

- 731-997 -

**muRata****Specification****of****GYROSTAR<sup>®</sup>****- Piezoelectric Vibratory Gyroscope -****MODEL: ENV-05H-01<sup>⊙</sup>****Support Sensor for  
GPS Navigation**

⊙ replaces previous preliminary model part number ENX-0031A

Issue no. 2  
02.05.95

**muRata****MURATA MANUFACTURING CO. LTD.****Gyrostar® ENV-05H-01****Piezoelectric Vibratory Gyroscope****Structural characteristics**

External Dimensions	24 x 40 x 48 mm max. (details of mechanical construction see figure 1)
Material of case	molded resin case (black)
Weight	50 gr. max.
Length of connecting cable	150 mm
Connector	Co. SMK, Japan : Type W-A2503-IN (3 terminal type)

**Marking**

- (1) Commodity name  
 (2) Model name  
 (3) Serial number  
 (4) Manufacturing company

(1)	GYROSTAR
(2)	ENV-05H-01
(3)	5N3
(4)	muRata Japan

**Terminal connections**

Terminal wire colour	Terminal No.	Description	Symbol
red	①	Supply voltage	Vcc
black	②	Ground	GND
white	③	Sensor output	Out

**Mounting**

Use 4 pcs. machine screws M3, max. 10 mm long

**MURATA MANUFACTURING CO. LTD.****Gyrostar® ENV-05H-01****Piezoelectric Vibratory Gyroscope****Technical Specification**

1. Supply voltage $V_{cc}$	+5.0 VDC $\pm 0.5$ VDC
2. Current consumption $I_{cc}$	15 mA max.
3.1 Angular velocity $\omega$	$\pm 90$ deg./sec @ $25^{\circ}\text{C} \pm 3^{\circ}\text{C}$
3.2 Max. angular velocity $\omega$ max.	$\pm 60$ deg./sec @ $-30^{\circ}\text{C}$ to $80^{\circ}\text{C}$
4. Output Voltage $V_o$	+2.5 V $\pm 300$ mV @ $\omega = 0$ (within temperature range $-30^{\circ}\text{C}$ to $80^{\circ}\text{C}$ )
5. Scale factor $S_v$	$22.2 \pm 0.67$ mV/deg/sec @ $25^{\circ}\text{C} \pm 3^{\circ}\text{C}$ $22.2 \pm 2.90$ mV/deg/sec @ $-10^{\circ}\text{C}$ to $60^{\circ}\text{C}$ $22.2 \pm 4.00$ mV/deg/sec @ $-30^{\circ}\text{C}$ to $80^{\circ}\text{C}$
6. Linearity	within $\pm 0.5\%$ FS of max. angular velocity range
7.1. Resolution	0.1 deg/sec. max.
7.2. Asymmetry CW & CCW	3 deg/sec. max
8. Response	7 Hz (Phase delay $90^{\circ}$ )
9. Offset drift	23 deg./sec max (equiv.: 500 mV <sub>pp</sub> ) (@ operating temperature range $-30^{\circ}\text{C}$ to $80^{\circ}\text{C}$ )
10. Zero point stability (start-up)	Within $\pm 20$ mV/10 min. ( $V_o$ measured after 5 sec @ stable temp. $25^{\circ}\text{C} \pm 3^{\circ}\text{C}$ )
11. Operating temperature range $T_{opr}$	$-30^{\circ}\text{C}$ to $80^{\circ}\text{C}$
12. Storage temperature range $T_{stg}$	$-40^{\circ}\text{C}$ to $85^{\circ}\text{C}$
13. Dependence on Supply voltage	$\Delta$ Scale factor (%) = $(1.1 \pm 0.2) \Delta V_{cc}(\%)$ $\Delta$ Output voltage (%) = $(1.0 \pm 0.2) \Delta V_{cc}(\%)$ (@ $V_{cc} = 5.0$ V)
14. Output noise level	$\leq 10$ mV <sub>rms</sub> @ 8 kHz

