Symbol	Typ	Titel
H	**Sektion**	**SECTION H — ELECTRICITY**
H02	**Klasse**	**GENERATION, CONVERSION, OR DISTRIBUTION OF ELECTRIC POWER**
H02P	**Unterklasse**	**CONTROL OR REGULATION OF ELECTRIC MOTORS, GENERATORS, OR DYNAMO-ELECTRIC CONVERTERS; CONTROLLING TRANSFORMERS, REACTORS OR CHOKE COILS (structure of the starter, brake, or other control devices, see the relevant subclasses, e.g. mechanical brake F16D, mechanical speed regulator G05D, variable resistor H01C, starter switch H01H; systems for regulating electric or magnetic variables using transformers, reactors or choke coils G05F; arrangements structurally associated with motors, generators, dynamo-electric converters, transformers, reactors or choke coils, see the relevant subclasses, e.g. H01F, H02K; connection or control of one generator, transformer, reactor, choke coil, or dynamo-electric converter with regard to conjoint operation with similar or other source of supply H02J; control or regulation of static converters H02M) [4]**
H02P 1/00	***Hauptgruppe***	***Arrangements for starting electric motors or dynamo-electric converters (starting of synchronous motors with electronic commutators H02P 6/20 , H02P 6/22 ; starting dynamo-electric motors rotating step by step H02P 8/04 ; vector control H02P 21/00) [4, 2006.01]***
H02P 1/02	1-Punkt Untergruppe	. Details
H02P 1/04	2-Punkt Untergruppe	. . Means for controlling progress of starting sequence in dependence upon time or upon current, speed, or other motor parameter
H02P 1/06	3-Punkt Untergruppe	. . . Manually-operated multi-position starters
H02P 1/08	3-Punkt Untergruppe	. . . Manually-operated on/off switch controlling power-operated multi-position switch or impedances for starting a motor
H02P 1/10	3-Punkt Untergruppe	. . . Manually-operated on/off switch controlling relays or contactors operating sequentially for starting a motor (sequence determined by power-operated multi-position switch H02P 1/08)
H02P 1/12	3-Punkt Untergruppe	. . . Switching devices centrifugally operated by the motor
H02P 1/14	3-Punkt Untergruppe	. . . Pressure-sensitive resistors centrifugally operated by the motor
H02P 1/16	1-Punkt Untergruppe	. for starting dynamo-electric motors or dynamo-electric converters
H02P 1/18	2-Punkt Untergruppe	. . for starting an individual dc motor
H02P 1/20	3-Punkt Untergruppe	. . . by progressive reduction of resistance in series with armature winding
H02P 1/22	3-Punkt Untergruppe	. . . in either direction of rotation
H02P 1/24	2-Punkt Untergruppe	. . for starting an individual ac commutator motor (starting of ac/dc commutator motors H02P 1/18)
H02P 1/26	2-Punkt Untergruppe	. . for starting an individual polyphase induction motor
H02P 1/28	3-Punkt Untergruppe	. . . by progressive increase of voltage applied to primary circuit of motor
H02P 1/30	3-Punkt Untergruppe	. . . by progressive increase of frequency of supply to primary circuit of motor
H02P 1/32	3-Punkt Untergruppe	. . . by star/delta switching
H02P 1/34	3-Punkt Untergruppe	. . . by progressive reduction of impedance in secondary circuit
H02P 1/36	4-Punkt Untergruppe	. . . . the impedance being a liquid resistance
H02P 1/38	3-Punkt Untergruppe	. . . by pole-changing

Symbol	Typ	Titel
H02P 1/40	3-Punkt Untergruppe	. . . in either direction of rotation
H02P 1/42	2-Punkt Untergruppe	. . for starting an individual single-phase induction motor
H02P 1/44	3-Punkt Untergruppe	. . . by phase-splitting with a capacitor
H02P 1/46	2-Punkt Untergruppe	. . for starting an individual synchronous motor
