

Ten Turns Servo or Bushing Mount Hall Effect Sensor in Size 09 (22.2 mm)



FEATURES

- All electrical angles available up to: 3600°
- Accurate linearity down to: $\pm 0.5\%$
- Very long life: 50M cycles for servo, 10M cycles for bushing
- Non contacting technology: Hall effect; true power on sensor
- Model dedicated to applications requiring long life
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912


RoHS
COMPLIANT

| QUICK REFERENCE DATA | |
|----------------------|------------------------------------|
| Sensor type | Multi Turn ROTATIONAL, hall effect |
| Output type | Wires or rear turrets |
| Market appliance | Industrial |
| Dimensions | 7/8" (22.2 mm) |

| ELECTRICAL SPECIFICATIONS | | |
|-----------------------------|--|------------------------------|
| PARAMETER | STANDARD | SPECIAL |
| Electrical angle | 10 turns 3600° | Any other angle upon request |
| Linearity | $\pm 1\%$ | $\pm 0.5\%$ |
| Supply voltage | 5 V _{DC} $\pm 10\%$ | Other upon request |
| Supply current | < 16 mA for single | < 32 mA for redundant |
| Output signal | Analog ratiometric 1 % to 99 % of V _{supply} (other on request) or PWM 1 kHz, 10 % to 90 % duty cycle or SPI binary on 5 V or binary on 3.3 V | |
| 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 static | 10° on drive shaft | |

| MECHANICAL SPECIFICATIONS | |
|---------------------------|--|
| PARAMETER | |
| Mechanical travel | 3600° continuous |
| Bearing type | A sleeve bearing for bushing model/2 ball bearings for servo model |
| Standard | IP 50; other on request |
| Resolution | 12 bits for analog and PWM, 14 bits for SPI |

| ORDERING INFORMATION/DESCRIPTION | | | | | | | | | |
|---|------------------------|---------------------------|--------------------------------|-------------------------------------|---|--|-----------------|----------------|-------------|
| 34 THE | B | 1 | A | T | A | 2S22 | XXXX | BO 1 | e1 |
| MODEL | MOUNTING TYPE | NUMBER OF SIGNALS | LINEARITY | OUTPUT TYPE | OUTPUT SIGNAL | SHAFT TYPE | SPECIAL REQUEST | PACKAGING | LEAD FINISH |
| | B: Bushing S: Servo | 1: Single 2: Redundant | A: $\pm 1\%$ B: $\pm 0.5\%$ | T: Turrets Z: Custom W: Wires | A: Analog CW B: Analog CCW C: PWM CW D: PWM CCW E: SPI CW ⁽¹⁾ F: SPI CCW ⁽¹⁾ G: Analog inverted slope H: PWM inverted slope K: SPI inverted slope ⁽¹⁾ Z: Other output | 2: 3.175 mm 9: Special P: Plain S: Slotted Z: Other type | | Box of 1 piece | |
| Shaft length from mounting face standard: 22 mm | | | | | | | | | |

Note
⁽¹⁾ SPI output → output type: Wires

| SAP PART NUMBERING GUIDELINES | | | | | | | |
|-------------------------------|------------|------------------|----------------|-------------|---------------|------------|-----------------|
| 34 THE | S | 2 | B | T | C | 2P12 | XXXX |
| MODEL | SERVO TYPE | 2 OUTPUT SIGNALS | LINEARITY | OUTPUT TYPE | OUTPUT SIGNAL | SHAFT TYPE | SPECIAL REQUEST |
| | | | B: $\pm 0.5\%$ | | | | |

V_{OUT} ANALOG

Single Output (output signal code: "A")

