

TEST DATA OF UMPS30F05-E

Regulated DC Power Supply
July 23, 2024

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COSEL CO.,LTD.

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(Final Page 15)

Model

UMPS30F05-E

Item

Input Current (by Load Current)

Object

+5V3A

1.Graph

—△—

Input Volt. 115V

- - □ - -

Input Volt. 230V

- · - ○ - · -

Input Volt. 264V

Input Current [A]

0.4

0.3

0.2

0.1

0

0

1

2

3

4

Load Current [A]

2.Values

Load Current [A]	Input Current [A]		
	Input Volt. 115[V]	Input Volt. 230[V]	Input Volt. 264[V]
0.0	0.009	0.016	0.019
0.6	0.079	0.053	0.049
1.2	0.139	0.090	0.082
1.8	0.193	0.125	0.112
2.4	0.249	0.156	0.144
3.0	0.305	0.189	0.173
--	-	-	-
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--	-	-	-
--	-	-	-
--	-	-	-

Temperature 25°C

Testing Circuitry Figure A

BC-12000

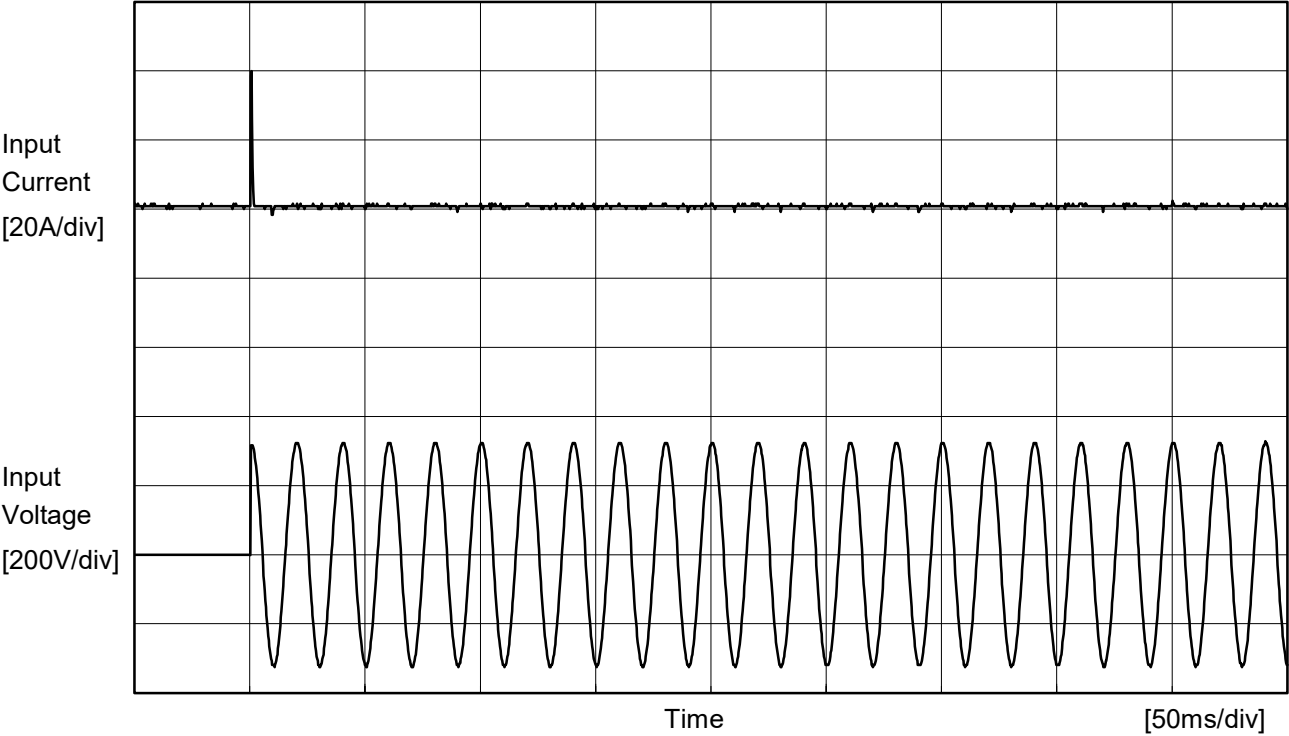
BC-12000



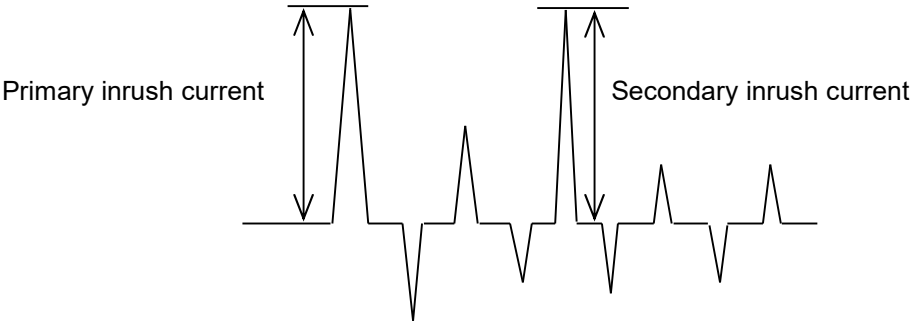
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1.Graph		Temperature 25°C Testing Circuitry Figure A																																																						
<div>—△— Input Volt. 115V ---□--- Input Volt. 230V -·-○-·- Input Volt. 264V</div> <div>Power Factor</div> <div>Load Current [A]</div>		2.Values																																																						
