

Single Turn Bushing Mount Hall Effect Sensor in Size 09 (22.2 mm)



FEATURES

- Accurate linearity down to: $\pm 0.5\%$
- All electrical angles available up to: 360° (no dead band)
- Long life: greater than 10M cycles
- Non contacting technology: Hall effect
- Model dedicated to all applications in harsh environments
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912


RoHS
COMPLIANT

QUICK REFERENCE DATA

| | |
|------------------|-------------------------------------|
| Sensor type | ROTATIONAL, single turn hall effect |
| Output type | Wires |
| Market appliance | Industrial |
| Dimensions | 7/8" (22.2 mm) |

ELECTRICAL SPECIFICATIONS

| PARAMETER | STANDARD | SPECIAL |
|-----------------------------|--|--|
| Electrical angle | $90^\circ, 180^\circ, 270^\circ, 360^\circ$ | Any other angle upon request |
| Linearity | $\pm 1\%$ | $\pm 0.5\%$ |
| Supply voltage | $5 V_{DC} \pm 10\%$ | Other upon request |
| Supply current | 10 mA typical | 16 mA for PWM output |
| Output signal | Analog ratiometric 10 % to 90 % of V_{supply} or PWM 10 % to 90 % duty cycle | Other upon request |
| Over voltage protection | | + 20 V_{DC} |
| Reverse voltage protection | | - 10 V_{DC} |
| Load resistance recommended | | Min. 1 k Ω for analog output and PWM output |
| Hysteresis | | < 0.2 % |

MECHANICAL SPECIFICATIONS

| PARAMETER | |
|-------------------|---|
| Mechanical travel | 360° continuous, stops upon request: $340^\circ \pm 3^\circ$ |
| Bearing type | Sleeve bearing |
| Standard | IP 50; other on request |
| Weight | 20 g \pm 2 g |

ORDERING INFORMATION/DESCRIPTION

| 351HE | 0 | A | 1 | W | A | 1S22 | XXXX | BO 10 | e1 |
|--|--|--|---|-------------------------------------|--|--|-----------------|------------------|-------------|
| MODEL | FEATURES | LINEARITY | ELECTRICAL ANGLE | OUTPUT TYPE | OUTPUT SIGNAL | SHAFT TYPE | SPECIAL REQUEST | PACKAGING | LEAD FINISH |
| 0: | Continuous rotation and antirotation pin | A: $\pm 1\%$ B: $\pm 0.5\%$ | 1: 90° 2: 180° 3: 270° 4: 360° 9: Other angles | W: Wires Z: Custom | A: Analog CW B: Analog CCW C: PWM CW D: PWM CCW Z: Other output | 0: 6 mm 1: 6.35 mm 2: 3.175 mm 9: Special P: Plain S: Slotted Z: Other type | | Box of 10 pieces | |
| 1: | Continuous rotation and no antirotation pin | | | | | | | | |
| 2: | Stops at 330° and antirotation pin | | | | | | | | |
| 3: | Stops at 330° and no antirotation pin | | | | | | | | |
| Shaft length from mounting face 22 mm to 72 mm max. per step of 5 mm | | | | | | | | | |

