

**CHAPTER**

**30**

**ICE AND RAIN PROTECTION**

CHAPTER 30  
ICE AND RAIN PROTECTION

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I	WING THERMAL ANTI-ICE SYSTEM	30-11-11		101		Jun 21/2016	ALL
	<b><u>INLET COWL AND NACELLE ANTI-ICING SYSTEM</u></b>						
I	ENGINE NACELLE ANTI-ICE	30-21-11		101		Jun 21/2016	ALL
	<b><u>PITOT TUBES AND TEMPERATURE PROBE ANTI-ICING SYSTEM</u></b>						
I	PITOT AND PROBE HEATERS - SYSTEM A	30-31-11		101		Jun 21/2016	ALL
I	PITOT AND PROBE HEATERS - SYSTEM B	30-31-12		101		Jun 21/2016	ALL
	<b><u>FLIGHT COMPARTMENT WINDOW ANTI-ICING SYSTEM</u></b>						
	WINDSHIELD HEAT SYSTEM - L. FRONT, R. SIDE AND OPTIONAL L3 WINDOWS	30-41-11		101	1	Dec 10/2015	YT101-YT116 YT126-YT131
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	<b><u>WINDSHIELD WIPER SYSTEM</u></b>						
I	WINDSHIELD WIPERS	30-42-11		101		Jun 21/2016	ALL
	<b><u>WATER AND TOILET DRAIN ANTI-ICING SYSTEM</u></b>						
	DRAIN HEATERS	30-71-11		101	1	Oct 14/2015	YT101-YT112 YT126-YT130
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	<b><u>ICE DETECTION SYSTEM</u></b>						
I	ADVISORY ICE DETECTION SYSTEM	30-81-11		101		Jun 21/2016	ALL

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30-21-11	ENGINE NACELLE ANTI-ICE
30-31-11	PITOT AND PROBE HEATERS - SYSTEM A
30-31-12	PITOT AND PROBE HEATERS - SYSTEM B
30-41-11	WINDSHIELD HEAT SYSTEM - L. FRONT, R. SIDE AND OPTIONAL L3 WINDOWS
30-41-12	WINDSHIELD HEAT SYSTEM - R. FRONT, L. SIDE AND OPTIONAL R3 WINDOWS
30-42-11	WINDSHIELD WIPERS
30-11-11	WING THERMAL ANTI-ICE SYSTEM

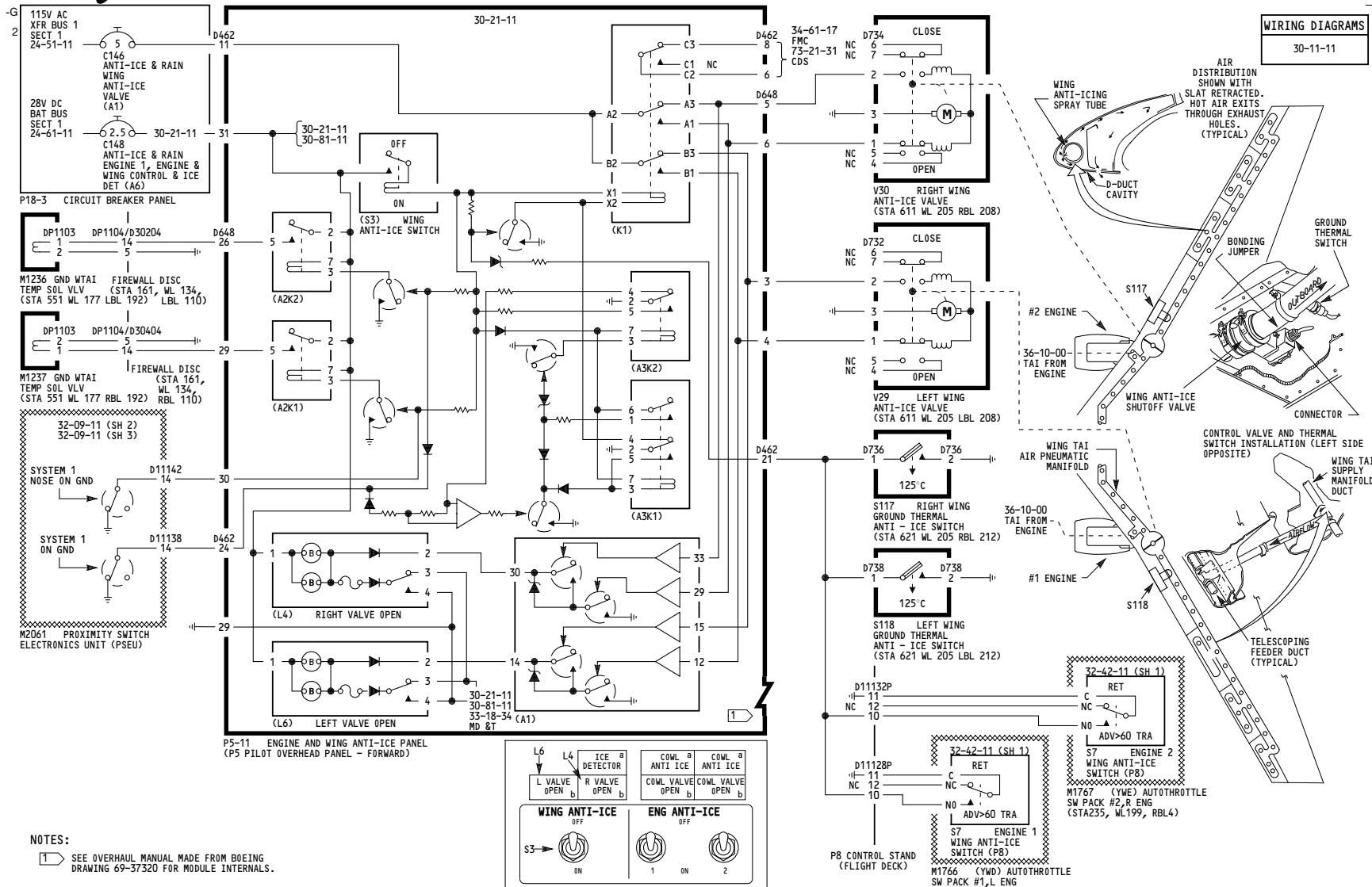
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## WING THERMAL ANTI-ICE SYSTEM

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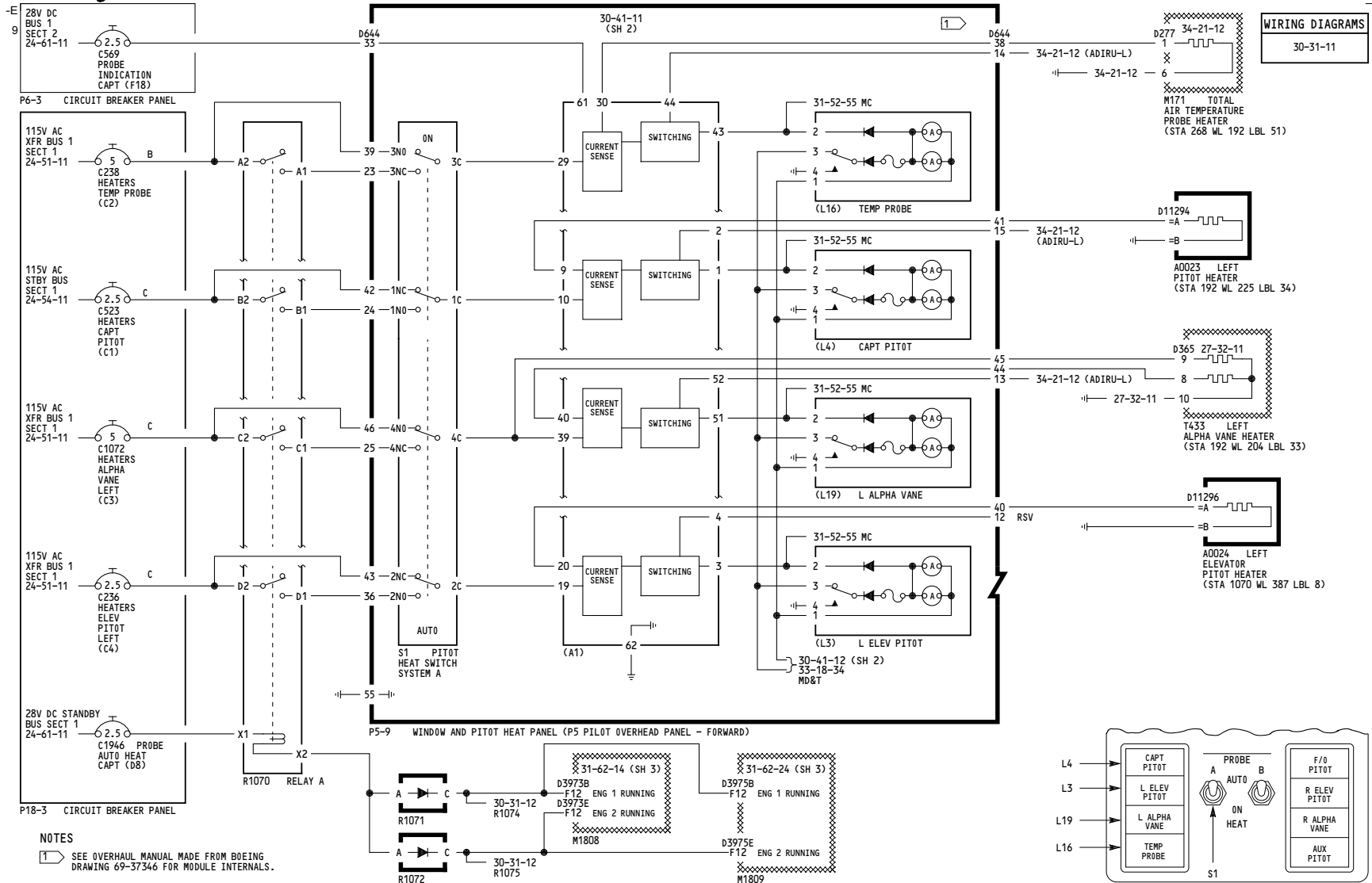
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## PITOT AND PROBE HEATERS - SYSTEM A

