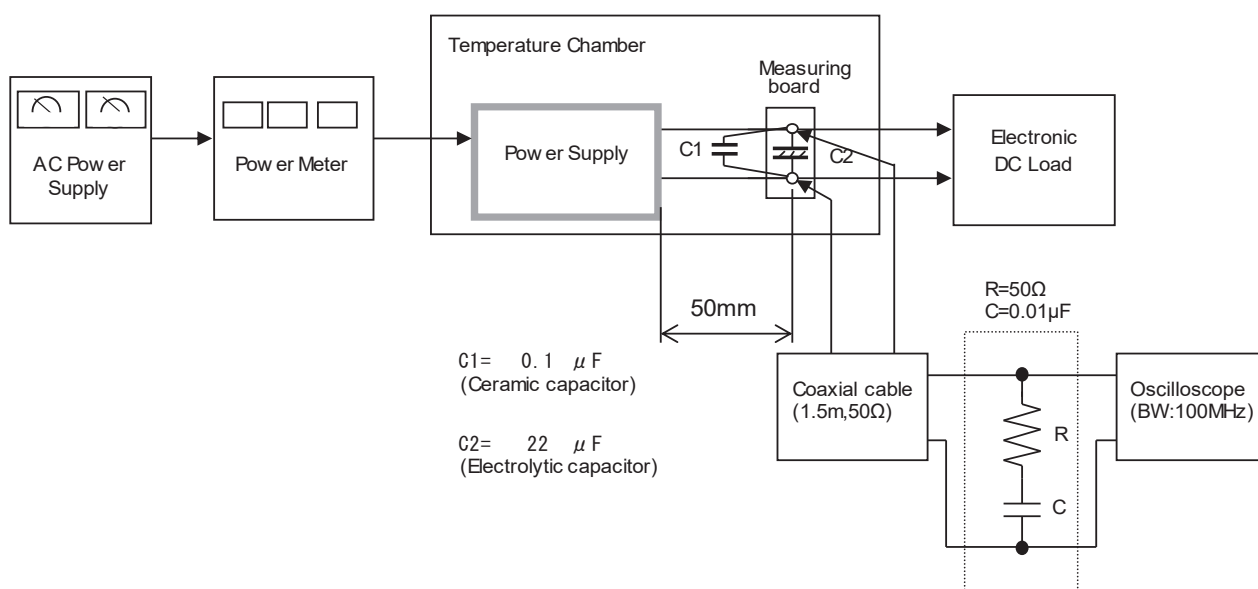


Figure B

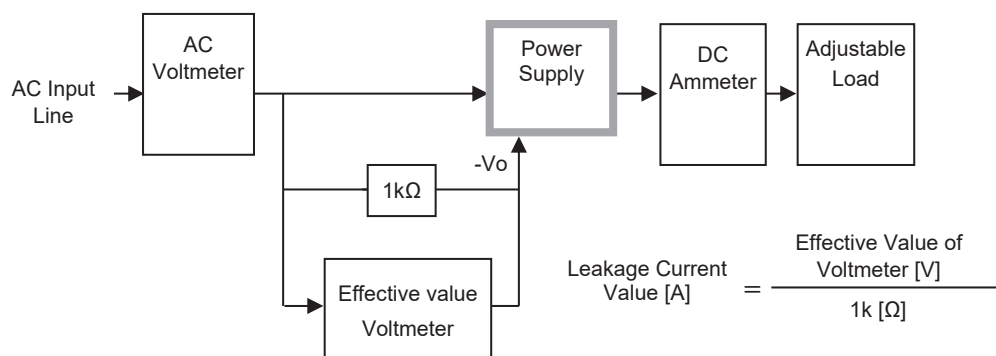


Figure C-1 (DEN-AN)

