

GURLEY MODEL A36

ABSOLUTE ENCODER WITH SSI OUTPUT

MOTION TYPE:

ROTARY

USAGE GRADE:

INDUSTRIAL

OUTPUT:

ABSOLUTE

MAX RESOLUTION:

SINGLE-TURN: 2^{16}

MULTI-TURN: 2^{32}



INDUSTRIAL RUGGEDNESS, SINGLE OR MULTI-TURN

Major Features and Advantages:

- 16 x 16 resolution standard; higher turns counts available
- Shaft or blind hollow-shaft options
- 36 mm diameter; 41 mm length
- Standard synchro flange
- SSI interface standard @ 100 kHz - 2 MHz clock frequency; CAN bus optional
- Data update rate 32usec
- Accuracy +/- 0.09 degrees

The Model A36S with SSI output is a heavy-duty absolute rotary encoder with robust magnetic technology and standard SSI (RS422) interface. It is available as a single-turn encoder with up to 12 bits of resolution (4096 steps per revolution), or as a standard multi-turn with a range of 2^{25} (12-bit (4096) words/turn + 13-bit (8192) turns). These encoders are used in a wide variety of position sensing applications for the measuring of angles and distances. Mechanical features include a 36 mm aluminum housing, a 6 mm stainless steel shaft, and precision ball bearings.

Real time complimentary quadrature square waves are available at 1024 steps per revolution and at 100 RPM (2 ms cycle time required). Call factory for details.

**ISO
9001
CERTIFIED**

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SPECIFICATIONS

ELECTRICAL

Clock input	Via opto-coupler
Clock frequency	100 kHz to 2 MHz
Data update rate	<32usec
Data output	Line-driver according to RS 422
LSB step frequency	Max. 100 kHz
Transition accuracy @20°C	± 0.09 degrees
EMC	Certified according to EN 61000-6-2, EN 61000-6-4
Supply voltage	4.75 - 30VDC
Current consumption	200mA MAX
Output code format	Gray code or Natural Binary

MECHANICAL

Housing	Stainless steel
Bearing life	6 x 10 ⁹ revolutions (with 26 N radial or 13 N axial load)
Moment of inertia	£ 30 g-cm ² (4.2 x 10 ⁻⁴ in-oz-s ²)
RPM	Max. 12,000 (continuous)
Shock (IEC 68-2-27)	£ 100g (half sine, 6 ms)
Vibration (IEC 68-2-6)	£ 10g (10 Hz to 1,000 Hz)
Max shaft loading	Axial 40 N (4 lb), radial 110 N (25 lb)
Friction torque	£ 3 Ncm (4.2 in-oz) without shaft seals £ 10 Ncm (14 in-oz) with shaft seals
Maximum weight, oz (g)	5.3 (150)

ENVIRONMENTAL

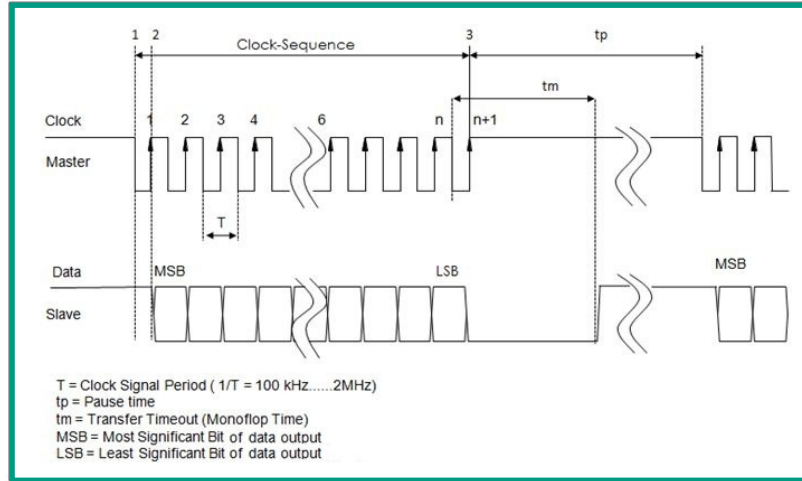
Operating temperature	- 30°C to + 85°C (-22°F to 185°F)
Storage temperature	- 30°C to + 85°C (-22°F to 185°F)
Humidity	98 % (non-condensing)
Casing side	IP 54 Protection class (EN 60529)
Shaft side	IP 65 Protection class (EN 60529)

As part of our continuous product improvement program these specifications are subject to change without notice.

