

ATTACHMENT 8

KG 102A Directional Gyro Test Data Sheets

**KG 102A
DIRECTIONAL GYRO**

FINAL TEST DATA SHEET

Serial Number: U 22363

Flavor: 00

Procedure No. Test Description Measured Data Voltage/Limits

5.0 FINAL TEST

5.1 POWER SUPPLY (14 Volts)

(MPS REF 6.2)

5.1.2.1	Time for KI 525A & AP valid LED's illuminate	<u>10</u>	Sec	10 to 80 seconds
5.1.6.1	Voltage @ pin Z to t (scope)	<u>13</u>	Vpeak	12.5 to 15.5 Vpeak
5.1.6.2	Voltage @ pin g to t (scope)	<u>26</u>	Vpeak	23 to 32.6 Vpeak
5.1.6.3	Frequency of waveform @ pin g to t	<u>404</u>	Hz	370 to 430 Hz
5.1.7.1	Voltage @ pin g to t (scope)	<u>21</u>	Vpeak	20 to 29.6 Vpeak
5.1.7.2	Frequency of waveform @ pin g to t	<u>404</u>	Hz	370 to 430 Hz
5.1.8.1	Voltage @ pin X to Y (scope)	<u>5.0</u>	Vpeak	3.0 to 4.0 Vpeak
5.1.8.2	Frequency of waveform @ pin X to Y	<u>808</u>	Hz	740 to 860 Hz
5.1.8.3	Voltage @ pin F to D	<u>13.5</u>	Vdc	+13.0 to +17.0 Vdc
	Max AC ripple	<u>0.04</u>	Vac	0.3 Vrms max.
5.1.8.4	Voltage @ pin H to Y	<u>14.6</u>	Vdc	+13.5 to +16.5 Vdc
	Max AC ripple	<u>0.01</u>	Vac	0.1 Vrms max.
5.1.8.5	Voltage @ pin K to Y	<u>-14.4</u>	Vdc	-13.5 to -16.5 Vdc
	Max AC ripple	<u>0.01</u>	Vac	0.1 Vrms max.
5.1.8.6	Voltage @ pin T to V	<u>5.4</u>	Vdc	+4.9 to +5.9 Vdc
	Max AC ripple	<u>0.006</u>	Vac	0.05 Vrms max.
5.1.8.7	Voltage @ pin a to D	<u>.89</u>	Vdc	+0.4 to +1.6 Vdc
5.1.9.1	Voltage @ pin f to V (Positive) (-00 & -01 ONLY)	<u>11.7</u>	Vdc	+9.5 to +13.5 Vdc
5.1.9.2	Voltage @ pin f to V (Negative) (-00 & -01 ONLY)	<u>-12.4</u>	Vdc	-11.5 to -15.5 Vdc
5.1.9.3	Voltage @ pin f to V (Positive) (-02 ONLY)	<u>N/A</u>	Vdc	+9.5 to +13.5 Vdc
5.1.9.4	Voltage @ pin f to V (Negative) (-02 ONLY)	<u>N/A</u>	Vdc	-11.5 to -15.5 Vdc
5.1.10.1	Voltage @ pin s to V (Positive) (-00 & -01 ONLY)	<u>11.7</u>	Vdc	+9.5 to +13.5 Vdc
5.1.10.2	Voltage @ pin s to V (Negative) (-00 & -01 ONLY)	<u>-12.4</u>	Vdc	-11.5 to -15.5 Vdc
5.1.10.3	Voltage @ pin s to V (Positive) (-02 ONLY)	<u>N/A</u>	Vdc	+9.5 to +13.5 Vdc
5.1.10.4	Voltage @ pin s to V (Negative) (-02 ONLY)	<u>N/A</u>	Vdc	-11.5 to -15.5 Vdc
5.1.11.1	Voltage @ pin P to D (High Output)	<u>13.2</u>	Vdc	+13.0 to +17.0 Vdc
5.1.11.2	Voltage @ pin S to D	<u>.84</u>	Vdc	+0.35 to +1.15 Vdc
5.1.12.1	Voltage @ pin P to D (Low Output)	<u>.83</u>	Vdc	+0.35 to +1.15 Vdc
5.1.12.2	Voltage @ pin S to D	<u>13.2</u>	Vdc	+13.0 to +17.0 Vdc
5.1.13.1	Voltage @ pin L to D (High Output)	<u>13.2</u>	Vdc	+13.0 to +17.0 Vdc
5.1.13.2	Voltage @ pin N to D	<u>.83</u>	Vdc	+0.35 to +1.15 Vdc
5.1.14.1	Voltage @ pin L to D (Low Output)	<u>.84</u>	Vdc	+0.35 to +1.15 Vdc
5.1.14.2	Voltage @ pin N to D	<u>13.2</u>	Vdc	+13.0 to +17.0 Vdc
5.1.15	Voltage @ pin u to Y	<u>1.4</u>	Vac	0.9 to 1.9 Vac

