



موتور ویبره  
RPM 3000



**ماهان موتور آریا**

MAHAN MOTOR ARIA

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021-33933400



021-33949151

خیابان سعدی جنوبی، کوچه فخرایی کوچه  
کاوه، پلاک ۵۶، ساختمان ماهان موتور آریا



sales@mahanmotor.com



09100533887



09906060711



The MVSI series represents the line of reference products for manufacturer's of vibrating machines and plants operating in many industrial sectors and is made up of the largest range on the market, with centrifugal force values up to 30500 Kgf (300kN).

The MVSI series has been conceived to guarantee higher performance in all conditions and environments and complies with the most recent IEC and EN international standards for use in atmospheres with potentially explosive powders. In particular, the MVSI series can be used in areas 21 and 22.

## Technical features

### Power supply

Three-phase voltage from 24V to 690V, 50Hz or 60Hz or single-phase 100-130V, 60Hz and 200-240V, 50Hz (single-phase types are supplied without capacitor); suitable for use with an inverter from 20Hz to the base frequency with constant torque load profile.

### Polarity

2, 4, 6 and 8 standard poles, 10 and 12 poles on request.

### Conformity with European Directives

Low voltage 2006/95/EC; ATEX 94/9/EC.

### Reference Regulations

EN 60034-1, IEC/EN 61241-0, IEC/EN 61241-1.

### Functioning

Continual service (S1) at maximum declared centrifugal force and electric power. Intermittent services are also possible depending on the type of vibrator and the operating conditions. For detailed information, contact our technical assistance office.

### Centrifugal force

Range extended up to 30500 Kgf. (300 kN), with centrifugal force adjustable from 0 to 100%.

### Mechanical protection

IP 66 according to IEC 529, EN 60529.

### Protection against mechanical impacts

IK 08 according to IEC 68, EN 50102.

### Insulation class

Class F (155°C), class H (180°C) on request.

### Tropicalization

Standard on all vibrators, with vacuum encapsulation up to gr. AF 33 and 35, with "drop by drop" trickle system for larger sizes.

### Ambient temperature

From -20°C to +40°C. Versions for higher or lower temperatures are available on request.

### Vibrator thermal protection

Standard PTC rated thermistor heat detectors 130°C (DIN 44081-44082) from size 70, on request for smaller sizes. On request, thermistors with different temperatures and anti-condensation heaters.

### Fixing of the vibrator

In all positions and therefore without restriction.

### Lubrication

All vibrators are lubricated in the factory and do not require further lubrication if used in normal operating conditions ("FOR LIFE" lubrication). In heavy duty operating conditions periodical re-lubrication may be applied to size 35 and larger.

### Terminal box

Large fixed electrical connections. Special shaped terminals allow to fix the power supply cable, protecting it from loosening.

### Electric motor

Three-phase asynchronous type. Designed for maximum starting torques and torque curves specific to requirements of vibrating machines. Insulated windings using vacuum encapsulating up to size 35; using the "drop by drop" trickle system with class H resin for larger sizes. The rotor is die cast aluminium.

### Casing

In high-tensile aluminium alloy up to size 60, in spheroidal cast iron for larger sizes. Patented shape that improves heat dispersion and lowers normal working temperature at full load.



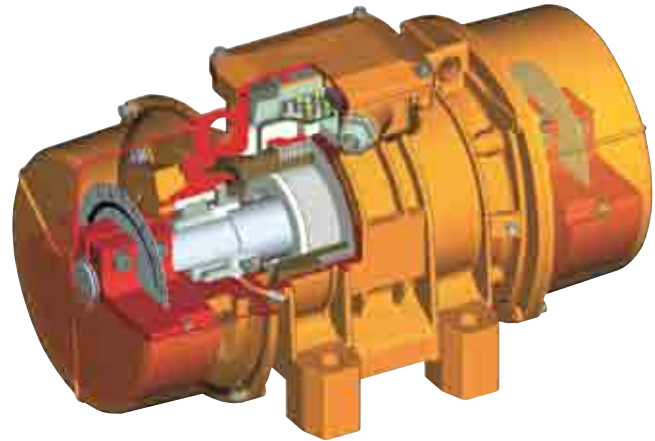
.....  
**Category:** II 2 D  
.....

.....  
**Level of protection:** tD A21 IP66  
.....

.....  
**Temperature class:** see tab. page 6-13  
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.....  
**EC certificate:** LCIE 05 ATEX 6163 X  
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.....  
**Areas of use:** 21, 22  
.....



