Symbol	Typ	Titel
H	**Sektion**	**ELECTRICITY**
H03	**Klasse**	**BASIC ELECTRONIC CIRCUITRY**
H03L	**Unterklasse**	**AUTOMATIC CONTROL, STARTING, SYNCHRONISATION, OR STABILISATION OF GENERATORS OF ELECTRONIC OSCILLATIONS OR PULSES (of dynamo-electric generators H02P) [3]**
H03L 1/00	**Hauptgruppe**	**Stabilisation of generator output against variations of physical values, e.g. power supply (automatic control H03L 5/00, H03L 7/00) [3, 2006.01]**
H03L 1/02	1-Punkt Untergruppe	. against variations of temperature only [3, 2006.01]
H03L 1/04	2-Punkt Untergruppe	. . Constructional details for maintaining temperature constant [3, 2006.01]
H03L 3/00	**Hauptgruppe**	**Starting of generators [3, 2006.01]**
H03L 5/00	**Hauptgruppe**	**Automatic control of voltage, current, or power [3, 2006.01]**
H03L 5/02	1-Punkt Untergruppe	. of power [3, 2006.01]
H03L 7/00	**Hauptgruppe**	**Automatic control of frequency or phase; Synchronisation (tuning of resonant circuits in general H03J; synchronising in digital communication systems, see the relevant groups in class H04) [3, 2006.01]**
H03L 7/02	1-Punkt Untergruppe	. using a frequency discriminator comprising a passive frequency-determining element [3, 2006.01]
H03L 7/04	2-Punkt Untergruppe	. . wherein the frequency-determining element comprises distributed inductance and capacitance [3, 2006.01]
H03L 7/06	1-Punkt Untergruppe	. using a reference signal applied to a frequency- or phase-locked loop [3, 2006.01]
H03L 7/07	2-Punkt Untergruppe	. . using several loops, e.g. for redundant clock signal generation (for indirect frequency synthesis H03L 7/22) [5, 2006.01]
H03L 7/08	2-Punkt Untergruppe	. . Details of the phase-locked loop [3, 2006.01]
H03L 7/081	3-Punkt Untergruppe	. . . provided with an additional controlled phase shifter [5, 2006.01]
H03L 7/083	3-Punkt Untergruppe	. . . the reference signal being additionally directly applied to the generator (direct frequency synchronisation without loop H03L 7/24) [5, 2006.01]
H03L 7/085	3-Punkt Untergruppe	. . . concerning mainly the frequency- or phase-detection arrangement including the filtering or amplification of its output signal (H03L 7/10 takes precedence; frequency or phase detection comparison in general H03D 3/00, H03D 13/00) [5, 2006.01]
H03L 7/087	4-Punkt Untergruppe	. . . . using at least two phase detectors or a frequency and phase detector in the loop [5, 2006.01]
H03L 7/089	4-Punkt Untergruppe	. . . . the phase or frequency detector generating up-down pulses (H03L 7/087 takes precedence) [5, 2006.01]
H03L 7/091	4-Punkt Untergruppe	. . . . the phase or frequency detector using a sampling device (H03L 7/087 takes precedence) [5, 2006.01]
H03L 7/093	4-Punkt Untergruppe	. . . . using special filtering or amplification characteristics in the loop (H03L 7/087-H03L 7/091 take precedence) [5, 2006.01]
H03L 7/095	4-Punkt Untergruppe	. . . . using a lock detector (H03L 7/087 takes precedence) [5, 2006.01]
H03L 7/097	4-Punkt Untergruppe	. . . . using a comparator for comparing the voltages obtained from two frequency to voltage converters [5, 2006.01]
H03L 7/099	3-Punkt Untergruppe	. . . concerning mainly the controlled oscillator of the loop [5, 2006.01]
H03L 7/10	3-Punkt Untergruppe	. . . for assuring initial synchronisation or for broadening the capture range [3, 2006.01]

Symbol	Typ	Titel
