

GURLEY MODEL A90 ABSOLUTE ENCODER

MOTION TYPE:

ROTARY

USAGE GRADE:

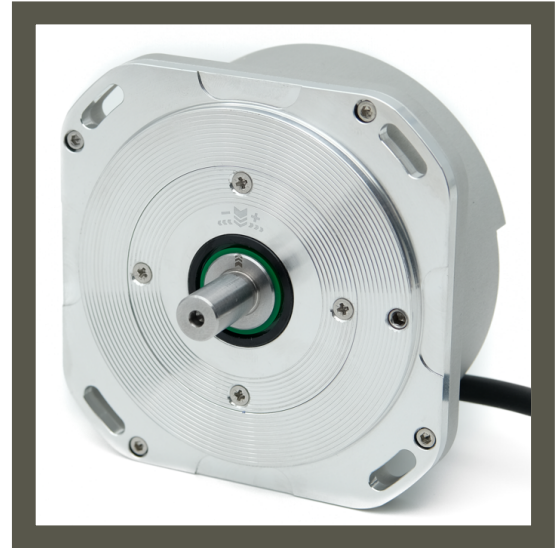
INDUSTRIAL

OUTPUT:

ABSOLUTE

RESOLUTION:

UP TO 26 BIT



HIGH PERFORMANCE

The model **A90** encoder is a single-turn high resolution absolute rotary encoder with opto-electronic technology. This encoder is used in a wide variety of position-sensing applications for high resolution measuring of angles and distances. Mechanical features include a 90-mm aluminum housing, stainless steel shaft with a 10 mm diameter, and precision ball bearings. Extended operating temperature from -30 to +70C is optional.

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	kg-mm ²	50	
Operating Torque	Nm	0.01	
Radial Shaft Load	N	10	
Axial Shaft Load	N	10	
Bearing Arrangement		2 pre-loaded bearings	
Bearings		Grease-lubricated and sealed	
Maximum Operating Speed	RPM	1000	
Non-Operating Slew	RPM	4000	
Shock 11 (ms)	m/s ²	300	
Vibration (55-2000Hz)	m/s ²	100	
Sealing		IP64	2
Environmental Specifications			
Operating Temperature	°C	0 to +70	3
Relative Humidity	%	98	1
Electrical Specifications			
Supply Voltage	VDC	4.75 to 5.25, 5.00 nominal	
Current Consumption	mA	≤ 220	
LED Life	hours	≥ 100,000	
Output Code		Binary	
Output Format		Up to 26 bit SSI or BiSS	
Output Device		RS Differential MAX3490	
Accuracy		+/-5.0 arc seconds	

Notes

1. Non-condensing
2. Per CEI / IEC 529 - Degrees of protection provided by enclosures (IP Code)
3. -30C to +70C extended operating temperature available. Accuracy may be affected. Consult factory for additional information.

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

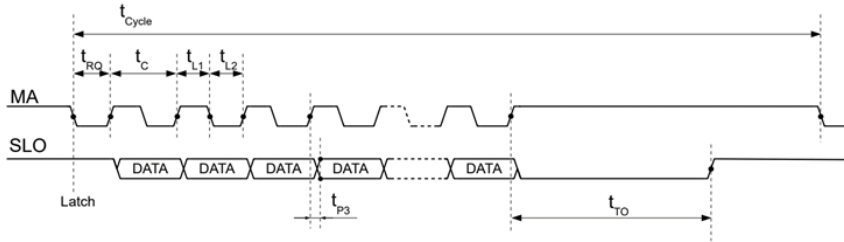
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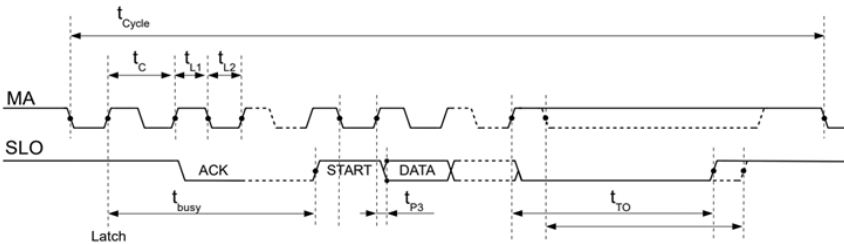
SSI Timing Protocol



Symbol	Parameter	Min	Max	Unit
t_c	Permissible Clock Period	250		ns
t_{L1}	Clock Signal Hi-Level Duration	125	t_{TO}	ns
t_{L2}	Clock Signal Lo-Level Duration	125	t_{TO}	ns
t_{RQ}	Request Time	500		ns
t_{P3}	Output Propagation Delay		50	ns
t_{TO}	Slave Timeout		20.5	us
t_{Cycle}	Permissible Clock Cycle Time	*	indefinite	ns

*allow t_{TO} to elapse

BiSS Timing Protocol

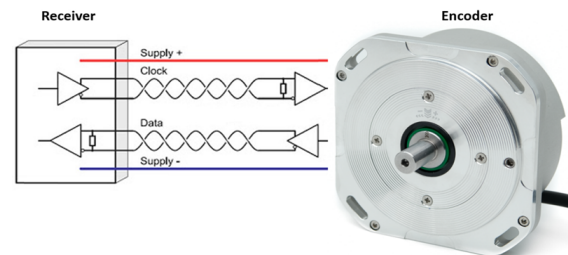


Symbol	Parameter	Min	Max	Unit
t_c	Permissible Clock Period	100		ns
t_{L1}	Clock Signal Hi-Level Duration	40	t_{TO}	ns
t_{L2}	Clock Signal Lo-Level Duration	40	t_{TO}	ns
t_{busy}	Minimum Data Output Delay		$2t_c$	ns
t_{busy}	Maximum Data Output Delay		400	ns
t_{P3}	Output Propagation Delay		50	ns
t_{TO}	Slave Timeout	0.16	20.5	us
t_{Cycle}	Permissible Clock Cycle Time	*	indefinite	ns

*allow t_{TO} to elapse

Pin Assignment / Wire Color

Electrical Signal	Pin	Color
CASE	1	ORANGE
CLOCK	2	BLK-RED
/CLOCK	3	GRN-VIO
+V	4	RED
DATA	5	GREEN
/DATA	6	YELLOW
0 V	7	
	8	
	9	BLUE



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ORDERING INFORMATION

MODEL	SHAFT	RES	OF	OC	OD	VOLT	TEMP	BASE	EXIT	CAB	CONN	SHAFT	SPEC

MODEL

A90

SHAFT - Shaft type

S Solid

RES – Resolution (in bits)

01 - 26

OF – Output Format

B BiSS

S SSI

OC – Output Code

B Binary (OF = **B** or **S**)

OD – Output Device

RS RS Differential (MAX3490)

VOLT – Voltage

05 5 VDC Power Supply

RR 10-30VDC Power Supply

TEMP – Temperature Range

S Standard (0 to 70°C)

T Extended (-30 to 70°C)

BASE

A Synchro flange mount base

C Square flange mount base

EXIT– Cable Exit

S Side exit

CAB – Cable length, inches

39 Standard 39" (1.0 m)

02-99 02" to 99"

CONN – Connector

P Pigtail

S DE-9P

SHAFT – Diameter

10M 10mm

06E 3/8"

SPEC – Special features

N No Special Features

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.

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