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 - 5.1.2 Rotary encoders
 - 5.1.3 Inclination, tilt
 - 5.1.4 Distance, length, elevation
 - 5.1.5 Level, depth
 - 5.1.6 Coat thickness, roughness
 - 5.1.7 Position, contour (2D/3D)
 - 5.1.8 Other parameters
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- 5.4 Sensors for temperature and calorific parameters**
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 - 5.5.2 Humidity (solid matter)
 - 5.5.3 Particle density
 - 5.5.4 Wind direction, wind force, wind velocity
 - 5.5.5 Barometric pressure
 - 5.5.6 Room climate
 - 5.5.7 Other parameters
 - 5.5.8 CO₂ sensor
- 5.6 Sensors for optical and acoustic parameters**
 - 5.6.1 Light intensity
 - 5.6.2 Radiation
 - 5.6.3 Opaqueness, absorption, transmission
 - 5.6.4 Refraction, reflexion, remission, brilliancy
 - 5.6.5 Chromaticity
 - 5.6.6 Image detection, image evaluation
 - 5.6.7 Sound, solid-borne sound, volume

- 5.6.8 Other parameters
- 5.7 Sensors for electrical and magnetical parameters**
 - 5.7.1 Voltage, current
 - 5.7.2 Charge, capacitance
 - 5.7.3 Field strength
 - 5.7.4 Resistance, conductivity
 - 5.7.5 Inductivity
 - 5.7.6 Power, energy
 - 5.7.7 Other parameters
- 5.8 Sensors for chemical parameters
- 5.9 Sensors for biological parameters
- 5.10 Sensor elements by technology**
 - 5.10.1 Potentiometer and resistive sensor elements
 - 5.10.2 Inductive
 - 5.10.3 Capacitive
 - 5.10.4 Optoelectronic
 - 5.10.5 Magnetic
 - 5.10.6 Piezo electrical
 - 5.10.7 Ultrasonic
 - 5.10.8 UV and IR
 - 5.10.9 Laser
 - 5.10.10 Radar
 - 5.10.11 X-rays
 - 5.10.12 Biometric
 - 5.10.13 Other technologies

6 Test and measurement

- 6.1 Measuring / testing of geometric parameters**
 - 6.1.1 Linear measurement devices
 - 6.1.2 GPS positioning systems
- 6.2 Mechanical parameters**
 - 6.2.1 Torque measurement equipment
 - 6.2.2 Force meters
 - 6.2.3 Pressure meters
 - 6.2.4 Scale equipment
 - 6.2.5 Mechanical parameters, miscellaneous
- 6.3 Time and time-based parameters**
 - 6.3.1 Acceleration meters
 - 6.3.2 RPM measurement
 - 6.3.3 Speed measurement
 - 6.3.4 Time / frequency distribution equipment (networks)
 - 6.3.5 Time counters
 - 6.3.6 Frequency and time standards
- 6.4 Thermal units**
 - 6.4.1 Temperature meters
 - 6.4.2 Micro-thermographs without contact
- 6.5 Environmental parameters**
 - 6.5.1 Humidity meters, relative air
 - 6.5.2 Shock, vibration meters
- 6.6 Chemical and biological parameters
- 6.7 Optical and acoustical parameters**
 - 6.7.1 Optical spectrum analyzers
 - 6.7.2 Optical time domaine reflectometers

- 6.7.3 Optical power meters
- 6.7.4 Optical network analyzers
- 6.7.5 Optical signal generators
- 6.7.6 Optical amplifiers
- 6.7.7 Optical multimeters
- 6.7.8 Fiber optic measurement equipment, miscellaneous
- 6.7.9 Sound level meters
- 6.8 Image / pattern recognition and processing**
 - 6.8.1 Image-processing software
 - 6.8.2 Identification systems
 - 6.8.3 Lighting systems for image / pattern recognition
 - 6.8.4 Optical inspection systems
 - 6.8.5 Technical endoscopes
 - 6.8.6 Equipment for image / pattern recognition and processing, miscellaneous
- 6.9 Electrical parameters**
 - 6.9.1 Analog measurement techniques**
 - 6.9.1.1 RF measurement equipment**
 - 6.9.1.1.1 Frequency counters
 - 6.9.1.1.2 Power meters
 - 6.9.1.1.3 Spectrum analyzers
 - 6.9.1.1.4 Reflectometers
 - 6.9.1.1.5 Measurement receivers
 - 6.9.1.1.6 Network analyzers, scalar
 - 6.9.1.1.7 Network analyzers, vector

- 6.9.1.1.8 Signal generators
- 6.9.1.1.9 Sweep generators
- 6.9.1.1.10 Noise-figure meters
- 6.9.1.1.11 Measurement equipment for electrical / magnetic parameters, miscellaneous
- 6.9.1.2 Microwave measurement equipment
- 6.9.1.3 EMI measurement techniques**
 - 6.9.1.3.1 EMI measurement receivers
 - 6.9.1.3.2 EMI test systems
 - 6.9.1.3.3 EMC test-site equipment
 - 6.9.1.3.4 Field-strength measurement devices
 - 6.9.1.3.5 Probes
 - 6.9.1.3.6 Antennas
 - 6.9.1.3.7 ESD testers
 - 6.9.1.3.8 Magnetic-field measurement equipment
 - 6.9.1.3.9 Standards for electrical / magnetic parameters
 - 6.9.1.3.10 LISNs
 - 6.9.1.3.11 Power amplifiers
 - 6.9.1.3.12 Surge and burst test equipment
 - 6.9.1.3.13 Testing electrical / magnetic properties, other devices for
- 6.9.1.4 Accessories for RF and μ W measurement equipment**
 - 6.9.1.4.1 Measurement bridges
 - 6.9.1.4.2 Reflection bridges
 - 6.9.1.4.3 Calibration kits





