

TEST DATA OF UMPS30F48-E

Regulated DC Power Supply
July 22, 2024

Approved by : Takashi Kajii
Design Manager

Prepared by : Kyosuke Kurata
Design Engineer

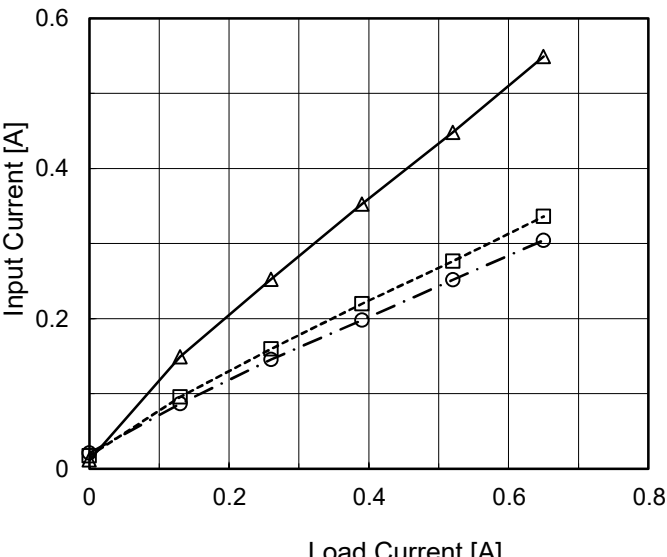
COSEL CO.,LTD.

