W40
Open Induction Motors

European Market
W40
Open Induction Motors

The W40 motor is a general purpose line designed for environments where dirt and moisture are minimal. The W40 cast iron frame is designed to provide maximum ventilation and heat dissipation, offering low vibration levels, high mechanical stiffness and durability. Widely used in applications such as compressors, pumps and chillers, the W40 line meets or exceeds the efficiency levels determined by International Standards and the minimum efficiency level programs in force worldwide.

Standard Features
- Rated output: 11 to 1,500 kW (50 Hz)
- Number of poles: 2 and 4
- Frame sizes IEC 160M to 450 K/J
- Frequency: 50 or 60 Hz
- Voltage: 380 to 3,300 V
- Insulation class F (DT 80 K)
- Degree of protection ODP (IP23) for frames 160L to 400 WPI (IP24) for frame size 450K/J
- Efficiency levels: IE2 Efficiency and IE3 Efficiency
- Colour: RAL 5009 - blue
- Cooling method: IC-01 according to DIN EN 60034-6
- Mounting: B3
- Frame and end-shields material: FC 200 cast iron
- Terminal box material: FC 200 cast iron (up to 315G/F) and Steel plate (for frames 355J/H and above)
- Terminal block for motor connection
- Grease nipples for frames 225S/M and above
- Ball bearings
- Thermistors (PTC), for low voltage motors
- Pt-100 (3 wires/two per phase), for medium voltage motors (from frames 315G/F up to 450K/J)

Optional Features
- Voltage: 5,000 to 6,600 V
- Number of poles: 6 poles and above
- Frame sizes: 112 and 132 or NEMA 254T to L6808/09
- Other mounting configurations, including vertical and foot / flange mounted motors
- Accessories terminal box (standard for medium and high voltage motors)
- Thermal protections: Thermostats or Thermoresistances (Pt-100) on windings or bearings
- Class H insulation
- Suitable for frequency inverter operation for voltages above 575 V up to 6,800 V
- Space heaters
- Cable glands
- Roller bearings
- Sleeve bearings for frames 400 and above (only by request)
- Degree of protection WPI or WPII (IP24) for frame size 355 and up

Note: 1) Vertical flange mounting unavailable in frame sizes 160L to 280L

W40, The Most Cost-Effective Industrial Motor

The W40 motor is an effective option for applications which do not require a high degree of protection. Due to its open enclosure, the motor design permits higher output levels to be achieved when compared with totally enclosed motors, resulting in a cost effective solution for driven equipment. The motor enclosures are carefully designed with high-tech simulation tools to ensure low sound pressure levels, even with the high amount of air circulating inside the casting.

W40, ideal for applications in pumps
# Electrical Data

## Medium Voltage 1,2 kV up to 5,0 kV - IE3 Efficiency level

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<tr>
<th>Output kW</th>
<th>Frame</th>
<th>Full Load Current (A)</th>
<th>Locked Rotor Current (A)</th>
<th>Rotor Torque (Nm)</th>
<th>Breakdown Torque (Nm)</th>
<th>Inertia J (kgm²)</th>
<th>Allowable Locked rotor time (s)</th>
<th>Weight (kg)</th>
<th>Sound dB(A)</th>
<th>Rated speed (rpm)</th>
<th>Efficiency % of full load</th>
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* Motor with class F (TOSK) temperature rise.
### Low Voltage - IE3 Efficiency level

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<th>Frame</th>
<th>Full Load Torque (Nm)</th>
<th>Locked Rotor Current In/A</th>
<th>Locked Rotor Torque (Nm)</th>
<th>Breakdown Torque (Nm)</th>
<th>Inertia (kgm²)</th>
<th>Allowable locked rotor time (s)</th>
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<th>Efficiency</th>
<th>% of full load</th>
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* Motor with class F (155ºC) temperature rise.
### Low Voltage - IE3 Efficiency level

#### 380 V

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### Notes
- W40 - Open Induction Motors
- www.weg.net
## Low Voltage - IE2 Efficiency Level

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<th>Weight (kg)</th>
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<th>Rated speed (rpm)</th>
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### Notes
- **Current Allowable locked speed**
- **Torque Breakdown**
- **IV Poles**
- **330**
- **250**
- **220**
- **200**
- **180**
- **160**
- **140**
- **125**
- **115**
- **90**
- **75**
- **60**
- **45**
- **30**
- **20**
- **15**
- **10**
- **5**
- **3**
- **2**