H02P 1/48	3-Punkt Untergruppe	. . . by pole-changing
H02P 1/50	3-Punkt Untergruppe	. . . by changing over from asynchronous to synchronous operation (H02P 1/48 takes precedence)
H02P 1/52	3-Punkt Untergruppe	. . . by progressive increase of frequency of supply to motor
H02P 1/54	2-Punkt Untergruppe	. . for starting two or more dynamo-electric motors
H02P 1/56	3-Punkt Untergruppe	. . . simultaneously
H02P 1/58	3-Punkt Untergruppe	. . . sequentially
H02P 3/00	***Hauptgruppe***	***Arrangements for stopping or slowing electric motors, generators, or dynamo-electric converters (stopping of synchronous motors with electronic commutators H02P 6/24 ; stopping dynamo-electric motors rotating step by step H02P 8/24 ; vector control H02P 21/00) [2, 4, 2006.01]***
H02P 3/02	1-Punkt Untergruppe	. Details
H02P 3/04	2-Punkt Untergruppe	. . Means for stopping or slowing by a separate brake, e.g. friction brake, eddy-current brake (brakes F16D, H02K 49/00) [2]
H02P 3/06	1-Punkt Untergruppe	. for stopping or slowing an individual dynamo-electric motor or dynamo-electric converter [2]
H02P 3/08	2-Punkt Untergruppe	. . for stopping or slowing a dc motor [2]
H02P 3/10	3-Punkt Untergruppe	. . . by reversal of supply connections
H02P 3/12	3-Punkt Untergruppe	. . . by short-circuit or resistive braking
H02P 3/14	3-Punkt Untergruppe	. . . by regenerative braking
H02P 3/16	3-Punkt Untergruppe	. . . by combined electrical and mechanical braking
H02P 3/18	2-Punkt Untergruppe	. . for stopping or slowing an ac motor [2]
H02P 3/20	3-Punkt Untergruppe	. . . by reversal of phase sequence of connections to the motor
H02P 3/22	3-Punkt Untergruppe	. . . by short-circuit or resistive braking
H02P 3/24	3-Punkt Untergruppe	. . . by applying dc to the motor
H02P 3/26	3-Punkt Untergruppe	. . . by combined electrical and mechanical braking
H02P 4/00	***Hauptgruppe***	***Arrangements specially adapted for regulating or controlling the speed or torque of electric motors that can be connected to two or more different voltage or current supplies (starting H02P 1/00 ; stopping or slowing H02P 3/00 ; vector control H02P 21/00) [2006.01]***
H02P 5/00	***Hauptgruppe***	***Arrangements specially adapted for regulating or controlling the speed or torque of two or more electric motors (starting H02P 1/00 ; stopping or slowing H02P 3/00 ; vector control H02P 21/00) [1, 2006.01]***
H02P 5/04	Gelöscht	(transferred to H02P 29/04)
H02P 5/05	Gelöscht	(transferred to H02P 25/08)
H02P 5/06	Gelöscht	(covered by H02P 7/06)
H02P 5/08	Gelöscht	(covered by H02P 7/06-H02P 7/22)
H02P 5/10	Gelöscht	(covered by H02P 7/06-H02P 7/22)
H02P 5/12	Gelöscht	(covered by H02P 7/24)

Symbol	Typ	Titel
H02P 5/14	Gelöscht	(covered by H02P 7/26)
H02P 5/16	Gelöscht	(covered by H02P 7/28)
H02P 5/162	Gelöscht	(covered by H02P 7/282)
H02P 5/165	Gelöscht	(covered by H02P 7/285)
H02P 5/168	Gelöscht	(covered by H02P 7/288)
H02P 5/17	Gelöscht	(covered by H02P 7/29)
H02P 5/172	Gelöscht	(covered by H02P 7/292)
H02P 5/175	Gelöscht	(covered by H02P 7/295)
H02P 5/178	Gelöscht	(covered by H02P 7/298)
H02P 5/18	Gelöscht	(covered by H02P 7/30)
H02P 5/20	Gelöscht	(covered by H02P 7/32)
H02P 5/22	Gelöscht	(covered by H02P 7/34)
H02P 5/24	Gelöscht	(covered by H02P 7/34)
H02P 5/26	Gelöscht	(covered by H02P 7/34)
H02P 5/28	Gelöscht	(transferred to H02P 23/00; H02P 25/00; H02P 27/00)
H02P 5/30	Gelöscht	(transferred to H02P 25/18)
H02P 5/32	Gelöscht	(transferred to H02P 25/18)
H02P 5/34	Gelöscht	(transferred to H02P 27/04)
H02P 5/36	Gelöscht	(transferred to H02P 23/00; H02P 25/00; H02P 27/00)
