

# Vibration Calibrators



**VC20**  
**VC21**  
**VC21D**



## Application

- Rapid and easy calibration of vibration transducers for acceleration, velocity and displacement
- Calibration and fault detection of vibration measuring systems
- Calibration of low frequency equipment for whole-body vibration to ISO 8041 and building vibration to DIN 4150-3 with model VC21(D)

## Properties

- Load independent vibration level for test objects up to 600 grams
- Vibration magnitude of 10 m/s<sup>2</sup> (VC20) or selectable in up to 5 steps from 1 to 20 m/s<sup>2</sup>
- Quartz controlled vibration frequency of 159.15 Hz (VC20) or selectable in seven steps from 15.92 Hz to 1280 Hz (VC21/VC21D)
- Display shows frequency, magnitude, error in percent and calibration date
- VC21D with detachable fastening device for the dynamic calibration of non-contact displacement sensors / proximity probes
- VC21D with clock output for the synchronization of narrow-band measuring systems
- Traceable to national PTB standard, calibration to ISO 16062-44, factory calibration certificate included
- Rugged design
- Mains buffered battery operation for laboratory and field use
- Mains plug adapter with wide range input included

## Technical Data

	VC20	VC21 / VC21D													
Schwingfrequenzen Vibration frequencies	159,2 Hz	15,92 Hz	40 Hz	80 Hz	159,2 Hz	320 Hz	640 Hz	1280 Hz							
Schwingbeschleunigungen (Effektivwerte) Vibration accelerations (rms)	10 m/s <sup>2</sup>	1 m/s <sup>2</sup> 2 m/s <sup>2</sup> 5 m/s <sup>2</sup> 10 m/s <sup>2</sup> 20 m/s <sup>2</sup>	1 m/s <sup>2</sup> 2 m/s <sup>2</sup> 5 m/s <sup>2</sup> 10 m/s <sup>2</sup> 20 m/s <sup>2</sup>	1 m/s <sup>2</sup> 2 m/s <sup>2</sup> 5 m/s <sup>2</sup> 10 m/s <sup>2</sup> 20 m/s <sup>2</sup>	1 m/s <sup>2</sup> 2 m/s <sup>2</sup> 5 m/s <sup>2</sup> 10 m/s <sup>2</sup> 20 m/s <sup>2</sup>	1 m/s <sup>2</sup> 2 m/s <sup>2</sup> 5 m/s <sup>2</sup> 10 m/s <sup>2</sup> 20 m/s <sup>2</sup>	1 m/s <sup>2</sup> 2 m/s <sup>2</sup> 5 m/s <sup>2</sup> 10 m/s <sup>2</sup> 20 m/s <sup>2</sup>	1 m/s <sup>2</sup> 2 m/s <sup>2</sup> 5 m/s <sup>2</sup> 10 m/s <sup>2</sup> 20 m/s <sup>2</sup>							
Schwinggeschwindigkeiten (Effektivwerte) bei Kreisfrequenzen 100 s <sup>-1</sup> und 1000 s <sup>-1</sup> Vibration velocities (rms) at radian frequencies 100 s <sup>-1</sup> und 1000 s <sup>-1</sup>	10 mm/s	10 mm/s 20 mm/s			1 mm/s 2 mm/s 5 mm/s 10 mm/s 20 mm/s										
Schwingwege (Effektivwerte) bei Kreisfrequenzen 100 s <sup>-1</sup> und 1000 s <sup>-1</sup> Vibration displacements (rms) at radian frequencies 100 s <sup>-1</sup> und 1000 s <sup>-1</sup>	10 µm	100 µm 200 µm			1 µm 2 µm 5 µm 10 µm 20 µm										
Messobjektmasse, max. Weight of test object, max.	1 m/s <sup>2</sup> 2 m/s <sup>2</sup> 5 m/s <sup>2</sup> 10 m/s <sup>2</sup> 20 m/s <sup>2</sup>	- - - 600 g -	500 g 500 g 500 g -	500g 500 g 500 g -	500 g 500 g 500 g 500 g 250 g	500 g 500 g 500 g 500 g 200 g	500 g 500 g 500 g 400 g 100 g	500 g 500 g 500 g 200 g 50 g							
