

**NEW PROJECT PROFILE****TIMER WITH ALARM**

**PRODUCT CODE** : NEW PRODUCT

**QUALITY & STANDARD** : Bureau of Indian Standards has not yet formulated any standard for this product as a whole unit.

**MONTH & YEAR OF PREPARATION** : February 2005

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**1.0.00 INTRODUCTION :**

This is an electronic product of safety device as an individual or Add-on circuit to protect appliances, whether domestic or industrial, from working beyond pre-determined time by audible (musical) alarm alerting the attention of the user. Domestic and industrial appliances and electrical convenient systems need to be protected from over-usage in respect of time. To protect from the usage beyond pre-determined time varying from 1 minute to 2 hours as per the user's choice, this electronic device consisting of CMOS Oscillator and electronic components will alert the user by alarm. In this project this circuit is discussed in details in view of manufacturing this as a commercial product.

**2.0.00 MARKET :**

Supporting devices for protecting appliances/utilities from excessive usage are too needed in the present safety scenario. As long as the electrical appliances and utilities are growing in demand, the protection systems are also in line with them in respect of demand. Even through numerous industries are manufacturing this kind of product in varieties, the new-comer in this line will also cater to the demand due to the rising demand of utilities. As such, entrepreneurs taking up this project will reap good profit and also make quick return of investment.

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**3.0.0 BASIS AND PRESUMPTIONS:**

1. The Basis for calculation of production capacity is on single shift basis, working for 25 days per month at 80% efficiency. Time required for achieving 100 % capacity is assumed as one year.
2. BEP for the scheme has been calculated for 100 % capacity utilization.
3. Rate of Interest has been taken as 14.5 % on an average.
4. Labour wages have been taken on the basis of prevailing rates locally.
5. Rental charges of Rs. 25/- per square metre has been taken on average. This may cost less if unit is located at outskirts of the city.
6. Margin money requirement differs from project to project and the type of entrepreneurs such as, fresh engineering graduates etc. On an average 25% is required for margin money. Normally the entrepreneurs have to verify with the latest norms of the banks / financial institution.
7. The gestation period for this project is about 6 months and maximum period for repayment of loan is 5 years including gestation period.
8. The cost of machineries, equipments and all accessories indicated in the scheme are approximate and also are at the rates ruling at the time of preparation of the scheme. Taxes, Transportation and octroi may vary from place to place. Entrepreneurs have to verify with the suppliers of those items before placing orders.
9. Non- refundable deposits, cost of preparation of project, consultancy fees etc are taken into account under pre-operative expenses.
10. The operative period of this project is estimated to be about 10 years considering technology obsolescence.

**4.0.00 IMPLEMENTATION SCHEDULE :**

It is estimated that from conception of the project to commercial production, it may take about 6 months including purchase of machines, installation, commissioning, staff recruitment and all clearances from various agencies such as Electricity Board, DIC, Financial Institutions.

**5.0.00 TECHNICAL ASPECTS:****5.1.00 WORKING -**

This circuit is mainly built around CMOS oscillator/divider IC CD 4060; it works by a 9 Volt DC source.

By adjusting the variable resistor (1 Meg Ohm), the time delay can be adjusted as per the user's need and it may be from 1 minute to 2 hours. After the time is over the musical sound generator receives positive supply thro' transistor due to the Pin 3 of CMOS gone HIGH. The Zener diode reduces the power supply to the required level for operation of UM66 of which output is fed to the speaker.

Timer gets activated when power is supplied and during non-requirement the power may be Switched OFF.

The Entire circuit can be connected to an appliance as Add-on circuit with appropriate connection or can be better used as individual device.

**5.2.00 PRODUCTION PROCESS:**

The electrical and electronic components as detailed under the column of raw materials requirement are procured and inspected as a routine Quality Control inspection.

As detailed in the technical aspects column, a suitable PCB is to be soldered to accommodate all the components as listed under the raw materials column and to be connected as per the main circuitry narrated earlier.

The assembled PCB along with 9 Volt battery supply and speaker are to be mounted on a study insulated base and terminals for external link as add-on circuit may be brought out. All are housed inside a moulded PVC base and screwed properly. The final product is tested with different time settings and checked. The product is finally packed inside an attractive carton pack with guarantee and card & users manual.

