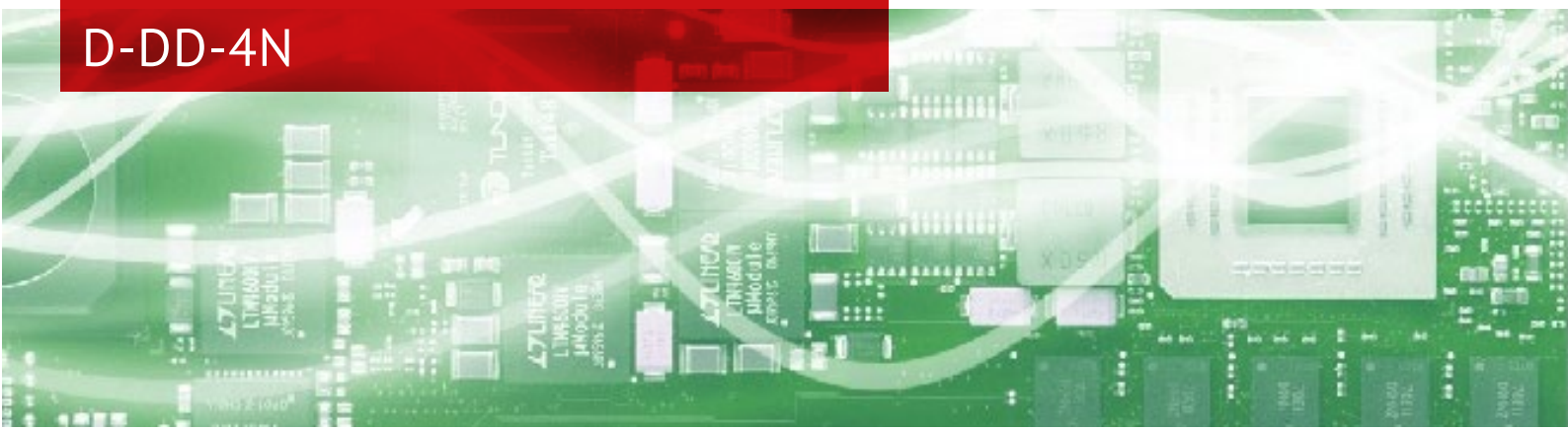
optomet.
LASER VIBROMETRY

Digital Displacement Decoder
D-DD-4N



Ultrafast FPGA-based Digital Signal Processing

Optomet Vibrometers feature an end-to-end FPGA-based digital signal processing allowing a fully digital read-out of the measurement data. Digital signal processing avoids any drawbacks of analog demodulation which may result from component aging, temperature dependencies, noise and non-linearities. Significantly higher sensitivity, better resolution, and stability are the benefits of OptoMET's end-to-end digital signal processing. Extremely low noise levels produce precise results even from poorly reflecting measurement objects.

HIGHLIGHTS:

- Digital decoder
- 19 displacement measuring ranges
- Frequency range: DC bis 10 MHz
- Max. velocity up to 12 m/s
- Resolution down to 50 femtometers

High-Frequency Displacement Decoder

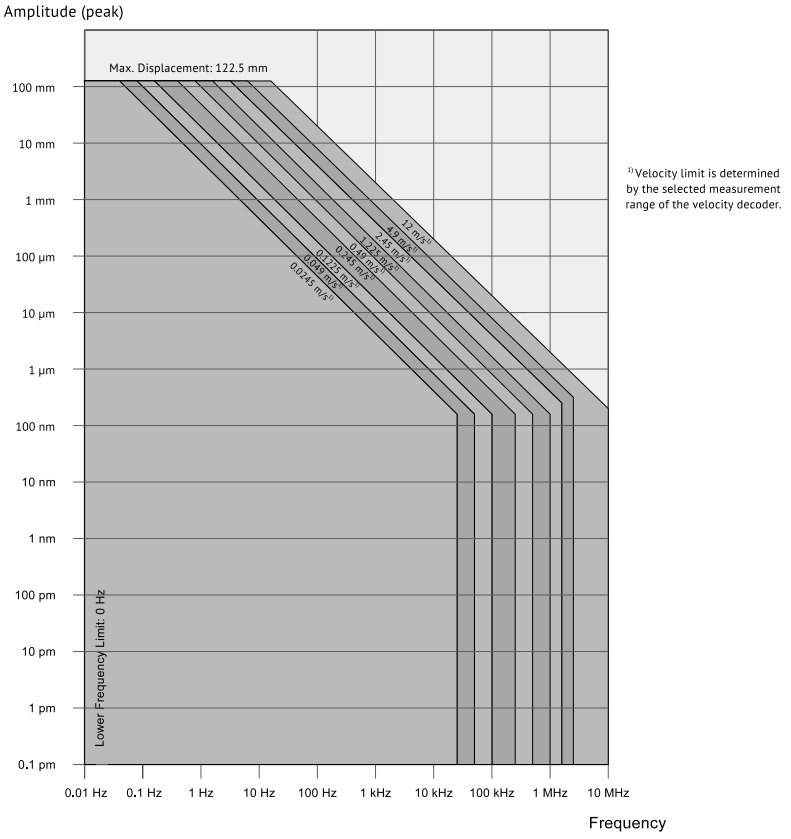
All vibrometers series feature by default a velocity decoder and can be supplemented with a suitable displacement and/or acceleration decoder.

The D-DD-4N displacement decoder was specially developed for measuring displacements of high-frequency processes with up to 10 MHz. This decoder combines a wide measuring frequency bandwidth with an excellent resolution down to the atomic scale.
Required velocity decoder: D-VD-4N

Technical data

Pos.	Full Scale Output peak to peak µm	Signal Frequency Range kHz	Max. Velocity m/s
1	0.245	0 ... 10000	12
2	0.49	0 ... 10000	12
3	0.98	0 ... 10000	12
4	2.45	0 ... 10000	12
5	4.9	0 ... 10000	12
6	9.8	0 ... 10000	12
7	24.5	0 ... 10000	12
8	49	0 ... 10000	12
9	98	0 ... 10000	12
10	245	0 ... 10000	12
11	490	0 ... 10000	12
12	980	0 ... 10000	12
13	2,450	0 ... 10000	12
14	4,900	0 ... 10000	12
15	9,800	0 ... 10000	12
16	24,500	0 ... 10000	12
17	49,000	0 ... 10000	12
18	98,000	0 ... 10000	12
19	245,000	0 ... 10000	12

Range diagram



[1] Velocity limit is determined by the selected measurement range of the velocity decoder.