Product Index Range of exhibits according to product groups

6.9.1.4.4	Power sensors	6.9.3.2	ATM analyzers	6.9.7.3	Simulators
6.9.1.4.5	High-frequency test tips	6.9.3.3	LAN analyzers	6.9.7.4	Simulation software
6.9.1.4.6	Attenuators	6.9.3.4	WAN analyzers	6.9.7.5	ATE software
6.9.1.4.7	Detectors	6.9.3.5	PCI bus analyzers and measurement adapters	6.9.8	Peripheral equipment
6.9.1.4.8	Power splitters	6.9.3.6	USB analyzers	6.9.8.1	DSP cards
6.9.1.4.9	Couplers	6.9.3.7	Bus testers	6.9.8.2	A/D converter cards
6.9.1.4.10	Test sets	6.9.3.8	Fiber-optic measurement equipment	6.9.8.3	D/A converter cards
6.9.1.4.11	Noise generators	6.9.3.9	Precision frequency sources	6.9.8.4	Laboratory instrumentation accessories
6.9.1.4.12	RF measurement cables	6.9.3.10	TV and radio measurement equipment	6.9.8.5	Laboratory mains equipment
6.9.1.5	Audio measurement equipment	6.9.4	Mobile radio measurement equipment	6.9.8.6	Standards for measurement/testing
6.9.1.5.1	Level meters	6.9.4.1	Test systems for analog mobile radios	6.9.8.7	Calibration equipment, passive
6.9.1.5.2	Distortion factor measurement devices	6.9.4.2	Test systems for digital mobile radios	6.9.8.8	Measurement/analysis devices for laboratory examinations, miscellaneous
6.9.1.5.3	Signal analyzers, also FFT	6.9.4.3	Signal generators for digital mobile radio transmission	6.9.8.9	Measured-value amplifiers
6.9.1.5.4	Signal generators	6.9.4.4	Analyzers for digital mobile radio transmission	6.9.8.10	Probes
6.9.1.6	General-purpose measurement equipment	6.9.4.5	Geographical radio-coverage analysis systems	6.9.8.11	Differential probes
6.9.1.6.1	Voltmeters	6.9.4.6	Type-approval test systems	6.9.8.12	Testing aids, miscellaneous
6.9.1.6.2	Current meters	6.9.5	Protective-measure test devices	6.9.8.13	Adapters for component testing
6.9.1.6.3	Power meters	6.9.5.1	Ground test equipment	6.9.8.14	Probe cards
6.9.1.6.4	Multimeters, voltmeters	6.9.5.2	Insulation testers	6.9.8.15	Bed-of-nails adapters
6.9.1.6.5	Signal generators	6.9.5.3	High-voltage testers	6.9.8.16	Test fixtures, miscellaneous
6.9.1.6.6	Function generators	6.9.5.4	Short-circuit localization devices	6.9.8.17	Test pins
6.9.1.6.7	Pulse generators	6.9.5.5	Safety testers, multitesters	6.9.8.18	Test pin arrays
6.9.1.6.8	Arbitrary waveform generators	6.9.6	Test systems	6.9.8.19	Connection testers
6.9.1.6.9	Oscilloscopes	6.9.6.1	Semiconductor test systems	6.9.8.20	Measurement cables/leads
6.9.1.6.10	Resistance meters	6.9.6.2	IC testers	6.9.8.21	Measurement data-transmission equipment
6.9.1.6.11	Impedance meters	6.9.6.3	Mixed-signal test systems	6.9.8.22	PC instrumentation
6.9.1.6.12	Capacitance meters	6.9.6.4	Board testers	6.10	Specialized laboratory/ test equipment
6.9.1.6.13	Inductance meters	6.9.6.5	Boundary scan board test systems	6.10.1	Aging test equipment
6.9.1.6.14	Transient-value recorders	6.9.6.6	In-circuit testers	6.10.2	Burn-in equipment
6.9.1.6.15	Transmission-time measurement devices	6.9.6.7	Functional testers	6.10.3	Identification tools
6.9.1.6.16	Energy-consumption measurement	6.9.6.8	Combination testers (in-circuit & function)	6.10.4	Shielded rooms
6.9.1.6.17	Powerline measurement equipment IEC 1000-3-3	6.9.6.9	VXI bus test systems	6.10.5	Measurement cabinets and chambers
6.9.1.6.18	Power analyzers/ disturbance analyzers	6.9.6.10	VME bus test systems	6.10.6	Programming equipment
6.9.1.6.19	Measurement equipment, miscellaneous	6.9.6.11	Benchtop ATEs, miscellaneous	6.10.7	Visual inspection (with image processing)
6.9.1.7	Current sinks	6.9.6.12	Real-time measured-value acquisition systems	6.10.8	Environmental simulation/ test equipment
6.9.1.7.1	Resistive loads	6.9.6.13	Adapters for assembly testing	6.10.9	Radiation sources for measurement purposes
6.9.1.7.2	Inductive loads	6.9.6.14	Test systems without adapters	6.10.10	Reference voltage sources
6.9.1.7.3	Capacitive loads	6.9.6.15	Measurement-data acquisition systems with distributed sensors	6.10.11	Reference current sources
6.9.1.7.4	Variable loads	6.9.6.16	Multiple-channel measurement systems (loggers)	6.10.12	Time standards
6.9.1.7.5	Programmable loads	6.9.6.17	Computer-aided measurement/ analysis systems (CAMA)	6.10.13	Hand tools
6.9.1.8	Hand-held measurement equipment	6.9.6.18	Component testers for electronics (hardware-specific)	6.10.14	Special electronics hand tools
6.9.1.8.1	Multimeters	6.9.6.19	Power supply test equipment	6.10.15	ESD hand tools
6.9.1.8.2	Oscilloscopes	6.9.6.20	Cable test systems	6.10.16	Lab furniture
6.9.1.8.3	LWL multimeters	6.9.6.21	Test systems, miscellaneous	6.10.17	ESD benches
6.9.2	Digital measurement equipment	6.9.7	Software tools for test systems	6.10.18	Specialized laboratory/ test equipment, miscellaneous
6.9.2.1	Logic analyzers	6.9.7.1	Data evaluation tools for measurement purposes		
6.9.2.2	Logic generators, word generators	6.9.7.2	Databases, measurement technologies		
6.9.2.3	Embedded software and verification tools				
6.9.2.4	Digital measurement equipment, miscellaneous				



