SOLUTIONS FOR STONE CRUSHER APPLICATIONS
200 - 750 kVA
Technical Specifications

<table>
<thead>
<tr>
<th>Prime Rating at rated rpm (As per ISO8528)</th>
<th>KVA</th>
<th>200</th>
<th>250</th>
<th>320 HD</th>
<th>380 HD</th>
<th>400 HD</th>
<th>500 HD</th>
<th>750HD</th>
</tr>
</thead>
<tbody>
<tr>
<td>kW</td>
<td>160</td>
<td>200</td>
<td>256</td>
<td>304</td>
<td>320</td>
<td>400</td>
<td>500</td>
<td>600</td>
</tr>
</tbody>
</table>

**Genset Model**
- KG1-200WS
- KG1-250WS
- KG1-300WS
- KG1-400WS
- KG1-500WS
- KG1-750WS

**Frequency**
- Hz: 50

**Power factor**
- lagging: 0.8

**Voltage (with Three Phase Supply)**
- V: 415 V

**Governing class (As per ISO 8528 Part-V)**
- G3

**Noise level**
- dBA: < 75

**Fuel Consumption**
- At 100 % Load: 45.9 Ltrs/hr
- At 75 % Load: 34.4 Ltrs/hr

**Fuel tank capacity**
- Ltrs: 460

**Weight of genset with canopy (approx.):**
- Dry Kg: 3900
- Height mm: 1970

**Overall dimensions of genset**
- Length mm: 4340
- Width mm: 1740

**Electrical Battery starting voltage**
- Volts-DC: 24

**ENGINE**

<table>
<thead>
<tr>
<th>Engine Model</th>
<th>6SL1500TA G2</th>
<th>6SL1500TA G3</th>
<th>DV8TA G1</th>
<th>DV8TA G2</th>
<th>DV8TA G3</th>
<th>DV10TA G1</th>
<th>DV12TA G1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated output (Prime Continuous rating as per ISO 8528-1)</td>
<td>kW</td>
<td>183</td>
<td>228</td>
<td>294</td>
<td>349</td>
<td>360</td>
<td>447</td>
</tr>
<tr>
<td>HP</td>
<td>248</td>
<td>310</td>
<td>400</td>
<td>470</td>
<td>490</td>
<td>608</td>
<td>900</td>
</tr>
</tbody>
</table>

**No. of cylinder**
- Number: 6

**Cubic capacity**
- Ltrs: 8.86

**Bore x Stroke**
- mm: 118 x 135

**RPM**
- 1500

**Lube Oil change period**
- hrs: 500

**Lube Oil Sump Capacity**
- Ltrs: 27

**Coolant Capacity**
- Ltrs: 29.28

**ALTERNATOR**

<table>
<thead>
<tr>
<th>Insulation Class</th>
<th>Class H</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protection</td>
<td>IP 23</td>
</tr>
<tr>
<td>Alternator Efficiency (at 100% load)</td>
<td>0.8 pf**</td>
</tr>
<tr>
<td>Alternator Efficiency (at 75% load)</td>
<td>0.8 pf**</td>
</tr>
<tr>
<td>Permissible Voltage Dip at Full Load</td>
<td>0.8 pf</td>
</tr>
<tr>
<td>Time Permitted to build up rated voltage at Rated RPM</td>
<td>&lt; 1 sec provided engine reach the rated speed</td>
</tr>
<tr>
<td>Short Circuit Ratio</td>
<td>0.545</td>
</tr>
<tr>
<td>Short Circuit Withstand Time</td>
<td>sec</td>
</tr>
<tr>
<td>Overload Withstand Capacity</td>
<td>%</td>
</tr>
</tbody>
</table>

**Notes**
- * Tolerances Apply
- * With 0.845 Specific Gravity of diesel (5% Tolerance)
- * Fuel Consumption without savings due to TOUCHSTONE System.
- Upto 8% saving can be expected with TOUCHSTONE System based on site conditions.

Stone Crusher Plant Considerations

The stone crusher application differs from other applications because of certain practical considerations that have been highlighted below.

- The current drawn from the genset changes drastically as:
  - The equipment life increases
  - Equipment starts
  - The dynamic load changes during running

- The genset sizing is usually done based on nameplate specifications of the load and not on operating specifications.

- The genset alternator is designed to operate at 0.8 percent power factor. The efficiency and reliability of the alternator changes drastically at lower power factors.

- The temperature rise in the alternator is a function of the current drawn. At high ambient temperatures, the internal temperature rise can result in of failures of the alternator.

