

# TEST DATA OF WDA30F-24

Regulated DC Power Supply  
August 17, 2022

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Design Manager

Prepared by : Jeonghoon Yi  
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.Overvoltage Protection . . . . .	13
17.Figure of Testing Circuitry . . . . .	14

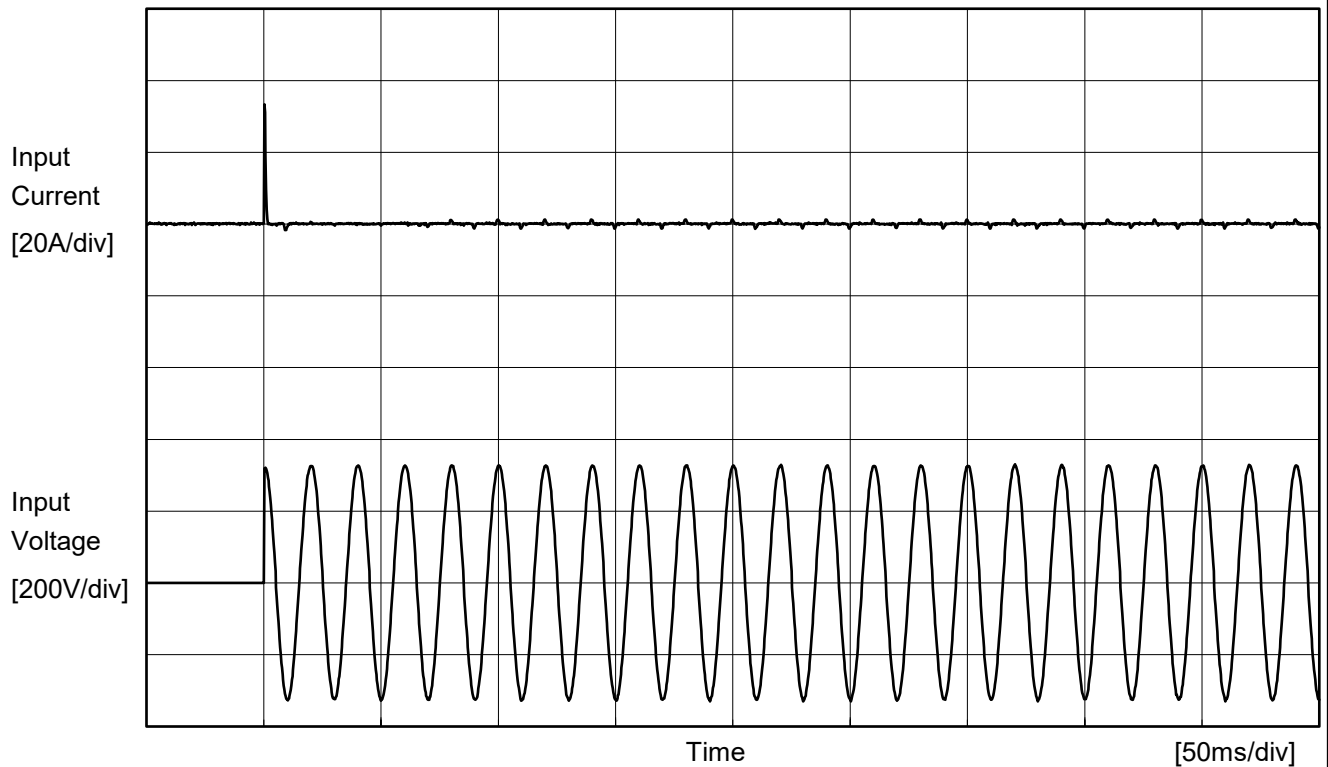
(Final Page 15)