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Model		UMPS30F48-E	Temperature Testing Circuitry	25°C Figure A																																																							
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1.Graph		<div><div><div>—△—</div><div>Input Volt.</div><div>115V</div></div><div><div>---□---</div><div>Input Volt.</div><div>230V</div></div><div><div>-·-○-·-</div><div>Input Volt.</div><div>264V</div></div></div> <div></div>	2.Values	<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Input Current [A]</th></tr><tr><th>Input Volt. 115[V]</th><th>Input Volt. 230[V]</th><th>Input Volt. 264[V]</th></tr><tr><td>0.00</td><td>0.012</td><td>0.017</td><td>0.021</td></tr><tr><td>0.13</td><td>0.149</td><td>0.096</td><td>0.087</td></tr><tr><td>0.26</td><td>0.252</td><td>0.160</td><td>0.146</td></tr><tr><td>0.39</td><td>0.353</td><td>0.220</td><td>0.198</td></tr><tr><td>0.52</td><td>0.448</td><td>0.276</td><td>0.252</td></tr><tr><td>0.65</td><td>0.549</td><td>0.336</td><td>0.305</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><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr></table>	Load Current [A]	Input Current [A]			Input Volt. 115[V]	Input Volt. 230[V]	Input Volt. 264[V]	0.00	0.012	0.017	0.021	0.13	0.149	0.096	0.087	0.26	0.252	0.160	0.146	0.39	0.353	0.220	0.198	0.52	0.448	0.276	0.252	0.65	0.549	0.336	0.305	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
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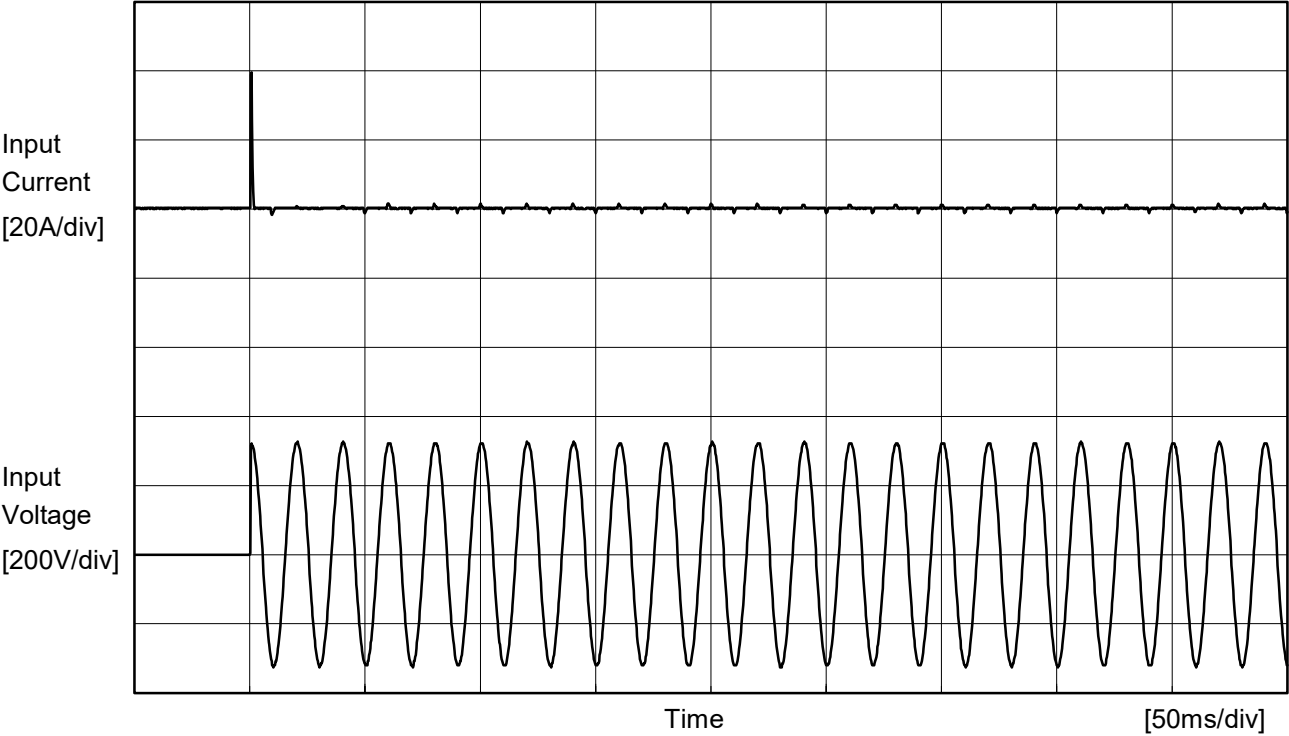
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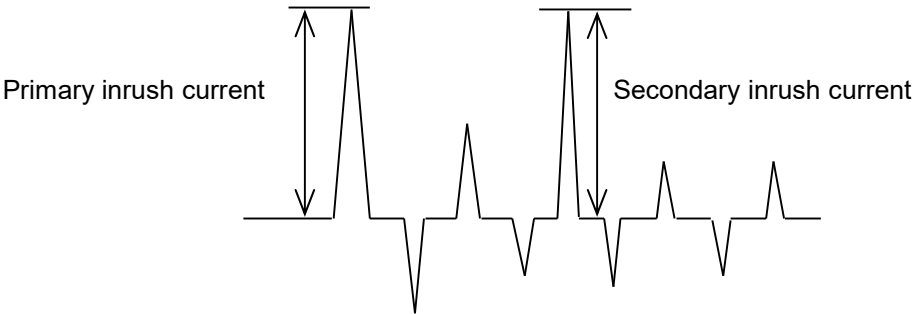


Model		UMPS30F48-E	Temperature 25°C Testing Circuitry Figure A
Item		Inrush Current	
Object		+48V0.65A	



Input Voltage 230 V
Frequency 50 Hz
Load 100 %

Primary inrush current 39.4 A
Secondary inrush current 1.4 A





COSEL		Temperature 25°C Testing Circuitry Figure C
Model	UMPS30F48-E	
Item	Leakage Current	
Object	+48V0.65A	

1.Results

[μ A]