### Certifications

#### Bearing flange

Constructed in cast iron (spheroidal or grey) or in aluminium with steel bearing seat. The geometry of the flange transmits the load to the casing uniformly.

#### 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.

#### Eccentric weights

Allow continual adjustment of the centrifugal force. This adjustment is realized by a graduated scale, which expresses the centrifugal force as a percentage of the maximum centrifugal force.

A patented system (patent N°MO98A000194), called ARS, prevents adjustment errors.

#### Weight covers

In aluminium alloy. On several sizes split covers are available, please refer to section MVSI-TS on page 14. On request stainless steel AISI 304 weight covers can be supplied.

#### Painting

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

#### Stainless steel protection

On request, corrosion high grade protection (stainless steel micro suspensions in a polyurethanic paint) is available.

**Several sizes are available with different mounting bolt patterns. Please contact sales office at Italvibras.**

Regulation CAN/CSA - C22.2 N. 100-95, file n° LR100948 Class 4211 01 – Motors and generators.



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Mechanical protection IP66 (EN 60529), protection against impacts IK 08 (EN 50102)



.....  
II 2 D, tD A21 IP66  
IEC/EN 61241-0, IEC/EN 61241-1  
Certificate n. LCIE 05 ATEX 6163X



.....  
Certificate GOST-R n° POCC IT.ГБ04.В01154, standards GOST R 51330.0-99, GOST R 51330.1-99, GOST R 51330.8-99, GOST R IEC 61241-1-1-99



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Certificate of Conformity n° IECEx CES 09.0001X standards IEC 61241-0, IEC 61241-1



