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MANUFACTURERS OF ELECTRICAL INDUSTRIAL EQUIPMENT

1961

The list of firms normally included in this report
has been omitted from this issue, along with
certain tables. See introductory text for details.

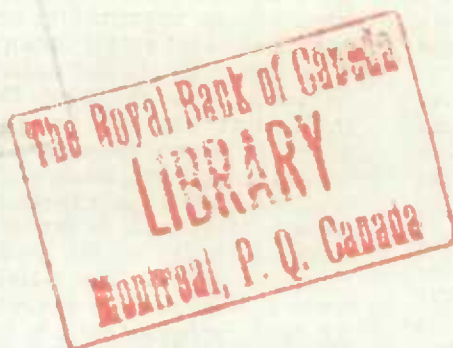
ANNUAL CENSUS OF MANUFACTURES

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SYMBOLS

The interpretation of the symbols used in the tables throughout this publication is as follows:

- .. figures not available.
- ... figures not appropriate or not applicable.
- nil or zero.

EXPLANATORY NOTES

This report is one in a series of about 140 publications which present the results of the 1961 Census of Manufactures. Most reports in this series refer to specific industries, but there are summary reports for Canada and the provinces and for major industry groups. Implementation of the new definition of the establishment in the 1961 Census has resulted in certain changes and necessitated some adjustments to the statistics for previous years in order to maintain comparability of the data. (See following note on "Establishment".)

Industry statistics given in these reports refer to number of establishments, employees, salaries and wages, cost of materials, supplies, fuel and electricity, gross value of shipments, inventories and value added by manufacturing. Details of materials used and products shipped are also given. Descriptions of the principal industry statistics, with special reference to 1961, are as follows:

Period Covered

Firms are asked to submit figures for the calendar year, if at all possible, and most reports are on this basis. Financial year reports for periods differing from the calendar year are accepted in instances where the firms find it impossible to supply calendar year data from accounting records. However the data on employees, salaries and wages are requested on a calendar year basis in all cases.

Establishment

The reporting unit in the Census of Manufactures is the **establishment**. Beginning with the 1961 Census, the establishment is defined as follows:

The smallest unit which is a separate operating entity capable of reporting all the following:

- Materials and supplies used,
- Goods purchased for resale as such,
- Fuel and power consumed,
- Number of employees and their pay,
- Inventories,
- Shipments or sales.

The establishment is to be distinguished from smaller subdivisions or departments which do not have records which permit them to report all items required of an establishment. Prior to 1961, some establishments were required to submit two or more separate reports when they were engaged in operations which were classifiable to different industries. Beginning with 1961, separate reports for such operations will be required only in cases where accounting records can provide all the elements of principal statistics enumerated above. Special reporting arrangements were made with respondents when the acceptance of combined reports would have seriously affected the statistics for particular industries or areas. Where continuity of industry statistics was affected by this change in reporting procedures, adjustments to the data were made back to 1957 in order to maintain comparability of the series for recent years.

A manufacturing establishment is typically a factory, mill or plant principally engaged in manufacturing operations. Prior to 1961, the Census of Manufactures attempted to cover the manufacturing activities of all establishments, whether or not they were principally engaged in manufacturing operations. Beginning with the 1961 Census, establishments (accounting entities) which are not primarily engaged in manufacturing are no longer included as manufacturing establishments in the basic industry statistics. Again adjustments to the industry statistics were made to reflect the removal of such reporting units for the period 1957-1960. These reporting units are now listed as establishments in other Bureau industry surveys, such as Wholesale Trade, Construction, etc. In order, however, to maintain complete coverage of certain commodity items produced mainly in manufacturing establishments, many non-manufacturing establishments are now surveyed for commodity shipments only and the latter are included in those tables of industry reports showing shipments of certain commodities "from all industries".

Many firms have more than one manufacturing establishment. Such firms are requested to submit a separate Census of Manufactures report for each manufacturing establishment which can meet the reporting requirements described earlier.

Prior to 1961, the main emphasis in the Census of Manufactures was on manufacturing activity whereas, beginning with 1961, each establishment reports on the total operations carried out within its accounting boundaries (except income from investments such as rent, interest and dividends). However, data on different activities (manufacturing, selling, construction by own labour force etc.) are requested separately. The 1961 statistics in this report are confined to manufacturing activity in order to maintain comparability with previous years. In the 1962 reports it is planned to show both 1961 and 1962 data on the "total activity" basis in addition to the data on manufacturing operations.

Employees

Administrative and office employees include all executives and supervisory officials such as presidents, vice-presidents, secretaries, treasurers, etc., together with managers, professional and technical employees, superintendents and factory supervisors above the working foremen level, and clerical employees. Working owners and partners are also included in this category but will be shown separately in subsequent years.

Production and related workers include all other factory workmen whether paid on a monthly, weekly, hourly or piece-work basis. Working foremen doing work similar to that of the employees they supervise are included, as are maintenance, handling, warehousing and delivery staff. Employees on new construction work, in retail or wholesale operations, on outside piece work, etc, are not included.

Production workers are reported by months, an average for the year being obtained by summing the monthly figures and dividing by twelve. This procedure is followed even though the plant did not operate in all months. Figures on employment refer to the calendar year whether or not some establishments reported other data on a financial year basis.

Salaries and Wages

Salaries and wages refer to gross earnings of the employees described above, including salaries, wages, commissions, bonuses, the value of room and board where provided, deductions for income tax and social services such as sickness and unemployment insurance, pensions, etc., as well as any other allowances forming part of the employees' wages. Payments for overtime are included.

