



CONNECTOR

NRH27Y-XXX-XX-XX-X-X-XXX-~~XX~~

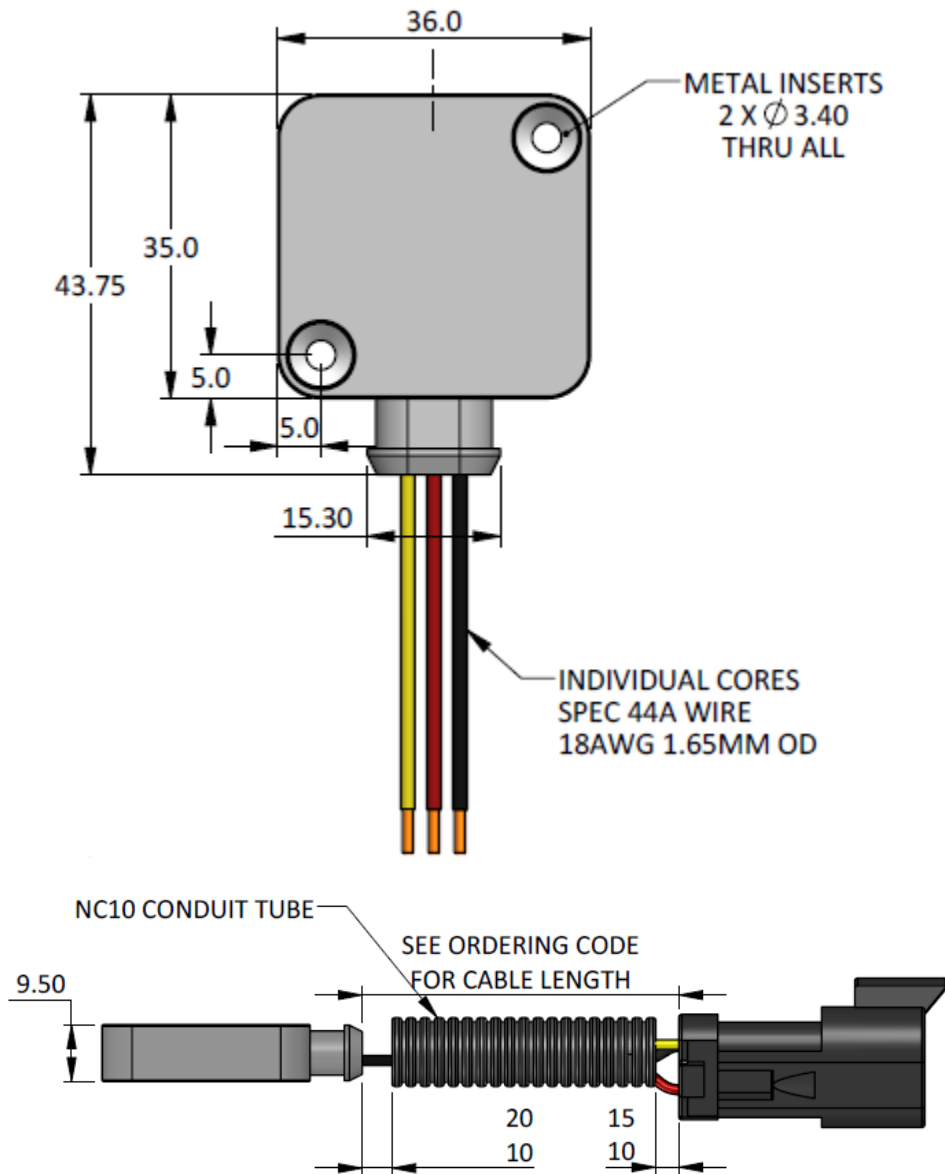
Code	Description
C0	No connector, 3- or 6-way flying leads
C1	Deutsch DT04
C2	AMP Superseal