.....  
Comply with the applicable European Union directives





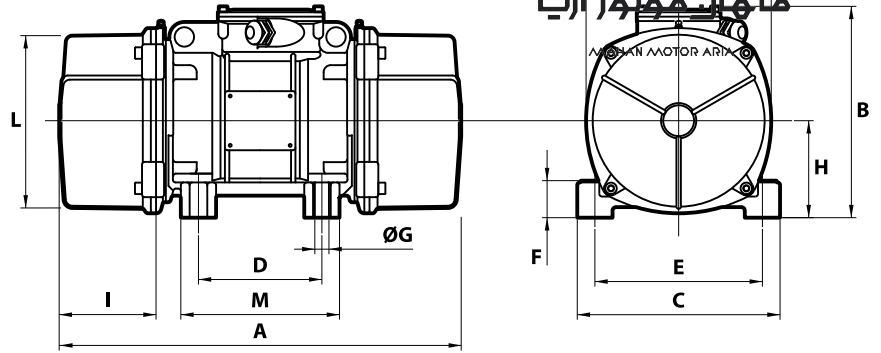
### 2 poles - 3000/3600 rpm

|              | Description |                 |      |                  | Mechanical specifications |       |                   |             |             |             |              |       | Electrical specifications |       |                   |                |
|--------------|-------------|-----------------|------|------------------|---------------------------|-------|-------------------|-------------|-------------|-------------|--------------|-------|---------------------------|-------|-------------------|----------------|
|              | Code        | Type            | SIZE | II2D Temp. class | Static moment*<br>kgmm    |       | Centrifugal force |             |             |             | Weight<br>kg |       | Max input power<br>W      |       | Max. current<br>A |                |
|              |             |                 |      |                  | 50 Hz                     | 60 Hz | 50 Hz             | 60 Hz       | 50 Hz       | 60 Hz       | 50 Hz        | 60 Hz | 50 Hz                     | 60 Hz | 400 V<br>50 Hz    | 460 V<br>60 Hz |
| three-phase  | 600311      | MVSI 3/100-S02  | 00   | • 120°C          | 12.0                      | 12.0  | <b>121</b>        | <b>174</b>  | <b>1.19</b> | <b>1.71</b> | 5.60         | 5.60  | 180                       | 180   | 0.35              | 0.30           |
|              | 600312      | MVSI 3/200-S02  | 01   | • 120°C          | 21.0                      | 15.0  | <b>211</b>        | <b>218</b>  | <b>2.07</b> | <b>2.14</b> | 6.40         | 6.20  | 180                       | 180   | 0.35              | 0.30           |
|              | 600313      | MVSI 3/300-S02  | 10   | • 120°C          | 30.1                      | 20.4  | <b>304</b>        | <b>297</b>  | <b>2.98</b> | <b>2.91</b> | 9.70         | 9.20  | 260                       | 270   | 0.60              | 0.50           |
|              | 600314      | MVSI 3/500-S02  | 20   | • 120°C          | 49.9                      | 32.4  | <b>503</b>        | <b>471</b>  | <b>4.93</b> | <b>4.62</b> | 14.8         | 13.8  | 450                       | 500   | 0.80              | 0.75           |
|              | 600366      | MVSI 3/700-S02  | 20   | • 120°C          | 72.8                      | -     | <b>734</b>        | -           | <b>7.19</b> | -           | 15.1         | -     | 450                       | -     | 0.8               | -              |
|              | 600381      | MVSI 3/800-S02  | 30   | • 120°C          | 78.0                      | 52.0  | <b>785</b>        | <b>754</b>  | <b>7.70</b> | <b>7.40</b> | 21.0         | 20.0  | 650                       | 685   | 1.10              | 1.00           |
|              | 600513      | MVSI 3/1100-S02 | 35   | • 120°C          | 110                       | 73.0  | <b>1105</b>       | <b>1061</b> | <b>10.8</b> | <b>10.4</b> | 23.0         | 22.0  | 1000                      | 1200  | 1.75              | 1.75           |
|              | 600491      | MVSI 3/1300-S08 | AF33 | • 200°C          | 128                       | 91.6  | <b>1290</b>       | <b>1327</b> | <b>12.7</b> | <b>13.0</b> | 27.0         | 25.7  | 1300                      | 1350  | 2.10              | 1.90           |
|              | 600504      | MVSI 3/1500-S08 | AF33 | • 200°C          | 146                       | 110   | <b>1470</b>       | <b>1595</b> | <b>14.4</b> | <b>15.6</b> | 25.3         | 24.0  | 1300                      | 1350  | 2.10              | 1.90           |
|              | 600502      | MVSI 3/1600-S02 | 50   | • 200°C          | 153                       | 102   | <b>1545</b>       | <b>1483</b> | <b>15.2</b> | <b>14.5</b> | 33.0         | 31.5  | 1400                      | 1450  | 2.30              | 2.00           |