		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Power Factor</th></tr><tr><th>Input Volt. 115[V]</th><th>Input Volt. 230[V]</th><th>Input Volt. 264[V]</th></tr><tr><td>0.0</td><td>0.047</td><td>0.031</td><td>0.031</td></tr><tr><td>0.6</td><td>0.421</td><td>0.331</td><td>0.315</td></tr><tr><td>1.2</td><td>0.473</td><td>0.378</td><td>0.362</td></tr><tr><td>1.8</td><td>0.504</td><td>0.406</td><td>0.390</td></tr><tr><td>2.4</td><td>0.525</td><td>0.424</td><td>0.409</td></tr><tr><td>3.0</td><td>0.539</td><td>0.439</td><td>0.422</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]	Power Factor			Input Volt. 115[V]	Input Volt. 230[V]	Input Volt. 264[V]	0.0	0.047	0.031	0.031	0.6	0.421	0.331	0.315	1.2	0.473	0.378	0.362	1.8	0.504	0.406	0.390	2.4	0.525	0.424	0.409	3.0	0.539	0.439	0.422	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-
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Model		UMPS30F05-E	Temperature 25°C Testing Circuitry Figure A
Item		Inrush Current	
Object		+5V3A	



Input Voltage	230 V
Frequency	50 Hz
Load	100 %
Primary inrush current	39.6 A
Secondary inrush current	2.0 A





		Temperature 25°C Testing Circuitry Figure C
Model	UMPS30F05-E	
Item	Leakage Current	
Object	+5V3A	

1.Results

[μA]

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.

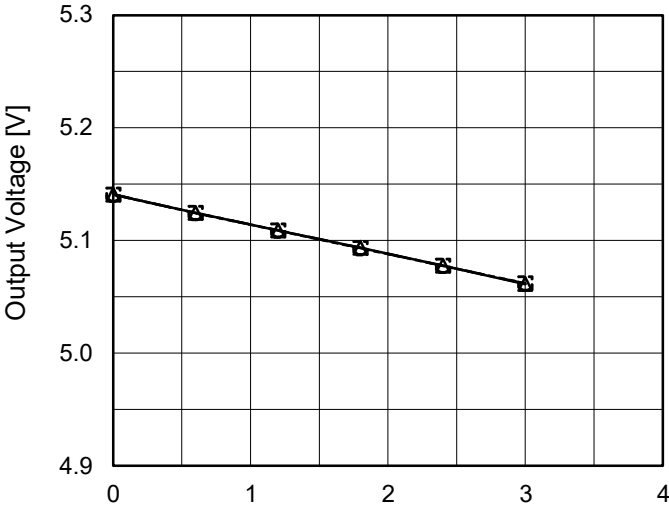
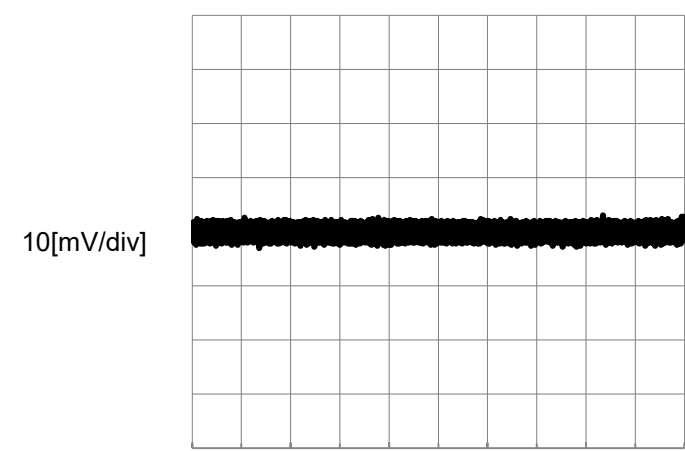
2.Condition

