GENERAL ELECTRIC

68A993459
CONT ON SHEET 2 SH NO. 1

REV NO. A	TITLE TEST SPECIFICATIONS OVERSPEED SENSOR
68A993459 CONT ON SHEET 2 SH NO. 1	FIRST MADE FOR IC3600Q0XA,1,2,3,4,5,6

REVISIONS

2. CHECK THAT THE REED RELAY MOUNTED ON THE CARD IS LABELLED 68A997168A03. CHECK R2 AND R3 ARE 100 OHMS 2W, R5 IS 330 OHMS, AND C12 IS 0.5 MFD.

3. APPLY POWER TO THE CARD AS FOLLOWS:

   +12V (27)
   -50V (30)

   A COM (2-50)
   P COM (25)
   D COM (1-51)
   JUMPER PINS (1), (2), (25) TOGETHER
   ATTACH 5 - 20 KC LOADS TO OTP (37)

4. SET A SINE WAVE SIGNAL GENERATOR WITH A 600 OHM OUTPUT IMPEDANCE TO 3000 Hz, 24 V PEAK TO PEAK. THEN CONNECT THIS SIGNAL GENERATOR TO IN (7) AND A COM (2-50). THE SIGNAL LEVEL SHOULD DROP TO 9 ± 2V PEAK TO PEAK. MEASURE THE VOLTAGE ON TP3 (21) IT MUST BE -11 TO -13 VOLT.

5. REDUCE THE SIGNAL ON IN (7) TO 8V PEAK TO PEAK, 3000 Hz, AND CHECK THE SIGNAL AT TP1 (19) AND TP2 (11). THESE SIGNALS SHOULD BOTH BE SQUARE WAVES OF AMPLITUDE 21 ±8V, WITH A PERIOD OF 330 ±50 MICROSECONDS. THE RISE AND FALL TIME OF THE SQUARE WAVE MUST BE LESS THAN 160 µSEC.

6. WITH THE SIGNAL ON IN (7) AT 5V PEAK TO PEAK, AND AT THE RUN FREQUENCY SHOWN ON THE CARD FRONT, MEASURE THE DC VOLTAGE FROM TP4 (49) TO TP5 (48). THIS MUST BE 9 TO 14 VOLTS.

   CHECK THAT OUTPUT 4EC (35) IS LESS THAN 0.4 VOLTS AND OUTPUT 04EC (45) IS GREATER THAN 10 VOLTS.

   NOW TIE TP6 (9) TO COM (25) AND CHECK THAT THE VOLTAGE FROM TP4 (49) TO TP5 (48) IS LESS THAN 3.5 VOLTS.

7. RELAY DROPOUT CHECK.
   REMOVE GND. FROM PIN (9).
   TURN THE SLUG IN T2 FULLY COUNTERCLOCKWISE AND INCREASE THE INPUT FREQUENCY TO TRIP VALUE SHOWN IN THE TABLE BELOW. USE A COUNTER TO INSURE THE FREQUENCY IS SET PROPERLY .

CAT. NO.	TRIP FREQ.	STEP 9A PICKUP	STEP 9A DROPOUT
CARD IC3600Q0XA1	3960 HZ	UNDER 320HZ	OVER 145HZ
CARD IC3600Q0XA2	5610 HZ	UNDER 460HZ	OVER 205HZ
CARD IC3600Q0XA3	7150 HZ	UNDER 585HZ	OVER 260HZ
CARD IC3600Q0XA4	7590 HZ	UNDER 630HZ	OVER 280HZ
CARD IC3600Q0XA5	5350 HZ	UNDER 440HZ	OVER 195HZ
CARD IC3600Q0XA6	6765 HZ	UNDER 555HZ	OVER 246HZ

2520
DL22
PRINTS TO

MADE BY J. H. SMITH	APPROVALS RKD	INDUSTRY CONTROL — DIV OR DEPT.	68A993459
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CODE IDENT NO.

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WITH AN OHMMETER ACROSS THE REED RELAY CONTACTS (PINS 46 AND 47), SLOWLY TURN THE SLUG IN T2 CLOCKWISE UNTIL RELAY K1 DROPS OUT (I.E. THE RESISTANCE SHOWN ON THE OHMMETER GOES TO INFINITY.

IF TRIP OCCURS WITH T2 SLUG FULL CCW (OUT AND LOOSE), DECREASE C2 TO THE NEXT STANDARD VALUE (OR REMOVE C2 ENTIRELY, IF NECESSARY) TO MOVE THE TRIP POINT OF THE SLUG DOWN INTO THE TURNING HOLE.

