



Brüel & Kjær Vibro



VIBROCONTROL 1000

On-site Machine Protection

VIBROCONTROL 1000



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

Typical applications in these cases 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. B&K Vibro offers a comprehensive palette of machine monitoring systems and thereby a tailor-made solution for every task.

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

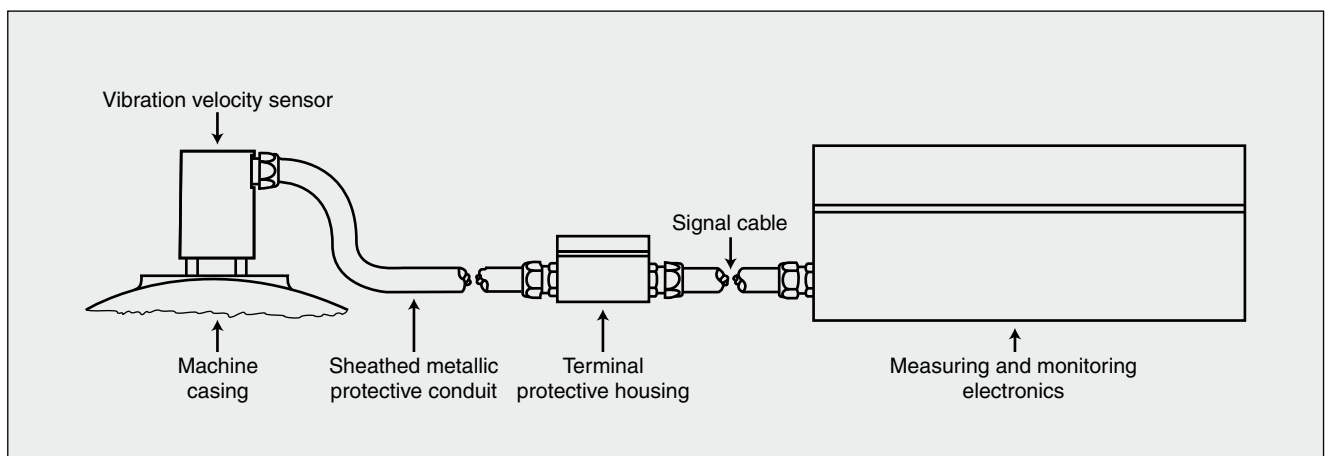
The measurement types

Absolute bearing vibrations

These are understood to be the measurable vibrations at the surface of the machine. They are a reliable criterion for assessment of the vibration behaviour of machines equipped with rolling-element bearings. The absolute bearing vibrations are acquired by utilization of VIBROCONTROL 1000 with vibration velocity sensors. The following measurements can be selectively monitored:

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

For assessment of bearing vibrations extensive experience is available, e.g. as published 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

 		1-channel absolute bearing vibrations
Order code VC-1000	Typ CV-110 CV-116	
Inputs No. of vibration channels Sensor connections Sensor power Sensor OK monitoring	1 Vibration velocity sensors, e.g. VS-068, VS-069, VS-077, VS-079, VS-0168, VS-0169 None required Yes, cable damage	
Measurement types Measurement channels Measuring ranges Frequency range ¹⁾ Displacement measurement Bearing vibration measurement Measurement accuracy	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 µm Sensor with natural frequency f ₀ = 8 Hz: 10 ... 1000 Hz 1 ... 1000 Hz Sensor with natural frequency f ₀ = 15 Hz: 15 ... 1000 Hz 2 ... 1000 Hz Peak value of vibration displacement in µm RMS value of vibration velocity in mm/s 5% of measured value, additionally 3% of measuring range full scale	
Monitoring Alarm signalling Relay time delay Limit value relay	Alert and Danger alarm: Setting range between 10% ...100% of measuring range full scale 1, 3, 10 s, 30 ms 2 relays, in normally energized or normally de-energized operation, latching or non-latching	
Outputs Analogue signal outputs	0/4...20 mA, Load <= 500 Ω or 0...10 V (Load resistance >= 100 kΩ)	
Power supply Mains power	CV-110 230/115 V AC, +10% / -15%, 50...60 Hz, appr. 10 VA CV-116 24 V DC (18...32 V), appr. 10 W	
Environmental conditions Operating temperature range Storage temperature range Humidity	0°C ... + 65°C - 40°C ... + 100°C Max. 95% non-condensing	
Mechanical data Housing Dimensions Cable feed	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 M 16 x 1.5 feed-through fittings	