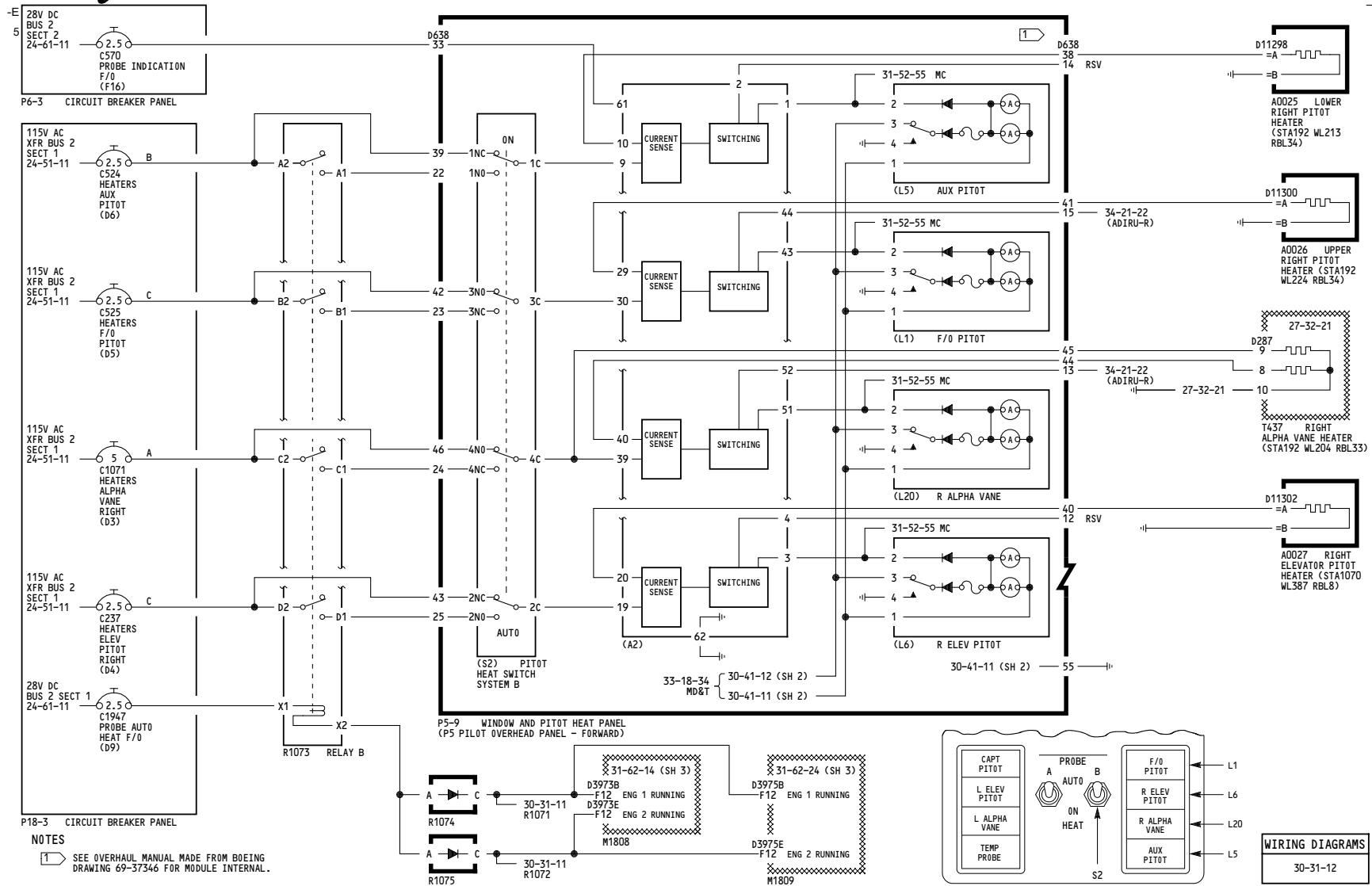
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## PITOT AND PROBE HEATERS - SYSTEM B

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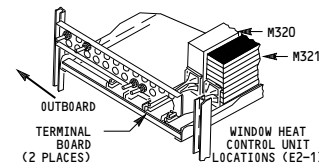
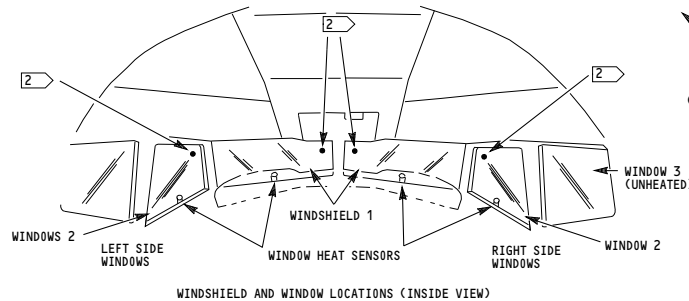
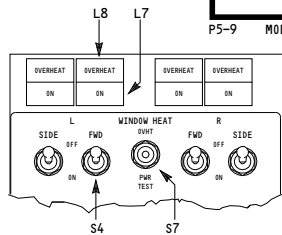
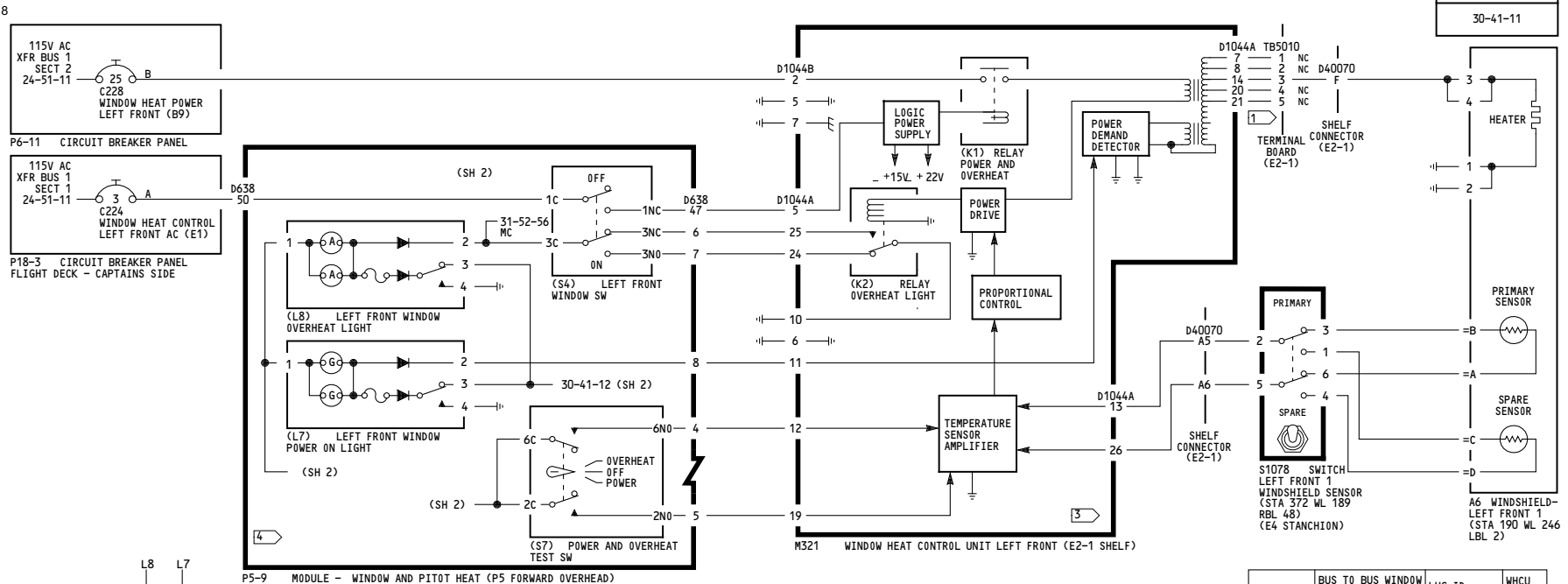
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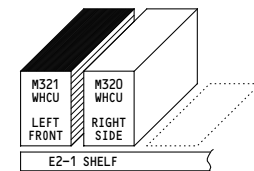
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**WIRING DIAGRAMS**  
30-41-11



