

**FRIWO**

**FWGB**

**FWFE**

# Specifications

for **FRIWO GMBH**  
 230Vac/50Hz 9Vac/1800mA

Page 1 of 3

Typ: EI 48

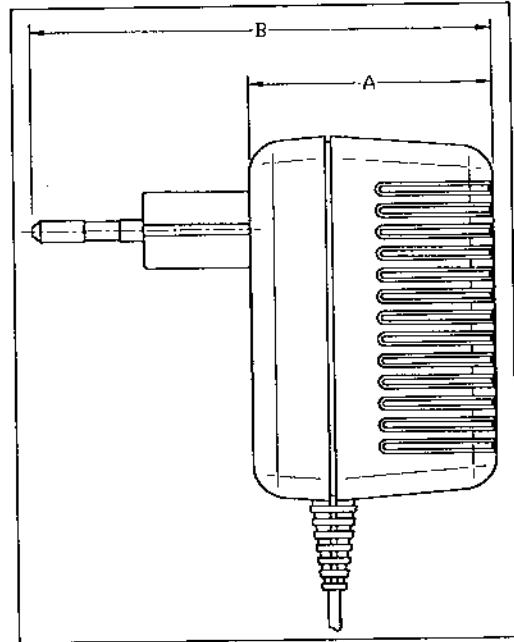
EDV No.: 1883466

REF. No. :

848-00229-300

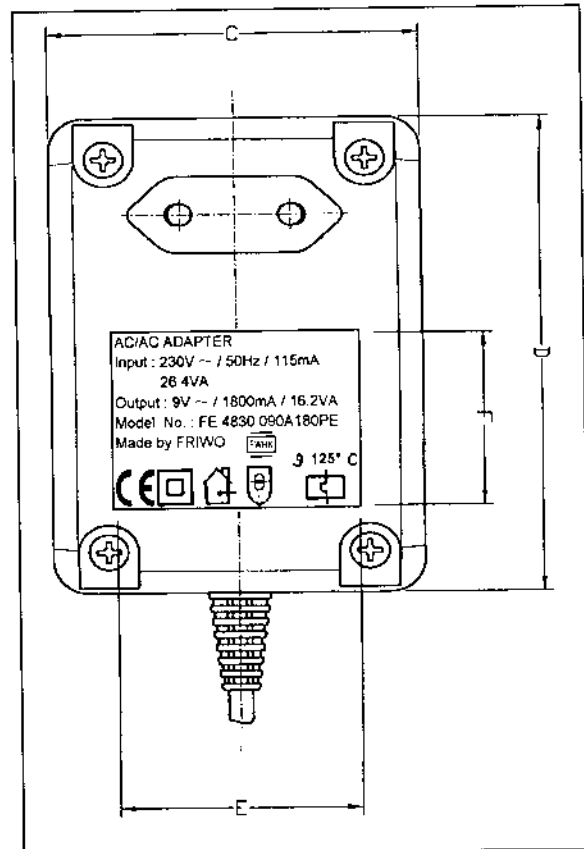
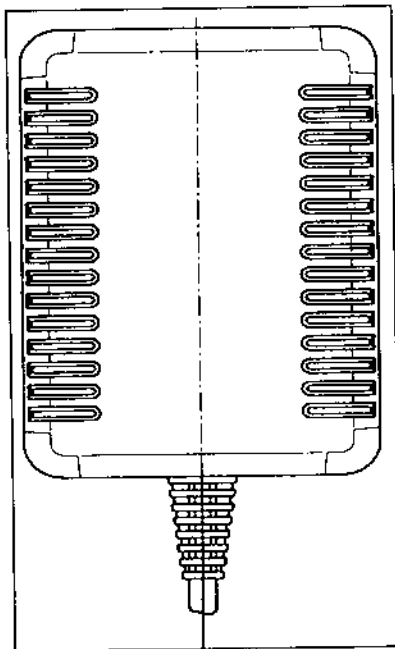
P/N: 22.0360.111-00

