

PROJECT PROFILE
ON
ELECTRONIC WEIGHING SCALES

PRODUCT CODE (ASICC)	: 7532
QUALITY STANDARD	: IS 9281:1981
PRODUCTION CAPACITY	: Qty-1800 Nos. Value - Rs. 1,26,00,000/-
YEAR OF PREPARATION	: 2006-07
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1. INTRODUCTION

Electronic weighing systems are used in industries and business establishments for weighing and segregating materials accurately for process sales. The main advantages of an electronic weighing system when compared with mechanical weighing systems are:

- (a) Compactness and small size independent of capacity.
- (b) Ruggedness and high dependability.
- (c) High speed of response and rapid weighing.
- (d) Good accuracy.
- (e) Excellent flexibility to monitor multiple loads.
- (f) Analog and digital with printout facility remote indication and parallel display.
- (g) Online processing through computer.

The electronic weighing system comprises the basic load cell, suitable signal conditioners and output recorders/ indicators giving both the analog and digital output for further processing. The signals from the load cell are amplified and fed to analog/digital converter, which provide an output in the digital format for display/ printing/processing etc. The strain gauge based load cell is the most popular weight transducer used in the electronic weighing system.

2. MARKET POTENTIAL

The total production in industrial electronic and control instrumentation is showing growth rate every year. This product requires a good marketing set up duly backed by after sales service facilities. In the state like Orissa, this product has hues demand as because suppliers are procuring various types of digital weighing scales from Delhi, Kolkata and Hariyana which are insufficient to meet the local market demand hence, manufacturing of electronic weighing scales in the home state, positively will bring down it's price and also it will be possible to facilitate the consumers after sales service which may in turn create sufficient demand. In this concept, it is preferred to manufacture, electronic weighing scales which does have better market potential now and even in future

3. BASIS AND PRESUMPTIONS

- (i) The basis for calculation of production capacity has been taken on single shift of 8 hrs. per day basis on 75% efficiency.

- (ii) The maximum capacity utilization on single shift basis for 300 days a year. During first year and second year of operations, the capacity utilization is 60% and 80% respectively. The unit is expected to achieve full capacity utilization from “the third year onwards.
- (iii) The salaries and wages, cost of raw materials, utilities, civil construction etc. are based on the prevailing rates in and around north India. These cost factors are likely to vary with time and location.
- (iv) Interest on term loan and working capital loan has been taken at the rate of 16% on an average. This rate may vary depending upon the policy of the financial institutions/agencies from time to time.
- (v) The cost of machinery and equipments refer to a particular make/model and prices are approximate.
- (vi) The break-even point percentage indicated is of full capacity utilization.
- (vii) The project preparation cost etc. whenever required could be considered under pre-operative expenses.
- (viii) The essential production machinery and test equipment required for the project have been indicated. The unit may also utilize common test facilities available at Electronics Test and Development Centres (ETDCs) and Electronic Regional Test Laboratories (ERTLs) set up by the State Governments and STQC, Directorate of the Department of Information Technology, Ministry of Communication and Information Technology, to manufacture products conforming to Bureau of Indian Standards.

Implementation Schedule

The major activities in the implementation of the project has been listed and the average time for implementation of the project is estimated at 12 months:

		Period in
Sl.No.	Name of Activity	Months
		(Estimated)
1.	Preparation of project report	1
2.	Registration and other formalities	1
3.	Sanction of loan by financial institutions	3
4.	Plant and Machinery:	
	(a) Placement of orders	1

	(b) Procurement	2
	(c) Power connection/ Electrification	2
	(d) Installation/Erection of machinery/Test Equipment	2
5.	Procurement of raw materials	2
6.	Recruitment of Technical Personnel etc.	2
7.	Trial production	11
8.	Commercial production	12

Notes

1. Many of the above activities shall be initiated concurrently.
2. Procurement of raw materials commences from the 8th month onwards.
3. When imported plant and machinery are required, the implementation period of project may vary from 12 months to 15 months.

TECHNICAL ASPECTS

1. PROCESS OF MANUFACTURE

The manufacturing process involves the assembly of load cell, electronic circuits and electro mechanical hardware. Subsequently, the electronics assembly the ICs, transistor, diodes, resistors, capacitors transformer, coils, relays, potentiometers are assembled on PCBs as per design.