SYNCHRONOUS SERIAL INTERFACE (SSI)

DRIVER:
TRANSFER:
TRANSMISSION:
PAIR LINES:
INTERFACE:

Driver meets EIA standard RS 422: transmission rates up to 10 MBit/s
 Transfer distance up to 1,200m
 Balanced transmission provides high noise immunity
 Shielded and twisted pair lines are essential to attain extremely high noise immunity
 For a detailed description of the Synchronous-Serial Interface (SSI), refer to *Introduction to SSI*



ELECTRICAL INTERFACE

Function		DE-9P (CONN = S)	Wire color (CONN = P)
Clock -	INP	3	Yellow
Clock +	INP	2	Green
Data +	OUT	6	Grey
Data -	OUT	7	Pink
Direction	INP	4	Red
V = 4.75 - 30 V	PWR	5	Brown
GND	PWR	9	White
Shield		1	Shielding
Preset		8	Blue or Black

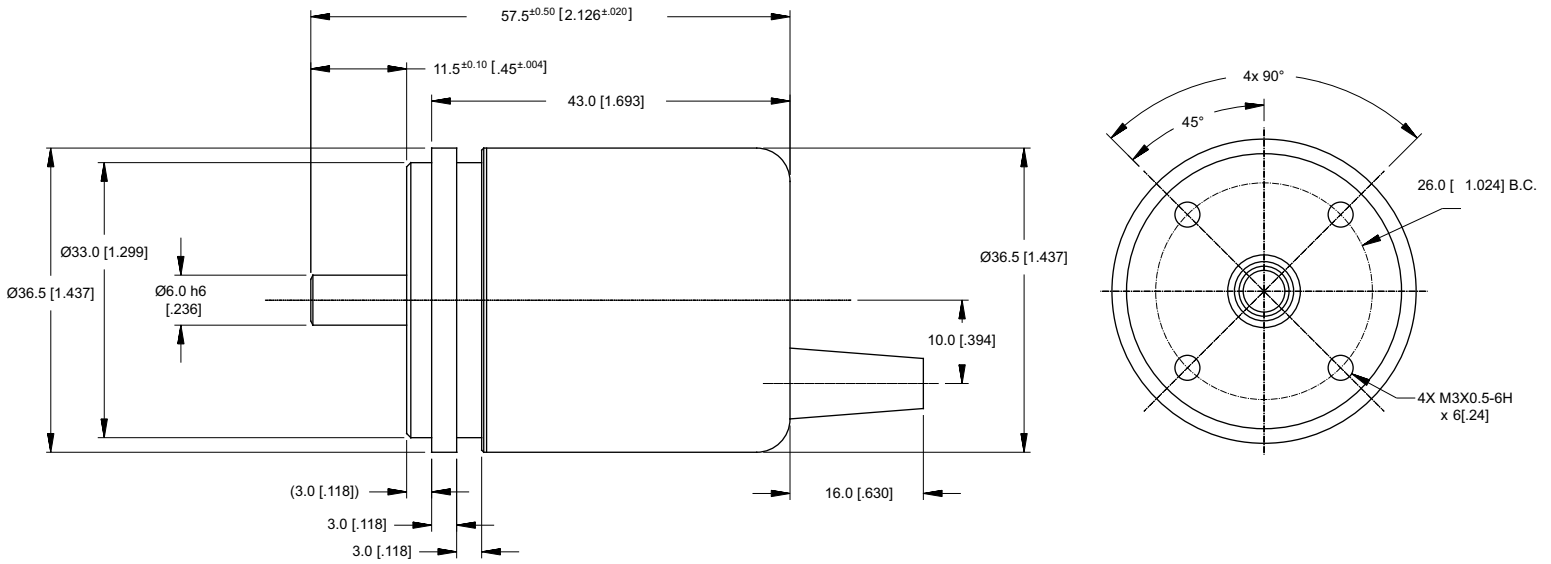
PRESET FUNCTION

Voltage Level	Function
0 (Input = N.C. or GND)	Inactive
1 (Input ≥ 4.5V / Input < UB)	Encoder value will set to 0 after 1 sec
Input Resistance	10kOhm

