

GURLEY MODEL R108

ROTARY INCREMENTAL MICRO-ENCODER

MOTION TYPE:

ROTARY

USAGE GRADE:

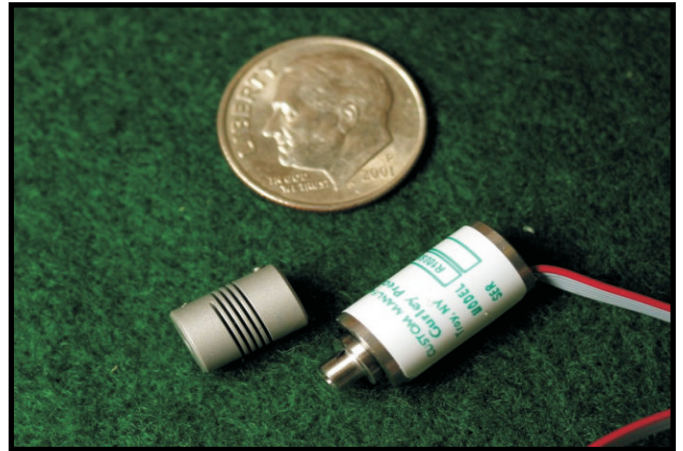
INSTRUMENT

OUTPUT:

INCREMENTAL

MAX RESOLUTION:

4096 COUNTS



MINIATURE HIGH-RESOLUTION ENCODER

The R108 magnetic rotary encoder is designed for light industrial applications that require up to 4096 counts/turn in a very small package.

Major features and advantages:

- Power Supply: +5VDC
- Current consumption: not more than 50mA
- Maximum mechanical speed: 6,000 RPM; operational speed: 1,000 RPM
- Accuracy: ± 60 arcmin
- Operating temperature range: -40°C to $+85^{\circ}\text{C}$ (-40°F to $+185^{\circ}\text{F}$)
- Vibration: 50 m/sec^2 (55 to 2,000Hz) [5G]
- Shock: 100 m/sec^2 [10G]
- Moment of inertia: $1.1 \times 10^{-8} \text{ kg} \times \text{m}^2$ [$1.56 \times 10^{-6} \text{ in-oz-s}^2$]
- Starting torque @ 20°C : $2 \times 10^{-3} \text{ Nm}$
- Protection class: IP50
- Max shaft load: axial & radial 3N (0.7lb)

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

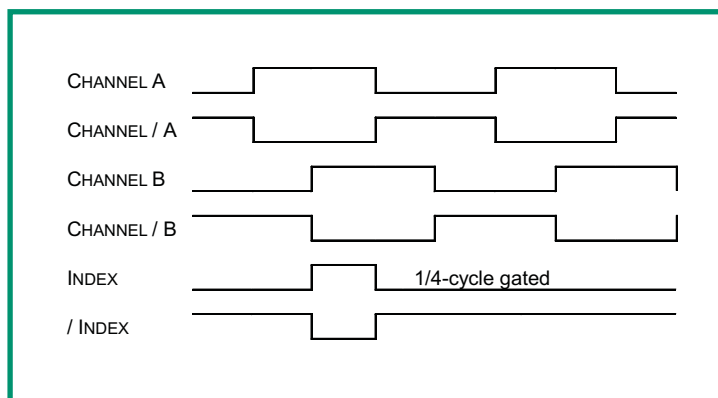


SPECIFICATIONS

	Units	Limiting Values	See Note
Mechanical Specifications			
Moment of Inertia	in-oz-s ² (kg-m ²)	1.56 x 10 ⁻⁶ (1.1 x 10 ⁻⁸)	
Starting Torque	in-oz (Nm)	0.283 (0.002)	
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		actuation magnet	
Shock 11 (ms)	G (m/s ²)	10 (100)	
Vibration (55-2000Hz)	G (m/s ²)	5 (50)	
Sealing		IP50	
Max. Rotational Speed, RPM		6000	
Recommended Coupling	N/A	SCD	
Environmental Specifications			
Operating Temperature	°F (°C)	-40 to 185 (-40 to 85)	
Storage Temperature	°F (°C)	-40 to 185 (-40 to 85)	
Relative Humidity, non-condensing	%	95	
Electrical Specifications			
Supply Voltage	VDC	5.00 +/-5%	
Current Consumption	mA	≤ 50	
Accuracy		+/-60 arc minutes	