Material : ABS/PC  
 Colour : black  
 Housing : 48/600 EURO  
 Output Lead : 10.5567.003-X1 (0.75mm<sup>2</sup>)



All Dimensions in mm

A	B	C	D	E	F
48	85.5	61.5	77	40	32



Bottom Inscription : 820-01374-999

index	Modi.	Name	Date

Author :	<i>[Signature]</i>	17/10/22
Checked :	<i>[Signature]</i>	20/12/22
Approved :	<i>[Signature]</i>	20/12/22
	Name	Date

## 1.0 General test conditions

- 1.1 Operating temperature : 0 deg. C to +40 deg. C
- 1.2 Storage temperature : -40 deg. C to +70 deg. C
- 1.3 Input data : 230Vac, 50Hz, 115mA, 26.4VA
- 1.4 High voltage test : Input to Output 4.5KVac / 50Hz / 1s
- 1.5 Thermal protection : Thermal fuse operate at primary winding temperature of 125 deg. C
- 1.6 Transformer type : EI 48
- 1.7 Power supply : Output values at ambient temperature of 25°C with non reactive load after 2 minutes of operation
- 1.8 Comply with EN61558

Input : U <sub>E</sub> (V~)	Output 1:			Output 2:			Output 3:		
	Charact. curve :		W	Charact. curve :			Charact. curve :		
	I <sub>A</sub> (mA)	U <sub>A</sub> (Vac)	V <sub>Br</sub> (mVeff)	I <sub>A</sub> (mA)	U <sub>A</sub> (Vac)	V <sub>Br</sub> (mVeff)	I <sub>A</sub> (mA)	U <sub>A</sub> (Vac)	V <sub>Br</sub> (mVeff)
230	0	≅ 12							
230	1800	9±10%							

Author : *[Signature]* 8/9/02  
 Checked : *[Signature]* 2002-5-  
 Approved : *[Signature]*  
 Name Date

index Modi. Name Date

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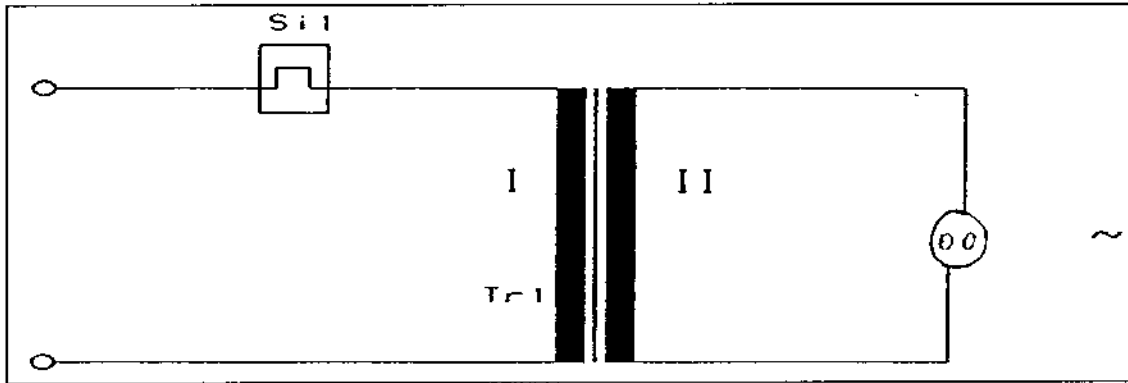
**FWFE**

# Specifications

for **FRIWO GMBH**  
230Vac/50Hz 9Vac/1800mA

Page 3 of 3  
Type: EI 48  
EDV No.: 1883466  
REF No. :  
848-00229-300  
P/N: 22-0360-111-00