The assembled PCBs are tested for performance. Subsequently the electronics assembly along with electromechanical assembly, hardware such as connectors/switches, terminals display, meters are assembled and housed in a metallic / fibre / plastic case with an appealing front panel. Finally the assembled unit is calibrated and tested as per the design specification.

2. QUALITY :

IS : 2281/1981

3. PRODUCTION CAPACITY :

Qty : 1800 Nos per annum

Value : Rs. 1,26,00,000

4. MOTIVE POWER : 5 KVA

5. Pollution Control

The Govt. accords utmost importance to control environmental pollution. The small-scale entrepreneurs should have an environmental friendly attitude and adopt pollution control measures by process modification and technology substitution.

India having acceded to the Montreal Protocol in Sept. 1992, the production and use of Ozone Depleting Substances (ODS) like Chlorofluoro Carbon (CFC), Carbon Tetrachloride, Halons and Methyl Chloroform etc. need to be phased out Immediately with alternative chemicals/solvents. A notification for detailed Rules to regulate ODS phase out under the Environment Protection Act, 1986 have been put in place with effect from 19th July, 2000.

The following steps are suggested which may help to control pollution in electronics industry wherever applicable:

- (i) In electronic industry fumes and gases are released during hand soldering / wave soldering/Dip soldering, which are harmful to people as well as environment and the end products. Alternate technologies may be used to phase out the existing polluting technologies. Numerous new fluxes have been developed containing 2-10% solids, as opposed to the traditional 15-35% solids.
- (ii) Electronic industry uses 'CFC, Carbon Tetrachloride and Methyl Chloroform for cleaning of printed circuit boards after assembly to remove flux residues left after soldering, and various kinds of foams for packaging.

Many alternative solvents could replace CFC-113 and Methyl Chloroform in electronics cleaning. Other Chlorinated solvents such as Trichloroethylene, Perchloroethylene and Methylene Chloride have been used as effective cleaners in electronics industry for many years. Other organic solvents such as Ketones and Alcohols are effective in removing both solder fluxes and many polar contaminants.

6. Energy Conservation

With the growing energy needs and shortage coupled with rising energy cost, a greater thrust in energy efficiency in industrial sector has been given by the Govt. of India since 1980s. The Energy Conservation Act, 2001 has been enacted on 18th August, 2001, which provides for efficient, use of energy, its conservation and capacity building of Bureau of Energy Efficiency created under the Act.

The following steps may help for conservation of electrical energy:

- i) Adoption of energy conserving technologies, production aids and testing facilities.

- ii) Efficient management of process/manufacturing machineries and systems, QC and testing equipments for yielding maximum Energy Conservation.
- iii) Optimum use of electrical energy for heating during soldering process can be obtained by using efficient temperature controlled soldering and de-soldering stations.
- iv) Periodical maintenance of motors, compressors etc.
- v) Use of power factor correction capacitors. Proper selection and layout of lighting system; timely switching on /off of the lights; use of compact fluorescent lamps wherever possible etc.

Financial Aspects

(i) Land and Building

Built up area	500 Sqr. meters
Office & Stores	150 sqr. meter
Factory Shed	200 sqr. meter
Assembling & Testing	1500 sqr. meter
Payable / annum	Rs. 1,08,000/-

(II) Machinery and Equipments.

Sl. No.	Description	Ind./ Imp.	Qty.	Rate (Rs.)	Value (Rs.)
1.	Bench Drilling machine ½	Ind.	1	@15000	15,000
2.	Digital Multi Meter (3½ digits)	Ind.	3	@9000	27,000
3.	Oscilloscope (0-20 MHz)	Ind.	1	@50,000	50,000
4.	IC Tester/EPR0M Programmer	Ind.	1	@50,000	50,000
5.	Digital LCR Meter	Ind.	1	@45,000	45,000
6.	Load Cell Simulator (Imported)	Ind.	1	@90,000	90,000
7.	Portable Grinder	Ind.	1	@20,000	20,000
8.	Power Supply (0-30V, 2A)	Ind.	2	@10,000	20,000
9.	Standard Weights Brass	Ind.	LS	LS	30,000
10.	Multi-meter (Analog)	Ind.	1	@4,500	4,500
11.	UV Eraser,	Ind.	1	@6,000	6,000
12.	Variac (4A)	Ind.	2	@10,000	20,000
	Total cost				3,77,500

