

# SS3/SS8 Digital position sensors



SS8 with epoxy



SS3



SS8 with ceramic cap

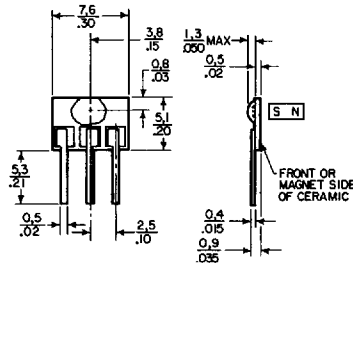
## MOUNTING DIMENSIONS

(For reference only)

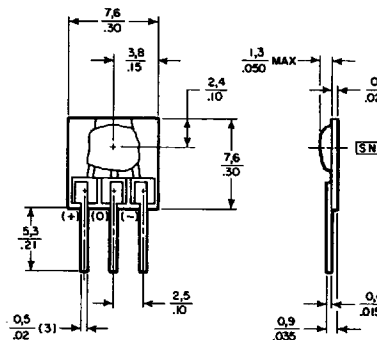
## FEATURES

- Low operating gauss levels
- Reverse power polarity protection
- SS3 — .30" × .20" ceramic package  
Epoxy chip protection
- SS8 — .30" × .30" ceramic package  
Ceramic cap or epoxy chip protection
- Sensitive magnetic specifications
- Bipolar magnetics
- Operating speed from 0 to over 100 kHz
- Nearly symmetrical magnetics