Salaries refer to amounts paid to administrative and office employees. Withdrawals by working owners or partners for normal living expenses for self and family are included with salaries, but will be shown separately in subsequent years. Wages refer to the amounts paid to production and related workers as defined above. Data on earnings refer to the calendar year whether or not some establishments reported other data on a financial year basis.

Cost of Fuel and Electricity

Figures for fuel refer to amounts actually used (including fuel used in cars and trucks), not to purchases unless the quantities are the same. Values refer to the laid-down cost at the establishment including freight, duty, etc.

Materials and Supplies Used

Figures represent quantities and laid-down cost values, at the establishment, of materials, supplies and components actually used during the year whether purchased from others or received as transfers from other plants of the reporting company. Amounts paid to other manufacturers for work done on materials owned by the reporting company are included. Returnable containers or any other items charged to capital account are not included. Fuels are not included. Goods bought from others or received as transfers from other plants or reporting companies for resale without further processing are not included. Maintenance and repair supplies not chargeable to capital account are included.

Factory Shipments

Factory shipments generally refer to shipments of goods made from own materials either in the reporting establishments or by other manufacturers on the basis of a charge to the reporting establishment for work done. All products and by-products shipped from the establishment are included whether for domestic use, export, or for government departments. Transfer shipments to sales outlets, distributing warehouses or to other manufacturing units of the reporting firm which are treated as separate establishments are included. Goods bought or received as transfers and resold without further processing are not included. Values are requested

on f.o.b. establishment basis, and do not include sales tax or excise duties. Values of containers not returnable are included. Amounts received in payment for work done on materials owned by others are included.

In a few industries such as shipbuilding, aircraft, etc., where work on principal products extend over a relatively long period, the value of production is recorded rather than the value of shipments. For those industries production is computed from the value of deliveries of complete units during the year plus the value of work done during the year on unfinished units less the value of work done in previous years on finished units delivered in the year under review.

Inventories

Values represent the book value of manufacturing inventory. Figures consist of inventory at the plant and at warehouses or selling outlets which are treated as extensions of the plants for the purpose of reporting shipments.

Value added by Manufacturing

Value added is compiled by deducting the cost of materials, fuel and electricity consumed from the value of production (value of shipments adjusted for changes in the value of inventories of finished goods and goods in process). Value added is sometimes referred to as net production.¹

Standard Industrial Classification

The revised Standard Industrial Classification which was introduced with the 1960 Census of Manufactures provides for a breakdown of the universe into 140 industries arranged in 20 major groups compared with 135 industries in 17 major groups in the old classification which was used in the compilations for the years 1949 to 1959 inclusive. Full details are contained in the Standard Industrial Classification Manual, Catalogue No. 12-501, which is available from either the Queen's Printer or the Dominion Bureau of Statistics. Reporting establishments are classified or allotted to specific industries on the basis of the value of principal products made or shipped.

Establishments engaged solely in repair work are not included in manufacturing industries (except in the case of furniture, shipbuilding, boat building, aircraft and railroad rolling stock industries) but establishments principally engaged in assembling parts into complete units are included.

¹ To arrive at the National Accounts concept of "gross domestic product at factor cost", it would be necessary to subtract also the cost of advertising, insurance and other business costs which are not collected in the annual Census of Manufactures. Value added figures for the primary industries, manufacturing and construction are published in D.B.S. publication 61-202, Survey of Production.

Short Forms

Since 1949, in order to ease the reporting burden for smaller firms, a one-page short form has been used asking only for certain principal items of shipments. For purposes of publication, missing data were estimated on the basis of appropriate ratios. For the 1959 and 1960 censuses the general limit for short forms was raised from \$50,000 to \$100,000 value of shipments and a new intermediate form was used. This form is a shortened version of the long form in that some of the general questions were pared down and the detailed lists of materials and products were limited to the more important items. The general limits for firms in this category were set at between \$100,000-\$500,000 value of shipments, but in the case of both the short and inter-

mediate forms there are lower cut-offs for a number of industries in which the smaller firms account for a larger share of total shipments.

In the 1961 Census, in addition to the question on shipments of goods of own manufacture, questions on employment and payroll and on total revenue were added on all short forms. The other elements of principal statistics, viz. value of materials, fuel and electricity, and inventories, are generally estimated by using ratios based on the change in the value of shipments from year to year. This is to permit the complete compilation of basic industry statistics by industry and by geographic location. The proportion of the estimated data is generally less than 5 per cent of the total in each category of principal statistics.

INSTRUMENTAL ANALYSIS OF INDUSTRIAL

COMPOUNDS

1961

The first part of the book is devoted to a general discussion of the principles of instrumental analysis. This includes a review of the various types of instruments used in the analysis of industrial compounds, such as gas chromatography, liquid chromatography, and mass spectrometry. The second part of the book is devoted to the analysis of specific industrial compounds, such as hydrocarbons, alcohols, and amines. This part includes detailed discussions of the various instrumental methods used for the analysis of these compounds, and the results of the analysis are presented in a series of tables and graphs.

The third part of the book is devoted to the analysis of industrial mixtures. This part includes detailed discussions of the various instrumental methods used for the analysis of these mixtures, and the results of the analysis are presented in a series of tables and graphs.

The fourth part of the book is devoted to the analysis of industrial processes. This part includes detailed discussions of the various instrumental methods used for the analysis of these processes, and the results of the analysis are presented in a series of tables and graphs.

The fifth part of the book is devoted to the analysis of industrial waste. This part includes detailed discussions of the various instrumental methods used for the analysis of these wastes, and the results of the analysis are presented in a series of tables and graphs.