Product Index Range of exhibits according to product groups

7 Electronic Design (ED/EDA)

7.1 CAD/CAE tools	7.4 Software for special applications	7.6.1.6 Gate-array design for ASICs
7.1.1 Development software	7.4.1 Software design programs, CASE tools	7.6.1.7 Standard-cell design for ASICs
7.1.1.1 CAD/CAM interface software	7.4.2 Software for electronic labs	7.6.1.8 ASIC design services for other architectures
7.1.1.2 Chip design programs	7.4.3 System integration programs	7.6.1.9 Miniaturization development
7.1.1.3 Design programs, miscellaneous/ specialized	7.4.4 Thermoanalysis software	7.6.1.10 Customized circuit development, digital, analog, mixed-signal design
7.1.1.4 Design-to-test software	7.4.5 Software packages / tools, miscellaneous	7.6.1.11 Customized circuit development, RF and μ W design
7.1.1.5 RF design programs	7.4.6 Compilers	7.6.1.12 PGA design for ASICs
7.1.1.6 VHDL development systems	7.4.7 Libraries / databases	7.6.1.13 Characterization and optimization of magnetic components
7.2 Generation software	7.4.8 Real-time operating systems	7.6.1.14 Development of synthesis-capable functional models
7.2.1 Circuit optimization routines	7.4.9 Emulators	7.6.1.15 Development services, miscellaneous
7.2.2 Layout editors	7.4.10 Customized software	7.6.2 Manufacturing services
7.2.3 Routers for EDA	7.5 Peripheral equipment for ED/EDA environments	7.6.2.1 Prototype construction, housings
7.2.4 Modeling programs	7.5.1 Data terminals	7.6.2.2 Burn-in services
7.2.5 Board design programs	7.5.2 Card readers	7.6.2.3 Operating life testing
7.2.6 Synthesis tools	7.6 ED/EDA services	7.7 Design and development systems
7.2.7 Debuggers	7.6.1 Development services	7.7.1 ASIC design tools
7.3 Test software	7.6.1.1 Software development	7.7.2 PCB design tools
7.3.1 Simulation programs	7.6.1.2 PCB design technology consulting	7.7.3 Design and development systems, miscellaneous
7.3.2 Diagnostic programs	7.6.1.3 Circuit optimization services	
7.3.3 Verification programs	7.6.1.4 Fault analysis	
7.3.4 EMI/EMC test software	7.6.1.5 Release testing	
7.3.5 Application software, miscellaneous		

8 Passive components

8.1 Inductors and accessories	8.2.1.9 EMI capacitors	8.3.2 Variable resistors
8.1.1 DC Inductors, Filter reactors	8.2.1.10 Feed-through capacitors	8.3.2.1 Wire-wound potentiometers
8.1.2 Common mode chokes	8.2.1.11 Capacitors and accessories for power factor correction (PFC)	8.3.2.2 Conductive plastic potentiometers
8.1.3 Inductor cores, pressed cores	8.2.1.12 Power capacitors	8.3.2.3 Layered potentiometers
8.1.4 Laminated core inductors	8.2.1.13 SMD capacitors	8.3.2.4 Precision potentiometers
8.1.5 Aircore coils	8.2.1.14 Tantalum electrolytic capacitors	8.3.2.5 Rotary potentiometers
8.1.6 Transponder coils	8.2.1.15 Ultra capacitors	8.3.2.6 Linear potentiometers
8.1.7 Charging coils	8.2.1.16 Capacitors, miscellaneous	8.3.2.7 Sliding resistors
8.1.8 Deflection coils	8.2.2 Capacitors, variable	8.3.2.8 Trimmer resistors
8.1.9 Scanning Line transformers	8.2.2.1 Rotary capacitors	8.3.2.9 Adjustable resistors, miscellaneous
8.1.10 Planar transformers	8.2.2.2 Trimmer capacitors with solid dielectrics	8.3.2.10 Nonlinear resistors
8.1.11 Ignition spark transformers	8.2.2.3 Air dielectric variable capacitors	8.3.2.11 Controllable resistors
8.1.12 Audio transformers	8.3 Resistors (including R networks)	8.3.2.12 Motor potentiometers
8.1.13 Isolation transformers	8.3.1 Fixed resistors	8.3.2.13 Variable resistors, miscellaneous
8.1.14 Power transformers	8.3.1.1 Individual fixed resistors, standard	8.4 Radiofrequency and microwave components
8.1.15 L/C networks (PFC)	8.3.1.2 SMD resistors	8.4.1 Antennas and antenna accessories
8.1.16 SMD inductors	8.3.1.3 SMD resistor networks	8.4.1.1 Antennas
8.1.17 Multilayer inductors	8.3.1.4 High-voltage resistors	8.4.1.2 Antenna components
8.1.18 Inductors, miscellaneous	8.3.1.5 Power resistors, air-cooled	8.4.1.3 Absorbers
8.1.19 Accessories, miscellaneous	8.3.1.6 Power resistors, water-cooled	8.4.1.4 Tuner units
8.2 Capacitors	8.3.1.7 Measurement resistors	8.4.1.5 Antenna accessories, miscellaneous
8.2.1 Capacitors, fixed	8.3.1.8 Calibration resistors	8.4.2 Signal transmission, RF
8.2.1.1 Aluminum electrolytic capacitors	8.3.1.9 Resistor combinations / networks	8.4.2.1 Waveguide components and systems
8.2.1.2 Capacitor networks	8.3.1.10 Inrush current limiters	8.4.2.2 Directional couplers
8.2.1.3 Film capacitors	8.3.1.11 Varistors	8.4.2.3 Circulators
8.2.1.4 High-voltage capacitors	8.3.1.12 NTC thermistors	8.4.2.4 Isolators
8.2.1.5 Ceramic capacitors	8.3.1.13 PTC thermistors	8.4.2.5 Signal transmission, RF, miscellaneous
8.2.1.6 Capacitors with non-standard dielectrics	8.3.1.14 Fixed resistors, miscellaneous	8.4.2.6 RF transformers
8.2.1.7 Capacitors, special design		
8.2.1.8 Plastic capacitors		



