MODEL LDL-A
Miniature
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**
- **Designed to fit most space restrictive applications. .486 high by 1.229" long**
- **Available in either Metric or English Resolutions down to (5.0 Micron, .0001 inch)**
- **Single ended TTL compatible square wave with optional index**
- **Travel speeds up to 2.5 meters per second (100 inches per second)**
- **Up to 48" (1220mm) travel lengths**
- **Enhanced mounting tolerances**
- **Single LED light source**

The model LDL-A is a miniature non-contacting high resolution 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 LDL-A can also be supplied with varies lengths of PVC jacketed cable or flat ribbon cable.

DRC Encoders

LDL-A SPECIFICATIONS

ELECTRICAL

Resolution range:	See part number table for available resolutions.
Light source:	Light Emitting Diode.
Light sensor:	Phototransistor Array.
Excitation voltage:	+5Vdc ± 5% at 45mA maximum.
Output format:	Single ended TTL compatible square wave. Two count channels (A & B) in phase quadrature with an optional ZR output.
Quadrature:	90° ± 30° (at maximum conditions).
Symmetry:	180° ± 18° (at 10 KHz output frequency).
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:	On Micro scale – see chart below. On Mini scale add 70% to micro scale 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:	Aluminum.
Scale material glass:	Soda-lime glass (Thermal expansion 4.5 PPM/°F).
Cover material:	Aluminum.
Connector on encoder:	JST # SM05B-SRSS-TB.
Connector on cable:	JST # SHR-057-S.
Contacts on cable:	JST # SSH-003T-P0.2

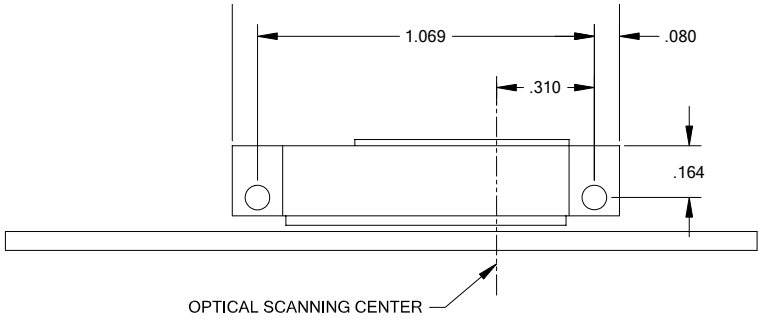
ELECTRICAL CONNECTIONS		
FUNCTION	PIN	COLOR
CHANNEL A	1	ORANGE
CHANNEL B	2	YELLOW
CHANNEL Z	3	BROWN
GROUND	4	BLACK
+5 VDC	5	RED