**6.0.00 Quality Standard and specifications:**

Bureau of Indian Standards has not yet formulated specific standard for this product. However, In-house testing facilities for checking and final product testing may be carried out.

**7.0.00 Production capacity per year:**

Type : 9 V DC Timer with alarm

Quantity : 2400 No. per annum ; Value : Rs 9,60,000 @ Rs 400 per unit.

**8.0.00 Power requirement: 0.75 kW ( 1 HP )****9.0.00 Pollution control:**

There is no process creating pollution involved in manufacturing of this product.

**10.0.0 Energy Conservation:**

Optimum utilization of machines and proper ventilation passage of natural light to the working area will save considerable electrical energy.

**11.0.00 FINANCIAL ASPECTS :**

**11.1.00 Fixed Capital :**

A.1 Land and Building:

Built up covered area 100 Sq.m @ 25/- p sq.m. Rs. 2500

<b>XI. A-2 MACHINERIES AND EQUIPMENTS:-</b>			
1.	Portable drilling machine	1 no	4,000
2	IC Tester kit	1 no	2,000
3.	Test bench with air cooled Variac, AC Voltmeter, DC Voltmeter, AC Ammeter, DC Ammeter fitted on board	1 set	10,000
4	Work bench fitted with electrical power sockets	4 set	22,000
5.	Digital multimeter 3 1/2 digit LCD Display AC/DC V/A/Ohm and transistor check features	3 No.	10,000
6.	Hand operated DC 500 V Meggar	2 No.	4,000
7.	0-200 micro ohm to 2000 ohm Digital milli-ohm meter	1 No.	3,000
			<b>Total</b>
			<b><u>55,000</u></b>
<b>A-3</b>			
(i)	Electrification and installation charges @ 10% of cost of machines equipments	Rs.	5,500
(ii)	Cost of office furniture, typewriter, work bench, shelves, racks, Trays, etc	Rs	25,000
(iii)	Cost of dies and tools	Rs.	4,500
(iv)	Pre-operative expenses	Rs	20,000
			<b>Total Fixed Capital</b>
			<b>Rs. <u>1,10,000</u></b>

**XI-B. RECURRING EXPENDITURE PER MONTH:-**

**I. STAFF AND LABOUR PER MONTH:-**

1. Engineer -Manager	1	5000	5000
2. Junior Engineer-Supervisor	1	3500	3500
3. Skilled Workers	3	2000	6000
4. Marketing asst/representative	1	2000	2000
5. Office assistant cum store clerk	1	2000	2000
6. Peon / Watchman	1	1500	1500
		<b>TOTAL</b>	<b>20,000</b>
		Perquisites 15%	<u>3,000</u>
		<b>TOTAL</b>	<b><u>23,000</u></b>

**XI.B. Raw Material Requirement per month for 200 units of production:**

S.No	Description	Qty(Nos)	Rate	Amount
1	Transistor BC 547 Model.	400	2.00	800
2	IC CD 4060	200	8.50	1,700
3	IC um 66	200	6.00	1,200
4	Variable resistor 1 Meg ohm	200	9.50	1,900
5	Variable resistor 1 k ohm	200	7.00	1,400
6	Resistors 2.2 Meg-ohm	200	2.00	400
7	Resistor 1.2 Meg ohm	200	2.00	400
8	Resistors 56 k ohm	200	1.50	300
9	Resistors 1 k ohm	600	1.50	900
10	Capacitor 0.01 micfd 12V	200	2.00	400
11	Capacitor 0.22 micfd 12 V	200	2.00	400
12	Variable capacitor 1 micfd 25 V	200	6.00	1,200
13	Zener diode 3.3 Volt	200	2.00	400
14	PCB Card	200	15.00	3,000
15	Flush type SPT Switch	200	4.00	800
16	Speaker 6 Ohm 0.5 W	200	12.50	2,500
17	9 Volt Battery	200	16.50	3,300
18	Plastic moulded cabinet	200	10.00	2,000
19	Fixing screws, rubber beads, bushes, PVC copper wire, PVC sleeves, soldering lead, soldering paste Packaging items etc.	LS	LS	1,000