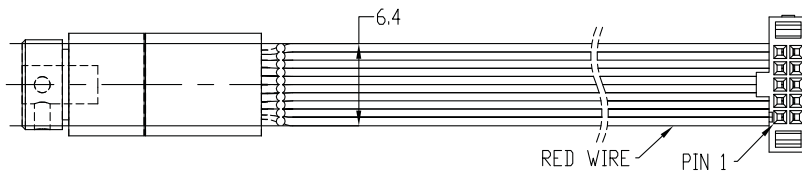
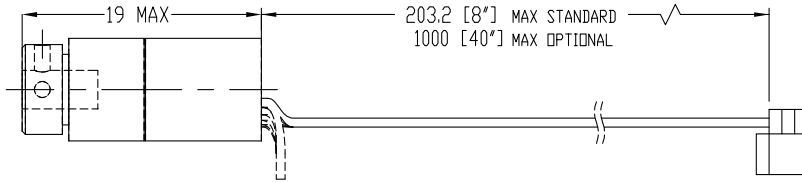
As part of our continuing product improvement program, all specifications are subject to change without notice.

OUTPUT WAVEFORMS



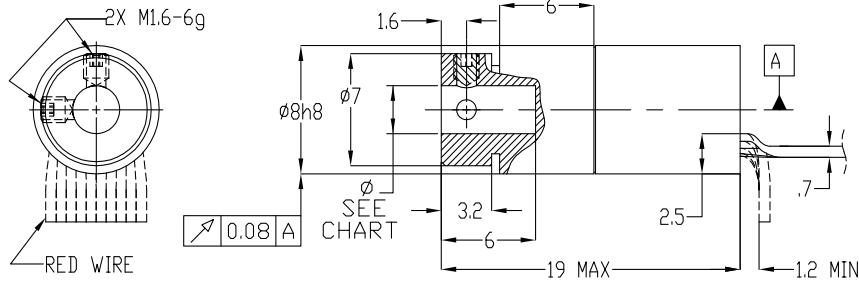
OUTLINE DIMENSIONS

BLIND HOLLOW ENCODERS - TOP ENTRY

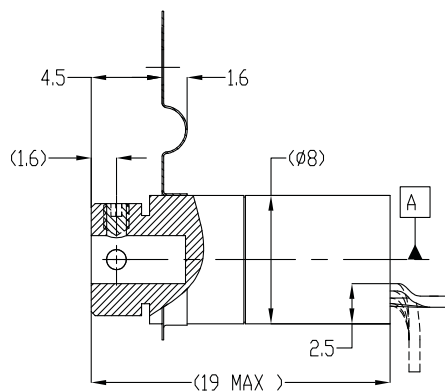
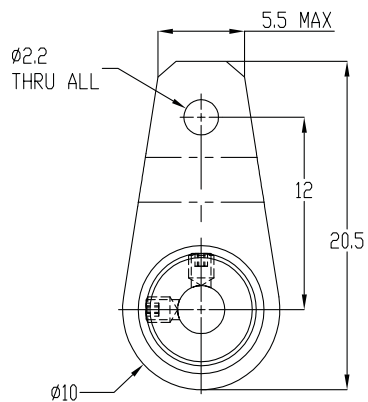


PINOUT TABLE	
PIN #	FUNCTION
	R108
1(RED)	N/C
2	+5V
3	GND
4	A
5	/A
6	/INDEX
7	INDEX
8	/B
9	B
10	N/C

BLIND HOLE Ø		
CODE	Ø	TOL
02M	2.0mm	H7
25M	2.5mm	H7
03M	3.0mm	F8
02E	1/8" [3.175mm]	H7



CODE A
STANDARD



CODE B
TETHER MOUNT

GPI0311-REV D

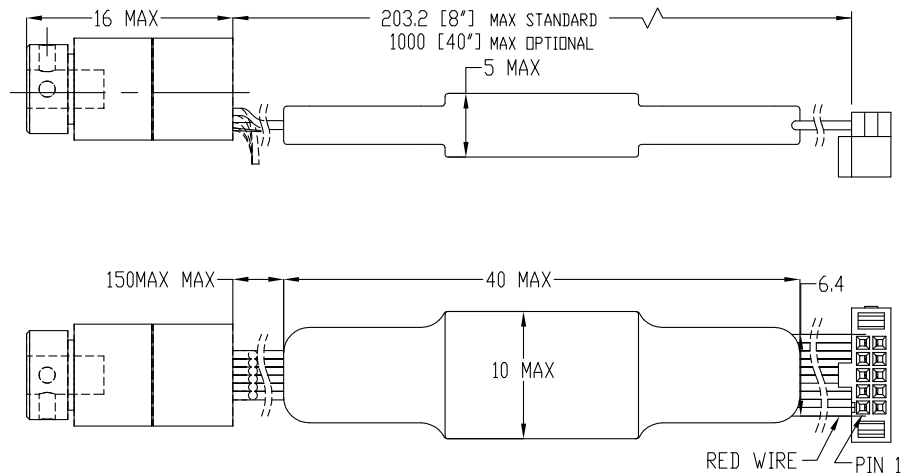
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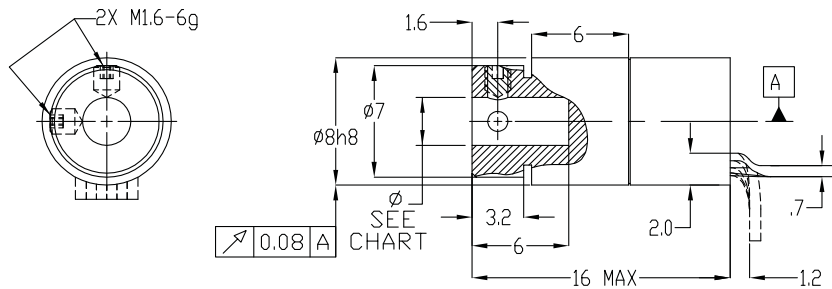
OUTLINE DIMENSIONS