Standards	Testing Circuitry	Measuring Method	Input Volt.			Note
			115 [V]	230 [V]	264 [V]	
IEC60601-1	Figure C-1	Both phases	1.54	3.95	4.57	Operation
		One of phases	2.59	6.23	7.16	Stand by
IEC62368-1	Figure C-2	Both phases	1.00	3.58	4.26	Operation
		One of phases	2.05	5.90	6.84	Stand by
	Figure C-3	Both phases	1.00	3.57	4.21	Operation
		One of phases	1.98	5.82	4.21	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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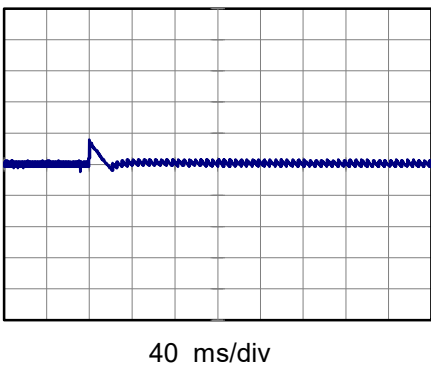
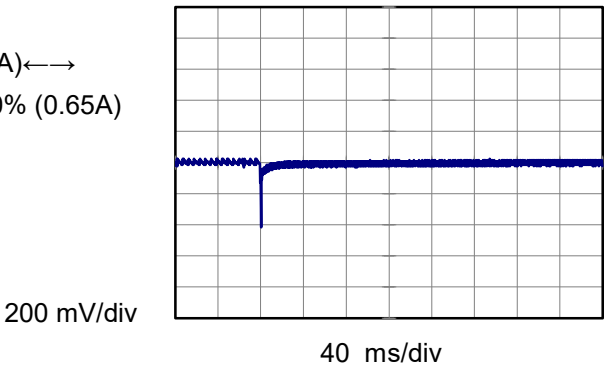


Model	UMPS30F48-E		
Item	Dynamic Load Response	Temperature	25°C
		Testing Circuitry	Figure A
Object	+48V0.65A		

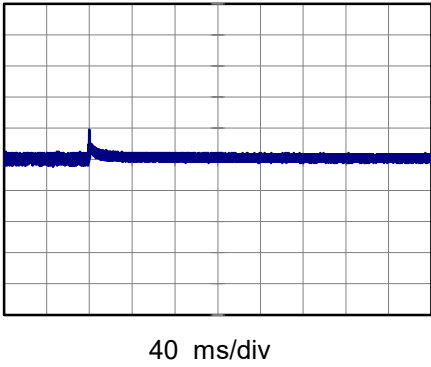
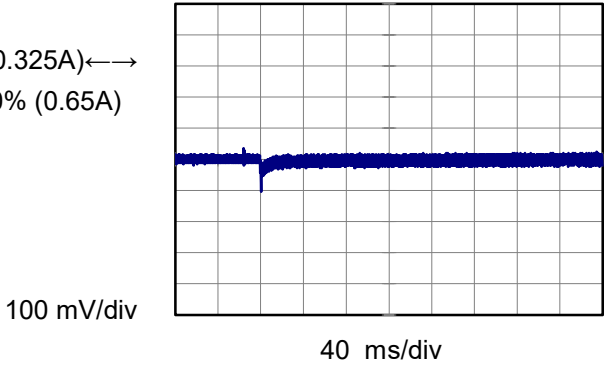
Input Volt. 230 V
Cycle 1000 ms



Min.Load (0A) \longleftrightarrow
Load 100% (0.65A)