WINDSHIELD 1 CODE	BUS TO BUS WINDOW RESISTANCE (OHMS) WINDSHIELD TEMP AT 88° F 20° F		LUG ID NUMBERS ON TERMINAL BOARD TB5010	WHCU OUTPUT VAC PER TAP SET
	MIN	MAX		
NEW { H13 H12 H11	31.4	35.1	1	271
	35.1	38.8	2	285
	38.8	42.6	3	300
OLD {	42.6	47.3	4	315
	47.3	52.0	5	331



**NOTES:**

- 1 USE WINDSHIELD CODE AND RESISTANCE VALUES FOR OLD (USED) AND NEW WINDSHIELDS TO DETERMINE TERMINAL CONNECTIONS.
- 2 WINDSHIELD "H" NUMBER CODE LOCATION.
- 3 SEE SUPPLIER OVERHAUL MANUAL MADE TO BOEING 10-61833 SPECIFICATION FOR LRU INTERNALS.
- 4 SEE OVERHAUL MANUAL MADE FROM BOEING DRAWING 233A3201 FOR MODULE INTERNALS.

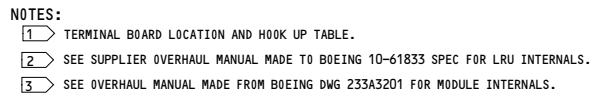
YT101-YT116, YT126-YT131

**WINDSHIELD HEAT SYSTEM - L. FRONT, R. SIDE AND OPTIONAL L3 WINDOWS**

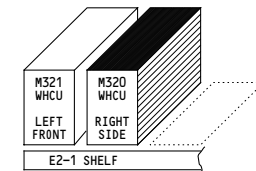
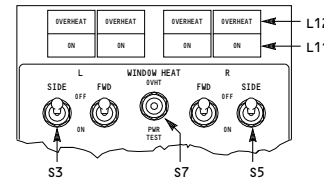
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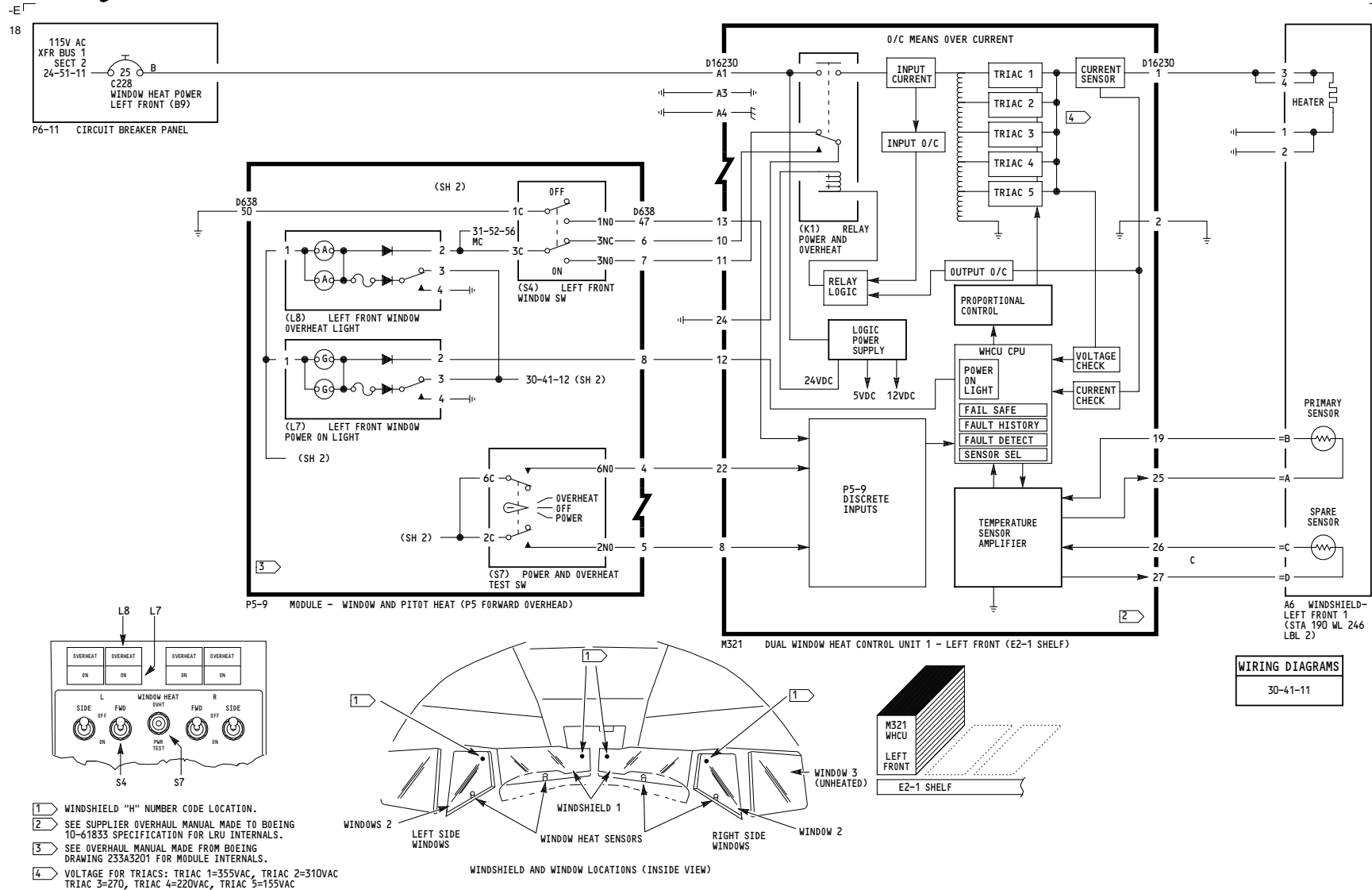
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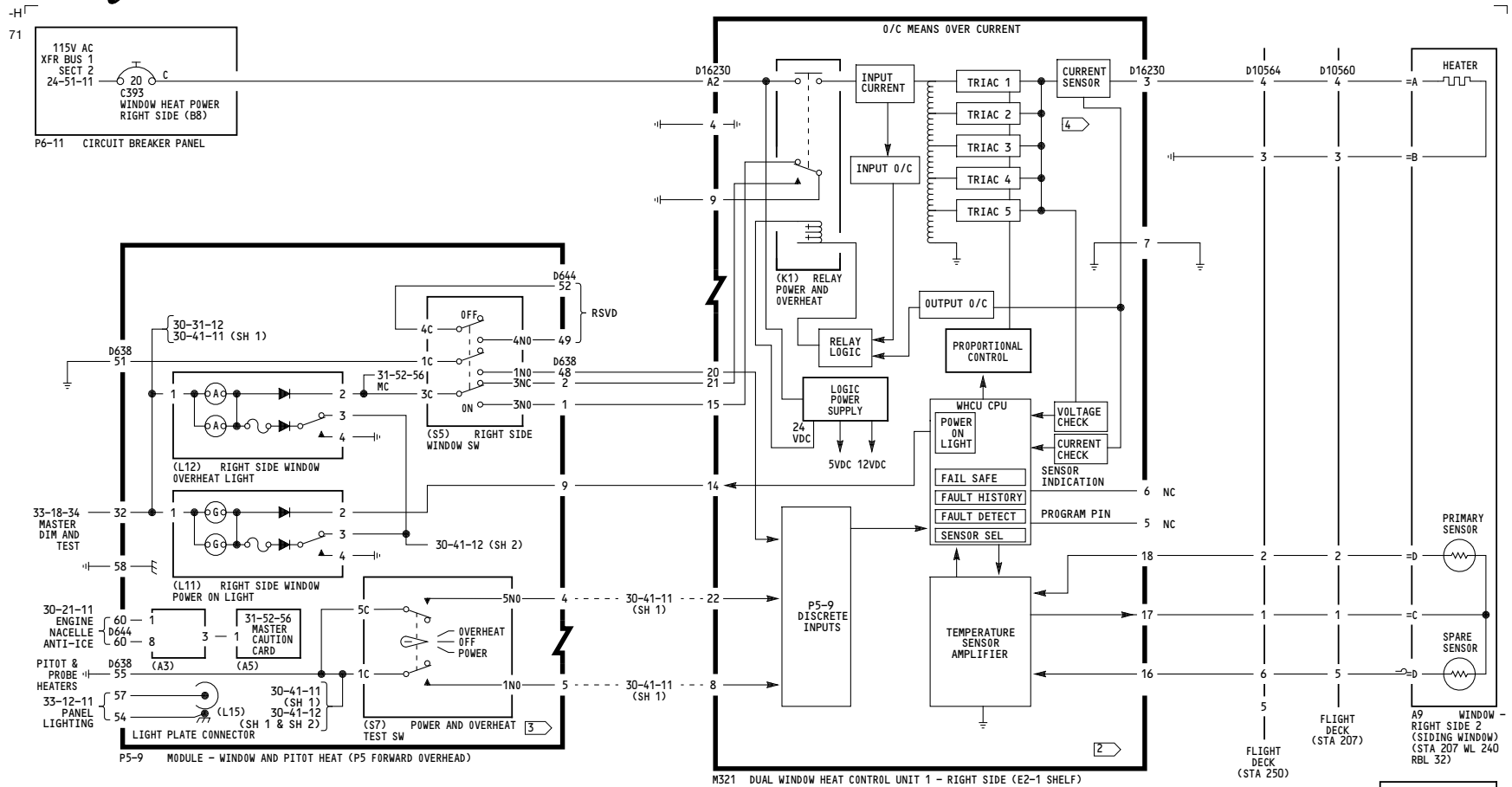
YT117-YT120, YT132-YT133