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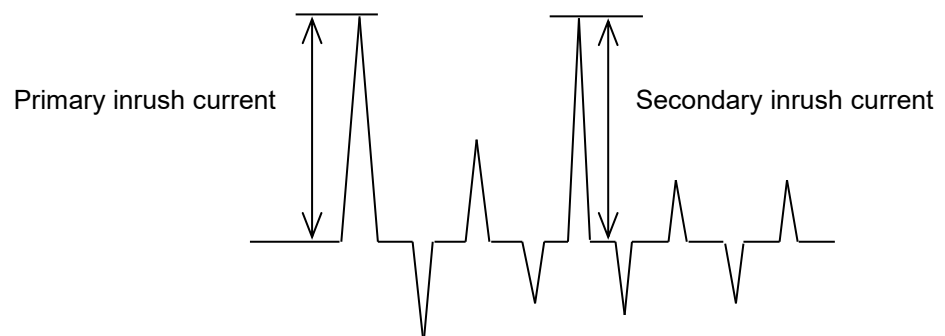
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Model	WDA30F-24	Temperature 25°C Testing Circuitry Figure A
Item	Inrush Current	
Object	+24V1.3A	



Input Voltage 230 V  
Frequency 50 Hz  
Load 100 %

Primary inrush current 33.2 A  
Secondary inrush current 0.0 A



		Temperature 25°C Testing Circuitry Figure C
Model	WDA30F-24	
Item	Leakage Current	
Object	+24V1.3A	

## 1.Results

[mA]

Standards	Testing Circuitry	Measuring Method	Input Volt.			Note
			115 [V]	240 [V]	264 [V]	
DEN-AN	Figure C-1	Both phases	0.14	0.33	0.37	Operation
		One of phases	0.27	0.62	0.69	Stand by
IEC62368-1	Figure C-2	Both phases	0.14	0.32	0.35	Operation
		One of phases	0.27	0.60	0.67	Stand by
	Figure C-3	Both phases	0.14	0.35	0.35	Operation
		One of phases	0.26	0.67	0.66	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.

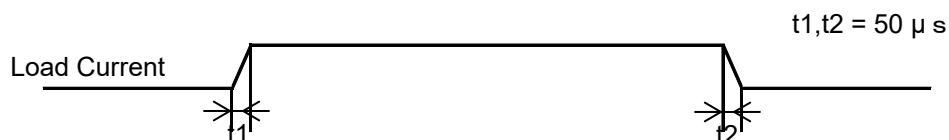
Model		WDA30F-24	Temperature25°C	
Item		Line Regulation	Testing CircuitryFigure A	
Object		+24V1.3A		
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Model	WDA30F-24																																																					
Item	Load Regulation	Temperature	25°C																																																			
Object	+24V1.3A	Testing Circuitry	Figure A																																																			
1.Graph		2.Values																																																				
<div><div><div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div>—△—</div><div>---□---</div><div>-·-○-·-</div></div><div><div>Input Volt.</div><div>Input Volt.</div><div>Input Volt.</div></div><div><div>115V</div><div>230V</div><div>264V</div></div></div><div>Output Voltage [V]</div><div>Load Current [A]</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>0.00</td><td>24.098</td><td>24.098</td><td>24.098</td></tr><tr><td>0.26</td><td>24.094</td><td>24.086</td><td>24.081</td></tr><tr><td>0.52</td><td>24.094</td><td>24.088</td><td>24.085</td></tr><tr><td>0.78</td><td>24.094</td><td>24.087</td><td>24.084</td></tr><tr><td>1.04</td><td>24.095</td><td>24.085</td><td>24.082</td></tr><tr><td>1.30</td><td>24.095</td><td>24.086</td><td>24.082</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]	0.00	24.098	24.098	24.098	0.26	24.094	24.086	24.081	0.52	24.094	24.088	24.085	0.78	24.094	24.087	24.084	1.04	24.095	24.085	24.082	1.30	24.095	24.086	24.082	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
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Item	Ripple-Noise	Temperature	25°C																																																			
Object	+24V1.3A	Testing Circuitry	Figure B																																																			
1.Graph																																																						
<div><div>Input Voltage230V</div><div>Load100%</div></div> <div>20[mV/div]</div> <div>10[ms/div]</div>																																																						

