Model LCE

Features

- **Low Cost Linear Solution**
- **Resolutions from 2 to 500 Cycles Per Inch**
- **IP65 Sealing Available**
- **0 Inch to 50 Inch Cable Measurement**

The Linear Cable Encoder (LCE) provides a low cost alternative for obtaining accurate linear measurements. As opposed to typical rotary shaft style encoders, the LCE has a retractable stainless steel cable, allowing for numerous and unusual measuring configurations. Placing the LCE away from harsh environmental conditions, while still providing precise measurements, gives the LCE an outstanding advantage over shaft style encoders. Installation is easy with a variety of cable exit directions, and perfect parallel alignment no longer necessary. The heart of the LCE is the popular E-Cube Accu-Coder™, the finest cube style encoder available. The E-Cube advantage provides a reliable digital pulse train in either single channel or quadrature format, with resolutions down to 0.002" per cycle. The small overall size, a variety of resolutions, and many different connector types, makes the versatility of the LCE unbeatable!

Common Applications

Robotics, Extrusion Presses, Valve Positioning, Textile Machinery, Control Gate Positioning

Model LCE Ordering Guide

Blue type indicates price adder options. Not all configuration combinations may be available. Contact Customer Service for details.

LCE01 - 1 - 002 - Q - PU - S

MODEL
- **LCE01** Standard
- **LCE02** IP65 (Industrial)

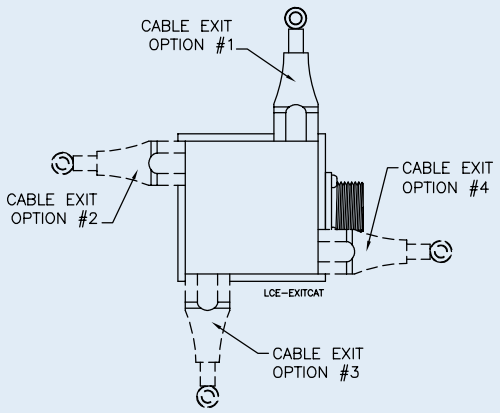
CABLE EXIT
- **1** Option 1
- **2** Option 2
- **3** Option 3
- **4** Option 4

CYCLES PER INCH
See chart below
Price adder for CPI >100

NUMBER OF CHANNELS
- **Q** Quadrature A & B
- **R** Quadrature A & B with Index Z

OUTPUT TYPE
- **OC** Open Collector
- **PU** Pull-Up Resistor
- **PP** Push-Pull
- **HV** Line Driver

CONNECTOR TYPE[2]
- **S** Standard 6-pin MS Style
- **Y** 7-pin MS Style
- **X** 10-pin MS Style
- **J** 5-pin M12 (12 mm)
- **K** 8-pin M12 (12 mm)
- **G** Gland Nut, 18" cable[1]
- **T** Solder Terminal
- **B** Solder Terminal with Conduit Box



For specification assistance call Customer Service at 1-800-366-5412

Model LCE Resolution Table

Cycles Per Inch	002	020	040	050	100	200	250	500
Resolution	0.500"	0.050"	0.025"	0.020"	0.010"	0.005"	0.004"	0.002"

Contact Customer Service for other resolutions

NOTES:
1. For non-standard cable lengths, add a forward slash (/) plus cable length expressed in feet. Example: G/6=6 feet of cable.
2. For Mating Connectors, Cables, and Cordsets see Electrical Accessories on the web at www.encoder.com.

Model LCE

Model LCE Specifications

Electrical

Input Voltage.....4.75 to 28 VDC max for temperatures up to 85° C
4.75 to 24 VDC for temperatures between 85° and 100° C
Input Current.....80 mA maximum with no output load
Input Ripple .....100 mV peak-to-peak at 0 to100 kHz
Output Format .....Incremental- Square wave with channel A leading B during linear extension
Output Type.....Open Collector- 250 mA max per channel
Pull-Up- 250 mA max per channel
Push-Pull- 20 mA max per channel
Line Driver- 20 mA max per channel (Meets RS 422 at 5 VDC supply)
Index.....Once per 5" cable extension or retraction
Max Frequency.....0 to 125 kHz
Symmetry .....180° (±18°) electrical
Quad Phasing.....90° (±22.5°) electrical
Rise Time.....Less than 1 microsecond

