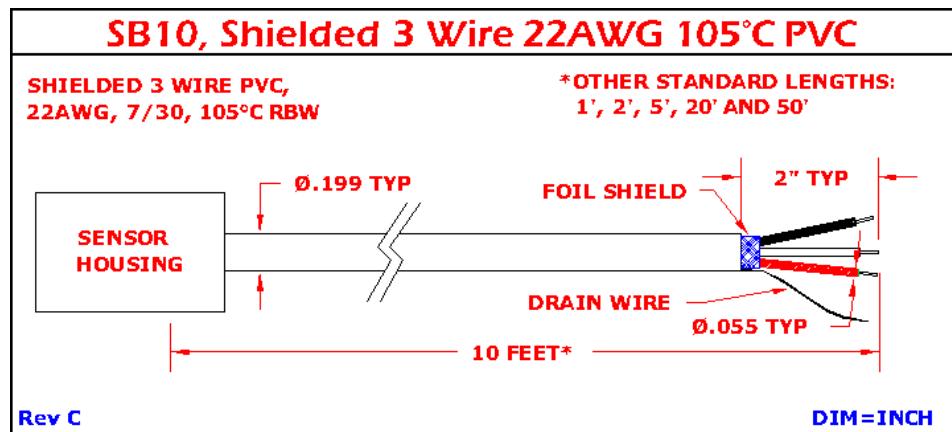
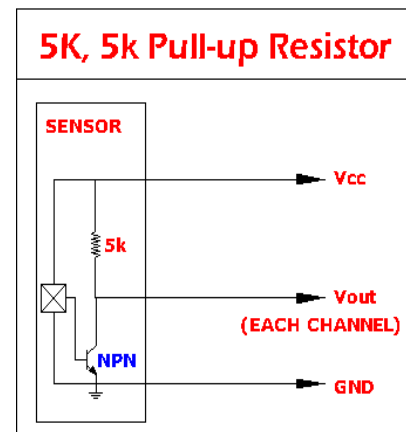
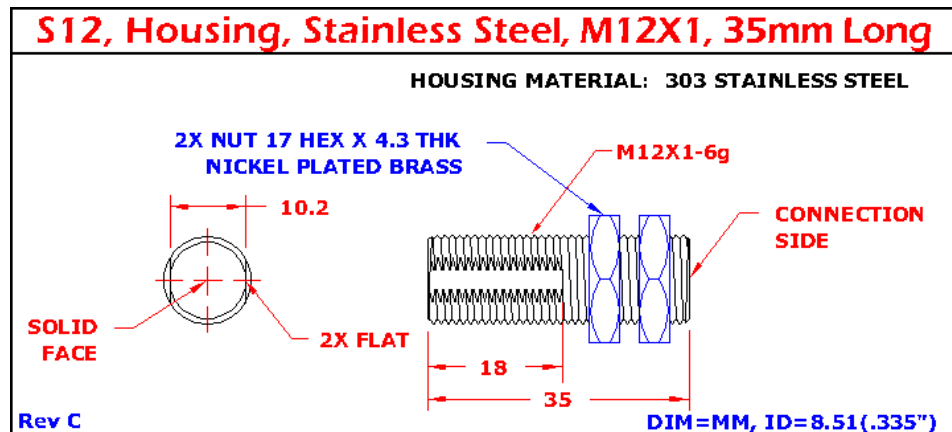


- INTERNAL HYSTERESIS, BOUNCE FREE
- SOLID STATE (Nothing to wear out!)
- TEMPERATURE STABLE
- NEAR 0 SPEED OPERATION
- DYNAMIC, SELF ADJUSTING

| ENVIRONMENTAL SPECIFICATIONS - S12 |                                 |
|------------------------------------|---------------------------------|
| Corrosion Resistance               | 500 hours salt spray ASTM B-117 |
| Installation Torque                | 23 Foot-Pounds Maximum          |
| Enclosure                          | Nema 1,3,4,6,13 & IEC IP67      |
| Vibration                          | 10 G's 2 to 2000 Hz Sinusoidal  |
| Mechanical Shock                   | 100 G's, 11 mS Half-Sine        |



**Connections Chart**

|       |              |
|-------|--------------|
| Red   | Vcc          |
| Black | Ground       |
| White | Digital Vout |
| Drain | Shield only  |

**SB10-18ADSO**

**Date Code 'YYM'**

YY = YEAR, M = MONTH

|   |     |   |     |   |     |   |     |
|---|-----|---|-----|---|-----|---|-----|
| A | JAN | D | APR | H | JUL | L | OCT |
| B | FEB | E | MAY | J | AUG | M | NOV |
| C | MAR | G | JUN | K | SEP | N | DEC |

The 18ADSO 'Target Tracker' speed sensor provides a digital output that tracks ferrous metal targets. DSO type single channel sensors do not require orientation to the target and will detect standard ferrous gears from 0 - 32 pitch. These sensors are also ideal for the detection of gears with uneven tooth spacing, detecting holes in rotating discs, or the detection of other targets such as bolt heads, studs, or other ferrous features on rotating targets.

The sensor has an internal magnet, and a sensing element at the face of the sensor. When ferrous metal is present, the amount of magnetic flux increases. When the metal goes away, the amount of flux decreases. The on board logic inside the sensor triggers the output on when the flux increases, and off when the flux decreases. This acts to self-calibrate the output so that an accurate edge is present at both the leading and falling edge of any ferrous metal target.

Target Specifications on the next page are per detecting an end-sensed, 14.5 pressure angle, steel spur gear. The presence of ferrous metals or strong magnetic fields in close proximity to the sensor's internal magnet may invalidate the specifications. Engineers are available to assist in target design and applications with non-standard targets. Custom target specifications can only be guaranteed when the customer supplies a target along with any additional components that may affect sensor output, and the customer has validated function in the finished application.

