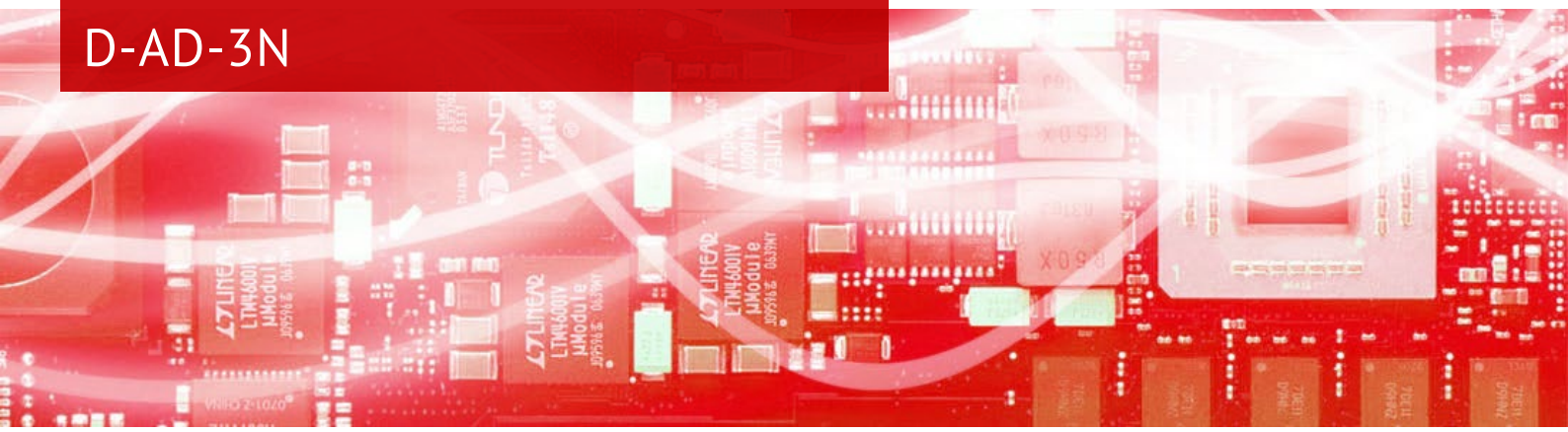
optomet.
LASER VIBROMETRY

# Digital Acceleration Decoder
## D-AD-3N



### 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
- 11 acceleration measuring ranges
- Frequency range: 0 Hz - 2.5 MHz
- Max. acceleration 40,000,000 g
- Best acceleration resolution 90 µg / √Hz*

### High-Speed Acceleration Decoder

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

The D-AD-3N acceleration decoder enables acceleration measurements up to 40,000,000 g at a maximum of 2.5 MHz and 25 m/s.
Required velocity decoder: D-VD-3N

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

# Technical data

| Pos. | Full Scale Output (Peak)<br>g | Max. Frequency<br>kHz | Max. Velocity<br>m/s |
|---|---|---|---|
| 1 | 392 | 25 | 25 |
| 2 | 1,560 | 50 | 25 |
| 3 | 7,800 | 100 | 25 |
| 4 | 39,200 | 250 | 25 |
| 5 | 156,000 | 500 | 25 |
| 6 | 784,000 | 1,000 | 25 |
| 7 | 2,350,000 | 1,500 | 25 |
| 8 | 7,840,000 | 2,500 | 25 |
| 9 | 19,600,000 | 2,500 | 25 |
| 10 | 31,300,000 | 2,500 | 25 |
| 11 | 40,000,000 | 2,500 | 25 |