	Other fixed Assets				
13.	Electrification charge @ 10% on machinery and equipments				37,750
14.	Office Furniture and Equipments				1,00,000
15.	Tools, Dies, Jigs & Fixtures				60,000
16.	Pre-operative expenses				30,000
	Total fixed capital				6,05,250

Working Capital (per month)

(i) Staff & Labour

Sl. No.	Designation	No. of Persons	Salary/ month	Total Salary (Rs.)
1.	Manager	1	10,000	10,000
2.	Production Engineer	1	8,000	8,000
3.	Sales & Marketing peronnel	3	5,000	15,000
4.	Accountant	1	5,000	5,000
5.	Steno./ typist	1	4,000	4,000
6.	Purchase and stores personnel	3	4,000	12,000
7.	Skilled workers	8	6000	48,000
8.	Semi Skilled workers	4	4000	16,000
9.	Watchman and peon	3	3000	9,000
	+ Perquisites@ 15% of Salary			19,050
	Total			1,46,050

(ii) Raw Material (Per month)

Sl. No.	Description	Ind./ Inp.	Qty.	Rate/ Unit	Vaule (Rs.)
1.	Cabinet/Housing (Metal)	Ind.	150	@400	60,000
2.	Capacitors	Ind.	150	@200	30,000
3.	Fluorescent display (Imp)	Ind.	150	@12,000	1,80,000
4.	Integrated circuits (Imp)	Ind.	150	@1,500	2,25,000
5.	Load cell (strain gauge) (Imp)	Ind.	150	@4,000	6,00,000
6.	Mechanical hardware	Ind.	150	@500	75,000
7.	Noise filter (Imp)	Ind.	150	@200	30,000
8.	PCB	Ind.	150	@400	60,000
9.	Rectifier (Imp)	Ind.	150	@150	22,500
10.	Resistors (Diodes and switches)	Ind.	150	@250	37,500
11.	Transformer	Ind.	150	@150	22,500
12.	Transistors	Ind.	300	@200	60,000
13.	Wires, cable connectors, consumables and packing material etc.	Ind.	150	@400	60,000
	Total				1,462,500

(iii) Utilities (per month)

Power	8,000
Water	1,000
Total	9,000

(iv) Other Contingent Expenses (per month)

1.	Advertisement	30,000
2.	Conveyance expenses	15,000
3.	Transport and packaging	20,000
4.	Misc. expenses	15,000
5.	Postage and stationery	5,000
6.	Traveling expenses	30,000
7.	Repair and maintenance	3,000
8.	Insurance and taxes	5,000
9.	Rent (Per month)	9,000
	Total	1,32,000

Total Recurring expenditure per month (i + ii + iii + iv)

= Rs. 1,46,050 + Rs. 1,462,500 + Rs. 9,000 + Rs.1,32,000

= Rs. 1,749,550/-

Total Capital Investment

Fixed capital		Rs. 6,05,250
Working capital for 3 months		Rs. 5,248,650
	Total	Rs. 5,853,900

Financial Analysis

Cost of Production (per annum)

Depreciation on pl. & m/c @ 10%	37,750
Depreciation on office equipment & furniture @ 20%	20,000
Depreciation on Tools, Dies, Jigs & Fixtures @ 25%	15,000
Recurring expenditure per annum	2,09,94,600
Interest on capital investment @ 16%	9,36,624
Total	2,20,03,974

Turnover (per annum)

Item	Qty.	Rate/Unit (Rs.)	Total sales (Rs.)
Electronic weighing scales upto 10 Kg	1800 Nos.	13,500/-	2,43,00,000

Profit Before Taxes

= Turnover per annum - Cost of production per annum

= Rs. 22,96,026/-

$$\text{Profit Ratio} = \frac{\text{Profit / annum}}{\text{Sales/ annum}} \times 100 = \frac{22,96,026}{2,43,00,000} \times 100 = 9.4\%$$

$$\text{Rate of Return} = \frac{\text{Profit / annum}}{\text{Total capital Investment}} \times 100 = \frac{22,96,026}{58,53,900} = 39.2\%$$

Break-even Point

Rent per Annum	1,08,000
Total Depreciation on Tools, Dies, Jigs & Furniture @ 25 %	15,000
Depreciation on pl. & m/c @ 10%	37,750
Depreciation on office equipment & furniture @ 20%	20,000
Interest on total capital investment @ 16 %	9,36,624