MANUFACTURERS OF ELECTRICAL INDUSTRIAL EQUIPMENT 1961

Data for 1961 presented in this report reflect implementation of the revised Standard Industrial Classification (S.I.C.) and the new Establishment Concept which are being used by the Dominion Bureau of Statistics in its compilation of 1961 industry statistics—see items “Standard Industrial Classification” and “Establishment” in the Explanatory Notes section of this report. For statistical purposes the industry titled manufacturers of Electrical Industrial Equipment in the revised Standard Industrial Classification covers the operations of establishments primarily engaged in manufacturing electric motors, generators and other electric power equipment for use in the generation, transmission and utilization of electric energy. Important products of this industry are steam turbine generator sets, motors (except railway, motor vehicle and aircraft), generators, transformers, switchgear, pole-line hardware, lightning arresters, electric welding equipment, electric meters. Establishments primarily engaged in manufacturing electric wire and cable are in Industry number 338—Manufacturers of Electric Wire and Cable.

The introduction of the new definition of establishment (reporting units) in the 1961 Census of Manufactures has resulted in certain changes and necessitated some adjustments to the statistics. For the most part the changes involved combinations of reporting units and adjustments resulting from a change in the basis of valuation.

As a result of increased work loads and staff shortages it has been necessary to suspend publication of certain tables normally contained in this report. It is planned to resume publication of these tables in the 1962 report. In general the tables affected are the following: Directory of firms—Imports—Exports—Capital and Repair Expenditures.

Note: In addition to accommodating the changes resulting from the introduction of the new Standard Industrial Classification and the new definition of establishment, data as presented in the 1961 report for this industry reflect a change in the treatment of progress payments. In the past, no allowance was made for changes in the progress payments accounts of establishments with inventory held under progress payments. However, as of 1961, changes in progress payments accounts of these establishments are being incorporated as part of the value of shipments—see Table 3. Figures for years back to 1957 (Table 1) have been adjusted to reflect this change in procedure.

**TABLE 1. Principal Statistics, Manufacturers of Electrical Industrial Equipment,
by Provinces, 1957-61**

Basis: Revised Standard Industrial Classification and New Establishment Concept.

	Estab- lish- ments	Em- ployees	Salaries and wages	Cost of fuel and electricity at plant	Cost at plant of materials used	Value added by manufacture	Value of factory shipments
	number		dollars				
1957							
Quebec	9	1,819	6,855,461	177,808	7,531,078		19,326,170
Ontario	56	22,197	96,018,247	2,382,816	102,956,457		279,311,424
Manitoba, Saskatchewan and Alberta	5	324	952,304	34,043	2,545,338	¹	4,688,018
British Columbia	7	276	1,265,061	29,455	1,975,188		4,353,660
Canada	77	24,616	105,091,073	2,624,122	115,008,061		307,679,272
1958							
Quebec	11	1,691	6,858,605	182,526	7,983,234	9,595,964	17,533,467
Ontario	62	18,367	91,017,279	1,964,897	87,131,108	117,426,356	208,946,160
Manitoba, Saskatchewan and Alberta	5	271	952,354	42,596	2,293,547	1,710,074	4,100,563
British Columbia	6	207	1,075,001	27,638	1,705,876	1,637,867	3,309,600
Canada	84	20,536	99,903,239	2,217,657	99,113,765	130,370,261	233,889,790
1959							
Quebec	13	1,734	7,154,088	200,396	9,119,227	8,837,140	19,190,021
Ontario	63	15,567	74,292,060	2,410,896	79,398,188	126,000,222	199,039,586
Manitoba, Saskatchewan and Alberta	5	290	1,068,376	44,636	2,716,282	2,366,375	4,903,854
British Columbia	7	227	1,095,398	25,596	1,811,883	2,190,888	4,019,789
Canada	88	17,818	83,609,922	2,681,524	93,045,580	139,394,625	227,153,250
1960							
Quebec	14	1,521	6,611,881	200,502	7,950,185	9,640,870	18,145,970
Ontario	71	15,007	75,075,007	2,323,922	72,684,057	125,112,608	202,672,056
Manitoba, Saskatchewan and Alberta	7	312	1,209,927	45,698	2,412,543	2,156,892	4,596,678
British Columbia	8	239	1,251,416	31,737	1,845,590	3,220,794	4,773,060
Canada	100	17,079	84,148,231	2,601,859	84,892,375	140,131,164	230,187,764
1961							
Quebec	15	1,527	6,750,654	216,841	8,429,444	8,989,205	18,172,371
Ontario	70	14,398	72,204,773	2,083,825	74,525,316	116,501,962	192,801,623
Manitoba, Saskatchewan and Alberta	6	264	987,137	39,129	1,956,205	2,395,331	4,417,042
British Columbia	6	215	1,002,874	25,294	1,900,547	1,428,102	3,490,132
Canada	97	16,404	80,945,438	2,365,089	86,811,512	129,314,600	218,881,168

¹ Because of lack of inventory data "Value added" is not available for 1957.

TABLE 2. Inventories:¹ Manufacturers of Electrical Industrial Equipment, 1961

	Raw materials and supplies	Goods in process	Finished goods of own manufacture	Total
	dollars			
Opening: ²				
Quebec	2,976,593	1,775,930	2,027,924	6,780,447
Ontario	16,793,507	22,092,356	18,150,260	57,036,123
Manitoba, Saskatchewan and Alberta.....	646,667	360,075	286,275	1,293,017
British Columbia.....	449,455	457,530	264,561	1,171,546
Canada	20,866,222	24,685,891	20,729,020	66,281,133
Closing:				
Quebec	2,627,657	1,490,766	1,776,207	5,894,630
Ontario	16,814,276	24,790,257	15,761,839	57,366,372
Manitoba, Saskatchewan and Alberta.....	671,727	452,020	167,953	1,291,700
British Columbia.....	379,125	360,036	225,866	965,027
Canada	20,492,785	27,093,079	17,931,865	65,517,729

¹ Book value of all manufacturing inventories owned and held at plant and plant warehouses.

