



1. Approving Civil Aviation
Authority/Country:
FAA/United States

2. **AUTHORIZED RELEASE CERTIFICATE**
FAA Form 8130-3, AIRWORTHINESS APPROVAL TAG

3. Form Tracking Number:
20230014006001Y15
348609175

4. Organization Name and Address: Honeywell International Inc.
11100 North Oracle
Tucson, AZ 85737

Repair Station
H23R571L


5. Work Order/Contract/Invoice Number:
R417570
348261537
Page 1 of 1

6. Item:	7. Description:	8. Part Number:	9. Quantity:	10. Serial Number:	11. Status / Work:
001	STARTER/GENERATOR, AC OUTLINE	28B545-9	1	48-B1243	REPAIRED

12. Remarks:

RETURNED TO SERVICE IAW CMM-24-21-14 REV 8, FOR TIME AND CYCLE
INFORMATION, SEE ATTACHED CAPE REPORT, IF APPLICABLE.
P.O. R417570
THIS DOCUMENT HAS BEEN ISSUED ACCORDING TO AN APPROVED COMPUTER
GENERATED SIGNATURE PROCEDURE

SEE ATTACHED DOCUMENTS AS APPLICABLE FOR WORK PERFORMED
CERTIFIES THAT THE WORK SPECIFIED IN BLOCK 11/12 WAS CARRIED OUT IN ACCORDANCE WITH EASA PART 145 AND IN RESPECT TO THAT WORK THE COMPONENT IS CONSIDERED READY FOR RELEASE
TO SERVICE UNDER EASA PART 145 APPROVAL NO. EASA 145.4132

13a. Certifies the items identified above were manufactured in conformity to: <input type="checkbox"/> Approved design data and are in a condition for safe operation. <input type="checkbox"/> Non-approved design data specified in Block 12.	14a. <input checked="" type="checkbox"/> 14 CFR 43.9 Return to Service <input checked="" type="checkbox"/> Other regulation specified in Block 12 Certifies that unless otherwise specified in Block 12, the work identified in Block 11 and described in Block 12 was accomplished in accordance with Title 14, Code of Federal Regulations, part 43 and in respect to that work, the items are approved for return to service.
13b. Authorized Signature:	14b. Authorized Signature: 
13c. Approval/Authorization No.:	14c. Approval/Certificate No.: H23R571L
13d. Name (Typed or Printed):	14d. Name (Typed or Printed): Brian Kelly
13e. Date(dd/mm/yyyy):	14e. Date(dd/mm/yyyy): 08/DEC/2023

User / Installer Responsibilities

It is important to understand that the existence of this document alone does not automatically constitute authority to install the aircraft engine/propeller/article. Where the user/installer performs work in accordance with the national regulations of an airworthiness authority different than the airworthiness authority of the country specified in Block 1, it is essential that the user/installer ensures that his/her airworthiness authority accepts aircraft engine(s)/propeller(s)/article(s) from the airworthiness authority of the country specified in Block 1. Statements in Blocks 13a and 14a do not constitute installation certification. In all cases, aircraft maintenance records must contain an installation certification issued in accordance with the national regulations by the user/installer before the aircraft may be flown.



Commercial

Tucson - North Oracle Rd
Honeywell International Inc
11100 North Oracle Road
TUCSON AZ 85737
Date:08 DEC 2023

Repair Station # HZ3R571L

Initial Findings Report

Repair Order: 2023-348261537-001
348609175
Customer P/O: R417570

Customer: 300002 AJW AVIATION LTD

Part Number: 28B545-9

Orig Cust:

Part Desc: STARTER/GENERATOR, AC
OUTLINE

Serial No: 48-B1243

Mods:

Series/Issue/Amdts: A

Quantity: 1

Aircraft tail#: UNK

Model #: APU 131

TIMES/CYCLES

Aircraft S/N#: UNK

Date on:

Received Date: 07 NOV 2023

Date off:

Engine S/N:

Alternate S/N:

HH.DD (HH:MM)

Time Since New:

Cycles Since New:

Time Since Overhaul:

Cycles Since Overhaul:

Time Since Repair:

Cycles Since Repair:

Time Since Installation:

Cycles Since Installation:

CUSTOMER REASON FOR RETURN

APU GEN DOES NOT CONNECT THE POWER FROM APU

GENERAL CONDITION AS RECEIVED (HIDDEN DAMAGE)

Condition Received Text

Last FT date: Component review shows normal wear and tear with no visible outer damage other than
noted: Customer hardware on unit

Reason for return code

INTERNAL FAILURE

Removal Type

Unscheduled

DETAIL DISASSEMBLY / EVALUATION FINDINGS

Failure Description:

Findings:

NO CID. Endbell, Rotor, and Stator being sent for repair. Shaft
and adapter worn. Seal plate worn. Unit disassembled and cleaned.
Parts ordered for reassembly.