¹⁾ selectively with or without frequency response linearization

Extent of delivery and order data

1. Monitoring electronics

consisting of:

A vibration monitoring instrument VIBROCONTROL 1000 with 2 user's instructions 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-core, PTFE, 5 m cable with steel protective conduit, T _A - 40°C ... + 80°C, ²⁾
	VS-069	Vertical measurement, 2-core, PTFE, 5 m cable with steel protective conduit, T _A - 40°C ... + 80°C, ²⁾
Vibration velocity sensor in Ex form	VS-0168	Horizontal measurement, 3-core, PVC, 10 m cable T _A - 10°C ... + 70°C, ²⁾
	VS-0169	Vertical measurement, 3-core, PVC, 10 m cable T _A - 10°C ... + 70°C, ²⁾

¹⁾ Design inspection certificates, ATEX certification and data sheet available on our homepage for download.

²⁾ T_A operating temperature range.

3. Terminal protective housing

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

Standard form	AC-2104	for max. 2 vibration sensors VS-068/069 or AS-022/030 weight appr. 1.2 kg
Ex form	AC-2103	for max. 2 vibration sensors VS-0168, VS-0169, weight appr. 420 g
4. Signal cable		
Standard form	AC-112	for vibration sensors AS-022/030 and VS-068/069, 4 x 0,5 mm ² , shielded, PVC black LIY (ST) Y, 7 mm Ø, T _A - 20°C ... + 70°C, ²⁾
Ex form	AC-180	for vibration velocity sensors, e.g. VS-0168/VS-0169 ¹⁾ , 3 x 0,75 mm ² shielded, PVC grey (N) YLHCY-J, 7 mm Ø, T _A - 10°C ... + 80°C, ²⁾

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Series CV

	110 with relays, power supply 230/115 V AC
	116 with relays, power supply 24 V DC

For vibration velocity sensors VS-068/069/0168/0169		
1	Vibration velocity,	10...1000 Hz
2	Vibration velocity,	1...1000 Hz
3	Vibration displacement,	10...1000 Hz
For vibration velocity sensors VS-077/078/079/177		
4	Vibration velocity,	15...1000 Hz
5	Vibration velocity,	2...1000 Hz
6	Vibration displacement,	15...1000 Hz

Measuring range			
For vibration velocity, vibration displacement			
1	0 ... 10 mm/s	0 ... 100 µm	
2	0 ... 2 mm/s	0 ... 20 µm	
3	0 ... 5 mm/s	0 ... 50 µm	
4	0 ... 20 mm/s	0 ... 200 µm	
5	0 ... 50 mm/s	0 ... 500 µm	
6	0 ... 100 mm/s	0 ... 1000 µm	

1	0 ... 20 mA and 0 ... 10 V
2	4 ... 20 mA and 0 ... 10 V

1	Normally energized
2	Normally de-energized

1	Latching
2	Non-latching

1	Normally energized
2	Normally de-energized

1	Latching
2	Non-latching

1	1 sec
2	3 sec
3	10 sec
4	30 msec

1	1 sec
2	3 sec
3	10 sec
4	30 msec

1	No
2	Yes, to following values

1	Without Ex-protection
2	With Ex-protection

1	230 V AC 50/60 Hz
2	115 V AC 50/60 Hz
3	24 V DC (only for CV-116)

0	No
1	Yes, following:

CV - A B C D E F G H I J K L M N Sum Code

110	/	1	/	1	/	2	/	2	/	1	/	2	/	1	/	1	/	1	/	1	/	1	/	0	/	125		
116	/	1	/	1	/	2	/	2	/	1	/	2	/	1	/	1	/	1	/	1	/	1	/	3	/	0	/	133

CV -

A	B	C	D	E	F	G	H	I	J	K	L	M	N	Sum Code
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