Product Index Range of exhibits according to product groups

8.4.3	RF switches	8.4.8	Filters, resonators and oscillators	8.4.9.5	Specialized tubes
8.4.4	Signal influencing	8.4.8.1	Filters	8.4.9.6	Vacuum switching elements
8.4.4.1	Power splitters	8.4.8.1.1	L/C filter arrays	8.4.9.7	Traveling wave tubes
8.4.4.2	Combiners	8.4.8.1.2	R/C filter arrays	8.4.9.8	Tubes, miscellaneous
8.4.4.3	Step attenuators	8.4.8.1.3	YIG filters	8.5	Polymer components
8.4.4.4	Attenuators	8.4.8.1.4	SAW filters	8.6	Nonlinear high-voltage components
8.4.4.5	Phase shifters	8.4.8.1.5	BAW filters	8.6.1	Arresters
8.4.4.6	Delay lines	8.4.8.1.6	Crystal filters	8.6.2	Switching spark gaps
8.4.4.7	Mixers	8.4.8.1.7	Ceramic filters	8.6.3	Starters for gas discharge tubes
8.4.4.8	Components for signal modification, miscellaneous	8.4.8.1.8	Coupling filters	8.7	Passive components, miscellaneous
8.4.5	Accessories	8.4.8.1.9	Customized filters	8.8	Piezoelectric components
8.4.5.1	Loads, chip	8.4.8.1.10	Filters, miscellaneous	8.8.1	Piezoelectric signal generators
8.4.5.2	Loads, coax	8.4.8.2	Resonators	8.8.2	Piezoceramic wares
8.4.5.3	Loads, waveguide	8.4.8.2.1	Microwave ceramics	8.8.3	Piezo foils
8.4.5.4	Rotary couplings	8.4.8.2.2	SAW resonators	8.8.4	Piezo actuators
8.4.5.5	Seals	8.4.8.2.3	Cavity resonators	8.9	Magnetic and electro ceramic products
8.4.5.6	DC blocks	8.4.8.2.4	Resonators, miscellaneous	8.9.1	AlNiCo magnets
8.4.5.7	Adapters, coax-waveguide	8.4.8.3	Oscillators	8.9.2	Hard-ferrite magnets
8.4.5.8	Adapters, coax-coax	8.4.8.3.1	Crystal oscillators	8.9.3	Plastic-bonded hard-ferrite magnets
8.4.5.9	Circulators, coax	8.4.8.3.2	VCXO modules	8.9.4	Plastic-bonded neodymium iron boron magnets
8.4.5.10	Circulators, waveguide	8.4.8.3.3	TCXO modules	8.9.5	Magnetic systems
8.4.5.11	Accessories, miscellaneous	8.4.8.3.4	OCXO modules	8.9.6	Neodymium iron boron magnets
8.4.6	Passive microwave components, miscellaneous	8.4.8.3.5	Programmable oscillators	8.9.7	Samarium cobalt magnets
8.4.7	Microwave components, active	8.4.8.3.6	Crystal oscillators, miscellaneous	8.9.8	Soft-ferrite products
8.4.7.1	Mixers	8.4.8.3.7	Oscillators for SMT	8.9.9	Ferroelectric ceramic tubes
8.4.7.2	Amplifiers	8.4.8.3.8	Tuning-fork oscillators	8.9.10	Ferroelectric ceramic parts
8.4.7.3	Frequency multipliers	8.4.8.3.9	Synthesizer modules	8.9.11	Ceramic molded parts
8.4.7.4	YIG components	8.4.8.3.10	Oscillator modules, miscellaneous	8.9.12	Ceramic insulation inserts
8.4.7.5	Microwave components, active, miscellaneous	8.4.9	Tubes	8.9.13	Amorphous Cut Cores
		8.4.9.1	X-ray tubes	8.9.14	Magnetic and electro ceramic products, miscellaneous
		8.4.9.2	Transmitter tubes		
		8.4.9.3	Generator tubes		
		8.4.9.4	Microwave tubes		

9 Electromechanics / System peripherals

9.1	Relays, switches and keyboards	9.1.1.21	Switches, miscellaneous	9.1.5	Detector and signaling devices
9.1.1	Switches for continuous connection	9.1.2	Switches with additional functions	9.1.5.1	Optical signaling devices
9.1.1.1	Encoder switches	9.1.2.1	Selection switches	9.1.5.2	Optical / acoustical signaling devices
9.1.1.2	DIL switches	9.1.2.2	Circuit breaker	9.1.5.3	Acoustical signaling devices
9.1.1.3	Dial / rotary switches	9.1.2.3	Time switches	9.1.5.4	Ex-signaling devices
9.1.1.4	Push-button switches	9.1.2.4	Tilt switches	9.1.5.5	Loudspeakers
9.1.1.5	Remote-control switches, miscellaneous	9.1.2.5	Thermo switches	9.1.5.6	Tone generators, electronic
9.1.1.6	Manually activated switches, miscellaneous	9.1.2.6	Sensor switches	9.1.5.7	Microphones
9.1.1.7	Toggle switches	9.1.2.7	ASI switches	9.1.5.8	Sound generators, electromechanical
9.1.1.8	Multiplexers	9.1.3	Electrical keys	9.1.6	Keyboards
9.1.1.9	Matrix switches	9.1.3.1	Limit keys	9.1.6.1	Keyboards
9.1.1.10	PCB switches	9.1.3.2	Input keys	9.1.6.2	PC keyboards
9.1.1.11	Illuminated key switches / keypads	9.1.3.3	Miniature keys	9.1.6.3	Flat keyboards
9.1.1.12	Miniature switches	9.1.3.4	Sensor keys	9.1.6.4	Membrane keyboards
9.1.1.13	Subminiature switches	9.1.3.5	ASi keys	9.1.6.5	Short-stroke keyboards
9.1.1.14	Reed switches	9.1.3.6	Electrical keys, miscellaneous	9.1.6.6	MF keyboards (multifunctional)
9.1.1.15	Opto switches	9.1.4	Detector components	9.1.6.7	Miniature keyboards
9.1.1.16	Piezo switches	9.1.4.1	Event detectors / counters	9.1.6.8	Piezo keypads
9.1.1.17	Sliding switches	9.1.4.2	Light barriers	9.1.6.9	Sensor keys / keyboards
9.1.1.18	Safety switches	9.1.4.3	Reflectors for light barriers	9.1.6.10	Silicone keyboards
9.1.1.19	SM-capable switches	9.1.4.4	Signal generators, acoustic	9.1.6.11	Specialized keyboards
9.1.1.20	Incremental switch / resistor combinations	9.1.4.5	Proximity switches	9.1.6.12	Keyboard systems
		9.1.4.6	Limit switches	9.1.6.13	Touch-glass keyboards
		9.1.4.7	Detector components, miscellaneous	9.1.6.14	LCD single-key keyboards
				9.1.6.15	Touch panels