² The opening inventory for 1961 differs from the closing inventory for 1960 because of the receipt of revised data, the inclusion of new establishments, the removal of figures for establishments which did not operate in 1961, changes in classification and the implementation of the New Establishment Concept.

TABLE 3. Factory Shipments: Manufacturers of Electrical Industrial Equipment, 1961

	Value of factory shipments
	\$
Electrical industrial equipment:	
Industrial control equipment (see Table 10).....	22,810,745
Converter equipment (see Table 12).....	2,472,600
Electric generators and parts (see Table 5).....	8,781,243
Electric motors and parts (see Table 6)	33,744,691
Transformers and parts (see Table 7)	52,780,838
Electrical switchgear and protective equipment (except telephone switchboards) (see Table 8).....	39,010,178
Electric welding apparatus and welding rod (see Table 9).....	5,355,094
Cutouts and fuses (see Table 11).....	2,872,636
Instruments and meters (see Table 13)	9,541,876
Pole line hardware (see Table 14).....	7,290,880
Miscellaneous electrical equipment:	
Conduit and accessories	39,950
Industrial electric heating equipment.....	552,607
Lighting equipment.....	1,161,472
Telecommunication equipment other than domestic radio and television receiving sets	3,283,530
Rectifiers (other than power) (semi-conductor and/or electron tube type) (see Table 12) .....	..
Miscellaneous electrical products	2,309,844
All other products (not specified elsewhere)	23,313,299
Amount received in payment for work done on materials owned by others.....	3,989,654
Less adjustment for value of sales taxes, excise duties and outward transportation charges which were not deducted from individual commodity items detailed above.....	1,631,969
Total value of shipments and work done	217,679,168
Adjustment for work put in place but not shipped during year	1,202,000
Adjusted total	218,881,168

TABLE 4. Materials Used: Manufacturers of Electrical Industrial Equipment, 1961

Material	Quantity	Cost at plant
		\$
Aluminum—Castings..... lb.	1, 136, 241	959, 164
Wire rods "	168, 686	89, 121
Sheets and strip "	663, 427	333, 848
Other.....	...	699, 008
Brass and Bronze—Castings..... lb.	1, 464, 652	1, 108, 417
Wire rods "	350, 286	173, 707
Sheets and strip "	352, 070	210, 614
Other.....	...	196, 974
Copper—Wire rods..... lb.	1, 101, 308	588, 679
Sheets and strip..... "	2, 207, 371	1, 152, 461
Tubing and pipe..... "	225, 195	138, 414
Wire, enamelled "	7, 292, 325	4, 966, 919
Wire, other insulated.....	...	2, 962, 225
Other.....	...	2, 513, 980
Insulating varnishes, japans, enamels and lacquers.....	...	265, 580
Insulators, porcelain and glass.....	...	2, 183, 808
Iron and steel (except alloy):		
Casting—Iron..... ton	5, 966	2, 303, 981
Steel..... "	1, 224	882, 235
Steel bars and rods..... "	14, 964	2, 438, 917
Steel sheets and strip—Plain..... "	31, 049	4, 706, 979
Galvanized..... "	400	66, 000
Steel wire..... "	877	203, 018
Structural steel..... "	3, 060	553, 814
Other (except alloy).....	...	866, 860
Alloy steel:		
Stainless.....	...	224, 066
Silicon sheets and strips..... ton	21, 739	8, 857, 428
Other alloy including tool steel.....	...	543, 504
Lead..... lb.	247, 599	40, 800
Red lead..... "	73, 530	9, 965
Mica..... "	56, 912	66, 817
Motors, electric—Under 1 h.p. No.	40, 322	531, 467
1 h.p. and over a.c. or d.c..... "	4, 379	301, 847
Paints, stains, lacquers.....	...	370, 364
Resins, synthetic.....	...	481, 428
Resistance wire, ribbon and strip..... lb.	10, 156	19, 601
Sulphuric acid..... "	358, 510	14, 114
All other materials ¹.....	...	39, 196, 131
Containers and other packaging materials and supplies.....	...	1, 091, 989
Operating supplies, maintenance supplies and repair supplies.....	...	3, 343, 017
Amount paid out to others for work done on materials owned by others..	...	1, 154, 251
Total.....	...	86, 811, 512

¹ No detailed information on materials used was collected from small establishments. The total estimated value of materials used by these establishments was \$1,915,300 and this amount is included in "All other materials".

TABLE 5. Factory Shipments of Electric Generators and Parts, 1961
(from All Industries)

Item	Number	Total rating	Value of factory shipments
			\$
A.c. generators (except for vehicle and marine use) including horizontal water-wheel driven synchronous generators but not including vertical water-wheel synchronous generators:			
Up to and including 100 kw.	302	..	1,067,464
101 to 500 kw.	82	..	974,768
501 to 1,500 kw.	11	..	5,791,074
1,501 and above .....	...	...	947,937
A.c. vertical water-wheel driven generators, all ratings			
Accessories and parts for a.c. generators			
Steam or gas turbo-driven a.c. generators 5,001 kw. and above			
Total			8,781,243

TABLE 6. Factory Shipments of Electric Motors¹ and Parts, 1961 (from All Industries)