Related Area:

Non-conformance: OPRTING VOLTGE/CURRNT/RESIST
OUT OF SPEC

Recurrent Failure:

Failed Part

Part Name

Condition:

Primary Failure

6430800-4	STATOR HOUSING	Voltage/Current/Resist Out of Limits	Yes
6430580-2	RESOLVER ROTOR	Delamination	No - but contributing
6430610-1	SHAFT ASSY	Worn	No - but contributing
6430587-1	ADAPTER	Worn	No - but contributing
6428300-1	SEAL PLATE	Worn	No - but contributing
6430624-4	ROTOR, AC GENERATOR	Low Operating Voltage	No - but contributing
6430603-3	END BELL ASSEMBLY	ID (Inside diameter) oversized	No - but contributing

SERVICE BULLETINS / AUTHORIZING DOCUMENTS

Authorizing Technical Document

Complied With:

Doc#: CMM 24-21-14 Rev: 8 Date: 01/25/2022

WORK PERFORMED / COMMENTS TO CUSTOMER

Workscope Performed / Summary of Actions Taken



Commercial

Tucson - North Oracle Rd
Honeywell International Inc
11100 North Oracle Road
TUCSON AZ 85737
Date:08 DEC 2023

Repair Station # HZ3R571L

Configuration And Findings Evaluation

Repair Order: 2023-348261537-001
348609175

Customer: 300002 AJW AVIATION LTD

Customer P/O: R417570

Orig Cust:

Part Number: 28B545-9

Part Desc: STARTER/GENERATOR, AC
OUTLINE

Serial No: 48-B1243

Mods:

Series/Issue/Amdts: A

Quantity 1

Ship Date:

Received Date: 07 NOV 2023

Findings: Failed CMM 24-21-14 Rev 008. Failed Visual inspection of the unit, Shaft and Adapter worn. Failed Open or Shorted Diode Test for Faulty Diode (Rotor). Failed Insulation Resistance Test for Low Mohm (Min. 40 Mohm Read 23 Mohm at one Minute)(Stator). Customer return reason Confirmed. No Last FT date. NO CID. Rotor and Stator being sent for repair. Shaft and adapter worn. Seal plate worn. Unit disassembled and cleaned. Parts ordered for reassembly. Final: Repaired I.A.W. Authorizing Documents listed above. Replaced unserviceable components as described in parts section of CAFE or as listed in Work Accomplished. Time and cycle information, as provided from the customer PO referenced in TIMES/CYCLES section of CAFE with the following changes after completion of this service. TSR-0 and CSR-0.

Action Taken Code

Repaired

Customer Confirmed Removal Reason:

Yes

Evaluation Type

Evaluated - Significant Fault Found

FINAL CONFIGURATION

Part No: 28B545-9



S/N: 48-B1243



Series/Issues/Amdts: A



Mods:

MECHANIC/ANALYST Scott Drobeck

DATE: 05 DEC 2023

ANALYTICAL CHECK SHEET FORM

Honeywell

Repair Facility :Tucson - North Oracle Rd
Honeywell International Inc
11100 North Oracle Road
TUCSON AZ 85737

Customer PO : R417570
Notification No: 48-B1243
Outline No : 28B545-9
Mod To Outline. :28B545-9

Customer : 300002 AJW AVIATION LTD
Service Order No : 5018014600 Sales Order No : 551747660
Serial No: 48-B1243
Mod to S/N : 48-B1243 Model No. : APU 131

	Material	Serial No.	Disp	Qty	Description	Service Order #
IN	28B545-9	48-B1243	M	0	STARTER/GENERATOR, AC OUTLINE	5018014600
OUT	28B545-9	48-B1243	M			

REWORK CODE : IT01

CONDITION CODE : ACS OPRTING VOLTGE/CURRNT/RESIST OUT OF SPEC ACCT IND :