*info mod 6
5.0 is in spec
Unit mod
states 1-5*

5.2 GYRO OPERATION (14 Volts)

(MPS REF 6.2.1 → 6.2.15)

5.2.1.1	CCW card rotation	<u>✓</u>	Ok	2.0 to 4.0 Deg/sec
5.2.1.2	KI 525A & AP valid LED's	<u>✓</u>	Ok	Extinguished
5.2.1.3	Voltage @ pins d to b	<u>.88</u>	Vdc	+0.4 to +1.6 Vdc
5.2.2.1	High speed slave stops	<u>✓</u>	Ok	Passing through 0
5.2.2.2	KI 525A and AP valid LED's	<u>✓</u>	Ok	Illuminate
5.2.3	CW card step of 1/4 deg	<u>✓</u>	Ok	every 3.6 to 5.6 sec
5.2.4	No card movement or Flag operation	<u>✓</u>	Ok	Slave CW
5.2.5	No card movement or Flag operation	<u>✓</u>	Ok	Slave CCW
5.2.7.1	CW card rotation (Slave CW)	<u>✓</u>	Ok	4 to 6 Deg/sec
5.2.7.2	KI 525A and AP valid LED's	<u>✓</u>	Ok	Extinguished
5.2.9.1	CCW card rotation (Slave CCW)	<u>✓</u>	Ok	4 to 6 Deg/sec
5.2.9.2	KI 525A and AP valid LED's	<u>✓</u>	Ok	Extinguished
5.2.10.1	CW card rotation (slave CW on)	<u>✓</u>	Ok	2 to 4 Deg/sec
5.2.10.2	KI 525A and AP valid LED's	<u>✓</u>	Ok	Extinguished

- 5.2.11.1 CCW card step of 1/4 deg after passing 0
 5.2.11.2 KI 525A and AP valid LED's
 5.2.11.3 Voltage @ pins k to Y
 5.2.14.1 Compass card rotation
 5.2.15.1.1 Compass card rotation (slave on) -00 & -01
 5.2.16.2.1 Compass card rotation (slave on) -02
 5.2.17.1 Compass card rotation (FV fully CCW)
 5.2.17.2 Voltage @ pin k to Y
 5.2.19.1 Compass card rotation (CW slave on)
 5.2.21.1 Compass card rotation (CCW slave on)
 5.2.25.1 Compass card rotation CCW
 5.2.26.1 Compass card rotation CW
 5.2.28.3.1 Compass card rotation to CW -02
 5.2.28.4 Compass card recycles fast slave -02
 5.2.28.5.1 Compass card rotation to CCW -02
 5.2.28.6 Compass card recycles fast slave -02
 5.2.28.9.1 Rotating CW at 900 °/minute (Slave On) -02
 5.2.28.12.1 Rotating CCW at 900 °/minute (Slave On) -02
 5.2.34.1 Compass card rotates to N ± 20 Degs
 5.2.36.1 Compass card Recycle Mode