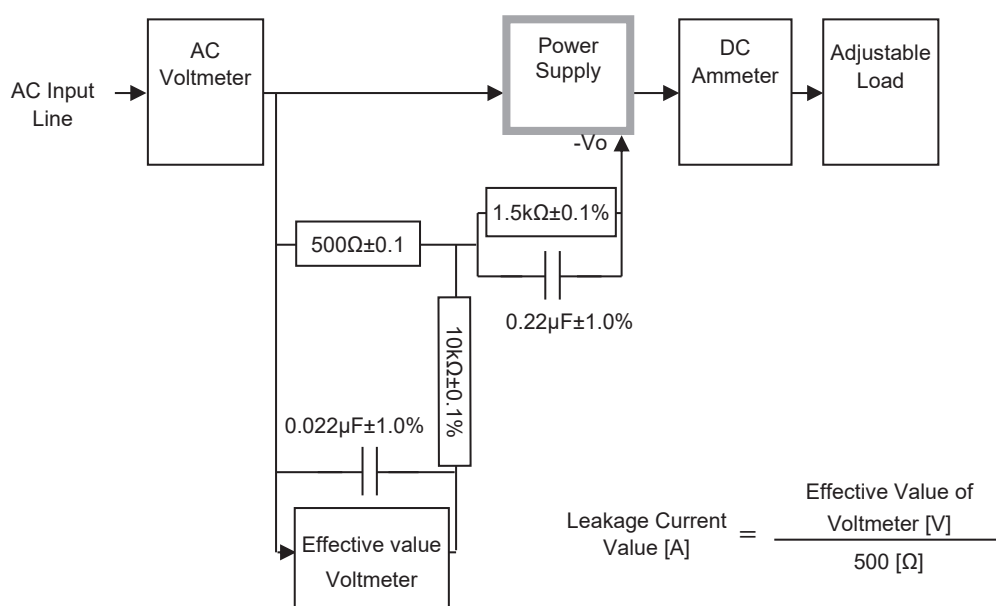


Figure C-2 (IEC62368-1 refer to IEC60990 Fig.4)

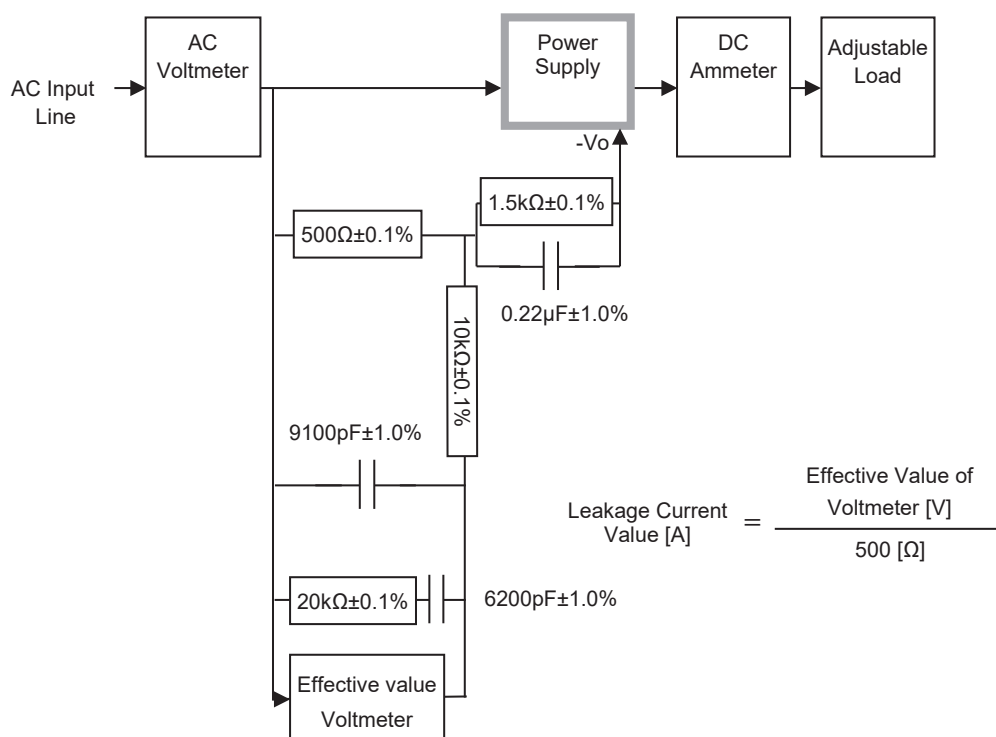


Figure C-3 (IEC62368-1 refer to IEC60990 Fig.5)