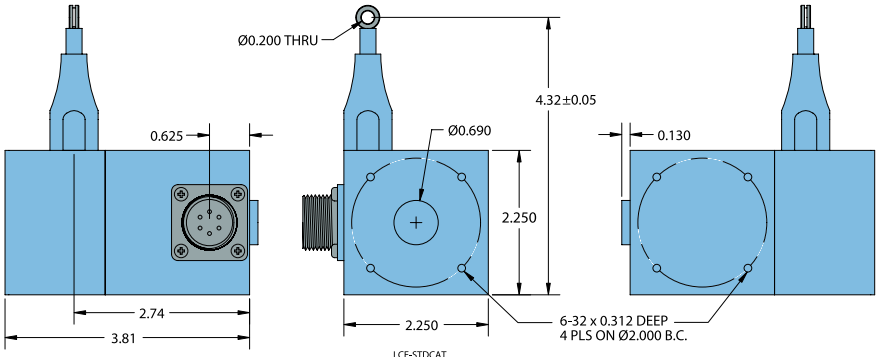
Mechanical

Full Stroke
Length (FSL).....50" standard. Longer measuring ranges may Length (FSL) be available, please contact Customer Service.
Finish .....Black powder coated aluminum
Accuracy.....±0.10% of FSL
Repeatability.....±0.015% of FSL
Linear Resolution .....Up to 500 cycles per inch (0.002" per cycle)
Cable Material .....0.034" nylon coated stainless steel rope
Cable Tension.....20 oz maximum typical
Life (cycles) .....1,000,000 predicted at zero angle cable exit
Electrical Conn .....6-, 7-, or 10-pin MS Style, 5-, or 8-pin M12 (12 mm), Gland with 18" cable (foil and braid shield, 24 AWG conductors), Solder Terminal, or Solder Terminal with conduit box
Weight.....19 oz typical

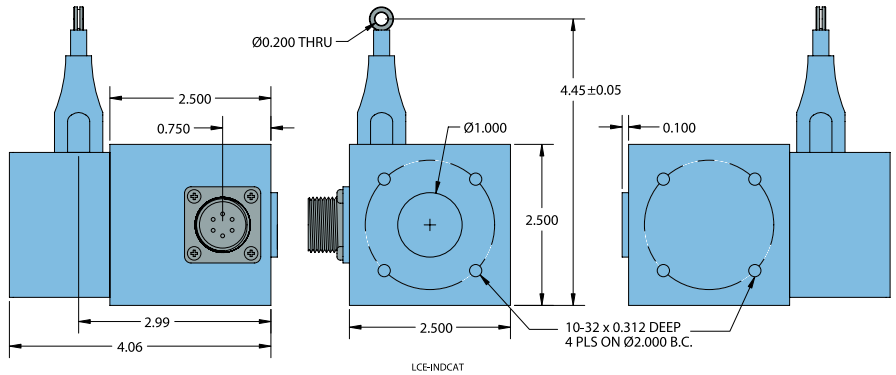
Environmental

Operating Temp.....0° to 85° C, or 0° to 100° C for 5-24 VDC
Sealing.....IP65 for Industrial LCE

Model LCE Standard Housing (LCE01)



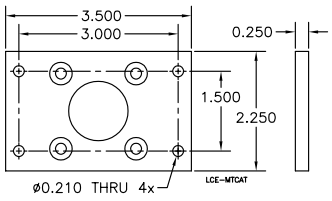
Model LCE IP65 Industrial Housing (LCE02)



All dimensions are in inches with a tolerance of ±0.005" or ±0.01" unless otherwise specified

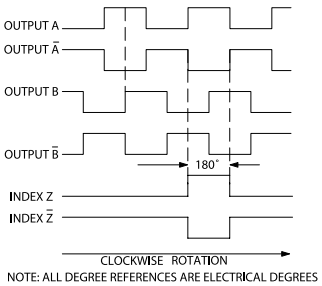
Optional Mounting Plate

Attaches to Standard or Industrial LCE in three different orientations.
Order Accessory Item 176064-01



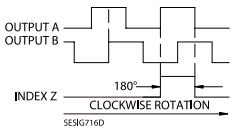
Waveform Diagrams

Line Driver and Push-Pull



NOTE: ALL DEGREE REFERENCES ARE ELECTRICAL DEGREES

Open Collector and Pull-Up



Wiring Tables

Function	Gland Cable Wire Color	5-pin M12	8-pin M12	10-pin MS	7-pin MS HV	7-pin MS O, S PP	6-pin MS HV No Index	6-pin MS O, S PP	Term. Block HV No Index	Term. Block O, S PP
Com	Black	3	7	F	F	F	A	A, F	1	1, 6
+VDC	Red	1	2	D	D	D	B	B	2	2
A	White	4	1	A	A	A	C	D	3	4
A'	Brown	----	3	H	C	----	D	----	4	----
B	Blue	2	4	B	B	B	E	E	5	5
B'	Violet	----	5	I	E	----	F	----	6	----
Z	Orange	5	6	C	----	C	----	C	----	3
Z'	Yellow	----	8	J	----	----	----	----	----	----
Case	Green[1]	----	----	G	G	G	----	----	----	----
Shield	Bare	----	----	----	----	----	----	----	----	----

[1]E-Cube Only