5.3 Power Supply (28 Volts)

- 5.3.4.1 Voltage @ pin Z to t (scope)
 5.3.4.2 Voltage @ pin g to t (scope)
 5.3.4.3 Frequency of waveform @ pin g to t
 5.3.4.4 Voltage @ pin X to Y (scope)
 5.3.4.5 Frequency of waveform @ pin X to Y
 5.3.4.6 Voltage @ pin F to D
 5.3.4.7 Voltage @ pin H to Y
 5.3.4.8 Voltage @ pin K to Y
 5.3.4.7 Voltage @ pin T to V
 5.3.4.8 Voltage @ pin a to D

5.4 GYRO OPERATION (28 Volts)

- 5.4.2.1 CCW card rotation, with CW unit rotation
 5.4.3.1 CW card rotation, with CCW unit rotation
 5.4.6.1 Compass card rotation
 5.4.7.1 Compass card rotation
 5.4.8 High speed slave
 5.4.9.1 High speed card movement (FV fully CW)
 5.4.11.1 Voltage @ pin u to Y
 5.4.14.1 Compass card rotates to N ± 20 Degs
 5.4.15.1 Compass card Recycle Mode

5.5 Drift Test (14 Volts)

- 5.5.9.1 API Reading after 10 minutes
 5.5.13.1 API Reading after 10 minutes (rotated 180°)

5.6 Hypot Test

- 5.6.2.1 Measure between Main Conn pin b and bottom cover

6.2 Final Turn On

- 6.2.9.1 AP and HDG Valid LED's
 6.2.10.1 HDG Card slews CW
 6.2.10.2 AP and HDG Valid LED's
 6.2.11.1 HDG Card slews CCW
 6.2.11.2 AP and HDG Valid LED's
 6.2.12.2 Compass Card slews to NORTH
 6.2.12.3 Check to see if switch plate is installed

Ok
 2.1 Vdc
 Ok
 N/A
 -1.5 Vdc
 Ok
 Ok
 Ok
 Ok
 Ok
 N
 Ok
 Ok
 Ok
 Ok
 A
 Ok
 Ok
 Ok
 every 3.6 to 5.6 sec
 illuminate
 +1.8 to +2.6 Vdc
 CW direction
 CCW, 2 to 3 deg/sec
 CCW, 2 to 3 deg/sec
 CW rotation
 -1.8 to -2.6 Vdc
 CW, 4 to 6 deg/sec
 CCW, 4 to 6 deg/sec
 stops with 2 deg of N
 stops with 2 deg of N
 within 30°
 with 2 deg of 330°
 within 30°
 with 2 deg of 330°
 Does not Fast Slave
 Does not Fast Slave
 then slow slave
 Moves < 10°

(MPS REF 6.2.16)

13 Vpeak 12.5 to 15.5 Vpeak
 27 Vpeak 23 to 32.6 Vpeak
 405 Hz 370 to 430 Hz
 5 Vpeak 3.0 to 4.0 Vpeak
 8-10 Hz 740 to 860 Hz
 13.7 Vdc +13 to +17 Vdc
 14.5 Vdc +13.5 to +16.5 Vdc
 -14.5 Vdc -13.5 to -16.5 Vdc
 5.4 Vdc +4.9 to +5.9 Vdc
 .93 Vdc +0.4 to +1.8 Vdc

w/ Red 6
 500c is
 in spec

(MPS REF 6.2.17 → 6.2.21)

Ok within 2.0 ° of North
 Ok within 2.0 ° of North
 Ok CW
 Ok CCW
 Ok CW
 Ok Stops
 0.015 vac 0.050 Vac max
 Ok then slow slave
 Ok Moves < 10°

(MPS REF 6.2.22)

6 within 4° of North (0°)
 7 within 4° of North (0°)

2.2 > 10 mag11

Ok illuminate
 Ok Uniformly
 Ok Extinguish
 Ok Uniformly
 Ok Extinguish
 Ok NORTH ± 5°
 Ok Switch plate installed

TESTED BY:

DATE:

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PAGE 15 OF 1