



**Brüel & Kjær Vibro**



# **VIBROCONTROL 1000**

**On-site Machine Protection**

# VIBROCONTROL 1000



Permanent machine monitoring is necessary for machines which are exposed to strong damaging influences and whose failure may result in high repair costs or substantial losses in production.

Typical applications are ventilators, fans, compressors, centrifuges, turbines, generators, mills and pumps.

## VIBROCONTROL 1000

Depending upon the construction type, size and application conditions, one or more measurements types must be monitored. Brüel & Kjær Vibro offers a comprehensive range of machine monitoring systems and thereby a tailor-made solution for every task.

The monitoring instruments of the VIBROCONTROL 1000 family are used when a single measurement is sufficient to guarantee reliable machine protection.



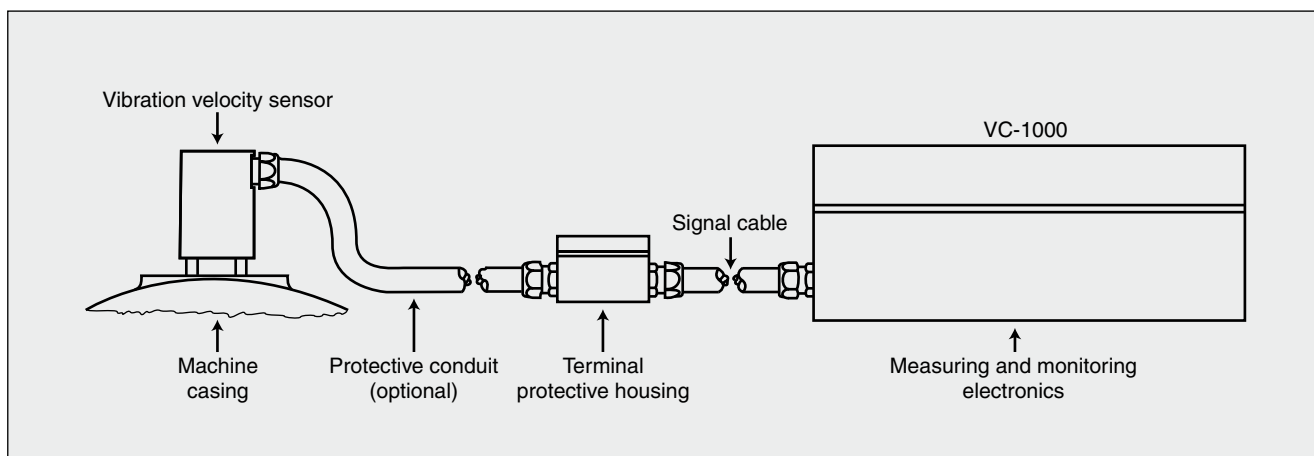
## The measurement types

### Absolute bearing vibrations



These are the measurable vibrations at the surface of the machine. They are a reliable criterion for the assessment of the vibration behaviour of machines equipped with rolling-element bearings. The absolute bearing vibrations are acquired by VIBROCONTROL 1000 in conjunction with vibration velocity sensors. Signal processing is performed by the CV series of VIBROCONTROL 1000. The following measurements can be monitored:

- RMS value of vibration velocity  $V_{RMS}$
- Peak value of vibration displacement  $S_p$

Extensive experience is available for the assessment of bearing vibrations published e.g. in DIN ISO 10816. This guideline recommends the "RMS value of vibration velocity" in the frequency range 10 to 1000 Hz as the measurement type.