Item	Number	Total rating	Value of factory shipments
		h.p.	\$
A.c. motors (except for railway and vehicle use):			
Single phase induction:			
1/3 h.p. and under (except shaded pole or universal motors)	973,074	241,543	13,053,170
1/2 h.p. and 3/4 h.p.	89,345	50,419	2,309,023
1 h.p. to 5 h.p. inclusive-open type	12,954	21,459	1,006,329
1 h.p. to 5 h.p. inclusive-enclosed type	1,961	3,389	168,734
Polyphase induction:			
1/3 h.p. and under	4,576	1,364	127,945
1/2 h.p. and 3/4 h.p.	10,438	6,257	383,258
1 h.p. to 5 h.p. inclusive-open type	17,846	44,452	1,390,688
1 h.p. to 5 h.p. inclusive-enclosed type	9,874	27,026	961,365
6 h.p. to 25 h.p. inclusive-open type	5,363	69,076	1,103,424
6 h.p. to 25 h.p. inclusive-enclosed type	4,710	56,708	1,175,320
26 h.p. to 100 h.p. inclusive-open type	1,904	100,729	1,274,263
26 h.p. to 100 h.p. inclusive-enclosed type	1,290	64,873	1,201,530
101 h.p. to 200 h.p. inclusive-open type	368	54,872	876,908
101 h.p. to 200 h.p. inclusive-enclosed type	118	16,318	425,515
201 h.p. to 1000 h.p. inclusive	356	166,315	2,288,807
1001 h.p. and over			
Synchronous motors and condensers:			
Up to and including 500 h.p.	40	9,570	273,721
501 h.p. to 2000 h.p.	59	39,150	905,766
2001 h.p. and above	—	—	2
Accessories and parts for a.c. motors	—	—	590,936
Railway and vehicle motors, a.c. and d.c.	—	—	2
Shaded pole type motors, all ratings	305,993	..	1,116,416
Universal type motors, all ratings	86,332	..	318,148

See footnotes at end of table.

**TABLE 6. Factory Shipments of Electric Motors¹ and Parts, 1961
(from All Industries) — Concluded**

Item	Number	Total rating	Value of factory shipments
		h.p.	\$
D.c. motors and generators, including exciters, (except for railway and vehicle use):			
D.c. motors—1/3 kw. and under			²
1/2 kw. and 3/4 kw.	659	380	62,506
D.c. motors or generators:			
1 h.p. or kw. to 5 h.p. or kw.	148	224	51,545
6 h.p. or kw. to 25 h.p. or kw.	129	2,228	387,165
26 h.p. or kw. to 100 h.p. or kw.	239	14,145	1,207,663
101 h.p. or kw. to 200 h.p. or kw.	21	3,390	²
201 h.p. or kw. to 1000 h.p. or kw.	40	12,510	²
1001 h.p. or kw. and over	—	—	²
Accessories and parts for d.c. motors and generators	—	—	319,088
All other motors or generators	—	—	6,658,058 ³
Totals	—	—	35,058,604

¹ Electric motors and/ or generators as indicated.

² Included with "All other motors or generators".

³ Includes rotors and stators.

TABLE 7. Factory Shipments of Transformers, by Types, 1961 (from All Industries)

Type	Number	Total rating	Value of factory shipments
		kva.	\$
Distribution transformers — Dry type up to and including 200 kva. 1 phase, 15 kv. and below; except dry type transformers 2 kva. and below	5,697	139,056	1,523,316
Distribution transformers — Dry type, up to and including 225 kva. 3 phase, 15 kv. and below; except dry type transformers 1 kva. and below	1,840	107,501	1,259,060
Distribution transformers — Liquid filled type, up to and including 200 kva. 1 phase, 15 kv. and below	52,825	1,267,401	12,236,514
Distribution transformers — Liquid filled type, up to and including 225 kva. 3 phase, 15 kv. and below	2,056	180,411	1,095,096
Power transformers 7,500 kva. and less, up to and including 138 kv. class	1,260	1,967,020	9,465,543
Power transformers above 7,500 kva. at all voltages, also all kva. ratings in voltages above 138 kv. class	153	6,423,043	11,437,520
Feeder regulators:			
Single phase step voltage regulators	101	14,964	471,919
Three phase step voltage regulators with 750 kva. of regulation or less			
Induction voltage regulators			
Current transformers:			
Up to and including 15 kv.	23,640	..	1,133,471
Above 15 kv.			
Potential transformers:			
Up to and including 15 kv.	5,499	..	628,078
Above 15 kv.			

TABLE 7. Factory Shipments of Transformers, by Types, 1961
(from All Industries) — Concluded

Type	Number	Total rating	Value of factory shipments
		kva.	\$
Metering outfits (combination of current and potential transformers in one enclosure):			
Up to and including 15 kv.	539	..	383,582
Above 15 kv.			
Luminous tube transformers	200,685	..	1,768,918
Ignition transformers (oil and gas)			
Radio and TV transformers:			
Air core	1,528,146	..	991,026
Powdered iron and therite core			
Laminated core			
Transformers for electronic equipment (other than radio and TV)	2,729,872	..	2,353,438
Fluorescent transformers and ballasts	209,111	..	1,454,444
Mercury lamp transformers	1,960,544	..	8,321,017
Bell ringing and chime transformers	46,417	..	1,478,635
Control and signalling transformers	1	..	1
General purpose dry type transformers, up to and including 2 kva.	51,142	..	414,587
All other transformers	42,562	..	435,773
Parts and supplies for transformers .....	..	..	3,127,830
Totals .....	..	..	1,505,712
			61,483,479

¹ Included in "All other transformers".

