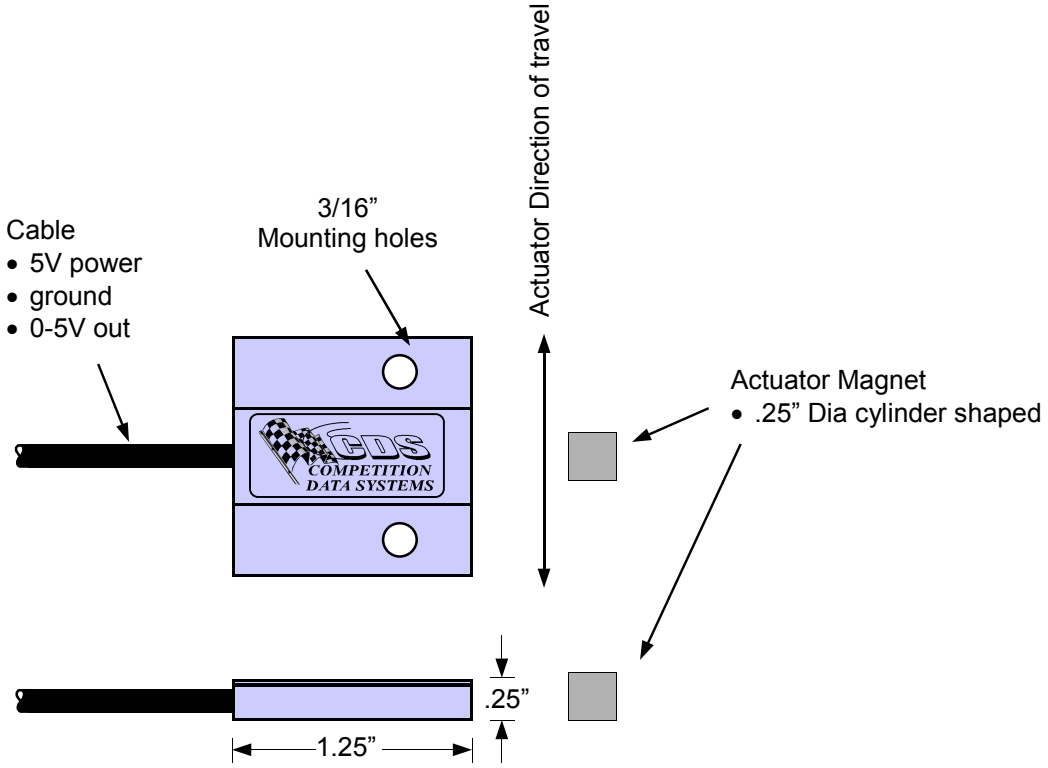
SPECIFICATIONS				
Parameter	**Min**	**Typ**	**Max**	**Unit**
Input Voltage	4.75	5.0	5.25	Volts
Output	*see motion range limit pages*			
Resolution		0.02%		% full scale
Linearity error		+/- .6%		% full scale
Temperature range	-40 C		+140	°C
Drift over temperature range		.36%		% full scale
Repeatability		.05%		% full scale
Frequency response		0-3 Khz		kHz



!!! VERY IMPORTANT !!!

Round face of magnet MUST face the sensor as shown.

SEN-15 Magnetic actuated non contact displacement sensor

Basic Concepts:

- Sensor generates a voltage output by measuring magnetic field.
- Small magnet actuates the sensor
- Can measure linear or angular motion
- Either the sensor or the magnet can be on the moving part.

Mounting Considerations:

- Both the sensor and the magnet must be mounted rigidly such that vibration does not cause relative motion between them and thus introduce errors
  - Sensor mounts using #8 machine screws
  - Magnet mounts using epoxy
    - If possible drill a .25" dia countersink about .12" deep and epoxy the magnet into it, otherwise just epoxy the magnet to the surface.
- The motion of the magnet must be in the same plane as the sensor body as shown.
- See the following pages for ranges of motion and suggested air gaps.

