

GENERAL DESCRIPTION:

MODEL CP-3HK-100 IS ONE OF MIDORI'S "ORANGE POT Alpha" SERIES 360° CONTACTLESS ANGLE SENSORS THAT CONSISTS OF A PAIR OF TEMPERATURE STABLE HALL EFFECT SENSORS AND A DEDICATED ANALOG AND DIGITAL SIGNAL PROCESSING SYSTEM IC. A/D, D/A CONVERTERS, ARITHMETIC, CONTROL, LOGIC CIRCUITS IN THE PROCESSOR ALLOW THE SENSOR TO HAVE A PRECISELY CALIBRATED SIGNAL THROUGHOUT THE ENTIRE OUTPUT RANGE. THE SENSOR IS ALSO PACKAGED WITH SEALED, RUGGEDIZED HOUSING TO MEET SEVERE MECHANICAL, ENVIRONMENTAL REQUIREMENTS. THIS HIGH PERFORMANCE, COMPARABLE WITH THOSE OF A PRECISION POTENTIOMETER AND ENCODER, MAKES THE SENSOR SUITABLE FOR APPLICATIONS IN OFF-ROAD, MARINE, AEROSPACE, MINING, FACTORY AUTOMATION EQUIPMENTS.

ENVIRONMENTAL SPECIFICATIONS:

OPERATING TEMPERATURE: -40°C to +100°C
 STORAGE TEMPERATURE: -40°C to +100°C
 SHOCK: 1000 M / S² (100Gs), 11 mS, 3 AXES, 3 TIMES
 VIBRATION: 100 M / S² (10 Gs), 5 ~ 500 Hz, 6 MINUTES, 3 AXES, 2 HOURS

ELECTRICAL SPECIFICATIONS: (UNLESS OTHERWISE SPECIFIED, T_A=25°C, V_{IN}=5Vdc REFER TO FIGURES 1, 2 AND 3)

ELECTRICAL ANGLE: 360° (FS)
 INPUT VOLTAGE (V_{in}): 5.0 ±0.5 Vdc
 NOTE: (1) IN APPLYING INPUT POWER, VOLTAGE V_{in} MUST RISE TO 4.5 V, WITHIN 0.2 SECONDS, OTHERWISE, OUTPUT SHALL BE DISABLED (V_{out} = 0 V).
 (2) WHEN INPUT VOLTAGE V_{in} IS OUT OF THE SPECIFIED RANGE, THE OUTPUT SHALL BE DISABLED.

SUPPLY CURRENT: 30 mA MAX.
 OUTPUT RANGE: 0.25 V to 4.75 V (12.5 mV/1°)
 OUTPUT CURRENT: 1.5 mA MAX.
 OUTPUT IMPEDANCE: 51 OHMS NOMINAL
 OUTPUT LOAD (R_L) (RECOMMENDED): 1 meg OHMS MIN.
 RESOLUTION: 0.1° @ 400 rpm MAX. SHAFT SPEED
 ABSOLUTE LINEARITY: ±0.4% FS (±1.44°), R_L = 1 meg OHMS
 HYSTERESIS: ±0.14 % FS (±0.5°)
 TOTAL SIGNAL DELAY TIME: 0.3 mS TYP.
 ESD: ±8 kV (IEC 61000-4-2)
 EMS: 100 V / M 200 mega Hz to 1 GHz (ISO 11452 - 2)
 TEMPERATURE EFFECT: ±0.3 % FS (±1.1°), T_{REF} = 25°C, -40°C ~ +100°C

MECHANICAL SPECIFICATIONS:

MECHANICAL ANGLE: 360° (ENDLESS)
 BEARING: BALL BEARING
 TORQUE: 2 mN-m (20 gf-cm) MAX.
 SHAFT LOAD: 14 N (1.4 kgf) MAX RADIAL, 4 N (0.4kgf) THRUST
 WEIGHT: APPROX. 80 g
 SEAL COMPLIANCE: IP54 (EXCLUDING SEAL BETWEEN SHAFT AND BUSHING)