The KOEL solution for stone crushers ensures that actual site considerations are taken care of so that the genset operates at maximum reliability and efficiency.
The Touchstone Dynamic Compensation system is connected between the genset and the load. It senses the magnetising current requirements of the load and injects the required current dynamically. It reduces the current drawn from the genset & improves the alternator efficiency. Thus the total losses in the system that are fed by the genset also reduce. The improved efficiency can give fuel saving up to 8%.

The problem of overload related tripping of the genset is quite common in stone crusher plants. This can be attributed to large magnetising currents that are drawn by the stone crusher equipment under certain use conditions. The Touchstone systems helps reduce the burden of supplying this magnetising current and prevents frequent tripping of the genset.

What Is Touchstone Dynamic Compensation?

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Key features of Dynamic Compensation controller

The panel comes with a microprocessor based controller with an LCD display. The controller has a response time of less than 20 msecs. The controller measures the load characteristics and decides the amount of compensation that needs to be provided. The controller has built in metering of voltages, compensation currents and powerfactor.

Powered by KOEL switchgear

The Touchstone panels are provided with KOEL MCCBs for overload and short circuit protection. KOEL MCCBs are designed to provide unmatched reliability under tough environmental conditions.

Technical Specifications

<table>
<thead>
<tr>
<th>Genset KVA</th>
<th>200</th>
<th>250</th>
<th>320</th>
<th>380</th>
<th>400</th>
<th>500</th>
<th>750</th>
</tr>
</thead>
<tbody>
<tr>
<td>T8 Range</td>
<td>T81250</td>
<td>T81250</td>
<td>T82000</td>
<td>T82000</td>
<td>T82500</td>
<td>T82500</td>
<td>T84000</td>
</tr>
<tr>
<td>Maximum compensation Current</td>
<td>175</td>
<td>175</td>
<td>280</td>
<td>280</td>
<td>350</td>
<td>550</td>
<td></td>
</tr>
<tr>
<td>Response</td>
<td>&lt; 20 msecs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating Temp.</td>
<td>-5 to 50 Degree C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IP</td>
<td>IP55</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nos. of Enclosures</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Panel Dimensions Length mm</td>
<td>650</td>
<td>650</td>
<td>650</td>
<td>650</td>
<td>650</td>
<td>650</td>
<td></td>
</tr>
<tr>
<td>Width mm</td>
<td>800</td>
<td>800</td>
<td>800</td>
<td>800</td>
<td>800</td>
<td>800</td>
<td></td>
</tr>
<tr>
<td>Height mm</td>
<td>1575</td>
<td>1575</td>
<td>1575</td>
<td>1575</td>
<td>1575</td>
<td>1575</td>
<td></td>
</tr>
<tr>
<td>MCCB rating</td>
<td>200A</td>
<td>200A</td>
<td>350A</td>
<td>350A</td>
<td>400A</td>
<td>630A</td>
<td></td>
</tr>
</tbody>
</table>

Heavy duty enclosure

The panel has a completely enclosed construction with IP 55 level of ingress protection. The panel is completely finger proof. All terminations are external. The panel has been designed for the stone crusher environment that includes high dust levels. The panel uses the enclosure size and thermal mass for heat dissipation and does not depend on forced cooling for limiting the temperature rise.

Power electronic switching for high speed:

Touchstone panels are powered by power electronic switching devices that deliver an unmatched speed of response. The devices have a high voltage withstand and come with inbuilt over current protection.
KOEL GREEN
BACK-UP POWER AT YOUR FINGERTIPS

LOW RUNNING COSTS
KOEL Genset’s Fuel efficiency is optimized for the most common usage band of 50-75% loading. Best-in-class fuel economy helps you reduce running costs.

ONE-STOP SOLUTION
KOEL Green team assists you - from Genset selection to synchronisation, from exhaust piping to commissioning. Leverage decades of industry experience for your requirement.

QUICK RESPONSE TO STEP-LOAD
KOEL Gensets offer class-leading response to jerk loads/step-loads. This become especially important for starting large motors and operating special purpose machines.

7-DAYS ASSURED DELIVERY
7 days delivery assurance is backed by KOEL’s globally-awarded supply chain. This means availability of Genset just when you need it & without blocking your money for long.

GENSET CONTROL AT YOUR FINGERTIPS
Remote monitoring system in KOEL Green Gensets brings performance data, service reminders and alerts right on your desktop. Live information & historical data at your fingertips.

PRODUCT CARE AT YOUR FINGERTIPS
KOEL’s trained and experienced product support team is just a call away. Log in your requirement at KOEL Care Centre and we will track it till you are satisfied.

KOEL Gensets are available in
- Standard Radiator-cooled version
- Heat-exchanger integrable version

For a free copy of ‘Genset Buyer’s Guide’, send an email to koel.helpdesk@kirloskar.com

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BACK-UP POWER AT YOUR FINGERTIPS

30000 HHP GENSETS

Celebrating

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