H02P 5/38	Gelöscht	(transferred to H02P 25/32)
H02P 5/40	Gelöscht	(transferred to H02P 23/00; H02P 25/00; H02P 27/00)
H02P 5/402	Gelöscht	(transferred to H02P 27/02)
H02P 5/405	Gelöscht	(transferred to H02P 25/26)
H02P 5/408	Gelöscht	(transferred to H02P 27/04)
H02P 5/41	Gelöscht	(transferred to H02P 27/06)
H02P 5/412	Gelöscht	(transferred to H02P 27/16)
H02P 5/415	Gelöscht	(transferred to H02P 23/00; H02P 27/05)
H02P 5/418	Gelöscht	(transferred to H02P 25/10)
H02P 5/42	Gelöscht	(transferred to H02P 25/28)
H02P 5/44	Gelöscht	(transferred to H02P 25/12; H02P 25/16)
H02P 5/46	1-Punkt Untergruppe	. for speed regulation of two or more dynamo-electric motors in relation to one another
H02P 5/48	2-Punkt Untergruppe	. . by comparing mechanical values representing the speeds
H02P 5/50	2-Punkt Untergruppe	. . by comparing electrical values representing the speeds
H02P 5/52	2-Punkt Untergruppe	. . additionally providing control of relative angular displacement
H02P 5/60	*1-Punkt Untergruppe*	*. controlling combinations of dc and ac dynamo-electric motors (H02P 5/46 takes precedence) [2006.01]*
H02P 5/68	*1-Punkt Untergruppe*	*. controlling two or more dc dynamo-electric motors (H02P 5/46 , H02P 5/60 take precedence) [2006.01]*
H02P 5/685	*2-Punkt Untergruppe*	*. . electrically connected in series, i.e. carrying the same current [2006.01]*
H02P 5/69	*2-Punkt Untergruppe*	*. . mechanically coupled by gearing [2006.01]*
H02P 5/695	*3-Punkt Untergruppe*	*. . . Differential gearing [2006.01]*
H02P 5/74	*1-Punkt Untergruppe*	*. controlling two or more ac dynamo-electric motors (H02P 5/46 , H02P 5/60 take precedence) [2006.01]*
H02P 5/747	*2-Punkt Untergruppe*	*. . mechanically coupled by gearing [2006.01]*
H02P 5/753	*3-Punkt Untergruppe*	*. . . Differential gearing [2006.01]*
H02P 6/00	**Hauptgruppe**	**Arrangements for controlling synchronous motors or other dynamo-electric motors with electronic**

Symbol	Typ	Titel
		commutators in dependence on the rotor position; Electronic commutators therefor (stepping motors H02P 8/00; vector control H02P 21/00) [3, 4, 6]
H02P 6/04	1-Punkt Untergruppe	. Arrangements for controlling or regulating speed or torque of more than one motor [6]
H02P 6/06	1-Punkt Untergruppe	. Arrangements for speed regulation of a single motor wherein the motor speed is measured and compared with a given physical value so as to adjust the motor speed [6]
H02P 6/08	1-Punkt Untergruppe	. Arrangements for controlling the speed or torque of a single motor [6]
H02P 6/10	2-Punkt Untergruppe	. . providing reduced torque ripple; controlling torque ripple [6]
H02P 6/12	1-Punkt Untergruppe	. Monitoring commutation; Providing indication of commutation failure [6]
H02P 6/14	1-Punkt Untergruppe	. Electronic commutators [6]
H02P 6/16	2-Punkt Untergruppe	. . Circuit arrangements for detecting position (structural arrangement of position sensors H02K 29/06) [6]
H02P 6/18	3-Punkt Untergruppe	. . . without separate position detecting element, e.g. using back-emf in windings [6]
H02P 6/20	1-Punkt Untergruppe	. Arrangements for starting (H02P 6/08, H02P 6/22 take precedence) [6]
H02P 6/22	1-Punkt Untergruppe	. Arrangements for starting in a selected direction of rotation [6]
H02P 6/24	1-Punkt Untergruppe	. Arrangements for stopping [6]
H02P 7/00	***Hauptgruppe***	***Arrangements for regulating or controlling the speed or torque of electric dc-motors (starting H02P 1/00 ; stopping or slowing H02P 3/00 ; vector control H02P 21/00) [2, 2006.01]***