ANALYST REMARKS :

	Material	Serial No.	Disp	Qty	Description	Service Order #
IN	.6430610-1		N	1	SHAFT ASSY	
OUT	6430610-1		N			

REWORK CODE :

CONDITION CODE : 6780 Worn

ACCT IND :

ANALYST REMARKS :

	Material	Serial No.	Disp	Qty	Description	Service Order #
IN	.6430587-1		N	1	ADAPTER	
OUT	6430587-1		N			

REWORK CODE :

CONDITION CODE : 6780 Worn

ACCT IND :

ANALYST REMARKS :

	Material	Serial No.	Disp	Qty	Description	Service Order #
IN	.6430603-3	041223DA	R	1	END BELL ASSEMBLY	5018087809
OUT	6430603-3	062	R			

REWORK CODE :

CONDITION CODE : 850 ID (Inside diameter) oversized

ACCT IND :

ANALYST REMARKS :

Bearing liner

	Material	Serial No.	Disp	Qty	Description	Service Order #
IN	.521-1588268-18		N	4	HEX SOCK SCREW	
OUT	521-1588268-18		N			

REWORK CODE :

CONDITION CODE : 100% Replacement as Required

ACCT IND :

ANALYST REMARKS :

	Material	Serial No.	Disp	Qty	Description	Service Order #
IN	.1531758-70		N	4	GASKET O RING	
OUT	1531758-70		N			

REWORK CODE :

CONDITION CODE : 100% Replacement as Required

ACCT IND :

ANALYST REMARKS :

ANALYTICAL CHECK SHEET FORM

Honeywell

Repair Facility :Tucson - North Oracle Rd
Honeywell International Inc
11100 North Oracle Road
TUCSON AZ 85737

Customer PO : R417570
Notification No: 48-B1243
Outline No : 28B545-9
Mod To Outline. :28B545-9

Customer : 300002 AJW AVIATION LTD
Service Order No : 5018014600
Serial No: 48-B1243
Mod to S/N : 48-B1243

Sales Order No : 551747660
Model No. : APU 131

	Material	Serial No.	Disp	Qty	Description	Service Order #
IN	.890376-4		N	12	SCREW	
OUT	890376-4		N			

REWORK CODE :

CONDITION CODE : 100% Replacement as Required

ACCT IND :

ANALYST REMARKS :

	Material	Serial No.	Disp	Qty	Description	Service Order #
IN	.6428300-1		N	1	SEAL PLATE	
OUT	6428300-1		N			

REWORK CODE :

CONDITION CODE : 6780 Worn

ACCT IND :

ANALYST REMARKS :

	Material	Serial No.	Disp	Qty	Description	Service Order #
IN	.6430580-2	1167	N	1	RESOLVER ROTOR	
OUT	6430580-2	13976	N			

REWORK CODE :

CONDITION CODE : 470 Delamination

ACCT IND :

ANALYST REMARKS :

	Material	Serial No.	Disp	Qty	Description	Service Order #
IN	.6430692-1		N	1	BEARING	
OUT	6430692-1		N			

REWORK CODE :

CONDITION CODE :

ACCT IND :

ANALYST REMARKS :

	Material	Serial No.	Disp	Qty	Description	Service Order #
IN	.6430624-4	0459	R	1	ROTOR, AC GENERATOR	5018087484
OUT	6430624-4	9000-2334	R			

REWORK CODE :

CONDITION CODE : 1160 Low Operating Voltage

ACCT IND :

ANALYST REMARKS :

Low voltage output

	Material	Serial No.	Disp	Qty	Description	Service Order #
IN	.6428177-1		N	1	BEARING, ROLLER	
OUT	6428177-1		N			

REWORK CODE :

CONDITION CODE :

ACCT IND :

ANALYST REMARKS :

ANALYTICAL CHECK SHEET FORM

Honeywell

Repair Facility :Tucson - North Oracle Rd
Honeywell International Inc
11100 North Oracle Road
TUCSON AZ 85737

Customer : 300002 AJW AVIATION LTD
Service Order No : 5018014600
Serial No: 48-B1243
Mod to S/N : 48-B1243

Sales Order No : 551747660

Model No. : APU 131

Customer PO : R417570
Notification No: 48-B1243
Outline No : 28B545-9
Mod To Outline. :28B545-9