*Motor with class F [105K] temperature rise.*
## Low Voltage - IE2 Efficiency level

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<tr>
<th>Rated speed (rpm)</th>
<th>Efficiency</th>
<th>% of full load</th>
<th>Power Factor</th>
<th>Full load current (A)</th>
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### 380 V

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<th>Tb/Tn</th>
<th>Sound speed</th>
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<tr>
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<td>91,3</td>
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</tr>
<tr>
<td>160 V</td>
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<tr>
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www.weg.net
IEC Mechanical Data (Dimension in mm)

## IP23 Frames 160M to 280S/M - Low Voltage

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<th>Frame</th>
<th>A</th>
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<th>AB</th>
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<th>AD</th>
<th>B</th>
<th>BA</th>
<th>BB</th>
<th>C</th>
<th>D</th>
<th>d1</th>
<th>E</th>
<th>ES</th>
<th>F</th>
<th>G</th>
<th>GD</th>
<th>H</th>
<th>HA</th>
<th>HB</th>
<th>HC</th>
<th>HD</th>
<th>HF</th>
<th>K</th>
<th>L</th>
<th>LL</th>
<th>LM</th>
<th>S1</th>
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Note: 1) Only for 2-pole motors.

## IP23 Frame 280L - Low Voltage

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<th>AB</th>
<th>AC</th>
<th>AD</th>
<th>B</th>
<th>BA</th>
<th>BB</th>
<th>C</th>
<th>D</th>
<th>d1</th>
<th>E</th>
<th>ES</th>
<th>F</th>
<th>G</th>
<th>GD</th>
<th>H</th>
<th>HA</th>
<th>HB</th>
<th>HC</th>
<th>HD</th>
<th>HF</th>
<th>K</th>
<th>L</th>
<th>LL</th>
<th>LM</th>
<th>S1</th>
<th>Bearings</th>
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<td>346</td>
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<td>192</td>
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<td>365</td>
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<td>533</td>
<td>577</td>
<td>586</td>
<td>824</td>
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<td>586</td>
<td>824</td>
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</table>

Note: 1) Only for 2-pole motors.
### IP23 Frames 315G/F to 400J/H - Low Voltage

| Frame  | A   | AA  | AB  | AC  | AD  | AE  | B   | BA  | BB  | C   | D   | d1  | E   | ES  | F   | G   | GD  |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 315G/F | 508 | 134 | 628 | 771 | 732 | 466 | 800 | 365 | 1,028 | 216 | 65m6 | 140 | 125 | 18 | 58 | 11 |
| 355J/H | 610 | 170 | 748 | 853 | 699 | 507 | 926 | 1,075 | 290 | 254 | 80m6 | 170 | 140 | 22 | 71 | 14 |
| 400J/H | 686 | 190 | 840 | 1,003 | 699 | 557 | 900 | 285 | 1,201 | 280 | 130m6 | 210 | 155 | 28 | 100 | 16 |

Note: 1) Only for 2-pole motors. 2) For side mounted terminal box only. 3) For top mounted terminal box only.

### IP23 Frames 315G/F to 400J/H - High Voltage

<table>
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<th>HB</th>
<th>HC</th>
<th>HD</th>
<th>HF</th>
<th>HG</th>
<th>HH</th>
<th>HK</th>
<th>K</th>
<th>L</th>
<th>LL</th>
<th>LM</th>
<th>S1</th>
<th>Drive end</th>
<th>Non-drive end</th>
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<td>339</td>
<td>669</td>
<td>883</td>
<td>611</td>
<td>818.5</td>
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<td>290</td>
<td>40</td>
<td>1,467</td>
<td>460</td>
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<td>2xM80x2.0</td>
<td>6314 C3</td>
<td>6314 C3</td>
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<td>928</td>
<td>1,075</td>
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<td>1,563</td>
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<td>782</td>
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<td>1,190</td>
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<td>2xM80x2.0</td>
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Note: 1) Only for 2-pole motors. 2) For side mounted terminal box only. 3) For top mounted terminal box only.
### FF Flange

