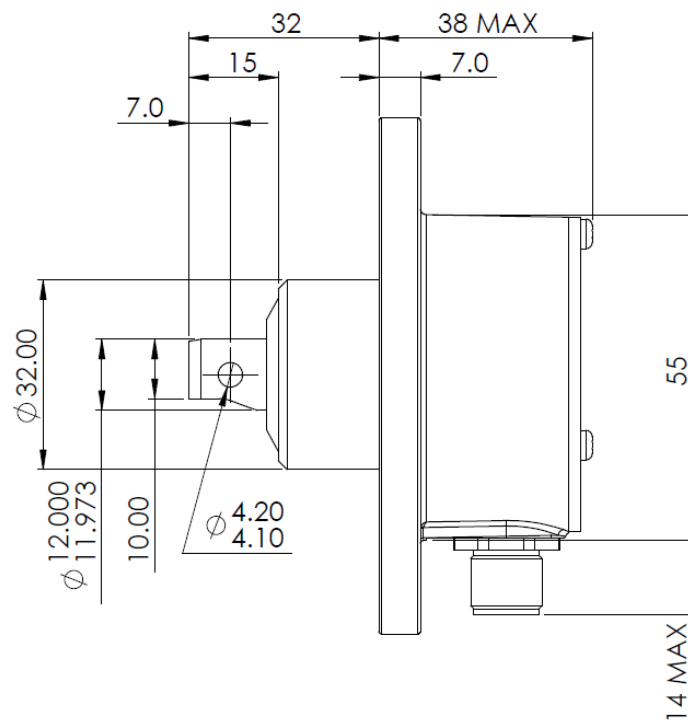
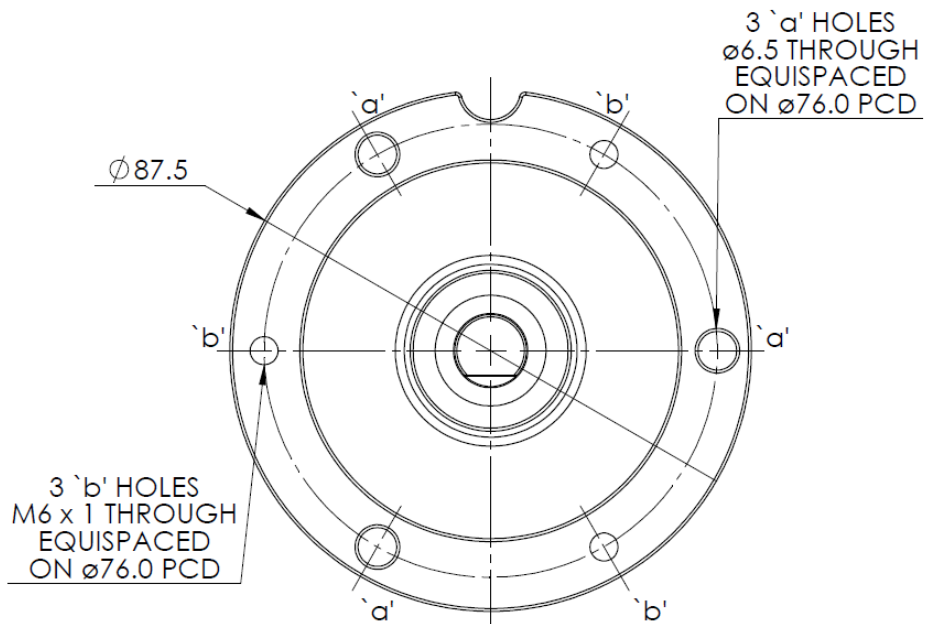




INSTALLATION

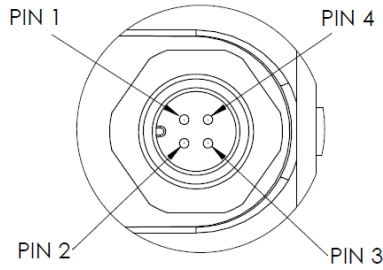
MECHANICAL





ELECTRICAL CONNECTIONS

M12 Connector

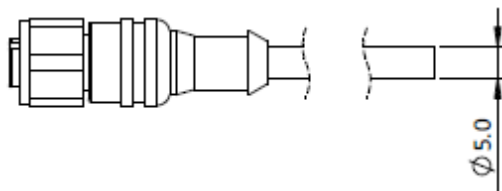


Pin	Function (Single output)	Function (Dual output)	Mating connector cable color
1	SRH761: Vsupply	SRH762: Vsupply	BROWN
2	SRH761: Not used	SRH762: Output 2	WHITE
3	SRH761: GND (0V)	SRH762: GND (0V)	BLUE
4	SRH761: Output	SRH762: Output 1	BLACK

