



HALL EFFECT SENSOR

MODEL 9970



Features

- Two standard output configurations (0-5 V ratiometric or 4-20 mA)
- Amp Superseal 1.5: 3 terminal connector
- Available with 12 active angle ranges from +/- 15 up to 360 degrees (in 30 degree increments) in a single output device
- Full 360 degree travel range provides versatility
- IP67 and IP69K package
- Uses non-contacting Hall effect technology
- Ideal for harsh environments such as steering and pedal position for off highway construction and agricultural vehicles as well as mining, marine and material handling equipment

SPECIFICATIONS

Mechanical

Mechanical Travel	Continuous up to 360 degrees
Mounting	50mm mounting centers
Shaft	6mm shaft with flat and 2mm cross-drilled hole
Terminations	3 terminal AMP Superseal Connector
Housing	Glass Filled PBT
Rotational Life	35 M cycles

Electrical

Active Electrical Angle:	30 (+/- 15) degrees through 360 (+/- 180) degrees in 30 degree increments. Other angles available, consult factory.
Output Function:	1) Analog ratiometric 10% to 90% 2) Current: 4-20 mA (3-wire)
Resolution:	0.088 degrees (12-bit)
Accuracy:	± 0.6% of Active Electrical Angle at room temperature
Supply Voltage	5.0 V±0.25V DC for ratiometric 9-30 VDC for current 4-20mA
Input Current	16mA maximum except for Current Loop option at 36mA max
Protection	Overvoltage: 5V Input: 20VDC 9-30V Input: 70V per ISO 7637-2 Reverse Polarity Short Circuit
EMC	200V/meter per ISO 11452-3 & EN61000-4-20
ESD	8 kV per ISO 10605

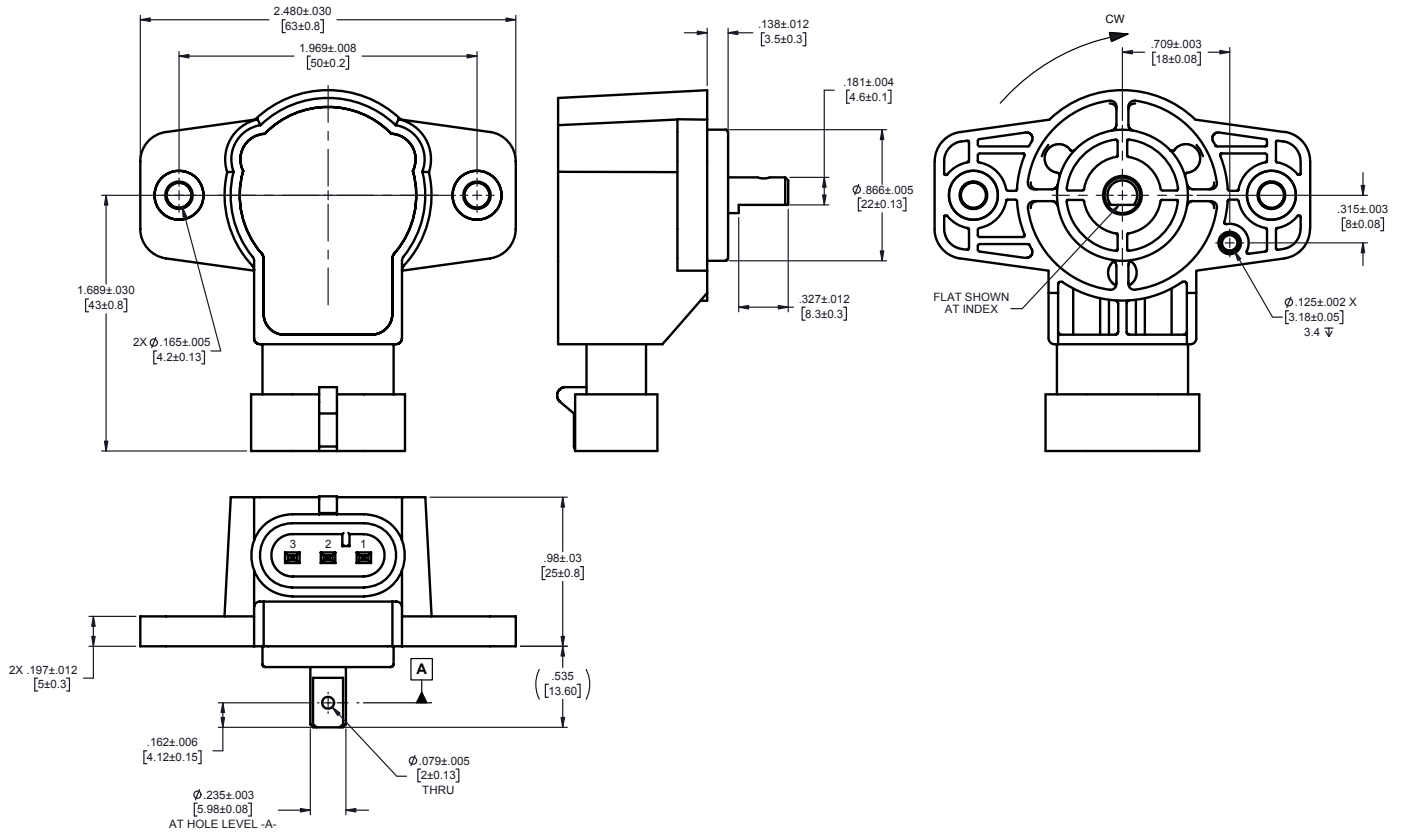
Environmental

Sealing	IP67 and IP69K per DIN 40050-9
Vibration	10g rms 20 – 2000 Hz
Humidity	95% RH @ 40° C
Liquid Exposure	Salt water, cola, motor oil, ethylene glycol, paint, diesel fuel
RoHS	Yes
Operating Temperature	-40°C to +125°C
Storage Temperature	-40°C to +125°C