BLIND HOLLOW ENCODERS - TOP ENTRY EXTERNAL ELECTRONICS

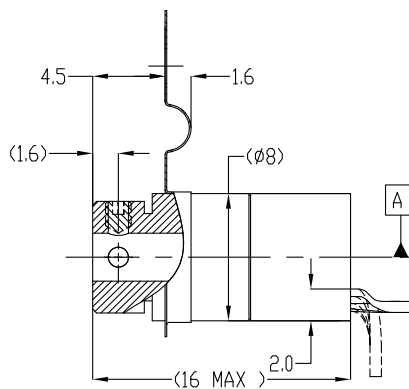
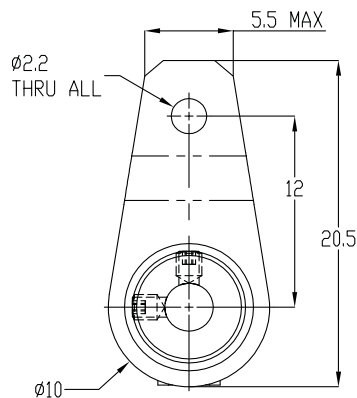


PINOUT TABLE	
PIN #	FUNCTION
	R108
1(RED)	N/C
2	+5V
3	GND
4	A
5	/A
6	/INDEX
7	INDEX
8	/B
9	B
10	N/C

BLIND HOLE ϕ		
CODE	ϕ	TOL
02M	2.0mm	H7
25M	2.5mm	H7
03M	3.0mm	F8
02E	1/8\" [3.175mm]	H7