## Circuit Diagram

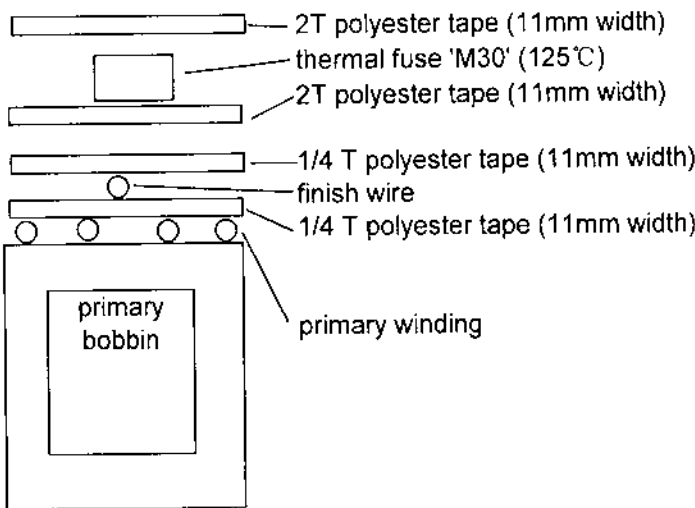


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				<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
					2002-5-7	2002-5-7

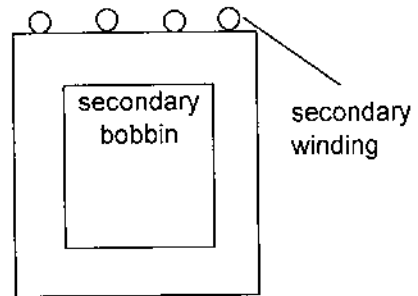
**Transformer Specification**

- 2.1 Primary Winding : 1462T wire gauge 0.16mm diameter
- 2.2 Secondary Winding : pin 7 to pin 1 : 69T wire gauge 0.75mm diameter
- 2.3 Core Material : 50H1000

Primary



Secondary



				Author :	<i>[Signature]</i>	1/9/02
				Checked :	<i>[Signature]</i>	2002-5-7
				Approved :	<i>[Signature]</i>	2002-5-7
index	Modi.	Name	Date		Name	Date

# Sample Submission Form

**FRIWO®**

Customer: **FRIWO GMBH** Input **230** Vac / **50** Hz  
 EDV: **1883466**  
 Ref.No.: **848 - 00229 - 300** Output **9 ± 10%** Vac / **1800** mA