INSTALLATION

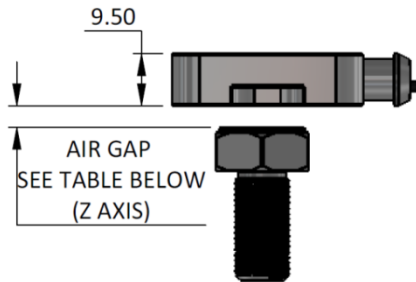
MECHANICAL

Sensor





Magnet



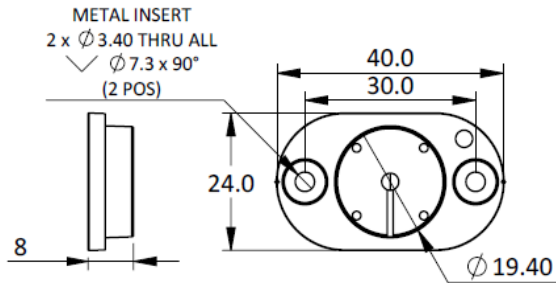
Magnet Type	Air Gap
BOLT & PLUG TYPE	2-7mm
MOLDED CARRIER	1.5-6.5mm from front face of carrier
MAGNET ONLY	3-8mm

NOTES

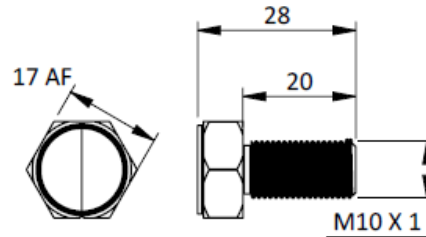
All stated specifications are based on a nominal air gap of 3.5mm. Per the table above, other air gaps are possible but some specifications may vary. Please consult Curtiss-Wright for further details.

If the unit is operated when the magnet is outside the recommended air gap, the output will not meet specification. If the magnet is absent, the output will default to <0.1Vdc or a 0% PWM duty cycle.

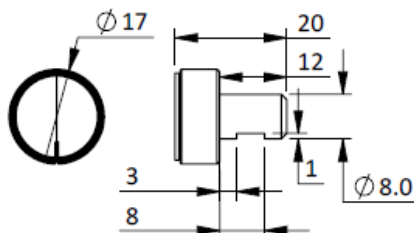
Molded Carrier



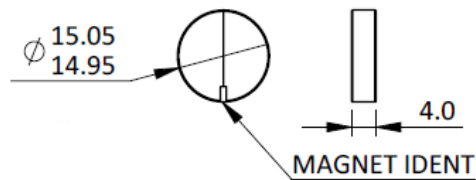
Bolt Type



Plug Type

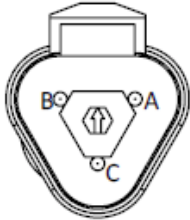


Magnet Only



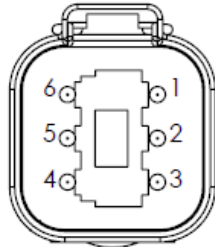
**ELECTRICAL CONNECTIONS****Flying Leads (C0)**

Color	Function	
RED	NRH271: Vsupply	NRH272: Vsupply 1
BLACK	NRH271: GND (0V)	NRH272: GND (0V) 1
YELLOW	NRH271: Output	NRH272: Output 1
BLUE		NRH272: Vsupply 2
GREEN		NRH272: GND (0V) 2
WHITE		NRH272: Output 2

Deutsch DT04 (C1)**NRH271**

Deutsch DT04 3P-CE03 with gold contact 0460-202-1631

Mating Part No: DT06-3S-**** (plug) & 0462-201-1631 (pins)

NRH272

Deutsch DT04 6P-CE03 with gold contact 0460-202-1631

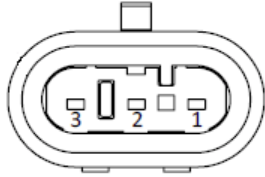
Mating Part No: DT06-6S-**** (plug) & 0462-201-1631 (pins)

