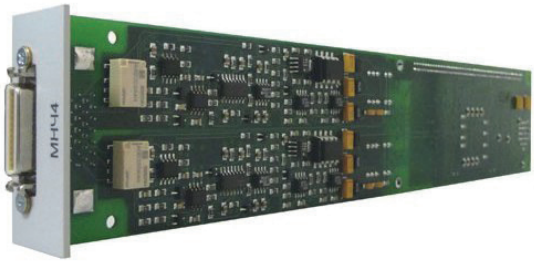
Measuring the frequency of the signals **MNCH4**



The MNCH4 mezzanine module is designed for normalization and subsequent measurement of the frequency of periodic signals from the outputs of induction-type sensors (liquid and gas flow sensors, speed sensors).

The MNCH4 mezzanine performs measurements in the following modes:

- "One-time" - a single measurement is performed on all channels;
- "Block" - measurements are performed until a pre-set number of samples (results) is received on all channels;
- "Continuous" - measurements are performed on all channels in a continuous loop until the stop command is received.

Special Features

- Channels are galvanically separated from control schemes, source voltage and common (gnd) lines, frames (m-module case and mezzanine carrier case)
- frequency measurement in single mode or continuous mode
- program changeable period of channel polling (sampling period)
- with increased sampling period accuracy of frequency measurement is increased
- normalization of the signal at input (amplification and conversion of the signal into digital form)
- digital filtration of interferences by continuance

Specifications

Number of channels 4	Frequency measurement range from 1 Hz to 30 kHz
Minimum amplitude of the input bipolar signal at which measurement is provided: • 15 mV for input frequency from 1 Hz to 1 kHz; • 50 mV for input frequency from 1 kHz to 5 kHz; • 100 mV for the input frequency from 5 kHz to 10 kHz; • 300 mV for the input frequency from 10 kHz to 30 kHz.	The sampling period is set programmatically in the range from 100 µs to 1 s. Step for changing the sampling period 100 µs The input resistance of the measuring channel is 2 MOhm
Limits of the permissible basic relative error of frequency measurements of a periodic bipolar signal at an ambient temperature of + (20 ± 2) ° C, % $\pm\left[\frac{T_{\min}}{T_s}\cdot 0{,}1+\frac{0{,}5}{T_s\cdot F_x}+\delta_0\right]$ where Tmin is the minimum allowed sampling period of 100 MS, Ts is the sampling period, and Fx is the measured frequency, $\delta_0 = 0.00018\%$	Limits of permissible additional relative error of frequency measurements of a periodic bipolar signal, %: ± 0,0001T, where T – dimensionless quantity, is numerically equal to the deviation of ambient temperature from the value of 18 °C (for temperatures from 5 to 18 ° C) or from value of 22 °C (for temperature range from 22 to 40 °C).
The measuring circuits of the mezzanine are galvanically isolated from the housing. The galvanic isolation voltage is not less than 200 V. The galvanic isolation resistance is not less than 20 MOhm.	Measuring circuits of different channels of the mezzanine are galvanically isolated from each other. The galvanic isolation voltage is not less than 150 V. The galvanic isolation resistance is not less than 20 MOhm.