H02P 7/01	Gelöscht	(transferred to H02P 4/00)
H02P 7/04	Gelöscht	(transferred to H02P 29/04)
H02P 7/05	Gelöscht	(transferred to H02P 25/08)
H02P 7/06	1-Punkt Untergruppe	. for regulating or controlling an individual dc dynamo-electric motor by varying field or armature current
H02P 7/08	2-Punkt Untergruppe	. . by manual control without auxiliary power
H02P 7/10	3-Punkt Untergruppe	. . . of motor field only
H02P 7/12	4-Punkt Untergruppe	. . . . Switching field from series to shunt excitation or vice versa
H02P 7/14	3-Punkt Untergruppe	. . . of voltage applied to the armature with or without control of field
H02P 7/18	2-Punkt Untergruppe	. . by master control with auxiliary power
H02P 7/20	3-Punkt Untergruppe	. . . using multi-position switch, e.g. drum, controlling motor circuit by means of relays (H02P 7/24, H02P 7/30 take precedence)
H02P 7/22	3-Punkt Untergruppe	. . . using multi-position switch, e.g. drum, controlling motor circuit by means of pilot-motor-operated multi-position switch or pilot-motor-operated variable resistance (H02P 7/24, H02P 7/30 take precedence)
H02P 7/24	3-Punkt Untergruppe	. . . using discharge tubes or semiconductor devices
H02P 7/26	4-Punkt Untergruppe	. . . . using discharge tubes
H02P 7/28	4-Punkt Untergruppe	. . . . using semiconductor devices
H02P 7/282	5-Punkt Untergruppe	. . . . . controlling field supply only [4]
H02P 7/285	5-Punkt Untergruppe	. . . . . controlling armature supply only [4]
H02P 7/288	6-Punkt Untergruppe	. . . . . . using variable impedance [4]
H02P 7/29	6-Punkt Untergruppe	. . . . . . using pulse modulation [4]

Symbol	Typ	Titel
H02P 7/292	6-Punkt Untergruppe	. . . . . . using static converters, e.g. ac to dc [4]
H02P 7/295	7-Punkt Untergruppe	. . . . of the kind having one thyristor or the like in series with the power supply and the motor [4]
H02P 7/298	5-Punkt Untergruppe	. . . . . controlling armature and field supply [4]
H02P 7/30	3-Punkt Untergruppe	. . . using magnetic devices with controllable degree of saturation, i.e. transductors
H02P 7/32	3-Punkt Untergruppe	. . . using armature-reaction-excited machines, e.g. metadyne, amplidyne, rototrol
H02P 7/34	3-Punkt Untergruppe	. . . using Ward-Leonard arrangements
H02P 7/36	Gelöscht	(transferred to H02P 23/00; H02P 25/00; H02P 27/00)
H02P 7/38	Gelöscht	(transferred to H02P 23/00; H02P 25/00; H02P 27/00)
H02P 7/40	Gelöscht	(transferred to H02P 25/24)
H02P 7/42	Gelöscht	(transferred to H02P 27/04)
H02P 7/44	Gelöscht	(transferred to H02P 27/04)
H02P 7/46	Gelöscht	(transferred to H02P 27/05)
H02P 7/48	Gelöscht	(transferred to H02P 25/20)
H02P 7/50	Gelöscht	(transferred to H02P 25/12)
H02P 7/52	Gelöscht	(transferred to H02P 23/00; H02P 25/00; H02P 27/00)
H02P 7/54	Gelöscht	(transferred to H02P 25/18)
H02P 7/56	Gelöscht	(transferred to H02P 25/18)
H02P 7/58	Gelöscht	(transferred to H02P 23/00; H02P 25/00; H02P 27/00)
H02P 7/60	Gelöscht	(transferred to H02P 25/32)
H02P 7/62	Gelöscht	(transferred to H02P 23/00; H02P 25/00; H02P 27/00)
H02P 7/622	Gelöscht	(transferred to H02P 27/02)
H02P 7/625	Gelöscht	(transferred to H02P 25/26)
H02P 7/628	Gelöscht	(transferred to H02P 27/04)
H02P 7/63	Gelöscht	(transferred to H02P 27/06)
H02P 7/632	Gelöscht	(transferred to H02P 27/16)
H02P 7/635	Gelöscht	(transferred to H02P 23/00; H02P 27/05)
H02P 7/638	Gelöscht	(transferred to H02P 25/10)
H02P 7/64	Gelöscht	(transferred to H02P 25/28)
H02P 7/66	Gelöscht	(transferred to H02P 25/30)
H02P 7/67	Gelöscht	(transferred to H02P 5/00)
H02P 7/68	Gelöscht	(transferred to H02P 5/68)
