Model 5 Position Encoder/Totalizer Conditioner for Series 700 Instruments

- position encoder mode counts each input cycle 1X, 2X or 4X
- enables a position encoder to acquire, display and classify displacement, angle, turns, runout, diameter¹ concentricity², thickness¹, taper² and perpendicularity²
- performs batch-in, batch-out or counting in totalizer mode
- 48 bit internal counter and 400kHz input bandwidth
- includes selectable data filters and protected excitation supplies
- retains all Series 700 Instrument system features including:
  - engineering unit display, legends and 0.01% resolution
  - 2000 samples/sec./channel, user assignable logic I/O’s
  - fast max/min capture, limits, real time calculations
  - serial communication, auto-scaled ±5V and/or ±10V analog outputs

Notes: 1. Requires a reference fixture or, you must use two Model 5’s. 2. Requires two Model 5’s. 3. See page 4 of Bulletin 375, for application details.

One or two Model 5 conditioners can be installed in a 700 Series Instrument. If one is used, then any other conditioner can be used in the second channel. Whatever the configuration, the instruments built-in processing functions and real-time digital calculations make the combination a powerful test analyzer with easily configured characteristics.

TORQUE vs ANGLE or FORCE vs DISPLACEMENT can be measured when a Model 5 is added to a Model 701 Instrument (see Bulletin 370). The resultant Model 751 will also compute their ratio in real time as well as: display and classify 3 parameters with engineering units, capture their maximum and minima, output digital and analog data, etc.

Specifications

<table>
<thead>
<tr>
<th>Signal Source</th>
<th>Rotary and linear quadrature encoders, or TTL events.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Cable Length</td>
<td>500ft.</td>
</tr>
<tr>
<td>Excitation Supplies</td>
<td>+ <a href="mailto:12V@1.25mA">12V@1.25mA</a> or +5V@250mA².</td>
</tr>
<tr>
<td>Inputs</td>
<td>Short circuit (current limit) and overvoltage (fuses: 375mA for 12V, 1A for 5V) protected.</td>
</tr>
<tr>
<td>Type</td>
<td>Single ended, TTL</td>
</tr>
<tr>
<td>Impedance</td>
<td>50kΩ</td>
</tr>
<tr>
<td>Maximum Voltage</td>
<td>130VDC or 130Vrms.</td>
</tr>
<tr>
<td>Bandwidth</td>
<td>400kHz</td>
</tr>
</tbody>
</table>

Operating Modes

- Quadrature Encoder Mode... Counts input cycles once or doubles (2X) or quadruples (4X) the number of input pulses.
  - Choose A leads B or B leads A for incrementing direction of counter.

- Totalizer Mode... Counts edges of Signal A.
  - Choose Rising Edge or Falling Edge.

Counter Reset

- Via the RESET key, the Logic I/O or, the transducer connector.
- Reset Via The Transducer Connector: Choose TLL Low, TLL High, or Ignore.
- Reset Mode... Enables Reset Signal (choose TLL Low, TLL High, or Ignore).

Internal Counter... 48 bits.

Display Range and Resolution... Displays 0 to 999,900 units of measure with legend; resolution is 0.01% of Full Scale.

Response Time... 0.5ms.

Data Filter... Unfiltered or 4 pole Bessel response low pass digital filter.

10 cutoff frequencies from 0.1 to 100Hz (in 1-2-5 steps).

4. Both excitation voltages can be used simultaneously with the following restrictions:
   - A) 4.8 x (12V current) + (5V current) x 700mA
   - B) 12V current <= 125mA
   - C) 5V current <= 250mA
   - Examples of acceptable loads: 12V @ 125mA and 5V @ 100mA and 12V@90mA and 5V@250mA

5. Specifications are subject to change without notice.

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