## WINDSHIELD HEAT SYSTEM - L. FRONT, R. SIDE AND OPTIONAL L3 WINDOWS

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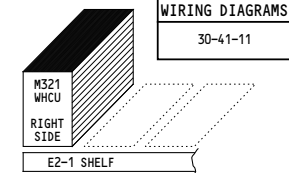
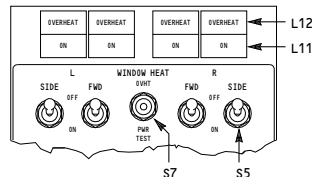
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NOTES:

- 2 SEE SUPPLIER OVERHAUL MANUAL MADE TO BOEING 10-61833 SPEC FOR LRU INTERNALS.
- 3 SEE OVERHAUL MANUAL MADE FROM BOEING DWG 233A3201 FOR MODULE INTERNALS.
- 4 VOLTAGE FOR TRIACS: TRIAC 1=355VAC, TRIAC 2=310VAC, TRIAC 3=270VAC, TRIAC 4=220VAC, TRIAC 5=155VAC



YT117-YT120, YT132-YT133

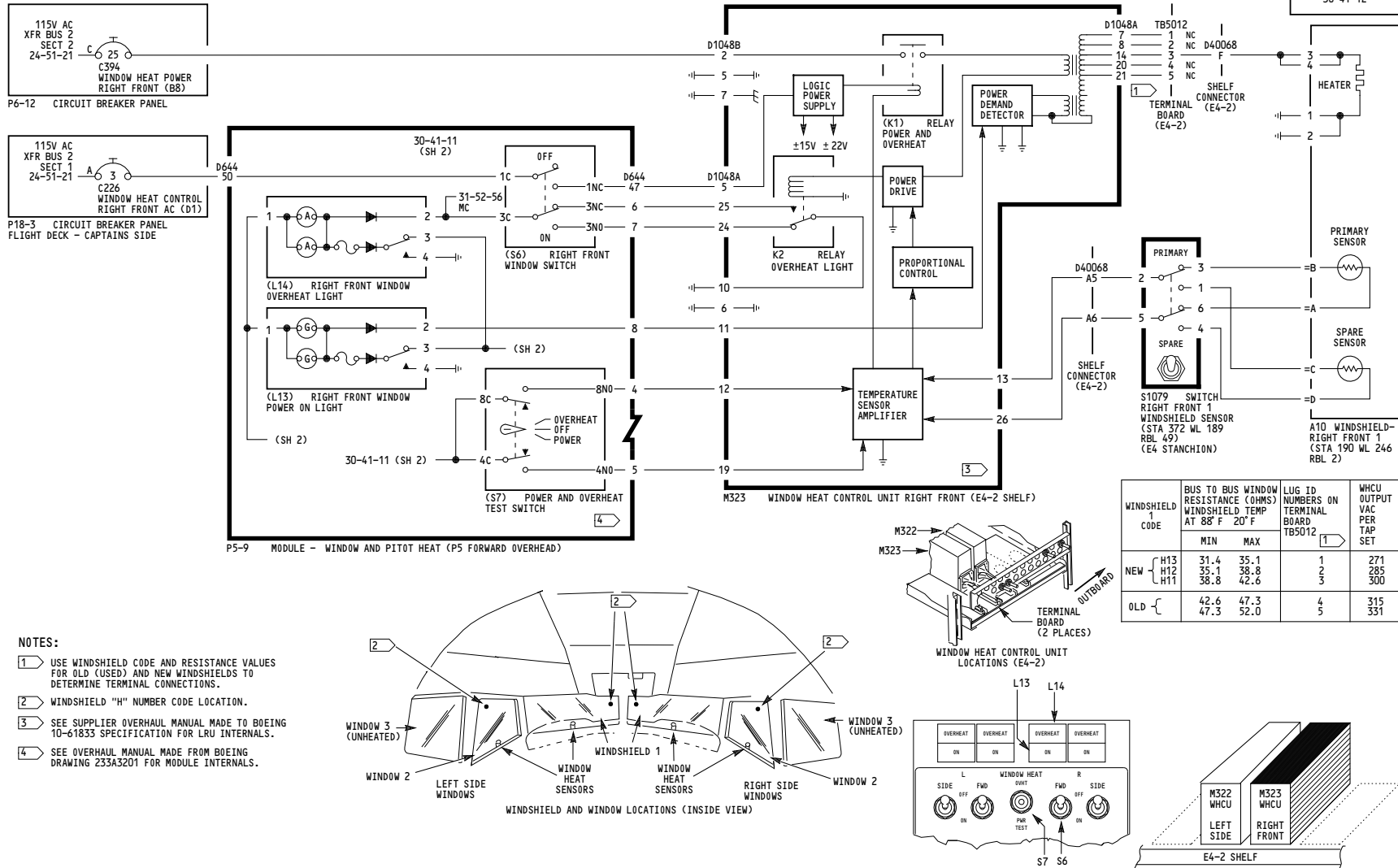
**WINDSHIELD HEAT SYSTEM -  
L. FRONT, R. SIDE AND  
OPTIONAL L3 WINDOWS**

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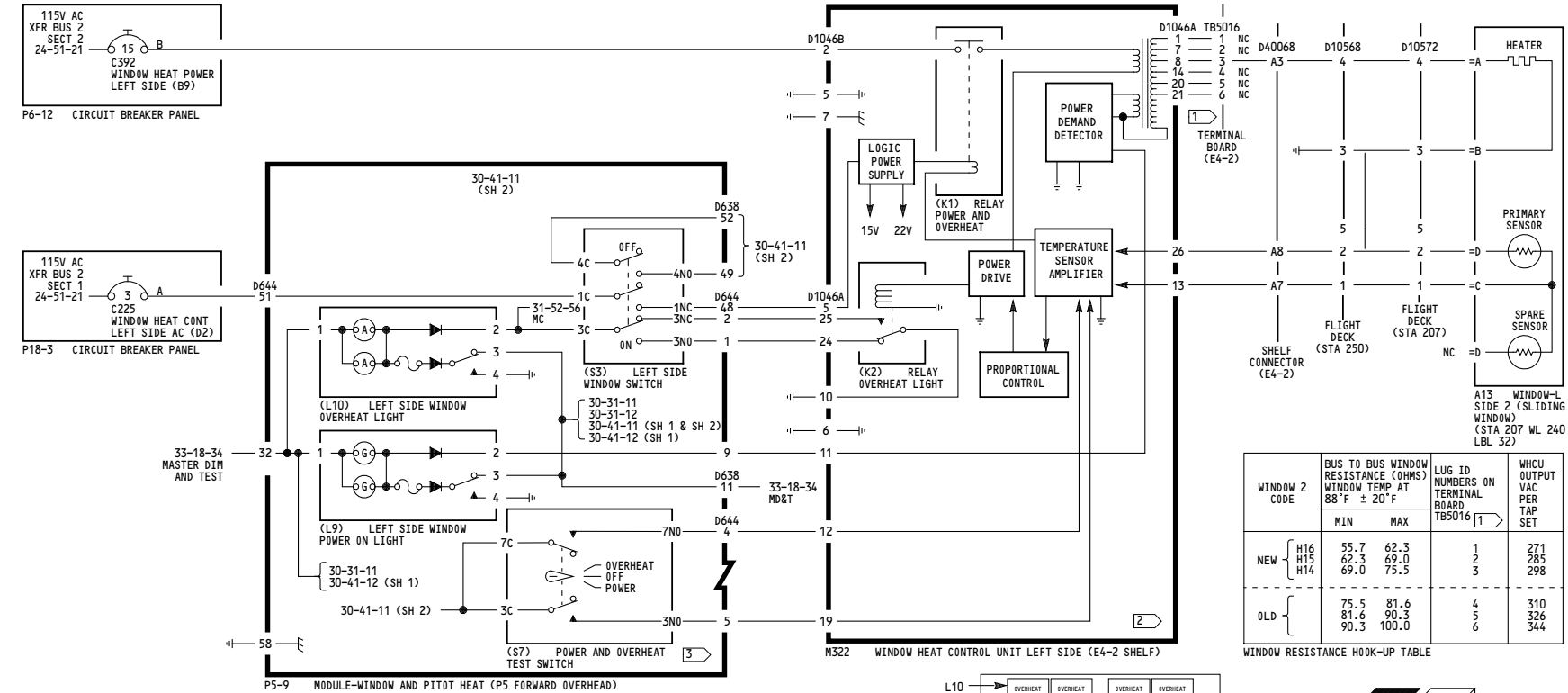
YT101-YT116, YT126-YT131