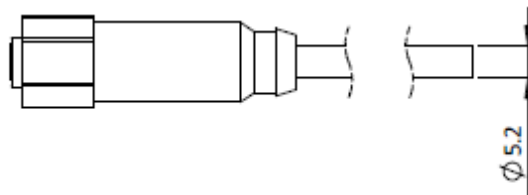
Recommended Mating Connectors

Description	Manufacturer reference number
3 wire, 2 meter long, IP68	Hirschmann No. 934-401-203 2m
4 wire, 2 meter long, IP68	Hirschmann No. 934-551-009 2m
3 wire, 5 meter long, IP68	Hirschmann No. 934-401-202 5m
4 wire, 5 meter long, IP68	Hirschmann No. 934-551-010 5m
3 wire, 10 meter long, IP68	Lumberg PRST 4-07/10m
4 wire, 10 meter long, IP68	Hirschmann No. 934-551-035 10m
4 wire, 1.5 meter long, IP69K	Murr No.7044-12221-336-0150 1.5m
4 wire, 5 meter long, IP69K	Murr No.7044-12221-336-0500 5m
4 wire, 10 meter long, IP69K	Murr No.7044-12221-336-1000 10m

IP68 connectors



IP69K connectors





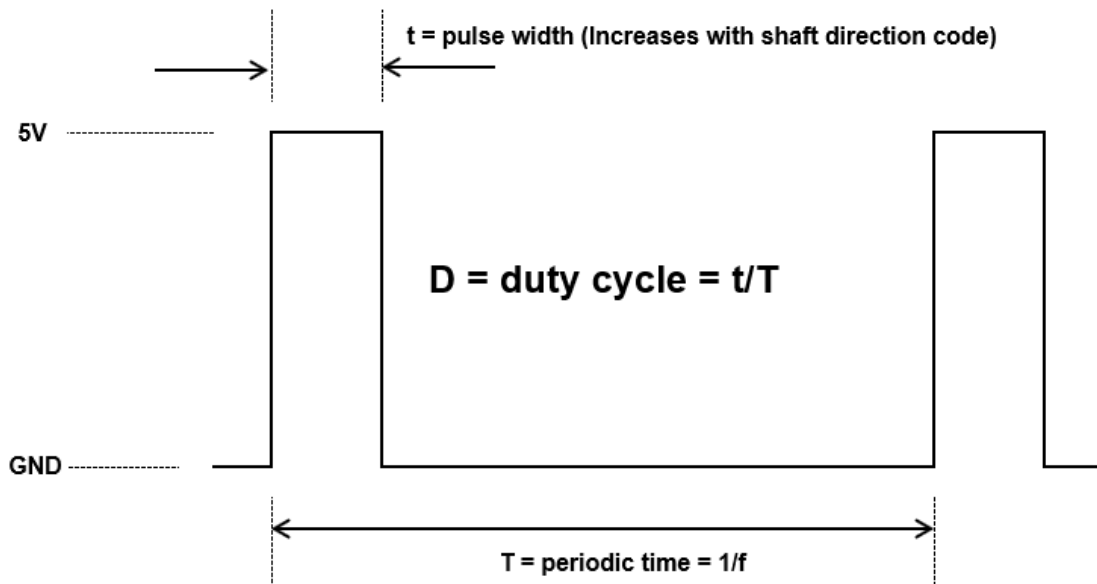
SPECIFICATIONS

ELECTRICAL

MEASUREMENT RANGE	As per configuration code, minimum 0-20°, maximum 0-360° in 1° increments
SUPPLY VOLTAGE	13.5-30Vdc unregulated for A2 option, 9-30Vdc unregulated for all other options
SUPPLY CURRENT (SINGLE OR DUAL OUTPUT)	≤30mA (+ output current for each 4-20mA output)
SUPPLY REVERSE POLARITY PROTECTION	Yes
SHORT-CIRCUIT PROTECTION	
OUTPUT TO GND	Indefinite (30mA maximum per channel)
OUTPUT TO SUPPLY	Indefinite (30mA maximum per channel)
OVER-VOLTAGE PROTECTION	Up to 40Vdc at ambient temperature
POWER-ON SETTLEMENT	≤1s
RESOLUTION	≤0.025% of measurement range (12-bit)
TEMPERATURE COEFFICIENT	<±100 ppm/°C (A1, A2, A5, P1, P2 and P3) <±200 ppm/°C (A3 option only)
LINEARITY	≤±0.4%