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



		Temperature25°C Testing CircuitryFigure A																																
Model	UMPS30F05-E																																	
Item	Line Regulation																																	
Object	+5V3A	2.Values																																
1.Graph																																		
<div><div><div><div></div></div><div>Load 50%</div></div><div><div></div><div>Load 100%</div></div></div> <div>Output Voltage [V]</div> <div>Input Voltage [V]</div>		<table><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><tr><td>85</td><td>5.101</td><td>-</td></tr><tr><td>100</td><td>5.101</td><td>-</td></tr><tr><td>115</td><td>5.101</td><td>5.062</td></tr><tr><td>132</td><td>5.101</td><td>5.062</td></tr><tr><td>170</td><td>5.101</td><td>5.062</td></tr><tr><td>200</td><td>5.101</td><td>5.062</td></tr><tr><td>230</td><td>5.101</td><td>5.062</td></tr><tr><td>264</td><td>5.101</td><td>5.062</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></table>	Input Voltage [V]	Output Voltage [V]		Load 50%	Load 100%	85	5.101	-	100	5.101	-	115	5.101	5.062	132	5.101	5.062	170	5.101	5.062	200	5.101	5.062	230	5.101	5.062	264	5.101	5.062	--	-	-
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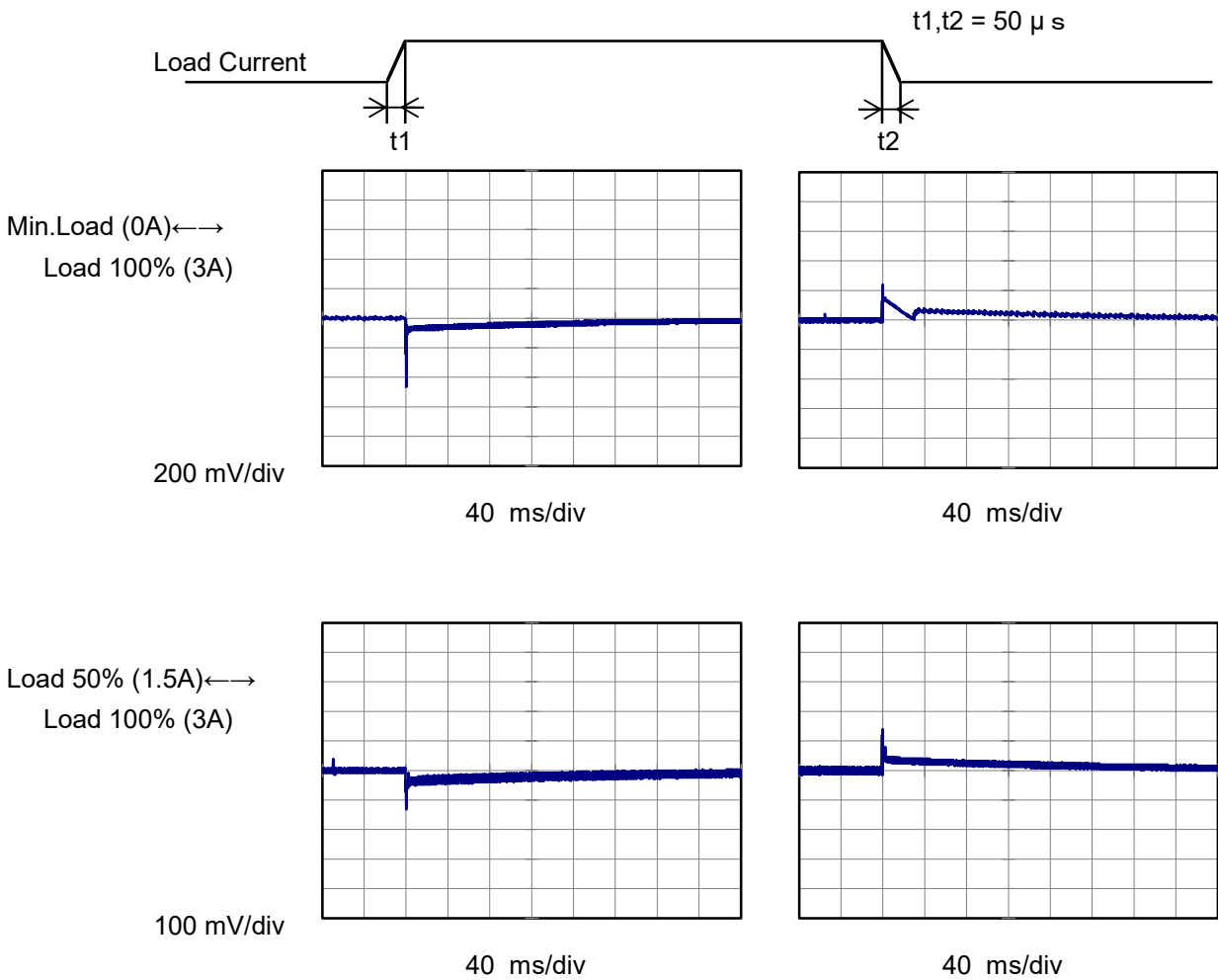
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Model	UMPS30F05-E																																																									
Item	Load Regulation	Temperature	25°C																																																							