Model	WDA30F-24	Temperature 25°C Testing Circuitry Figure A
Item	Dynamic Load Response	
Object	+24V1.3A	

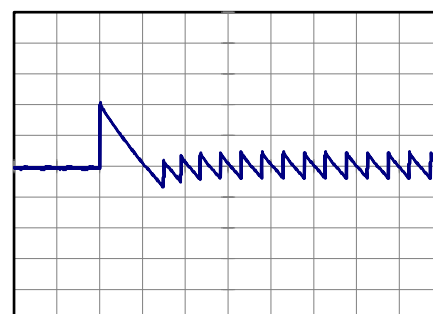
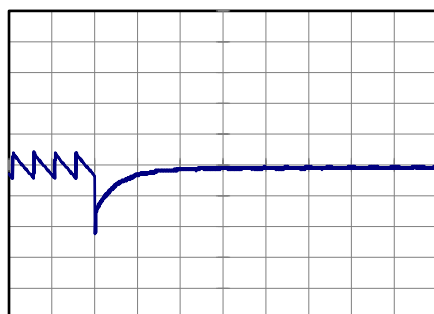
Input Volt. 230 V  
Cycle 1000 ms



Min.Load (0A) ←→  
Load 100% (1.3A)

100 mV/div

20 ms/div

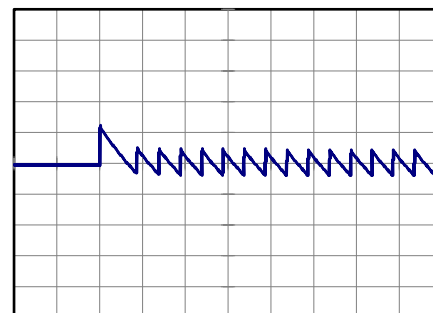
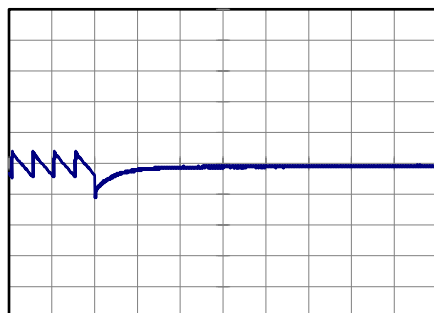


20 ms/div

Min.Load (0A) ←→  
Load 50% (0.65A)

100 mV/div

20 ms/div

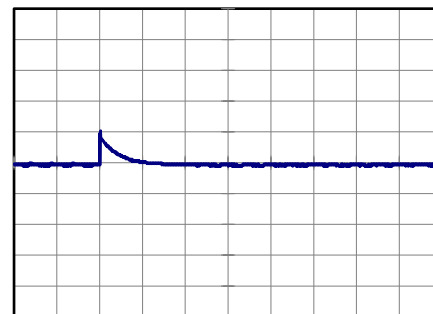
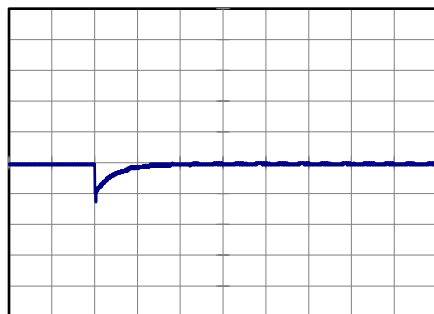


20 ms/div

Load 50% (0.65A) ←→  
Load 100% (1.3A)