PWM OUTPUTS (PX)

PWM FREQUENCY	P1: 244Hz ±20% over temperature range P2: 500Hz ±20% over temperature range P3: 1000Hz ±20% over temperature range
PWM LEVELS (9-30Vdc SUPPLY)	0V and 5V ±3% nominal
DUTY CYCLE	10% – 90% over measurement range
MONOTONIC RANGE	5% and 95% nominal
RISE/FALL TIME	20µs
LOAD RESISTANCE	10kΩ min. resistive to GND
PWM OUTPUT CHARACTERISTICS	

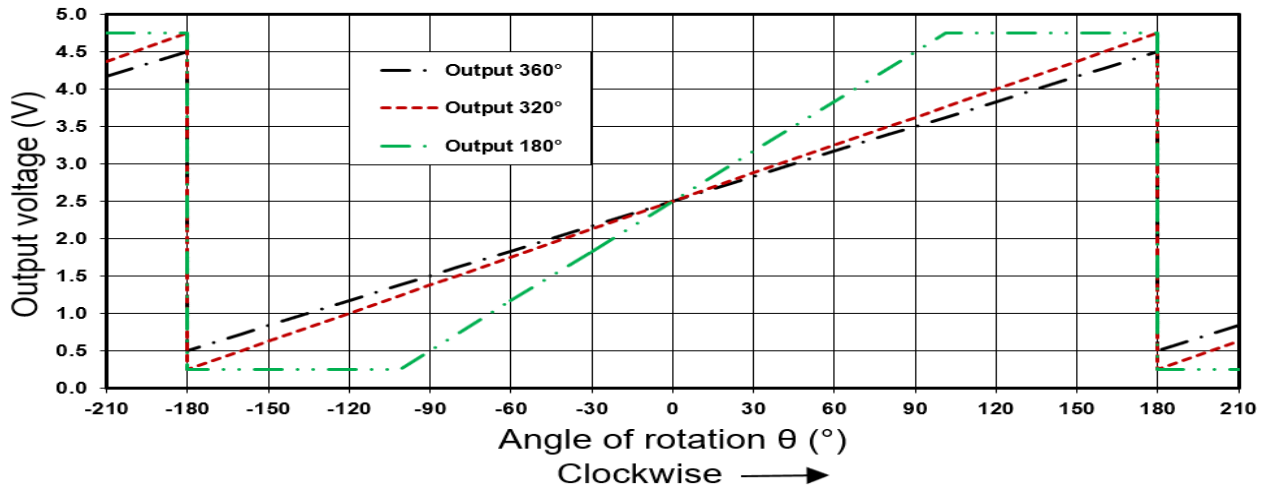


Actual Measured Output Angle = 1.25 x (D-0.5) x Sensor electrical angle (from ordering code)



