

Gurley Model A19 Absolute Encoder

Motion Type:

Rotary

Usage Grade:

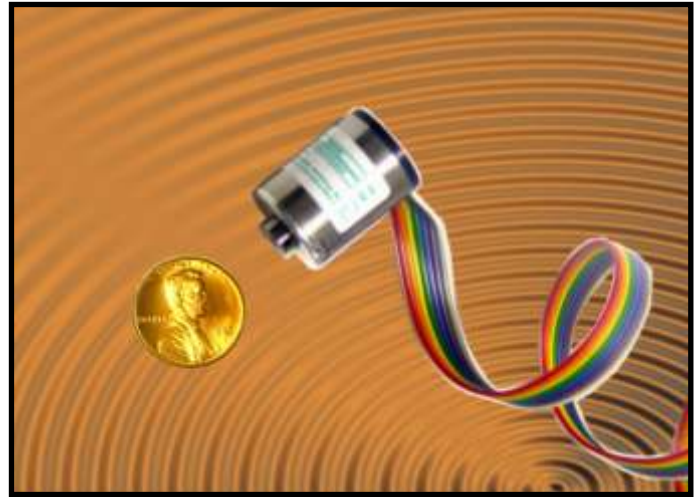
Industrial

Output:

Absolute

Max Resolution:

15 Bits



Miniature High-Resolution Absolute Encoder

The model **A19** encoder is a miniature single-turn absolute rotary encoder with opto/magnetic electronic technology. This encoder is used in a wide variety of position-sensing applications for the measuring of angles and distances in very small envelopes.

In addition, the encoder features:

- Up to 15-bit resolution, SSI output
- -40C to +85C extended operating temperature available
- Represent either shafted or blind-hollow shaft version
- LED illumination for long life (>100,000 hours)
- Faster and more accurate than any resolver-based system
- 19mm diameter housing
- 3-4mm (0.125") diameter steel solid or blind hollow shaft

ingenuity[®]@work

ISO
9001
Certified

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SPECIFICATIONS

	Units	Limiting Values	See Note
Mechanical Specifications			
Moment of Inertia	in-oz-s ² (g-cm ²)	5.7 x 10 ⁻⁶ (0.4)	
Starting Torque	in-oz (N x m)	0.07 (5 x 10 ⁻⁴)	
Radial Shaft Load	lb (N)	0.6 (3)	
Axial Shaft Load	lb (N)	0.6 (3)	
Bearing Arrangement		2 pre-loaded bearings	
Bearings		Grease lubricated and sealed	
Measuring Rotational Element		Etched chrome on glass disc, axially combined with actuation magnet	
Non-Operating Slew	RPM	10,000	
Shock 11 (ms)	g (m/s ²)	30 (300)	
Vibration (55-2000Hz)	g (m/s ²)	10 (100)	
Sealing		IP50	2
Acceleration	rad/s ²	3 x 10 ⁶	
Max. Rotational Speed, RPM		2000	
Recommended Coupling	SCD		
Environmental Specifications			
Operating Temperature	°F (°C) °F (°C)	Standard is +32 to +158 (0 to +70) Extended is -40 to +185 (-40 to +85)	
Relative Humidity	%	98	1
Electrical Specifications			
Supply Voltage	VDC	4.75 to 5.25, 5.00 nominal	
Current Consumption	mA	≤ 150	
LED Life	hours	≥ 100,000	
Output Code		Gray code or natural binary	
Output Format		13, 14, or 15 bit SSI	
Output Device		RS485	
Accuracy		+/-150 arc seconds	

Notes

1. Non-condensing
2. Per CEI / IEC 529 - Degrees of protection provided by enclosures (IP Code)

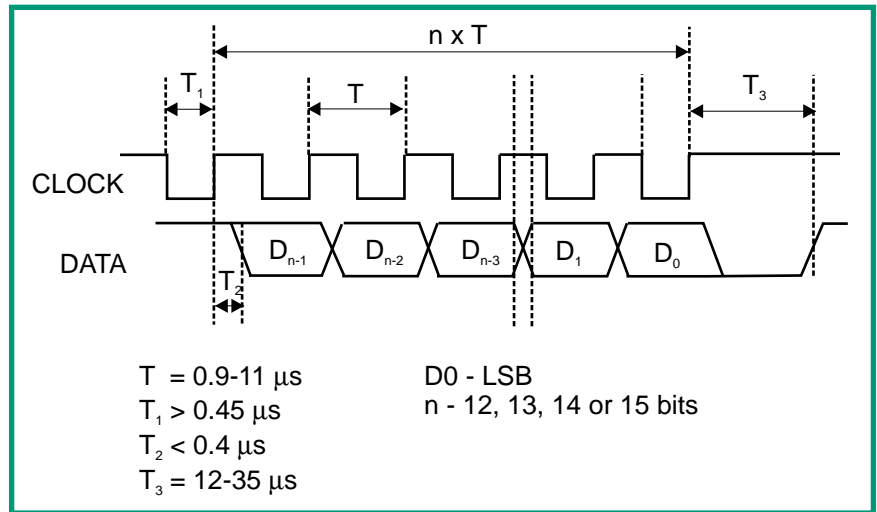
As part of our continuing product improvement program, all specifications are subject to change without notice.