Messobjektmasse, max. Weight of test object, max.					500 g (1 .. 10 m/s <sup>2</sup> ); 200 g (20 m/s <sup>2</sup> ) 1.1 lb (1 .. 10 m/s <sup>2</sup> ); 0.44 lb (20 m/s <sup>2</sup> )										
Amplitudenfehler max. Amplitude error, max.					± 3 % (0 .. 40 °C / 32 .. 100 °F) ± 5 % (-10 .. 55 °C / 14 .. 130 °F)										
Frequenzfehler, max. Frequency error, max.					± 0,05 %										
Taktausgang (VC21D) Clock output (VC21D)	Takt abgeleitet vom internen Referenzsensor; BNC; 3,3 V; 50 Ω; Tastverhältnis ca. 1:1 Clock of internal reference sensor; BNC; 3.3 V; 50 Ω; duty ratio approx. 1:1														
Querschwingung (14 mm über Schwingkopf) Transverse vibration (14 mm above shaker)	< 10 %	< 10 %	< 10 %	< 10 %	< 10 %	< 20 %	< 20 %	< 10 %							
Klirrfaktor Harmonic distortion	< 1 %	< 5 %	< 1 %	< 1 %	< 1 %	< 1 %	< 1 %	< 1 %							
Pegelkontrolle Level indication	Prozentanzeige und Piezosummar percent display and piezo beeper														
Sensorbefestigung Sensor mounting	M5-Innengewinde (90° ± 1°; 7 mm tief), Magnet M5 tapped hole (90° ± 1°; 7mm deep), magnet														
Betriebstemperaturbereich Operating temperature range	-10 .. 55 °C 14 .. 130 °F														
Akkumulatortyp Accumulator type	eingebauter NiMH-Akkupack; 7,2 V / 1,6 Ah built-in NiMH battery pack; 7.2 V / 1.6 Ah														
Betriebsdauer je Akkuladung Operating time per battery charge	ca. 5 h mit 100 g Masse approx. 5 hours with 100 g weight														
Ladebuchse Charge socket	Rundsteckverbindung nach DIN 45323 (5,5 mm / 2,1 mm) Circular power connector to DIN 45323 (5.5 mm / 2.2 mm)														
Ladezeit Charging time	ca, 4 Stunden approx. 4 hours														
Ladezustandsanzeige Charge condition indication	Balkenanzeige bar graph display														
Ladespannung Charging voltage	11 .. 18 VDC														
Ladestrom Charging current	< 1 A														
Selbstabschaltung Automatic switch off	10 Minuten 10 Minutes	1 .. 30 Minuten einstellbar 1 .. 30 Minutes adjustable													
Abmessungen (L x B x H) Dimensions (L x W x H)	100 x 100 x 120mm <sup>3</sup>														
Masse Weight	2,2 kg														
Lieferumfang	Transportkoffer, Steckernetzgerät PS1600(100 .. 240 VAC; 50 / 60 Hz), Gewindeadapter (M3, M5, M8, 1/4"-28, UNF 10-32)														
Accessories (scope of delivery)	Plastic carrying case, mains adapter PS1600 (100 .. 240 VAC; 50 / 60 Hz), thread adapters (M3, M5, M8, 1/4"-28, UNF 10-32)														
Optionales Zubehör Optional accessories	Dreilochadapter 040 3-hole adapter 040														
Gewindeadapter für VC21D (optional) Thread adapters for VC21D (optional)	M6x0,5; M8x1; M10x1; M14x1; M20x1; 1/4"-28; 3/8"-24; 1/2"-20														

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Specifications subject to change without prior notice.