Applications:

- Throttle and brake pedal or linkage
- Suspension bell cranks on push and pull rod cars
- Suspension "A" and trailing arms
- Steering rack
- Anything that moves within the range of travel the sensor is capable of (see following pages)

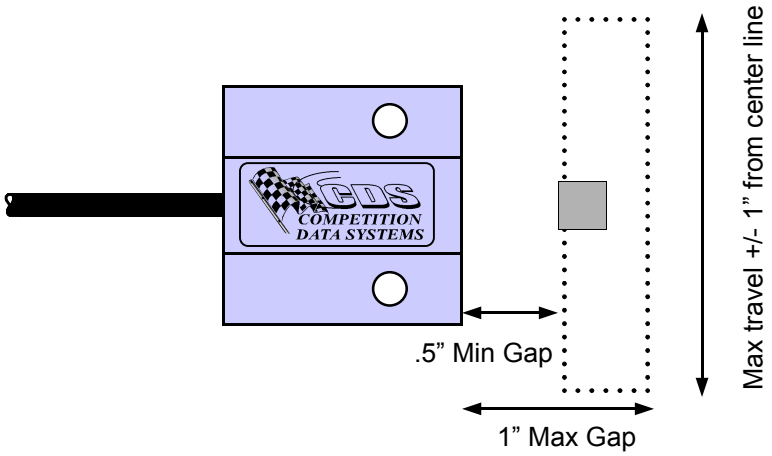
COMPETITION DATA SYSTEMS

Description	Basic Concepts
Part Number	SEN-15
Page	1 of 4
Date	5-21-2013

Nominal Output		
Gap	**Mechanical Travel**	**Output**
.5”	+/- 1”	.60 - 4.6 V
1”	+/- 1”	1.4 - 3.8 V

SEN-15
Linear Motion Range Limits

- Face of magnet actuator must remain within the limits shown
- Output will be non-linear. Do interactive calibration after installation.
- Note that the sensor OR the magnet can be mounted on the moving part.
- NOTE! The magnet does not need to move exactly parallel to the face of the sensor. As long as it moves generally in the direction of travel shown AND remains within the limits shown it will work fine.



!!! VERY IMPORTANT !!!

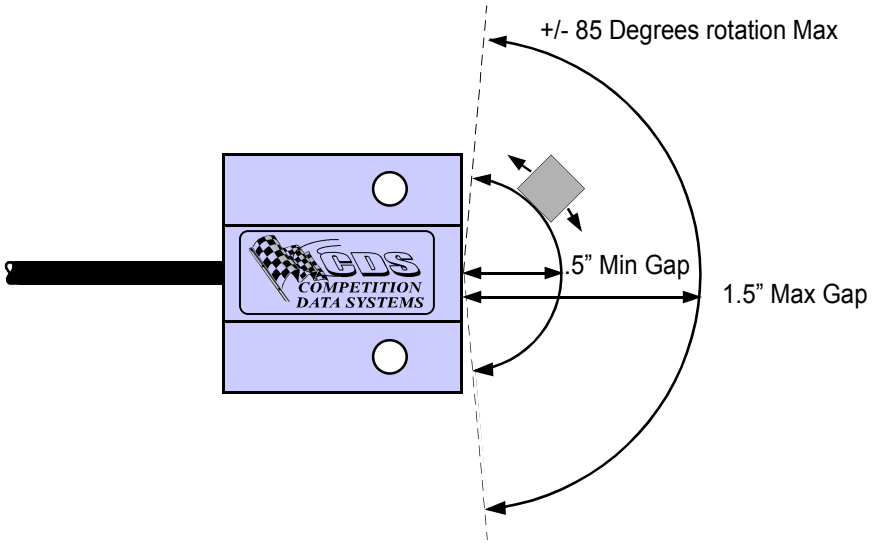
Round face of magnet MUST face the sensor as shown.

Description	Linear motion application
Part Number	SEN-15
Page	2 of 4
Date	5-21-2013

Nominal Output		
Gap	**Mechanical Travel**	**Output**
.5”	+/- 85°	.80 - 4.2 V
1.5”	+/- 85°	.60 - 4.4 V

SEN-15
Angular Concave Motion Range Limits

- Face of magnet actuator must remain within the limits shown
- Output will be almost linear with angle. Do interactive calibration after installation.
- Gap is measured at 0 degrees of rotation
- Note that the sensor OR the magnet can be mounted on the moving part.
- NOTE! The magnet does not need to move in a constant radius arc. As long as it moves generally in the direction of travel shown AND remains within the limits shown it will work fine.