100 mV/div

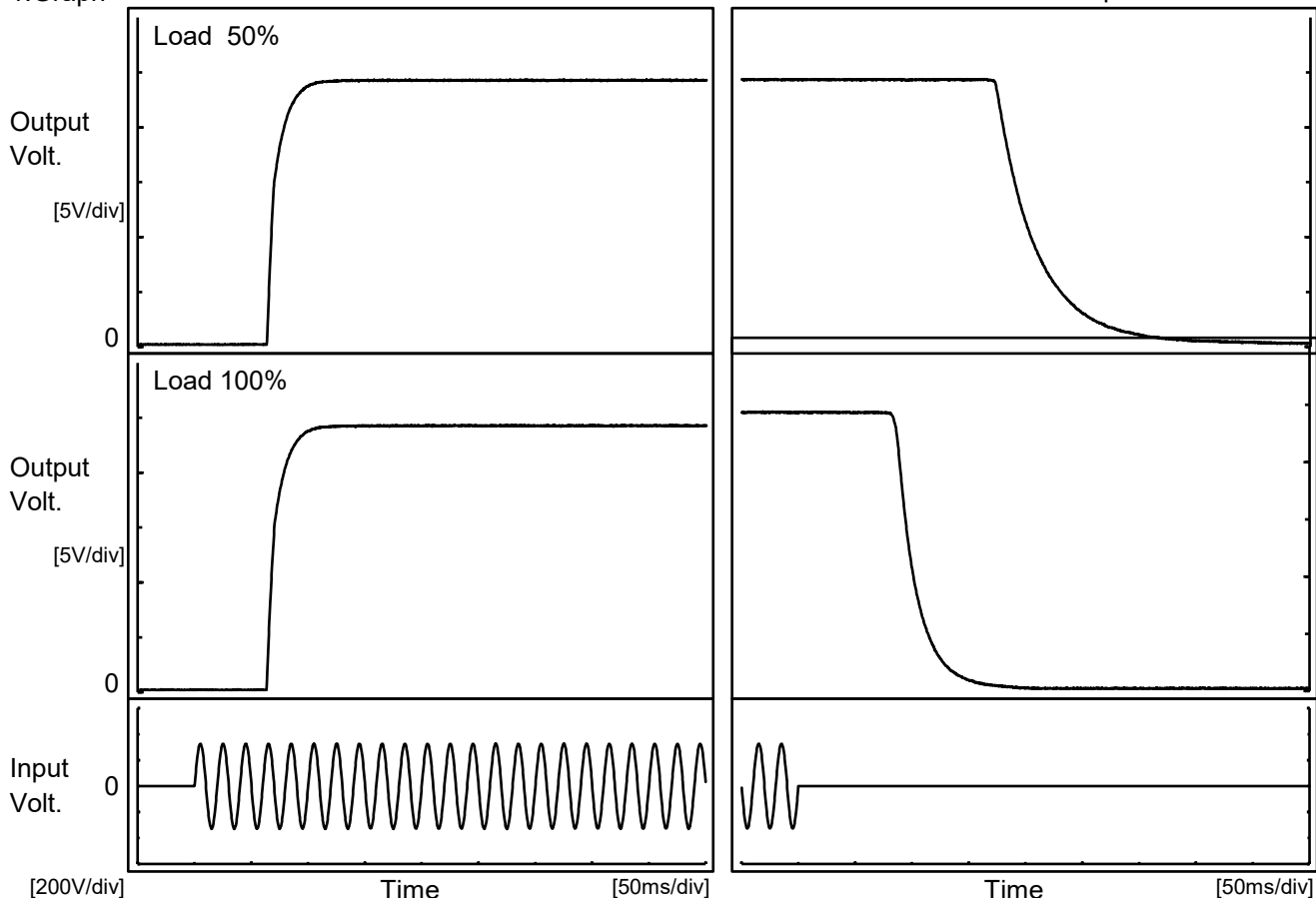
20 ms/div



20 ms/div

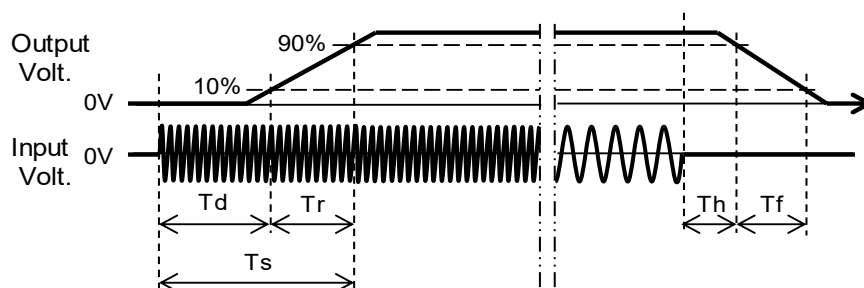
Model	WDA30F-24	Temperature 25°C Testing Circuitry Figure A
Item	Rise and Fall Time	
Object	+24V1.3A	