INPUT	SPEC.	LIMIT	Sample 1		Sample 2		Sample 3		Sample 4		Sample 5		Sample 6		Sample 7		Sample 8		Hot Test Sample
			O/P	O/P	O/P	O/P	O/P	O/P	O/P	O/P	O/P	O/P	O/P	O/P	O/P	O/P	O/P	O/P	
230 Vac	O/P Voltage(Full Load)	Vac/ 1800mA	8.09	8.13	8.07	8.09	8.12	8.09	8.13	8.09	8.12	8.09	8.13	8.09	8.13	8.09	8.13	8.09	7.81
	O/P Voltage(No Load)	Vac max./OmA	7.68	7.68	7.67	7.68	7.68	7.68	7.68	7.68	7.68	7.68	7.68	7.68	7.68	7.68	7.68	7.68	9.65
	I/P Current(No Load)	mA max.	20.93	22.70	20.86	22.55	20.93	22.55	20.93	22.55	20.93	22.55	20.93	22.55	20.93	22.55	20.93	22.55	27.00
50 Hz	I/P Current(Full Load)	mA max.	93.23	93.63	93.85	93.72	93.85	93.72	93.85	93.72	93.85	93.72	93.85	93.72	93.85	93.72	93.85	93.72	93.44
	I/P Power(No Load)	W max.	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.6
	I/P Power (Full Load)	W max.	19.1	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.0
230 Vac	O/P Voltage(Full Load)	9 ± 10% Vac/ 1800 mA	7.19	7.11	7.18	7.16	7.17	7.16	7.16	7.16	7.17	7.16	7.16	7.16	7.16	7.16	7.16	7.16	8.86
	O/P Voltage(No Load)	Vac max./OmA	10.74	10.74	10.74	10.74	10.74	10.74	10.74	10.74	10.74	10.74	10.74	10.74	10.74	10.74	10.74	10.74	10.70
	I/P Current(No Load)	mA max.	30.53	32.90	30.51	32.50	30.53	32.50	30.53	32.50	30.53	32.50	30.53	32.50	30.53	32.50	30.53	32.50	40.22
50 Hz	I/P Current(Full Load)	mA max.	95.64	96.21	96.58	96.09	96.58	96.09	96.58	96.09	96.58	96.09	96.58	96.09	96.58	96.09	96.58	96.09	96.95
	I/P Power(No Load)	W max.	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2
	I/P Power (Full Load)	W max.	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5
230 Vac	O/P Voltage(Full Load)	Vac/ 1800 mA	10.22	10.22	10.22	10.22	10.22	10.22	10.22	10.22	10.22	10.22	10.22	10.22	10.22	10.22	10.22	10.22	9.89
	O/P Voltage(No Load)	Vac max./OmA	11.78	11.79	11.78	11.79	11.78	11.79	11.78	11.79	11.78	11.79	11.78	11.79	11.78	11.79	11.78	11.79	11.74
	I/P Current(No Load)	mA max.	48.25	51.79	48.25	51.46	48.25	51.46	48.25	51.46	48.25	51.46	48.25	51.46	48.25	51.46	48.25	51.46	63.52
50 Hz	I/P Current(Full Load)	mA max.	98.93	101.11	102.05	100.87	102.05	100.87	102.05	100.87	102.05	100.87	102.05	100.87	102.05	100.87	102.05	100.33	103.76
	I/P Power(No Load)	W max.	2.8	2.8	2.9	2.8	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.7	3.0
	I/P Power (Full Load)	W max.	24.0	24.0	24.0	23.9	24.0	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	24.0
Hi-pot Test	Input to output	4.5 KV/ 5t Hz/ 1 s	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	
Temp. Rise	T <sub>AMBIENT</sub>	°C	26.2	26.2	26.2	26.2	26.2	26.2	26.2	26.2	26.2	26.2	26.2	26.2	26.2	26.2	26.2	26.2	26.2
	WORKING TIME	Hours		193		193		193		193		193		193		193		193	61.8
Temp. Rise			R <sub>2</sub> -R <sub>1</sub>	R <sub>1</sub>	R <sub>2</sub> -R <sub>1</sub>		R <sub>1</sub>		R <sub>2</sub> -R <sub>1</sub>		R <sub>1</sub>		R <sub>2</sub> -R <sub>1</sub>		R <sub>1</sub>		R <sub>2</sub> -R <sub>1</sub>		ΔT PRIMARY WINDINGS
Temp. Rise			ΔT PRIMARY WINDING	ΔT PRIMARY WINDING	ΔT PRIMARY WINDING		ΔT PRIMARY WINDING		ΔT PRIMARY WINDING		ΔT PRIMARY WINDING		ΔT PRIMARY WINDING		ΔT PRIMARY WINDING		ΔT PRIMARY WINDING		ΔT PRIMARY WINDINGS

Checked By: **FRIWO FAR EAST LTD.**  
 Checked: *[Signature]* Date: **2002.5.6**  
 Approved: *[Signature]* Date: **2002.5.6**  
 Approval by customer: \_\_\_\_\_ Date: \_\_\_\_\_  
 Signature: \_\_\_\_\_ Date: \_\_\_\_\_

# V & I Characteristic of EURO Charger (9Vac/1800mA)

**FRIWO**

FRIWO GMBH 848-00229-300

Unit tested at input voltage 207Vac, 230Vac & 253Vac and the output load from 0mA to short circuit