Output Options

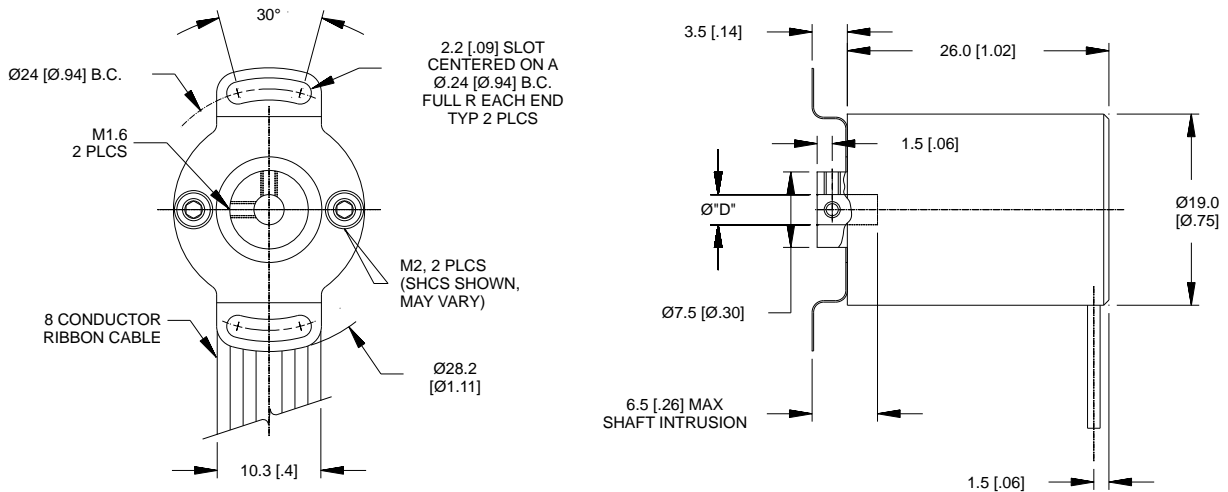
Serial Output - Gray code or Binary

Electrical Signal	Pin	Color
CASE	7	Gray
Clock	2	Orange
/ Clock	3	Yellow
Data	4	Green
/ Data	5	Blue
0V	8	White
+5V	1	Red
n/a	6	Violet



OUTLINE DIMENSIONS

A19B (BASE CODE A)



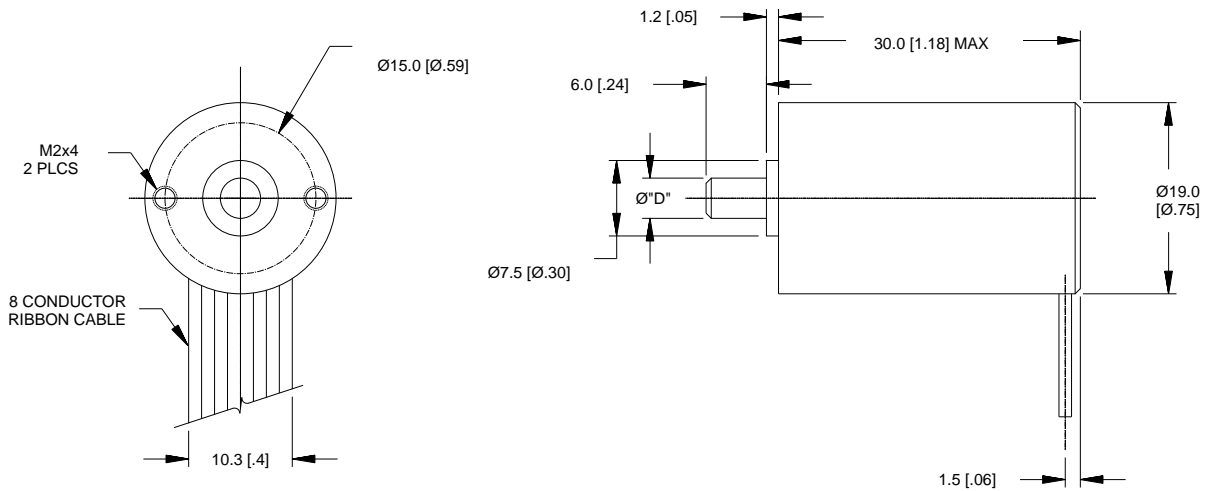
A19B (BASE CODE A)