H02P 7/685	Gelöscht	(transferred to H02P 5/685)
H02P 7/69	Gelöscht	(transferred to H02P 5/69)
H02P 7/695	Gelöscht	(transferred to H02P 5/695)
H02P 7/74	Gelöscht	(transferred to H02P 5/74)
H02P 7/747	Gelöscht	(transferred to H02P 5/747)
H02P 7/753	Gelöscht	(transferred to H02P 5/753)
H02P 7/80	Gelöscht	(transferred to H02P 5/60)
H02P 8/00	***Hauptgruppe***	***Arrangements for controlling dynamo-electric motors rotating step by step (vector control H02P 21/00) [2, 6, 2006.01]***
H02P 8/02	1-Punkt Untergruppe	. specially adapted for single-phase or bi-pole stepper motors, e.g. watch-motors, clock-motors [6]
H02P 8/04	1-Punkt Untergruppe	. Arrangements for starting [6]
H02P 8/06	2-Punkt Untergruppe	. . in selected direction of rotation [6]
H02P 8/08	2-Punkt Untergruppe	. . Determining position before starting [6]

Symbol	Typ	Titel
H02P 8/10	2-Punkt Untergruppe	. . Shaping pulses for starting; Boosting current during starting [6]
H02P 8/12	1-Punkt Untergruppe	. Control or stabilisation of current [6]
H02P 8/14	1-Punkt Untergruppe	. Arrangements for controlling speed or speed and torque (H02P 8/12, H02P 8/22 take precedence) [6]
H02P 8/16	2-Punkt Untergruppe	. . Reducing energy dissipated or supplied [6]
H02P 8/18	2-Punkt Untergruppe	. . Shaping of pulses, e.g. to reduce torque ripple [6]
H02P 8/20	2-Punkt Untergruppe	. . characterised by bidirectional operation [6]
H02P 8/22	1-Punkt Untergruppe	. Control of step size; Intermediate stepping, e.g. micro-stepping [6]
H02P 8/24	1-Punkt Untergruppe	. Arrangements for stopping (H02P 8/32 take precedence) [6]
H02P 8/26	2-Punkt Untergruppe	. . Memorising final pulse when stopping [6]
H02P 8/28	2-Punkt Untergruppe	. . Disconnecting power source when stopping [6]
H02P 8/30	2-Punkt Untergruppe	. . Holding position when stopped [6]
H02P 8/32	1-Punkt Untergruppe	. Reducing overshoot or oscillation, e.g. damping [6]
H02P 8/34	1-Punkt Untergruppe	. Monitoring operation (H02P 8/36 takes precedence) [6]
H02P 8/36	1-Punkt Untergruppe	. Protection against faults, e.g. against overheating, step-out; Indicating faults (emergency protective arrangements with automatic interruption of supply H02H 7/08) [6]
H02P 8/38	2-Punkt Untergruppe	. . the fault being step-out [6]
H02P 8/40	1-Punkt Untergruppe	. Special adaptations for controlling two or more stepping motors [6]
H02P 8/42	1-Punkt Untergruppe	. characterised by non-stepper motors being operated step by step [6]
H02P 9/00	***Hauptgruppe***	***Arrangements for controlling electric generators for the purpose of obtaining a desired output (Ward-Leonard arrangements H02P 7/34 ; vector control H02P 21/00 ; feeding a network by two or more generators H02J ; for charging batteries H02J 7/14) [1, 2006.01]***
H02P 9/02	1-Punkt Untergruppe	. Details
H02P 9/04	1-Punkt Untergruppe	. Control effected upon non-electric prime mover and dependent upon electric output value of the generator (effecting control of the prime mover in general, see the relevant class for such prime mover) [2]
H02P 9/06	1-Punkt Untergruppe	. Control effected upon clutch or other mechanical power transmission means and dependent upon electric output value of the generator (effecting control of the power transmission means, see the relevant class for such means) [2]
H02P 9/08	1-Punkt Untergruppe	. Control of generator circuit during starting or stopping of driving means, e.g. for initiating excitation [2]
H02P 9/10	1-Punkt Untergruppe	. Control effected upon generator excitation circuit to reduce harmful effects of overloads or transients, e.g. sudden application of load, sudden removal of load, sudden change of load [2]
