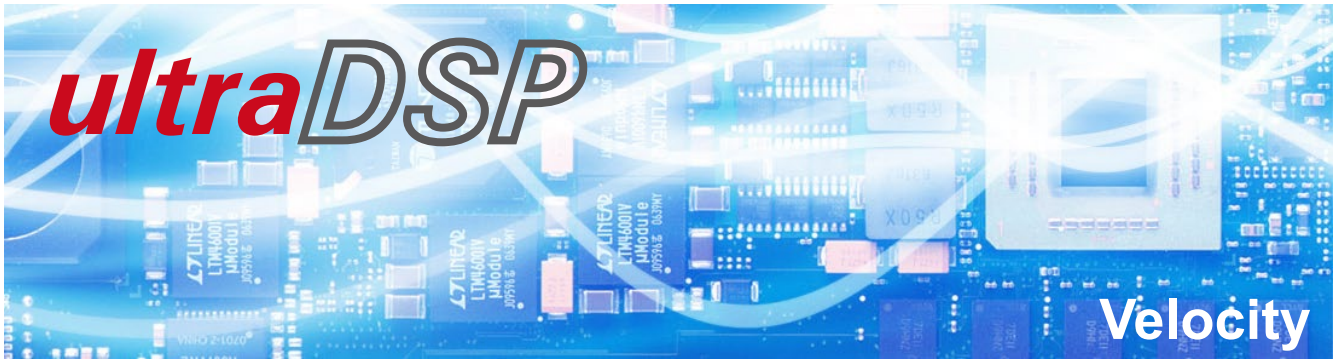
Digital Velocity Decoder D-VD-2N-R



ultraDSP Technology - Ultrafast digital signal processing (ultraDSP)

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 velocity resolution, high frequency bandwidths and extremely large dynamic range of up to 9 decades for velocity measurements (nm/s - m/s).

Velocity decoders

OptoMET offers a wide range of digital decoder options allowing customers to tailor any vibrometer model to their unique measurement requirements.

All vibrometers have at least one velocity decoder, which can be supplemented with a suitable displacement and/or acceleration decoder.

The choice of velocity decoder defines not only the minimum and maximum measurable velocity, but also the maximum permissible acceleration and vibration frequency.

D-VD-2N-R Features:

- Digital Decoder
- 11 velocity measuring ranges
- Frequency range DC to 25 kHz
- Max. vibration velocity 5 m/s
- Resolution down to 1.7 nm $s^{-1}/\sqrt{Hz}$
- Max. permissible acceleration of the measured object 80,000 g

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Technical data

The D-VD-2N-R velocity decoder has been specially developed to register even the smallest mechanical vibrations and motions. It has 11 velocity measuring ranges from 2.45 mm/s to 5 m/s and is ultrasensitive in detecting tiny vibrations up to 1.7 nm/s.

Pos.	Full Scale Output (Peak) m/s	Typical Resolution* µm s^{-1} / √Hz	Signal Frequency Range kHz	Max. Acceleration g
1	0.00245	0.0017	2.5	3.9
2	0.0049	0.002	5	15.6
3	0.01225	0.003	10	78
4	0.0245	0.012	25	392
5	0.049	0.018	25	784
6	0.1225	0.024	25	1,960
7	0.245	0.05	25	3,920
8	0.49	0.10	25	7,840
9	1.225	0.20	25	19,600
10	2.45	0.29	25	39,200
11	5	0.50	25	80,000

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