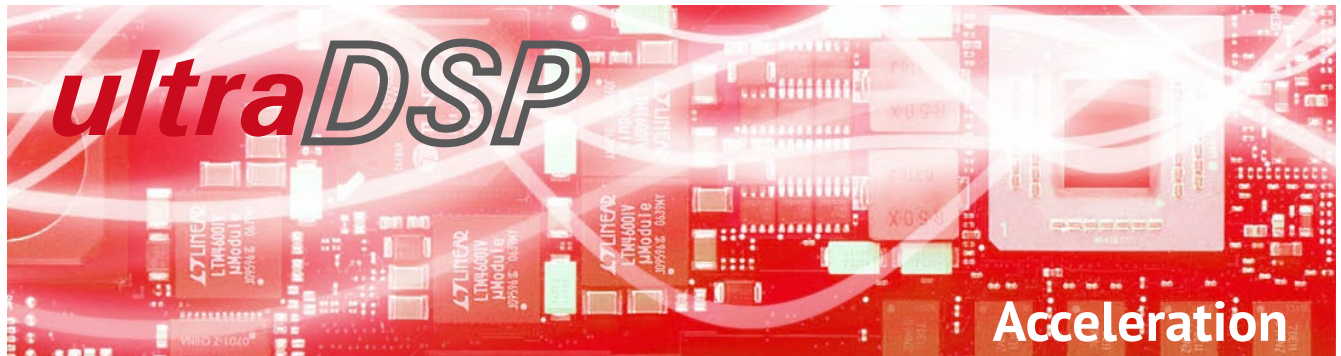


Digital Acceleration Decoder D-AD-5N



ultraDSP Technology - Ultrafast FPGA based digital signal processing

OptoMET offer a complete line of vibrometer digital decoders. Compared to their analog counterparts, digital decoders offer much better precision, resolution, aging resistance, and sensitivity. The user can thus measure vibrations / dynamic motion (even very small amplitudes) with high precision. Practical applications also benefit from the excellent low-noise digital signal processing that allows measurements on nearly all types of surfaces and from a large distance.

OptoMET has implemented its ultrafast digital signal processing technology (ultraDSP), which combines efficient algorithms with extremely powerful hardware, to achieve exceptional resolution, high frequency bandwidths and extremely large dynamic range of up to 9 decades for velocity measurements (nm/s - m/s).

Acceleration decoders

OptoMET offers a range of digital decoder options that can be used to upgrade or expand all models of so that you can tailor them to your measuring requirements.

Each vibrometer can also be equipped with an acceleration decoder in addition to the velocity decoder already installed. These decoders produce a real-time output signal that is proportional to the acceleration of the measured object. Depending on the performance class, these decoders have a working frequency range of up to 10 MHz.

D-AD-5N Features:

- Digital Decoder
- 14 acceleration measuring ranges
- Max. frequency up to 10 MHz
- Max. acceleration 78,400,000 g
- Best acceleration resolution 1.8 $\mu\text{g} / \sqrt{\text{Hz}}$ *
- Max. permissible velocity of the measured object 24.5 m/s

Technical data

The D-AD-5N acceleration decoder was specially developed for use with velocity decoder D-VD-5N. It expands the laser Doppler vibrometers of the Vector Series with the capability of a real-time output of the acceleration value.

D-AD-5N technical data

Pos.	Full Scale Output (Peak) g	Max. Frequency kHz	Max. Velocity m/s
1	3.9	2.5	24.5
2	15.6	5	24.5
3	78	10	24.5
4	392	25	24.5
5	1,560	50	24.5
6	7,800	100	24.5
7	39,200	250	24.5
8	156,000	500	24.5
9	784,000	1,000	24.5
10	2,350,000	1,500	24.5
11	7,840,000	2,500	24.5
12	78,400,000	10,000	24.5
13	62,700,000	5,000	24.5
14	39,200,000	2,500	24.5

* The resolution is defined as the signal amplitude (rms) that produces 0 dB signal/noise ratio with 1 Hz spectral resolution at 50 % fmax.