SUBJECT: HONEYWELL ALERT SERVICE BULLETIN (ASB) No. KCP 220-22-A0017

To all Customers, Operators and Service Centers: Date: Jul 31/15

Effectivity: All PC-12, PC-12/45 and PC-12/47 aircraft MSN 101 thru 544 and 546 thru 888 with a Bendix King Autopilot KCP 220 installed.

This Service Letter is issued to draw attention to the following vendor information:

Honeywell have issued a revised alert service bulletin to advise operators to inspect KCP 220 autopilot computers (various part numbers).

Pilatus recommends that operators of PC-12 aircraft, read the Honeywell ASB No. KCP 220-22-A0017 (latest revision) and, if required, take the recommended action.

Operators who require further information on this subject should contact the address given below.

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CH-6371 STANS
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Tel: +41 41 619 3333
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eMail: SupportPC12@pilatus-aircraft.com

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Attachments:

- HONEYWELL ALERT SERVICE BULLETIN (ASB) No. KCP 220-22-A0017

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Website: www.BendixKing.com/support

SERVICE BULLETIN

ALERT

AUTO FLIGHT - KCP 220 FLIGHT COMPUTER (KCP 220) - Modification (MOD) 11 to KCP 220, PN 065-00064-0000, -0001, -0005 Thru -0009, -0012, -0015, -0017, -0020: Inspect Resistor on Pitch Board Assembly and Replace if Necessary

Publication Number D201502000027

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Transmittal Information

ATA Number KCP 220-22-A0017 (Publication Number D201502000027)

Summary

This revision is a FULL replacement. This revision includes the changes that follow:

- Removed KCP 220, PN 065-00064-0002 and -0030 from the effectivity of this service bulletin. Added KCP 220, PN 065-00064-0017 to the effectivity of this service bulletin.
- Changed Paragraph 1.D.(1)
- Changed compliance statement in Paragraph 1.E.
- Changed approval statement in Paragraph 1.F.
- Changed sixty months to twenty four months in Paragraph 1.G.(2).
- Changed Revision 0 to Revision 1 in Paragraph 2.A.(2), Paragraph 2.A.(3), and Paragraph 2.B.(1)

Refer to Table 2 for a list of the acronyms and abbreviations used in this service bulletin.

Revision History

This service bulletin has had one revision(s) as shown in Table 1.

Table 1. Revision History

Revision Number	Revision Date
0	4 Mar 2015
1	1 Jun 2015

Highlights

This section transmits Revision 1 to Service Bulletin, ATA Number KCP 220-22-A0017 (Pub Number D201502000027), and contains these changes:

The list of highlights tells the users about the changes that the revision makes. The list has three columns. The "Page" column shows the block of data that the revision changes and the page on which the block begins. The block can be a section, subsection, graphic, table, etc. Revision marks give the location of the change in the block. The "Description" column tells the user about the change or changes in each block. A paragraph, table, or figure reference often comes before the description. The "Effectivity" column tells the user about the part number(s) to which the block of information applies. The default value for this column is "All." "All" means that the block applies to all parts.

Page	Description	Effectivity
7	Paragraph 1.A.(1). Removed KCP 220, PN 065-00064-0002 and -0030 from the effectivity of this service bulletin. Added KCP 220, PN 065-00064-0017 to the effectivity of this service bulletin.	All
7	Paragraph 1.C.(1). Identified that the aural warning function will still be activated as intended.	All
7	Paragraph 1.D.(1). Changed Paragraph 1.D.(1).	All

Page	Description	Effectivity
8	Paragraph 1.E.(1). Changed Paragraph 1.E.(1).	All
8	Paragraph 1.F.(1). Changed approval statement.	All
8	Paragraph 1.G.(2). Changed sixty months to 24 months.	All
10	Paragraph 2.A.(2). Changed Revision 0 to Revision 1.	All
10	Paragraph 2.A.(3). Changed Revision 0 to Revision 1.	All
10	Paragraph 2.B.(1). Changed Revision 0 to Revision 1.	All

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1. Planning Information

A. Effectivity

(1) This service bulletin is applicable to the KCP 220, PN 065-00064-0000, -0001, -0005 thru -0009, -0012, -0015, -0017, -0020, without MOD 11 installed.