H02P 9/12	2-Punkt Untergruppe	. . for demagnetising; for reducing effects of remanence; for preventing pole reversal [2]
H02P 9/14	1-Punkt Untergruppe	. by variation of field (H02P 9/08, H02P 9/10 take precedence) [2]
H02P 9/16	2-Punkt Untergruppe	. . due to variation of ohmic resistance in field circuit, using resistances switched in or out of circuit step by step
H02P 9/18	3-Punkt Untergruppe	. . . the switching being caused by a servomotor, measuring instrument, or relay
H02P 9/20	2-Punkt Untergruppe	. . due to variation of continuously-variable ohmic resistance

Symbol	Typ	Titel
H02P 9/22	3-Punkt Untergruppe	. . . comprising carbon pile resistance
H02P 9/24	2-Punkt Untergruppe	. . due to variation of make-to-break ratio of intermittently-operating contacts, e.g. using Tirrill regulator
H02P 9/26	2-Punkt Untergruppe	. . using discharge tubes or semiconductor devices (H02P 9/34 takes precedence) [2]
H02P 9/28	3-Punkt Untergruppe	. . . using discharge tubes
H02P 9/30	3-Punkt Untergruppe	. . . using semiconductor devices
H02P 9/32	2-Punkt Untergruppe	. . using magnetic devices with controllable degree of saturation (H02P 9/34 takes precedence) [2]
H02P 9/34	2-Punkt Untergruppe	. . using magnetic devices with controllable degree of saturation in combination with controlled discharge tube or controlled semiconductor device
H02P 9/36	2-Punkt Untergruppe	. . using armature-reaction-excited machines
H02P 9/38	2-Punkt Untergruppe	. . Self-excitation by current derived from rectification of both output voltage and output current of generator
H02P 9/40	1-Punkt Untergruppe	. by variation of reluctance of magnetic circuit of generator
H02P 9/42	1-Punkt Untergruppe	. to obtain desired frequency without varying speed of the generator
H02P 9/44	1-Punkt Untergruppe	. Control of frequency and voltage in predetermined relation, e.g. constant ratio
H02P 9/46	1-Punkt Untergruppe	. Control of asynchronous generator by variation of capacitor
H02P 9/48	1-Punkt Untergruppe	. Arrangements for obtaining a constant output value at varying speed of the generator, e.g. on vehicle (H02P 9/04-H02P 9/46 take precedence) [3]
H02P 11/00	***Hauptgruppe***	***Arrangements for controlling dynamo-electric converters (starting H02P 1/00 ; stopping or slowing H02P 3/00 ; vector control H02P 21/00 ; feeding a network in conjunction with a generator or another converter H02J) [4, 2006.01]***
H02P 11/04	1-Punkt Untergruppe	. for controlling dynamo-electric converters having a dc output
H02P 11/06	1-Punkt Untergruppe	. for controlling dynamo-electric converters having an ac output
H02P 13/00	**Hauptgruppe**	**Arrangements for controlling transformers, reactors or choke coils, for the purpose of obtaining a desired output (regulation systems using transformers, reactors or choke coils G05F; transformers H01F; feeding a network in conjunction with a generator or a converter H02J; control or regulation of converters H02M) [4]**
H02P 13/06	1-Punkt Untergruppe	. by tap-changing; by rearranging interconnections of windings
H02P 13/08	1-Punkt Untergruppe	. by sliding current collector along winding
H02P 13/10	1-Punkt Untergruppe	. by moving core, coil winding, or shield, e.g. by induction regulator
H02P 13/12	1-Punkt Untergruppe	. by varying magnetic bias
H02P 15/00	***Hauptgruppe***	***Arrangements for controlling dynamo-electric brakes or clutches (controlling speed of dynamo-electric motors by means of a separate brake H02P 29/04 , vector control H02P 21/00) [1, 2006.01]***