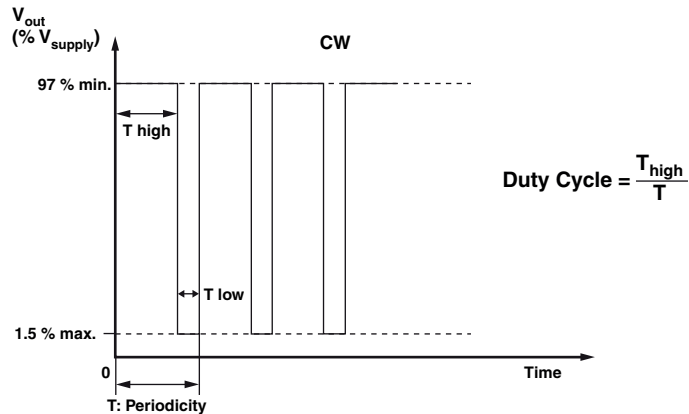


Redundant Output: with inverted slope
(output signal code: "G")



V_{OUT} PWM

Single Output: (output signal code: "C")



V_{OUT} SPI

Notice on demand

Output signal code: "E" if CW (single or redundant identical)

Output signal code: "F" if CCW (single or redundant identical)

Output signal code: "K" if CW (if redundant but inverted slope)



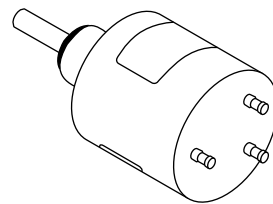
| MECHANICAL SPECIFICATIONS | | |
|---------------------------|--|------------------|
| PARAMETER | STANDARD | SPECIAL |
| Mounting type | Servo mounting type or bushing mount (delivered with nut and washer) | |
| Housing | Anodized aluminum | |
| Shaft guiding | 2 ball bearings for servo and sleeve bearing for bushing | |
| Shaft | Stainless steel Ø 3.175 | Other on request |
| Outputs | Turrets | Other on request |
| Mechanical travel | 3600° and no stop | |

| ENVIRONMENTAL SPECIFICATIONS | |
|---|--|
| Operating temperature range | - 40 °C; + 85 °C |
| Life | > 10M of cycles for bushing > 50M of cycles for servo |
| Rotational speed (max.) | 1200 rpm |
| Immunity to radiated electromagnetic disturbances | 200 V/m 150 kHz/1 GHz, IEC 62132-2 part 2 (level A) |
| Immunity to power frequency magnetic field | 200 A/m 50 Hz/60 Hz, EN 61000-4-8 (level A) |
| Radiated electromagnetic emissions | 30 MHz/1 GHz < 30 dBµV/m, EN 61000-6-4 (level A) |
| Electrostatic discharges | Contact discharges: ± 4 kV Air discharges: ± 8 kV, EN 61000-4-2 |
| Sine vibration on 3 axes | 1.5 mm or 20 g from 10 Hz to 2000 Hz |
| Mechanical shocks on 3 axes | 50 g, 11 ms, half sine |