Pin	Function	
1/A	NRH271: GND (0V)	NRH272: GND (0V) 1
2/B	NRH271: Output	NRH272: Vsupply 1
3/C	NRH271: Vsupply	NRH272: Output 1
4		NRH272: GND (0V) 2
5		NRH272: Vsupply 2
6		NRH272: Output 2



AMP Superseal (C2)

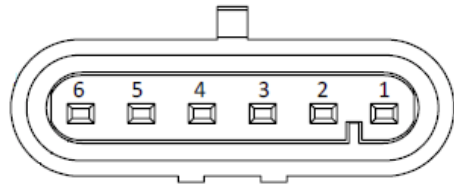
NRH271



AMP 1.5 Superseal 282105-1

Mating Part No: 282087-X (plug) & 183025-1 (pins)

NRH272



AMP 1.5 Superseal 282108-1

Mating Part No: 282090-X (plug) & 183025-1 (pins)

Pin	Function	
1	NRH271: Output	NRH272: GND (0V) 1
2	NRH271: Vsupply	NRH272: Vsupply 1
3	NRH271: GND (0V)	NRH272: Output 1
4		NRH272: GND (0V) 2
5		NRH272: Vsupply 2
6		NRH272: Output 2

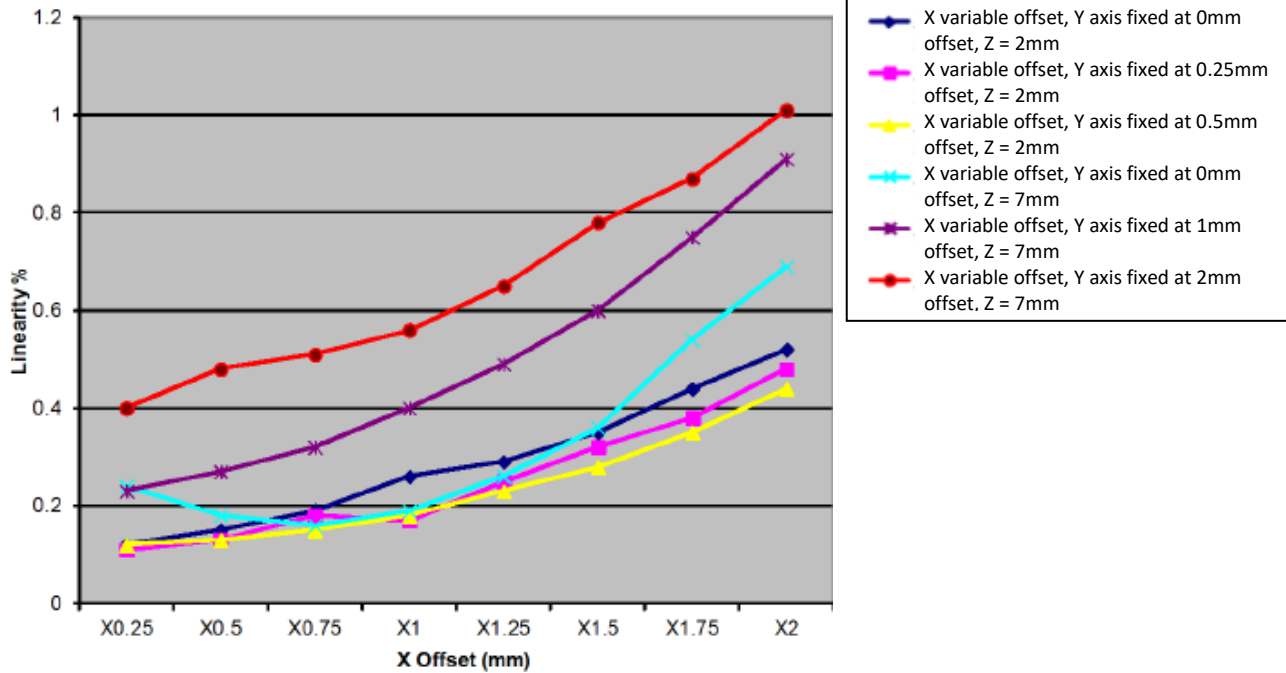


SPECIFICATIONS

ELECTRICAL

MEASUREMENT RANGE	20-360° in 1° increments
SUPPLY VOLTAGE	5Vdc ±0.5Vdc or 5Vdc ±0.5Vdc and 9-30Vdc unregulated – auto-selects
SUPPLY CURRENT	NRH271: <12.5mA NRH272: <25mA
