

GURLEY MODEL A36S

ABSOLUTE ENCODER WITH SSI OUTPUT

MOTION TYPE:

ROTARY

USAGE GRADE:

INDUSTRIAL

OUTPUT:

ABSOLUTE

MAX RESOLUTION:

SINGLE-TURN: 2^{12}

MULTI-TURN: 2^{25}



INDUSTRIAL RUGGEDNESS, SINGLE OR MULTI-TURN

Major Features and Advantages:

- 12 x 13 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
- Accuracy +/- .35 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 14 bits of resolution (16384 steps per revolution), or as a standard multi-turn with a range of 2^{14} (16384) turns (2^{38} available). 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.

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 output | Line-driver according to RS 422 |
| LSB step frequency | Max. 100 kHz |
| Transition accuracy @20°C | ± .35 degrees |
| EMC | Certified according to EN 61000-6-2, EN 61000-6-4 |
| Supply voltage | +5 VDC ±0.25 V or 10-30 VDC |
| Current consumption | 100mA |
| 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 |

ENVIRONMENTAL

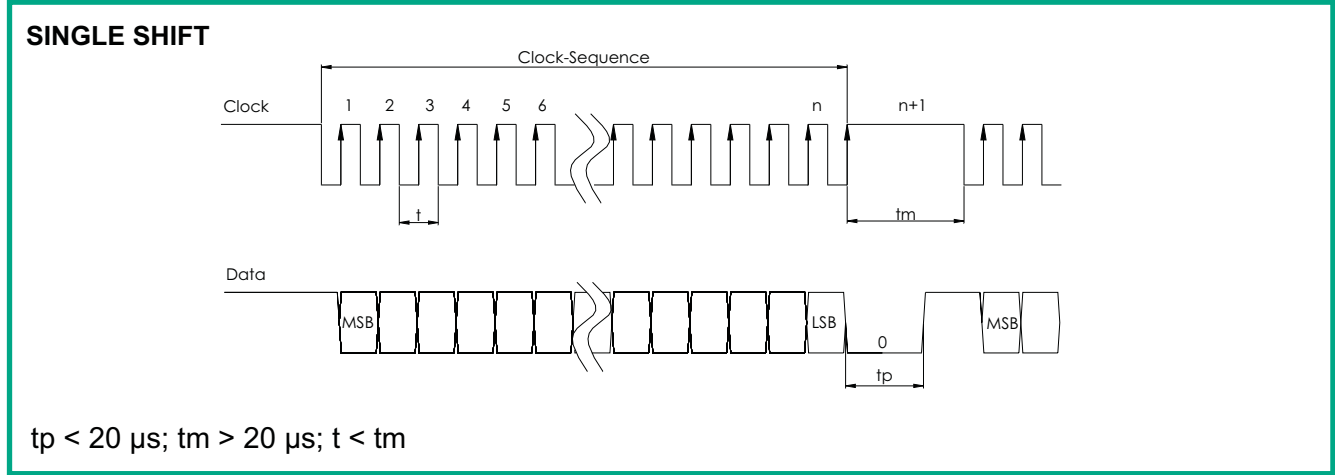
| | |
|-----------------------|-----------------------------------|
| Operating temperature | - 30°C to + 85°C (-22°F to 185°F) |
| Storage temperature | - 30°C to + 85°C (-22°F to 185°F) |
| Humidity | 98 % (non-condensing) |
| Casing side | IP 54 Protection class (EN 60529) |
| Shaft side | IP 64 Protection class (EN 60529) |

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



SYNCHRONOUS SERIAL INTERFACE (SSI)

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



ELECTRICAL INTERFACE

| Function | | Pin # (CONN = E) | 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 = +5 V or 10-30 V | PWR | 5 | Brown |
| GND | PWR | 9 | White |
| Shield | | 1 | Shielding |
| Preset | | 8 | Blue or Black |

