

**Technical Report No. S-1030-1595-00 OS**

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Client: Senertek Enerji Otomasyon Elektronik Teknolojileri Uretimi Ith. Ihr. San. ve Tic. Ltd. Sti.

Manufacturing location: Mithat Pasa Cad. No:165/1 Karatas, IZMIR, TURKEY

Test object: ENERGY PLUS

Test specifications: EN 61010-1:2001

Purpose of examination: Partial testing according to test specifications (see item 2)

Test result: The test sample is in compliance with the tested clauses of the test specifications (see item 2).

Date of issue: 2009-02-23

## **1 Description of the test object**

### **1.1 Function**

The product is an energy saving device. It is directly connected to the mains outlets. This product can monitor incoming power and adjusted the input to meet the demand of electrical appliances and motors. It also eliminates energy wastage and extends the service life of electrical appliances.

### **1.2 Technical Data**

Model:	ENERGY PLUS
Rated Voltage:	110 – 220 VAC
Rated Power:	1W
Mass:	0,185 kg
Dimensions:	8cm x 9cm x 13cm (WxLxH)

## **2 Testing**

This product was tested according to the electrical safety requirements of EN 61010-1: 2001.

The tests carried out are as follows:

- Markings (cl. 5.1)
- Power consumption (cl. 5.1.3)
- Durability of Markings (cl. 5.3)
- Leakage Current (cl. 6.3)
- Clearances and creepage distances measurements (cl. 6.7)
- Dielectric strength (cl. 6.8)
- Mechanical tests (cl. 8)
- Equipment temperature limits measurements (cl. 10)
- Components

5	MARKING AND DOCUMENTATION		—
5.1.1	General		—
	Required equipment markings are:		P
	visible:		P
	From the exterior, or		P
	After removing a cover, or		N/A
	Opening a door		N/A
	After removal from a rack or panel	Not mounted on rack or panel	N/A
	Not put on parts which can be removed by an OPERATOR		P
	Letter symbols (IEC 60027) used		P
	Graphic symbols (IEC 61010-1: Table 1) used		N/A
5.1.2	Identification		—
	Equipment is identified by:		—
5.1.2a)	Manufacturer's or supplier's name or trademark	Senertek	P
5.1.2b)	Model number, name or other means	ENERGY PLUS	P
	Manufacturing location identified		N/A
5.1.3	Mains supply		—
	Equipment is marked as follows:		—
5.1.3a)	Nature of supply:		—
	1) a.c. rated mains frequency or range of frequencies :	50Hz	P
	2) d.c. with symbol 1		N/A
5.1.3b)	rated supply voltage(s) or range:	110-220V	P
5.1.3c)	Max. rated power (W or VA) or input current :	1W	P
5.1.4	Fuses		—
	Operator replaceable fuse marking (see also 5.4.5) :	Fuse	P

5.1.3		TABLE: Mains supply				Form A.3	P
		Marked rating .....	110-220VAC				—
		Phase .....	L-N				—
		Frequency .....	50Hz				—
		Power .....	1W				—
Test No.	Voltage V	Frequency Hz	Current A	Power in W	Power in VA	Comments	
1	99	50	0,216	0,1	--	Running mode	
2	110	50	0,235	0,2		Running mode	
2	220	50	0,470	0,6	--	Running mode	
3	242	50	0,520	0,8	--	Running mode	
Note: Measurements are only required for marked ratings.							
Supplementary information: Running mode: The product is loaded with 3 lamp.							

5.3		TABLE: Durability of markings		Form A.4	P
		Marking method (see NOTE)		Agent	
1) Rating Label				A Water	
2) Rating Label				B Isopropyl alcohol	

6.3		TABLE: Leakage current		P
		Test voltage(V):	242	
		Leakage current between	I (mA)	Max. allowed I (mA)
		Line and enclosure	0,01	0,5

6.7		TABLE: CLEARANCES and CREEPAGE DISTANCES										Form A.13		P
8		Mechanical resistance to shock and impact												P
10.5.1		Integrity of CLEARANCES and CREEPAGE DISTANCES												P
Location (see Form A.5)	Measured CREEPAGE DISTANCE mm	Measured (initial - 6.7) CREEPAGE DISTANCE mm	Verdict	Mechanical tests (note)			Test at max. RATED ambient (10.5.1)	Measured after test (if required)		Verdict	Comments			
				Applied force (6.7) N	Rigidity (8.1) Static	Drop (8.2) Normal		CREEPAGE DISTANCE mm	CLEARANCE mm					
Between mains layertracks	1,5	1,5	P	30N	30N	5J	30°	N/A	40°C	--	--	P	--	
NOTE – Refer to Form A.12 for dielectric strength tests following the above tests.														