	Material	Serial No.	Disp	Qty	Description	Service Order #
IN	.6430800-4	1406	R	1	STATOR HOUSING	5018087804
OUT	6430800-4	1680	R			

REWORK CODE :

CONDITION CODE :

5260 Voltage/Current/Resist Out of Limits

ACCT IND :

ANALYST REMARKS :

	Material	Serial No.	Disp	Qty	Description	Service Order #
IN	..AS3209-216		N	1	PACKING, PREFORMED	
OUT	AS3209-216		N			


REWORK CODE :

CONDITION CODE :

100% Replacement as Required

ACCT IND :

ANALYST REMARKS :

TDS	PART NAME	Brushless, Oil-Spray-Cooled Ac Generator	SERIAL NO.	 <u>48-B1243</u>
	PART NO.	28B545-ALL		
REMARKS Reference TESTING AND FAULT ISOLATION		TECHNICIAN		
NOTE: Throughout this record terminal T4 and N (neutral) reference the same terminal		<u>H311103</u>		
Use with Honeywell CMM 24-21-14, REV <u>8</u>		<u>Final</u>	DATE <u>DEC 08 2023</u>	<input checked="" type="checkbox"/> ACCEPT <input type="checkbox"/> REJECT

28B545-9

Para

5. **Initial Resistance Test**

Required Resistance: 0.0125 ± 0.0010 ohms

Sub Para

A.	Terminals	Min.	Max	Measured
	T1-T4	0.0115	0.0135	<u>0.0126</u>
	T2-T4	0.0115	0.0135	<u>0.0125</u>
	T3-T4	0.0115	0.0135	<u>0.0128</u>

Pass / Fail _____


B.	Pins	Min.	Max	Measured
	1-2	0.29	0.35	<u>0.33</u>
	2-3	0.29	0.35	<u>0.33</u>
	3-1	0.29	0.35	<u>0.33</u>

Pass / Fail _____

C.	Pins	Min.	Max	Measured
	5-7	5.13	6.27	<u>5.59</u>

Pass / Fail _____

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TDS	PART NAME	Brushless, Oil-Spray-Cooled Ac Generator	SERIAL NO. 48-B1243	
	PART NO.	28B545-ALL		
REMARKS Reference TESTING AND FAULT ISOLATION			TECHNICIAN	
NOTE: Throughout this record terminal T4 and N (neutral) reference the same terminal			H311103	
Use with Honeywell CMM 24-21-14, REV <u>8</u>			DATE DEC 08 2023	<input checked="" type="checkbox"/> ACCEPT <input type="checkbox"/> REJECT

6. Resolver Verification Procedure

Sub Para

B. – E.

Rpm	Resolver A-Phase Output is in Phase with Generator T1–T4 Output	Angular Offset (Limit: $\pm 3^\circ$)
2,000 (200 Hz)	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<u>0</u> °
6,000 (600 Hz)	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<u>0</u> °

Phase variation from 2000 rpm to 6000 rpm shall be less than 1° .

Pass ☒ Fail ☐

Para

8.

Vari-Drive Tests

CAUTION: Do not rotate generator or start electrical tests unless oil is flowing through the generator.

Sub Para

A.

Test Conditions


	Required	Measured
(3) Oil inlet temperature	240 $\pm 10^\circ\text{F}$	<u>230</u> °F
Oil flow	4.5 ± 0.3 gpm	<u>4.2</u> gpm
Oil inlet pressure	60–75 psi	<u>65</u> psi

Pass ☒ Fail ☐

- (4) Make sure static leakage is not more than a light wetting, not sufficient to make a drop.

Pass ☒ Fail ☐

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TDS	PART NAME	Brushless, Oil-Spray-Cooled Ac Generator	SERIAL NO.	 <u>48-B1243</u>
	PART NO.	28B545-ALL		
REMARKS Reference TESTING AND FAULT ISOLATION		TECHNICIAN		
NOTE: Throughout this record terminal T4 and N (neutral) reference the same terminal		<u>H311103</u>		
Use with Honeywell CMM 24-21-14, REV <u>8</u>		DATE	<u>DEC 08 2023</u>	<input checked="" type="checkbox"/> ACCEPT <input type="checkbox"/> REJECT

Sub Para

D.