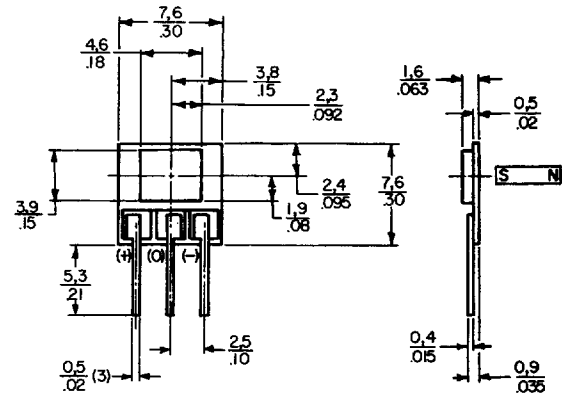
## SS3 Series with epoxy



## SS8 Series with epoxy

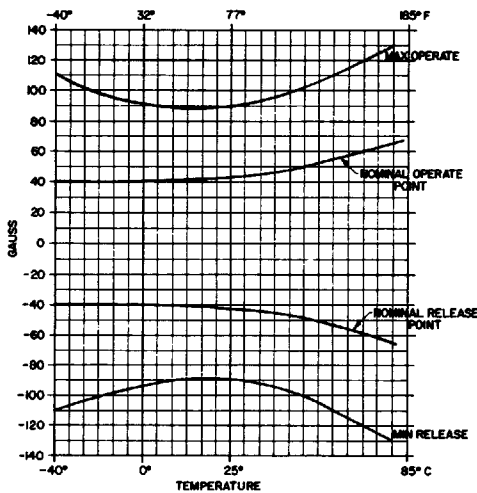


## SS8 Series with ceramic cap

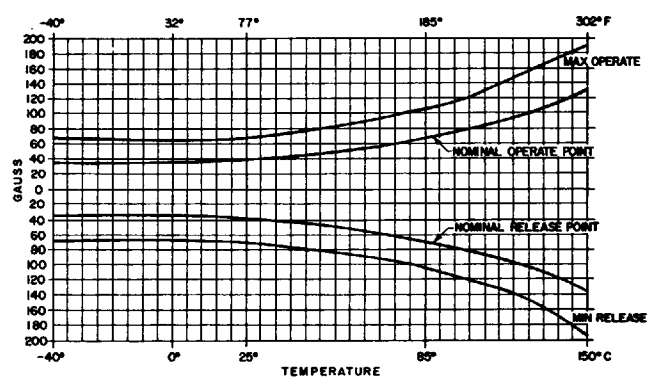


## OPERATE AND RELEASE POINTS

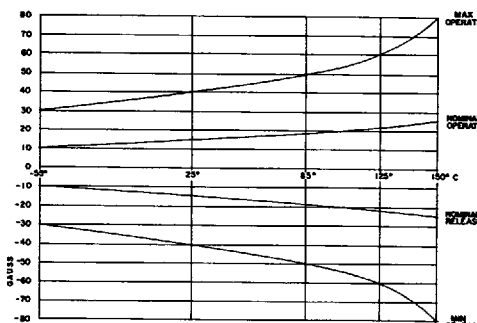
## SS31EA, SS81EA, Epoxy chip protection



## SS81CA, Ceramic chip protection



## SS83CA, Ceramic chip protection



## SS31EA, SS81EA

| °C         | Operate |    |     | Release |      |       |
|------------|---------|----|-----|---------|------|-------|
|            | - 40    | 25 | 85  | - 40    | 25   | 85    |
| Gauss max. | 110     | 90 | 135 | - 110   | - 90 | - 135 |
| Gauss nom. | 40      | 40 | 60  | - 40    | - 40 | - 60  |

## SS83CA

| °C         | Operate |    |    |     |     | Release |      |      |      |      |
|------------|---------|----|----|-----|-----|---------|------|------|------|------|
|            | - 55    | 25 | 85 | 125 | 150 | - 55    | 25   | 85   | 125  | 150  |
| Gauss max. | 30      | 40 | 50 | 60  | 80  | - 30    | - 40 | - 50 | - 60 | - 80 |
| Gauss nom. | 10      | 15 | 18 | 22  | 25  | - 10    | - 15 | - 18 | - 22 | - 25 |

## SS81CA

| °C         | Operate |    |    |     |     | Release |      |      |       |       |
|------------|---------|----|----|-----|-----|---------|------|------|-------|-------|
|            | - 55    | 25 | 70 | 100 | 150 | - 55    | 25   | 70   | 100   | 150   |
| Gauss max. | 70      | 70 | 90 | 120 | 190 | - 70    | - 70 | - 90 | - 120 | - 190 |
| Gauss nom. | 30      | 40 | 60 | 80  | 130 | - 30    | - 40 | - 60 | - 80  | - 130 |