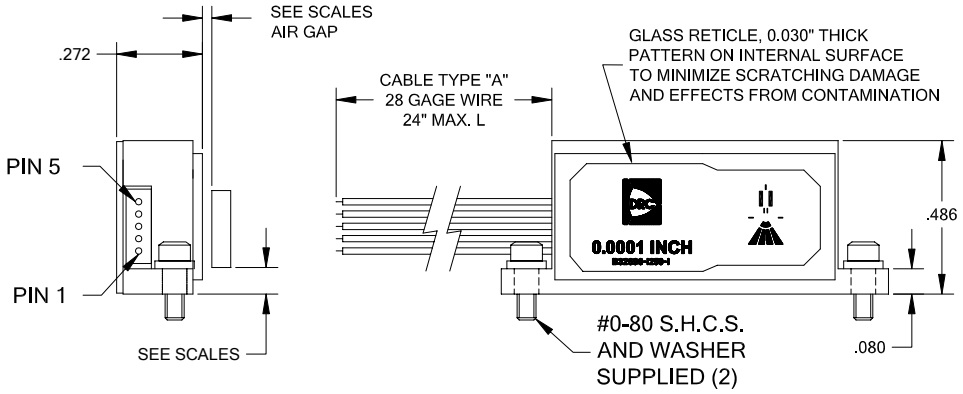
ENVIRONMENTAL

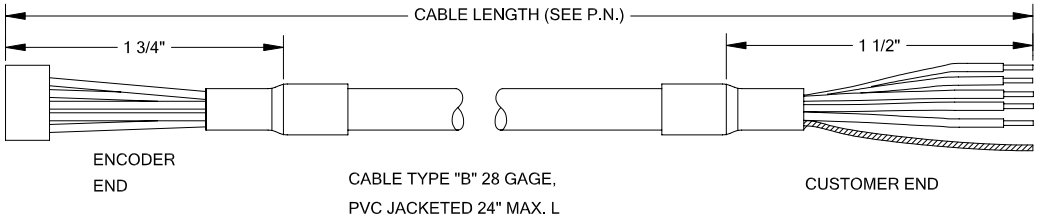
Operating temperature:	0°C to +70°C
Storage temperature range:	-25°C TO +85°C
Shock:	10 G for 11 millisecond duration.
Humidity:	To 98% R.H. (non-condensing).

Note: ZR width for MINI scale– add 70% to micro scale width.

RESOLUTION	SCALE	SPEED	ZR WIDTH ±50% (MICRO SCALE)
.0001 IN.	2500 CPI MICRO SCALE	25 IN./SEC.	15 CYCLES
.0001 IN.	2500 CPI MINI SCALE	25 IN./SEC.	(SEE NOTES)
.005 MM.	GLASS 50 CPMM SCALES	50 IN./SEC.	7 CYCLES
.010 MM.	25 CPMM MINI SCALES	100 IN./SEC.	4 CYCLES







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RESOLUTION	SCALE TYPE (PURCHASED SEPARATELY)	CABLE TYPE (28 AWG)	CABLE LENGTH	CONNECTOR AT CUSTOMER END	ADD MODIFIER FOR SPECIALS
3 = .0001 IN. 4 = 5 MICRON 6 = 10 MICRON	1 = MINI 2 = MICRO	A = WIRE B = PVC JACKETED N = NONE (CONNECTOR OUT)	XX = XX INCHES (02 TO 24)	0 = NONE (LEADS) A = JST #SHR-05V-S	

GSI MicroE Systems®

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MICRO SCALE

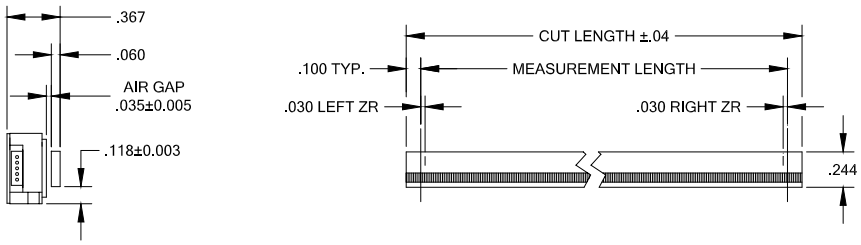
B36681 - ○ - ○ - ○○○

LDL A & C RESOLUTION
(3) .0001"
(4) 5 MICRON
(6) 10 MICRON

CYCLES REF.
2 = 2500 CPI (1/4W)
4 = 50 CPMM (1/8W)
6 = 25 CPMM (1/8W)

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

MEASUREMENT LENGTH (SEE TABLE 1)
XX.XX = INCHES FORENGLISH SCALES
XXX.X = MILLIMETERS FOR METRIC SCALES
(INCLUDE DECIMAL POINT IN PART NUMBER)
CUT LENGTH = (MEASUREMENT LENGTH + .2000 ±.04



MICRO SCALE MOUNTED ON A SPAR

B36679 - ○ - ○ - ○○○

(INCLUDE DECIMAL POINT IN PART NUMBER)
SPECIAL LENGTHS AVAILABLE
CONSULT FACTORY

LDL A & C RESOLUTION
(3) .0001"
(4) 5 MICRON
(6) 10 MICRON

CYCLES REF.
2 = 2500 CPI (1/4W)
4 = 50 CPMM (1/8W)
6 = 25 CPMM (1/8W)

