

# MVS2018

Magnetic sensor

# MVS18 magnetic sensor design



Lightweight sensor and magnet:  
< 10 g for high bandwidth

Individually replaceable

- Sensor
- Cable
- Magnet (configurable)
- Elastic Element

Cable with coaxial connector that can turn and persist high force:

- The MVS18 could be pulled off a surface by the cable

Easy to grip

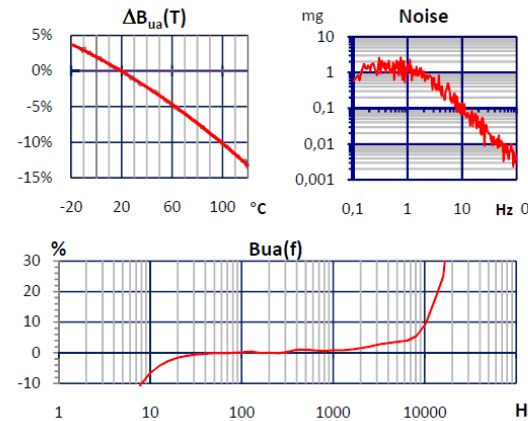
# Accelerometer data

Sensor produced by MMF Radebeul exclusively for Discom

## KS91E1

- IEPE-Beschleunigungsaufnehmer mit ringförmiger, isolierter Tastfläche aus Edelstahl
- M6x0,5 Gewinde zur Befestigung des Tastkopfes
- Empfindlichkeit: 10 mV/g
- Hoher Dynamikbereich
- Hohe Resonanzfrequenz

- IEPE accelerometer with ring-shaped, insulated probe made of stainless steel
- M6x0,5 thread to coupling the probe
- Sensitivity: 10 mV/g
- Wide dynamic range
- High resonant frequency



Magnet is attached to sensor with M3 screw; magnets of different strengths are available.

|  |  |   |                   |
|--|--|---|-------------------|
| Arbeitstemperaturbereich   | $T_{min}/T_{max}$                        | -20 / 120   | °C                |
| Piezosystem • Piezo design   |  | Scherprinzip • Shear design   |                   |
| Spannungsübertragungsfaktor • Voltage sensitivity                                  | $B_{ua}$                                 | $10 \pm 10 \%$  | mV/g              |
| Linearer Frequenzgang (am Messkopf) • Linear frequency range (on the probe)        | $\pm 3dB$<br>$\pm 10\%$<br>$\pm 5\%$     | 4... 18.000<br>8... 10.000<br>12... 8.000                               | Hz                |
| Resonanzfrequenz • Resonant frequency  | $f_r$                                    | > 42 (+25dB)  | kHz               |
| Messbereich • Range  | a- / a-                                  | $\pm 700$   | g (pk)            |
| Bruchbeschleunigung • Destruction limit  | $a_{max}$                                | 8000  | g (pk)            |
| Querrichtungsfaktor • Transverse sensitivity                                       | $G_{90max}$                              | < 5   | %                 |
| Keramikkapazität • Ceramic Capacitance   | $C_i$                                    | 200   | pF                |
| Ausgang • Output   |  | IEPE kompatibel • IEPE compatible                                       |                   |
| Konstantstromversorgung • Constant current supply                                  | $I_{CONST}$                              | 2..20   | mA                |
| Arbeitspunktspannung • Output bias voltage   | $U_{BIAS}$ @4mA; @25°C<br>@Tmin<br>@Tmax | 10..12<br>+5<br>-15   | V<br>%<br>%       |
| Nichtlinearität • Total harmonic distortions                                       | THD @a/a-                                | 2   | %                 |
| Ausgangsimpedanz • Output resistance   | $\Gamma_a$ @4mA                          | < 50  | $\Omega$          |
| Untere Grenzfrequenz • Low cut-off frequency                                       | $f_{ug}$ -3dB                            | 4   | Hz                |
| Störgrößen • Environmental characteristics   |  |   |                   |
| Eigenrauschen • Residual noise   | $a_{n\_RMS}$ (0,5 .. 20k)Hz              | < 30  | mg                |
|  | $a_n$ @1 Hz                              | 1000  | $\mu g/\sqrt{Hz}$ |
|  | @10 Hz                                   | 100   |                   |
|  | @100 Hz                                  | 10  |                   |
| Temperaturkoeffizient der Empfindlichkeit • Temperature coefficient of sensitivity | TK(Bua) @T< 20°C<br>@T> 20°C             | -0,10<br>-0,13  | %/K               |
| Temperatursprungempfindlichkeit • Temperature transient sensitivity                | $b_{aT}$                                 | 0,15  | $ms^{-2}/K$       |
| Magnetfeldempfindlichkeit • Magnetic field sensitivity                             | $b_{aB}$                                 | -   | $ms^{-2}/T$       |
| Mechanische Daten • Mechanical data  |  |   |                   |
| Abmessungen • Dimensions   | $\varnothing / h$                        | 7,8 / 15,5  | mm                |
| Kopfflansch für Sensoraufnahme • coupling flange                                   | $\varnothing / h$                        | M6x0,5 / 2,2  | mm                |
| Masse ohne Kabel • Weight without cable  | m  | 1,85  | g                 |
| Gehäusematerial • Case material  |  | Aluminium / Edelstahl • Stainless steel                                 |                   |
| Kabelanschluss • Cable connection  |  | axial   |                   |
| Kontaktbuchse • Socket   |  | Subminiatur M3 • Subminiature M3  |                   |
| Befestigung • Mounting   | Messkopf • probe                         | adhesive / antasten • touch   |                   |
| Schutzgrad / Isolation • Protection grade / Insulation                             |  | - / Isolierter Messkopf • insulated probe                               |                   |
| Anschlusszubehör • Connection Accessories  |  | 054 / 013T / 017 / 016 + 051x   |                   |
| Befestigungszubehör • Mounting Accessories   |  | 002   |                   |
| Passende Messgeräte • Suitable Electronics   |  | M28 / M32 / M68 / M108 / M208 / M12 / VibroMetra                        |                   |
| Bestellinformation • Ordering Information  |  | KS91E1: Aufnehmer mit $B_{ua} \pm 10\%$ • Sensor with $B_{ua} \pm 10\%$ |                   |