DIMENSIONS

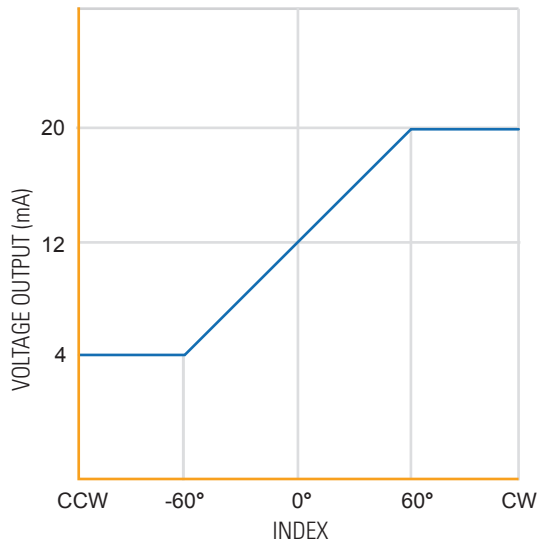
Dimensions are in in[mm]





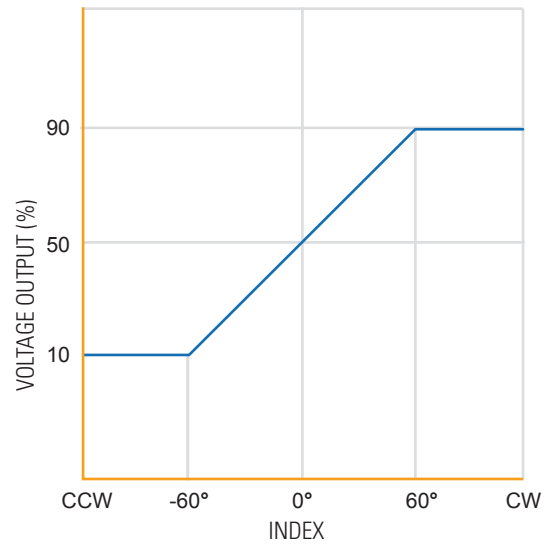
OUTPUT WAVEFORMS

EXAMPLE 9970-120-9J-SA



ACTIVE ELECTRICAL ROTATION (DEGREES)

EXAMPLE 9970-120-5A-SA

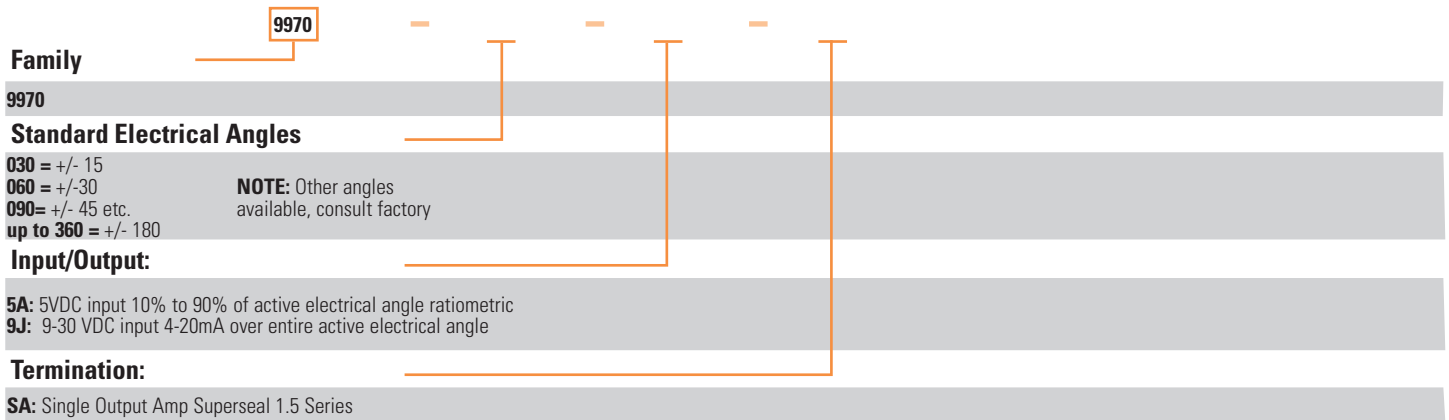


ACTIVE ELECTRICAL ROTATION (DEGREES)



ORDERING OPTIONS

Use this diagram to construct your model number.





CONNECTOR PIN OUT

PIN	FUNCTION
1	GROUND
2	SUPPLY
3	OUTPUT



CROSSOVER TABLE

BEI SENSORS	ELOBAU	HONEYWELL
9970 - XXX - 5A - SA	424A06AXXX	RPNSXXXGC1A11X
9970 - XXX - 9J - SA	424A02AXXX	RPNSXXXDD1A21X

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