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

MEASURMENT LENGTH (SEE TABLE 1)

1.00 = 1 IN.	25.0 = 25 MM
2.00 = 2 IN.	50.0 = 50 MM
3.00 = 3 IN.	75.0 = 75 MM
4.00 = 4 IN.	100.0 = 100 MM
5.00 = 5 IN.	125.0 = 125 MM

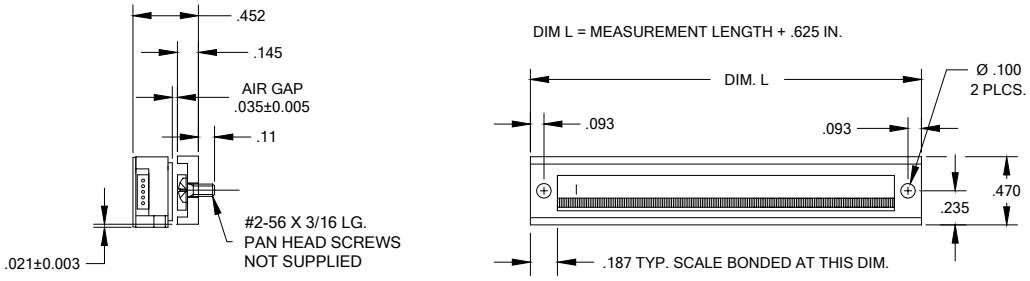


TABLE 1

MAX. LENGTH OF MEASUREMENT STROKE (MICRO SCALE)		
WITH ZR LOCATION	ENGLISH	METRIC
NO ZR OR CENTER OF TRAVEL	5.32 IN.	135 MM
LEFT OR RIGHT END OF TRAVEL	5.02 IN.	127 MM

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MINI SCALE

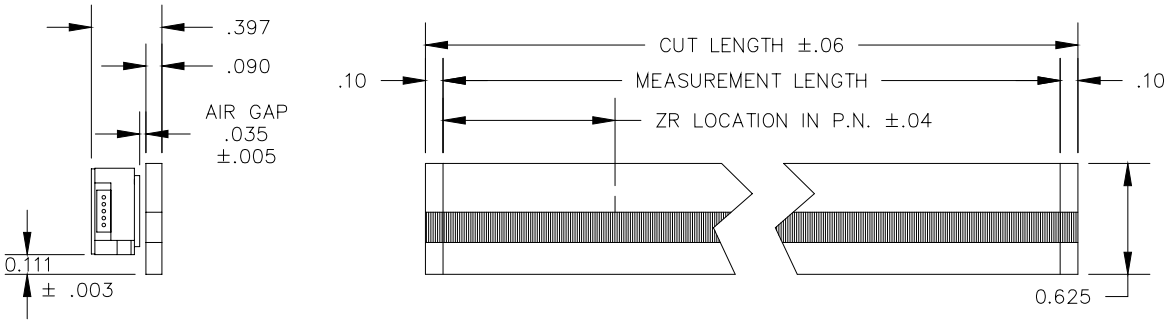
B36678 – X – XXXX – XXXX

LDL A & C RESOLUTION
(3) .0001" ..... 2 = 2500 CPI
(4) 5 MICRON ..... 4 = 50 CPMM
(6) 10 MICRON ..... 6 = 25 CPMM

CYCLES

ZR LOCATION
0.0 = NO ZR
XX.XX = INCHES
XXX.X = MM
(INCLUDE DECIMAL POINT)

MEASUREMENT LENGTH
(UP TO 1200 MM OR 48")
XX.XX = IN. FOR ENGLISH SCALES
XXX.X = MM FOR METRIC SCALES
(INCLUDE DECIMAL POINT IN P. N.)
CUT LENGTH = (MEASUREMENT LENGTH + .200) ± .06



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