(2) This service bulletin is applicable to the KCP 220 part numbers identified in Paragraph 1.A.(1) with SN 2053 and below.

B. Concurrent Requirements

(1) No other modification must be done before the modification given in this service bulletin.

C. Reason

(1) BendixKing/Honeywell has observed some faults in resistors designated as R-259 in the subject series of flight computers prior to 2000. BendixKing/Honeywell has no reported failures of R-259 resistors in computers built in 2000 or later. In the event that R-259 fails while the autopilot is not engaged, there is no effect on the aircraft flight control system. If R-259 fails prior to autopilot mode engagement, the autopilot will appear to engage with a mode annunciation indicating engagement, but the pitch and roll servos will not engage. In the event that R-259 fails while the autopilot is engaged, the pitch and roll servos will disengage, but the aural warning function will still be activated as intended, and the aural warning will sound. Any failure of R-259 does not affect the pilot's ability to manually control the airplane.

D. Description

(1) Mod 11 inspects and, if necessary, replaces a resistor in the autopilot clutch engage circuitry.

(2) A summary of the work necessary to do this modification is given below.

(a) The KCP 220 is disassembled and the pitch board assembly is removed.

(b) Resistor R259 on the pitch board assembly is examined.

1 If resistor R259 is identified with the Ohmite manufacturer's name, the resistor R259 is replaced.

2 If the manufacturer of resistor R259 cannot be identified, the resistor R259 is replaced.

3 If it can be identified that the manufacturer is NOT Ohmite, it is not necessary to replace the resistor R259.

(c) The KCP 220 is assembled.

(d) MOD 11 is identified as installed in the KCP 220.

(e) A test is done on the KCP 220.

NOTE: There are two possible tests. One for a shop location and one for a customer location (in the aircraft).

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E. Compliance

(1) This modification is highly recommended because it may have an effect on aircraft safety. Do this modification as soon as practical, but no later than 24 months after the release date of Revision 1 of this service bulletin.

F. Approval

(1) This service bulletin includes approved instructions from the manufacturer. The configuration created by this modification or conversion is approved by the applicable regulatory agency.

G. Manpower

(1) This modification can be completed in the approximate times that follow:

- 2.0 hour(s) for the labor to do the modification and testing of the KCP 220
- 2.0 more hour(s) for the labor to remove and install KCP 220.

(2) Twenty four months after the release date of Revision 1 of this service bulletin, more hours can be applicable. The hours are for the labor necessary to prepare, package, and inspect the KCP 220.

H. Weight and Balance

(1) None.

I. Electrical Load Data

(1) Not changed.

J. Software Accomplishment Summary

(1) Not applicable.

K. References

(1) To find, see, and download Honeywell Technical Publications, go to www.myaerospace.com.

(2) The document(s) that follow(s) is/are necessary to complete this modification. Unless specified differently, you can use subsequent revisions.

- MM, Publication Number 006-05657-0003, Revision 4, KCP 220 Flight Computer.

L. Other Publications Affected

(1) MM, Publication Number 006-05657-0003, Revision 4, KCP 220 Flight Computer, will be revised because of this service bulletin.

M. Interchangeability or Intermixability of Parts

(1) The installation of MOD 11 has no effect on the interchangeability and intermixability of the KCP 220 part number(s) identified in this service bulletin.

NOTE: Interchangeability and intermixability are only identified for the KCP 220s with the same part number.

N. Acronyms and Abbreviations

(1) Refer to Table 2 for a list of the acronyms and abbreviations used in this service bulletin.