PMG Test

Sub Para

(2) - (4)

Initial L-L Voltage Readings (Unit as Received) at 11,550 \pm 25 rpm (1155.0 \pm 2.5 Hz)—No Load

<u>Phase</u>	<u>Required Voltage Range</u>	<u>Measured Voltage</u>
1-2	76-84	<u>81</u>
2-3	76-84	<u>81</u>
3-1	76-84	<u>81</u>

Voltages are within 1.5% of the average.

Pass / Fail _____


(5) - (6)

L-L Voltage Reading with 10.0 A/Phase Resistive Load at 11,550 \pm 25 rpm (1155.0 \pm 2.5 Hz)

<u>Phase</u>	<u>Min. Required Voltage</u>	<u>Measured Voltage</u>
1-2	55	<u>60</u>
2-3	55	<u>60</u>
3-1	55	<u>59</u>

Pass / Fail _____

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TDS	PART NAME	Brushless, Oil-Spray-Cooled Ac Generator	SERIAL NO.	 48-B1243
	PART NO.	28B545-ALL		
REMARKS Reference TESTING AND FAULT ISOLATION		TECHNICIAN		
NOTE: Throughout this record terminal T4 and N (neutral) reference the same terminal		H311103		
Use with Honeywell CMM 24-21-14, REV <u>8</u>		DATE	DEC 08 2023	<input checked="" type="checkbox"/> ACCEPT <input type="checkbox"/> REJECT

Sub Para

E.

Saturation Curve Check

- (4) – (6) Field Current Excitation with Output Voltage of 120 ± 1 V
 Required rpm: $11,550 \pm 25$ (1155.0 ± 2.5 Hz)

T1-T4 (V)	T2-T4 (V)	T3-T4 (V)	T1-T2 (V)	T2-T3 (V)	T3-T1 (V)	Field Current I_f (A)	Field Voltage E_f (V)	Voltage Amplitude Modulation (%)
120	120	120	208	208	208	0.88	7.2	0.1

Max: 0.90 A

Max: 0.5 %

Pass / Fail

- (7) Required rpm: $11,550 \pm 25$ (1155.0 ± 2.5 Hz)

T1-T4 (V)	THD (%)
120	1.7

Max: 3.2% L-N

Pass / Fail

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TDS	PART NAME	Brushless, Oil-Spray-Cooled Ac Generator	SERIAL NO. 48-B1243	TUS FT 102
	PART NO.	28B545-ALL		
REMARKS Reference TESTING AND FAULT ISOLATION NOTE: Throughout this record terminal T4 and N (neutral) reference the same terminal			TECHNICIAN H31103	
Use with Honeywell CMM 24-21-14, REV <u>8</u>			DEC 08 2023	<input checked="" type="checkbox"/> ACCEPT <input type="checkbox"/> REJECT

Sub Para

(8) (9) Field Current Excitation with Field Current Set at $2.00 \pm 0.1A$

Required rpm: $11,550 \pm 25$ (1155.0 ± 2.5 Hz)

Field Current I_f (A)	Field Voltage E_f (V)	T1-T4 (V)	T2-T4 (V)	T3-T4 (V)	T1-T2 (V)	T2-T3 (V)	T3-T1 (V)
2.00	16.4	153	154	153	267	266	266

Min.: 145 V

Pass ☒ Fail ☐

(10)

Required
Sequence

Actual
Sequence

T1, T2, T3

T1, T2, T3

Pass ☒ Fail ☐

F. Short-Circuit Test

NOTE: The Short Circuit Test is only required if a prior operation may have affected the electromagnetic performance of the stators or rotors, for example, a rotor rewind.

Required rpm: $12,000 \pm 25$ (1200.0 ± 2.5 Hz)

(7)

Min. Current

Max Current

Measured Current

530 A

870 A

561 A

Apply three-phase symmetrical short circuit across terminals T1 through T4 for 5 seconds min.