**WINDSHIELD HEAT SYSTEM -  
R. FRONT, L. SIDE AND  
OPTIONAL R3 WINDOWS**

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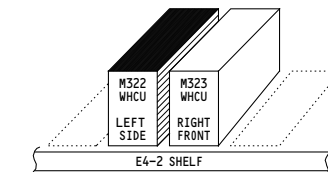
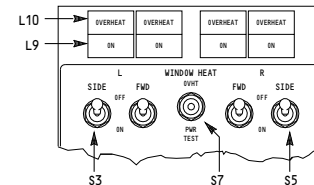
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WINDOW 2 CODE	BUS TO BUS WINDOW RESISTANCE (OHMS) WINDOW TEMP AT 88° F ± 20° F		LUG ID NUMBERS ON TERMINAL BOARD TB5016	WHCU OUTPUT VAC PER TAP SET
	MIN	MAX		
NEW { H16 H15 H14	55.7	62.3	1	271
	62.3	69.0	2	285
	69.0	75.5	3	298
OLD {	75.5	81.6	4	310
	81.6	90.3	5	326
	90.3	100.0	6	344

WINDOW RESISTANCE HOOK-UP TABLE



- NOTES:**
- 1 TERMINAL BOARD LOCATION AND HOOK UP TABLE.
  - 2 SEE SUPPLIER OVERHAUL MANUAL MADE TO BOEING 10-61833 SPEC FOR LRU INTERNALS.
  - 3 SEE OVERHAUL MANUAL MADE FROM BOEING DWG 233A3201 FOR MODULE INTERNALS.

YT101-YT116, YT126-YT131

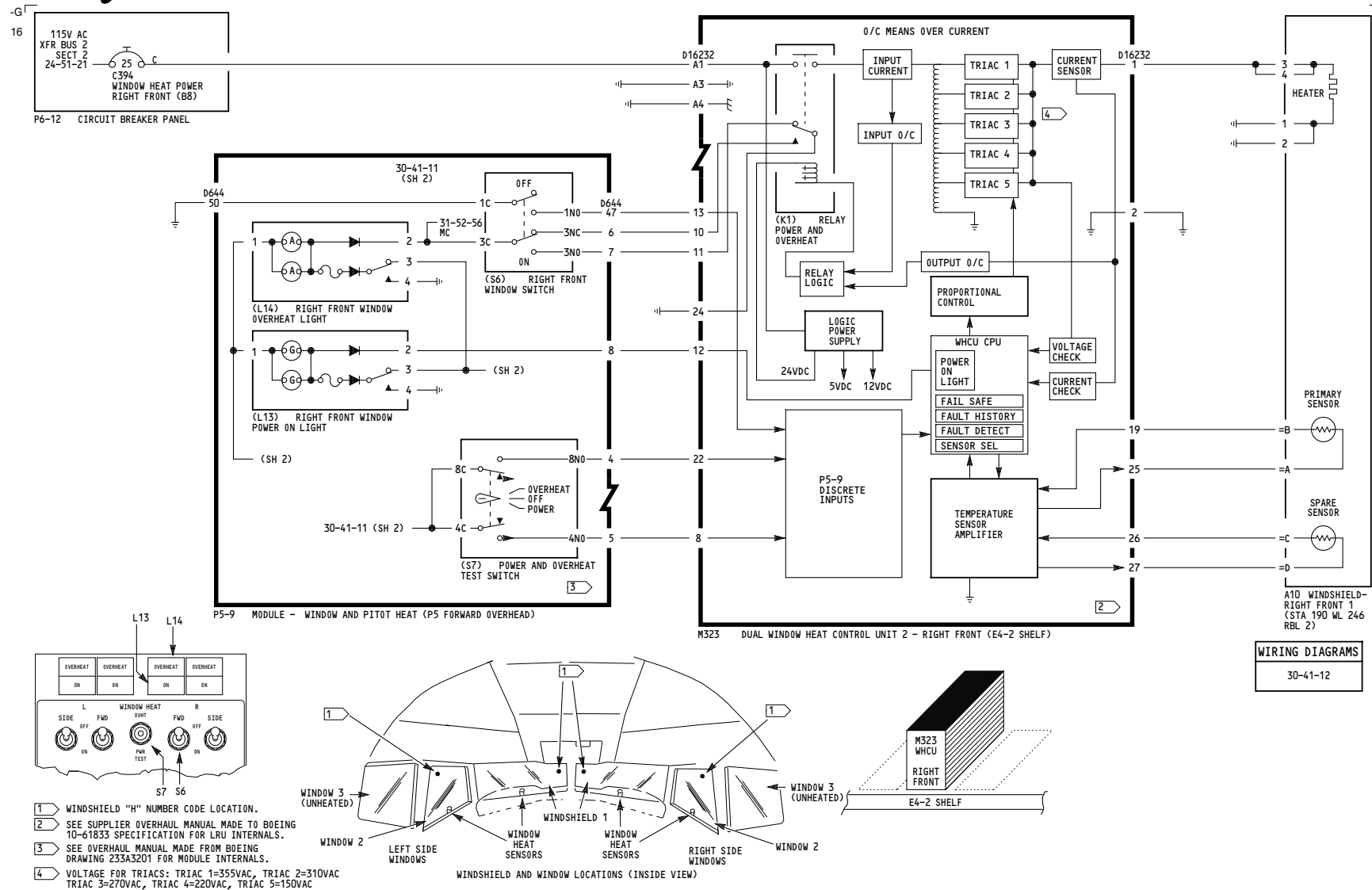
**WINDSHIELD HEAT SYSTEM - R. FRONT, L. SIDE AND OPTIONAL R3 WINDOWS**

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YT117-YT120, YT132-YT133

## WINDSHIELD HEAT SYSTEM - R. FRONT, L. SIDE AND OPTIONAL R3 WINDOWS

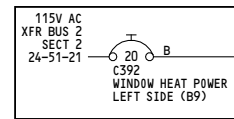
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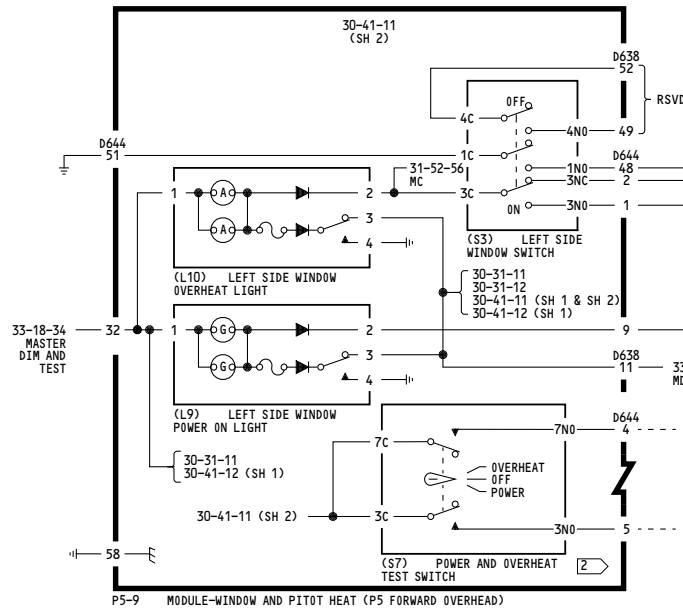
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$$-M \left[ \begin{array}{c} \text{---} \end{array} \right]$$