Object	+5V3A	Testing Circuitry	Figure A																																																							
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<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> 		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Output Voltage [V]</th></tr><tr><th>Input Volt. 115[V]</th><th>Input Volt. 230[V]</th><th>Input Volt. 264[V]</th></tr><tr><td>0.0</td><td>5.141</td><td>5.141</td><td>5.141</td></tr><tr><td>0.6</td><td>5.124</td><td>5.124</td><td>5.124</td></tr><tr><td>1.2</td><td>5.109</td><td>5.109</td><td>5.109</td></tr><tr><td>1.8</td><td>5.093</td><td>5.093</td><td>5.093</td></tr><tr><td>2.4</td><td>5.078</td><td>5.078</td><td>5.078</td></tr><tr><td>3.0</td><td>5.061</td><td>5.062</td><td>5.062</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]	Output Voltage [V]			Input Volt. 115[V]	Input Volt. 230[V]	Input Volt. 264[V]	0.0	5.141	5.141	5.141	0.6	5.124	5.124	5.124	1.2	5.109	5.109	5.109	1.8	5.093	5.093	5.093	2.4	5.078	5.078	5.078	3.0	5.061	5.062	5.062	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
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Item	Ripple-Noise	Temperature	25°C																																																							
Object	+5V3A	Testing Circuitry	Figure B																																																							
1.Graph																																																										
<div><div><div>Input Voltage</div><div>230V</div></div><div><div>Load</div><div>100%</div></div></div>																																																										