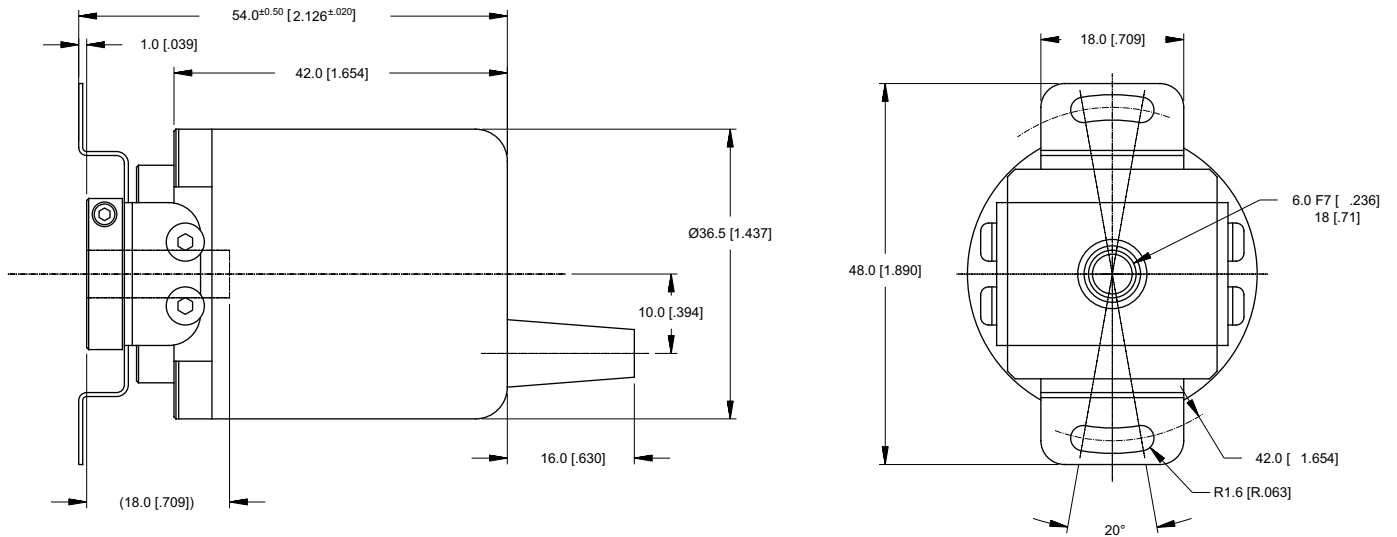
COMPLIMENT FUNCTION (CW SHAFT END)

Voltage Level	Function
0 (Input = N.C. or GND)	Up
1 (Input ≥ 4.5V / Input < UB)	Down
Input Resistance	10kOhm

A36S BASE A



A36B BASE B



ORDERING INFORMATION

A36

SHAFT	IN	CODE	RES	FORMAT	#TURNS	BASE	CABLE	EXIT	CONN	DIA	SF

SHAFT

- S** Solid shaft
- B** Blind hollow-shaft

BASE

- A** Clamp flange (SHAFT = S)
- B** Blind hollow shaft (SHAFT = B)

IN

- 5** +4.75 - 30 VDC input voltage

CABLE

- ##** Cable length, inches (02 to 99)
- 40** 40" Standard

CODE

- B** Natural Binary
- G** Gray code

EXIT

- T** Top exit
- S** Side exit

RES

- 16** 65,536 words/turn

CONN

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

FORMAT

- S** SSI

DIA

- 06M** 6 mm shaft diameter

#TURNS

- 00** Single-turn
- 16** 65,536

SF

- #** Issued at time of order to cover special customer requirements
- 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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