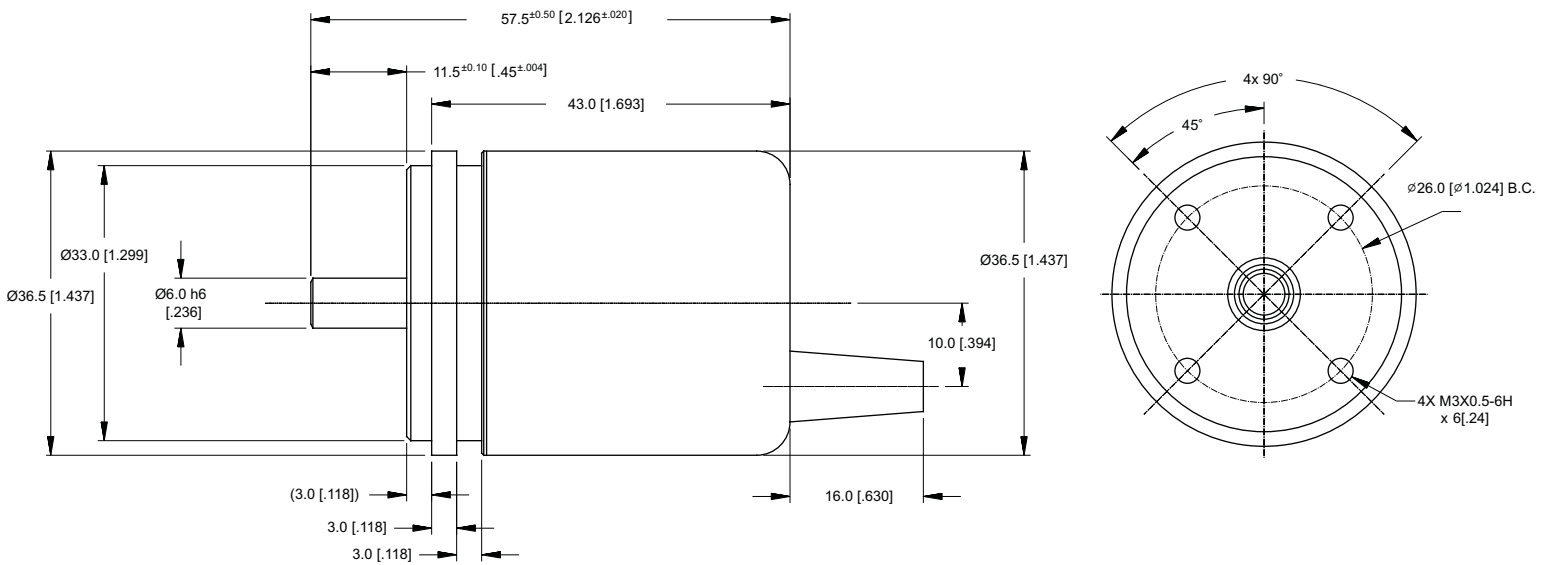
PRESET FUNCTION

| Voltage Level | Function |
|------------------------------|---|
| 0 (Input = N.C. oder GND) | Inactive |
| 1 (Input ? 10V / Input ? UB) | Encoder value will set to 0 after 1 sec |
| Input Resistance | 10kOhm |

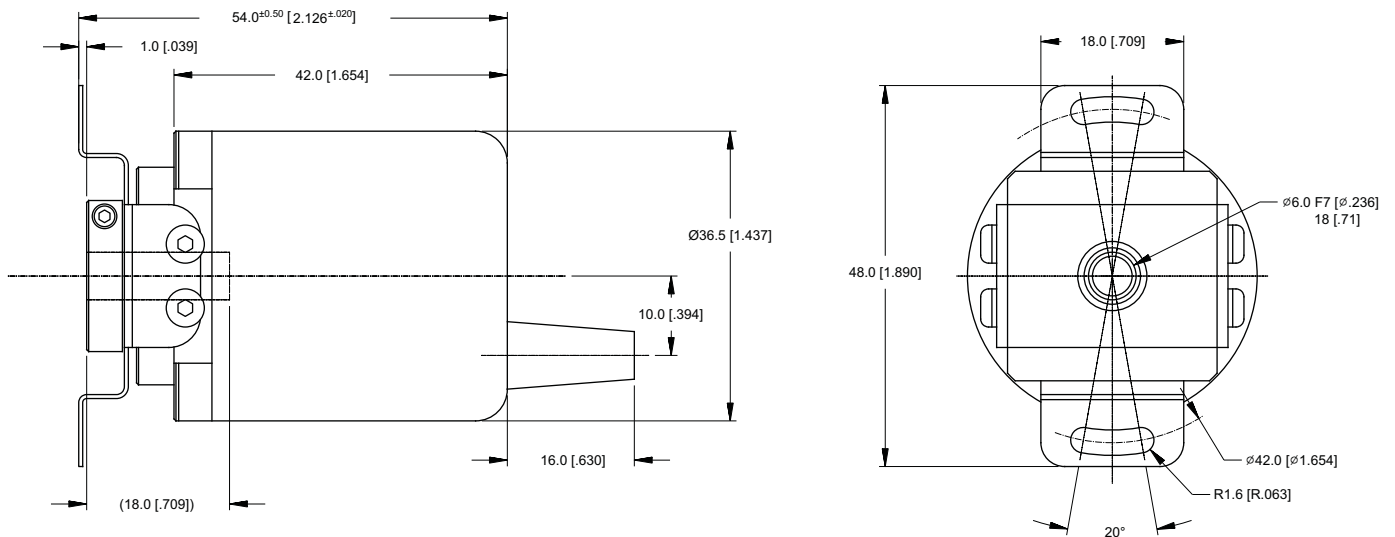
COMPLIMENT FUNCTION

| Voltage Level | Function |
|------------------------------|----------|
| 0 (Input = N.C. oder GND) | Up |
| 1 (Input ? 10V / Input ? UB) | Down |
| Input Resistance | 10kOhm |

A36S BASE A



A36S 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** +5 VDC input voltage
- R** 10-30 VDC

CABLE

- 40** 40" standard

CODE

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

EXIT

- T** Top exit

RES

- 12** 4096 words/turn

CONN

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

FORMAT

- S** SSI

DIA

- 06M** 6 mm shaft diameter

#TURNS

- 00** Single-turn
- 12** 4096
- 13** 8192

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.