|              | 600503      | MVSI 3/1800-S02 | 50   | • 200°C          | 179                       | 128   | <b>1802</b>       | <b>1853</b> | <b>17.7</b> | <b>18.2</b> | 34.0         | 32.5  | 2000                      | 2000  | 3.30              | 2.90           |
|              | 600256      | MVSI 3/2010-S90 | AF50 | • 200°C          | 205                       | 128   | <b>2059</b>       | <b>1853</b> | <b>20.2</b> | <b>18.2</b> | 48.7         | 46.3  | 2200                      | 2200  | 3.50              | 3.00           |
|              | 600257      | MVSI 3/2310-S90 | AF50 | • 200°C          | 230                       | 153   | <b>2316</b>       | <b>2224</b> | <b>22.7</b> | <b>21.8</b> | 49.6         | 47.1  | 2200                      | 2200  | 3.50              | 3.00           |
|              | 600470      | MVSI 3/3200-S02 | AF70 | • 135°C          | 344                       | 215   | <b>3457</b>       | <b>3112</b> | <b>33.9</b> | <b>30.5</b> | 94.0         | 90.0  | 4000                      | 4000  | 6.50              | 5.60           |
|              | 600471      | MVSI 3/4000-S02 | AF70 | • 135°C          | 387                       | 258   | <b>3890</b>       | <b>3735</b> | <b>38.2</b> | <b>36.6</b> | 96.0         | 92.0  | 4000                      | 4000  | 6.50              | 5.60           |
|              | 600472      | MVSI 3/5000-S02 | AF70 | • 135°C          | 515                       | 344   | <b>5187</b>       | <b>4979</b> | <b>50.9</b> | <b>48.8</b> | 109          | 105   | 5000                      | 5000  | 7.60              | 6.90           |
|              | 600276      | MVSI 3/6510-S02 | 90   | • 135°C          | 630                       | 443   | <b>6357</b>       | <b>6420</b> | <b>62.4</b> | <b>63.0</b> | 184          | 178   | 5500                      | 5500  | 9.20              | 8.00           |
|              | 600201      | MVSI 3/9000-S90 | 95   | - 135°C          | 895                       | 619   | <b>9007</b>       | <b>8970</b> | <b>88.4</b> | <b>88.0</b> | 215          | 210   | 10000                     | 9300  | 18.0              | 13.0           |
| Single-phase | 600311      | MVSI 3/100-S02  | 00   | • 120°C          | 12.0                      | 12.0  | <b>121</b>        | <b>174</b>  | <b>1.19</b> | <b>1.71</b> | 5.60         | 5.60  | 165                       | 165   | 0.75              | 1.52           |
|              | 600312      | MVSI 3/200-S02  | 01   | • 120°C          | 21.0                      | 15.0  | <b>211</b>        | <b>218</b>  | <b>2.07</b> | <b>2.14</b> | 6.40         | 6.20  | 165                       | 165   | 0.75              | 1.52           |
|              | 600313      | MVSI 3/300-S02  | 10   | • 120°C          | 30.1                      | 20.4  | <b>304</b>        | <b>297</b>  | <b>2.98</b> | <b>2.91</b> | 9.70         | 9.20  | 280                       | 280   | 1.25              | 2.40           |
|              | 600314      | MVSI 3/500-S02  | 20   | • 120°C          | 49.9                      | 32.4  | <b>503</b>        | <b>471</b>  | <b>4.93</b> | <b>4.62</b> | 14.8         | 13.8  | 500                       | 500   | 2.30              | 4.50           |
|              | 600366      | MVSI 3/700-S02  | 20   | • 120°C          | 72.8                      | -     | <b>734</b>        | -           | <b>7.19</b> | -           | 15.1         | -     | 500                       | -     | 2.30              | -              |
|              | 600381      | MVSI 3/800-S02  | 30   | • 120°C          | 78.0                      | 52.0  | <b>785</b>        | <b>754</b>  | <b>7.70</b> | <b>7.40</b> | 16.8         | 15.9  | 700                       | 750   | 3.25              | 7.00           |

