

# Model LCE - Linear Cable Encoder



## Features

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

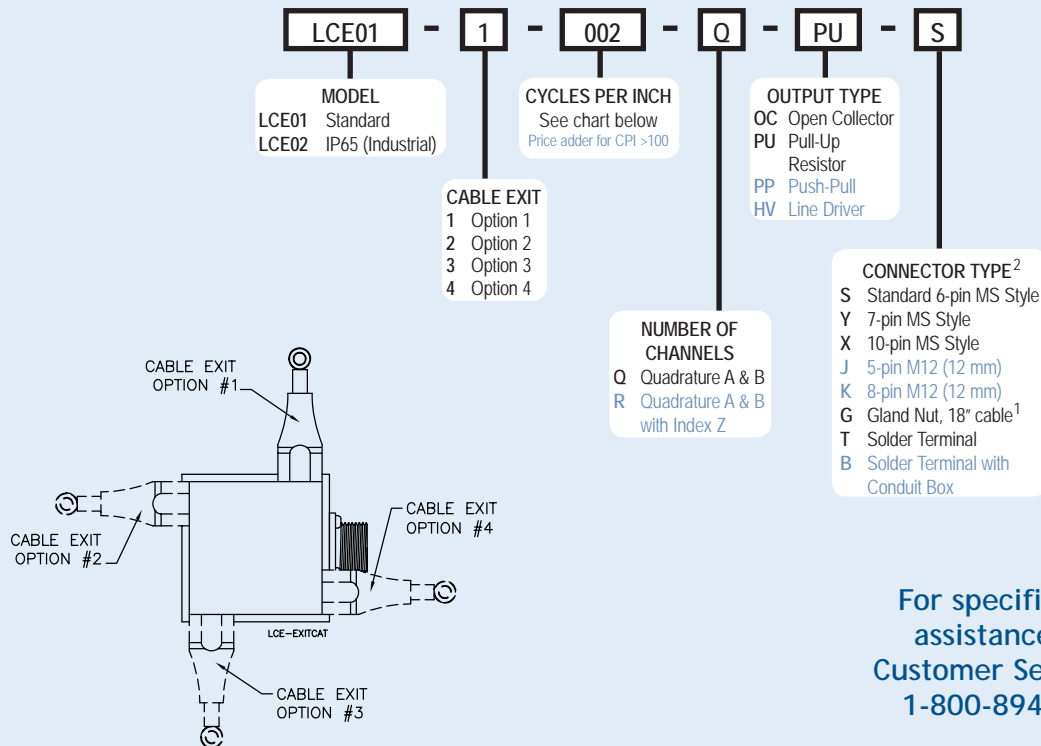
The Linear Cable Encoder (LCE) provides a low cost alternative for obtaining accurate linear measurements. As opposed to typical rotary shaft style encoders, the LCE has a retractable stainless steel cable, allowing for numerous and unusual measuring configurations. Placing the LCE away from harsh environmental 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.



For specification assistance call Customer Service at 1-800-894-0412

## 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](http://www.encoder.com).

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## 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 to 100 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  
 Freq Response.....0 to 125 kHz  
 Symmetry .....180° (±18°) electrical  
 Quad Phasing.....90° (±22.5°) electrical  
 Rise Time.....Less than 1 microsecond

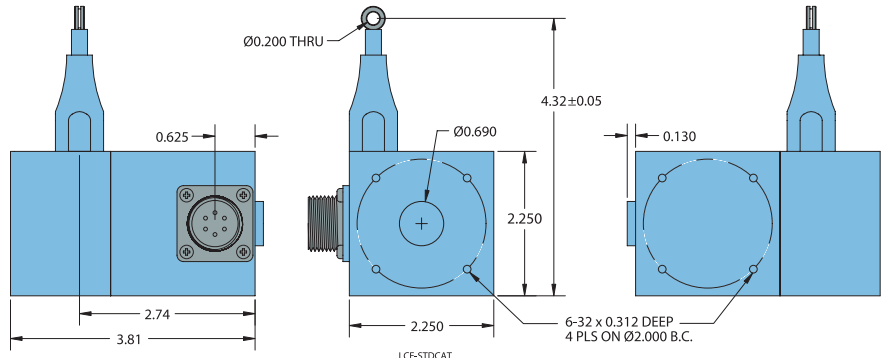
### Mechanical

Full Stroke .....50" standard. Longer measuring ranges may be available, please contact Customer Service.  
 Length (FSL) .....Black powder coated aluminum  
 Finish.....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

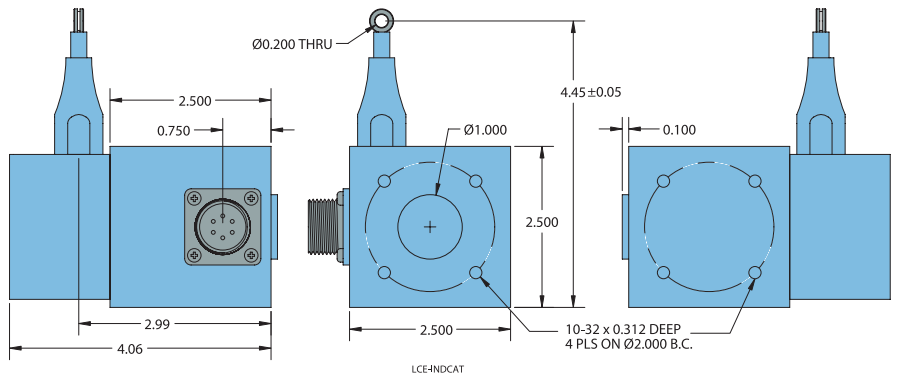
### Environmental

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

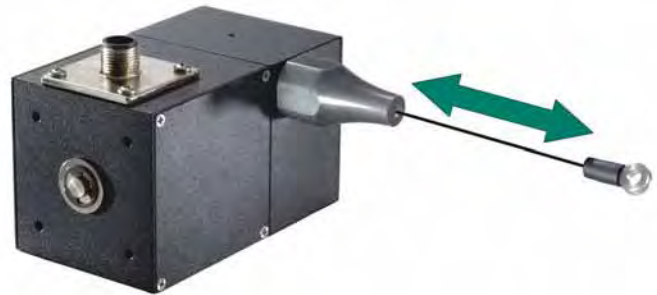
## Model LCE Standard Housing (LCE01)



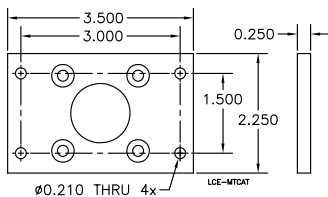
## Model LCE IP65 Industrial Housing (LCE02)



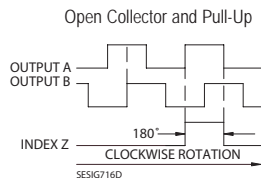
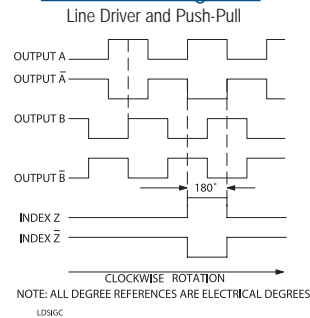
All dimensions are in inches with a tolerance of ±0.005" or ±0.01" unless otherwise specified



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



### Waveform Diagrams



### 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 <sup>1</sup>	---	---	G	G	G	---	---	---	---
Shield	Bare	---	---	---	---	---	---	---	---	---

<sup>1</sup>E-Cube Only

Spring 2007