MODEL LDK
Non-Contacting
Linear Encoder Kit

- Low cost non-contacting linear encoder designed for OEM usage
- Utilizes reflective optical diffraction technology for superb bi-directional repeatability
- .520” by 1.814” cross section designed to fit most space restrictive applications
- Differential, TTL compatible line driver output with optional index
- Up to 48” (1220mm) travel lengths
- Enhanced mounting tolerances
- Single LED light source

The model LDK is a compact non-contacting incremental linear encoder. It is available with three scale options. Mini scale, Micro scale and the Micro scale mounted on a spar for simplifying the scale installation. In addition to the varies scale options the model LDK can also be supplied with varies lengths of PVC jacketed cable or a 12” PARLEX high flex cable.
**ELECTRICAL**

- **Resolution range:** See part number table for available resolutions.
- **Light source:** Gallium aluminum arsenide L.E.D. rated @ 100,000 Hrs. MTBF (mfg’s spec).
- **Light sensor:** Phototransistor detectors.
- **Excitation voltage:** +5Vdc ± 5% at 120mA maximum.
- **Output format:** Differential line driver RS422 output.
- **Quadrature:** Two count channels (A & B) in phase quadrature with an optional ZR output.
- **Symmetry:** 90° ± 45° (at maximum conditions).
- **Rise and fall time:** 1 microsecond max. into 1,000pF load capacitance. Note: Units with line driver output the rise and fall time vary with line and load capacitance.
- **Zero reference width:** 3 to 5 electrical cycle in width.
- **Phase sense:** Channel A leads channel B for left to right movement of the scale when viewing the pattern side of the scale.

**MECHANICAL**

- **Housing material:** 20% glass filled polycarbonate.
- **Scale material:** Soda-lime glass (Thermal expansion 4.5 PPM/°F).
- **Cover material:** 20% glass filled polycarbonate.
- **Connector on encoder:**
  - JST # 08FMS-1.0SP-TF (fits Parlex cable).
  - JST # SM08B-SRSS-TB (fits PVC cable).

**ENVIRONMENTAL**

- **Operating temperature:** -25°C to +85°C
- **Storage temperature range:** -25°C TO +85°C
- **Shock:** 10 G for 11 millisecond duration.
- **Humidity:** To 98% R.H. (non-condensing).

<table>
<thead>
<tr>
<th>SPEED</th>
<th>RESOLUTION</th>
<th>SCALE</th>
<th>SPEED</th>
</tr>
</thead>
<tbody>
<tr>
<td>(2)</td>
<td>.0001 IN.</td>
<td>MICRO SCALE</td>
<td>40 IN./SEC. (1.0 MPS)</td>
</tr>
<tr>
<td>(3)</td>
<td>.001 IN.</td>
<td>MINI SCALE</td>
<td>20 IN./SEC. (0.5 MPS)</td>
</tr>
<tr>
<td>(4)</td>
<td>.005 MM.</td>
<td>ALL SCALES</td>
<td>60 IN./SEC. (1.5 MPS)</td>
</tr>
</tbody>
</table>

**FUNCTION**

- +5 VDC (RED)
- Z- (GRAY)
- Z+ (BROWN)
- B- (BLUE)
- B+ (YELLOW)
- A- (GREEN)
- A+ (ORANGE)
- GND (BLACK)
#2-56 x 7/16 Lg. socket head cap screws, square mounting washers, and gapping shim supplied in the hardware kit.

Optional Parlex high flex cable

Mating connector 08FMS-1.0SP-TF

Jet connector #5HR-08V-5
Contacts #3SH-0031-P02

Ply jacketed cable 28 AWG wires

Standard wire prep.

<table>
<thead>
<tr>
<th>Max. Length of Measurement Stroke (Micro Scale)</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>Metric</td>
<td>Gap</td>
</tr>
<tr>
<td>5.32 in.</td>
<td>135 mm</td>
<td>.030</td>
</tr>
<tr>
<td>5.02 in.</td>
<td>127 mm</td>
<td>.015</td>
</tr>
</tbody>
</table>

Table 1

Table 2
DRC ENCODER

MINI SCALE
B36678 - X - XXXX - XXXX

Cycles
2 = 2000 CPI
4 = 50 CPMM

ZR Location
0.0 = NO ZR
XXX = CPI = XXX
(INCLUDE DECMAL POINT)

Measurement Length
(UP TO 1000 MM OR 48")
XXX = INCHES FOR ENGLISH SCALES
XXX = MILLIMETERS FOR METRIC SCALES
(INCLUDE DECIMAL POINT IN PART NUMBER)
CUT LENGTH = (MEASUREMENT LENGTH + 200) ± .06

MICRO SCALE
B36681 - X - X - XXXX

Cycles
3 = 2500 CPI (3X ONLY)
4 = 50 CPMM

ZR Location
0 = NO ZR
1 = LEFT END OF TRAVEL
2 = CENTER OF TRAVEL
3 = RIGHT END OF TRAVEL

Scale Movement
(INCLUDE DECIMAL POINT IN PART NUMBER)
CUT LENGTH = (MEASUREMENT LENGTH + 200) ± .04

MICRO SCALE MOUNTED ON A SPAR
B36679 - X - X - XXXX

Cycles
2 = 2500 CPI (3X ONLY)
4 = 50 CPMM

ZR Location
0 = NO ZR
1 = LEFT END OF TRAVEL
2 = CENTER OF TRAVEL
3 = RIGHT END OF TRAVEL

Scale Movement
(INCLUDE DECIMAL POINT IN PART NUMBER)
CUT LENGTH = (MEASUREMENT LENGTH + 200) ± .04

<table>
<thead>
<tr>
<th>GAP</th>
<th>RESOLUTION (IN.)</th>
<th>RESOLUTION (MM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>.030</td>
<td>.0001 IN.</td>
<td>2500 CPI</td>
</tr>
<tr>
<td>.015</td>
<td>.005 MM</td>
<td>50 CPMM</td>
</tr>
</tbody>
</table>

Table 2