MATERIAL:

THIS PRODUCT COMPLIES WITH REQUIREMENTS OF RoHS DIRECTIVE

PRELIMINARY INFORMATION
02/04/08

| SYM | REVISION DESCRIPTION | DATE | DRAWN | APPR'D |
|-----|----------------------|------|-------|--------|
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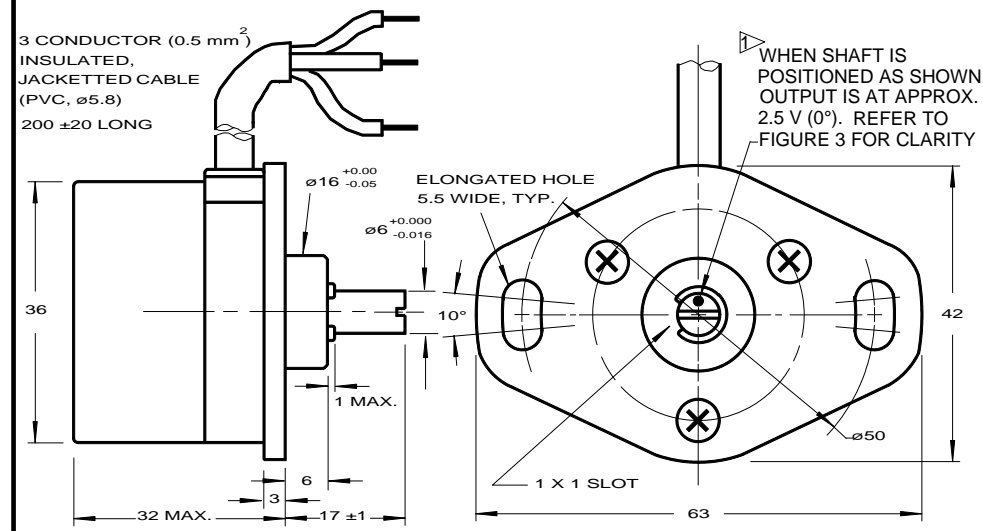


FIGURE 1 OUTLINE DIMENSIONS

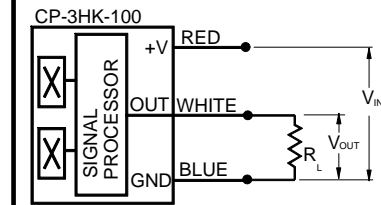


FIGURE 2 SCHEMATIC

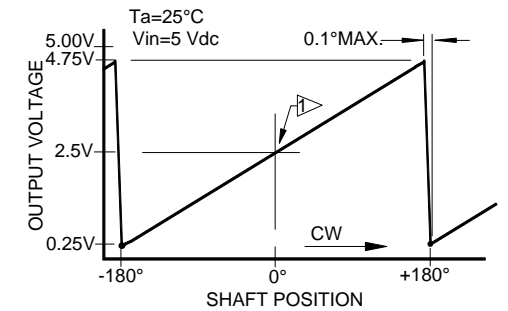


FIGURE 3 TYPICAL OUTPUT CHARACTERISTIC

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|---|--|---|---|
| UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN mm (in). TOLERANCES: ANGLES: ±1.5° <10 mm: ±0.25 <100 mm: ±0.5 >100 mm: ±1 | DRAWN: T. TSUGAWA DATE: 11/19/07 CHECKED: _____ DATE: _____ APPROVED: _____ DATE: _____ APPROVED: _____ DATE: _____ SCALE: _____ | SPECIFICATION DWG FOR MODEL CP-3HK-100 PRECISION CONTACTLESS 360° ROTARY POSITION SENSOR FILE: CP-3HK-100 | Midori America Corporation Fullerton, CA B-MAC-B72 1 OF 1 |
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