Table 2. Acronyms and Abbreviations

Term	Full Term
ADI	attitude director indicator
AHRS	attitude heading reference system
AP	autopilot
AR	as required
ATA	Air Transport Association
CAGE	commercial and government entity
CWS	control wheel steering
EADI	electronic attitude direction indicator
ECCN	Export Control Classification Number
EFIS	electronic flight instrument system
FAA	Federal Aviation Administration
FD	flight director
FOC	free of charge
GA	go around
HDG	heading
HSI	horizontal situation indicator
ID	identification
IPL	illustrated parts list
KCP 220	KCP 220 flight computer
MM	maintenance manual
MOD	modification
OSHA	Occupational Safety and Health Administration
PN	part number
Qty	quantity
RTS	return to service
SFAR	Special Federal Aviation Regulation
SN	serial number
YD	yaw damper

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2. Material Information

A. Material - Price and Availability

(1) Speak to Honeywell personnel at the location identified below for the necessary documentation, applicable material and labor prices, available parts, and supply times.

Honeywell
Aerospace Contact Team
Telephone: 800-601-3099 (Toll Free U.S.A./Canada)
Telephone: 602-365-3099 (International Direct)

NOTE: To order parts or materials, go to http://www.myaerospace.com. Registered users can enter their Honeywell ID and password. New users must register to create a Honeywell ID.

(2) This modification can be done at a Honeywell service center or Honeywell-authorized repair location. There is no cost to approved customers for 24 months after the release date of Revision 1 of this service bulletin. The price for an order that is received after this time will be given at the time of the order.

(3) Honeywell can supply the parts necessary to do this modification. There will be no cost to approved customers for 24 months after the release date of Revision 1 of this service bulletin. The price for an order that is received after this time will be given at the time of the order.

(4) If there is no charge for parts, send a no-charge purchase order that refers to this Service Bulletin, ATA Number KCP 220-22-A0017 (Publication Number D201502000027) - FOC. The purchase order must include only the applicable part(s) specified in Table 3 of this service bulletin.

(5) If there is a charge for parts, send a purchase order that refers to this Service Bulletin, ATA Number KCP 220-22-A0017 (Publication Number D201502000027). The purchase order must include only the applicable part(s) specified in Table 3 of this service bulletin.

B. Industry Support Information

(1) The maximum labor hours that will be reimbursed by Honeywell to do this modification are given below. Reimbursement will only be given if this modification is done less than 24 months after the release date of Revision 1 of this service bulletin. Reimbursement will not be more than Honeywell's applicable reimbursement labor rate or as specified in the agreement or contract.

- 2.0 hour(s) for the labor to do the modification and testing of the KCP 220
- 2.0 more hour(s) for the labor to remove and install KCP 220.

(2) Send claims through the Honeywell MyAerospace web portal (www.myaerospace.com).

- For mechanical components claims, select the Maintenance Plans tab and use the Claims-Maintenance Programs sub-option.
- For all other claims, select the Maintenance Plans tab and use the Claims-Other sub-option.

C. Material Necessary for Each Component

(1) The part(s) identified in Table 3 is/are necessary to do this service bulletin.

Table 3. Operator-Purchased Material

New PN	Keyword/ Nomenclature	Old PN	Qty	List Price [1]	Instructions/ Disposition Codes
132-00105-0092	Resistor, wire wound, 1.5 kilohms, 1.5 watts, 5%	132-00105-0092	AR [2]	[3]	[4]

NOTES:

1. Refer to the Honeywell, Aerospace Contact Team (Paragraph 2.A.) when you need data about available parts, supply times, or minimum order quantities.

2. An inspection is necessary to find if this part is necessary. Refer to Paragraph 3.C.(1). If the part is necessary, the quantity is one.

3. There is no charge for this part.

4. The customer or local regulatory authority can make decisions about what to do with the used parts.

(2) No operator-supplied material is necessary to do this service bulletin

D. Material Necessary for Each Spare

(1) Same as Paragraph 2.C.

E. Reidentified Parts

(1) Not applicable.

F. Tooling - Price and Availability

(1) The equipment that is necessary to do this modification is specified in the document(s) given in Paragraph 1.K.(2) of this service bulletin.

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3. Accomplishment Instructions

A. General Information

WARNING: TO AVOID INJURY TO PERSONNEL, BE AWARE THAT VOLTAGES ARE PRESENT IN THE KCP 220 FLIGHT COMPUTER AND IN THE TEST EQUIPMENT. VOLTAGES AS LOW AS 28 VOLTS CAN CAUSE SERIOUS INJURY UNDER SOME CONDITIONS. DO NOT BE MISLED BY THE TERM "LOW VOLTAGE."