Model	UMPS30F05-E		
Item	Dynamic Load Response	Temperature	25°C
		Testing Circuitry	Figure A
Object	+5V3A		

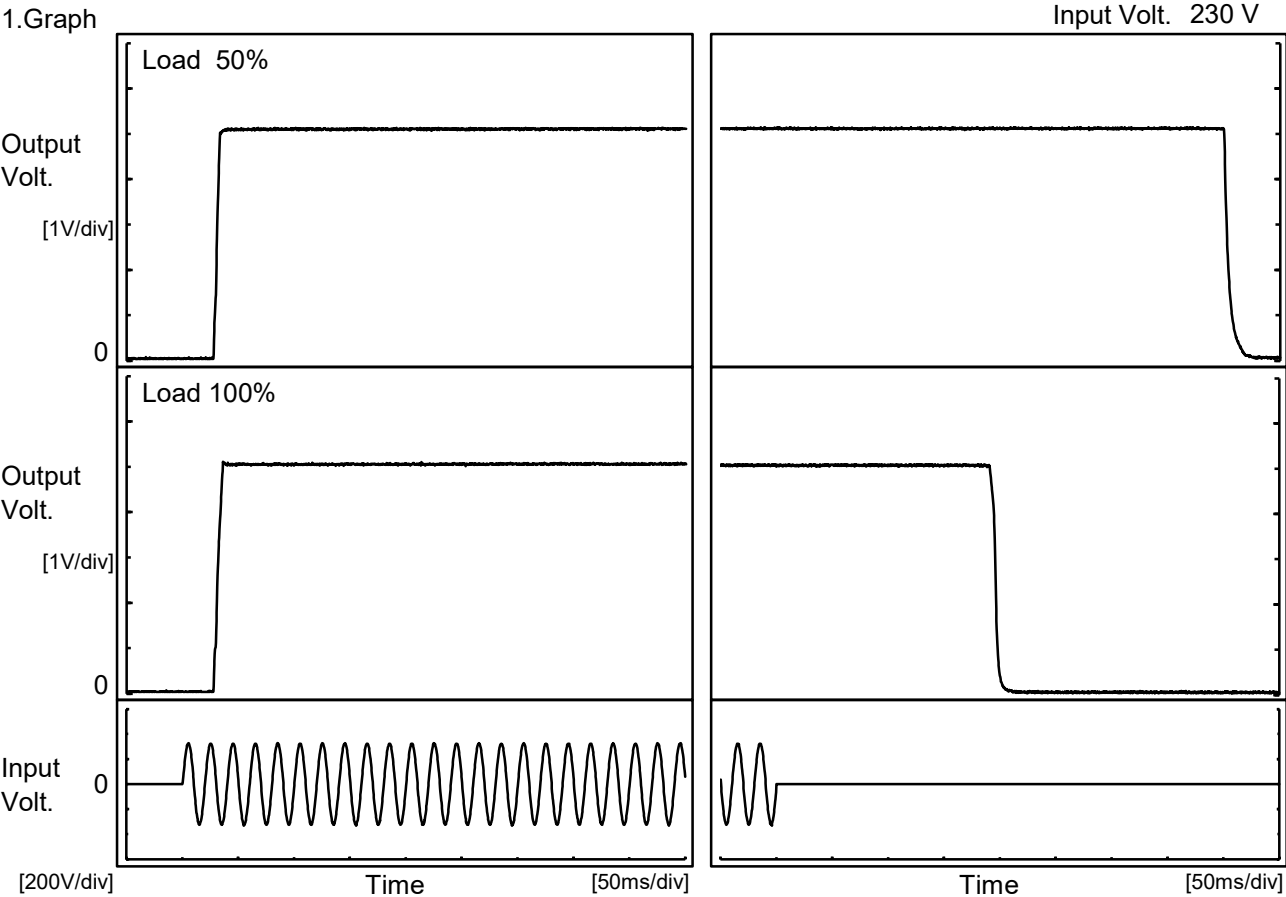
Input Volt. 230 V
Cycle 1000 ms





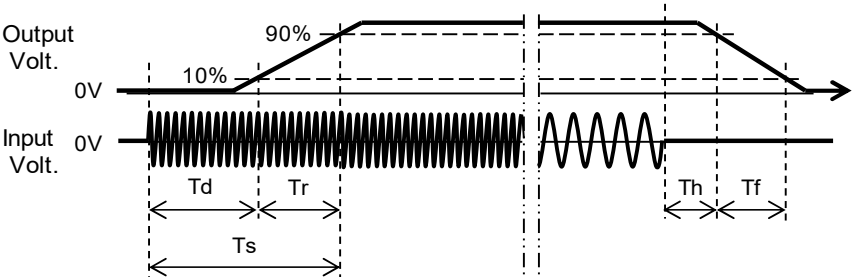
Model		UMPS30F05-E	Temperature 25°C Testing Circuitry Figure A
Item		Rise and Fall Time	
Object		+5V3A	

1.Graph



2.Values

		[ms]				
Load	Time	Td	Tr	Ts	Th	Tf
50 %		28.5	4.8	33.3	400.5	9.8
100 %		28.5	6.8	35.3	193.0	6.3





