

# GURLEY MODEL LR18 INCREMENTAL LINEAR ENCODER

MOTION TYPE:

LINEAR

USAGE GRADE:

INDUSTRIAL

OUTPUT:

INCREMENTAL

MAX RESOLUTION:

0.1 $\mu$ m & 1.0 $\mu$ m



## HIGH RESOLUTION - INDUSTRIAL RUGGEDNESS

The Model **LR18** Incremental Linear Encoder offers measuring lengths up to 2040mm and is accurate to  $\pm 3 \mu\text{m/m}$ .

ingenuity<sup>®</sup>@work

ISO  
9001  
CERTIFIED

Gurley Precision Instruments  
514 Fulton Street  
Troy, NY 12180 U.S.A.  
(800) 759-1844, (518) 272-6300, fax (518) 274-0336,  
Online at [www.gurley.com](http://www.gurley.com), e-mail: [info@gurley.com](mailto:info@gurley.com)



# SPECIFICATIONS

	<b>LR18</b>
Cross-section	18mm x 54mm
Measuring length ML	70mm - 2040mm
Overall length, mm	ML + 105mm
Weight	0.4kg + 0.8kg/m
Operating temperature	0° to 50°C
Sealing	IP64 with optional compressed air IP53 without compressed air
Grating Period	20µm
Resolution, µm	0.1µm, 0.2µm, 0.5µm, 1.0µm, 2.5µm, or 5.0µm
Accuracy (at 20°C)	Grade A: ±3 µm/m; Grade B: ±5 µm/m Grade C: ±10 µm/m
Input power	5V ± 5% @ 120 mA max (without load)
Max speed	1 m/s
Max acceleration	30 m/s <sup>2</sup>
Driving force	≤3.0 N
Humidity (non-condensing)	80% max
Vibration (40 to 2000 Hz)	≤3G
Shock (11ms)	≤10G

*As part of our continuing product improvement program, all specifications are subject to change without notice.*

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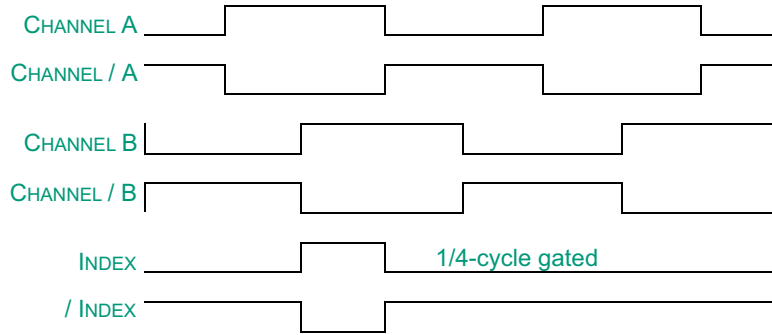
# SPECIFICATIONS & WIRING

## INPUT POWER

+5 VDC  $\pm$ 0.3 V @60mA max.

## SQUARE WAVE OUTPUT - OUTPUT CODE L

On all channels: EIA/RS-422 balanced differential line driver, with short circuit protection, may be used single-ended for TTL-compatible inputs. Index is 1/4-cycle wide, gated with the high states of channels A and B.



## SQUARE WAVE OUTPUT WIRING

Square waves OUT = L	Wire Colors Conn. Code <b>P</b>	Pin #, DA-15P Conn. Code <b>Q</b>	Pin #, DE-9P Conn. Code <b>S</b>
<b>A</b>	Green	8	4
<b>/ A</b>	Yellow	7	8
<b>B</b>	Pink	5	3
<b>/ B</b>	Red	4	7
<b>IND</b>	Brown	2	2
<b>/ IND</b>	Gray	1	6
<b>+V</b>	Black	10	5
<b>COMMON</b>	White	13	9
<b>CASE</b>	Bare (shield)	9	1

