

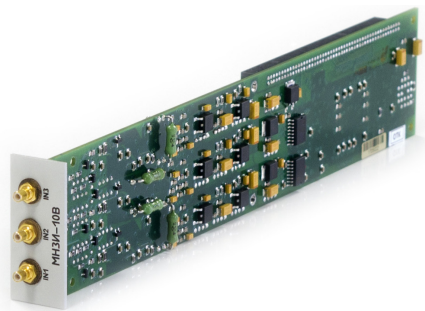
DC voltage meter **MN3I**

The MN3I mezzanine is designed to measure the instantaneous voltage value of high-frequency signals on 3 channels galvanically isolated from each other, control circuits, and the casing body.

MN3I mezzanine is installed on the mezzanine carrier - HM-M module and connected to it via a local information highway. Up to four different types of mezzanines can be installed on the NM-M module. The NM-M module, together with the mezzanines installed on it, forms the VXI module of size C-1 and is used to create information measuring VXI systems.

Key Features of MN3I

- each mezzanine measuring channel has a differential input;
- all measuring channels are galvanically isolated from each other, with control circuits, power lines and common (GND) VXI trunk, as well as from the chassis of the chassis;
- each mezzanine measuring channel has a 4th order analog filter.
- the inputs of each measuring channel are connected to the signal source via relay contacts. This allows you to switch input signals without first turning off the power of the mezzanine (for example, for self-monitoring).



- on the mezzanine, the possibility of hardware averaging of measurement results is realized in order to increase accuracy and reduce the flow of information over the VXI bus.
- the mezzanine provides the possibility of self-control of its basic functions;
- the mezzanine provides calibration of the zero offset of each measuring channel at an arbitrary point in time according to a command programmed by the user. This allows for high measurement accuracy during long-term tests (up to 350 hours or more) with changing ambient temperature.
- on the mezzanine 3 measurement channels are implemented, each with its own ADC, being interrogated synchronously.

Specifications

Number of measuring channels 3		The input resistance of the measuring channel is not less than 1 MOhm	
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Обозначение	Measurement range	Measuring channel bandwidth level -3 dB	
MN3I	-10 to +10 V	(305 ± 10) kHz	
MN3I-01	-1 to +1 V	(310 ± 10) kHz	
MN3I-02	-0,1 to +0,1 V	(460 ± 10) kHz	
MN3I-03	-10 to 10 V	(610 ± 20) kHz	
<p>The limits of the permissible basic relative error of measurement of instantaneous voltage values for the minimum sampling period (obtaining measurement results) at an ambient temperature (20 ± 2) ° C, %:</p> <ul style="list-style-type: none">• ±[0,025 + 0,0254(U_m/U_x - 1)] for the measurement range from -10 to 10 V and bandwidth (305 ± 10) kHz,• ±[0,045 + 0,0354(U_m/U_x - 1)] for the measurement range from -1 to 1 V and bandwidth (310 ± 10) kHz;• ±[0,350 + 0,3504(U_m/U_x - 1)] for the measurement range from -100 to 100 mV and bandwidth (460 ± 10) kHz;• ±[0,050 + 0,0504(U_m/U_x - 1)] for the measurement range from -10 to 10 V and bandwidth (610 ± 20) kHz. <p>where U_m is the value of the upper limit of the range, and U_x is the measured value;</p>			
<p>Limits of permissible additional relative measurement error for instantaneous voltage values with a minimum sampling period for all measurement ranges, %:</p> <p style="text-align: center;">± 0,002 T,</p> <p>where T is 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).</p>			
The period of receiving measurement results (sampling period) is set programmatically in the range from 400 ns to 26.214 ms in 400 ns increments		The measuring circuits of the mezzanine are galvanically isolated from the crate housing. Electrical insulation strength of the galvanic isolation is not less than 200 V. Isolation resistance of the galvanic isolation is not less than 20 MOhm	
Range of acceptable (safe) input voltage values from -35 V to +35 V			