6.8	TABLE: Dielectric strength tests					Form A.14	P
Location or references from Forms A.2 and A.5	Clause or sub-clause	Humidity Yes/No	Working voltage V	Test voltage r.m.s./peak/d.c V	Comments	Verdict	
Between L and N	6.8	No	230	1690	--	P	

8	MECHANICAL RESISTANCE TO SHOCK AND IMPACT			—
	After the tests of 8.1 to 8.2:			—
	Voltage tests		(see Form A.14)	P
	Inspections:			—
8a)	HAZARDOUS LIVE parts not accessible			P
8b)	ENCLOSURE shows no cracks (hazard)			P
8c)	CLEARANCES not less than their permitted values		(see Form A.13)	P
8d)	BARRIERS not damaged or loosened			N/A
8e)	No moving parts exposed, except permitted by 7.2			N/A
8f)	No damage which could cause spread of fire			P

10	TABLE: maximum temperatures						P
	test voltage (V) .....	198	242				—
	t <sub>amb1</sub> (°C) .....	20	20				—
	t <sub>amb2</sub> (°C) .....	20	21				—
maximum temperature T of part/at::		T (°C)				allowed T <sub>max</sub> (°C)	
Top of the PCB		25	25			130	
Internal Cable		25	26			70	
PFC component		28	31			225	
Enlosure		24	25			80	

5 Photos



Photo 1

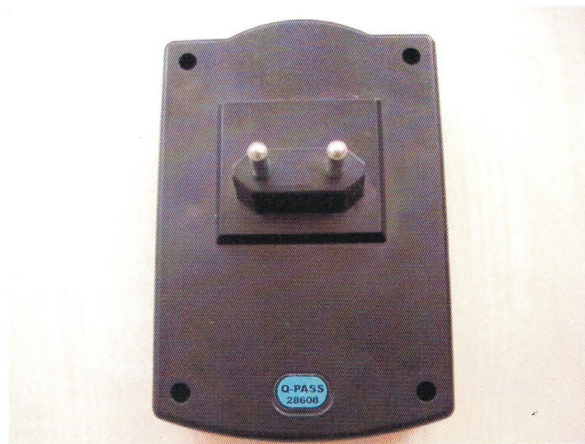
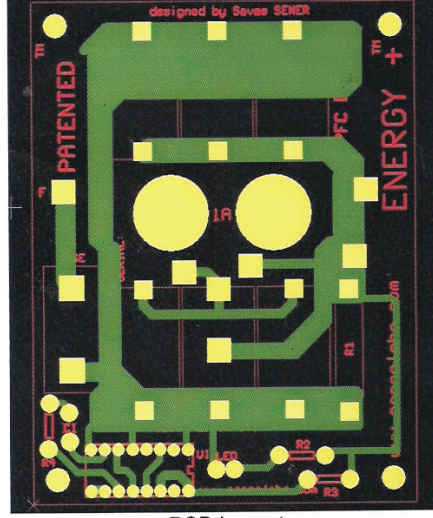
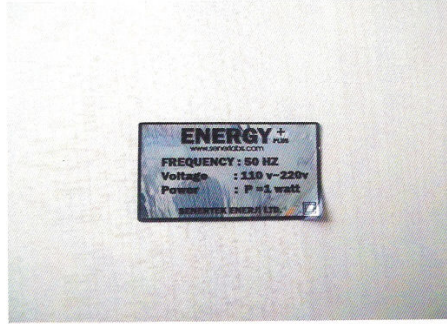


Photo 2



PCB Layout



Rating Label

-emitel TR-



Osman Soyturk  
(Test Engineer)



Mert S. Can  
(Director)