IF TRIP OCCURS WITH T2 SLUG FULL CW (DOWN INTO TURNING HOLE ALL THE WAY) INCREASE C2 TO THE NEXT STANDARD VALUE, TO MOVE THE SLUG UPWARD. CONTINUE TO INCREASE C2 UNTIL TRIP OCCURS WITH THE SLUG NEAR THE CENTER OF THE TURNING RANGE.

NOW REDUCE THE FREQUENCY UNTIL THE RELAY PICKS UP AGAIN AND SLOWLY INCREASE THE FREQUENCY UNTIL THE RELAY DROPS OUT. THIS FREQUENCY MUST BE WITHIN .2% HZ OF THE FREQUENCY SHOWN IN THE TABLE ABOVE. REPEAT THIS TEST AT LEAST ONCE MORE TO INSURE THAT THE RELAY WILL DROP OUT AT A FREQUENCY WITHIN .2% HZ OF THE STATED FREQUENCY.* WITH THE SIGNAL GENERATOR 400HZ ABOVE THE STATED TRIP FREQUENCY, CHECK THAT THE DC VOLTAGE FROM TP4 (49) TO TP5(48) IS LESS THAN 3.5V. NOTE: WITH REV. H AND ABOVE INCREASE SIGNAL TO 10VP-P FOR THIS STEP ONLY.

8. CHECK OUTPUTS 4EC(35) AND 04EC(45) FOR PROPER OPERATION AT TRIP FREQUENCY. REDUCE THE FREQUENCY UNTIL 4EC(35) IS A 0 AND 04EC IS A 1. SLOWLY INCREASE THE FREQUENCY UNTIL 4EC (35) GOES TO A 1 AND 04EC(45) TO A 0. THIS FREQUENCY MUST BE WITHIN ±.5% CYCLES OF THE STATED FREQUENCY IN THE TABLE IN STEP 7. IF IT IS NOT WITHIN ± .5% CYCLES, ADJUST POT.R60 TO BRING 4EC(35) AND 04EC(45) INTO SPECS.

9. VERIFY THAT DROPOUT FREQUENCY IS WITHIN .2% CYCLES OF THAT STATED ON CARD FRONT.

9A. RELAY ALSO OPERATED BETWEEN 4 AND 9% OF OPERATING SPEED. CHECK PU AND DO PER TABLE IN STEP 7.

10. WITH INPUTS 04ECA(31) AND 04A(33) A 1 AND 014HM (44) A 0, OTP (37) SHOULD BE A 0. REMOVE AND RE-APPLY POWER SEVERAL TIMES AND CHECK THAT EACH TIME POWER IS APPLIED, OTP COMES ON A 0.

CONNECT 04ECA(31), 04A(33) AND 014HM (44) TO COM, ONE AT A TIME. OTP SHOULD REMAIN A 0.

CONNECT A VOLTAGE DIVIDER CONSISTING OF TWO 1.5K RESISTORS BETWEEN P12 AND COM. CONNECT THE MIDPOINT OF THE DIVIDER TO OTP (37).

CONNECT 014HM (44) AND 04ECA (31) TO COM. OTP SHOULD BE A 1. DISCONNECT BOTH INPUTS FROM COM AND OTP SHOULD REMAIN A 1. PUSH PB1 TO RETURN OTP (37) TO A 0.

CONNECT 014HM (44) AND 04A (33) TO COM. OTP SHOULD BE A 1. DISCONNECT BOTH INPUTS FROM COM AND OTP SHOULD REMAIN A 1.

REVISIONS

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PRINTS TO

11. HEAT THE CARD IN AN OVEN TO 70°C, THEN REMOVE IT, ALLOW IT TO COOL AND CHECK THAT THE RELAY DROPOUT AS MEASURED IN STEP 7 IS WITHIN 3 HZ OF THE STATED VALUE IN STEP 7.

12. CHECK THAT RESISTANCE BETWEEN THE INDICATED PIN IS LESS THAN 1 OHM FOR CARD TYPE LISTED.

IC3600 QOXA1	PIN 3 TO 17
IC3600 QOXA2	PIN 3 TO 15
IC3600 QOXA3	PIN 3 TO 13
IC3600 QOXA4	PIN 13 TO 17
IC3600 QOXA5	PIN 3 TO 41
IC3600 QOXA6	PIN 13 TO 41

DL22
2520