# VIBROCONTROL 1000 Technical Data

		<b>1-channel absolute bearing vibrations</b>
<b>Order code</b>	<b>Type</b>	VC-1000 CV-110 230/115 V AC CV-116 24 V DC
<b>Inputs</b>	1	No. of vibration channels Sensor connections Sensor power Sensor OK-monitoring Vibration velocity sensors, e.g. VS-068, VS-069, VS-077, VS-079, VS-0168, VS-0169 None required Yes
<b>Measurement types</b>	1-channel operation with continuous monitoring Vibration velocity: 0 ... 2/5/10/20/50/100 mm/s Vibration displacement: 0 ... 20/50/100/200/500/1000 $\mu\text{m}$ Sensor with natural frequency $f_0 = 8 \text{ Hz}$ : 10 ... 1000 Hz 1 ... 1000 Hz Sensor with natural frequency $f_0 = 15 \text{ Hz}$ : 15 ... 1000 Hz 2 ... 1000 Hz Peak value of vibration displacement in $\mu\text{m}$ RMS value of vibration velocity in mm/s +/-5% of measured value, additionally +/-3% of full scale measurement range	Measurement channels Measuring ranges Frequency range <sup>1)</sup> Displacement measurement Absolute bearing vibration measurement Measurement accuracy
<b>Monitoring</b>	Alert and Danger alarm: Setting range between 10% ... 100% of measuring range full scale 30 ms and 1, 3, 10 s 2 relays, in normally energized or normally de-energized operation, latching or non-latching	Alarm signalling Relay time delay Limit value relay
<b>Outputs</b>	0/4 ... 20 mA, Load $\leq 500 \Omega$ or 0 ... 10 V (Load resistance $\geq 100 \text{ k}\Omega$ )	Analogue signal outputs
<b>Power supply</b>	CV-110 230/115 V AC, +10% / -15%, 50 ... 60 Hz, a approx. 10 VA CV-116 24 V DC (18 ... 32 V), approx. 10 W	Mains power
<b>Environmental conditions</b>	0 °C ... +65 °C -40 °C ... +100 °C Max. 95% non-condensing	Operating temperature range Storage temperature range Humidity
<b>Mechanical data</b>	Rugged aluminium housing in protection class IP-65, total weight approx. 2.1 kg 220 x 120 x 90 (L x B x H) 8 x M16 x 1.5 feed-through fittings	Housing Dimensions Cable connection glands

<sup>1)</sup> selectively with or without frequency response linearization

## Scope of delivery and ordering data

### 1. Monitoring electronics

consisting of:

A vibration monitoring instrument VIBROCONTROL 1000 with 2 user instruction manuals in German, English or French language (please specify language when ordering).

### 2. Vibration sensor

Vibration velocity sensor in standard form	VS-068	Horizontal measurement, 2-wire PTFE, 5 m cable with steel protective conduit, T <sub>A</sub> -40 °C ... +80 °C <sup>2)</sup>
	VS-069	Vertical measurement, 2-wire PTFE, 5 m cable with steel protective conduit, T <sub>A</sub> -40 °C ... +80 °C <sup>2)</sup>
Vibration velocity sensor in Ex form	VS-0168	Horizontal measurement, 3-wire PVC, 10 m cable T <sub>A</sub> -10 °C ... +70 °C <sup>2)</sup>
	VS-0169	Vertical measurement, 3-wire PVC, 10 m cable T <sub>A</sub> -10 °C ... +70 °C <sup>2)</sup>

<sup>1)</sup> Design inspection certificates, ATEX certification and data sheet available on our homepage [www.bkvibro.com](http://www.bkvibro.com) for download.

<sup>2)</sup> T<sub>A</sub> operating temperature range.

### 3. Terminal protective housing

Rugged aluminium housing in IP 65 protection class, painted RAL 7001, with cable feed-through glands

Standard form	AC-2104	for max. 2 vibration sensors VS-068/069 weight approx. 1.2 kg
Ex form	AC-2103	for max. 2 vibration sensors VS-0168, VS-0169, weight approx. 420 g
<b>4. Signal cable</b>		
Standard form	AC-1112	for vibration sensors VS-068/069, 4 x 0.5 mm <sup>2</sup> , shielded
Ex form	AC-180	for vibration sensors VS-0168/VS-0169 <sup>1)</sup> , 3 x 0.75 mm <sup>2</sup> shielded, PVC grey (N) YLHCY-J, Ø 7 mm, T <sub>A</sub> -10 °C ... +80 °C <sup>2)</sup>

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