Pass ☒ Fail ☐

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TDS	PART NAME	Brushless, Oil-Spray-Cooled Ac Generator	SERIAL NO. 48-B1243
	PART NO.	28B545-ALL	
REMARKS Reference TESTING AND FAULT ISOLATION		TECHNICIAN H311103	
NOTE: Throughout this record terminal T4 and N (neutral) reference the same terminal			
Use with Honeywell CMM 24-21-14, REV <u>8</u>		DATE DEC 08 2023	<input checked="" type="checkbox"/> ACCEPT <input type="checkbox"/> REJECT

Sub Para

- G. Starter/Generator Heating Test
- (1) - (7) Generator Heating at 11,550 \pm 25 rpm (1155.0 \pm 2.5 Hz) with 96-kVA Load and 0.75 PF (266 A/Phase)

Minimum running time: 10 minutes

Time (Minutes)	T1-T4 (V)	T2-T4 (V)	T3-T4 (V)	T1-T2 (V)	T2-T3 (V)	T3-T1 (V)	kW1 (kW)	kW2 (kW)	kW3 (kW)	I1 (A)	I2 (A)	I3 (A)
0	120	120	120	208	208	208	24	24	24	268	268	267
2	120	120	120	208	208	208	24	24	24	268	268	267
4	120	120	120	208	208	208	24	24	24	268	268	266
6	120	120	120	208	208	208	24	24	24	268	268	266
8	120	120	120	208	208	208	24	24	24	268	268	266
10	120	120	120	208	208	208	24	24	24	268	268	266

Time (Minutes)	Oil Inlet Temp (°F)	Oil Output Temp (°F)	Oil Inlet Pressure (psi)	Oil Flow (gpm)	Field Current I _f (A)	Field Voltage E _f (V)
0	237	254	66	4.3	2.9	24.2
2	234	260	65	4.2	2.9	25.5
4	236	260	66	4.3	2.9	25.4
6	232	261	66	4.2	2.9	25.5
8	240	263	66	4.3	2.9	25.5
10	233	260	65	4.3	2.9	25.5

Req.: 60-75 psi

Req.: 4.5 \pm 0.3 gpm
Max: 3.1 A

Pass ✓ Fail

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TDS 28B545-all Release Date: 16/07/2021
To be used with Honeywell CMM 24-21-14
6 of 12

TDS	PART NAME	Brushless, Oil-Spray-Cooled Ac Generator	SERIAL NO. 48-B1243	TUS FT 102
	PART NO.	28B545-ALL		
REMARKS Reference TESTING AND FAULT ISOLATION NOTE: Throughout this record terminal T4 and N (neutral) reference the same terminal			TECHNICIAN H311103	
Use with Honeywell CMM 24-21-14, REV <u>8</u>			DATE DEC 08 2023	<input checked="" type="checkbox"/> ACCEPT <input type="checkbox"/> REJECT

Sub Para

- (8) Generator Heating at 11,550 \pm 25 rpm (1155.0 \pm 2.5 Hz) with 96-kVA Load and 1.0 PF (266 A/Phase)

Time (Minutes)	T1-T2 (V)	T2-T3 (V)	T3-T1 (V)	T1-T4 (V)	T2-T4 (V)	T3-T4 (V)	kW1 (kW)	kW2 (kW)	kW3 (kW)	I1 (A)	I2 (A)	I3 (A)
0	207	207	207	119	120	119	32	32	31	264	266	263

Time (Minutes)	Oil Inlet Temp (°F)	Oil Output Temp (°F)	Oil Inlet Pressure (psi)	Oil Flow (gpm)	Field Current I _f (A)	Field Voltage E _f (V)	THD (%)
0	238	262	66	4.3	2.2	19.5	3.0

Req.: 60-75 psi

Req.: 4.5 \pm 0.3 gpm

Max: 3.1 A

Max: 3.2% L-N

Pass ☒ Fail ☐

- (9) Generator Heating at 11,550 \pm 25 rpm (1155.0 \pm 2.5 Hz) with 169-kVA Load and 0.75 PF
- NOTE: Steps (9) and (10) are overload tests that are only required if a prior operation may have affected the electromagnetic performance of the stators or rotors (for example, a rotor rewind).**

Apply overload for 5 seconds minimum (see caution text).
Time to adjust load and take readings should not exceed 30 seconds.


