Gurley Model LR18
Incremental Linear Encoder

Motion Type:
Linear

Usage Grade:
Industrial

Output:
Incremental

Max Resolution:
0.1µm & 1.0µm

High Resolution - Industrial Ruggedness

The Model **LR18** Incremental Linear Encoder offers measuring lengths up to 2040mm and is accurate to ±3 µm/m.

ingenuity@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, e-mail: info@gurley.com

GPI

Specifications

	LR18
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^2
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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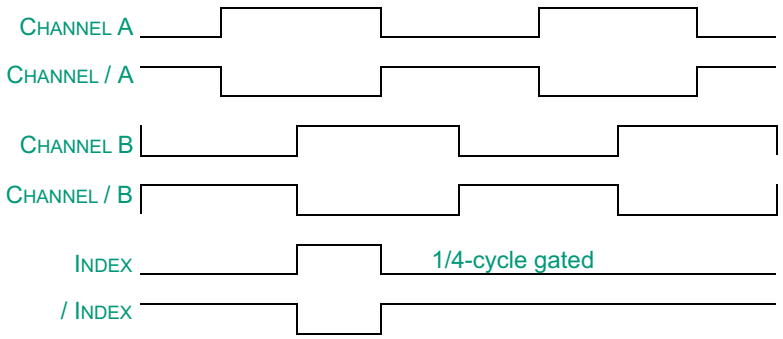
INPUT POWER
+5 VDC ±0.3 V @60mA max.

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 ¼-cycle wide, gated with the high states of channels A and B.



SQUARE WAVE OUTPUT WIRING

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

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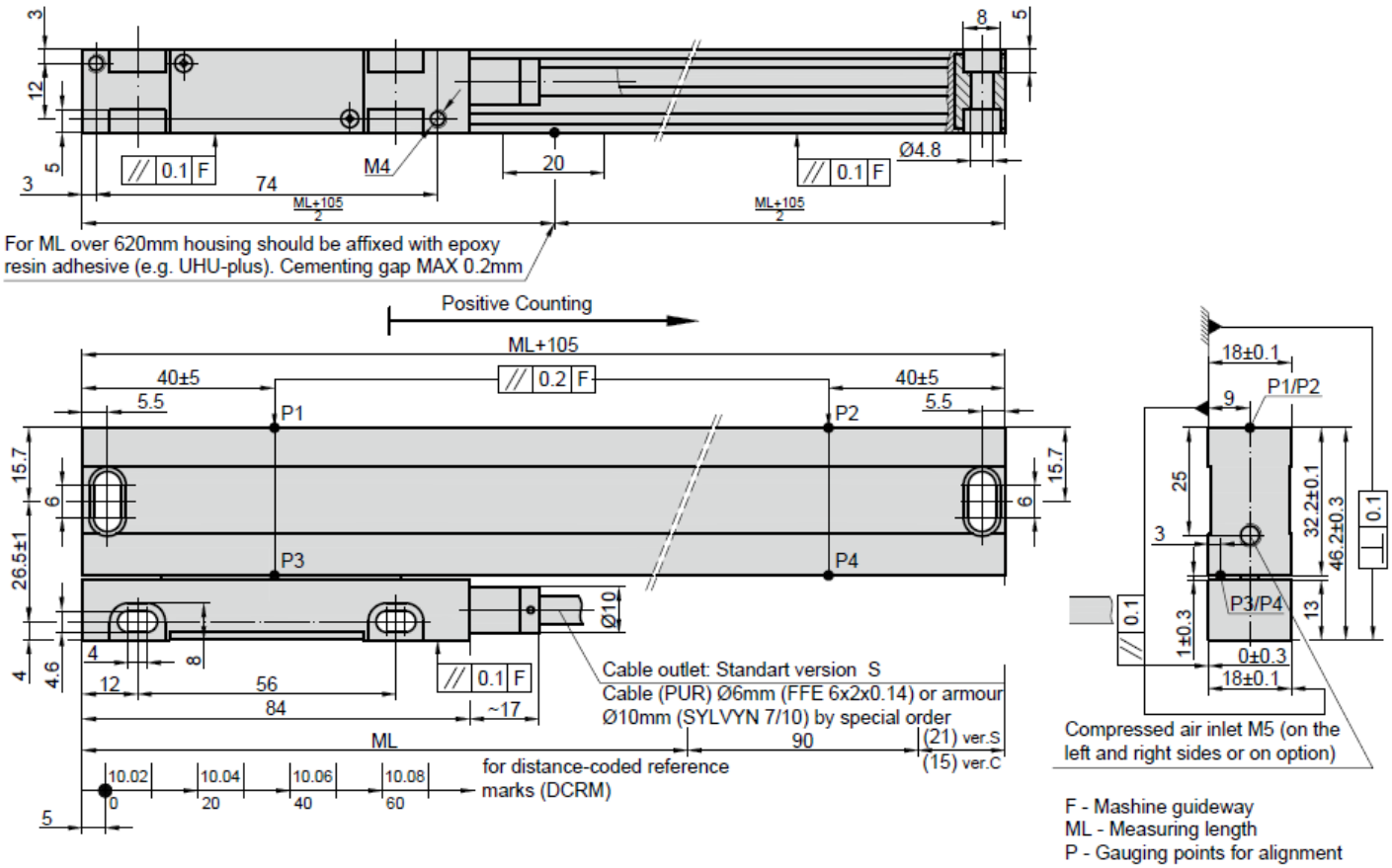
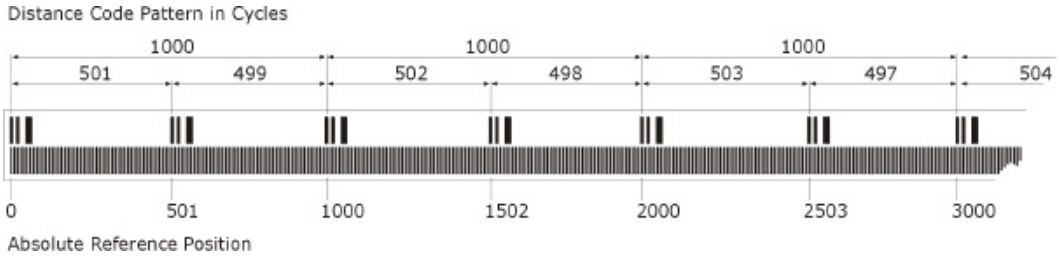
Outline Dimensions & Cable Information



DISTANCE-CODED REFERENCE MARKS

The LR18 encoders include an index signal, which can be located anywhere along the measuring length; its position is specified at the time of order. Once the encoder is installed, the index becomes fixed with respect to the user's machine. This feature allows the user to return to a known starting point.

Since the index signal occurs only once, it may take a while to find. One way to decrease the homing time is with DISTANCE-CODED REFERENCE MARKS (DCRM). Instead of being at a single location, many index marks are placed all along the scale so that the distance between any two adjacent marks is unique. Thus, the distance between any two marks, coupled with knowledge of the direction of travel, provides all the information necessary to determine the absolute position of an index mark. The maximum travel required to determine position is 1000 optical cycles, or 20 mm with a scale pitch of 20 µm.



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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
9999	Distance-coded reference marks

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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