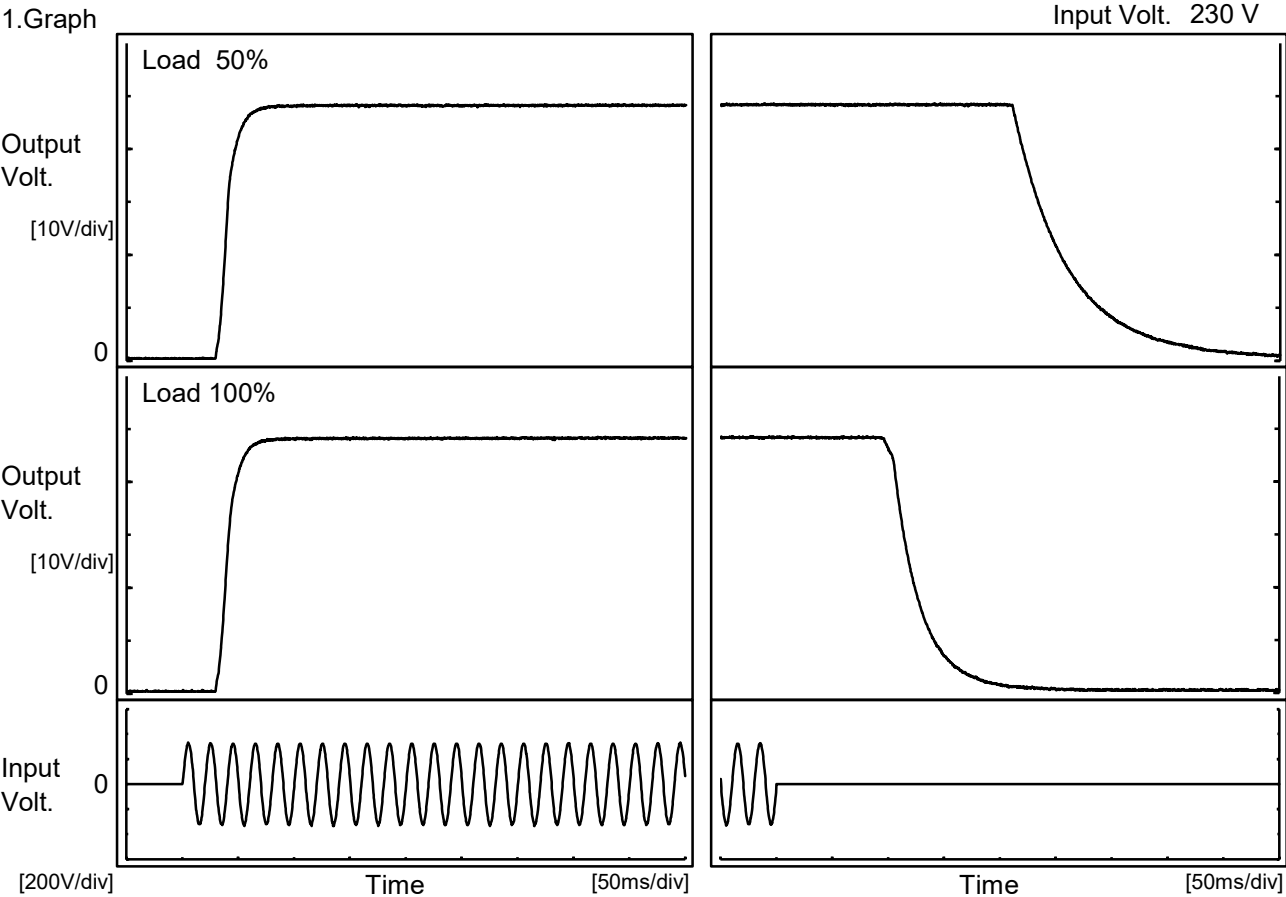
Load 50% (0.325A) \longleftrightarrow
Load 100% (0.65A)





