



Service Guide

Part # : L1986

Date: 07/28/2025

Page: 1 of 27

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Subject: M12 Electrical Cables (Phoenix) on Sukup Grain Dryers

REVISIONS: Updated tables showing M12 cable and bulkhead part numbers (page 26).
05/15/2025: Added "Phoenix" to Subject line.

Overview: Sukup Cross-Flow (Portable) and Mixed-Flow Grain Dryers are now equipped with new electrical cables that allow for easier connections to main power box, heaters, controls and junction boxes.

Layouts of main power box and control boxes have also been updated for compatibility with the new M12 cables, which replace most of the wiring conduits used on dryers.

Pictures below and on Pages 2 & 3 show new cables and various connections. Pages 4-25 show diagrams. Page 26 shows M12 cable and bulkhead (port) part numbers. Page 27 shows locations of components on common special-order dryers.

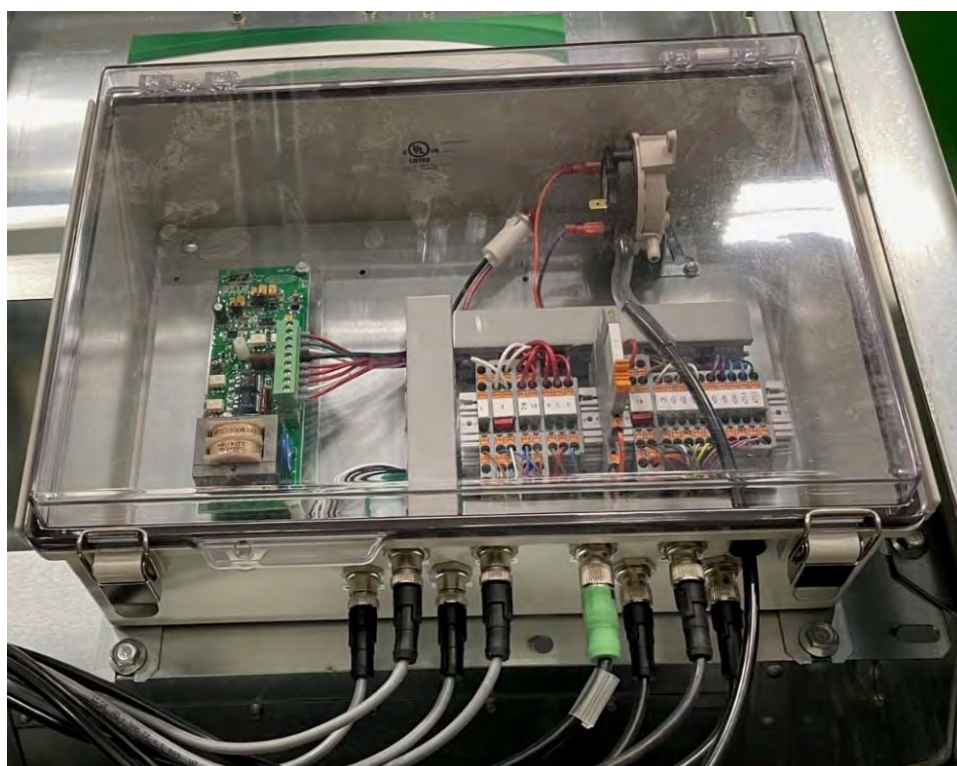


Image 1 - Heater box with M12 cables attached



Image 2 - Decal on bottom of heater box showing M12 cable connection ports

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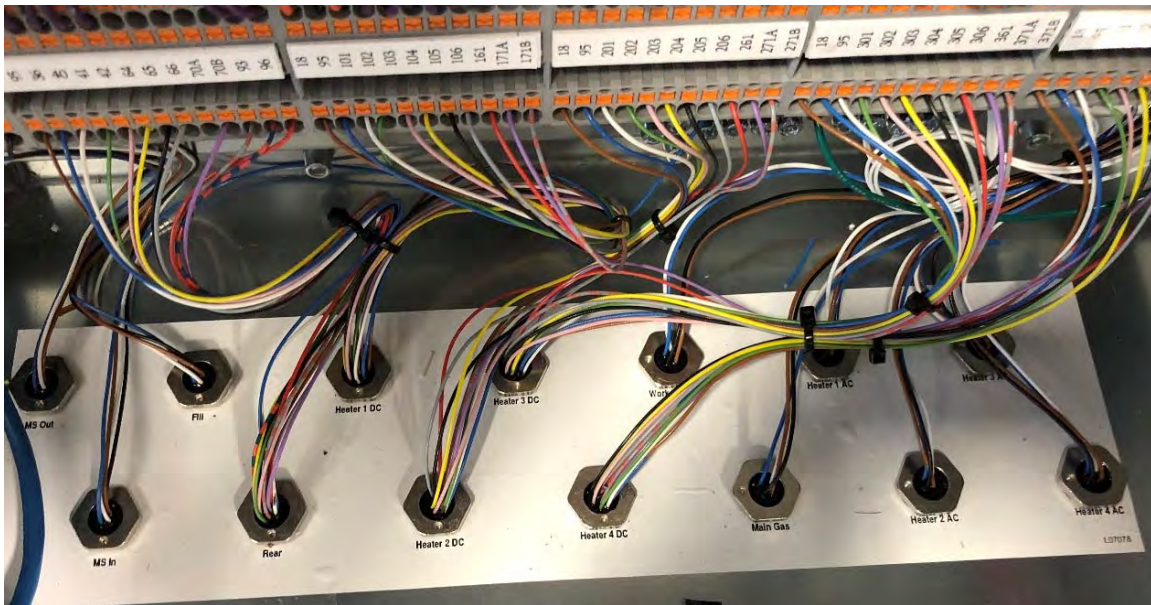


Image 3 - Sticker in left side of main power box identifying cable connection ports