# Digital position sensors **SS3/SS8**

## SS3/SS8 ORDER GUIDE

| Catalog Listings                                          | SS31EA                               | SS81CA                               | SS81EA                               | SS83CA                               | SS84AC                               | SS84BC                               | SS85CA                               |
|-----------------------------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|
| Supply Voltage (VDC)                                      | 4.5 to 24                            | 4.5 to 24                            | 4.5 to 24                            | 4.5 to 24                            | 4.5 to 24                            | 4.5 to 24                            | 4.5 to 24                            |
| Supply Current (mA)                                       | 5 typ.<br>8.7 max.                   | 5 typ.<br>8.7 max.                   | 5 typ.<br>8.7 max.                   | 5 typ.<br>8.7 max.                   | 14 typ.<br>18 max.                   | 14 typ.<br>18 max.                   | 16 typ.<br>22 max.                   |
| Sinking Output (mA)                                       | 10 max.                              | 10 max.                              | 10 max.                              | 10 max.                              | 10 max.                              | 10 max.                              | 20 max.                              |
| Output Voltage Operated (V)                               | 0.15 typ.<br>0.40 max.               | 0.15 typ.<br>0.40 max.               | 0.15 typ.<br>0.40 max.               | 0.15 typ.<br>0.4 max.                | 0.20 typ.<br>0.4 max.                | 0.20 typ.<br>0.4 max.                | 0.25 typ.<br>0.4 max.                |
| Output Leakage Current (Released)<br>(into sensor output) | 10 $\mu$ A max.                      | 10 $\mu$ A max.                      | 10 $\mu$ A max.                      | 10 $\mu$ A max.                      | 10 $\mu$ A max.                      | 10 $\mu$ A max.                      | 10 $\mu$ A max.                      |
| Output Switching Time                                     |                                      |                                      |                                      |                                      |                                      |                                      |                                      |
| Rise (10% to 90%)                                         | 0.2 $\mu$ s typ.<br>1.5 $\mu$ s max. | 0.2 $\mu$ s typ.<br>1.5 $\mu$ s max. | 0.2 $\mu$ s typ.<br>1.5 $\mu$ s max. | 0.2 $\mu$ s typ.<br>1.5 $\mu$ s max. | 0.2 $\mu$ s typ.<br>1.5 $\mu$ s max. | 0.2 $\mu$ s typ.<br>1.5 $\mu$ s max. | 0.2 $\mu$ s typ.<br>1.5 $\mu$ s max. |
| (90% to 10%)                                              | 0.5 $\mu$ s typ.<br>1.0 $\mu$ s max. | 0.5 $\mu$ s typ.<br>1.0 $\mu$ s max. | 0.5 $\mu$ s typ.<br>1.0 $\mu$ s max. | 0.5 $\mu$ s typ.<br>1.0 $\mu$ s max. | 0.5 $\mu$ s typ.<br>1.0 $\mu$ s max. | 0.5 $\mu$ s typ.<br>1.0 $\mu$ s max. | 0.5 $\mu$ s typ.<br>1.0 $\mu$ s max. |
| Package Size                                              | .3 x .2                              | .3 x .3                              | .3 x .3                              | .3 x .3                              | .3 x .3                              | .3 x .3                              | .3 x .3                              |
| Protection                                                | Epoxy                                | Ceramic Cap                          | Epoxy                                | Ceramic Cap                          | Ceramic cap                          | Ceramic cap                          | Ceramic cap                          |
| Magnetics Type                                            | Bipolar                              | Bipolar                              | Bipolar                              | Bipolar                              | Unipolar                             | Unipolar                             | Unipolar                             |

Listings are shown with terminal style A: .210" terminals on .100" mounting centers, pinout style 1.

### Termination Options

To order other termination options, substitute the option letter for the A at the end of the catalog listing.

**A**—.210" terminals, pinout style 1.

**B**—.210" terminals, pinout style 2.

**L**—.500" terminals, pinout style 1.

**P**—Solder pads, pinout style 1 (standard).

**Pinout style 1:** + 0 — standard, from chip side of ceramic.

**Pinout style 2:** 0 — +, from chip side of ceramic. Electrically compatible with many existing devices.

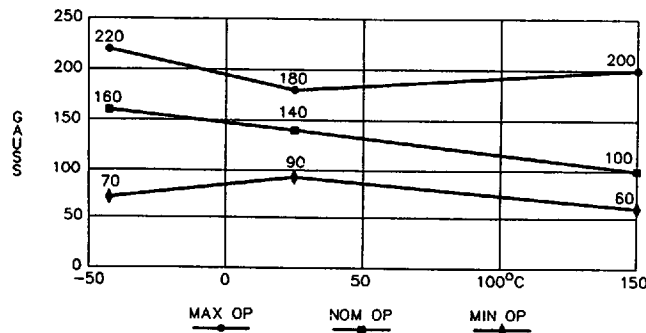
# SS3/SS8 Digital position sensors

## OPERATE AND RELEASE POINTS

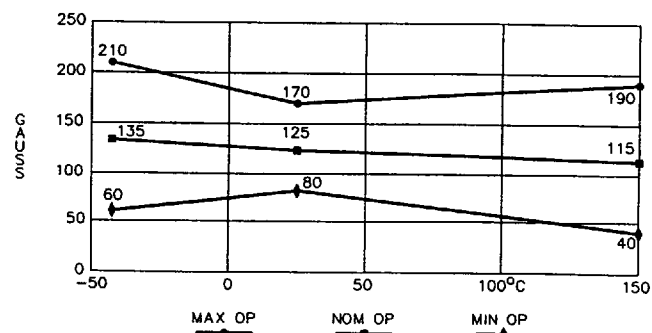
### SS84AC

|            | Operate |      |     | Release |      |     |
|------------|---------|------|-----|---------|------|-----|
| °C         | - 40    | - 25 | 150 | - 40    | - 25 | 150 |
| Gauss max. | 220     | 180  | 200 | 210     | 170  | 190 |
| Gauss nom. | 160     | 140  | 100 | 135     | 125  | 115 |
| Gauss min. | 70      | 90   | 60  | 60      | 80   | 40  |