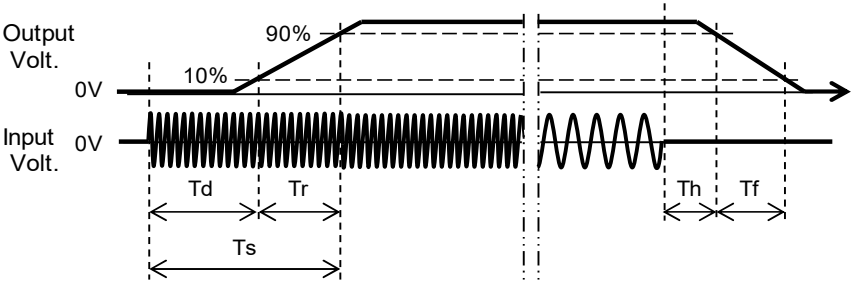
Model		UMPS30F48-E	Temperature 25°C Testing Circuitry Figure A
Item		Rise and Fall Time	
Object		+48V0.65A	

1.Graph



2.Values

		[ms]				
Load	Time	Td	Tr	Ts	Th	Tf
50 %		33.0	19.3	52.3	215.8	109.3
100 %		33.0	20.0	53.0	105.0	53.5



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0.13	125	539	719																																																																																																		
0.26	60	266	357																																																																																																		
0.39	39	178	239																																																																																																		
0.52	27	128	173																																																																																																		
0.65	17	96	132																																																																																																		
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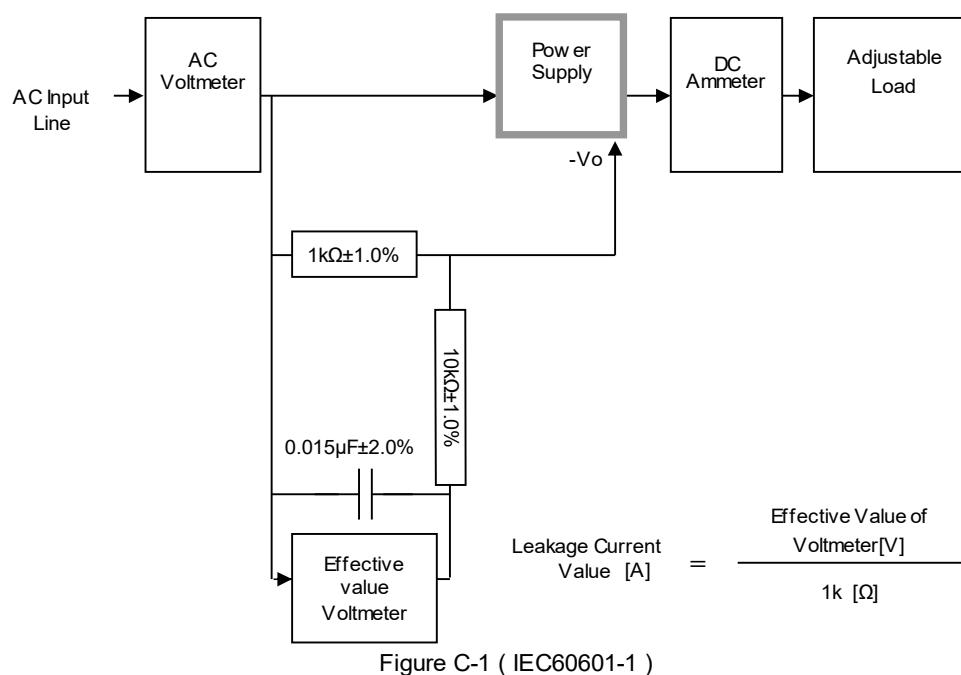
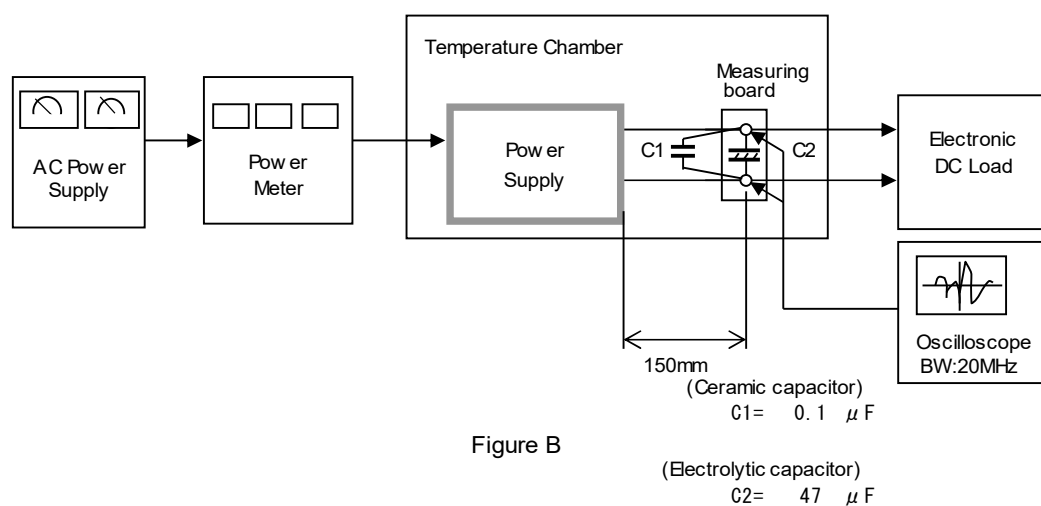
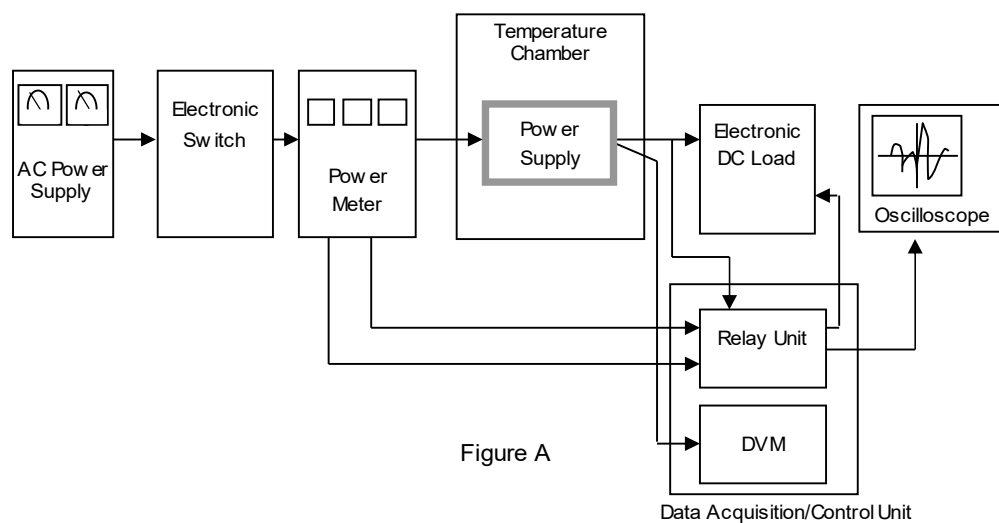
Model		UMPS30F48-E	Temperature 25°C																																																																
Item		Overcurrent Protection	Testing Circuitry Figure A																																																																
Object		+48V0.65A																																																																	
1.Graph		<div><div></div>Input Volt. 115V</div> <div><div></div>Input Volt. 230V</div> <div><div></div>Input Volt. 264V</div> <p>Output Voltage [V]</p> <p>Load Current [A]</p> <p>Note: Slanted line shows the range of the rated load current.</p> <p>Overcurrent protection is Hiccup mode.</p>	2.Values																																																																
			<table><tr><th rowspan="2">Output Voltage [V]</th><th colspan="3">Load Current [A]</th></tr><tr><th>Input Volt. 115[V]</th><th>Input Volt. 230[V]</th><th>Input Volt. 264[V]</th></tr><tr><td>48</td><td>0.86</td><td>0.84</td><td>0.88</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><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><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><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr></table>		Output Voltage [V]	Load Current [A]			Input Volt. 115[V]	Input Volt. 230[V]	Input Volt. 264[V]	48	0.86	0.84	0.88	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
Output Voltage [V]	Load Current [A]																																																																		
	Input Volt. 115[V]	Input Volt. 230[V]	Input Volt. 264[V]																																																																