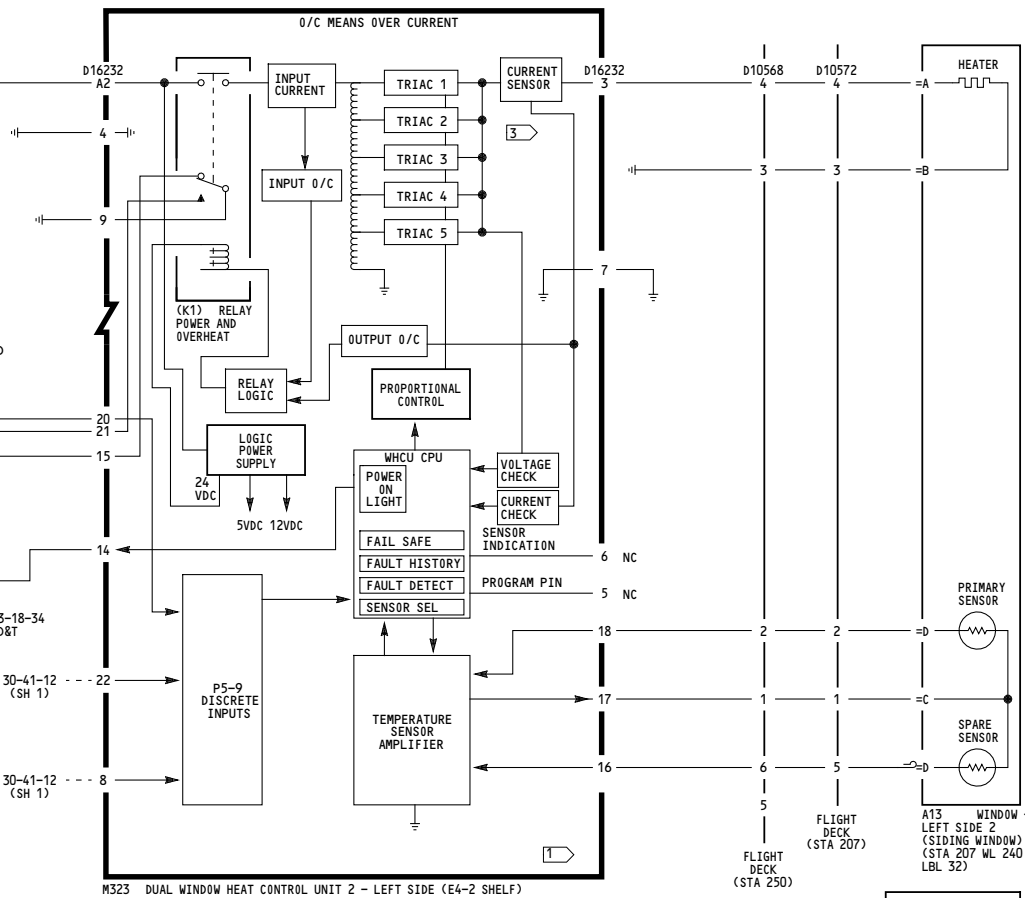
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P6-12 CIRCUIT BREAKER PANEL



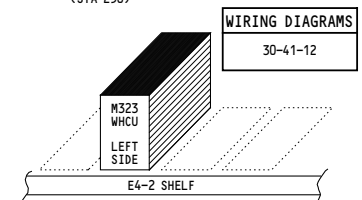
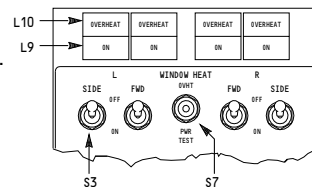
P5-9 MODULE-WINDOW AND PITOT HEAT (P5 FORWARD OVERHEAD)



M323 DUAL WINDOW HEAT CONTROL UNIT 2 - LEFT SIDE (E4-2 SHELF)

NOTES:

- 2 SEE SUPPLIER OVERHAUL MANUAL MADE TO BOEING 10-61833 SPEC FOR LRU INTERNALS.
- 3 SEE OVERHAUL MANUAL MADE FROM BOEING DWG 233A3201 FOR MODULE INTERNALS.
- 4 VOLTAGE FOR TRIACS: TRIAC 1=355VAC, TRIAC 2=310VAC, TRIAC 3=270VAC, TRIAC 4=220VAC, TRIAC 5=155VAC



## WIRING DIAGRAMS

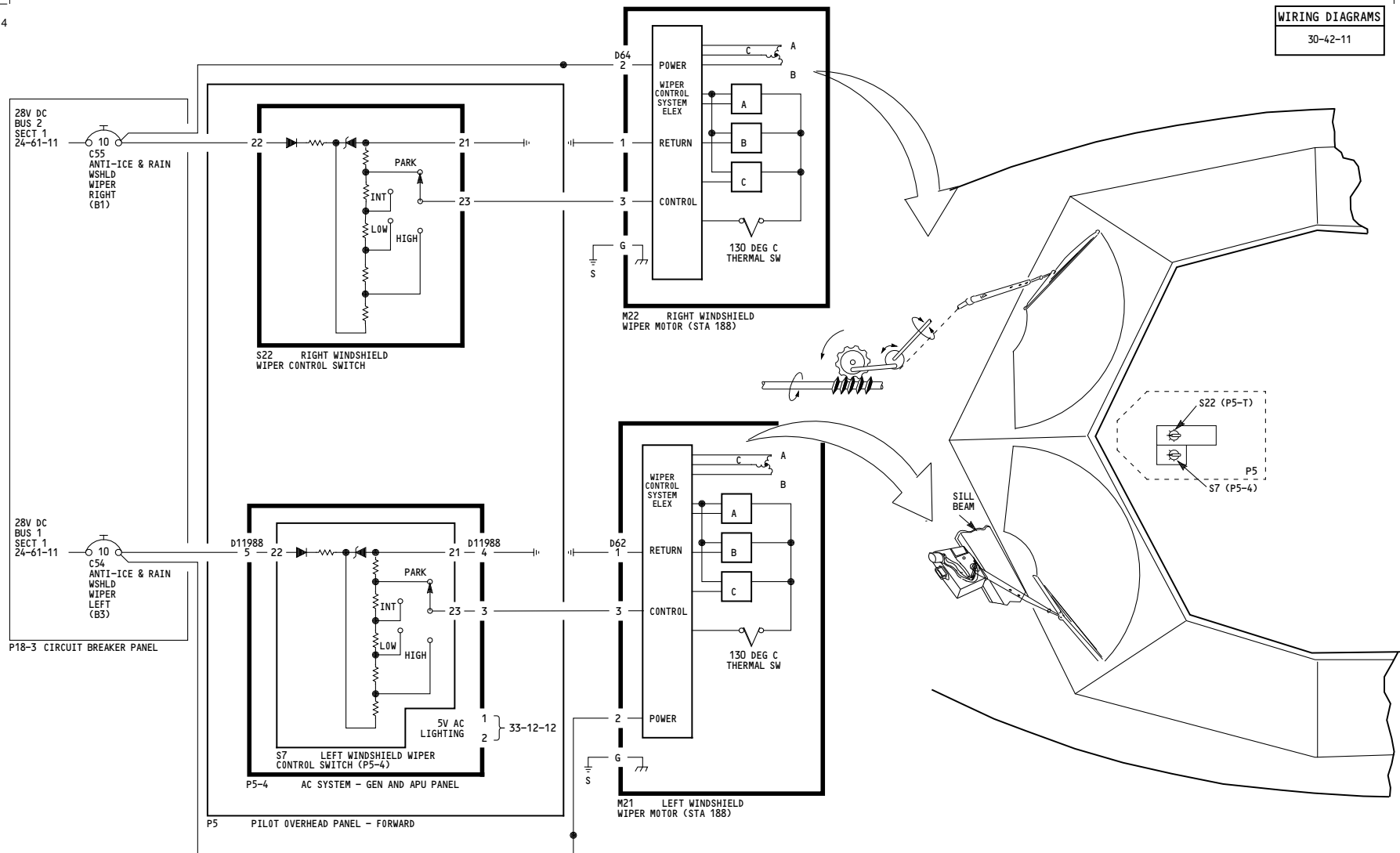
YT117-YT120, YT132-YT133

**WINDSHIELD HEAT SYSTEM -  
R. FRONT, L. SIDE AND  
OPTIONAL R3 WINDOWS**

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ALL	WINDSHIELD WIPERS
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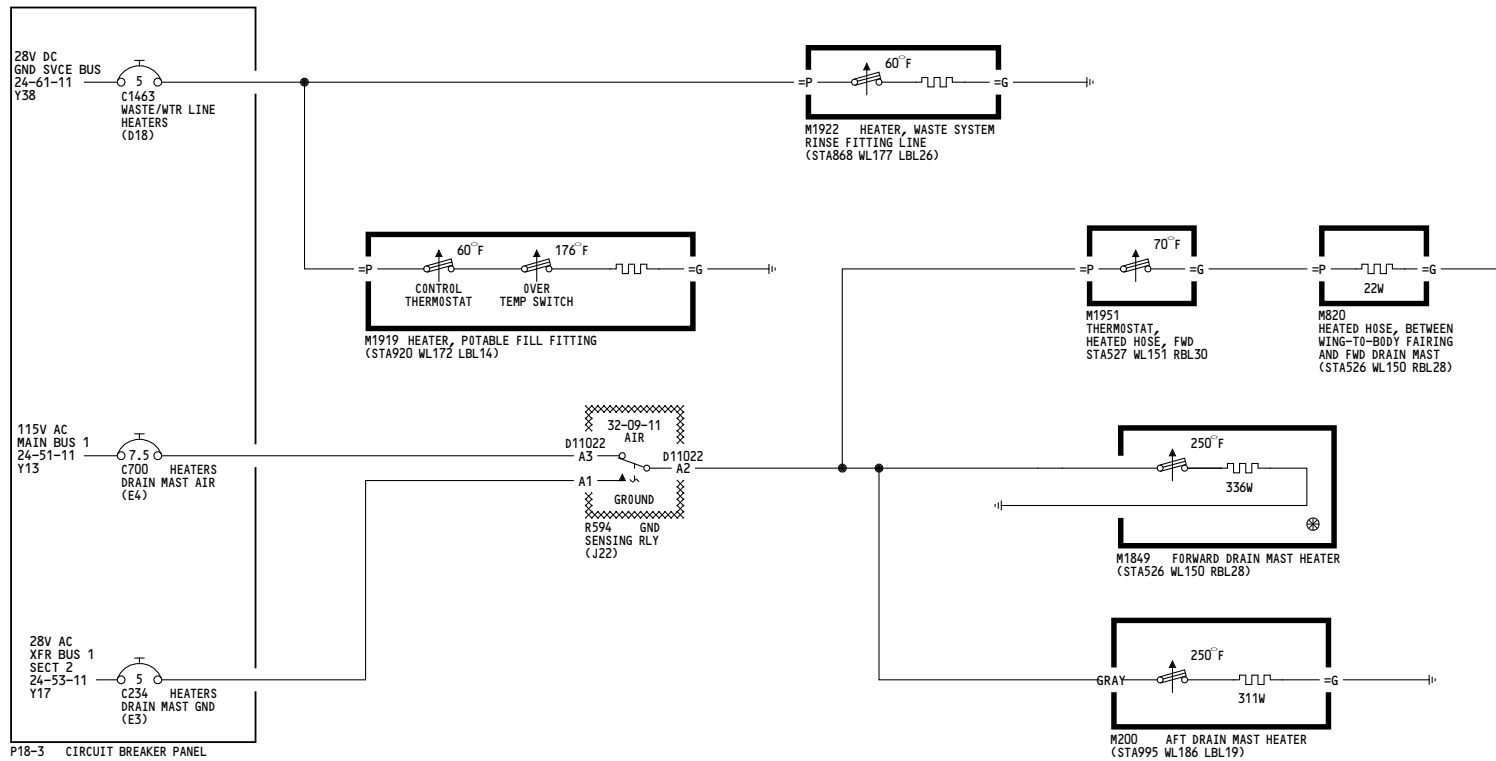
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**NOTES:**