### 1.Graph



### 2.Values

		[ms]				
Load	Time	Td	Tr	Ts	Th	Tf
50 %		64.5	20.0	84.5	176.8	79.8
100 %		64.3	20.3	84.6	87.3	39.3



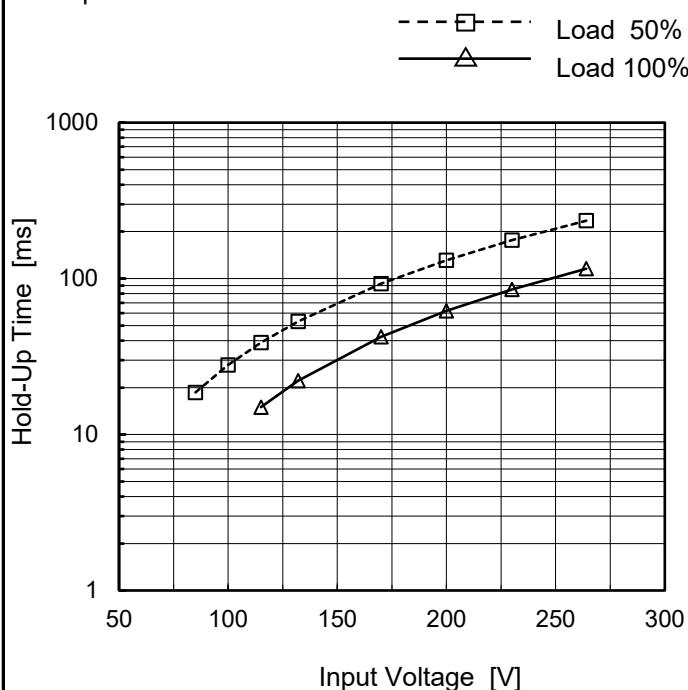
Model WDA30F-24

Item Hold-Up Time

Object +24V1.3A

Temperature 25°C  
Testing Circuitry Figure A

### 1.Graph



This duration covers from Shut-off of input voltage to the moment when output voltage descends to the rated range of voltage accuracy.

### 2.Values

Input Voltage [V]	Hold-Up Time [ms]	
	Load 50%	Load 100%
85	19	-
100	28	-
115	39	15
132	53	22
170	93	42
200	131	62
230	176	85
264	235	116
--	-	-

Model		WDA30F-24	Temperature25°C Testing CircuitryFigure A																																																			
Item		Instantaneous Interruption Compensation																																																				
Object		+24V1.3A																																																				
1.Graph <div><div><div><div><div></div></div><div></div></div><div><div>Input Volt.</div><div>115V</div></div></div><div><div><div><div></div></div><div></div></div><div><div>Input Volt.</div><div>230V</div></div></div><div><div><div><div></div></div><div></div></div><div><div>Input Volt.</div><div>264V</div></div></div></div> <div><div>Instantaneous Compensation Time [ms]</div><div>1000</div><div>100</div><div>10</div><div>1</div><div>0</div><div>0.4</div><div>0.8</div><div>1.2</div><div>1.6</div><div>Load Current [A]</div></div>			2.Values <table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Time [ms]</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>-</td><td>-</td><td>-</td></tr><tr><td>0.26</td><td>104</td><td>426</td><td>560</td></tr><tr><td>0.52</td><td>51</td><td>221</td><td>294</td></tr><tr><td>0.78</td><td>33</td><td>148</td><td>198</td></tr><tr><td>1.04</td><td>23</td><td>108</td><td>147</td></tr><tr><td>1.30</td><td>16</td><td>85</td><td>116</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]	Time [ms]			Input Volt. 115[V]	Input Volt. 230[V]	Input Volt. 264[V]	0.00	-	-	-	0.26	104	426	560	0.52	51	221	294	0.78	33	148	198	1.04	23	108	147	1.30	16	85	116	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
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Model	WDA30F-24	Temperature25°C Testing CircuitryFigure A																																																																
Item	Overcurrent Protection																																																																	
Object	+24V1.3A																																																																	
1.Graph		2.Values																																																																
<div><div><div></div><div>Input Volt.115V</div></div><div><div></div><div>Input Volt.230V</div></div><div><div></div><div>Input Volt.264V</div></div></div> <p>Note: Slanted line shows the range of the rated load current.</p>		<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>24</td><td>1.61</td><td>1.86</td><td>1.94</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]	24	1.61	1.86	1.94	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
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		Testing Circuitry Figure A
Model	WDA30F-24	
Item	Ambient Temperature Drift	
Object	+24V1.3A	

