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for the electrotechnical, electronic and
information technology trades

Electrical Engineering Textbook

1st edition

Prepared and revised by teachers at vocational colleges and by engineers
(see next page)

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Chapter number and symbols

● **General**

Preface	4
Table of Contents (in detail)	5–10
Notes on subject areas	11–14
Index	from page 651

● **Electrical engineering**

Table of Contents (short)

1 Occupational safety and health	15
2 Basic concepts of electrical engineering	21
3 Basic circuits of electrical engineering	49
4 Electric field	71
5 Magnetic field	82
6 Circuit engineering	101
7 AC and three-phase current technology	126
8 Measurement technology	167
9 Electronics	192
10 Electrical systems	275
11 Protective measures	334
12 Building engineering systems	371
13 Electric machines	449
14 Information technology	511
15 Automation technology	534
16 Materials, manufacturing, environment, energy saving ..	585

● **Profession and workplace** 606

● **Information pages**

- Circuit symbols
- Electrical and general symbols, test signs
- Resistors and capacitors (identification)
- Overcurrent protection equipment (trip characteristics) ...
- Lines and cables (installation types, minimum cross-sections) .
- Lines (current carrying capacity, conversion factors)
- Three-phase motors (operating data)
- Diodes, transistors, thyristor, triacs (characteristics)
- Important abbreviations
- List of companies

● **Practical Tips (selection)**

- RMS-value measurement of non-sinusoidal quantities.
- Measurement with the oscilloscope
- Installation, commissioning of a frequency converter
- Design, dimensioning of a photovoltaic system
- Color coding of conductors
- Installation of power lines
- Example of a power line calculation
- Testing of electrical systems
- Multimedia cabling, networked house
- Selection, connection of an electric motor
- Establish a WLAN connection
- Starting up a business

1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
	

Dear Reader,

The **Electrical Engineering Textbook** is intended for use in initial and continuing training in the profession of electrical engineering. This first English edition is based on the 29th German edition of the established and reliable textbook “Fachkunde Elektrotechnik.” It is used for the teaching of basic and technical knowledge, in particular in the field of energy technology. It is aimed at everyone who is active in this profession.

Target groups (examples)

- Electronics engineers for energy technology and building technology, automation technology, machine and drive technology, industrial engineering, equipment and systems
- Industrial electricians
- Electric systems technicians
- Electrical engineers
- Students

Structure and use of the book

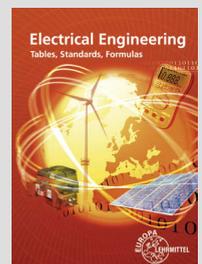
- The book was created by an experienced team of authors made up of teachers, master electricians and engineers.
- It has 17 chapters and is structured systematically according to subjects.
- The book is useful for skills-oriented and practical training.
- It can also be used as a reference work.
- Numerous multi-colored images, tables and charts help with the explanations.
- You will find explanations and uniform representations of important formulas of electrical engineering.
- Formulas and legends form a unit and are highlighted in color inside a frame.
- In the information section, you will find information on electro-technical symbols, characteristics and laying instructions for cables and lines.
- The “Review” pages consolidate and deepen the knowledge you have acquired.
- The results of the calculation tasks from the “Review” can be found on page 631.
- Practical tip pages will be of great support in professional activities.

Note on the standards

The book is based on European and German standards such as DIN, DIN EN, DIN EN ISO and DIN VDE. It is important to note that in some countries other standards, laws and regulations are valid that must be observed.

Auxiliary tool supplementing the Electrical Engineering Textbook

As supplementary technical literature, we recommend for the deepening and completion of your knowledge the book entitled “Electrical Engineering Tables, Standards, Formulas,” also published by Europa-Lehrmittel.



What can we make even better for you? Drop us a line at: info@europa-lehrmittel.de