These sensors power up with the output transistor OFF. This transistor turns ON for the first time on the approach of a tooth. After the first tooth, they will not miss a target. Note: for NPN sensors, off is a high signal, while PNP sensors off is a low signal. Additional gear tooth sensors are available. Check our website or contact us to compare all of our gear tooth and single channel speed sensor options.

## 18ADSO-5K, Electrical & Functional Specifications

| ABSOLUTE MAX LIMITS         | MIN  | MAX    | UNITS    |
|-----------------------------|------|--------|----------|
| Supply Voltage, Vcc at 25°C | -30  | +30    | Volts DC |
| Voltage applied to output   | -0.3 | +30    | Volts    |
| Current into output         | --   | 30     | mA       |
| Load Capacitance            | --   | 0.01   | uF       |
| Current out of output       | --   | Vcc/5k | mA       |
| Load Dump, 40mS Rs = 20     | --   | 60     | Volts    |

| ELECTRICAL SPECS           | CONDITIONS       | MIN  | MAX   | UNITS    |
|----------------------------|------------------|------|-------|----------|
| Temperature Range *        | Operating        | -40  | +110* | Deg C    |
| Supply Voltage, Vcc        | Over temperature | +4.2 | +24   | Volts DC |
| Supply Current, Output Off | Into Vcc         | +1.5 | +5    | mA       |
| Frequency Range            | Near zero speed  | 0.1  | 15K   | Hz       |
| Saturation Voltage Low     | I sink = 20 mA   | 0    | 0.6   | Volts    |
| Internal pull up resistor  | Vcc to Vout      | 4.9  | 5.1   | k ohms   |
| Output Rise Time 10-90%    | C < 100pF        | --   | 3.0   | uS       |
| Output Fall Time 90-10%    | C < 100pF        | --   | 1.0   | uS       |
| ESD **                     | Nondestructive   | --   | 2000  | Volts    |
| EMI **                     | 20k to 1 G Hz    | --   | 20    | V/M      |

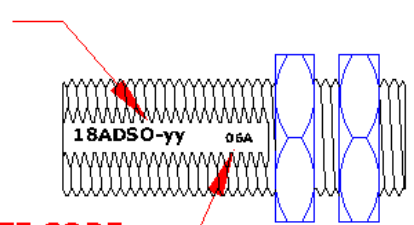
\* T max = 150°C is available, contact factory.

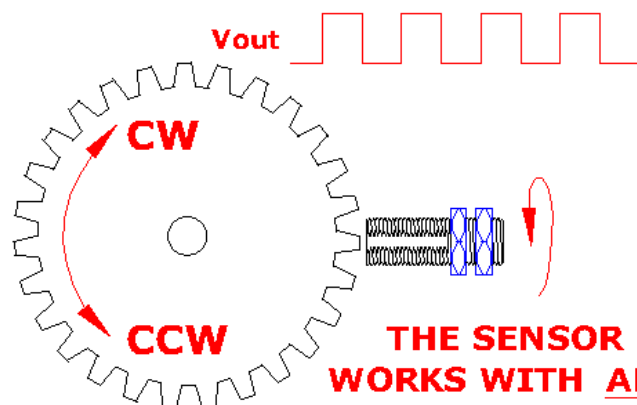
\*\* CMOS IC is static sensitive.

| TARGET PERFORMANCE GEAR PITCH<br>~ (#Teeth/Diam. in inches) | AIR GAP RANGE | TYPICAL MAX GAP | TYP. OUTPUT DUTY CYCLE | ALIGNMENT SKEW ANGLE |
|---|---------------|-----------------|------------------------|----------------------|
| 4 (.785" tooth to tooth)                                    | .000 to .120" | .150"           | 40 to 60 %             | 360 DEG              |
| 8 (.393" tooth to tooth)                                    | .000 to .085" | .110"           | 40 to 60 %             | 360 DEG              |
| 12 (.262" tooth to tooth)                                   | .000 to .055" | .075"           | 40 to 60 %             | 360 DEG              |
| 16 (.196" tooth to tooth)                                   | .000 to .035" | .050"           | 40 to 60 %             | 360 DEG              |
| 20 (.157" tooth to tooth)                                   | .000 to .030" | .040"           | 40 to 60 %             | 360 DEG              |
| 24 (.131" tooth to tooth)                                   | .000 to .020" | .030"           | 40 to 60 %             | 360 DEG              |
| 32 (.098" tooth to tooth)                                   | .000 to .012" | .020"           | 40 to 60 %             | 360 DEG              |

Rev B

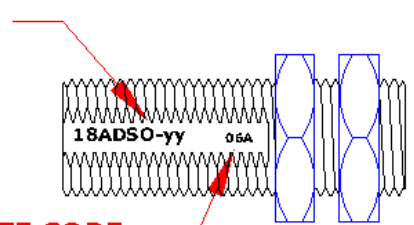
**CHARACTERISTIC-OPTION MARKED ON THIS SURFACE, yy = OPTION**



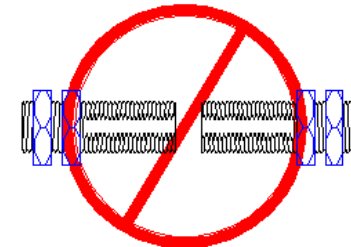


**THE SENSOR WORKS WITH ANY ORIENTATION!**

**DATE CODE, THIS SURFACE**



**DO NOT CONTACT FACE TO FACE**



**CONTACT WITH OTHER MAGNETS MAY REDUCE THE MAXIMUM OPERATING GAP**