1. HEATER LEAD LENGTH MINIMUM 36 INCHES FOR POWER, 12 INCHES FOR GROUND.

YT101-YT112, YT126-YT130

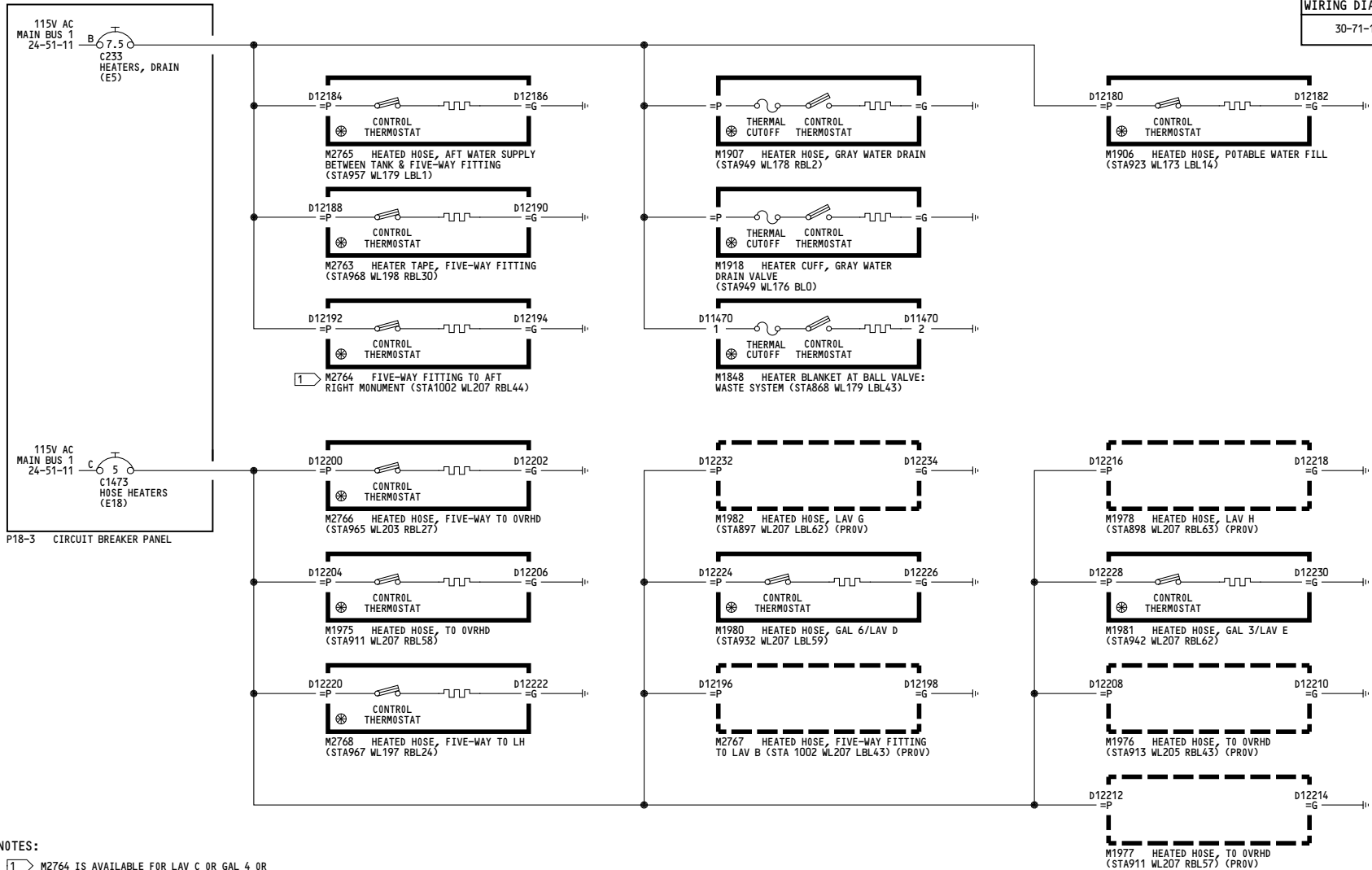
**DRAIN HEATERS**

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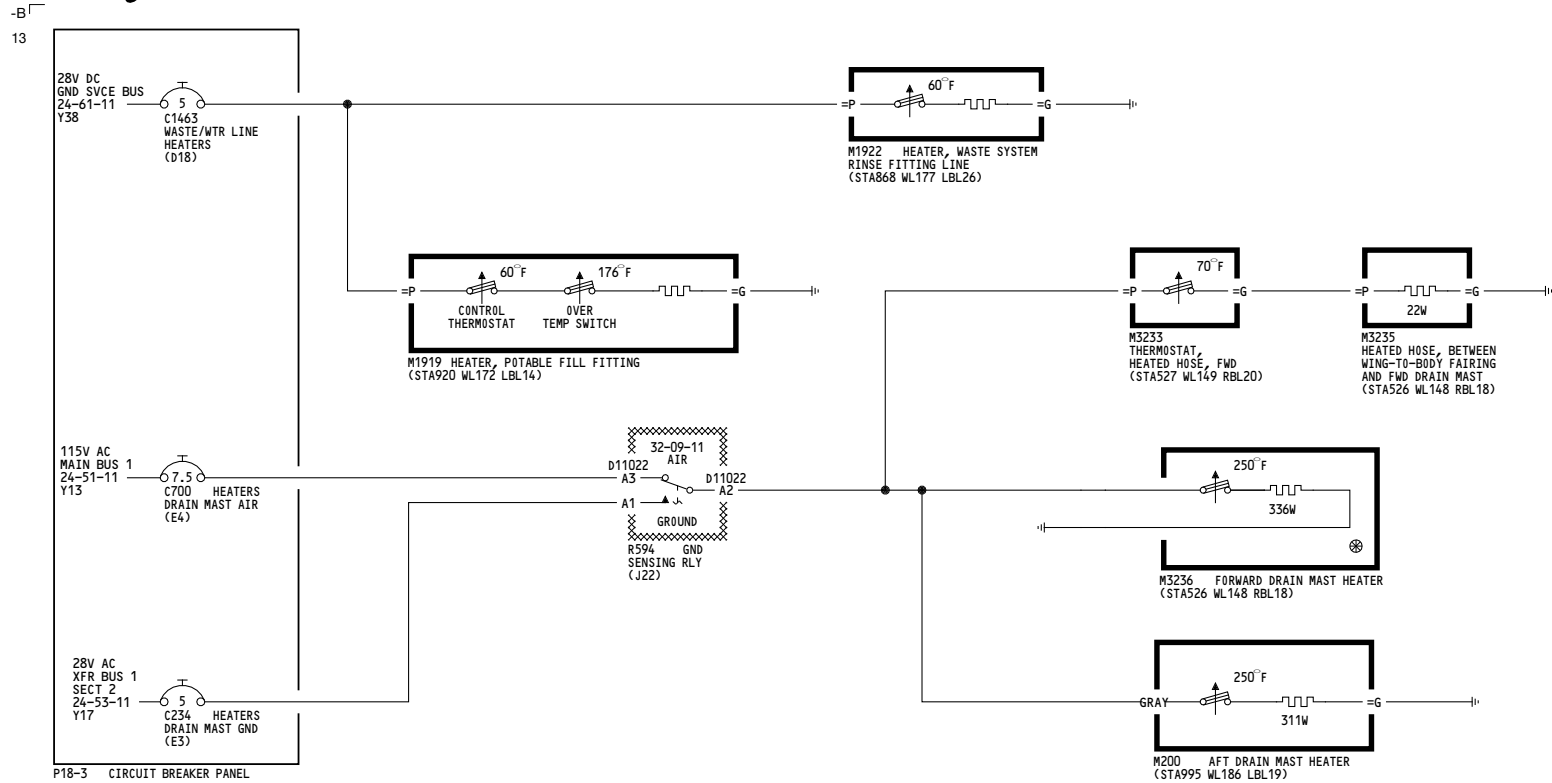
- 1 M2764 IS AVAILABLE FOR LAV C OR GAL 4 OR GAL 4B, WHICHEVER IS INSTALLED

