

Abstract

The invention relates to a method for determining and/or monitoring at least one physical, process variable of a medium with an oscillatable unit, wherein the oscillatable unit is excited by means of a frequency search sweep within a predetermined frequency band in the working range of the oscillatable unit in the form of transmitted signals (T) successively to oscillate with discrete exciter frequencies (f_k) following one after the other, wherein the corresponding oscillations of the oscillatable unit are received in the form of received signals (E), wherein, via the frequency search sweep, the exciter frequency (f_k) is ascertained, in the case of which the oscillatable unit oscillates with an oscillation frequency, which has a predetermined phase shift ($\Delta\phi$) between the transmitted signal (T) and the received signal (R), and wherein a transmitting/receiving unit excites the oscillatable unit to oscillate with the ascertained oscillation frequency or wherein the following frequency search sweep is started. The invention is distinguished by features including that the oscillation frequency at the predetermined phase shift ($\Delta\phi$) is ascertained by sampling the received signal (R) discretely at selected points in time, wherein the selected points in time depend on the predetermined phase shift ($\Delta\phi$) between transmitted signal (T) and received signal (R) and that the voltage values U_i sampled at the discrete exciter frequencies (f_k) of the received signal (R) are evaluated with reference to their amplitude.

(Fig. 1a)