SUPPLY REVERSE POLARITY PROTECTION	Yes
SHORT-CIRCUIT PROTECTION TO GND	Yes
SHORT-CIRCUIT PROTECTION TO SUPPLY	When used with 5V supply only
OVER-VOLTAGE PROTECTION	Up to 12Vdc @ 5V supply
POWER-ON SETTLEMENT	<1s
RESOLUTION	12-bit (0.025% of measurement range)
LINEARITY (ABSOLUTE)	±0.4%

Linearity versus magnetic misalignment



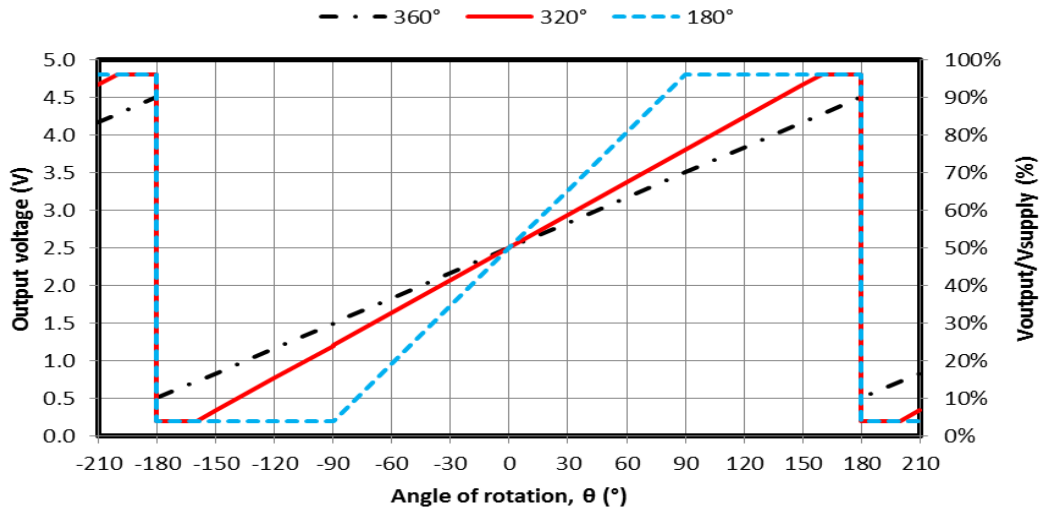
TEMPERATURE COEFFICIENT	<30ppm/°C
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VOLTAGE OUTPUTS

OUTPUT RANGE A1 @ 5Vdc SUPPLY	10-90% ±1% of Vsupply over measurement range
OUTPUT RANGE A1 @ 9-30Vdc SUPPLY	0-5-4.5V ±3% absolute
MONOTONIC RANGE	5%/0.25V to 95%/4.75V nominal
OUTPUT RANGE A5 @ 5Vdc SUPPLY	4-96% ±1% of Vsupply over measurement range
OUTPUT RANGE A5 @ 9-30Vdc SUPPLY	0.2-4.8V ±3% absolute
MONOTONIC RANGE	2%/0.1V to 98%/4.9V nominal