Product Index Range of exhibits according to product groups

9.1.7	Components and accessories for keyboards	9.2.1.8	SMD print connectors 0.635 mm pitch	9.2.6.1.9	PC 3.5 mm connectors
9.1.7.1	Panel membranes for keyboards	9.2.1.9	Standardized connectors, miscellaneous	9.2.6.1.10	PC 2.4 mm connectors
9.1.7.2	Separation membranes for keyboards	9.2.1.10	RCA plugs / jacks	9.2.6.1.11	PC 2.0 mm connectors and smaller
9.1.7.3	Silicone keypads for keyboards	9.2.1.11	Mains power appliance inlets	9.2.6.1.12	Adapters
9.1.7.4	Silicone rubber keypads	9.2.1.12	Mains power appliance outlets	9.2.6.1.13	Twinaxial components
9.1.7.5	Piezo keys	9.2.2	Connectors for specific handling	9.2.6.1.14	Coaxial connectors, miscellaneous
9.1.7.6	LCD single keys	9.2.2.1	Crimp connectors, open frame	9.2.6.2	Fiber-optic plug-in connectors
9.1.7.7	Key modules	9.2.2.2	Crimp connectors, rectangular	9.2.6.3	Data connectors (e.g. RJ 45)
9.1.8	Initiation devices, manually activated	9.2.2.3	Crimp connectors, round	9.2.7	Cables with connectors
9.1.8.1	Console components	9.2.2.4	Crimp connectors, miscellaneous	9.2.7.1	Configured cable / connector combinations for data technology
9.1.8.2	User consoles for night usage	9.2.2.5	Plug-in connectors for press-fit applications	9.2.7.2	Configured cable / connector combinations for household equipment
9.1.8.3	Input systems	9.2.2.6	Plug-in connectors for soldered connections	9.2.7.3	Configured cable / connector combinations for industrial electronics
9.1.8.4	Remote controls	9.2.2.7	Plug-in connectors with solder tags	9.2.7.4	Configured cable / connector combinations for consumer electronics
9.1.8.5	Initiation devices, miscellaneous	9.2.2.8	Plug-in connectors with crimp connectors	9.2.7.5	Configured cable / connector combinations for automotive applications
9.1.8.6	Trackball input devices	9.2.2.9	Plug-in connectors for wire-wrap connectors	9.2.7.6	Configured cable / connector combinations for laboratory / testing technology
9.1.8.7	Mouse	9.2.2.10	Plug-in connectors for insulation displacement assembly	9.2.7.7	Configured cable / connector combinations for the aerospace industry
9.1.8.8	Joysticks	9.2.3	Connectors, PCB-mountable	9.2.7.8	Configured cable / connector combinations for miscellaneous applications
9.1.8.9	Miniature joysticks	9.2.3.1	Fine-pitch connectors	9.2.7.9	Configured cable / connector combinations for telecommunications
9.1.9	Relays	9.2.3.2	Card plug-in connectors	9.2.7.10	Ribbon cable connection systems
9.1.9.1	DIL relays	9.2.3.3	PCB connection systems	9.2.7.11	Powercords
9.1.9.2	Poled relays	9.2.3.4	PCB connectors	9.2.8	Connectors with additional functions
9.1.9.3	Telecommunications relays	9.2.3.5	DIP plug-in connectors	9.2.8.1	Inverted plug-in connectors
9.1.9.4	Card relays	9.2.3.6	SM-capable connectors	9.2.8.2	Encoder plug-in connectors
9.1.9.5	Hermetically sealed relays	9.2.3.7	Ball-grid array adapters	9.2.9	Connectors, specific forms
9.1.9.6	Automotive relays	9.2.3.8	SM test points	9.2.9.1	Miniature plug-in connectors
9.1.9.7	Miniature relays	9.2.4	Sockets	9.2.9.2	Right-angle plug-in connectors
9.1.9.8	Microrelays	9.2.4.1	Plug bodies, modular	9.2.9.3	Round plug-in connectors
9.1.9.9	Mains power-isolating relays	9.2.4.2	IC sockets	9.2.9.4	Zero-force plug-in connectors (ZIF)
9.1.9.10	Phase monitor relays	9.2.4.3	IC footprint converters	9.2.9.5	Cut / crimp connectors (IP)
9.1.9.11	Reed relays	9.2.4.4	IC test clips	9.2.9.6	Flat plug-in connectors
9.1.9.12	Relays with forcibly guided (linked) contacts	9.2.4.5	PGA sockets	9.2.9.7	SMD connectors, 0.635 mm pitch
9.1.9.13	Incremental switch relays	9.2.4.6	Ball-grid array sockets	9.2.9.8	Foil-type plug-in connectors
9.1.9.14	Contactors / relays, miscellaneous	9.2.4.7	Lead frames	9.2.9.9	Ribbon cable connectors
9.1.9.15	Sensor relays	9.2.4.8	Sockets, miscellaneous	9.2.10	Miscellaneous connectors
9.1.9.16	Relays as SMDs	9.2.5	Connectors, application-oriented	9.2.10.1	Transfer plug-in connectors (I / O)
9.1.9.17	Current relays	9.2.5.1	Railway plug-in connectors	9.2.10.2	Coupling plug-in connectors
9.1.9.18	Thermorelays	9.2.5.2	Mining plug-in connectors	9.2.10.3	Customized plug-in connectors
9.1.9.19	Overload-monitor relays	9.2.5.3	Audio, video plug-in connectors	9.2.10.4	Specialized plug-in connectors
9.1.9.20	Secured relays	9.2.5.4	Automotive plug-in connectors	9.2.10.5	Multiple connection systems
9.1.9.21	Vacuum relays	9.2.5.5	Battery plug-in connectors	9.2.10.6	Plug sockets, miscellaneous
9.1.9.22	Time relays	9.2.5.6	High current plug-in connectors	9.2.10.7	Chip card connectors
9.1.9.23	Measurement relays	9.2.5.7	Medical plug-in connectors	9.2.10.8	Hermetically sealed connectors
9.1.9.24	High-frequency relays	9.2.5.8	Equipment plug-in connectors	9.2.10.9	Waterproof connectors
9.1.9.25	Magnets, electric	9.2.5.9	MIL connectors	9.2.10.10	Shielded connectors
9.1.9.26	Timers, electromechanical	9.2.5.10	Audio connectors		
9.1.9.27	Counter mechanisms, electromechanical	9.2.6	Connectors for telecommunications		
9.1.9.28	Relays, miscellaneous	9.2.6.1	Coaxial plug-in connectors		
9.2	Interconnection components / systems	9.2.6.1.1	BNC 50 Ω / 75 Ω connectors		
9.2.1	Standardized connectors	9.2.6.1.2	C / UHF connectors		
9.2.1.1	DIN 41 612 plug-in connectors	9.2.6.1.3	MCX / MMCX connectors		
9.2.1.2	Metric connectors	9.2.6.1.4	F connectors		
9.2.1.3	D subminiature connectors	9.2.6.1.5	N connectors		
9.2.1.4	D subminiature connectors with filters	9.2.6.1.6	SMA connectors		
9.2.1.5	D plug-in connectors	9.2.6.1.7	SMB / SMC / SMS connectors		
9.2.1.6	Extended standards plug-in connectors	9.2.6.1.8	PC 7 mm connectors		
9.2.1.7	Subminiature plug-in connectors				