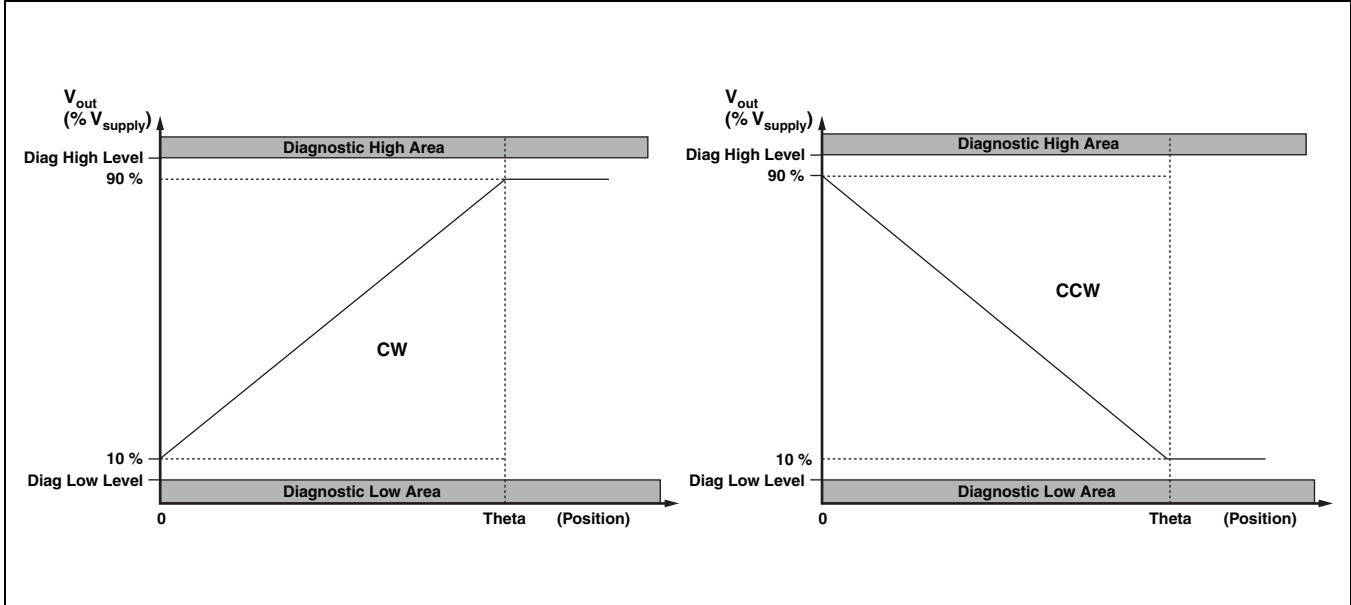
SAP PART NUMBERING GUIDELINES

| 351HE | 1 | B | 9 | Z | C | 0P27 | XXXX |
|-------|---------------------|-----------|-----------------|--------------|---------------|------------|-----------------|
| MODEL | MECHANICAL FEATURES | LINEARITY | ELECTRICAL TYPE | OUTPUT ANGLE | OUTPUT SIGNAL | SHAFT TYPE | SPECIAL REQUEST |

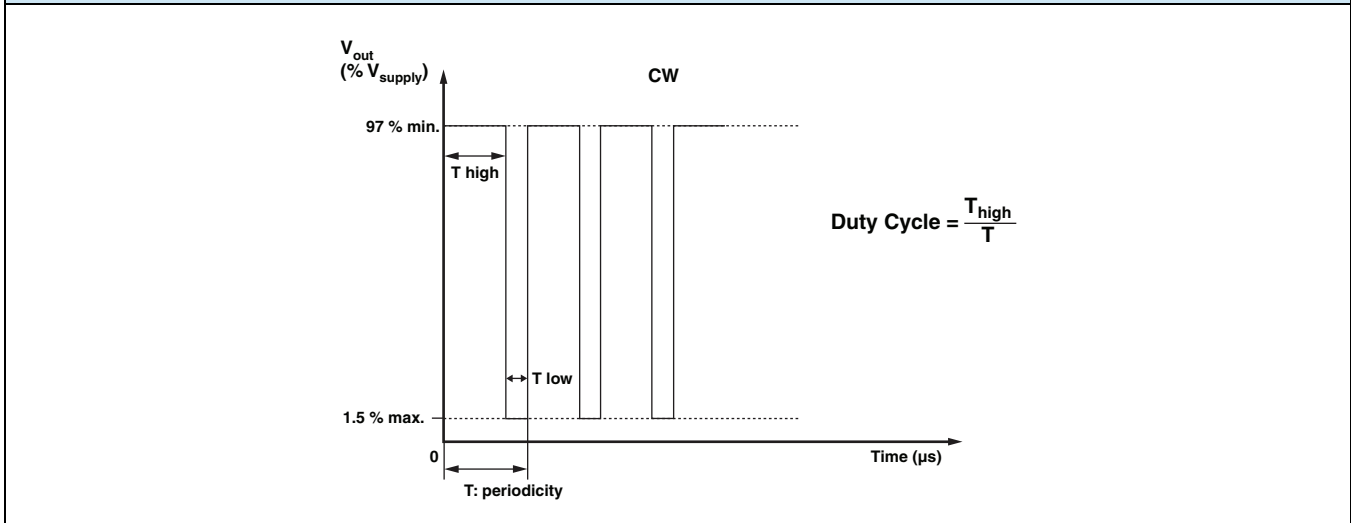


V_{OUT} ANALOG

| | | |
|-----------------------|-----------|-----------|
| Operating temperature | 85 °C | 125 °C |
| Diagnostic high level | 96 % min. | 96 % min. |
| Diagnostic low level | 2 % max. | 4 % max. |