<div>ModelUMPS30F05-E</div> <div>ItemHold-Up Time</div> <div>Object+5V3A</div>		<div>Temperature25°C</div> <div>Testing CircuitryFigure A</div>																																
<div>1.Graph</div> <div><div><div><div>---□---</div><div>Load 50%</div></div><div><div>—△—</div><div>Load 100%</div></div></div><div><div>Hold-Up Time [ms]</div><div><div><div>1000</div><div>100</div><div>10</div><div>1</div></div><div><div>50</div><div>100</div><div>150</div><div>200</div><div>250</div><div>300</div></div></div><div><div>Input Voltage [V]</div></div></div></div> <div><div>This duration covers from Shut-off of input voltage to the moment when output voltage descends to the rated range of voltage accuracy.</div></div>		<div>2.Values</div> <table><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><tr><td>85</td><td>47</td><td>-</td></tr><tr><td>100</td><td>68</td><td>-</td></tr><tr><td>115</td><td>92</td><td>41</td></tr><tr><td>132</td><td>124</td><td>56</td></tr><tr><td>170</td><td>213</td><td>99</td></tr><tr><td>200</td><td>298</td><td>141</td></tr><tr><td>230</td><td>399</td><td>192</td></tr><tr><td>264</td><td>534</td><td>258</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></table>	