Product Index Range of exhibits according to product groups

9.2.10.11	Jumpers	9.3.4.6	Twinaxial components	9.4.5.12	Filters, air
9.2.10.12	MID connectors	9.3.4.7	Wire harnesses	9.4.5.13	Power distribution components
9.2.10.13	Connectors, miscellaneous	9.3.4.8	Spiral cords	9.4.5.14	Accessories for housings, miscellaneous
9.2.11	Accessories for connectors	9.3.4.9	Customized cables	9.4.6	Thermal management
9.2.11.1	Plastic housings for connectors	9.3.4.10	Light-conducting cables	9.4.6.1	Passive components
9.2.11.2	Metal housings for connectors	9.3.4.11	Instrument cables	9.4.6.1.1	Shieldings, thermal
9.2.11.3	EMI/RFI shielding metal hoods	9.3.4.12	Safety cables / leads	9.4.6.1.2	Insulating elements, special
9.2.11.4	Rubber and plastic parts for connectors	9.3.4.13	Data transmission cables	9.4.6.1.3	Heat sinks
9.2.11.5	Tapper sleeves	9.3.4.14	Computer cables, configured	9.4.6.1.4	Specialized heat sinks
9.2.11.6	Special tools for connectors	9.3.4.15	Round-conductor ribbon cables for IDC	9.4.6.1.5	Heat-conducting plates / washers
9.2.11.7	Press-fit tools for connectors	9.3.4.16	Flexible ribbon cables	9.4.6.1.6	Circuit carriers, thermally conductive
9.3	Interconnection components, specialized	9.3.4.17	Shielded cables	9.4.6.1.7	Passive components, miscellaneous
9.3.1	Terminals	9.3.4.18	Halogen-free cables	9.4.6.1.8	Thermal interface materials
9.3.1.1	Terminals / terminal strips	9.3.4.19	Enamelled wire	9.4.6.2	Active components
9.3.1.2	Connectors (silicon rubber)	9.3.4.20	Wire / cables / leads, miscellaneous	9.4.6.2.1	Fans
9.3.1.3	Connection strips	9.3.4.21	Cables, miscellaneous	9.4.6.2.2	Fan inserts
9.3.1.4	Test terminals	9.4	Casing technology	9.4.6.2.3	Fan exchangers with built-in radiators
9.3.1.5	Terminal strips	9.4.1	System racks	9.4.6.2.4	Heat pumps, thermoelectric
9.3.1.6	Terminals with diodes	9.4.1.1	19" racks and cabinets	9.4.6.2.5	Peltier elements
9.3.1.7	PCB terminals	9.4.1.2	RF-shielded housings	9.4.6.2.6	Heat exchanger systems
9.3.1.8	Feed-through terminals	9.4.1.3	Circuit boxes	9.4.6.2.7	Heat pipes
9.3.1.9	Measurement terminals	9.4.1.4	Sheet-metal structures	9.4.6.2.8	Air-conditioning units
9.3.1.10	Disconnect terminals	9.4.1.5	System racks for telecommunications	9.4.6.2.9	Radiators and coolants
9.3.1.11	Terminals, miscellaneous	9.4.2	Build-in and desktop housings	9.4.6.2.10	Cooling equipment
9.3.2	Connection elements, miscellaneous	9.4.2.1	19" inserts and housings	9.4.6.2.11	CPU cooling equipment
9.3.2.1	Contact elements / modules	9.4.2.2	19" frames	9.4.6.2.12	Filter fans
9.3.2.2	Screen-connection elements	9.4.2.3	19" accessories	9.4.6.2.13	Thermostats
9.3.2.3	Slip-ring transformers	9.4.2.4	Console housings	9.4.6.2.14	Thermal management aids, miscellaneous
9.3.2.4	Contactless electrical rotary joints	9.4.2.5	Consoles	9.4.6.2.15	Thermofoil heaters
9.3.2.5	Contactless optical rotary joints	9.4.2.6	Computer housings	9.4.6.2.16	Heating elements with / without regulators
9.3.2.6	Soldered connection elements	9.4.2.7	Stand-alone housings	9.4.6.2.17	Active components, miscellaneous
9.3.2.7	Wire-wrap elements	9.4.2.8	Table-top housings	9.4.7	Electronic protection devices (EMI/ESD)
9.3.2.8	Removable connection elements, miscellaneous	9.4.2.9	Wall-mountable housings	9.4.7.1	EMC-conducted
9.3.2.9	Power distribution components (power strips)	9.4.2.10	Specialized housings for assemblies / devices	9.4.7.1.1	EMC-type plug-in connectors
9.3.2.10	Microconnectors	9.4.2.11	Housings, RF-resistant	9.4.7.1.2	EMC leads
9.3.2.11	Press-fit connectors	9.4.2.12	Wall-mountable and desktop housings, miscellaneous	9.4.7.1.3	EMC filters
9.3.2.12	Individual contacts	9.4.3	Small-scale housings	9.4.7.1.4	SM EMI suppression filters
9.3.2.13	Chip-card connection frames	9.4.3.1	Sheet-metal housings	9.4.7.1.5	Chip bead EMI suppressors
9.3.2.14	Permanent contacting elements, miscellaneous	9.4.3.2	Plastic housings, application-specific	9.4.7.1.6	Filter-equipped power-connection leads
9.3.2.15	Connection elements, miscellaneous	9.4.3.3	Hand-held housings	9.4.7.1.7	Mains filter modules
9.3.3	Accessories	9.4.3.4	Milling housings	9.4.7.1.8	RF chokes
9.3.3.1	Continuity accessories	9.4.3.5	Mini housings, miscellaneous	9.4.7.1.9	Mains power-surge protectors
9.3.3.2	Elastomers, electrical / thermal conducting	9.4.4	Special housings	9.4.7.1.10	Filter-equipped plug-in connectors
9.3.3.3	Shrink-wrap hoses	9.4.4.1	Specialized component enclosures	9.4.7.1.11	Threaded EMC cable glands
9.3.3.4	Strain-relief elements	9.4.4.2	Portable cases	9.4.7.1.12	EMC feedthrough components
9.3.3.5	Threaded cable glands	9.4.4.3	Individual housings	9.4.7.1.13	X/Y capacitors
9.3.3.6	Accessories, miscellaneous	9.4.5	Accessories for housings	9.4.7.1.14	Electronic protection devices, miscellaneous
9.3.4	Cables	9.4.5.1	Card slots	9.4.7.2	EMC-radiated
9.3.4.1	Coaxial high-frequency cables	9.4.5.2	Covers	9.4.7.2.1	Shieldings (EMC)
9.3.4.2	RF cords	9.4.5.3	Front panels for assemblies / devices	9.4.7.2.2	Housings with EMC protection
9.3.4.3	Semi-rigid cables	9.4.5.4	Front panels, customized	9.4.7.2.3	RF seals
9.3.4.4	Ready-made coaxial cables	9.4.5.5	Front handles	9.4.7.2.4	Metal sealings for housings
9.3.4.5	Coaxial conductor components and systems	9.4.5.6	Housing seals	9.4.7.2.5	Polymere seals for housings
		9.4.5.7	Knobs	9.4.7.2.6	Conductive tapes / cloth
		9.4.5.8	Rubber and plastic parts for housings	9.4.7.2.7	Window glass, RF-sealed
		9.4.5.9	Distance assembly fittings		
		9.4.5.10	Housing cover accessories		
		9.4.5.11	Conduits		