CODE D
STANDARD



CODE E
TETHER MOUNT

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GPI0311-REV D

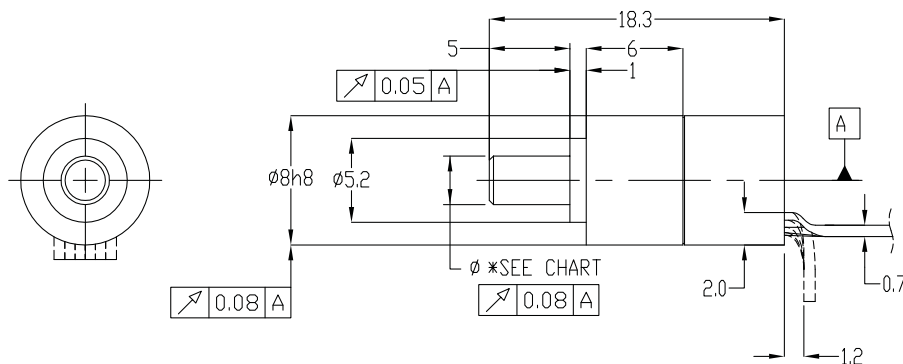
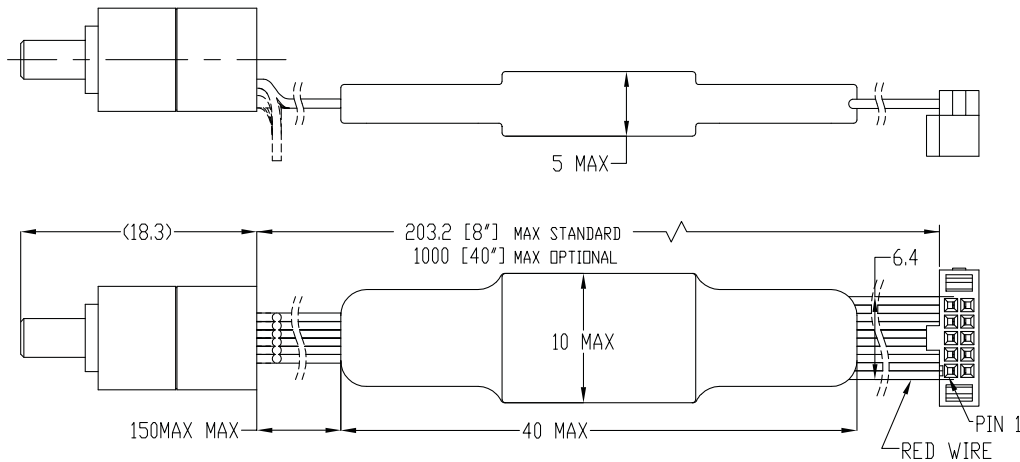
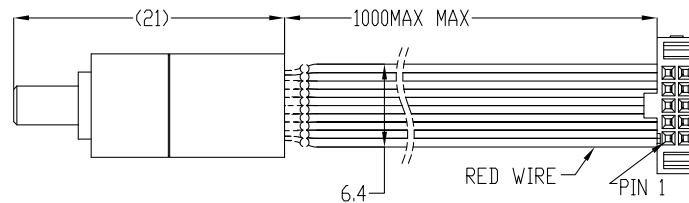
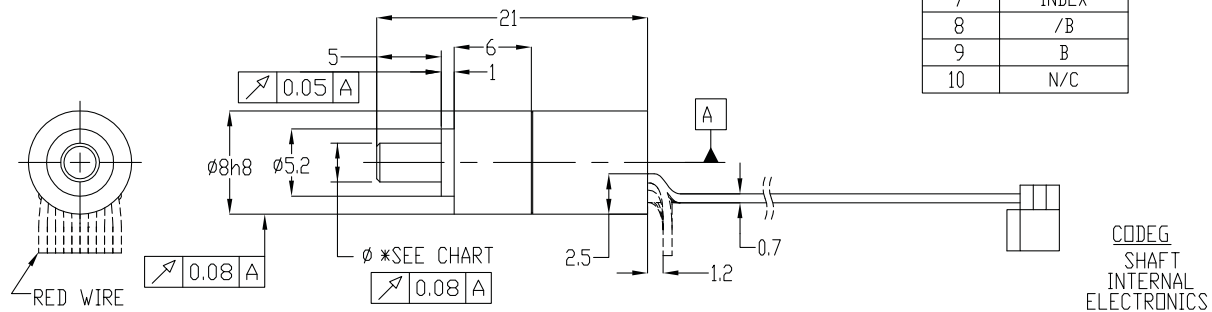


OUTLINE DIMENSIONS

SHAFT ϕ		
CODE	ϕ	TOL
02M	2.0mm	h6
25M	2.5mm	h6
03M	3.0mm	h6
02E	1/8" [3.175mm]	h6

SHAFT ENCODERS - TOP ENTRY INTERNAL OR EXTERNAL ELECTRONICS

PINOUT TABLE	
PIN #	FUNCTION
	R108
1(RED)	N/C
2	+5V
3	GND
4	A
5	/A
6	/INDEX
7	INDEX
8	/B
9	B
10	N/C



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ORDERING INFORMATION

MODEL	SHAFT	RES	IND	V	OUT	INTERP	BASE	TEMP	CAB	EXIT	CONN	DIA	SF
				5									

MODEL

R108 ϕ -mm body, ribbon cable

SHAFT

B Blind hollow shaft
S Solid shaft

RES – Resolution in cycles

00004, 00008, 00010, 00016

00020, 00025, 00032, 00040

00050, 00080, 00100, 00125

00200, 00250, 00256, 00400

00500, 00512, 01024

Consult factory for other resolutions

IND - Index format

Q Quarter-cycle gated index

V - Input voltage

5 +5 Vdc

OUT – Output format

L RS422 differential line driver

INTERP - Interpolation factor

01

BASE

A Use with **R108B**; Max res: 256 cycles

B Use with **R108B**; Max res: 256 cycles

D Use with **R108B**; Max res: 1024 cycles

E Use with **R108B**; Max res: 1024 cycles

G Use with **R108S**; Max res: 256 cycles

H Use with **R108S**; Max res: 1024 cycles

TEMP - Temperature

N 0 to 70 Celcius

T -40 to 85 Celcius

(limited to **BASE** codes D,E,H)

CAB - Cable length, inches

08 Standard

EXIT

T Top-exit cable

CONN - Connector

Z Samtec Connector

DIA - Shaft diameter

02M 2.0mm

25M 2.5mm

03M 3.0 mm

02E 1/8in

SF- Special features

N No special features

Issued at time of order to cover special customer requirements

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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