Total Amount

**24,000**

**XI. B-3 UTILITIES PER MONTH:-**

(i) Power 60 KWH @ Rs 4.00	240
(ii) Water & sanitary requirements	400

TOTAL 640

**Rounded off to Rs 650**

**XI - B- A OTHER CONTINGENT EXPENSES PER MONTH:-**

1. Rent 100 Sq.M X 25	2,500
2. Postage and Stationery	1,000
3. Telephone	1,000
4. Consumable Stores	200
5. Repair & Maintenance	200
6. Transport Charges	1,000
7. Advertisement & Publicity	<b>500</b>
8. Insurance	200
9. Miscellaneous	400
<b>TOTAL</b>	<b><u>7,000</u></b>

**TOTAL RECURRING EXPENDITURE PER MONTH:-**

Salaries + Raw Materials + Utilities + Contingent Expenses Rs. 54,650  
Rounded off to Rs 55,000

**TOTAL CAPITAL INVESTMENT:-**

Working Capital (Taken as 3 Months recurring expenditure)  
Fixed Capital

Rs. 1,65,000  
Rs. 1,10,000  
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**Rs. 2,75,000**  
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**TOTAL CAPITAL INVESTMENT**

**FINANCIAL ANALYSIS:-**

**1. COST OF PRODUCTION PER YEAR:-**

(a) Total recurring cost	Rs	6,60,000
(b) Depreciation on machineries @ 10%	Rs	6,050
(c) Depreciation on dies & Tools @ 25%	Rs	1,125
(d) Depreciation of office equipment @ 25%	Rs.	6,250
(e) Interest on total capital investment @ 14.5%	Rs.	39,875

**TOTAL COST OF PRODUCTION**

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**Rs. 7,13,300**  
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**ROUNDED OFF**

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**XII-2 TURN OVER:-**

By Sale of 2400 numbers of 240 V AC High  
Voltage protector @ Rs. 400 Rs. 9,60,000

**XII - 3 NET PROFIT PER YEAR:-**

Sales - Cost of Production = Rs. 9,60,000 - 7,13,000  
= Rs 2,47,000

**4 NET PROFIT RATIO:-**

$\frac{\text{Profit}}{\text{Turnover}} \times 100 = \frac{2,47,000}{2,75,000} \times 100 = 25.72\%$

**5 RATE OF RETURN ON INVESTMENT:-**

$\frac{\text{Profit}}{\text{Total investment}} \times 100 = \frac{2,47,000}{2,75,000} \times 100 = 89.82\%$

**XII.6 BREAK EVEN POINT ANALYSIS:-**

**FIXES COST PER ANNUM:-**

a) Rent	
b) Interest	30,000
c) Depreciation	39,875
d) Insurance	13,425
e) 40% of Salaries	2,400
	1,10,400

f) 40% of contingent expenses excluding  
rent & insurance

20,640

**TOTAL COST**  
**Rounded off to** 2,16,740  
**Rs 2,16,740**

**BREAK EVEN POINT :-**

$$\frac{\text{Fixed Cost}}{\text{Fixed cost} + \text{Profit}} \times 100 = \frac{2,16,740}{2,16,740 + 2,47,000} = 46.74\%$$

**XII. ADDRESSES OF SUPPLIERS :-**

**A. Machinery & Equipments:-**

- 1 Shri Vishnu Machinery manufactures,  
100, Jayaprakashnagar,  
Sanganur Road, Ganapathy  
Coimbatore - 641 006.
- 2 J K. Industries  
41, Shivaji Marg,  
Industrial Area ( Najafgarh Rd )  
New Delhi - 110 015
- 3 Globe Machine Tools,  
811, Avanashi Road  
Coimbatore - 641 018
- 4 Meco Instruments Pvt Ltd,  
PO Box No 6388, 301, Bharat Indl Estate,  
TJ road, Sewree(w), Mumbai-400 015

**B. Raw Materials :-**

1. Sunrise Electronics  
721/1, Oppanakara Street,  
Coimbatore - 641 001
2. Ingata laboratories  
686, Oppanakara street,  
Coimbatore - 641 001
- 3 Rajesh Electronics,  
29/1A, Chandni Chowk Street,  
Kolkata- 700 072
- 4 Natasha India,  
Block 6, Stall 719 'A'  
Old Lajpat rai market, Delhi-110 008

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