Insurance per Annum	60,000
40% Salaries and wages	6,09,600
40% other contingent expenses(excluding Insurance, tax and rent)	5,66,400
Total Fixed Cost	23,53,374

$$\text{Break-even Point} = \frac{\text{Fixed cost}}{\text{Fixed cost} + \text{Profit}} \times 100 = 50.6\%$$

Additional Information

- (a) The Project Profile may be modified/tailored to suit the individual entrepreneurship qualities/capacity, production programme and also to suit the locational characteristics, wherever applicable.
- (b) The Electronics Technology is undergoing rapid strides of change and there is need for regular monitoring of the national and international technology scenario. The unit may, therefore, keep abreast with the new technologies in order to keep them in pace with the developments for global competition.
- (c) Quality today is not only confined to the product or service alone. It also extends to the process and environment in which they are generated. The ISO 9000 defines standards for Quality Management Systems and ISO 14001 defines standards for Environmental Management System for acceptability at international level. The unit may therefore adopt these standards for global competition.
- (d) The margin money recommended IS 25% of the working capital requirement at an average. However, the percentage of margin money may vary as per bank's discretion.

Name and Addresses of Machinery and Equipment Suppliers

1. M/s. Agronic Instrument (P) Ltd. 201, Shiva-Shakti Industrial state, Mumbai-86.
2. M/s. Bergen Associates Pvt. Ltd. 1082, Sector 27-B, Chandigarh-19.
3. M/s. BPL (India) Ltd. 84, M. G. Road, Bangalore-560001.
4. M/s. Circuit Aids Inc. No. 5, Ranganathapura Magadi Road, Bangalore-79.
5. M/s. Navanidhi Electronics (P)Ltd. 1-60/1 Snehapuri, Nacharaam, Hyderabad-7
6. M/s. Noble Electronics 354, Lajpat Rai Market, Delhi-6.

7. M/s. Peico Electronics and Electrical Ltd. Shivasagar, Estate, Block-A,
Dr. Annie Besant Road, Mumbai-12.
8. M/s. Quality Machine Tools 34, J.C. Road, VISL Building, Bangalore-2.
9. M/s. Swastic Machine Tools 4, Lata Chambers, Nashik-422 002.
10. M/s.Sysco Associates 30/106 (New No.234) 11th Main, Malleswaram, Bangalore-3

Name and Addresses of Raw Material Suppliers

1. M/s. Amar Radio Corpn. 11/1, Thiglar Periyanna Lane, SJP Road, Bangalore-2.
2. M/s. Applied Electronics Ltd. A-5, Wagle Industrial Estate, Thane-4, (Mumbai)
3. M/s. Bakumbhai Ambalal Electronics Dept. Kaiser-T-Hind Building, Ballard Estate,
Mumbai-38.
4. M/s. Bangalore Electronics No.124, Sadarpatrapa Road, Bangalore-2.
5. M/s. Electronics Trade and Technology Dev. 15/48, Malcha Marg, New Delhi-21.
6. M/s. General Electronics 19,5th Floor, Tardeo Air Conditioned Market, Mumbai-34.
7. M/s. Inde Associates 16, Rest House Crescent, Off Church Street, Bangalore-1.
8. M/s. Interco Ltd. 456, Alexandra Road, 14.00 NOL Bldg. Singapore-0511.
9. M/s. Jairamadas and Sons (P.) Ltd. Mittal Towers, M.G. Road, Bangalore.
10. M/s. Micropack Ltd. Plot 16, Jigami Indl. Area, Anekal Taluk, Bangalore District- 560
002.
11. M/s. Namtech Systems(P) Ltd. 35, Dacosta Square, St. Thamas Town, Bangalore-84,
12. M/s. OEN Connectors Ltd. Vyattila, PB No.2, Cochin-19.
13. M/s. Rosemound Ine P.O. Box 35129, Minneapolis, MN 56435 (612) 941-5560, USA (For
scissors)
14. M/s. Saini Electronics Pushapadant Nivas, 3, Chuman Lane, Dr. D. Bhadkamkar Marg.
Mumbai-7.
15. M/s. Southern Electronics No.113, Sadarpatrapa Road, Bangalore-2.
16. M/s. Systronics 202-1206, Harsha House, Near Milan Cinema, arampura Road, New Delhi-
110015.
17. M/s. Tomson Electronics Pulickkal Buildings, Pallimukku, MG Road, Cochin
18. M/s. Shilpa International 107, Parklane, Secunderabad-3