**VRVT 190 LINEAR DISPLACEMENT TRANSDUCER**

The VRVT 190 Linear Displacement Transducer combines the best features associated with LVDTs and potentiometers into one rugged, contactless and highly reliable displacement transducer.

The VRVT 190 utilises the proven VRVT contactless operating principle, allowing a short body to stroke length ratio. Housed within a rugged, welded stainless steel case, it is suitable for use in the most arduous environments.

With no electrical sliding contacts, the VRVT 190 has a working life which is almost limitless. The standard spherical bearing mounting style enables easy installation, and offers the user the option of upgrading to VRVT technology from potentiometers or LVDTs.

Signal conditioning is carried out in a separate electronics package which can be sited up to 30 metres away from the harsh environment in which the transducer may be required to operate. The package has a dc volts input, with dc volts (or current) output and span and zero adjustment facility in a choice of enclosures.

### PERFORMANCE

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical stroke length</td>
<td>50 to 500mm</td>
</tr>
<tr>
<td>Independent linearity</td>
<td>Better than ±0.2% of stroke</td>
</tr>
<tr>
<td>Resolution</td>
<td>Infinite</td>
</tr>
<tr>
<td>Operational temperature</td>
<td>-40°C to +85°C</td>
</tr>
<tr>
<td>Temperature performance</td>
<td>≤ ±100ppm of electrical stroke°C (+20 to +60°C)</td>
</tr>
<tr>
<td></td>
<td>≤ ±200ppm of electrical stroke°C (-40 to +85°C)</td>
</tr>
<tr>
<td>Operating force</td>
<td>120 max. (in horizontal plane)</td>
</tr>
<tr>
<td>Insulation resistance</td>
<td>50MΩ at 100Vdc</td>
</tr>
<tr>
<td>Sealing</td>
<td>IP65</td>
</tr>
</tbody>
</table>

**Note**

The above specifications apply only when the VRVT 190 is operated in conjunction with a Penny & Giles EM Series electronic module.

Penny & Giles offer a wide range of electronic modules (EM Series)

For specific details please refer to EM Series data sheets.

- ±15V (±10%) and +18 to 30Vdc
- 0 to 10Vdc 0 to 5Vdc -5 to +5Vdc 5 to 25mA 0 to 20mA 4 to 20mA

Each transducer is supplied with a programming module calibrated to match the electrical stroke length. The module is plugged into the required EM electronic module via mating connectors.

Maximum recommended distance between sensor and EM electronic module is 30m.

The VRVT 190 is available from stock in standard stroke lengths from 50mm to 500mm.

For custom requirements please contact one of our Sales Application Engineers for assistance.
**VRVT 190**
LINEAR DISPLACEMENT TRANSDUCER

**DIMENSIONS**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical stroke E mm</td>
<td>50, 75, 100, 125, 150, 200, 250, 300, 400†, 500†</td>
</tr>
<tr>
<td>Mechanical stroke M mm</td>
<td>52, 77, 102, 127, 152, 202, 252, 302, 402†, 502†</td>
</tr>
<tr>
<td>Sleeve length S mm</td>
<td>126, 151, 176, 201, 226, 276, 326, 376, 476, 576</td>
</tr>
<tr>
<td>Distance between centres D mm</td>
<td>222, 247, 272, 297, 322, 372, 422, 472, 572, 672</td>
</tr>
<tr>
<td>Approximate weight gms</td>
<td>260, 270, 290, 310, 330, 370, 400, 440, 510, 580</td>
</tr>
</tbody>
</table>

†400mm and 500mm models may require special mounting consideration - depending on application. Please consult our application engineers for assistance.

**ELECTRICAL CONNECTIONS**

Standard Cable:
3 core + screen 19/0.15 ETFE insulated, TPS 120 sheath x 1metre long

Optional Connector:
Binder 712-1-99-0405-10-03 fitted to transducer cable

Optional Mating Connector with Cable Extension:
Binder 712-2-99-0406-10-03 fitted to cable extension

**ORDERING CODES**

VRVT190/SA/..../....

E = Stroke length mm  
X = Cable connector option

Mating connector and extension cable order as:

SA 56332/....

Extension cable length (metres)

**NOTE** See EM Series data sheets for full technical specifications and ordering code.

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**WEB SITE**
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Penny + Giles - the technology for linear position sensing

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