Input Voltage [V]	Hold-Up Time [ms]		Load 50%	Load 100%	85	47	-	100	68	-	115	92	41	132	124	56	170	213	99	200	298	141	230	399	192	264	534	258	--	-	-
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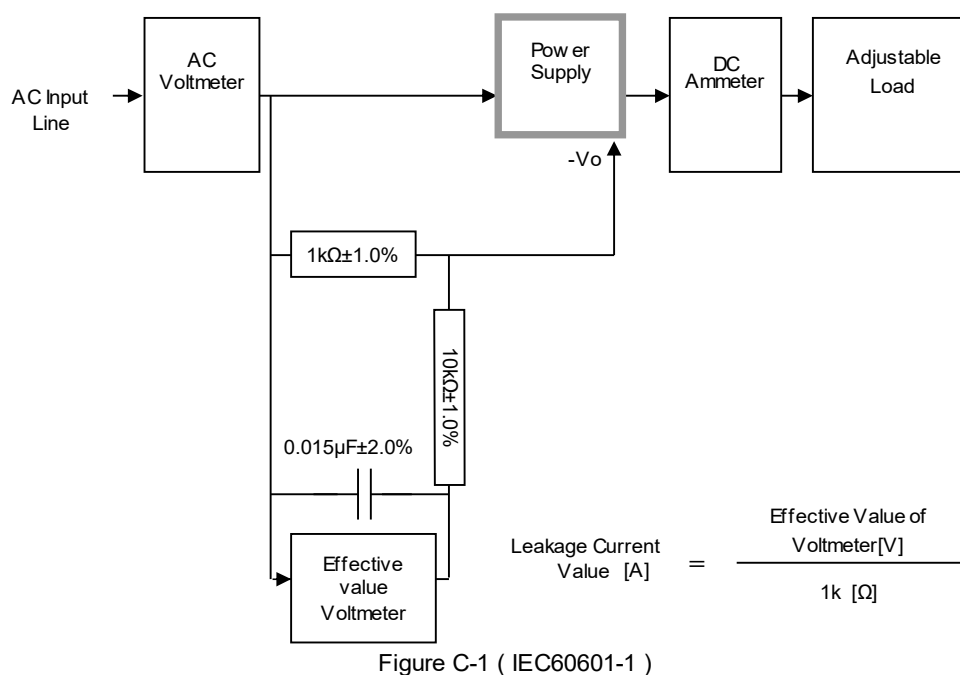
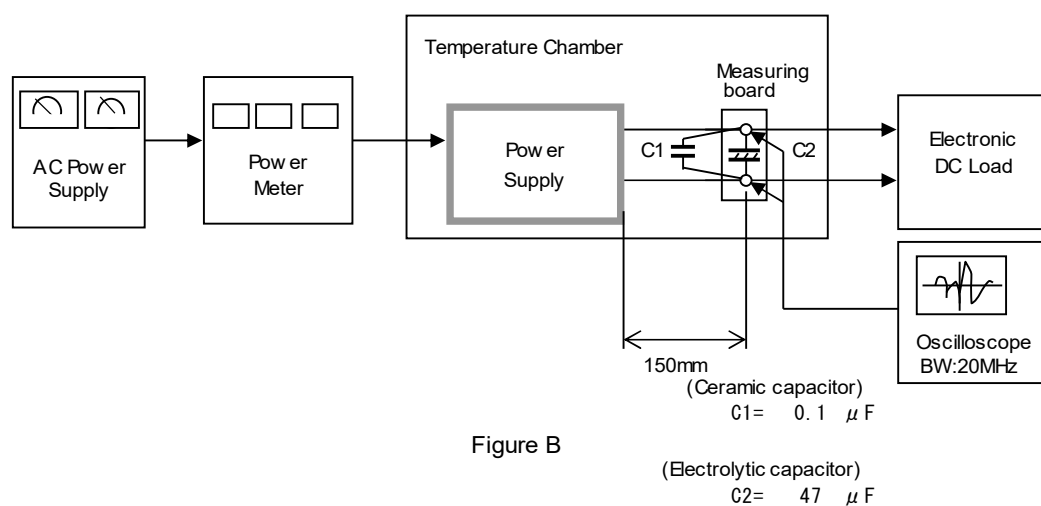
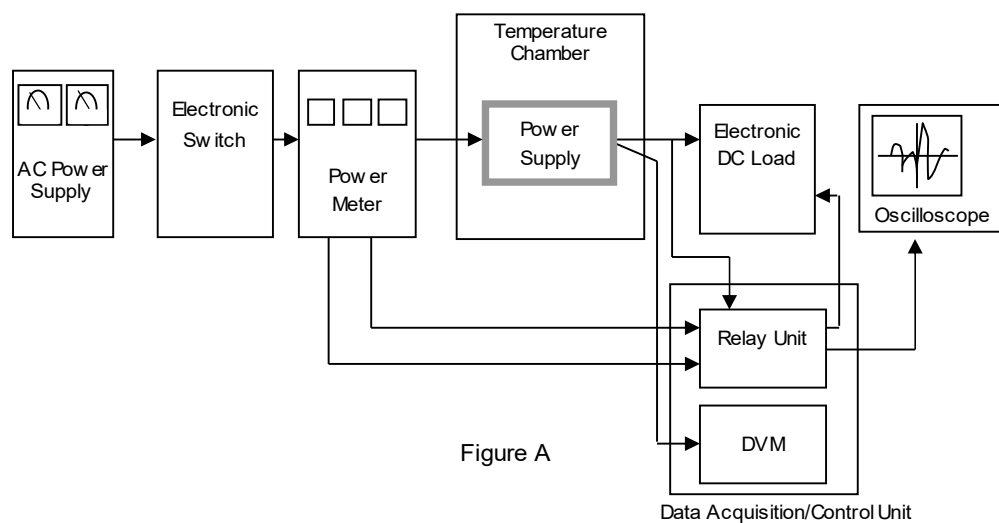
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Model	UMPS30F05-E	Testing Circuitry Figure A	
Item	Ambient Temperature Drift		
Object	+5V3A		
1.Values Load 100%			
Ambient Temperature[°C]	Output Voltage [V]		
	Input Volt. 115V	Input Volt. 230V	Input Volt. 264V
-20	5.059	5.060	5.059
25	5.062	5.062	5.062
45	5.060	5.060	5.060
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%	
-20	30	45	
25	28	45	
45	28	46	
Item	Overvoltage Protection	Testing Circuitry Figure A	
Object	+5V3A		
1.Values Load 0%			
Ambient Temperature[°C]	Operating Point [V]		
	Input Volt. 115V	Input Volt. 264V	
-20	6.61	6.61	
25	6.61	6.61	
45	6.61	6.61	