CAUTION: THE KCP 220 FLIGHT COMPUTER CONTAINS ELECTROSTATIC DISCHARGE SENSITIVE ITEMS. USE INDUSTRY APPROVED PRECAUTIONS.

CAUTION: THE KCP 220 FLIGHT COMPUTER CONTAINS MOISTURE-SENSITIVE PARTS. SPECIAL HANDLING IS NECESSARY.

(1) Obey the precautions.

(2) Refer to the KCP 220 Flight Computer MM, Publication Number 006-05657-0003, for procedures and precautions. Use all CAUTIONS and WARNINGS. Refer to the IPL in the MM for the location of the parts, unless specified differently.

(3) Keep all hardware for use in assembly unless specified differently.

(4) Obey standard established shop practices during modification of the KCP 220 unless specified differently.

B. Disassembly

(1) Disassemble the KCP 220 as necessary and remove the pitch board assembly, PN 200-07894-00XX. Refer to the disassembly instructions in the MM.

C. Modification

(1) Examine resistor R259 on the pitch board assembly, PN 200-07894-00XX.

NOTE: Resistor R259 is located in the lower right corner of the board (oriented with the connector towards the right side), slightly above the bottom edge and slightly inboard of the right edge.

(a) If resistor R259 is identified with the Ohmite manufacturer's name, replace the resistor R259 with PN 132-00105-0092.

(b) If the manufacturer of resistor R259 cannot be identified, replace the resistor R259 with PN 132-00105-0092.

(c) If it can be identified that the manufacturer is NOT Ohmite, it is not necessary to replace the resistor R259.

D. Assembly

(1) Assemble the KCP 220. Refer to the assembly instructions in the MM.

E. Modification Status Marking

(1) Stamp an X or put a permanent mark on the Letter Box 11 in the MOD status area of the KCP 220 identification plate.

F. Testing

(1) Do a test of the KCP 220. Use one of the two procedures given below.

(a) Complete a final test of the KCP 220 on the bench. Refer to the instructions in Section V, Maintenance, of the MM.

(b) Do an RTS test at a customer location (in the aircraft). Refer to the instructions in Paragraph 4.A.

(2) This completed the modification of the KCP 220. No more work is necessary.

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4. Appendix

A. Appendix A, RTS Test at Customer Location (in Aircraft)

(1) Power-Up Test

(a) Provide aircraft power and verify that the AUTOPILOT and TRIM circuit breakers are set. The TRIM fail annunciator illuminates upon initial power to the autopilot and then extinguishes after successful completion of the self test.

NOTE: Basic FD modes will be usable as long as the displayed attitude information is valid. Lateral FD modes will be usable as long as the displayed compass information is valid while in FD mode.

(2) Preflight Test

NOTE: The KFC 275/325 system incorporates a system selftest function which is activated by a test button on the mode controller. The test must be performed before the AP portion of the system can be used, but need not be performed before using the FD portion. This test determines, before takeoff, that the system is operating normally.

(a) Momentarily push the test button to perform a test. The actions identified below will occur:

- All annunciator lights will illuminate, including all segments and annunciations on the KAS 297C altitude/vertical speed unit.
- The trim light will flash four to six times.
- The preflight test concludes with the AP annuciator flashing approximately 12 times, accompanied by the autopilot disconnect tone. If the AP light fails to flash, preflight test has failed and the AP will not engage.
- The mode annunciators will all extinguish.

(3) Manual Electric Trim Test

(a) Do a check of the aircraft manual electric trim functions to verify normal operation. Refer to the aircraft flight manual for details if it differs from the procedure given below. Manual electric trim requires both sides of the trim switch be depressed in the same direction simultaneously. The procedure that follows describes a test for the manual electric trim system.

1 Push the left side of the split switch to the fore and aft positions while leaving the right side untouched. The trim wheel should not move. The left side of the split switch provides power to engage the trim servo clutch. Rotate the trim wheel manually against the engaged clutch to check the pilot's trim overpower capability.