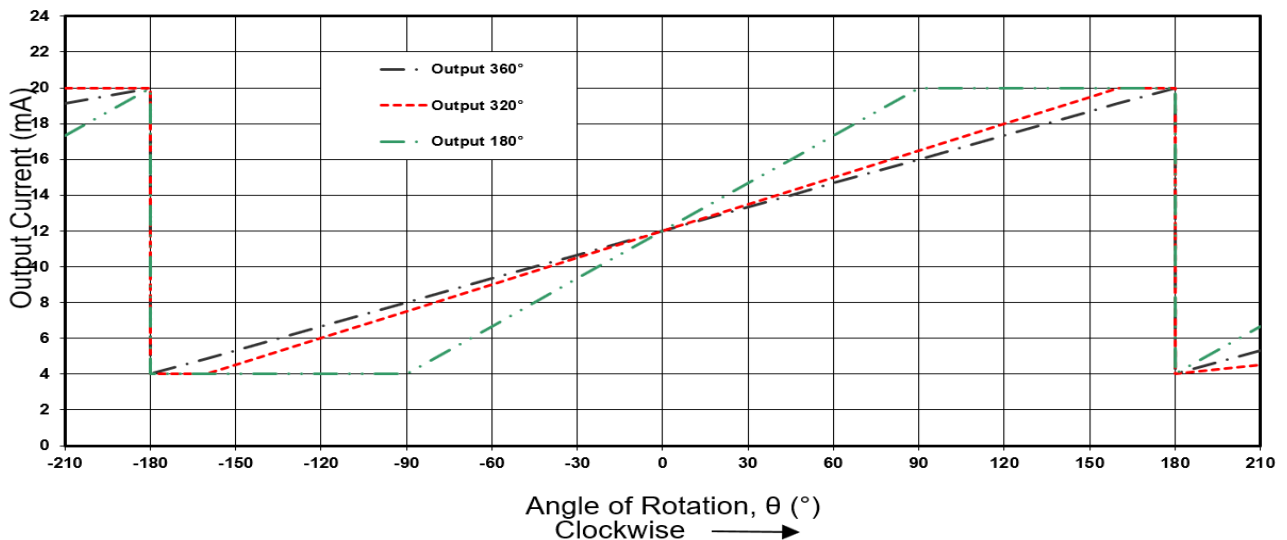
VOLTAGE OUTPUTS

OUTPUT RANGE	A1 – Absolute voltage 0.5V-4.5V dc ($\pm 3\%$) over measurement range A2 – Voltage 0.2V-9.8V dc ($\pm 0.1V$) A5 – Absolute voltage 0.2V-4.8V dc ($\pm 3\%$) over measurement range
MONOTONIC RANGE	A1 – 0.25V – 4.75V nominal A5 – 0.10V – 4.90V nominal
LOAD RESISTANCE	10k Ω min. resistive to GND
OUTPUT NOISE	<1mV rms
INPUT/OUTPUT DELAY	<3.5ms
EXAMPLE OF OUTPUT LAW	A1 with clockwise output configuration assumed



CURRENT OUTPUTS

OUTPUT RANGE	A3 - Absolute current from 4mA to 20mA over measurement range ($\pm 2\%$ span)
LOAD RESISTANCE	400 Ω max. resistive to GND
OUTPUT NOISE	<10 μ A rms
INPUT/OUTPUT DELAY	<3.5ms
EXAMPLE OF OUTPUT LAW	A3 with clockwise output configuration assumed



**MECHANICAL**

MECHANICAL ANGLE	360° continuous
MAXIMUM OPERATING SPEED	3600°/s
LIFE	>20 million operations of 150° sweep
SHAFT SIDE LOAD (DYNAMIC)	2kg mounted on sensor shaft – tested to 3 million operations of 150° sweep
WEIGHT	600g maximum
MOUNTING	Three tapped holes (M6 x 1 screws) or three through holes (to clear M6 or x ¼ UNC screws) with tightening Torque 10Nm Maximum

EMC DATA

RF IMMUNITY	ISO 11452-2: 2004, 100V/m, 80-3000MHz frequency range, 80%AM, 1kHz sine
MAGNETIC FIELD IMMUNITY	ISO 11452-8: 2015
CONDUCTED IMMUNITY	ISO 11452-4: 2005, 100mA, 10kHz-400MHz frequency range, 80%AM, 1kHz sine
ELECTROSTATIC DISCHARGE	ISO 10605: 2008 + A1: 2014, ±8kV contact, ±15kV air discharge
RADIATED EMISSIONS	EN55011: 2016 / CISPR 25
TRANSIENT PROTECTION	ISO 7637-2, pulses 1-5

ENVIRONMENTAL AND LEGISLATIVE

OPERATING TEMPERATURE RANGE	-40°C to +85°C
STORAGE TEMPERATURE RANGE	-50°C to +85°C
HUMIDITY	EN 60068-2-30 severity Db (55°C, 93%RH)
WATER AND DUST INGRESS	IP69K, IP68, IP67 with appropriate mating connector fitted
SALT SPRAY	EN 60068-2-52 test Kb severity 2 (72h)
VIBRATION (RANDOM)	BS EN 60068-2-64; 1995 - 14gn rms, 20-2000Hz
DROP/IMPACT SHOCK	2500g impact
MTTF'd	>150 years

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.

Continual research and development may require change to products and specification without prior notification.
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