V_{OUT} PWM



| DIAGNOSTIC MODES | | | |
|---|---|---|--|
| FAILURE | V_{out} ANALOG R_{pull-up} | V_{out} ANALOG R_{pull-down} | V_{out} PWM R_{pull-up} = 1 kΩ V_{pull-up} = V_{supply} = 5 V |
| 1: Broken GND | Diagnostic high area | Diagnostic low area | > 97 % V _{supply} without modulation |
| 2: Broken V _{out} | Diagnostic high area | Diagnostic low area | > 97 % V _{supply} without modulation |
| 3: Broken V _{supply} | Diagnostic high area | Diagnostic low area | > 97 % V _{supply} without modulation |
| Over voltage V _{supply} > 7 V | Diagnostic high area | Diagnostic low area | > 97 % V _{supply} without modulation |
| Under voltage V _{supply} < 2.7 V | Diagnostic high area | Diagnostic low area | > 97 % V _{supply} without modulation |

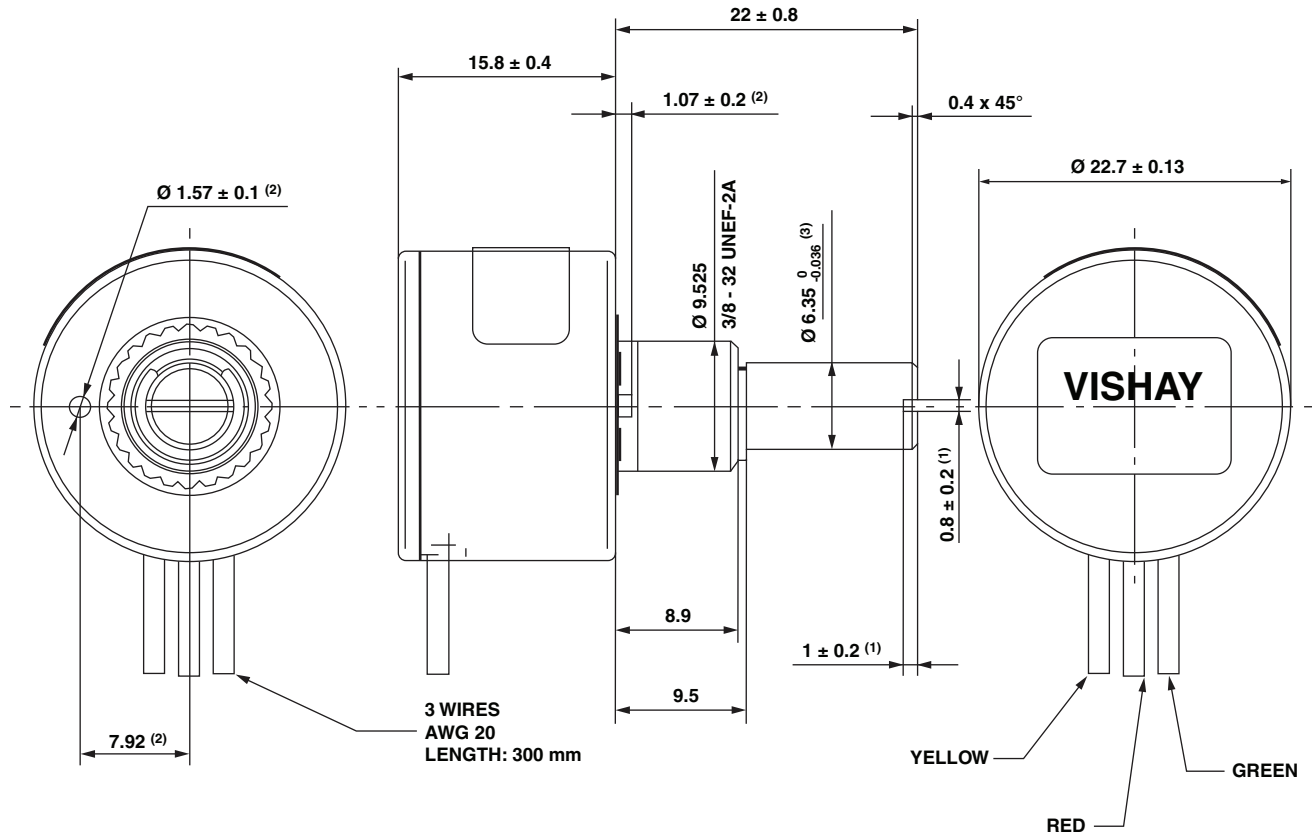
V_{pull-up} can be independent to V_{supply}

