

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]
H03L 1/02	1-Punkt Untergruppe	. against variations of temperature only [3]
H03L 1/04	2-Punkt Untergruppe	. . Constructional details for maintaining temperature constant [3]
H03L 3/00	Hauptgruppe	Starting of generators [3]
H03L 5/00	Hauptgruppe	Automatic control of voltage, current, or power [3]
H03L 5/02	1-Punkt Untergruppe	. of power [3]
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]
H03L 7/02	1-Punkt Untergruppe	. using a frequency discriminator comprising a passive frequency-determining element [3]
H03L 7/04	2-Punkt Untergruppe	. . wherein the frequency-determining element comprises distributed inductance and capacitance [3]
H03L 7/06	1-Punkt Untergruppe	. using a reference signal applied to a frequency- or phase-locked loop [3]
H03L 7/07	2-Punkt Untergruppe	. . using several loops, e.g. for redundant clock signal generation (for indirect frequency synthesis H03L 7/22) [5]
H03L 7/08	2-Punkt Untergruppe	. . Details of the phase-locked loop [3]
H03L 7/081	3-Punkt Untergruppe	. . . provided with an additional controlled phase shifter [5]
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]
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]
H03L 7/087	4-Punkt Untergruppe	 using at least two phase detectors or a frequency and phase detector in the loop [5]
H03L 7/089	4-Punkt Untergruppe	 the phase or frequency detector generating up-down pulses (H03L 7/087 takes precedence) [5]
H03L 7/091	4-Punkt Untergruppe	 the phase or frequency detector using a sampling device (H03L 7/087 takes precedence) [5]
H03L 7/093	4-Punkt Untergruppe	 using special filtering or amplification characteristics in the loop (H03L 7/087 to H03L 7/091 take precedence) [5]
H03L 7/095	4-Punkt Untergruppe	 using a lock detector (H03L 7/087 takes precedence) [5]
H03L 7/097	4-Punkt Untergruppe	 using a comparator for comparing the voltages obtained from two frequency to voltage converters [5]
H03L 7/099	3-Punkt Untergruppe	. . . concerning mainly the controlled oscillator of the loop [5]
H03L 7/10	3-Punkt Untergruppe	. . . for assuring initial synchronisation or for broadening the capture range [3]
H03L 7/107	4-Punkt Untergruppe	 using a variable transfer function for the loop, e.g. low pass filter having a variable bandwidth [5]
H03L 7/113	4-Punkt Untergruppe	 using frequency discriminator [5]

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H03L 7/12	4-Punkt Untergruppe	 using a scanning signal (tuning circuits with automatic scanning over a band of frequencies H03J 7/18) [3]
H03L 7/14	3-Punkt Untergruppe	. . . for assuring constant frequency when supply or correction voltages fail [3]
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]
H03L 7/18	3-Punkt Untergruppe	. . . using a frequency divider or counter in the loop (H03L 7/20 , H03L 7/22 take precedence) [3]
H03L 7/181	4-Punkt Untergruppe	 a numerical count result being used for locking the loop, the counter counting during fixed time intervals [5]
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]
H03L 7/185	5-Punkt Untergruppe	 using a mixer in the loop (H03L 7/187 to H03L 7/195 take precedence) [5]
H03L 7/187	5-Punkt Untergruppe	 using means for coarse tuning the voltage controlled oscillator of the loop (H03L 7/191 to H03L 7/195 take precedence) [5]
H03L 7/189	6-Punkt Untergruppe	 comprising a D/A converter for generating a coarse tuning voltage [5]
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]
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 to H03K 29/00) [5]
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 to H03K 29/00) [5]
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]
H03L 7/199	5-Punkt Untergruppe	 with reset of the frequency divider or the counter, e.g. for assuring initial synchronisation [5]
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]
H03L 7/22	3-Punkt Untergruppe	. . . using more than one loop [3]
H03L 7/23	4-Punkt Untergruppe	 with pulse counters or frequency dividers [5]
H03L 7/24	1-Punkt Untergruppe	. using a reference signal directly applied to the generator [3]
H03L 7/26	1-Punkt Untergruppe	. using energy levels of molecules, atoms, or subatomic particles as a frequency reference [3]