!!! VERY IMPORTANT !!!

Round face of magnet MUST face the sensor as shown.

CDS COMPETITION DATA SYSTEMS

Description	Angular concave motion
Part Number	SEN-15
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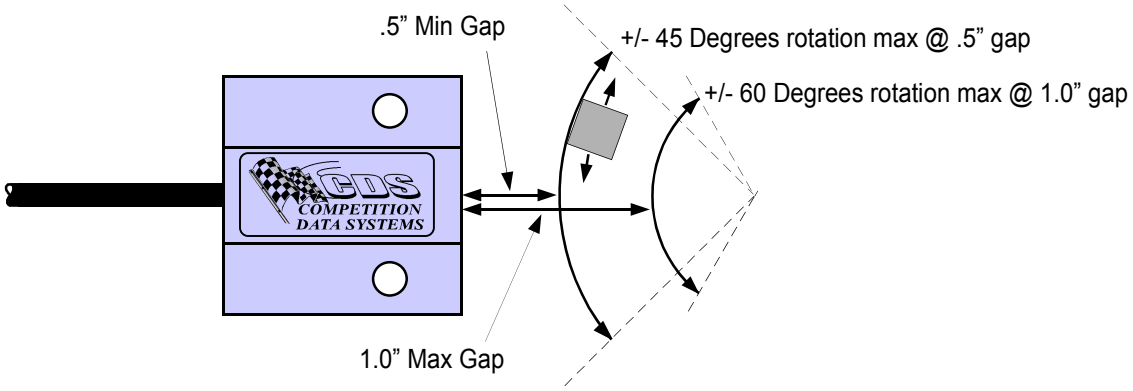
Date	5-21-2013

Nominal Output		
Gap	**Mechanical Travel**	**Output**
.5”	+/- 45°	.90 - 4.1 V
1.0”	+/- 60°	1.5 - 3.5 V

SEN-15
Angular Convex Motion Range Limits

- Face of magnet actuator must remain within the limits shown
- Output will be almost linear with angle. Do interactive calibration after installation.
- Gap is measured at 0 degrees of rotation
- Note that the sensor OR the magnet can be mounted on the moving part.
- NOTE! The magnet does not need to move in a constant radius arc. As long as it moves generally in the direction of travel shown AND remains within the limits shown it will work fine.



!!! VERY IMPORTANT !!!

Round face of magnet MUST face the sensor as shown.

COMPETITION DATA SYSTEMS

Description	Angular convex motion
Part Number	SEN-15
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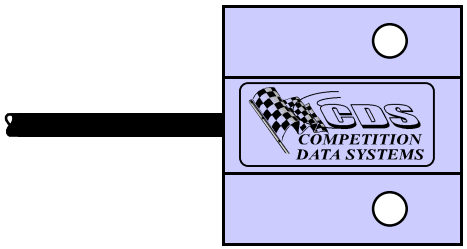

!!! VERY IMPORTANT !!!

Round face of magnet MUST face the sensor as shown.

SEN-15 Calibration Procedure

1. Disconnect shocks to make calibration easier.
2. Figure out a way to measure wheel movement at the hub, up and down from the static ride position (dial indicator, caliper, etc referenced to a fixed height).
3. Do an interactive calibration of each suspension sensor, calibrate over the range of ±1 inch of wheel movement or so. If the wheels move more than that on track, use a bigger range
4. Take at least 7 readings over this range including the zero reading (0, .35, .7, 1.0 inch for example)
5. When doing the calibration enter the values when the wheel is in BUMP as POSITIVE values, when the wheel is in DROOP enter NEGATIVE values.
6. Enter "1.0" for sensor motion ratio in the Geometry tab of the config file
7. Set the "*Shock compressses Sensor:"* setting to "*Compresses"* in the Geometry tab of the config file
8. Measure the travel of the shock when the hub moves 1 inch in bump. Enter this number as the shock motion ratio.

Description	Calibration Procedure
Part Number	SEN-15
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