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<th>S</th>
<th>T</th>
<th>α</th>
<th>Nº of holes</th>
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<td>45°</td>
<td>4</td>
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<td>22°30'</td>
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<td>6</td>
<td>22°30'</td>
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<td>600</td>
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<tr>
<td>400J/K</td>
<td>FF-840</td>
<td>35</td>
<td>840</td>
<td>880</td>
<td>1,002</td>
<td>28</td>
<td>6</td>
<td>45°</td>
<td>8</td>
</tr>
<tr>
<td>450K/J</td>
<td>FF-1080</td>
<td>23</td>
<td>1,080</td>
<td>1,000</td>
<td>1,149</td>
<td>28</td>
<td>6</td>
<td>45°</td>
<td>8</td>
</tr>
</tbody>
</table>

### FC Flange

<table>
<thead>
<tr>
<th>Frame</th>
<th>Flange</th>
<th>M</th>
<th>N</th>
<th>P</th>
<th>S</th>
<th>T</th>
<th>α</th>
<th>Nº of holes</th>
</tr>
</thead>
<tbody>
<tr>
<td>160M</td>
<td>FC-184</td>
<td>184.2</td>
<td>215.9</td>
<td>225</td>
<td>UNC 1/2&quot;x13</td>
<td>6.3</td>
<td>45°</td>
<td>4</td>
</tr>
<tr>
<td>160L</td>
<td>FC-184</td>
<td>184.2</td>
<td>215.9</td>
<td>225</td>
<td>UNC 1/2&quot;x13</td>
<td>6.3</td>
<td>45°</td>
<td>4</td>
</tr>
<tr>
<td>180M</td>
<td>FC-228</td>
<td>228.6</td>
<td>266.7</td>
<td>280</td>
<td>UNC 1/2&quot;x13</td>
<td>6.3</td>
<td>45°</td>
<td>4</td>
</tr>
<tr>
<td>180L</td>
<td>FC-228</td>
<td>228.6</td>
<td>266.7</td>
<td>280</td>
<td>UNC 1/2&quot;x13</td>
<td>6.3</td>
<td>45°</td>
<td>4</td>
</tr>
<tr>
<td>200M</td>
<td>FC-228</td>
<td>228.6</td>
<td>266.7</td>
<td>280</td>
<td>UNC 1/2&quot;x13</td>
<td>6.3</td>
<td>45°</td>
<td>4</td>
</tr>
<tr>
<td>200L</td>
<td>FC-228</td>
<td>228.6</td>
<td>266.7</td>
<td>280</td>
<td>UNC 1/2&quot;x13</td>
<td>6.3</td>
<td>45°</td>
<td>4</td>
</tr>
<tr>
<td>225S/M</td>
<td>FC-279</td>
<td>279.4</td>
<td>317.5</td>
<td>380</td>
<td>UNC 5/8&quot;x11</td>
<td>6.3</td>
<td>22°30'</td>
<td>8</td>
</tr>
<tr>
<td>250S/M</td>
<td>FC-279</td>
<td>279.4</td>
<td>317.5</td>
<td>380</td>
<td>UNC 5/8&quot;x11</td>
<td>6.3</td>
<td>22°30'</td>
<td>8</td>
</tr>
<tr>
<td>280S/M</td>
<td>FC-355</td>
<td>355.6</td>
<td>406.4</td>
<td>455</td>
<td>UNC 5/8&quot;x11</td>
<td>6.3</td>
<td>22°30'</td>
<td>8</td>
</tr>
<tr>
<td>280L</td>
<td>FC-355</td>
<td>355.6</td>
<td>406.4</td>
<td>455</td>
<td>UNC 5/8&quot;x11</td>
<td>6.3</td>
<td>45°</td>
<td>8</td>
</tr>
</tbody>
</table>
### IP24 Frame 450K/J - High Voltage

#### Dimensions

| Frame | A  | AA | AB  | AC  | AD  | AE  | B   | BA  | BB  | C   | D   | d1  | E   | ES  | F   | G   | GD |
|-------|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 450K/J| 750| 202| 949 | 1,229| 804 | 627 | 900/1,000| 287 | 1,200| 315 | 95mm| 140 | 170 | 6220 C3 | 14 |

#### Notes:
1) Dimension applicable to 2 pole motors.
2) Dimension applicable to side mounted terminal box.
3) Dimension applicable to top mounted terminal box.
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For those countries where there is not a WEG own operation, find our local distributor at www.weg.net.