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		Testing Circuitry Figure A																			
Model	UMPS30F48-E																				
Item	Ambient Temperature Drift																				
Object	+48V0.65A																				
1.Values <div>Load 100%</div> <table><tr><th rowspan="2">Ambient Temperature[°C]</th><th colspan="3">Output Voltage [V]</th></tr><tr><th>Input Volt. 115V</th><th>Input Volt. 230V</th><th>Input Volt. 264V</th></tr><tr><td>-20</td><td>48.363</td><td>48.365</td><td>48.366</td></tr><tr><td>25</td><td>48.553</td><td>48.554</td><td>48.555</td></tr><tr><td>45</td><td>48.638</td><td>48.639</td><td>48.640</td></tr></table>			Ambient Temperature[°C]	Output Voltage [V]			Input Volt. 115V	Input Volt. 230V	Input Volt. 264V	-20	48.363	48.365	48.366	25	48.553	48.554	48.555	45	48.638	48.639	48.640
Ambient Temperature[°C]	Output Voltage [V]																				
	Input Volt. 115V	Input Volt. 230V	Input Volt. 264V																		
-20	48.363	48.365	48.366																		
25	48.553	48.554	48.555																		
45	48.638	48.639	48.640																		
1.Values <div>Load 100%</div> <table><tr><th rowspan="2">Ambient Temperature[°C]</th><th colspan="2">Input Voltage [V]</th></tr><tr><th>Load 50%</th><th>Load 100%</th></tr><tr><td>-20</td><td>35</td><td>69</td></tr><tr><td>25</td><td>35</td><td>69</td></tr><tr><td>45</td><td>36</td><td>70</td></tr></table>			Ambient Temperature[°C]	Input Voltage [V]		Load 50%	Load 100%	-20	35	69	25	35	69	45	36	70					
Ambient Temperature[°C]	Input Voltage [V]																				
	Load 50%	Load 100%																			
-20	35	69																			
25	35	69																			
45	36	70																			
		Testing Circuitry Figure A																			
Item	Minimum Input Voltage for Regulated Output Voltage																				
Object	+48V0.65A																				
1.Values <div>Load 0%</div> <table><tr><th rowspan="2">Ambient Temperature[°C]</th><th colspan="2">Operating Point [V]</th></tr><tr><th>Input Volt. 115V</th><th>Input Volt. 264V</th></tr><tr><td>-20</td><td>63.49</td><td>62.80</td></tr><tr><td>25</td><td>62.50</td><td>61.86</td></tr><tr><td>45</td><td>62.79</td><td>62.85</td></tr></table>			Ambient Temperature[°C]	Operating Point [V]		Input Volt. 115V	Input Volt. 264V	-20	63.49	62.80	25	62.50	61.86	45	62.79	62.85					
Ambient Temperature[°C]	Operating Point [V]																				
	Input Volt. 115V	Input Volt. 264V																			
-20	63.49	62.80																			
25	62.50	61.86																			
45	62.79	62.85																			