2 Depress the right side of the split switch to the fore and aft positions while leaving the left side untouched. Again, the trim wheel should not move. Normal trim wheel force should be required to move the trim wheel manually. The right side of the switch controls the servo direction.

3 Depress both sides of the split switch forward. Check to insure the trim wheel is running in the direction of nose down trim. Depress both

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sides of the split switch rearward for nose up trim. Verify that the trim is correctly running in the nose up direction.

4 Move both sides of the trim switch fore and aft. Depress and hold the AP disconnect / trim interrupt switch while the trim wheel is moving. The trim wheel should stop turning while the AP disconnect / trim interrupt switch is held in. Release the switch.

(4) Autopilot Checks

(a) Pitch Axis

1 Engage the FD and AP. Assuming the vertical gyro/AHRS is level, the control column should not move (slight creeping one way or the other is not unusual).

2 Upon engagement of the FD and AP, the AP and YD should be annunciated on the annunciator panel. Command a pitch up command using the vertical trim switch on the mode controller. The FD command bars should pitch up on the ADI and the control column should move backward in a smooth and slow manner (some help might be needed for the autopilot to overcome the gravitational and/or frictional forces that are part of the aircraft flight controls). After a period of 3 to 5 seconds, the autopilot should activate the trim wheel in the noseup direction.

3 While firmly holding the control yoke, momentarily depress the pitch sync button on the pilot's control yoke. Command a pitch-down command using the vertical trim switch on the mode controller. The FD command bars should pitch down on the ADI and the control column should move forward in a smooth and slow manner. After a period of 3 to 5 seconds, the autopilot should activate the trim wheel in the nose down direction.

4 Depress and hold the pitch sync button on the pilot's control yoke and verify that the control yoke can be moved forward and aft to check AP clutch disengagement. Also notice that the FD command bars are aligned with the symbolic airplane/bull's eye reference, and for EFIS systems only, that CWS is annunciated on the EADI while the pitch sync button is depressed and held.

5 Release the pitch sync button and verify that the autopilot has re-engaged the clutches (the control yoke should feel stiff). Verify that the autopilot clutches can be overpowered by moving the yoke forward and aft and left and right. Verify also that positive clutch disengagement is possible under preloaded conditions. Disengage the autopilot.

(b) Roll Axis

1 Engage the FD and AP. Assuming the vertical gyro is level, the control column should not move (slight creeping one way or the other is not unusual).

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2 Position the HDG bug under the lubberline on the HSI and engage HDG mode on the mode controller. Moving the HDG bug clockwise will produce a right bank command and should move the control yoke clockwise. Control movement should be slow and smooth. Moving the HDG bug counterclockwise with respect to the lubberline will produce a left bank command and should move the control yoke counterclockwise.

3 Depress the pitch sync button on the pilot's control yoke and verify that the control yoke can be moved right and left to verify AP clutch disengagement. Also notice that the FD command bars are aligned with the symbolic airplane/bull's eye reference, and for EFIS systems only, that CWS is annunciated on the EADI while the pitch sync button is depressed and held. Release the pitch sync button and verify that the autopilot has re-engaged the clutches and follows after the HDG bug. Disengage the autopilot.

(c) AP/YD Disconnect Checks

NOTE: The conditions identified below should disengage the AP and YD. Upon disengagement, the appropriate clutches should disengage and the annunciations should be evident on the mode annunciator display as well as in the audio system.

1 Activation of the manual electric trim switch on the pilot's yoke, either nose up or nose down, will disengage the AP, but the YD will remain engaged.

2 Activation of the AP disconnect switch on either the pilot's or copilot's yoke will disengage the AP and the YD.

3 Activation of the TEST switch on the mode controller will disengage AP, YD, and all FD modes.

4 When a mode using compass information is engaged, and HDG valid is lost, the AP will disconnect. Reengagement of the AP is possible with roll attitude hold being the only lateral mode available. The pitch modes are unaffected.

5 Activation of GA will disengage AP and all FD pitch and lateral submodes. Only the YD and basic FD will remain engaged.

(5) This completes the RTS test at a customer location (in the aircraft).

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