The team of authors and the publishing house Europa-Lehrmittel

Winter 2016

1	 Occupational safety and health	15	4	 Electric field	71
1.1	Safety and health protection in the workplace	15	4.1	Characteristics of the electric field	71
1.2	Product Safety Act	15	4.2	Basic concepts	72
1.3	Ordinance on Hazardous Substances	16	4.2.1	Electric field strength	72
1.4	Safety symbols	17	4.2.2	Electric induction and polarization	72
1.5	First aid	18	4.2.3	Electric fields in practice	73
	Practical tip: Assessment of risk	19	4.3	Capacitors in a DC circuit	74
	Review the lesson for chapter 1	20	4.3.1	Behavior of a capacitor	74
			4.3.2	Capacitance of a capacitor	74
			4.3.3	Calculation of the capacitance of capacitors	75
2	 Basic concepts of electrical engineering	21	4.3.4	Charging and discharging of capacitors	76
2.1	How to deal with physical quantities	21	4.4	Energy of the charged capacitor	77
	Mass and force	21	4.4	Connections of capacitors	78
	Mechanical work	22	4.4.1	Parallel connection	78
	Energy	22	4.4.2	Series connection	78
	Mechanical power	22	4.5	Characteristics and types of capacitors	79
2.2	Types of electrical circuits	23	4.5.1	Characteristics	79
	Electric direct current circuit	24	4.5.2	Construction types	79
	Circuit symbols	25		Review the lesson for chapter 4	81
2.3	Electric charge (quantity of electricity)	26	5	 Magnetic field	82
	Structure of atoms	27	5.1	Characteristics of magnets and display representation	82
2.4	Voltage	28	5.2	Electromagnetism	84
2.4.1	Voltage sources	28	5.2.1	Current-carrying conductor and magnetic field	84
2.4.2	Potential and voltage	28	5.2.2	Current-carrying coil and magnetic field	85
2.4.3	Types of voltage generation	29	5.3	Magnetic values	86
2.4.4	Measurement of voltage	30	5.3.1	Magnetic flux Φ	86
2.5	Electric current	31	5.3.2	Current linkage Φ	86
2.5.1	Electric current in metals	32	5.3.3	Magnetic field strength H	87
2.5.2	Measurement of electric currents	32	5.3.4	Magnetic flux density B	87
2.5.3	Effects of the electric current	33	5.4	Iron in the magnetic field of a coil	88
2.5.4	Types of current	34	5.5	Current and magnetic field	91
2.5.5	Current density	35	5.5.1	Current-carrying conductor in the magnetic field	91
2.6	Electrical resistance and conductance	36	5.5.2	Current-carrying coil in the magnetic field	93
2.7	Ohm's law	37	5.5.3	Current-carrying parallel conductors	93
2.8	Conductor resistance	38	5.6	Voltage generation through induction	94
2.9	Temperature dependency of the resistance	39	5.6.1	Generator principle (induction through motion)	94
2.10	Design types of resistors	40	5.6.2	Lenz's rule	95
2.11	Electric energy and work	42	5.6.3	Transformer principle (stationary induction)	96
2.11.1	Generation of electric energy	42	5.6.4	Self-induction	98
2.11.2	Electric work	43	5.6.5	Eddy currents	99
2.12	Electric power	44		Review the lesson for chapter 5	100
2.13	Efficiency	46	6	 Circuit engineering	101
2.14	Electric heat	47	6.1	Circuit documents	101
	Review the lesson for chapter 2	48		Practical tip: Installation of a two-way circuit with socket	103
3	 Basic circuits in electrical engineering	49	6.2	Circuit installations	104
3.1	Series connection	49	6.2.1	Lamp circuits	104
3.1.1	Rules of series connection	49	6.2.2	Circuits with indicator lights	106
3.1.2	Series resistors	51	6.2.3	Circuit with a latching relay	107
3.1.3	Voltage drop on lines	52	6.2.4	Infrared motion sensor	107
3.2	Parallel connection	53	6.2.5	Circuit with stairway timer switch	108
3.3	Hybrid circuits	55	6.2.6	Paging systems	108
3.3.1	Voltage dividers	55	6.2.7	Intercoms	109
3.3.2	Bridge circuits	57	6.3	Electromagnetic switches	111
3.3.2.1	Balanced bridge circuit	57	6.3.1	Relays	112
3.3.2.2	Unbalanced bridge circuit	58	6.3.2	Contactors	114
3.3.3	Resistance determination by means of current and voltage measurement	59	6.3.3	Contactors	115
3.4	Voltage source	60		Jog mode	115
3.4.1	Loads of a voltage source	60		Self-holding circuit	115
3.4.2	Equivalent circuit of a voltage source	61	6.3.3.1	Sequential circuit	116
3.4.3	Matching	61		Applications of contactor circuits	116
3.4.4	Connections of voltage sources	63		Reversing contactor circuit	116
3.5	Galvanic elements	64		Star-delta contactor circuit	117
3.5.1	Conversion of chemical energy into electric energy	64		Automatic star-delta contactor circuit	119
3.5.2	Primary elements	65		Dahlander circuit	120
3.5.3	Secondary elements (batteries)	67	6.4	Terminal diagram	121
	Review the lesson for chapter 3	70	6.5	Electrical design of machines	122
				Practical tip: Requirements for control circuits	124
				Review the lesson for chapter 6	125