TABLE 8. Factory Shipments of Electrical Switch Gear and Protective Equipment
(except Telephone Switchboards), 1961 (from All Industries)

Item	Value of factory shipments
	\$
Switchgear assemblies:	
Metalclad switchgear, 5 kv. and 15 kv. with drawout oil circuit breakers	1,756,097
Metalclad switchgear, 5 kv. and 15 kv. with drawout oilless circuit breakers (includes air and airblast breakers)	4,641,612
600 volt metal-enclosed switchgear (drawout or fixed breakers, but not including moulded case breakers)	3,898,458
Control desks, duplex and open switchboards and supervisory control	1,931,070
Other switchgear assemblies including cubicles, cubicle switchgear, bus trough (except 600 volts) station type cubicle switchgear, fusegear (over 600 volts) etc., but not including capacitor assemblies	4,044,376
Power circuit breakers (sold apart from assemblies and not including sectionalizers or reclosers) —	
Indoor oil or oilless circuit breakers	5,170,038
Outdoor oil circuit breakers	
Outdoor oilless circuit breakers	
Low voltage air circuit breakers (sold apart from assemblies but not including moulded case breakers)	914,923
Disconnecting switches — Indoor type	341,633
Outdoor type	3,295,539
Lightning arresters — 15 kv. and under	760,910
Over 15 kv.	

**TABLE 8. Factory Shipments of Electrical Switch Gear and Protective Equipment
(except Telephone Switchboards), 1961 (from All Industries) — Concluded**

Item	Value of factory shipments
	\$
Power capacitors — Units (sold apart from assemblies)	¹
Assemblies (including units)	¹
Low voltage switchboards (fused or circuit breaker types)	2,367,237
Distribution, lighting and residential panelboards (with fuses or moulded case circuit breakers)	9,837,475
Industrial and residential enclosed safety switches and circuit breakers	7,326,171
Miscellaneous cabinets, wireways, gutters, surface raceways (excluding conduit and metallic tubing) and bus ducts including feeder, plug and trolley types	2,524,059
Oil circuit reclosers and sectionalizers, up to and including 15,000 volts and repair parts	¹
Relays, switchgear type, protective, auxiliary, regulation, etc. (sold apart from switchgear assemblies)	971,708
Potheads	¹
Other switchgear and protective equipment	5,584,489
Totals	55,365,795

¹ Included with "Other".

**TABLE 9. Factory Shipments of Electric Welding Apparatus and Welding Rod, 1952 - 61
(from All Industries)**

Year	Welding apparatus		Welding rod ¹	
	Electric arc welding equipment with controls	Other electric welding apparatus ²	Quantity	Value of factory shipments
	\$	\$	tons	\$
1952	1,494,781	272,015	16,597	5,459,228
1953	1,584,937	2,253,992	12,919	3,728,495
1954	1,213,051	1,530,201	11,926	3,634,811
1955	1,546,582	1,837,222	15,100	4,800,000
1956	2,324,099	3,215,817	20,230	6,823,000
1957	2,426,261	1,738,617	20,199	7,675,440
1958	1,816,938	1,176,631	18,474	7,436,477
1959	1,975,855	2,300,139	21,777	8,459,932
1960	2,175,966	1,650,069	19,490	7,342,000
1961	1,861,092	2,068,824	21,236	9,053,724

¹ Includes both gas and electric welding rod of ferrous type only.

² Includes "Resistance welding equipment with controls".

TABLE 10. Factory Shipments of Industrial Control Equipment, 1961 (from All Industries)

Item	Value of factory shipments
	\$
Traction control—Railway and mine locomotive, trolley coach, street car and self-propelled battery operated lift trucks	1
A.c. single phase and d.c. full voltage fractional horsepower low voltage manual starting switches including horsepower rated snap switches 1 h.p., 250 v. max.	500,769
A.c. and d.c. full voltage single phase and 3 phase integral horsepower manual low voltage starters 7½ h.p., 600 v. max.	593,269
A.c. full voltage single speed and multispeed low voltage magnetic line starters size 0 and up, for squirrel cage motors, 600 v. max. (ampere rated starters for hermetic motors not included)	3,921,670
A.c. low voltage magnetic contractors size 0 and up, and a.c. or d.c. magnetic multipole relays including single-voltage, double-voltage and timing relays and thermal and magnetic relays intended for starting and running protection of motors, 600 v. max. (thermal overload relay heaters furnished separately not included)	1,683,326
A.c. reduced voltage manual low voltage starters for squirrel cage motors, 600 v. max. (synchronous and wound-rotor motor controllers not included)	195,909
A.c. reduced voltage magnetic low voltage starters for squirrel cage motors, auto-transformer, resistor, reactor, part-winding and wye-delta types, 600 v. max. (synchronous, hermetic and wound-rotor motor controllers not included)	542,527
A.c. full voltage and reduced voltage ampere-rated low voltage controllers for hermetic motors, 600 v. max.	116,931
A.c. motor control centres consisting of factory assembled groups of low voltage combination magnetic starters, 600 v. max. (self-standing starter racks and assemblies not included,) ..	3,882,809
A.c. high voltage class E-1 and E-2 induction and synchronous motor controllers, 5,000 v. max. incorporating short circuit current interrupting means higher than 10 times contactor ampere rating	1,351,040
A.c. low-voltage and unfused high voltage synchronous motor controllers and field panels	95,580
A.c. combined motor drives including mine hoist and paper-machine drives and liquid rheostats (packaged adjustable voltage drives not included.)	256,070
All other a.c. motor control equipment including a.c. machine tool control and general purpose panels, wall, floor or machine mounted, consisting of grouped general purpose components, devices and starters; racked group control; a.c. magnetic crane and traffic bridge control and a.c. crane protective panels; a.c. magnetic low voltage and unfused high voltage wound-rotor motor control including magnetic secondary panels; a.c. high voltage contactors; low voltage firepump control; static adjustable voltage drives having static power conversion components; all other a.c. magnetic control n.o.p. all push button and indicating light stations larger than ordinarily listed by manufacturers. (Packaged adjustable voltage drives with rotating amplifiers and/or rotating converters, mine hoist drives and motor control centres not included)	2,005,346
D.c. low voltage magnetic contactors, controllers, starters and time starters including d.c. magnetic machine tool control, d.c. magnetic crane and traffic bridge control, d.c. crane protective panels, d.c. mill auxiliaries, and all other d.c. magnetic control n.o.p. (mine hoist drives not included)	570,082
D.c. mine and mill combined drives including steelmill, paper machine and rubber-mill drives, and static electronic and semi-conductor rectifier drives (d.c. mill auxiliaries not included)	1,192,451
A.c. & d.c. drum and cam switches and controllers, dial starters and rheostats and motor starting and speed controlling resistors mounted separately	321,863
Brakes with a.c. coils or d.c. coils, their clutches and actuators	263,981
Pushbutton and indicating light stations up to maximum grouping ordinarily listed by manufacturers, and pushbutton and indicating light components (not including pushbutton and indicating light stations)	1,317,367
Limit switches and all other pilot control equipment including pressure, vacuum, temperature, and liquid-level switches, plugging switches, speed switches, solenoids and terminal blocks. (Linestarter modification kits, pilot devices used in appliances, air-conditioning, refrigeration, heating and domestic installations not included)	816,552
Resistance welding and electronic control equipment including electronic and static control assemblies, electronic and static magnetic amplifiers, electronic relays, photoelectric controllers, voltage, speed, followup, position, inspection and gauging apparatus and solid-state control devices. (Packaged static adjustable voltage drives not included)	769,346
Renewal parts for industrial control equipment including modification, accessory and repair kits and separately furnished overload relay heaters	2,912,322
All other industrial control equipment	1,068,818
Total	24,378,028