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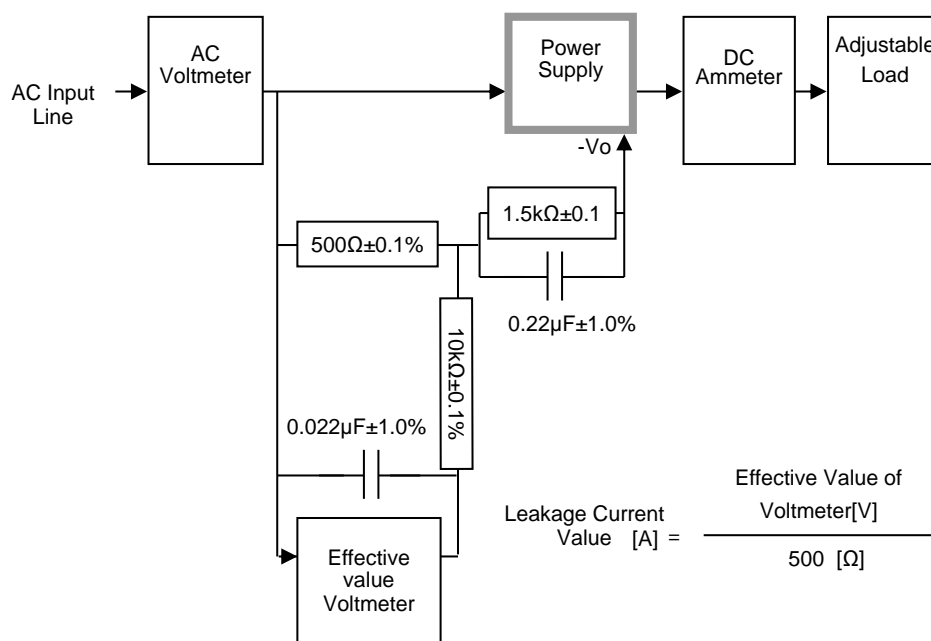