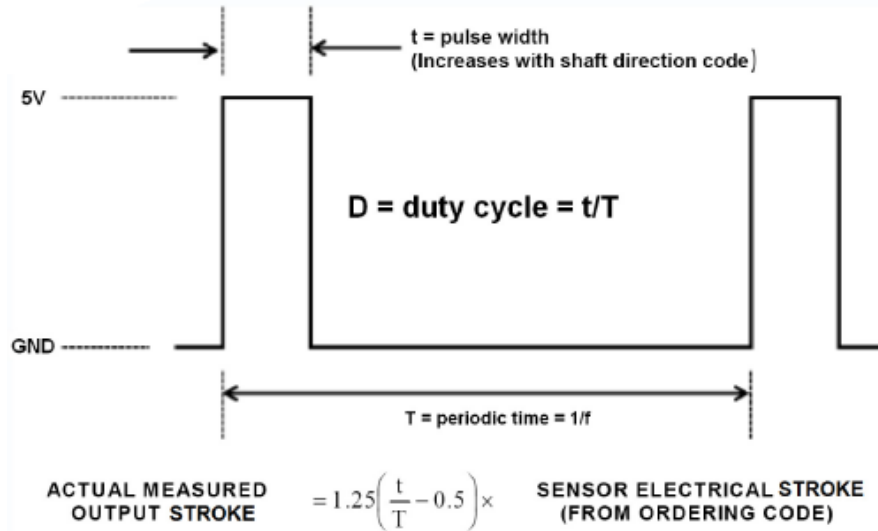
Voltage output law examples



LOAD RESISTANCE	10k Ω min. (resistive to GND)
OUTPUT NOISE	<1mV rms
INPUT/OUTPUT DELAY A1 & A5	<2ms

**PWM OUTPUTS**

PWM FREQUENCY	244Hz, 500Hz or 1kHz $\pm 20\%$
PWM LEVELS @ 5Vdc SUPPLY	0V and $V_{supply} \pm 1\%$
PWM LEVELS @ 9-30Vdc SUPPLY	0V and 5V $\pm 3\%$ nominal
DUTY CYCLE	10-90% over measurement range
MONOTONIC RANGE	5-95% nominal
LOAD RESISTANCE	10k Ω min. (resistive to GND)
RISE/FALL TIME	<15 μ s typical

**MECHANICAL**

MECHANICAL ANGLE	360° continuous
MAXIMUM OPERATING SPEED	3600°/s
WEIGHT	<100g
MOUNTING	2x $\varnothing 3.4$ mm holes with $\varnothing 7.3$ mm x 90° CSK
CABLE	Spec 44A wires 18AWG 1.65mm OD

**ENVIRONMENTAL**

OPERATING TEMPERATURE RANGE	-40°C to 140°C (-40°C to 120°C if conduit fitted)
STORAGE TEMPERATURE RANGE	-55°C to 140°C
SEALING	Sensor body IP69K AMP connector IP68 when fully mated Deutsch connector IP67 when fully mated
VIBRATION	EN 60068-2-64:1995 section 8.4 (31.4gn rms) 20-2000Hz random
SHOCK	3m drop onto concrete and 2500g
LIFE	Virtually infinite
MTTFd	> 600 years
ELECTROMAGNETIC INTERFERENCE	EN 61000-4-3:1999 to 100V/m 80-1000MHz & 1.4-2.7GHz
SALT SPRAY	BS EN 60068-2-52 TEST KB SEVERITY 2

IMPORTANT INFORMATION

Whilst Curtiss-Wright Industrial Division - Penny & Giles has designed this sensor to meet a range of applications it is the responsibility of the customer to ensure it meets their specific requirement.

Penny & Giles Controls Ltd makes no warranty or representation in respect of product fitness or suitability for any particular design application, environment, or otherwise, except as may subsequently be agreed in contract for the sale and purchase of products. Customers should therefore satisfy themselves of the actual performance requirements and subsequently the product's suitability for any particular design application and the environment in which the product is to be used.

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