H02P 15/02	1-Punkt Untergruppe	. Conjoint control of brakes and clutches [3]
H02P 17/00	***Hauptgruppe***	***Arrangements for controlling dynamo-electric gears (vector control H02P 21/00) [3, 2006.01]***
H02P 19/00	Gelöscht	(transferred to H02P 1/00; H02P 3/00; H02P 5/00; H02P 7/00; H02P 23/00-H02P 31/00)
H02P 19/02	Gelöscht	(transferred to H02P 29/02)
H02P 21/00	***Hauptgruppe***	***Arrangements or methods for the control of electric machines by vector control, e.g. by control of field orientation [6, 2006.01]***
H02P 21/02	*1-Punkt Untergruppe*	*. specially adapted for optimising the efficiency at low load [2006.01]*

Symbol	Typ	Titel
H02P 21/04	*1-Punkt Untergruppe*	*. specially adapted for very low speeds [2006.01]*
H02P 21/05	*1-Punkt Untergruppe*	*. specially adapted for damping motor oscillations, e.g. for reducing hunting [2006.01]*
H02P 21/06	*1-Punkt Untergruppe*	*. Rotor flux based control [2006.01]*
H02P 21/08	*2-Punkt Untergruppe*	*. . Indirect field-oriented control, e.g. field phase angle calculation based on rotor voltage equation by adding slip frequency and speed proportional frequency [2006.01]*
H02P 21/10	*2-Punkt Untergruppe*	*. . Direct field-oriented control [2006.01]*
H02P 21/12	*1-Punkt Untergruppe*	*. Stator flux based control [2006.01]*
H02P 21/13	*1-Punkt Untergruppe*	*. Observer control, e.g. using Luenberger observers or Kalman filters [2006.01]*
H02P 21/14	*1-Punkt Untergruppe*	*. Estimation or adaptation of machine parameters, e.g. rotor time constant, flux, speed, current or voltage [2006.01]*
H02P 23/00	***Hauptgruppe***	***Arrangements or methods for the control of ac-motors characterised by a control method other than vector control (starting H02P 1/00 ; stopping or slowing H02P 3/00 ; of two or more motors H02P 5/00 ; of synchronous motors with electronic commutators H02P 6/00 ; of dc-motors H02P 7/00 ; of stepping motors H02P 8/00) [2006.01]***
H02P 23/02	*1-Punkt Untergruppe*	*. specially adapted for optimising the efficiency at low load [2006.01]*
H02P 23/03	*1-Punkt Untergruppe*	*. specially adapted for very low speeds [2006.01]*
H02P 23/04	*1-Punkt Untergruppe*	*. specially adapted for damping motor oscillations, e.g. for reducing hunting [2006.01]*
H02P 23/06	*1-Punkt Untergruppe*	*. Controlling the motor in four quadrants [2006.01]*
H02P 23/08	*1-Punkt Untergruppe*	*. Controlling based on slip frequency, e.g. adding slip frequency and speed proportional frequency [2006.01]*
H02P 23/10	*1-Punkt Untergruppe*	*. Controlling by adding a dc current (dc current braking H02P 3/24) [2006.01]*
H02P 23/12	*1-Punkt Untergruppe*	*. Observer control, e.g. using Luenberger observers or Kalman filters [2006.01]*
H02P 23/14	*1-Punkt Untergruppe*	*. Estimation or adaptation of motor parameters, e.g. rotor time constant, flux, speed, current or voltage [2006.01]*
H02P 25/00	***Hauptgruppe***	***Arrangements or methods for the control of ac-motors characterised by the kind of ac-motor or by structural details (starting H02P 1/00 ; stopping or slowing H02P 3/00 ; of two or more motors H02P 5/00 ; of synchronous motors with electronic commutators H02P 6/00 ; of dc-motors H02P 7/00 ; of stepping motors H02P 8/00) [2006.01]***
H02P 25/02	*1-Punkt Untergruppe*	*. characterised by the kind of motor [2006.01]*
H02P 25/04	*2-Punkt Untergruppe*	*. . Single phase motors, e.g. capacitor motors [2006.01]*
H02P 25/06	*2-Punkt Untergruppe*	*. . Linear motors [2006.01]*
H02P 25/08	*2-Punkt Untergruppe*	*. . Reluctance motors [2006.01]*