DIMENSIONS in millimeters

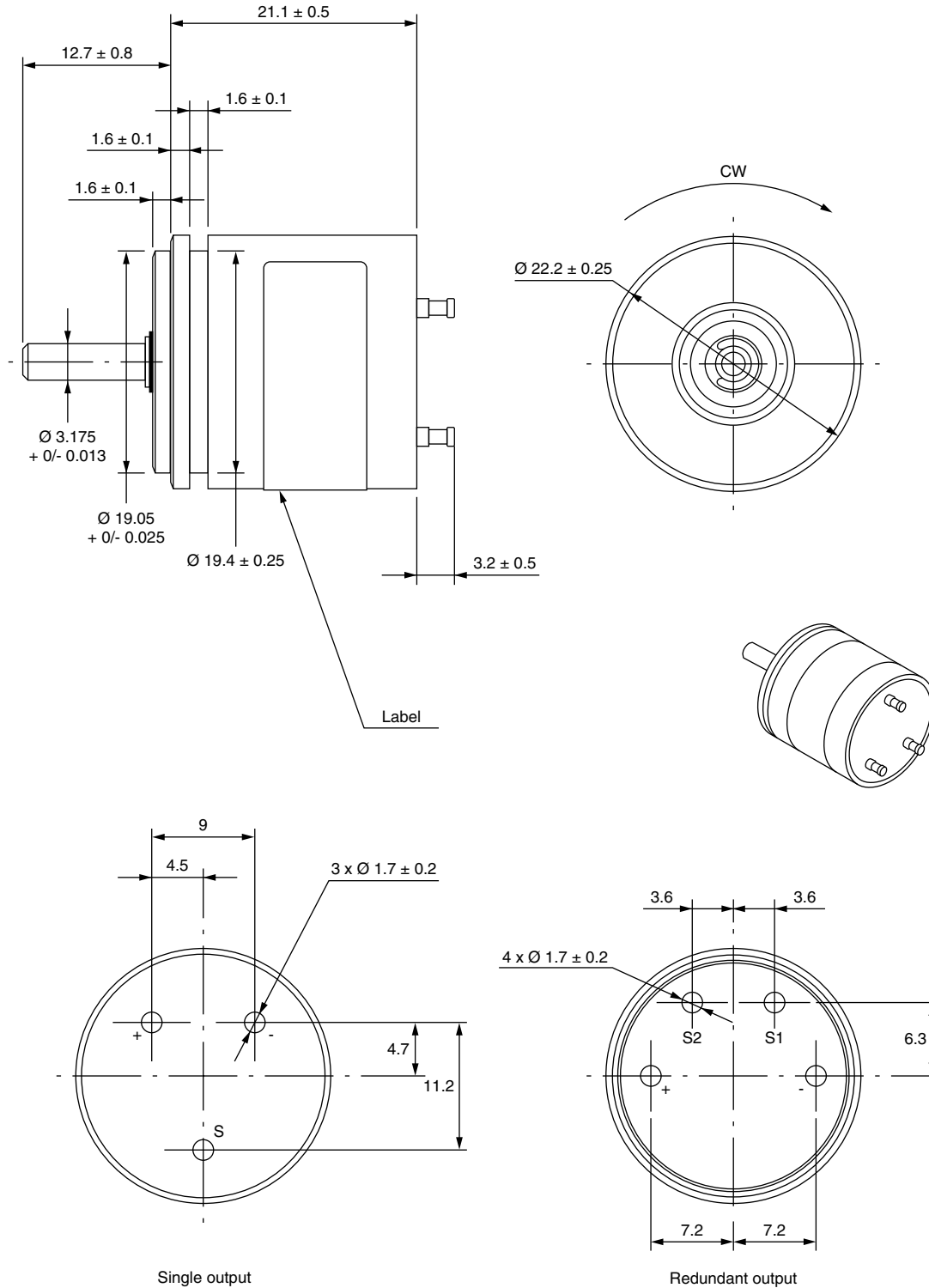
Drawing for bushing mount type: 34THEB...





DIMENSIONS in millimeters

Drawing for servo mount type: 34THES...



BUSHING AND SERVO TYPES

Output by wires for output signal "SPI" single and redundant



| SINGLE SPI OUTPUT (servo and bushing) | |
|---------------------------------------|---------------------|
| WIRE COLOR | OUTPUT |
| Yellow | GND (-) |
| Red | MOSI |
| Green | V _{CC} (+) |
| White | SS |
| Blue | SCLK |



| REDUNDANT SPI OUTPUT (servo and bushing) | |
|--|--------|
| WIRE COLOR | OUTPUT |
| Black | V- |
| Red | V+ |
| Yellow | O/I 1 |
| Blue | CLK 1 |
| White | /SS 1 |
| Green | O/I 2 |
| Violet | CLK 2 |
| Grey | /SS 2 |



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.

Данный компонент на территории Российской Федерации

Вы можете приобрести в компании MosChip.

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:

moschip.ru

moschip.ru_4

moschip.ru_6

moschip.ru_9