



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 |

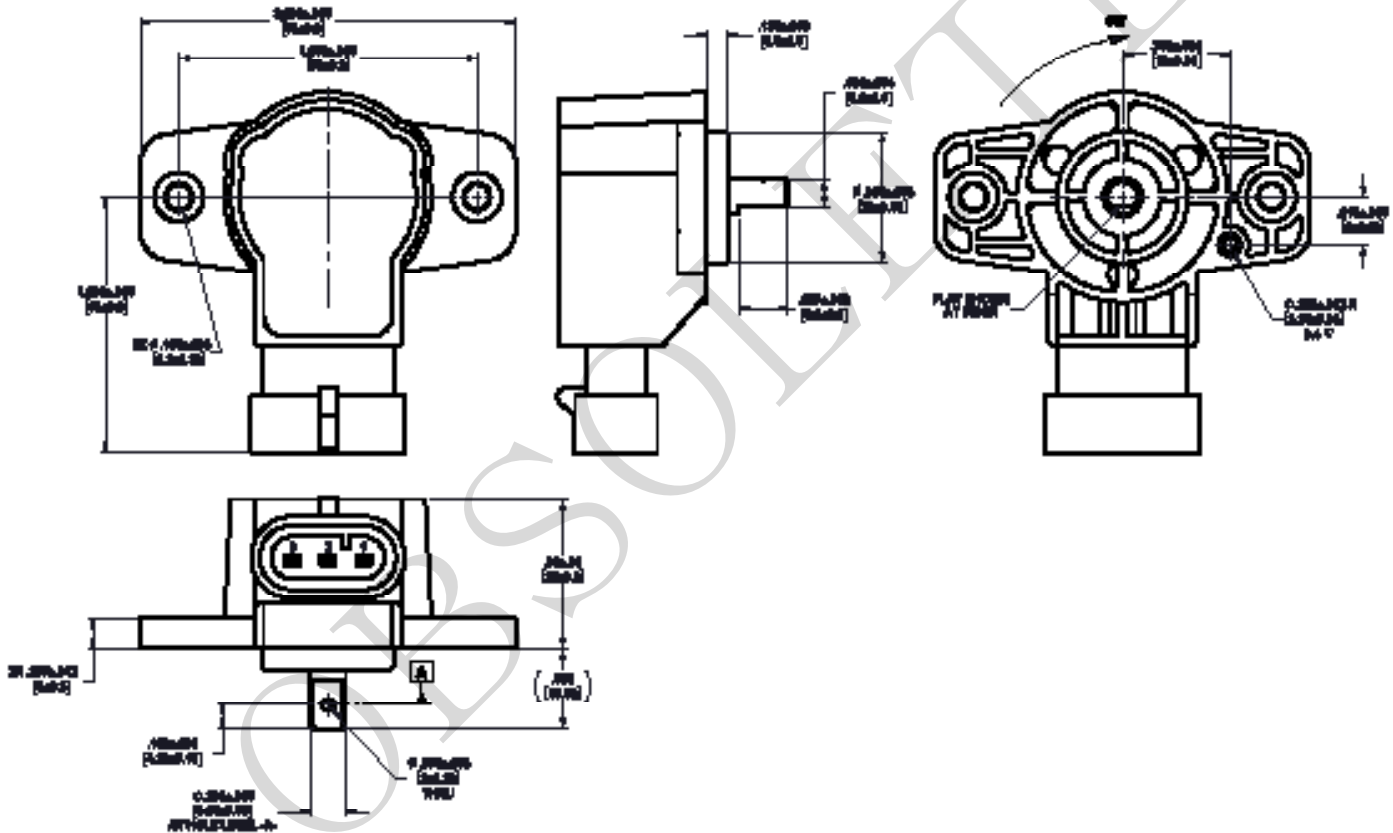
Environmental

| | |
|------------------------------|--|
| 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

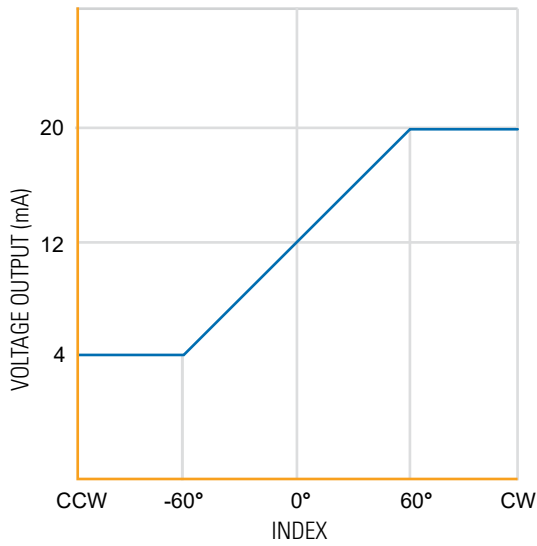
Dimensions are in in[mm]



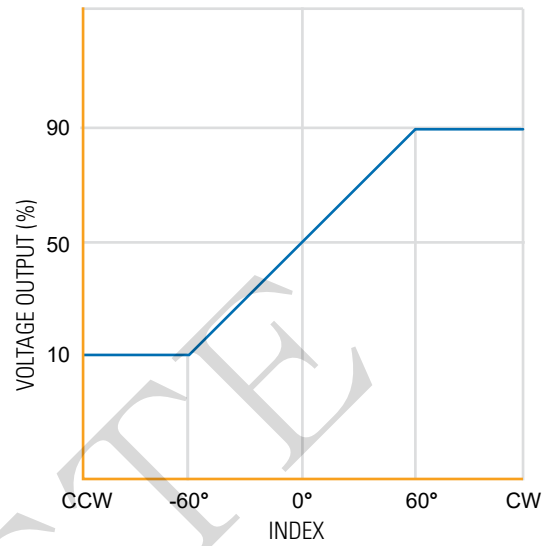


OUTPUT WAVEFORMS

EXAMPLE 9970-120-9J-SA



EXAMPLE 9970-120-5A-SA



ORDERING OPTIONS

Use this diagram to construct your model number.

Family

9970

Standard Electrical Angles

030 = +/- 15

060 = +/- 30

090 = +/- 45 etc.

up to 360 = +/- 180

NOTE: Other angles available, consult factory

Input/Output:

5A: 5VDC input 10% to 90% of active electrical angle ratiometric

9J: 9-30 VDC input 4-20mA over entire active electrical angle

Termination:

SA: Single Output Amp Superseal 1.5 Series



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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