Ø"D" TABLE		
"DIA" CODE	A19S	A19B
03M	Ø3mm h6	Ø3mm H7
04M	Ø4mm h6	N/A
02E	Ø0.125" $^{+0.0000}_{-0.0003}$	Ø0.125" $^{+0.0005}_{-0.0000}$

ALL DIMENSIONS IN MM [INCHES]

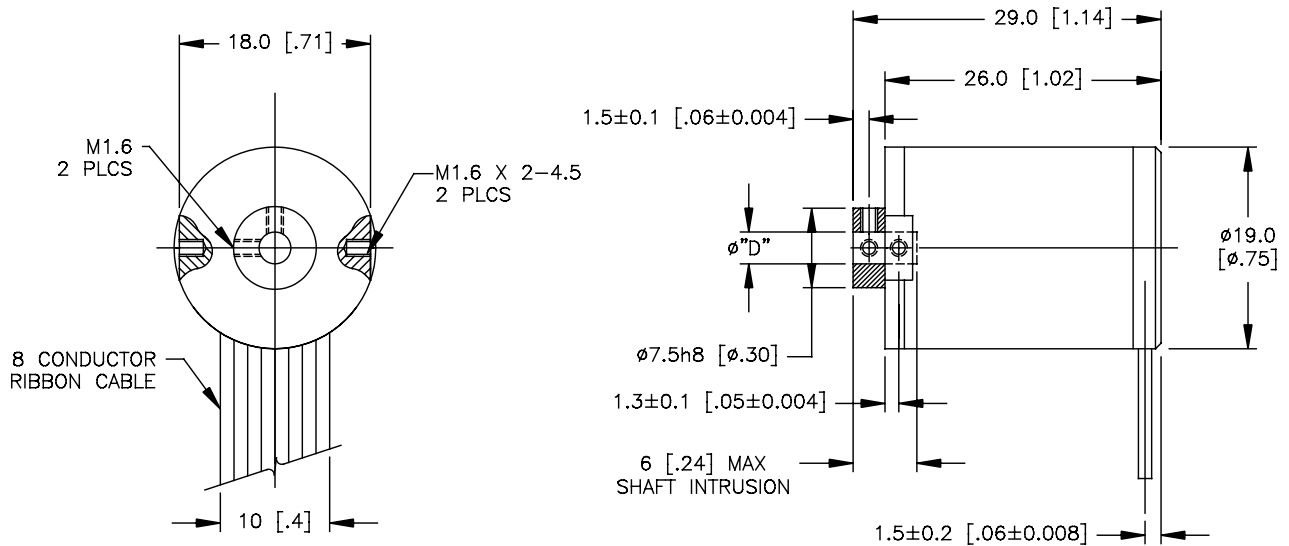
OUTLINE DIMENSIONS

A19S (BASE CODE B)



ø"D" TABLE		
"DIA" CODE	A19S	A19B
03M	ø3mm h6	ø3mm H7
04M	ø4mm h6	N/A
02E	ø0.125" $^{+0.0000}_{-0.0003}$	ø0.125" $^{+0.0005}_{-0.0000}$

A19B (BASE CODE D)



ø"D" TABLE		
"DIA" CODE	A19S	A1 B
03M	ø3mm h6	ø3mm H7
04M	ø4mm h6	N/A
02E	ø0.125" $^{+0.0000}_{-0.0003}$	ø0.125" $^{+0.0005}_{-0.0000}$

ALL DIMENSIONS IN MM [INCHES]

ORDERING INFORMATION

MODEL	SHAFT	RES	OF	OC	OD	V	TEMP	BASE	EXIT	CAB	CONN	DIA	SF
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

MODEL

A19 ϕ 19-mm body, ribbon cable

SHAFT – Shaft Type

B Blind hollow shaft
S Solid shaft

RES - Resolution

12 12-bit resolution
 13 13-bit resolution
 14 14-bit resolution
 15 15-bit resolution

OF - Output format

S SSI

OC – Output code

B Binary
G Gray code

OD – Output device

RS RS Differential (RS485)

V - Input voltage

05 +5 Vdc

TEMP – Operating temperature

S 0C to +70C
T -40C to +85C

BASE – Base code

A Blind hollow with external face mount
B Face mount base
D Blind hollow with external tether mount

EXIT – Cable exit

S Side-exit cable

CAB - Cable length, inches

18 Standard

CONN - Connector

P Pigtails (no connector)
Y 8-pos ribbon cable socket connector (FCI71600-100LF or equal)

DIA - Shaft diameter

02E 1/8" (SHAFT = **S** or **B**)
03M 3 mm (SHAFT = **S** or **B**)
04M 4 mm (SHAFT = **S** ONLY)

SPEC- Special features

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

ACCESSORIES (order separately)

SCD-xxx-xxx Shaft coupling (see separate data sheet)

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 parameters. 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.