\* Working moment = 2 x static moment.



Fig. A



| I <sub>A</sub> /I <sub>N</sub> |      | Type            | Dimensional specifications (mm) |     |       |     |         |     |    |    |     |       |       |     |     | Capacitor (µF) |                | Cable entry thread |                |
|--------------------------------|------|-----------------|---------------------------------|-----|-------|-----|---------|-----|----|----|-----|-------|-------|-----|-----|----------------|----------------|--------------------|----------------|
|                                |      |                 | Fig.                            | A   | B     | C   | D       | E   | ØG | N° | F   | H     | I     | L   | M   | N              | 220 V<br>50 Hz |                    | 115 V<br>60 Hz |
| 2.68                           | 3.00 | MVSI 3/100-S02  | A                               | 211 | 153   | 125 | 62-74** | 106 | 9  | 4  | 24  | 61    | 46    | 103 | 100 | 117            | -              | -                  | M20x1,5        |
| 2.68                           | 3.00 | MVSI 3/200-S02  | A                               | 235 | 153   | 125 | 62-74** | 106 | 9  | 4  | 24  | 61    | 58    | 103 | 100 | 117            | -              | -                  | M20x1,5        |
| 3.47                           | 4.20 | MVSI 3/300-S02  | A                               | 255 | 179   | 152 | 90      | 125 | 13 | 4  | 28  | 73    | 54    | 127 | 128 | 141            | -              | -                  | M20x1,5        |
| 4.21                           | 4.80 | MVSI 3/500-S02  | A                               | 288 | 203   | 167 | 105     | 140 | 13 | 4  | 30  | 82.5  | 65    | 145 | 140 | 160            | -              | -                  | M25x1,5        |
| 4.21                           | -    | MVSI 3/700-S02  | A                               | 288 | 203   | 167 | 105     | 140 | 13 | 4  | 30  | 82.5  | 65    | 145 | 140 | 160            | -              | -                  | M25x1,5        |
| 3.83                           | 6.00 | MVSI 3/800-S02  | A                               | 308 | 216   | 205 | 120     | 170 | 17 | 4  | 45  | 93.5  | 63    | 170 | 160 | 182            | -              | -                  | M25x1,5        |
| 3.63                           | 4.00 | MVSI 3/1100-S02 | A                               | 435 | 225   | 205 | 120     | 170 | 17 | 4  | 54  | 104.5 | 117,5 | 187 | 162 | 203            | -              | -                  | M25x1,5        |
| 3.96                           | 4.98 | MVSI 3/1300-S08 | A                               | 375 | 216.5 | 215 | 100     | 180 | 17 | 4  | 47  | 93,5  | 106   | 170 | 145 | 182            | -              | -                  | M25x1,5        |
| 3.96                           | 4.98 | MVSI 3/1500-S08 | A                               | 375 | 216.5 | 215 | 100     | 180 | 17 | 4  | 47  | 93,5  | 106   | 170 | 145 | 182            | -              | -                  | M25x1,5        |
| 4.95                           | 6.12 | MVSI 3/1600-S02 | A                               | 430 | 246   | 230 | 140     | 190 | 17 | 4  | 54  | 116   | 99    | 207 | 190 | 225            | -              | -                  | M25x1,5        |
| 4.33                           | 5.50 | MVSI 3/1800-S02 | A                               | 430 | 246   | 230 | 140     | 190 | 17 | 4  | 54  | 116   | 99    | 207 | 190 | 225            | -              | -                  | M25x1,5        |
| 4.62                           | 6.00 | MVSI 3/2010-S90 | A                               | 465 | 230   | 230 | 140     | 190 | 17 | 4  | 49  | 104   | 105   | 186 | 180 | 200            | -              | -                  | M25x1,5        |
| 4.62                           | 6.00 | MVSI 3/2310-S90 | A                               | 465 | 230   | 230 | 140     | 190 | 17 | 4  | 49  | 104   | 105   | 186 | 180 | 200            | -              | -                  | M25x1,5        |
| 4.46                           | 5.18 | MVSI 3/3200-S02 | A                               | 560 | 290   | 310 | 155     | 255 | 25 | 4  | 90  | 130   | 137   | 238 | 210 | 253            | -              | -                  | M25x1,5        |
| 4.46                           | 5.18 | MVSI 3/4000-S02 | A                               | 560 | 290   | 310 | 155     | 255 | 25 | 4  | 90  | 130   | 137   | 238 | 210 | 253            | -              | -                  | M25x1,5        |
| 5.54                           | 7.10 | MVSI 3/5000-S02 | A                               | 560 | 290   | 310 | 155     | 255 | 25 | 4  | 90  | 130   | 137   | 238 | 210 | 253            | -              | -                  | M25x1,5        |
| 6.45                           | 7.20 | MVSI 3/6510-S02 | A                               | 680 | 370   | 390 | 200     | 320 | 28 | 4  | 90  | 180   | 160   | 330 | 270 | 350            | -              | -                  | M32x1,5        |
| 4.39                           | 5.23 | MVSI 3/9000-S90 | A                               | 629 | 395   | 392 | 200     | 320 | 28 | 4  | 100 | 192   | 135   | 355 | 270 | 375            | -              | -                  | M32x1,5        |
| 1.67                           | 2.24 | MVSI 3/100-S02  | A                               | 211 | 153   | 125 | 62-74** | 106 | 9  | 4  | 24  | 61    | 46    | 103 | 100 | 117            | 10             | 28                 | M20x1,5        |
| 1.67                           | 2.24 | MVSI 3/200-S02  | A                               | 235 | 153   | 125 | 62-74** | 106 | 9  | 4  | 24  | 61    | 58    | 103 | 100 | 117            | 10             | 28                 | M20x1,5        |
| 2.48                           | 3.52 | MVSI 3/300-S02  | A                               | 255 | 179   | 152 | 90      | 125 | 13 | 4  | 28  | 73    | 54    | 127 | 128 | 141            | 16             | 25                 | M20x1,5        |
| 3.35                           | 4.22 | MVSI 3/500-S02  | A                               | 288 | 203   | 167 | 105     | 140 | 13 | 4  | 30  | 82.5  | 65    | 145 | 140 | 160            | 12.5           | 50                 | M25x1,5        |
| 3.35                           | -    | MVSI 3/700-S02  | A                               | 288 | 203   | 167 | 105     | 140 | 13 | 4  | 30  | 82.5  | 65    | 145 | 140 | 160            | 12.5           | -                  | M25x1,5        |
| 4.00                           | 4.14 | MVSI 3/800-S02  | A                               | 307 | 210   | 205 | 120     | 170 | 17 | 4  | 45  | 91.5  | 51    | 168 | 160 | 178            | 25             | 90                 | M25x1,5        |

I<sub>A</sub>/I<sub>N</sub> = ratio between start-up current and maximum current. \*\* Slot.  
 Several sizes are available with different mounting bolt patterns. Please contact sales office at Italvibras.