- 13 -

BC-12000



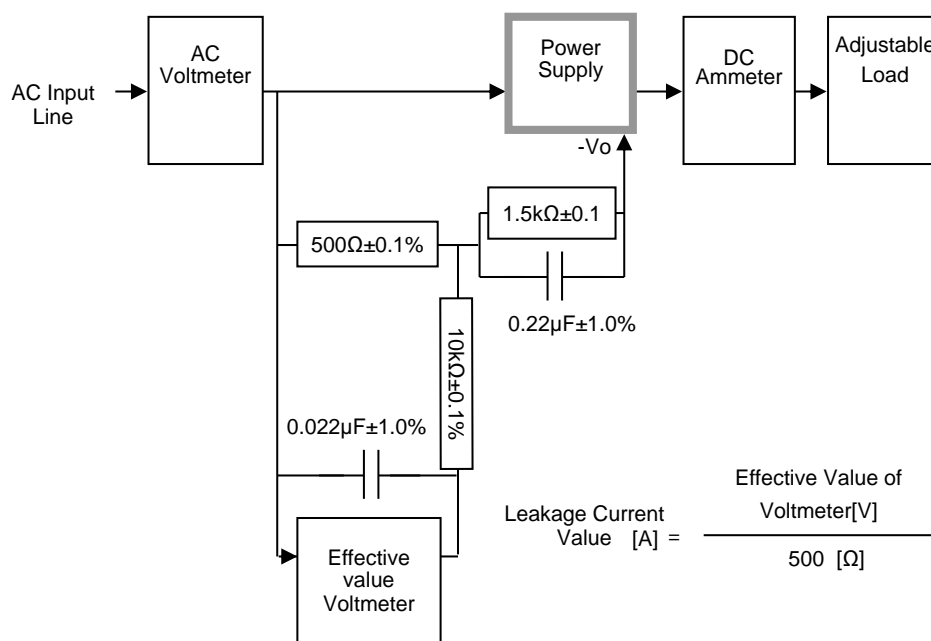


Figure C-2 (IEC62368-1 refer to IEC60990 Fig.4)

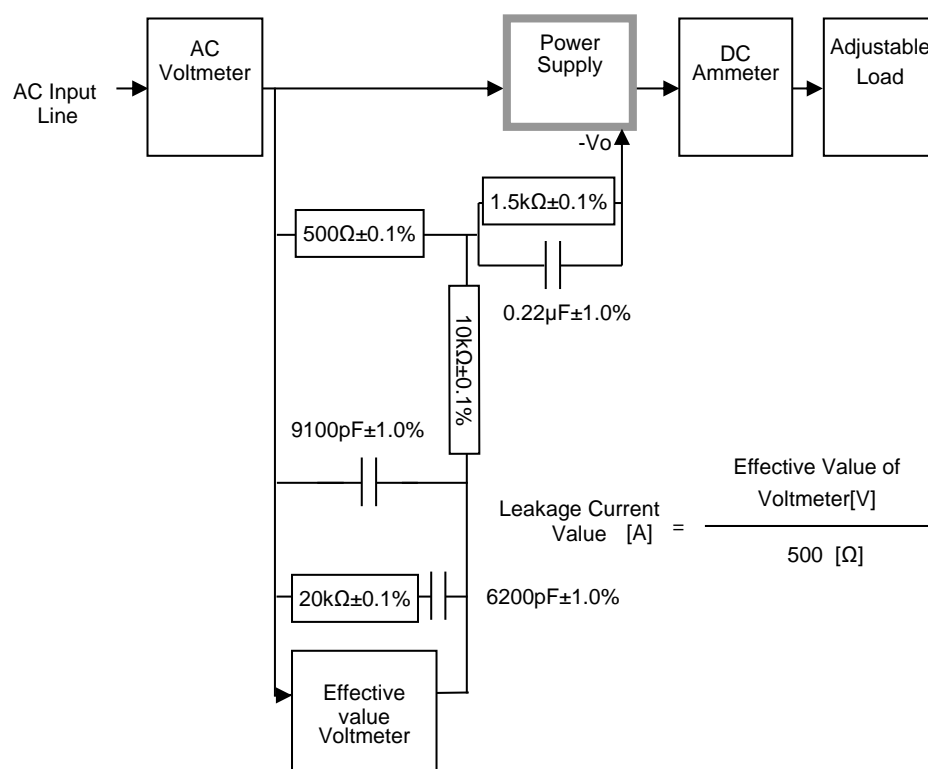


Figure C-3 (IEC62368-1 refer to IEC60990 Fig.5)