Time (Seconds)	T1-T4 (V)	Field Current I _f (A)	Field Voltage E _f (V)
5	119	5.3	46.4

Max: 6.2 A

Pass ☒ Fail ☐

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TDS 28B545-all Release Date: 16/07/2021
To be used with Honeywell CMM 24-21-14
7 of 12

TDS	PART NAME	Brushless, Oil-Spray-Cooled Ac Generator	SERIAL NO. 48-B1243	
	PART NO.	28B545-ALL		
REMARKS Reference TESTING AND FAULT ISOLATION			TECHNICIAN H311103	
NOTE: Throughout this record terminal T4 and N (neutral) reference the same terminal				
Use with Honeywell CMM 24-21-14, REV <u>8</u>			DEC 08 2023	<input checked="" type="checkbox"/> ACCEPT <input type="checkbox"/> REJECT

Sub Para

(10) Generator Heating at 11,550 \pm 25 rpm (1155.0 \pm 2.5 Hz) with 126-kVA Load and 0.75 PF (350 A/Phase)

Time (Minutes)	T1-T2 (V)	T2-T3 (V)	T3-T1 (V)	T1-T4 (V)	T2-T4 (V)	T3-T4 (V)	kW1 (kW)	kW2 (kW)	kW3 (kW)	I1 (A)	I2 (A)	I3 (A)
0	208	208	208	119	120	120	32	32	32	357	357	354
5	208	207	207	119	120	119	32	32	32	356	357	353

Time (Minutes)	Oil Inlet Temp (°F)	Oil Output Temp (°F)	Oil Inlet Pressure (psi)	Oil Flow (gpm)	Field Current I _f (A)	Field Voltage E _f (V)
0	235	273	66	4.3	3.9	34.9
5	234	282	66	4.2	4.1	37.2

Req.: 60-75 psi

Req.: 4.5 \pm 0.3 gpm

Max: 4.3 A

Pass / Fail _____

H. Current Transformer (CT) Phase

Caution: THESE THREE RESISTORS ARE USED TO SHORT CIRCUIT THE CT WINDINGS DURING ALL TESTS. DO NOT TRY TO SWITCH ON CT WHEN A LOAD CURRENT FLOWS IN THE STARTER/GENERATOR.


(1) (2) Required rpm: 11,550 \pm 25 (1155.0 \pm 2.5 Hz) Rated Load 96KVA, 1.0 PF, Current L-N = 266A
Required voltage: 0.65 \pm 0.04

Pins	Min.	Max	Measured
1-4	0.61 V	0.69 V	<u>0.66</u> V
2-4	0.61 V	0.69 V	<u>0.67</u> V
3-4	0.61 V	0.69 V	<u>0.66</u> V

The three readings are balanced within 0.035 V

Pass / Fail _____

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TDS	PART NAME	Brushless, Oil-Spray-Cooled Ac Generator	SERIAL NO.	 48-B1243
	PART NO.	28B545-ALL		
REMARKS Reference TESTING AND FAULT ISOLATION		TECHNICIAN		
NOTE: Throughout this record terminal T4 and N (neutral) reference the same terminal		H311103		
Use with Honeywell CMM 24-21-14, REV 8		DEC 08 2023	<input checked="" type="checkbox"/> ACCEPT	REJECT <input type="checkbox"/>

Sub Para

(3) Current Transformer Phasing Check with 96-kVA Load and 0.75 PF (266 A/Phase)

1-4 is in phase with T1-T4

Yes ☒ No ☐

2-4 is in phase with T2-T4

Yes ☒ No ☐

3-4 is in phase with T3-T4

Yes ☒ No ☐

Pass ☒ Fail ☐

I. Overspeed Test

Note: Do the procedures in the Overspeed Test while the starter/generator is still hot from the previous tests and checks. This test is only required if a prior operation may have affected the electromagnetic performance of the stators or rotors, for example a rotor rewind.

(1) - (3) Run unit at 13,200 \pm 25 rpm (1320.0 \pm 2.5 Hz) for 5 minutes minimum.

Then reduce the speed to 11,550 \pm 25 rpm (1150.0 \pm 2.5 Hz), and run unit at that speed with a 96-kVA load, 0.75 PF (266 A/Phase), for 2 minutes minimum. Record at the beginning and end of the 2-minute period.