YT101-YT112, YT126-YT130

**DRAIN HEATERS**

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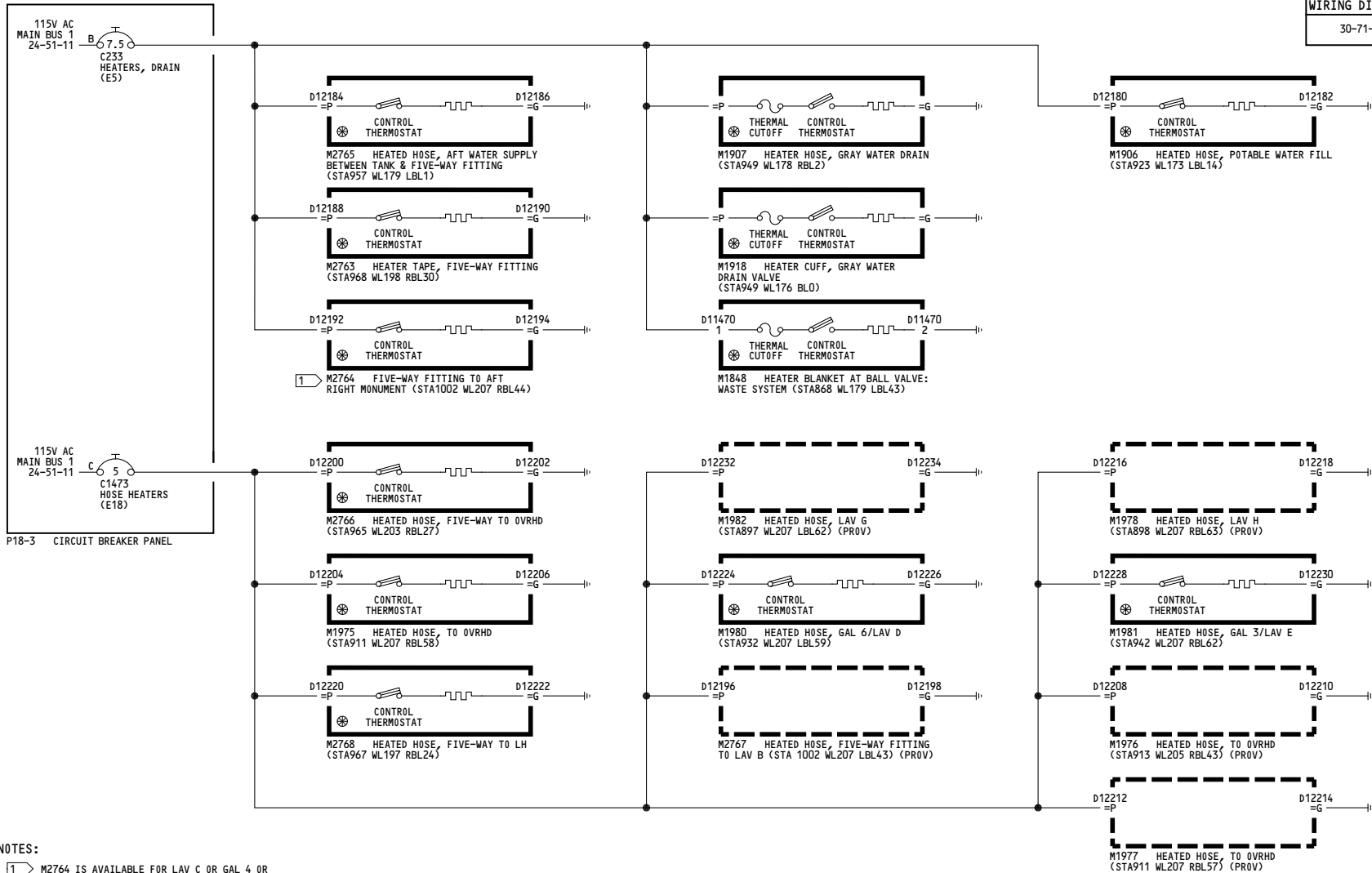
NOTES:  
1. HEATER LEAD LENGTH MINIMUM 36 INCHES FOR POWER, 12 INCHES FOR GROUND.

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**NOTES:**

- 1 M2764 IS AVAILABLE FOR LAV C OR GAL 4 OR GAL 4B, WHICHEVER IS INSTALLED

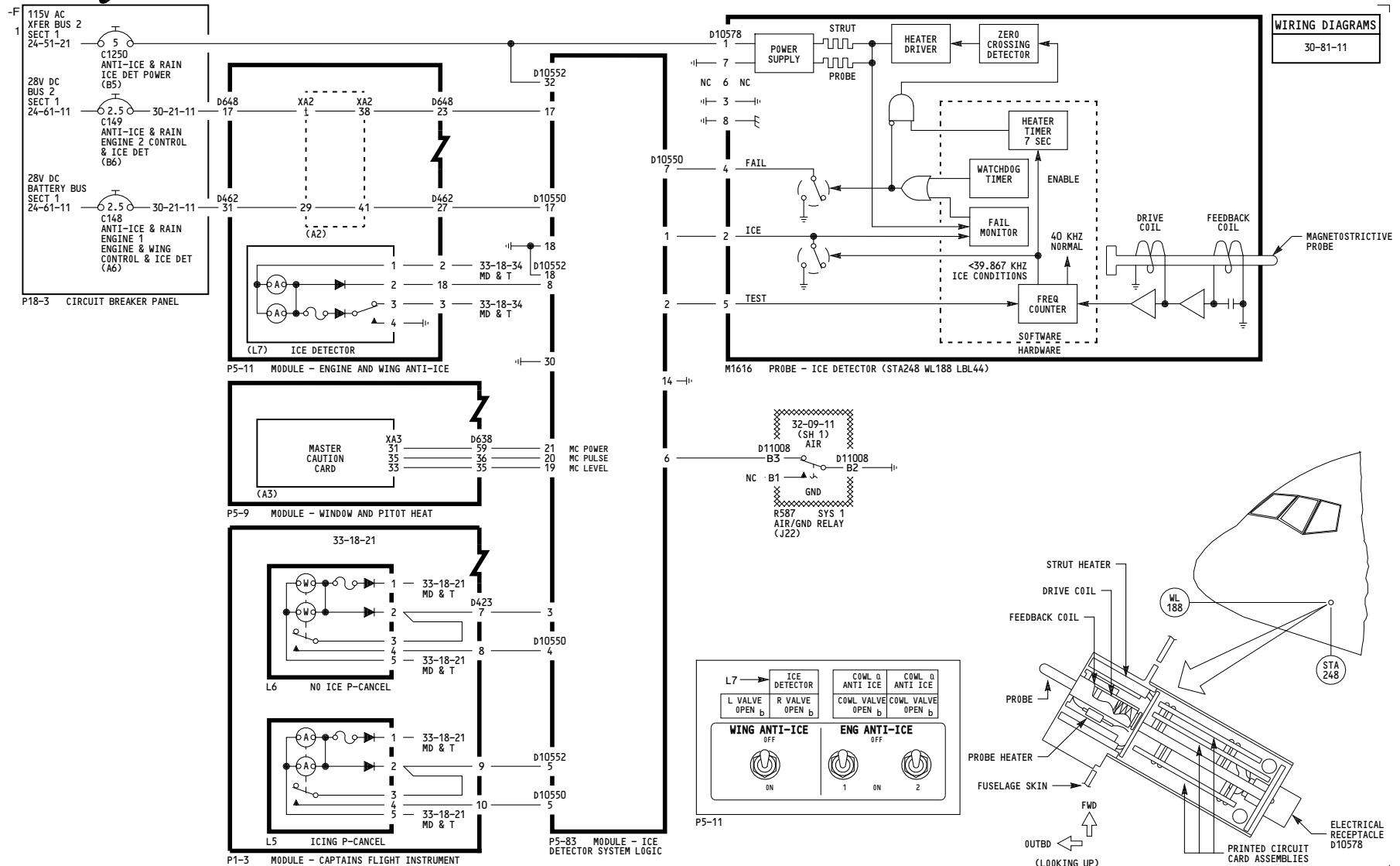
YT113-YT120, YT131-YT133

**DRAIN HEATERS**

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## ADVISORY ICE DETECTION SYSTEM

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