

NEW PROJECT PROFILE

ELECTRONIC GATE SECURITY SYSTEM

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 : March 2005

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1.0.00 INTRODUCTION :

This is an electronic product of safety device as an alarm while any person crosses through a gate of any big residence or any building enclosure. Nowadays the security system of main gate of any big residential building or restricted commercial complex or business establishments has been additionally strengthened through sophisticated electronic devices and gadgets. This simple alarm circuit sensing through Infra Red rays made in two parts as transmitter and receiver and fitted with the both sides of the gate will alert the occupants inside the building while the person crosses through the gate. 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 residential buildings, bungalows and business offices are very much needed in the present safety scenario. As long as the residential buildings, bungalows and business offices are growing in number, the protection systems are also in line with them in respect of demand. Even though some 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 providing safety to buildings. 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:-**

The circuit consists of transmitter and receiver and alarm sections: The transmitter and receiver sections are fitted as two separate segments with the two opposite pillars of the main gate : The alarm circuit is mounted inside the house. The transmitter emits infra red rays and it is focused towards the receiver section, while anyone passes through this rays transmission the alarm circuit is activated and sounds alarm thus alerting the occupants of the house-building.

The transmitter consists of a 555 timer which is wired as an astable multivibrator to oscillate at a frequency of 38 kHz. Its output is connected to the base of a transistor which drives both the LEDs to emit. The IR beams emitted by the LEDs are incident rays to the receiver 1738. If the beams are intercepted by a passer the other transistor gets forward biased and its output goes low. This is fed to the JK flip flop which works as a latch and gives high output which drives the piezo buzzer and sounds alarm. The whole operation is "reset" by the occupant by pressing a push button after noticing the entry.

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, suitable PCBs are to be soldered to accommodate all the components in two segments as transmitter and receiver as listed under the raw materials column and to be connected as per the circuitry narrated earlier.

The assembled PCBs along with separate 9 Volt batteries supply and the alarm with speaker are to be mounted on three separate sturdy insulated bases and terminals for external link may be brought out. All are housed inside their respective moulded PVC bases and screwed properly. The final product is tested and checked. The product is finally packed inside an attractive carton pack with guarantee 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 Electronic Gate Security System

Quantity : 2400 No. per annum , Value : Rs 10,20,000 @ Rs 425 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

XI. A-2 MACHINERIES AND EQUIPMENTS:-			
1.	Portable drilling machine	1 no	4,000
2.	IC Tester kit	1 no	2,000
3.	Test bench with instruments fitted on board	1 set	7,000
4.	Work bench fitted with electrical power sockets	4 set	20,000
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
		Total	<u>50,000</u>
A-3			
(i)	Electrification and installation charges (@ 10% of cost of machines equipments)	Rs	5,000
(ii)	Cost of office furniture, typewriter, work bench, shelves, racks, Trays, etc	Rs.	20,000
(iii)	Cost of dies and tools	Rs.	3,000
(iv)	Pre-operative expenses	Rs.	17,000
		Total Fixed Capital	Rs. <u>95,000</u>

XI-B. RECURRING EXPENDITURE PER MONTH:-**1. 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
		TOTAL	20,000
		Perquisites 15%	<u>3,000</u>
		TOTAL	<u>23,000</u>

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

SNo	Description	Qty (No.)	Rate (Rs)	Amount (Rs)
1	IC NE 555 timer	200	6.50	1300
2	IC TSOP 1738	200	11.00	2200
3	IC 7805	200	6.00	1200
4	IC 74 LS 73 A	200	10.00	2000
5	9 V NAND Gate	200	3.50	700
6	Transistor BC 548	400	2.00	800
7	9 V DCBuzzer	200	15.00	3000
8	LED	400	2.00	800
9	Variable resistor 10 k ohm	200	7.00	1400
10	Resistor 2.2 k ohm	400	2.50	1000
11	Resistor 10 k ohm	200	2.50	500
12	Resistor 4.7 k ohm	200	2.00	400
13	Resistor 1 k ohm	200	2.00	400
14	Resistor 560 ohm	200	2.00	400
15	Resistor 100 ohm	200	2.00	400
16	Variable capacitor 10 mic fd 25 V	200	6.00	1200
17	Capacitor 0.001 mic fd	200	1.00	200
18	Capacitor 0.01 mic fd	600	1.00	600
19	ON-OFF switch	200	3.00	600
20	Push button switch	200	5.50	1100
21	9 V Battery	200	13.00	2600
22	PCB for transmitter	200	7.50	1500
23	PCB for receiver	200	9.00	1800
24	Cabinet sets	400	7.00	2800
25	Mounting screws, wire, soldering lead etc	LS	LS	1000
26	Packing items, card, etc.	LS	LS	1000
	TOTAL			30900

Rounded off to Rs 31000

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	1,000
8. Insurance	200
9. Miscellaneous	400
TOTAL	7,000

TOTAL RECURRING EXPENDITURE PER MONTH:-

Salaries + Raw Materials + Utilities + Contingent Expenses Rs. 61,650
Rounded off to Rs 62,000

TOTAL CAPITAL INVESTMENT:-

Working Capital (Taken as 3 Months recurring expenditure) Rs. 1,86,000
Fixed Capital Rs. 95,000

TOTAL CAPITAL INVESTMENT **Rs. 2,81,000**

FINANCIAL ANALYSIS:-**I. COST OF PRODUCTION PER YEAR:-**

(a) Total recurring cost	Rs. 7,44,000
(b) Depreciation on machineries @ 10%	Rs. 5,500
(c) Depreciation on dies & Tools @ 25%	Rs. 750
(d) Depreciation of office equipment @ 25%	Rs. 5,000
(e) Interest on total capital investment @ 14.5%	Rs. 40,745

TOTAL COST OF PRODUCTION **Rs. 7,95,995**

ROUNDED OFF **Rs. 7,96,000**

XII-2 TURN OVER:-

By Sale of 2400 numbers of 9 V DC Electronic Gate
Security System @ Rs 425 Rs 10,20,000

XII - 3 NET PROFIT PER YEAR:-

Sales - Cost of Production = Rs. 10,20,000 - 7,96,000
= Rs. 2,24,000

4 NET PROFIT RATIO:-

$\frac{\text{Profit}}{\text{Turnover}} \times 100 = \frac{2,24,000}{10,20,000} \times 100 = 21.96\%$

5 RATE OF RETURN ON INVESTMENT:-

$\frac{\text{Profit}}{\text{Total investment}} \times 100 = \frac{2,24,000}{2,81,000} \times 100 = 79.72\%$

XII. 6 BREAK EVEN POINT ANALYSIS:-
FIXED COST PER ANNUM:-

a) Rent	
b) Interest	30,000
c) Depreciation	40,745
d) Insurance	11,250
e) 40% of Salaries	2,400
f) 40% of contingent expenses excluding rent & insurance	1,10,400
	20,640

TOTAL COST 2,15,435
Rounded off to Rs 2,16,000

BREAK EVEN POINT :-

$$\frac{\text{Fixed Cost}}{\text{Fixed cost} + \text{Profit}} \times 100 = \frac{2,16,000}{2,16,000 + 2,24,000} = 49.1\%$$

XII. ADDRESSES OF SUPPLIERS :-

A. Machinery & Equipments:-

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

B. Raw Materials :-

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