## Technical Characteristics

### LV 400
- **Power Range**: 300 kW - 1.4 MW
- **Input Section**: DFE (6 or 12 pulse) or AFE (IGBTs)
- **Converter Cooling**: Air
- **Type of Motor**: Induction, Synchronous or permanent magnet
- **Supply Voltage**: 380 to 480 V AC
- **Supply Voltage Tolerance**: ± 10%
- **Output Voltage**: 500 to 690 V AC
- **Output Frequency**: 50/60 Hz (±5%)
- **Cos Phi**: 0.93 to 0.97 (DFE), 1 (AFE) (Depending on the topology)
- **Efficiency at 100% at Rated Load**: 0.97 to 0.98 (Depending on the topology)
- **Main Options**: Dynamic braking chopper, different communication modules, dv/dt filter, sinusoidal filter, input/output isolation switch, marine customization and other.

### MV 100
- **Power Range**: 800 kW - 4.8 MW
- **Input Section**: DFE (12 or 24 pulse) or AFE (HV-IGBTs)
- **Converter Cooling**: NPC 3 level inverter (HV-IGBTs)
- **Type of Motor**: Induction, Synchronous or permanent magnet
- **Supply Voltage**: 4 x 1850 / 4 x 2350 V AC (24P DFE)
- **Supply Voltage Tolerance**: ± 10%
- **Output Voltage**: 3300 / 4160 V AC (AFE)
- **Output Frequency**: 0 to 3150 / 0 to 4160 V AC
- **Cos Phi**: 0.93 to 0.97 (DFE)
- **Efficiency at 100% at Rated Load**: 0.96 to 0.97 (Depending on the topology)
- **Main Options**: Dynamic braking chopper, different communication modules, dv/dt filter, sinusoidal filter, input/output isolation switch, marine customization and other.

### MV 300
- **Power Range**: 250 kW - 1.25 MW
- **Input Section**: DFE (24 pulse)
- **Converter Cooling**: NPC 3 level inverter (HV-IGBTs)
- **Type of Motor**: Induction, Synchronous or permanent magnet
- **Supply Voltage**: 2 x 1850 / 2 x 2350 V AC (12P DFE)
- **Supply Voltage Tolerance**: ± 10%
- **Output Voltage**: 3000 / 4160 V AC (AFE)
- **Output Frequency**: 0 to 1000 Hz / 0 to 70 Hz
- **Cos Phi**: 0.93 to 0.97 (DFE)
- **Efficiency at 100% at Rated Load**: 0.96 to 0.97 (Depending on the topology)
- **Main Options**: Dynamic braking chopper, different communication modules, dv/dt filter, sinusoidal filter, input/output isolation switch, marine customization and other.

### MV 700
- **Power Range**: 1.7 MW - 11.1 MW
- **Input Section**: DFE (24 pulse)
- **Converter Cooling**: 5 level inverter (HV-IGBTs) - H chopper
- **Type of Motor**: Induction, Synchronous or permanent magnet
- **Supply Voltage**: 0 - 11 kV AC (24P DFE)
- **Supply Voltage Tolerance**: ± 10%
- **Output Voltage**: 0 to 4160 V AC* / 0 to 6600 V AC
- **Output Frequency**: 50/60 Hz (±5%)
- **Cos Phi**: 0.93 to 0.97 (DFE), 1 (AFE) (Depending on the topology)
- **Efficiency at 100% at Rated Load**: 0.96 to 0.97 (Depending on the topology)
- **Main Options**: Dynamic braking chopper, different communication modules, dv/dt filter, sinusoidal filter, input/output isolation switch, marine customization and other.

*Available for 4160 V AC
Variable speed drives

<table>
<thead>
<tr>
<th>Power Range</th>
<th>LV 400</th>
<th>MV 100</th>
<th>MV 500</th>
</tr>
</thead>
<tbody>
<tr>
<td>900 kW - 5.7 MW</td>
<td>2 Level, DFE</td>
<td>2.5 MW - 12.7 MW</td>
<td>10 MW - 40 MW</td>
</tr>
<tr>
<td>DFE (6, 12, 18 or 24 pulse) or AFE (IGBTs)</td>
<td>DFE (12 or 24 pulse) or AFE (HV-IGBTs)</td>
<td>DFE (12 or 24 pulse) or AFE (IGCTs)</td>
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<tr>
<td>2 level inverter (IGBTs)</td>
<td>NPC 3 level inverter (HV-IGBTs)</td>
<td>NPC 3 level inverter (press-pack IGCTs)</td>
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<tr>
<td>Water Induction, Synchronous or permanent magnet</td>
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<td>Water Induction, Synchronous or permanent magnet</td>
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</tbody>
</table>

Supply Voltage
- LV 400: 380 to 480 V AC
- MV 100: 2 x 1850 V AC
- MV 500: 2 x 1850 V AC

Supply Voltage Tolerance
- LV 400: ±10%
- MV 100: ±10%
- MV 500: ±10%

Output Voltage
- LV 400: 500 to 690 V AC
- MV 100: 3300 V AC
- MV 500: 3300 V AC

Supply Frequency
- LV 400: 50/60 Hz (±5%)
- MV 100: ±10%
- MV 500: ±10%

Output Frequency
- LV 400: 0 to 120 Hz
- MV 100: 0 to 100 Hz
- MV 500: 0 to 70 Hz

Cos Phi
- LV 400: 0.93 to 0.97 (DFE), 1 (AFE)
- MV 100: 0.96 (DFE), 1 (AFE)
- MV 500: 0.96 (DFE), 1 (AFE)

Efficiency at 100% at Rated Load
- LV 400: 0.96 to 0.98 (Depending on the topology)
- MV 100: 0.97 to 0.98 (Depending on the topology)
- MV 500: 0.97 to 0.98 (Depending on the topology)

Main Options
- LV 400: Dynamic braking chopper, different communication modules, dv/dt filter, sinusoidal filter, input/output isolation switch, marine customization and other.
- MV 100: Dynamic braking chopper, different communication modules, dv/dt filter, sinusoidal filter, input/output isolation switch, marine customization and other.
- MV 500: Dynamic braking chopper, different communication modules, dv/dt filter, sinusoidal filter, input/output isolation switch, marine customization and other.