¹ Included with "All other industrial control equipment".

TABLE 11. Factory Shipments of Cutouts and Fuses, 1961 (from all Industries)

Item	Value of factory shipments
	\$
Cutouts and fuses:	
Open, semi-enclosed and enclosed distribution cutouts (601 volts and above), indoor and outdoor fused disconnect switches including porcelain housed, removable switch blades for use therewith (do not include fuse links therefor) and repair parts	1,641,437
Fuse links for distribution cutouts	311,519
Oil fuse cutouts including fuse links therefor and repair parts	¹
Power fuses (solid material type) — Up to and including 600 volts	662,353
Power fuses 601 volts and above (solid material and current limiting types), fuse supports, fuse mountings and repair parts	
Fuse links for power fuses 601 volts and above (solid material and current limiting types)	¹
Cartridge fuses	1,507,745
Plug fuses	
Individual cutouts for cartridge and plug fuses	134,144
All other fuses	417,545
Renewal elements for cartridge fuses	¹
Total	4,674,743

¹ Included in "All other fuses".

TABLE 12. Factory Shipments of Converter Equipment, 1961 (from All Industries)

Type	Number	Total rating	Value of factory shipments
		kv.	\$
Motor-generator sets up to and including 150 kw.—Induction and synchronous types (including frequency changers)	100	2,282	488,311
Motor-generator sets larger than 150 kw.—Induction and synchronous types (including frequency changers).....	43	13,319	697,022
Motor-generator sets — D.c. to d.c. and dynamotors .....	..	..	920,162
Mercury arc power rectifier and excitation cubicles (does not include associated switchgear or transformers)			
Semi-conductor power rectifier equipment including plate and crystal junction types (does not include associated switchgear, transformers or commercial battery chargers):	..	..	367,105
5 kw. to 50 kw.			
Over 50 kw. ....	..	..	367,105
Parts and supplies for converter equipment .....	..	..	367,105
Total of above items	—	—	2,472,600
Rectifiers for storage battery charging (semi-conductor and/or electron tube type)	—	—	1,132,000

TABLE 13. Factory Shipments of Watt-hour Meters, 1952-61 (from All Industries)

Year	Quantity	Value of factory shipments	Year	Quantity	Value of factory shipments
	No.	\$		No.	\$
1952	391,232	6,190,325	1957	469,188	7,951,000
1953	411,523	6,936,263	1958	399,935	6,915,000
1954	434,169	7,368,439	1959	410,943	7,493,000
1955	471,354	7,053,000	1960	315,992	5,978,746
1956	534,742	8,019,000	1961	364,089	6,292,517

TABLE 14. Factory Shipments of Pole Line Hardware, 1952-61 (from All Industries)

Year	Value of factory shipments	Year	Value of factory shipments
	\$		\$
1952	10,213,000	1957	11,988,000
1953	8,169,000	1958	12,303,000
1954	8,065,000	1959	12,251,000
1955	9,130,000	1960	11,146,000
1956	11,888,000	1961	10,617,000

TABLE 15. Principal Statistics classified according to Type of Ownership:
Manufacturers of Electrical Industrial Equipment, 1961

	Estab-lish-ments	Em-ployees	Salaries and wages	Cost at plant of materials used	Value of factory shipments
	number		dollars		
Individual ownerships	2	} 20	65,659	65,584	152,498
Partnerships	1				
Incorporated companies	94	16,384	80,879,779	86,745,928	218,728,670
Totals	97	16,404	80,945,438	86,811,512	218,881,168