X Cut off

| ENVIRONMENTAL SPECIFICATIONS | |
|---|--|
| Vibrations | 20 g from 10 Hz to 2000 Hz |
| Shocks | 3 shocks/axis; 50 g half a sine 11 ms |
| Operating temperature range | - 45 °C; + 125 °C |
| Life | > 10M of cycles |
| Rotational speed (max.) | 120 rpm |
| Immunity to radiated electromagnetic disturbances | 200 V/m 150 kHz/1 GHz |
| Immunity to power frequency magnetic field | 200 A/m 50 Hz/60 Hz |
| Radiated electromagnetic emissions | 30 MHz/1 GHz < 30 dBμV/m |
| Electrostatic discharges | Contact discharges: ± 4 kV Air discharges: ± 8 kV |
| MATERIALS | |
| Housing | Thermoplastic housing |
| Bushing | Brass nickel plated |
| Shaft | Stainless steel |
| Output | 3 lead wires |
| BUSHING MOUNT HARDWARE | |
| Lockwasher internal tooth | Steel nickel plated |
| Panel nut | Brass nickel plated |

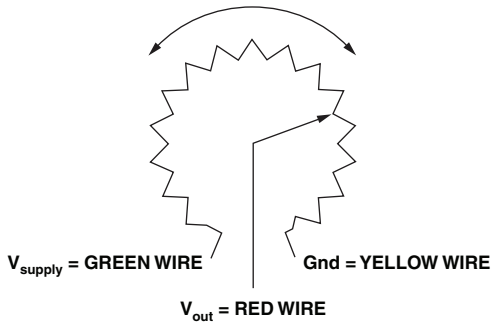


DIMENSIONS in millimeters

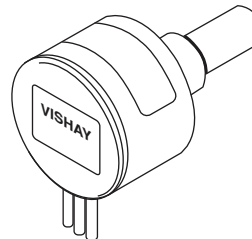


**CW OR CCW ACCORDING
OUTPUT MODE CHOICE**

GENERAL TOLERANCE: $\pm 0.5 \text{ mm}$



VIEWED FROM SHAFT



Notes

- (1) For version slotted shaft
- (2) For version non turn pin
- (3) For shaft type "1"

| MARKING | |
|---------------------|---|
| Unit Identification | Manufacturer's name and complete sap part reference, date code, and wiring correspondance: colors versus connections. |



Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and/or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.

Material Category Policy

Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as RoHS-Compliant fulfill the definitions and restrictions defined under Directive 2011/65/EU of The European Parliament and of the Council of June 8, 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (EEE) - recast, unless otherwise specified as non-compliant.

Please note that some Vishay documentation may still make reference to RoHS Directive 2002/95/EC. We confirm that all the products identified as being compliant to Directive 2002/95/EC conform to Directive 2011/65/EU.

Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as Halogen-Free follow Halogen-Free requirements as per JEDEC JS709A standards. Please note that some Vishay documentation may still make reference to the IEC 61249-2-21 definition. We confirm that all the products identified as being compliant to IEC 61249-2-21 conform to JEDEC JS709A standards.

Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

Мы предлагаем:

- Конкурентоспособные цены и скидки постоянным клиентам.
- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- Регистрацию проекта у производителя компонентов.
- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



Тел: +7 (812) 336 43 04 (многоканальный)

Email: org@lifeelectronics.ru