



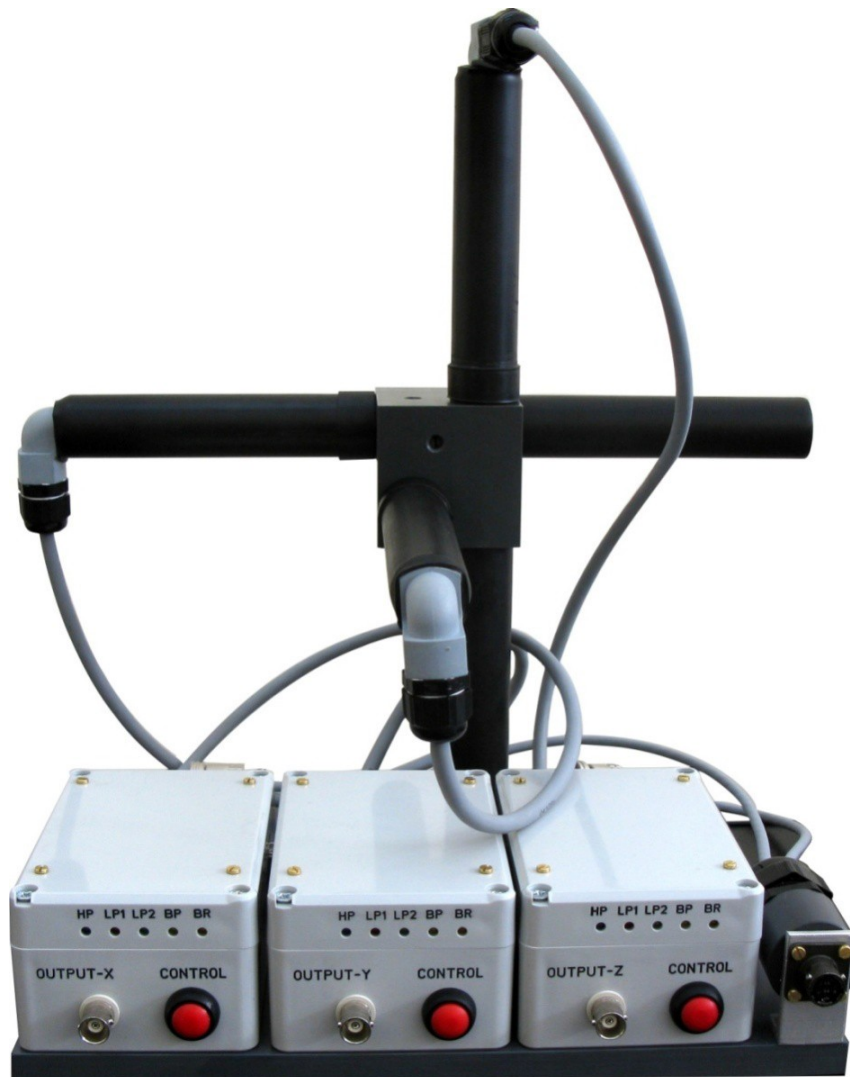
## HIGH FREQUENCY LOW NOISE INDUCTION MAGNETOMETER LEMI-150

### Main features:

- High sensitivity
- Low noise, near the theoretically lowest possible level
- Frequency band 1 ... 500 kHz
- Low power consumption

### Composition:

- 3 induction sensors
- 3 commutation and filter blocks



Three axis search-coil magnetometer LEMI-150 is intended for the measurements of the three orthogonal components of magnetic field fluctuations. Every individual sensor that constructs the 3D sensor is independent.

There is an option to take out the individual sensor for independent use with or without its matching circuits and filters (modularity). There is an option to work with less than three sensors.

System Performance	
Frequency Band	1-500 kHz
Nominal Transformation coefficient (at high impedance load)	500mV/nT
Transformation coefficient error	<6 dB
Crosstalk rejection	>20 dB
Magnetic noise level along each axis @1kHz	<35 fT/ $\sqrt{\text{Hz}}$
Magnetic noise level along each axis @10kHz	<4 fT/ $\sqrt{\text{Hz}}$
Magnetic noise level along each axis @20kHz	<2 fT/ $\sqrt{\text{Hz}}$
Magnetic noise level along each axis @100kHz	<2 fT/ $\sqrt{\text{Hz}}$
Power consumption	<2.5W
Operating temperature	0-50°C
Total Weight	<2.5kg
Outer dimensions of the 3D construction	33cm x 33cm x 33cm
Damage level	>40A/m
Frequency response and filters	
<u>High pass filter:</u> Filter type Cutoff frequency Stop band attenuation Passband ripple	4 <sup>th</sup> order Butterworth 1kHz 20 dB at 0.5kHz <0.4 dB
<u>Low pass filter 1:</u> Filter type Cutoff frequency Stop band attenuation Passband ripple	4 <sup>th</sup> order elliptic 100kHz 20 dB at 120kHz <0.4 dB
<u>Low pass filter 2:</u> Filter type Cutoff frequency Stop band attenuation Passband ripple	4 <sup>th</sup> order elliptic 300kHz 20 dB at 350kHz <0.4 dB
Additional band pass and band reject filters	The filters are detachable and interchangeable.
Interface and connectors	
Power supply voltage*	+ and - (8-12) V
Power supply connector	PT02E-08-04S(014)
Output resistance	50 Ohm
Min. loading resistance	50 Ohm
Max. output voltage	$\pm 2\text{V}$
Short-time short-circuit protection	Included
Type of the output connectors	Coaxial, BNC type

**\* When a single-axis sensor is used without the commutation filter block and connected to a 50 Ohm load, the power supply voltage must not exceed  $\pm 8$  V in order to avoid preamplifier overheating.**

5A Naukova St., 79060 Lviv, Ukraine, Lviv Centre of ISR,  
Tel./Fax: +38-032-2639163; Email: [yakor@isr.lviv.ua](mailto:yakor@isr.lviv.ua),  
<http://www.isr.lviv.ua>