# VB-E



The double-conical flange VB-E vibrators have been designed for use in industrial processes where explosive gas and dust particles are present, in compliance with ATEX Directive (2014/34/UE) and in compliance with IECEx Scheme.

They are supplied without eccentric weights, which must be realised and mounted by the manufacturer of the vibrating machine. In particular, these vibrators can be used in areas 1 and 2 (gas) and in areas 21 and 22 (dusts) according to the layout and following features:

## Technical features

**Power supply**
Three-phase voltage from 220V to 690V, 50Hz or 60Hz; variable frequency (in presence of PTC thermistor) from 20Hz to the base frequency with constant torque load profile type PWM.

**Polarity**
4 poles.

**Conformity with Standards and Regulations**
ATEX Directive 2014/34/UE;
EN/IEC 60079-0, EN/IEC 60079-7,
EN/IEC 60079-31, EN/IEC 60034-1.

**Controls**
The components that affect protection are 100% accurately controlled and recorded.

**Functioning**
Continual service (S1) at maximum declared centrifugal force and electric power.

**Centrifugal force**
Range extended up to 5000 kgf (49 kN), eccentric weights not included.

**Mechanical protection**
IP 66 according to IEC/EN 60529.

**Protection against mechanical impacts**
IK 08 according to IEC/EN 62262.

**Insulation class**
Class F (155°C).

**Tropicalization**
Standard with “drop by drop” trickle system.

**Ambient temperature**
From -20°C to +40°C, on request it is possible to have vibrators for maximum ambient temperatures of +55°C.

**Vibrator thermal protection**
Standard PTC rated thermistor heat detectors 130°C for VB 15/5000E-LM, on request for smaller sizes.

Alsoon request thermistors with different temperatures, bimetallic thermal protections and anti-condensation heaters.

**Fixing of the vibrator**
Typical vertical assembly with double tapered flange.

**Lubrication**
All vibrators are lubricated in the factory and do not require further lubrication at start-up.

**Terminal box**
The size guarantees passage of tools used for fixing the vibrator to the vibrating machine. The electrical connection must be carried out using the relative connectors inserted inside the connection box.

**Electric motor**
Three-phase asynchronous type. Designed for maximum starting torques and torque curves specific to requirements of vibrating machines. Insulated windings using “drop by drop” system with class H resin. The rotor is die cast aluminium.

# 4 poles - 1.500/1.800 rpm

## Three-phase

| DESCRIPTION | | | MECHANICAL SPECIFICATIONS | | | | | | | ELECTRICAL SPECIFICATIONS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | rpm | | Centrifugal force kg | | Centrifugal force kN | | Weight kg | Temp. class (G) | Temp. class (D) | Max input power W | | Power rating W | | Max. current A | | tE (s) | Ia/In |
| Code | Type | Poles | 50Hz | 60Hz | 50Hz | 60Hz | 50Hz | 60Hz | | | | 50Hz | 60Hz | 50Hz | 60Hz | 400V 50Hz | 460V 60Hz | | |
| 6E1223 | **VB 15/2510-D-E** | 4 | 1500 | 1800 | **2500** | **2500** | **24,5** | **24,5** | 68,0 | T3 | 150°C | 1700 | 1800 | 1390 | 1480 | 2,85 | 2,80 | 7 | 6,70 |
| | | | | | | | | | | T4 | | 1220 | 1350 | 1030 | 1100 | 2,38 | 2,30 | 6 | 7,76 |
| 6E1378 | **VB 15/5000E-LM** | 4 | 1500 | 1800 | **5000** | **5000** | **49,0** | **49,0** | 101 | T3 | 135°C | 3200 | 3500 | 2560 | 2800 | 5,70 | 5,45 | 6 | 7,00 |

**Category:** II 2D & II 2G

**Level of protection:**

Ex tb IIIC T...°C Db

Ex e IIC T3/T4 Gb

**Temperature class:**

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**Zones of use:**

1, 2, 21, 22

## Certifications

Compliance with the applicable European Union directives.

II2G II2D (2014/34/UE)
Ex e IIC T3/T4 Gb
Ex tb IIIC T...°C Db
EN 60079-0
EN 60079-7
EN 60079-31

Ex e IIC T3/T4 Gb
Ex tb IIIC T...°C Db
IEC 60079-0
IEC 60079-7
IEC 60079-31

Certification for Eurasian Customs Union
N° TC RU C-IT.ГБ08.B.02190

KOSHA Korea
Certificate n° 11-AVG BO-0346/7/8/9/50/51
Ex e IIT3/T4
Ex td A21 IP66

**Casing**
In spheroidal cast iron to have high strength and optimal elasticity.

**Bearing flange**
The two flanges, made in spheroidal cast iron, are characterized by external tapered diameter for fixing in the vibrating machine.

**Bearings**
Custom made with particular geometry, especially designed for Italvibras, suitable to support both high radial and axial loads.

**Motor shaft**
In treated steel alloy (Isothermic hardening) resistant to stress. On request both shaft ends may be modified to be adapted to the user weights.

**Eccentric weights**
Not envisioned, to be made and mounted by the user.

**Weight covers**
Not envisioned.

**Painting**
Electrostatic surface treatment based on polymerised epoxy polyester powder in oven at 200°C. Tested in salt spray for 500 hours.

**For further details please contact sales offices at Italvibras.**
**The technical data and models listed in this catalogue are not binding. Italvibras reserves the right to modify them without prior notice.**

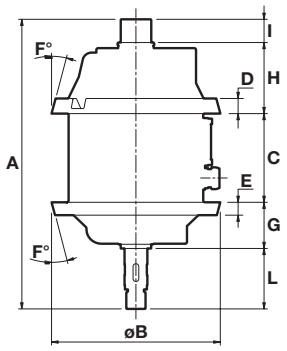


Fig. H

**DIMENSIONAL SPECIFICATIONS (mm)**

| Type | Fig. | A | ØB | C | D | E | F° | G | H | I | L | Cable entry thread |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **VB 15/2510-D-E** | **H** | 517,5 | 281 | 158,5 | **27** | **23** | **14** | 82,5 | 127 | 41,5 | 108 | M32x1,5 |
| **VB 15/5000E-LM** | **H** | 555 | 342 | 208 | **48** | **48** | **25** | 110 | 119 | 48 | 70 | M25x1,5 |

tE (s) = set time tE from IEC/EN 60079-7. Ia/In = ratio between start-up current and maximum current.