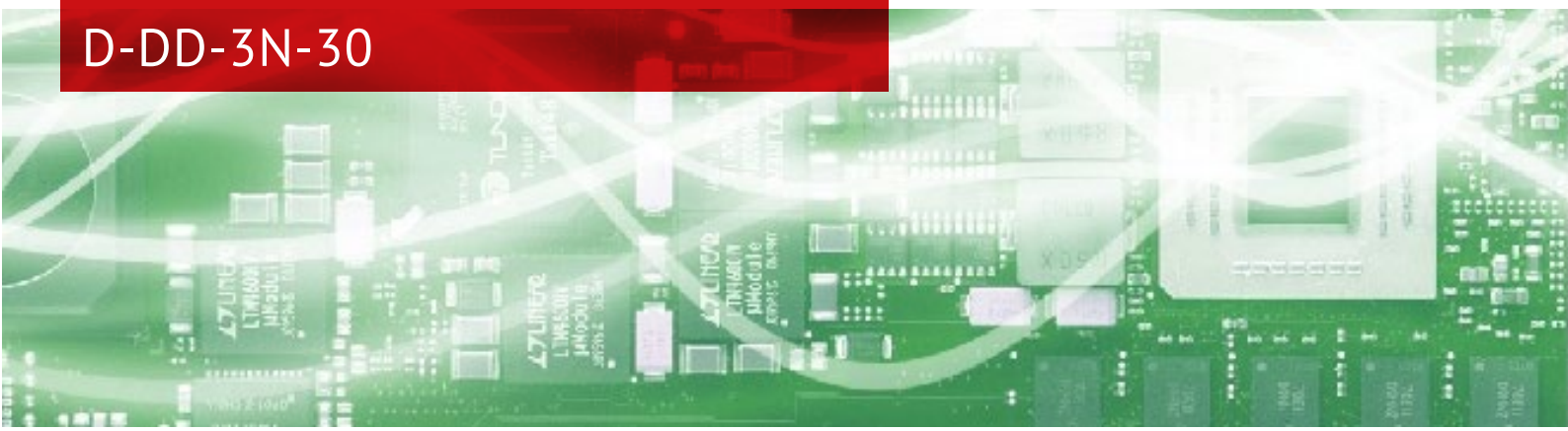
optomet.
LASER VIBROMETRY

Digital Displacement Decoder
D-DD-3N-30



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 2.5 MHz
- Max. velocity up to 30 m/s
- Resolution down to 50 femtometers

High-Speed Displacement Decoder

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

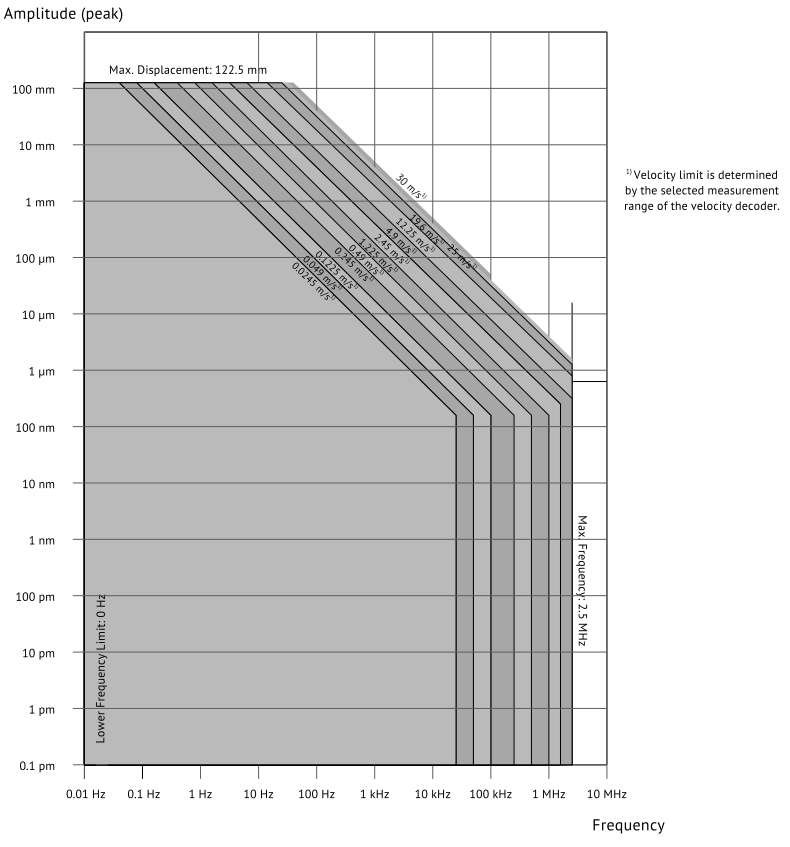
The D-DD-3N-30 displacement decoder can also measure displacements of objects with a very high velocity (up to 30 m/s). The working frequency range is between DC and 2.5 MHz.
Required velocity decoder: D-VD-3N-30

Technical data

Pos.	Full Scale Output peak to peak µm	Signal Frequency Range kHz	Max. Velocity* m/s
1	0.245	0 ... 2500	30
2	0.49	0 ... 2500	30
3	0.98	0 ... 2500	30
4	2.45	0 ... 2500	30
5	4.9	0 ... 2500	30
6	9.8	0 ... 2500	30
7	24.5	0 ... 2500	30
8	49	0 ... 2500	25
9	98	0 ... 2500	30
10	245	0 ... 2500	30
11	490	0 ... 2500	30
12	980	0 ... 2500	30
13	2,450	0 ... 2500	30
14	4,900	0 ... 2500	30
15	9,800	0 ... 2500	30
16	24,500	0 ... 2500	30
17	49,000	0 ... 2500	30
18	98,000	0 ... 2500	30
19	245,000	0 ... 2500	30

* Frequency limited to 100 kHz at velocity 30 m/s

Range diagram



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