H03L 7/107	4-Punkt Untergruppe	. . . . using a variable transfer function for the loop, e.g. low pass filter having a variable bandwidth [5, 2006.01]
H03L 7/113	4-Punkt Untergruppe	. . . . using frequency discriminator [5, 2006.01]
H03L 7/12	4-Punkt Untergruppe	. . . . using a scanning signal (tuning circuits with automatic scanning over a band of frequencies H03J 7/18) [3, 2006.01]
H03L 7/14	3-Punkt Untergruppe	. . . for assuring constant frequency when supply or correction voltages fail [3, 2006.01]
H03L 7/16	2-Punkt Untergruppe	. . Indirect frequency synthesis, i.e. generating a desired one of a number of predetermined frequencies using a frequency- or phase-locked loop [3, 2006.01]
H03L 7/18	3-Punkt Untergruppe	. . . using a frequency divider or counter in the loop (H03L 7/20, H03L 7/22 take precedence) [3, 2006.01]
H03L 7/181	4-Punkt Untergruppe	. . . . a numerical count result being used for locking the loop, the counter counting during fixed time intervals [5, 2006.01]
H03L 7/183	4-Punkt Untergruppe	. . . . a time difference being used for locking the loop, the counter counting between fixed numbers or the frequency divider dividing by a fixed number [5, 2006.01]
H03L 7/185	5-Punkt Untergruppe	. . . . . using a mixer in the loop (H03L 7/187-H03L 7/195 take precedence) [5, 2006.01]
H03L 7/187	5-Punkt Untergruppe	. . . . . using means for coarse tuning the voltage controlled oscillator of the loop (H03L 7/191-H03L 7/195 take precedence) [5, 2006.01]
H03L 7/189	6-Punkt Untergruppe	. . . . . comprising a D/A converter for generating a coarse tuning voltage [5, 2006.01]
H03L 7/191	5-Punkt Untergruppe	. . . . . using at least two different signals from the frequency divider or the counter for determining the time difference (H03L 7/193, H03L 7/195 take precedence) [5, 2006.01]
H03L 7/193	5-Punkt Untergruppe	. . . . . the frequency divider/counter comprising a commutable pre-divider, e.g. a two modulus divider (pulse counters/frequency dividers H03K 21/00-H03K 29/00) [5, 2006.01]
H03L 7/195	5-Punkt Untergruppe	. . . . . in which the counter of the loop counts between two different non zero numbers, e.g. for generating an offset frequency (H03L 7/193 takes precedence; pulse counters for predetermined counting H03K 21/00-H03K 29/00) [5, 2006.01]
H03L 7/197	4-Punkt Untergruppe	. . . . a time difference being used for locking the loop, the counter counting between numbers which are variable in time or the frequency divider dividing by a factor variable in time, e.g. for obtaining fractional frequency division [5, 2006.01]
H03L 7/199	5-Punkt Untergruppe	. . . . . with reset of the frequency divider or the counter, e.g. for assuring initial synchronisation [5, 2006.01]
H03L 7/20	3-Punkt Untergruppe	. . . using a harmonic phase-locked loop, i.e. a loop which can be locked to one of a number of harmonically related frequencies applied to it (H03L 7/22 takes precedence) [3, 2006.01]
H03L 7/22	3-Punkt Untergruppe	. . . using more than one loop [3, 2006.01]
H03L 7/23	4-Punkt Untergruppe	. . . . with pulse counters or frequency dividers [5, 2006.01]
H03L 7/24	1-Punkt Untergruppe	. using a reference signal directly applied to the generator [3, 2006.01]
H03L 7/26	1-Punkt Untergruppe	. using energy levels of molecules, atoms, or subatomic particles as a frequency reference [3, 2006.01]
H03L 9/00	**Hauptgruppe**	**Automatic control not provided for in other groups of this subclass [2006.01]**