H02P 25/10	*2-Punkt Untergruppe*	*. . Commutator motors, e.g. repulsion motors [2006.01]*
H02P 25/12	*3-Punkt Untergruppe*	*. . . with shiftable brushes [2006.01]*
H02P 25/14	*3-Punkt Untergruppe*	*. . . Universal motors (H02P 25/12 takes precedence) [2006.01]*
H02P 25/16	*1-Punkt Untergruppe*	*. characterised by the circuit arrangement or by the kind of wiring [2006.01]*
H02P 25/18	*2-Punkt Untergruppe*	*. . with arrangements for switching the windings, e.g. with mechanical switches or relays [2006.01]*
H02P 25/20	*3-Punkt Untergruppe*	*. . . for pole-changing [2006.01]*

Symbol	Typ	Titel
H02P 25/22	*2-Punkt Untergruppe*	*. . Multiple windings ; Windings for more than three phases [2006.01]*
H02P 25/24	*2-Punkt Untergruppe*	*. . Variable impedance in stator or rotor circuit [2006.01]*
H02P 25/26	*3-Punkt Untergruppe*	*. . . with arrangements for controlling secondary impedance [2006.01]*
H02P 25/28	*2-Punkt Untergruppe*	*. . using magnetic devices with controllable degree of saturation, e.g. transductors [2006.01]*
H02P 25/30	*2-Punkt Untergruppe*	*. . the motor being controlled by a control effected upon an ac generator supplying it [2006.01]*
H02P 25/32	*2-Punkt Untergruppe*	*. . using discharge tubes [2006.01]*
H02P 27/00	***Hauptgruppe***	***Arrangements or methods for the control of ac-motors characterised by the kind of supply voltage (starting H02P 1/00 ; stopping or slowing H02P 3/00 ; of two or more motors H02P 5/00 ; of synchronous motors with electronic commutators H02P 6/00 ; of dc-motors H02P 7/00 ; of stepping motors H02P 8/00) [2006.01]***
H02P 27/02	*1-Punkt Untergruppe*	*. using supply voltage with constant frequency and variable amplitude [2006.01]*
H02P 27/04	*1-Punkt Untergruppe*	*. using variable-frequency supply voltage, e.g. inverter or converter supply voltage [2006.01]*
H02P 27/05	*2-Punkt Untergruppe*	*. . using ac supply for both rotor and stator circuits, the frequency of supply to at least one circuit being variable [2006.01]*
H02P 27/06	*2-Punkt Untergruppe*	*. . using dc to ac converters or inverters (H02P 27/05 takes precedence) [2006.01]*
H02P 27/08	*3-Punkt Untergruppe*	*. . . with pulse width modulation [2006.01]*
H02P 27/10	*4-Punkt Untergruppe*	*. . . . using bang-bang controllers [2006.01]*
H02P 27/12	*4-Punkt Untergruppe*	*. . . . pulsing by guiding the flux-, current-, or voltage-vector on a circle or a closed curve, e.g. direct torque control [2006.01]*
H02P 27/14	*4-Punkt Untergruppe*	*. . . . with three or more levels of voltage [2006.01]*
H02P 27/16	*2-Punkt Untergruppe*	*. . using ac to ac converters without intermediate conversion to dc (H02P 27/05 takes precedence) [2006.01]*
H02P 27/18	*3-Punkt Untergruppe*	*. . . varying the frequency by omitting half waves [2006.01]*
H02P 29/00	***Hauptgruppe***	***Arrangements for regulating or controlling electric motors, appropriate for both ac- and dc-motors (starting H02P 1/00 ; stopping or slowing H02P 3/00 ; control of motors that can be connected to two or more different voltage or current supplies H02P 4/00 ; vector control H02P 21/00) [2006.01]***
H02P 29/02	*1-Punkt Untergruppe*	*. Providing protection against overload without automatic interruption of supply, e.g. monitoring [2006.01]*
H02P 29/04	*1-Punkt Untergruppe*	*. by means of a separate brake [2006.01]*
H02P 31/00	***Hauptgruppe***	***Arrangements for regulating or controlling electric motors not provided for in groups H02P 1/00-H02P 5/00 , H02P 7/00 or H02P 21/00-H02P 29/00 [2006.01]***