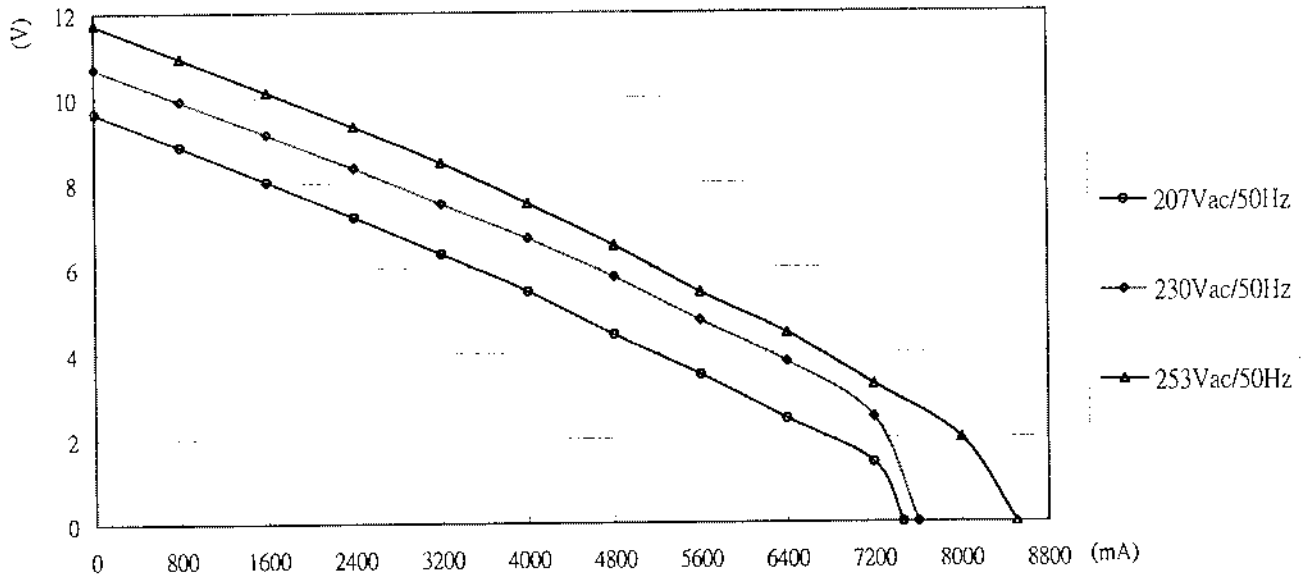
## 1, Unit at cold condition

207Vac/50Hz O/P current (mA)	207Vac/50Hz O/P voltage (Vac)	230Vac/50Hz O/P current (mA)	230Vac/50Hz O/P voltage (Vac)	253Vac/50Hz O/P current (mA)	253Vac/50Hz O/P voltage (Vac)
0	9.65	0	10.70	0	11.74
800	8.85	800	9.93	800	10.94
1600	8.03	1600	9.14	1600	10.14
2400	7.20	2400	8.34	2400	9.32
3200	6.33	3200	7.51	3200	8.47
4000	5.45	4000	6.69	4000	7.52
4800	4.43	4800	5.78	4800	6.52
5600	3.50	5600	4.76	5600	5.42
6400	2.45	6400	3.79	6400	4.47
7200	1.41	7200	2.48	7200	3.26
7465	0	7604	0	8000	1.98
				8506	0

## 2, unit at warm condition

207Vac/50Hz O/P current (mA)	207Vac/50Hz O/P voltage (Vac)	230Vac/50Hz O/P current (mA)	230Vac/50Hz O/P voltage (Vac)	253Vac/50Hz O/P current (mA)	253Vac/50Hz O/P voltage (Vac)
0	9.64	0	10.70	0	11.73
800	8.79	800	9.90	800	10.89
1600	7.93	1600	9.06	1600	10.04
2400	7.05	2400	8.24	2400	9.15
3200	6.08	3200	7.38	3200	8.28
4000	5.16	4000	6.52	4000	7.32
4800	4.14	4800	5.59	4800	6.40
5600	3.16	5600	3.99	5600	5.40
6400	2.13	6400	2.90	6400	4.43
6940	0	7200	1.71	7200	2.94
		7633	0	8000	1.57
				8670	0

### V & I curve (at cold condition)



### V & I curve (at warm condition)