TABLE 16. Principal Statistics grouped according to Selling Value of Factory Shipments:
Manufacturers of Electrical Industrial Equipment, 1961

Establishments reporting value of shipments of	Estab-lish-ments	Em-ployees	Salaries and wages	Cost at plant of materials used	Value of factory shipments
	number		dollars		
Under \$ 49,999	5	20	46,376	64,435	147,631
\$ 50,000 to 99,999	13	117	334,841	481,320	982,330
100,000 " 199,999	9	134	540,591	591,769	1,224,226
200,000 " 499,999	18	452	1,775,220	2,764,486	6,543,259
500,000 " 999,999	16	1,002	3,742,088	5,285,725	11,165,602
1,000,000 " 4,999,999	26	4,539	19,922,536	31,151,381	64,387,204
5,000,000 and over	10	9,698	51,737,175	46,472,396	134,430,916
Head office		442	2,846,611		
Totals	97	16,404	80,945,438	86,811,512	218,881,168

TABLE 17. Employees and their Earnings: Manufacturers of Electrical Industrial Equipment, 1961

Province	Employees					Earnings		
	Supervisory and office		Production workers		Total	Supervisory and office	Production workers	Total
	Male	Female	Male	Female				
	number					dollars		
Quebec	4 17	131	782	197	1 527	3 125,479	3 625,175	6 750,654
Ontario	4,433	1,319	7,256	1,390	14,398	33,366,596	38,838,177	72,204,773
Manitoba, Saskatchewan and Alberta	72	21	156	15	264	373,075	614,062	987,137
British Columbia	60	10	130	15	215	294,739	708,135	1,002,874
Canada	4,982	1,481	8,324	1,617	16,404	37,159,889	43,785,549	80,945,438

TABLE 18. Production Workers, by Month: Manufacturers of Electrical Industrial Equipment, 1961

Month	Establishments reporting monthly detail ¹	
	Male	Female
January	7 709	1 389
February	7 737	1 405
March	7 714	1 387
April	7 664	1 422
May	7 879	1 451
June	8 191	1 507
July	8 314	1 536
August	8 371	1 577
September	8 527	1 672
October	8 521	1 692
November	8 497	1 683
December	8 334	1 677
Average for establishments reporting monthly detail	8 124	1 533
Average estimated for small establishments ²	200	84
Average for all establishments	8 324	1 617

¹ The number of production workers, by months, was collected only for large establishments.² The monthly detail of production workers was not collected from small establishments. Only annual averages were collected from these establishments.

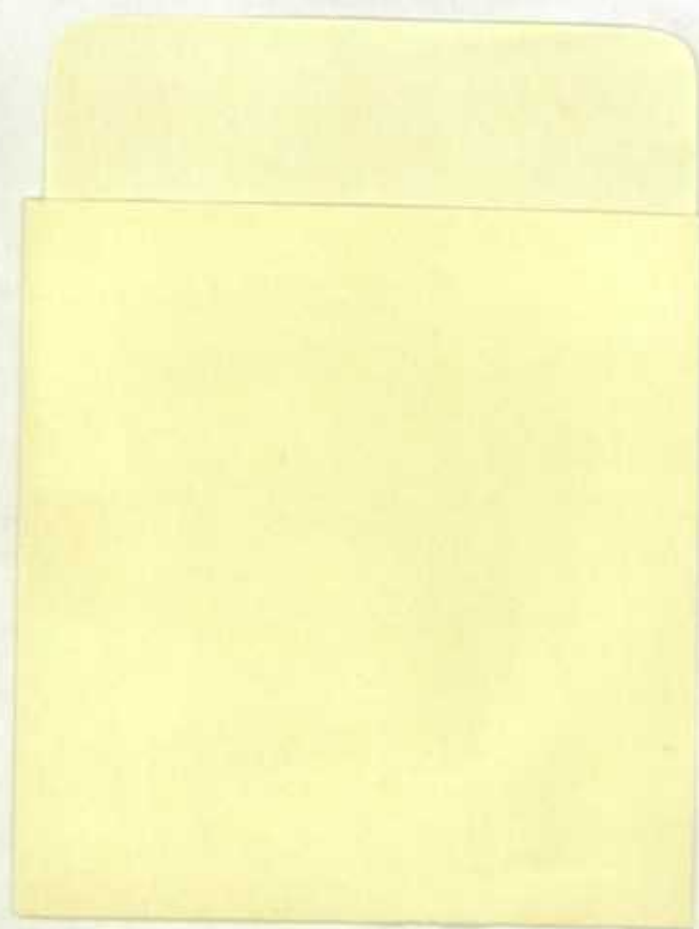
TABLE 19. Fuel and Electricity Used: Manufacturers of Electrical Industrial Equipment, 1961

Kind	Quantity	Cost at plant
		\$
1. Establishments reporting commodity detail: ¹		
Bituminous coal:		
(a) From Canadian mines ton	240	2,839
(b) Imported "	43,238	465,886
Coke (for fuel only)..... "	200	2,032
Gasoline (including gasoline used in cars and trucks)..... Imp. gal.	193,589	71,686
Fuel oil including kerosene or coal oil "	3,172,081	362,761
Gas:		
(a) Liquefied petroleum gases Imp. gal.	42,025	13,327
(b) Natural gas M cu. ft.	160,900	149,317
Other fuel .....	...	5,463
Electricity purchased kwh.	137,149,960	1,222,746
Steam purchased .....	...	30,332
2. Estimate for establishments for which no data were collected: ²		
Cost of fuel and electricity .....	...	38,700
3. All establishments:		
Total cost of fuel and electricity	2,365,089

¹ Large establishments.² Small establishments.



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