Figure C-2 (IEC62368-1 refer to IEC60990 Fig.4)

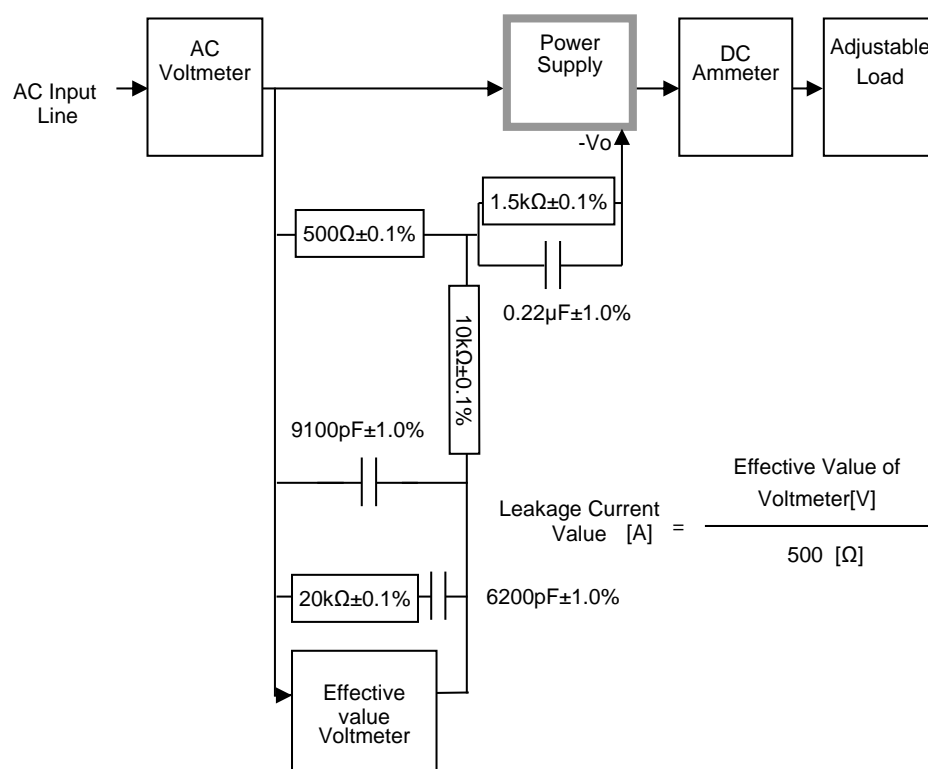


Figure C-3 (IEC62368-1 refer to IEC60990 Fig.5)