Time (Minutes)	T1-T2 (V)	T2-T3 (V)	T3-T1 (V)	T1-T4 (V)	T2-T4 (V)	T3-T4 (V)	kW1 (kW)	kW2 (kW)	kW3 (kW)	I1 (A)	I2 (A)	I3 (A)
0	208	208	208	120	120	120	24	24	24	267	268	266
2	208	208	208	120	120	120	24	24	24	267	268	266

Time (Minutes)	Oil Inlet Temp (°F)	Oil Output Temp (°F)	Oil Inlet Pressure (psi)	Oil Flow (gpm)	Field Current I _f (A)	Field Voltage E _f (V)
0	235	247	66	4.3	2.8	23.9
2	238	263	66	4.3	2.9	25.4


Req.:
60-75 psi

Req.:
4.5 \pm 0.3 gpm

Max:
3.1 A

Pass ☒ Fail ☐

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Use with Honeywell CMM 24-21-14, REV <u>8</u>		DATE	<u>DEC 08 2023</u>	<input checked="" type="checkbox"/> ACCEPT <input type="checkbox"/> REJECT

Sub Para

(4) Anti-drive end (ADE) displacement (in mil): 0.4 Max limit: 2.0 mils peak to peak

Pass / Fail

J. Open or Shorted Diode Test

(1) Do a check for open or shorted diodes by monitoring the exciter field voltage waveform on an oscilloscope. Perform the test at 11525 to 11575 RPM and no load.

(2) If the peaks of the waveform are not within 0.5 volts of each other, the generator has a failed diode or failed diode lead.

Waveform peaks are within 0.5 V of each other

Pass / Fail

K. Phase Balance Test

(1) - (4) Determine no-load and full-load phase balance from data gathered and recorded in paragraphs E (4) – (6). Record (saturation curve check) and G. (1) – (7) (generator heating with 96-kVA load, 0.75 PF).

Paragraph	T1-T4 (V)	T2-T4 (V)	T3-T4 (V)	Avg. (V)	T1-T2 (V)	T2-T3 (V)	T3-T1 (V)	Avg. (V)
E. (4) – (6)	<u>120</u>	<u>120</u>	<u>120</u>	<u>120</u>	<u>208</u>	<u>208</u>	<u>208</u>	<u>208</u>
G. (1) – (7)	<u>120</u>	<u>120</u>	<u>120</u>	<u>120</u>	<u>208</u>	<u>208</u>	<u>208</u>	<u>208</u>


Requirement: No individual reading of the L-L or L-N phase voltages for both no-load and full-load shall deviate from the average of the three respective phase voltages by more than 0.5%.

Max Deviation

0.0 %

Pass / Fail

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Sub Para

L. Case Ground Check **Note:** R_{25} must be $\leq 0.008\Omega$

(1) – (5) Room Temperature 21 °C
 Resistance J1–Pilot Flange 0.004 Ω
 Resistance J2–Pilot Flange 0.003 Ω

Pass / Fail

M. Insulation Resistance Test

CAUTION: Keep CT secondaries short-circuited during all dielectric strength and insulation resistance testing.

(4)	<u>Time</u>	<u>Applied Voltage</u>	<u>Min. Resistance</u>	<u>Measured Resistance</u>
	1 minute	250	40 Mohm	<u>283</u> Mohm
				Pass <u>/</u> Fail <u> </u>

N. Dielectric Strength Test


(3) 250 V, 60 Hz for 1 Minute minimum

	<u>Applied Voltage</u>	<u>Max Leakage</u>	<u>Measured Leakage</u>
Pin 1 of connector J2, to generator frame	<u>250</u> V	5 mA	<u>0</u> mA
			Pass <u>/</u> Fail <u> </u>

(4) 250 V, 60 Hz for 1 Minute minimum

	<u>Applied Voltage</u>	<u>Max Leakage</u>	<u>Measured Leakage</u>
Pin 5 of connector J2, to generator frame	<u>250</u> V	5 mA	<u>0</u> mA
			Pass <u>/</u> Fail <u> </u>

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Sub Para

(5) 750 V, 60 Hz for 1 Minute minimum

	<u>Applied Voltage</u>	<u>Max Leakage</u>	<u>Measured Leakage</u>
Terminal T1, to generator frame	<u>750</u> V	15 mA	<u>2</u> mA
		Pass <u>/</u>	Fail <u> </u>

(6) 250 V, 60 Hz for 1 Minute minimum with CTs Ungrounded

	<u>Applied Voltage</u>	<u>Max Leakage</u>	<u>Measured Leakage</u>
CT connector (J1) pins 1, 2, 3, and 4 shorted together, to generator frame	<u>250</u> V	5 mA	<u>0</u> mA
		Pass <u>/</u>	Fail <u> </u>

NOTE: Make sure static leakage is not more than a light wetting, not sufficient to make a drop.

Pass / Fail

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