## 1.Values

Load 100%

Ambient Temperature[°C]	Output Voltage [V]		
	Input Volt. 115V	Input Volt. 230V	Input Volt. 264V
-20	24.025	24.016	24.012
25	24.071	24.059	24.055
50	24.066	24.056	24.052

Item	Minimum Input Voltage for Regulated Output Voltage	Testing Circuitry Figure A
Object	+24V1.3A	

## 1.Values

Ambient Temperature[°C]	Input Voltage [V]	
	Load 50%	Load 100%
-20	38	76
25	37	75
50	38	75

Item	Overvoltage Protection	Testing Circuitry Figure A
Object	+24V1.3A	

## 1.Values

Load 0%

Ambient Temperature[°C]	Operating Point [V]	
	Input Volt. 115V	Input Volt. 264V
-20	30.53	30.41
25	31.41	31.41
50	32.06	32.06

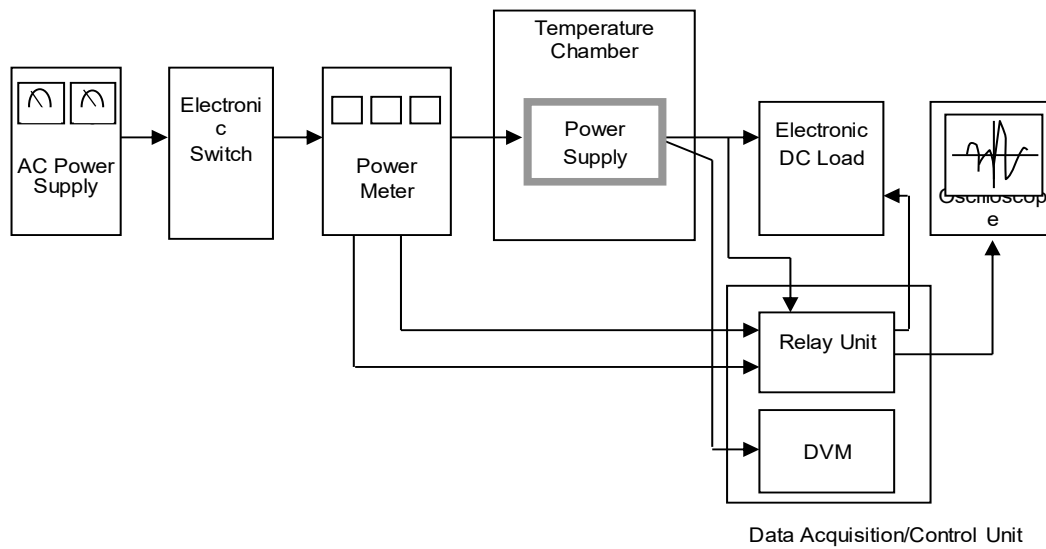


Figure A

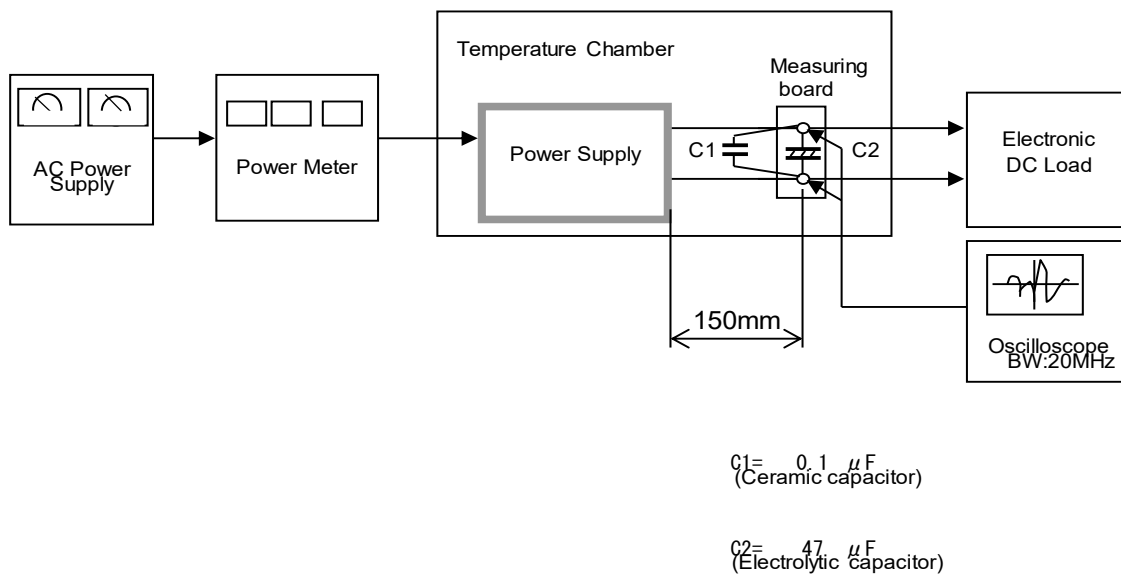


Figure B



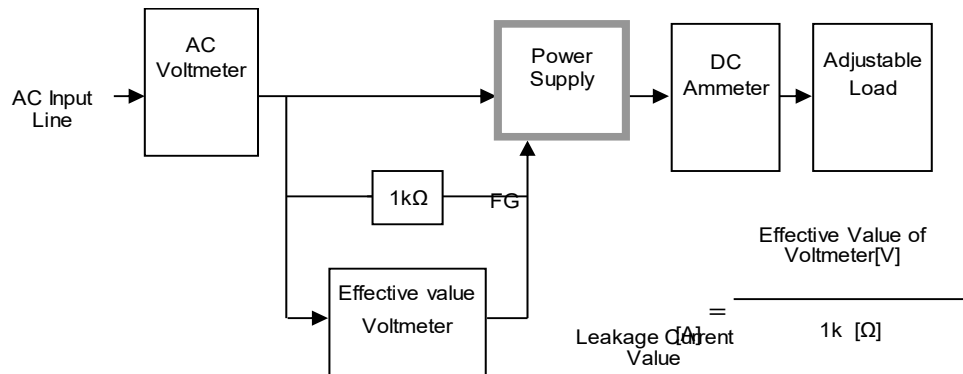


Figure C-1 ( DEN-AN )