### O.P. Vs. Temperature



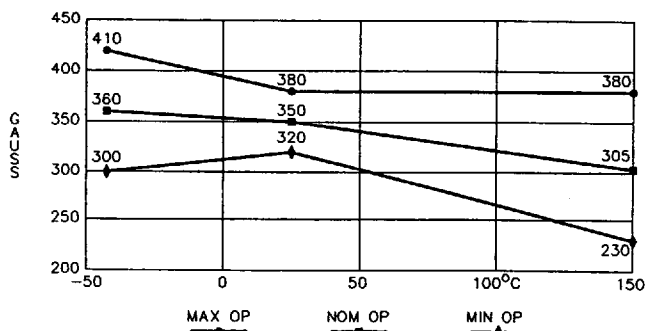
### R.P. Vs. Temperature



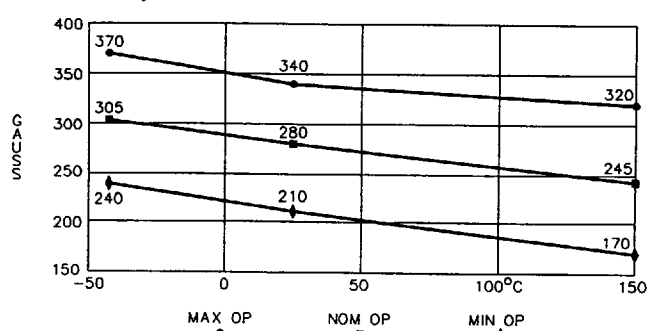
### SS84BC

|            | Operate |     |     | Release |     |     |
|------------|---------|-----|-----|---------|-----|-----|
| °C         | - 40    | 25  | 150 | - 40    | 25  | 150 |
| Gauss max. | 420     | 380 | 380 | 370     | 340 | 320 |
| Gauss nom. | 360     | 350 | 305 | 305     | 280 | 245 |
| Gauss min. | 300     | 320 | 230 | 240     | 210 | 170 |

### O.P. Vs. Temperature



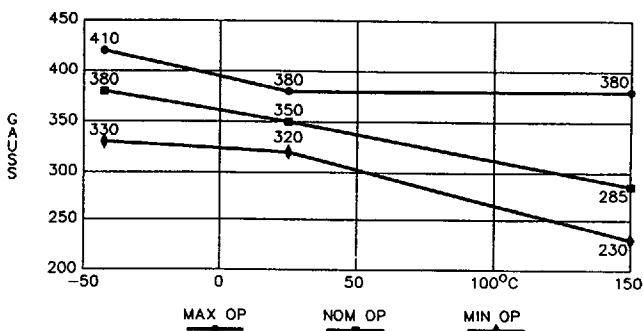
### R.P. Vs. Temperature



### SS85CA

|            | Operate |     |     |     | Release |     |     |     |
|------------|---------|-----|-----|-----|---------|-----|-----|-----|
| °C         | - 40    | 25  | 125 | 150 | - 40    | 25  | 125 | 150 |
| Gauss max. | 410     | 380 | 380 | 380 | 360     | 320 | 320 | 320 |
| Gauss nom. | 380     | 350 | 300 | 285 | 305     | 280 | 240 | 225 |
| Gauss min. | 330     | 320 | 250 | 230 | 250     | 230 | 170 | 155 |

### O.P. Vs. Temperature



### R.P. Vs. Temperature