Product Index Range of exhibits according to product groups

9.4.7.3 EMP protection	9.4.7.5 Packaging materials	9.4.7.6.4 Power semiconductor protection
9.4.7.3.1 EMP protection elements / modules	9.4.7.5.1 Packaging materials	9.4.7.6.5 Low-voltage protection equipment
9.4.7.3.2 NEMP protective equipment	9.4.7.5.2 Blister belting strips	9.4.7.6.6 EMC ferrite cores
9.4.7.4 ESD protection	9.4.7.5.3 Blister belt cover strips	9.4.7.6.7 Circuit breaker for equipment protection
9.4.7.4.1 ESD protection	9.4.7.5.4 Belt spools for component belting	9.4.7.6.8 Equipment-protection fuses
9.4.7.4.2 Voltage suppressors	9.4.7.6 Protection components, miscellaneous	9.4.7.6.9 Fuse holders / sockets
9.4.7.4.3 Limiter diodes	9.4.7.6.1 Suppressor chokes	9.4.7.6.10 Protection components accessories
9.4.7.4.4 Lightning protection equipment	9.4.7.6.2 Suppressor capacitors	
9.4.7.4.5 Surge protection equipment	9.4.7.6.3 Shielded chokes / converters	
10 Power supplies		
10.1 Transformers	10.3.2 Cores	10.7.3 Mains power stabilizers
10.1.1 Power-supply transformers	10.3.3 Coil former	10.8 Special power supplies
10.1.2 PCB transformers	10.3.4 Metal powder coil cores	10.8.1 Programmable power supplies
10.1.3 Planar transformers	10.3.5 Accessories, miscellaneous	10.8.2 System power supplies
10.1.4 Miniature transformers	10.3.6 Amorphous Cut Cores	10.8.3 Lab power supplies
10.1.5 Toroidal core transformers	10.4 Power supplies, DC output	10.8.4 Intelligent power modules, customized
10.1.6 Security transformers	10.4.1 AC / DC power supplies, single / multiple phase	10.8.5 Power supplies, high-voltage
10.1.7 Isolating transformers (including shielded)	10.4.2 AC / DC eurocard power supplies	10.8.6 Mains power devices, application-specific
10.1.8 Regulating transformers	10.4.3 AC / DC power supplies, DIN rail	10.8.7 LED power supplies
10.1.9 High-voltage transformers	10.4.4 AC / DC power supplies, open frame	10.9 Batteries
10.1.10 Pulse transformers	10.4.5 VME bus power supplies	10.9.1 Accumulators, up to 50 Ah
10.1.11 Stray-field transformers	10.4.6 DC / DC converter modules	10.9.2 Primary elements and batteries
10.1.12 Diode splitter transformers	10.4.7 DC converters with 42 V input for automotive applications	10.9.3 Smart batteries
10.1.13 Autotransformers	10.4.8 Protected power supplies	10.9.4 Chargers, battery
10.1.14 Transformers, miscellaneous	10.4.9 Plug-in mains power devices (AC / DC)	10.10 Static current supplies, miscellaneous
10.2 Coilware for specific applications	10.5 Power supplies, AC output	10.11 Power management systems
10.2.1 Filter coils	10.5.1 Mains power devices, insert housing	10.12 Accessories
10.2.2 Commutation chokes	10.5.2 Mains power devices, portable	10.12.1 Power factor compensation equipment
10.2.3 Chokes, miscellaneous	10.5.3 Plug-in mains power devices (AC / AC)	10.12.2 Voltage stabilizers
10.2.4 Coilware, application-specific	10.5.4 Inverters (DC / AC)	10.12.3 Charge rectifiers
10.2.5 Coilware, shielded	10.6 Frequency converters	10.12.4 Charge indicators
10.2.6 Coilware, miscellaneous	10.7 UPS systems	10.12.5 Battery testers
10.3 Accessories for coilware	10.7.1 Uninterruptable power supplies (UPS)	10.12.6 Accessories, miscellaneous
10.3.1 Core-molded parts	10.7.2 Backup power supplies	
11 PCBs and other circuit carriers		
11.1 Non-PTH single- and double-sided PCBs	11.4.6 Micro via PCBs	11.6.2 Al ₂ O ₃
11.2 Double-sided PCBs, PTH	11.4.7 PCBs on aluminum substrates	11.6.3 AlN
11.2.1 Copper through-hole PCBs	11.4.8 HF PCBs	11.6.4 Ceramic PCBs, miscellaneous
11.2.2 Silver through-hole PCBs	11.4.9 Impedance-controlled PCBs	11.7 PCBs for backplanes / bus systems
11.3 Multilayer PCBs (ML)	11.4.10 Press-fit component PCBs	11.7.1 PCI bus
11.3.1 Ultrathin ML (100 µm / layer)	11.4.11 Large-format PCBs (more than 600 mm)	11.7.2 Compact PCI bus
11.3.2 Plated through-hole PCBs	11.4.12 Ultrafine-line circuitry (< 50 µm)	11.7.3 VME 64
11.3.3 PCBs with blind vias	11.4.13 PCBs, other	11.7.4 Backplane PCBs, unconfigured
11.3.4 HDI PCBs	11.4.14 Optical PCBs	11.7.5 Backplanes / bus systems, miscellaneous
11.3.5 PCBs with thick copper	11.4.15 LED PCBs	11.8 Accessories for PCBs
11.3.6 Multilayer PCBs, miscellaneous	11.5 Injection molded circuits, MID / 3D-MID	11.8.1 Multilayer bus bars for PCBs
11.4 Special PCBs	11.5.1 3D-MID circuit boards	11.8.2 Conductor strips
11.4.1 Bondable PCBs	11.5.2 Hybrid MID components	11.8.3 Accessories for PCBs, miscellaneous
11.4.2 Metal core PCBs	11.5.3 MID components, other	
11.4.3 PCBs with embedded resistors	11.6 Ceramic PCBs	
11.4.4 Flexible circuits	11.6.1 LTCC	
11.4.5 Flex-rigid circuits		