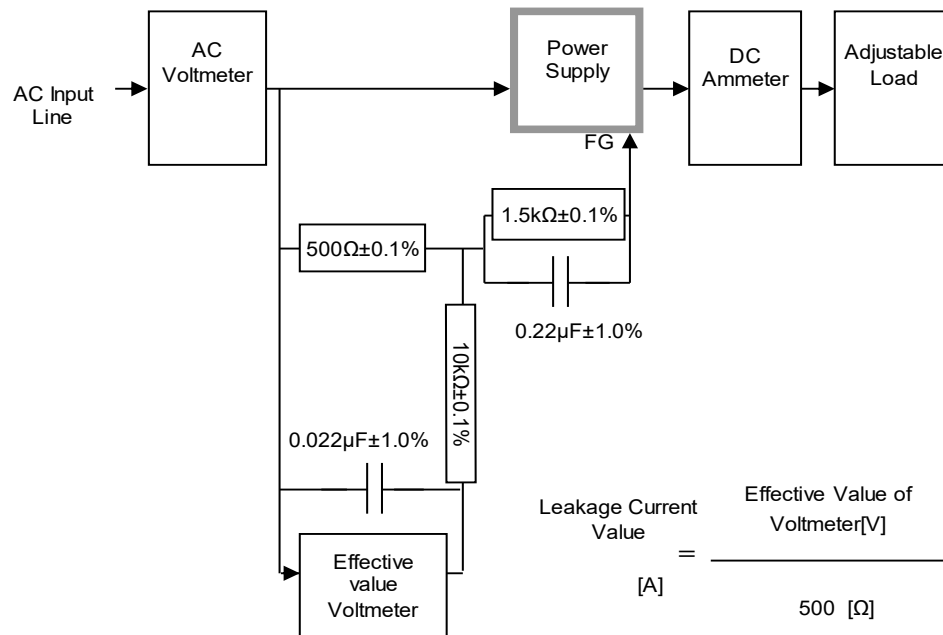


Figure C-2 ( IEC62368-1 refer to IEC60990 Fig.4 )

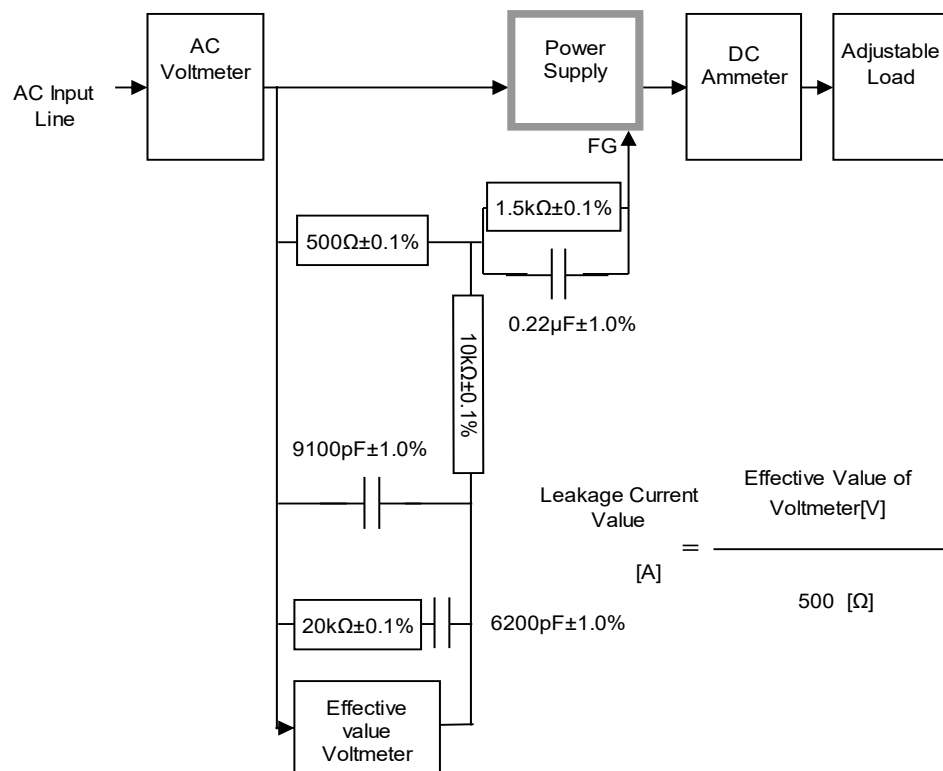


Figure C-3 ( IEC62368-1 refer to IEC60990 Fig.5 )