Dynaspede A.C. Tachogenerator is a thoroughly engineered speed transducer, for industrial duty applications. It features extreme linearity, wide speed range and power capabilities required in industrial duty applications.

48-pole construction provides an output at 400 Hz. Per 1000 rpm or 24 pulses per revolution. An important design feature is that the stationary and rotating members are vacuum moulded in epoxy and are housed in graded Aluminium casing. Well proportioned shaft of 12 mm dia., Liberally selected, widely spaced and pre-loaded ball bearings, all contribute to ensure structural rigidity and dependable performance.

**Standard Features:**
- ALNICO permanent magnets, for excellent long-term stability.
- 48-pole construction for wide speed range.
- Low impedance output, with power delivering capability of two watts.
- Plug-in connectors for quick and easy termination or cable extension.
- Totally encapsulated design, to prevent ingress of moisture and dirt.
- Available in foot mounting or flange mounting versions.

**Design Principles:**

The purpose of a Tachogenerator is to convert mechanical rotation into an analogous electrical signal for the purpose of indication or control. Tachogenerators can also provide a time-derivative of angular position of rotating shafts. For use as a reliable feedback element, a Tacho however, must qualify certain conditions.

The Tacho output has to be converted to a D.C. Voltage which shall be strictly linear to speed. Further, as with all accurate systems, ripple content of the rectified signal must be low to avoid interaction with the control circuits. Such interaction can cause instability when Tacho ripple becomes a multiple of line frequency.

Therefore, a high frequency Tacho signal even at low rotational speeds is desirable for a wide range of speed control. Long-term stability, temperature effects and spurious signals due to armature flexing and vibration, backlash in Tacho drive etc., are some of the many significant factors to be counted in Tacho design.

**Electrical Specifications:**

<table>
<thead>
<tr>
<th>MODEL</th>
<th>VOLTAGE OUTPUT A.C r.m.s</th>
<th>TOLERANCE</th>
<th>CURRENT MAX mA</th>
<th>LINEARITY</th>
<th>FREQUENCY Hz. Per 1000 r.p.m</th>
<th>MAX SPEED r.p.m</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEFT</td>
<td>20 V/33.3 V</td>
<td>10%</td>
<td>60</td>
<td>&lt;1%</td>
<td>400</td>
<td>4000</td>
</tr>
<tr>
<td>TEFL</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>
**Application Hints:**

Dynaspede Tachogenerators are designed to meet the requirements as mentioned overleaf. They can be used in countless applications in a variety of ways and configurations, limited solely by the ingenuity of the designer.

As an analogue speed transducer, the Tacho output is rectified to provide a speed or velocity signal for indication or control. Since the linearity on the r.m.s. voltage is specified as better than 1%, this conventional and simple approach is satisfactory for most applications. However, where ultra-high linearity or absolute speed accuracy is called for, a digital approach yields the desired results.

Since Dynaspede Tachogenerators have a 48-pole construction, its output is at a frequency which is strictly a linear proportion to speed, having a slope of 400 Hz. Per 1000 rpm. Accuracy of speed or position based on frequency is therefore absolute, limited only by the degree of precision in measurements.

In keeping with the latest concepts in system building blocks, many integrated circuit devices are now available for frequency to voltage conversion.

**Speed Indicators:**

Dynaspede Tachogenerator construction makes it ideal for digital processing, for the purpose of speed indication or control.

Digital speed indicators can be easily implemented by counting the pulses from the Tacho for a finite interval, depending on the display proportionally.

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