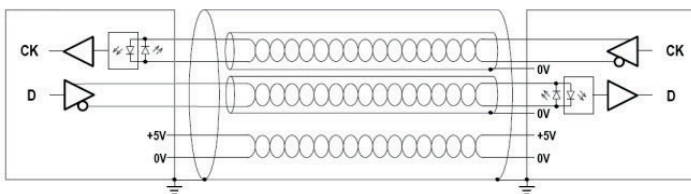
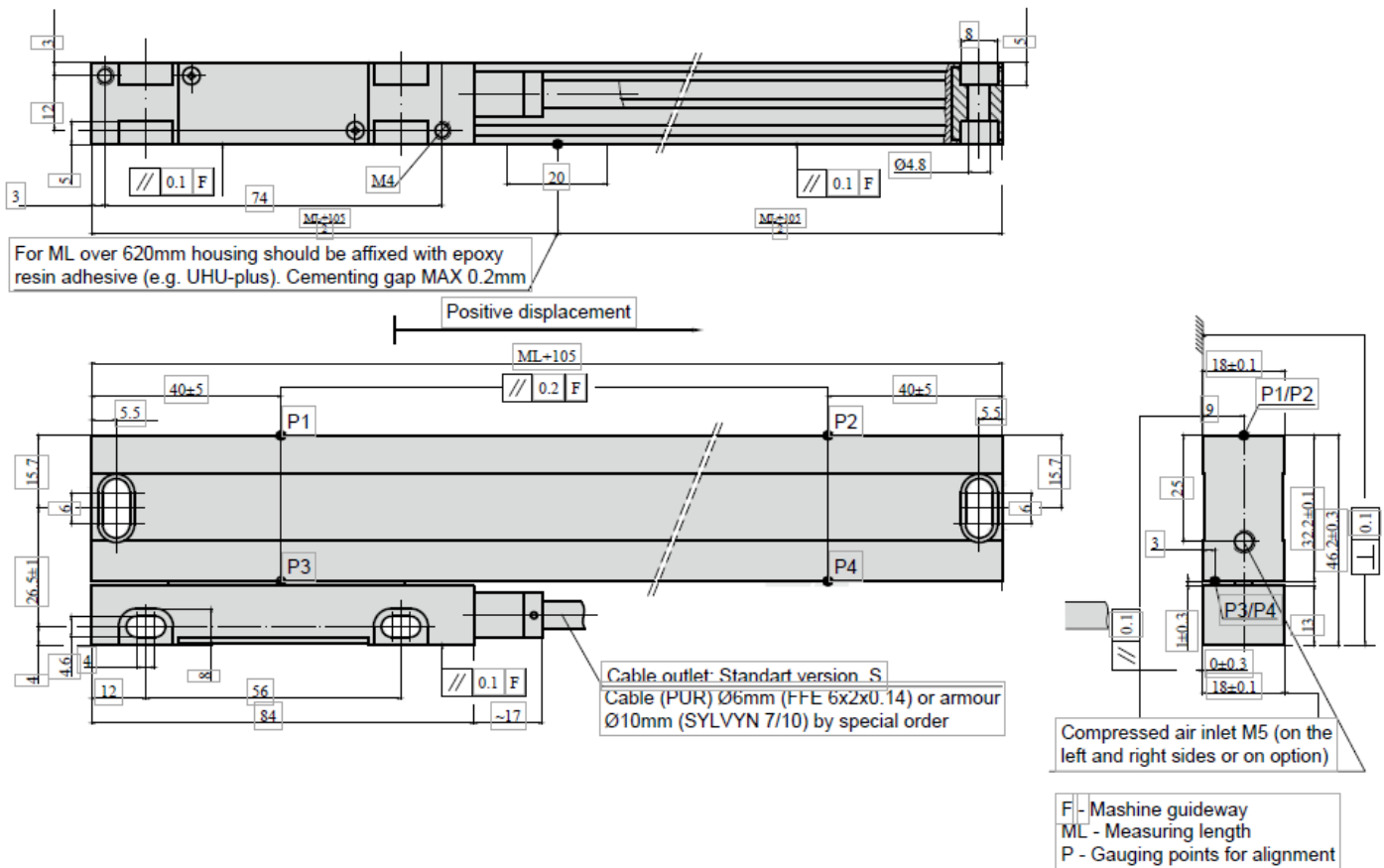
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# OUTLINE DIMENSIONS & CABLE INFORMATION



Encoder is supplied with 6-wire shielded twisted pairs

- 6-wire shielded cable,  $\varnothing=6.2$  mm
- PVC external sheath, with low friction coefficient, oil-resistant, suitable for continuous movements
- Conductors section: power supply  $0.35$  mm<sup>2</sup>, signals  $0.25$  mm<sup>2</sup>
- Cable bend radius should not be less than 35 mm.

**LR18**

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# ORDERING INFORMATION

MODEL	RES	ACC	IN	OUT	ML	EXIT	TYPE	CABLE	CONN	SPEC

**MODEL**

**LR18** 18 x 46 mm **cross-section**

**RES** - Resolution

**001** 0.1µm  
**002** 0.2µm  
**005** 0.5µm  
**010** 1.0µm  
**025** 2.5µm  
**050** 5.0µm

**ACC** - Accuracy

**A** ±3 µm/m  
**B** ±5 µm/m

**IN** - Input voltage

**5** +5Vdc

**OUT** - Output format

**L** RS 422

**ML** - Measuring Length\*

**xxxx** mm

**EXIT** -

**A** Cable exits to the right

**IND** - Index location

**xxxx** Distance from left end of scale housing to left side of read head, mm  
**0000** None required

**TYPE** - Of Cable

**S** Shielded

**CABLE** - **xxx** Cable length, inches

**040** 1 Meter  
**080** 2 Meters  
**120** 3 Meters

**CONN**

**P** Pigtails (no connector)  
**S** DE-9P

**SPEC** - Special Code

**#** Issued at the time of order to cover special customer requirements  
**N** No special features

**ACCESSORIES** (order separately)

**M06** Mating connector for DE-9P

\*Available measuring lengths (mm): 70; 120; 170; 220; 270; 320; 370; 420; 470; 520; 570; 620; 720; 770; 820; 920; 1024; 1140; 1240; 1340; 1440; 1540; 1640; 1740; 1840; 2040.

**SPECIAL CAPABILITIES**

For special situations, we can optimize catalog encoders to provide higher frequency response, greater accuracy, wider temperature range, reduced torque, non-standard line counts, or other modified characteristics. In addition, we regularly design and manufacture custom encoders for user-specific requirements. These range from high-volume, low-cost, limited-performance commercial applications to encoders for military, aerospace and similar high-performance, high-reliability conditions. We would welcome the opportunity to help you with your encoder needs.

**WARRANTY**

Gurley Precision Instruments offers a limited warranty against defects in material and workmanship for a period of one year from the date of shipment.



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