Product Index Range of exhibits according to product groups

12 EMS Electronic manufacturing services

12.1 EMS (component / chip carrier manufacturing)	12.3.1.1 Design	12.4.2.6 Components made of fiber-reinforced plastic
12.1.1 Layout services	12.3.1.2 Component, system and product development	12.4.2.7 Components made of plastic or rubber, other
12.1.2 Artwork production services	12.3.1.3 Development and design engineering	12.4.3 Intermediate / semifinished goods made of ceramics
12.1.3 Screen production services	12.3.1.4 Process development	12.4.3.1 Injection-molded parts made of metallic powder
12.1.4 Coating services	12.3.1.5 Services for development and design	12.4.3.2 Injection-molded parts made of ceramics
12.1.5 Laser engraving	12.3.2 IT systems / design software	12.4.3.3 Ceramic foils / LTCC ceramics
12.1.6 Wire erosion	12.3.2.1 CAD / CAM systems	12.4.4 Intermediate / semifinished goods, other
12.1.7 Laser welding / cutting	12.3.2.2 3D software	12.5 Hybrid components / assemblies
12.1.8 Plating services	12.3.2.3 Simulation	12.5.1 Metal-plastic hybrids
12.1.9 Reflow services	12.3.2.4 Software for model making and prototyping	12.5.2 Metal-rubber hybrids
12.1.10 Surface treatment	12.3.2.5 Software for tool and die making	12.5.3 Plastic-plastic hybrids
12.1.11 Production services for component / chip carrier manufacturing, miscellaneous	12.3.2.6 Other IT-systems / software	12.5.4 Plastic-rubber hybrids
12.2 EMS (component construction and equipment manufacturing)	12.4 Intermediate / semifinished goods, materials	12.5.5 Metal-ceramic hybrids
12.2.1 Solder mask services	12.4.1 Intermediate / semifinished goods, metallic	12.5.6 Ceramic-plastic hybrids
12.2.2 Hybrid solutions	12.4.1.1 Bent parts	12.5.7 Hybrid housings
12.2.3 Component insertion	12.4.1.2 Precision turned parts	12.5.8 Hybrid frames
12.2.4 Bonding of dies on PCBs	12.4.1.3 Compression molded parts	12.5.9 Hybrid assemblies
12.2.5 Flip chip insertion	12.4.1.4 Injection molded parts	12.5.10 Hybrid components, other
12.2.6 Component insertion under cleanroom conditions	12.4.1.5 Stamped bent parts	12.6 Prototyping
12.2.7 Metal machining	12.4.1.6 Stamped parts / stamped parts with press fit zones	12.6.1 PCBs
12.2.8 Manufacturing precision drilling and milling parts	12.4.1.7 Stamped parts bondable	12.6.2 Housings
12.2.9 Housings, customer-specific	12.4.1.8 Drawn parts	12.6.3 Equipment
12.2.10 Assembly production	12.4.1.9 Stamped parts and metal components, other	12.6.4 Small-batch manufacturing
12.2.11 EMD shielding	12.4.2 Intermediate / semifinished goods, plastic and rubber	12.6.5 Techniques / technology
12.2.12 Cabling	12.4.2.1 Electrically conductive elastomers	12.6.5.1 3D modelling
12.2.13 Labeling	12.4.2.2 Injection-molded parts made of plastic	12.6.5.2 3D printing
12.2.14 Production services for component construction and equipment manufacturing, miscellaneous	12.4.2.3 2-component injection-molded parts	12.6.5.3 Rapid prototyping
12.3 Product development	12.4.2.4 Injection-molded parts made of silicone	12.6.5.4 Laser sintering (SLS)
12.3.1 Component development / design	12.4.2.5 Injection-molded parts made of rubber	12.6.5.5 Stereo lithography (STL)
		12.6.5.6 Vacuum injection molding
		12.6.5.7 Other techniques / technology
		12.6.6 Prototyping, miscellaneous

13 Assemblies and subsystems

13.1 Assemblies for control applications	13.2 Printer assemblies	13.4 Hybrid modules (including multi-chip modules)
13.1.1 Regulator assemblies	13.2.1 Thermal printers	13.4.1 Thick-film hybrids
13.1.2 Motor protection modules	13.2.2 Thermal transfer printers	13.4.2 Thin-film hybrids
13.1.3 Switching-device assemblies	13.2.3 Printer assemblies, mechanical	13.4.3 RF hybrids
13.1.4 MPC assemblies	13.2.4 Laser printer assemblies	13.4.4 Hybrid filters
13.1.5 Compact PCI bus modules	13.2.5 Ink-jet printer assemblies	13.4.5 Hybrid modules, mixed-signal
13.1.6 VME 64 modules	13.2.6 Printer assemblies, miscellaneous	13.4.6 Hybrid modules, alternating-signal, miscellaneous
13.1.7 Profi bus modules	13.3 Assemblies, miscellaneous	13.4.7 Hybrid modules, static-signal, miscellaneous
13.1.8 Field bus modules	13.3.1 Converter assemblies	13.4.8 Hybrid circuits on glass substrates
13.1.9 LON bus modules	13.3.2 Backplane PCBs, configured	13.4.9 Hybrid modules on ceramic substrates
13.1.10 Mezzanine modules	13.3.3 IR transmitters / receivers	13.4.10 LSI hybrids (MCM)
13.1.11 Modules for other bus systems	13.3.4 Matrix cameras, CCD	13.4.11 Multi-chip module hybrids, miscellaneous
13.1.12 Controllers, programmable	13.3.5 Bar-code reader assemblies	
13.1.13 Electromotor controllers / regulators	13.3.6 Image-conversion assemblies, miscellaneous	



Product Index Range of exhibits according to product groups

13.4.12	Application-specific hybrid circuits	13.5.1.3	DC motors (standard, up to 300 W)	13.5.3.1	Magnetic motors (translational direct drives)
13.4.13	Networks, miscellaneous	13.5.1.4	Torque motors	13.5.3.2	Electromagnets for moving processes
13.4.14	Opto hybrids	13.5.1.5	Miniature motors, universal current	13.5.4 Actuators, miscellaneous	
13.4.15	Miscellaneous hybrid circuits/modules	13.5.1.6	Stepper motors	13.5.4.1	Piezo actuator motors
13.4.16	Strip-conductor components for microwave technology	13.5.1.7	Micromotors	13.5.4.2	Translational direct drives
13.4.17	Clock modules	13.5.2 Gears		13.5.4.3	Positioning drives, miscellaneous
13.4.18	Hybrid modules, miscellaneous	13.5.2.1	Geared motors	13.5.4.4	Resolvers
13.5 Servo-technology / Drive elements		13.5.2.2	Linear drives	13.5.5 Accessories for actuators	
13.5.1 Motors		13.5.2.3	Micropositioning	13.5.5.1	Electromotor device parts, miscellaneous
13.5.1.1	AC motors (standard, up to 300 W)	13.5.2.4	Actuators, miscellaneous	13.5.5.2	Slide bearings, ceramic
13.5.1.2	Brushless motors	13.5.2.5	Micro gears	13.5.5.3	Soft starters for electric motors
		13.5.3 Magnetic actuators			
14 Automotive					
14.1 Drive (engine and gears)					
14.1.1 Engine Control		14.4.1.8	Wind screen heating	14.5.3.6	Adaptive Lighting Systems
14.1.1.1	Ignition	14.4.1.9	Electrical air conditioning	14.5.3.7	Daytime Running Light
14.1.1.2	Fuel injection	14.4.2 Driver information		14.5.3.8	LED Lighting
14.1.1.3	Direct fuel injection	14.4.2.1	Multi-purpose instrument	14.5.3.9	LED Taillights
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