Image 4 - Sticker on bottom of box identifying cable connection ports



Image 5 - Back of mixed-flow dryer cooling section



Image 6 - Cable connections to solenoid junction boxes



Image 7 - Upper heat section of mixed-flow dryer



Image 8 - Paddle switch for cross-flow dryer

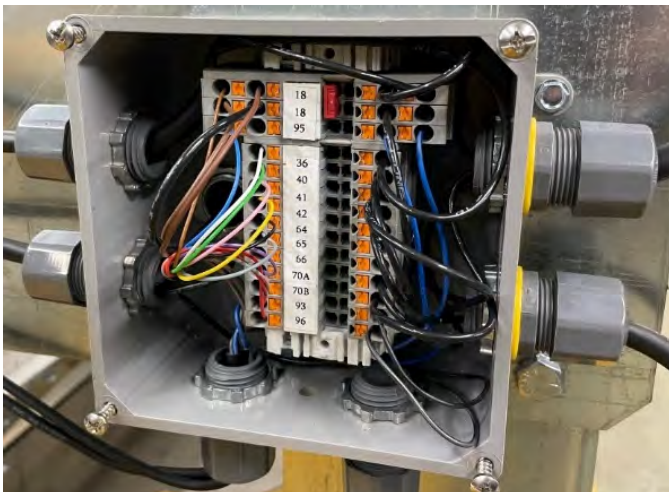


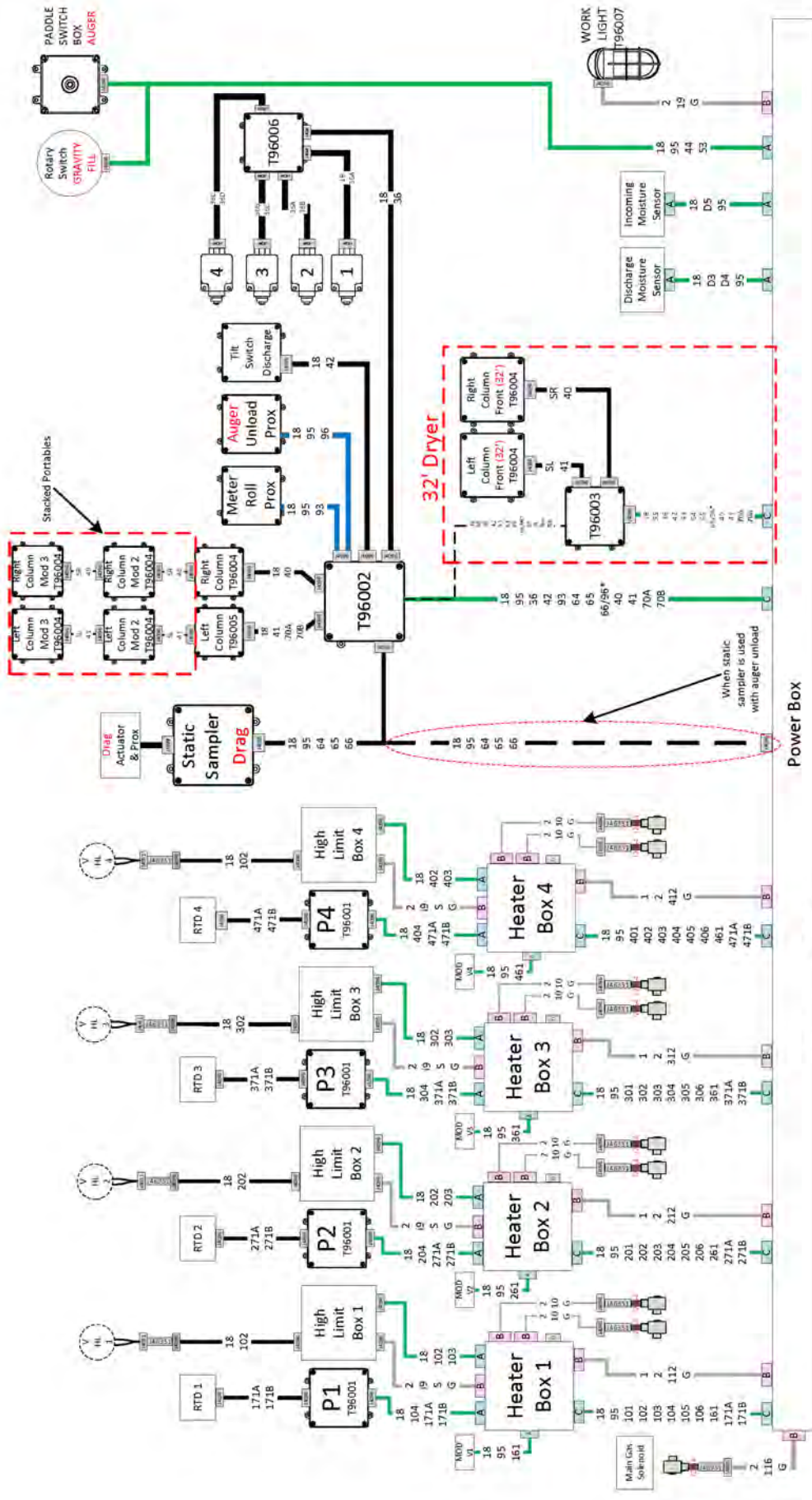
Image 9 - Weathertight connections on right rear junction box



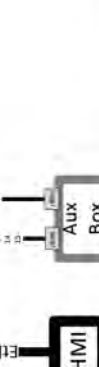
Image 10 - Cable (at front of dryer) from right rear junction box



Image 11 - Work light cable & column over-temp capillary on front of cross-flow dryer

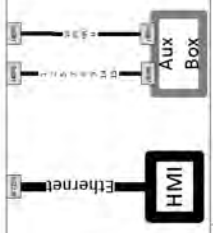


		SUKUP MANUFACTURING COMPANY 1555 255 th ST. SHEFFIELD, IOWA 50475	
DRAWN BY EM		DATE 08/26/2020	DRAWING NO. T96000
REVISION 1.18		DESCRIPTION ADDED APPLICATION VARIANCE NOTE	DESCRIPTION 1 LAYOUT, WIRING, DRYERS
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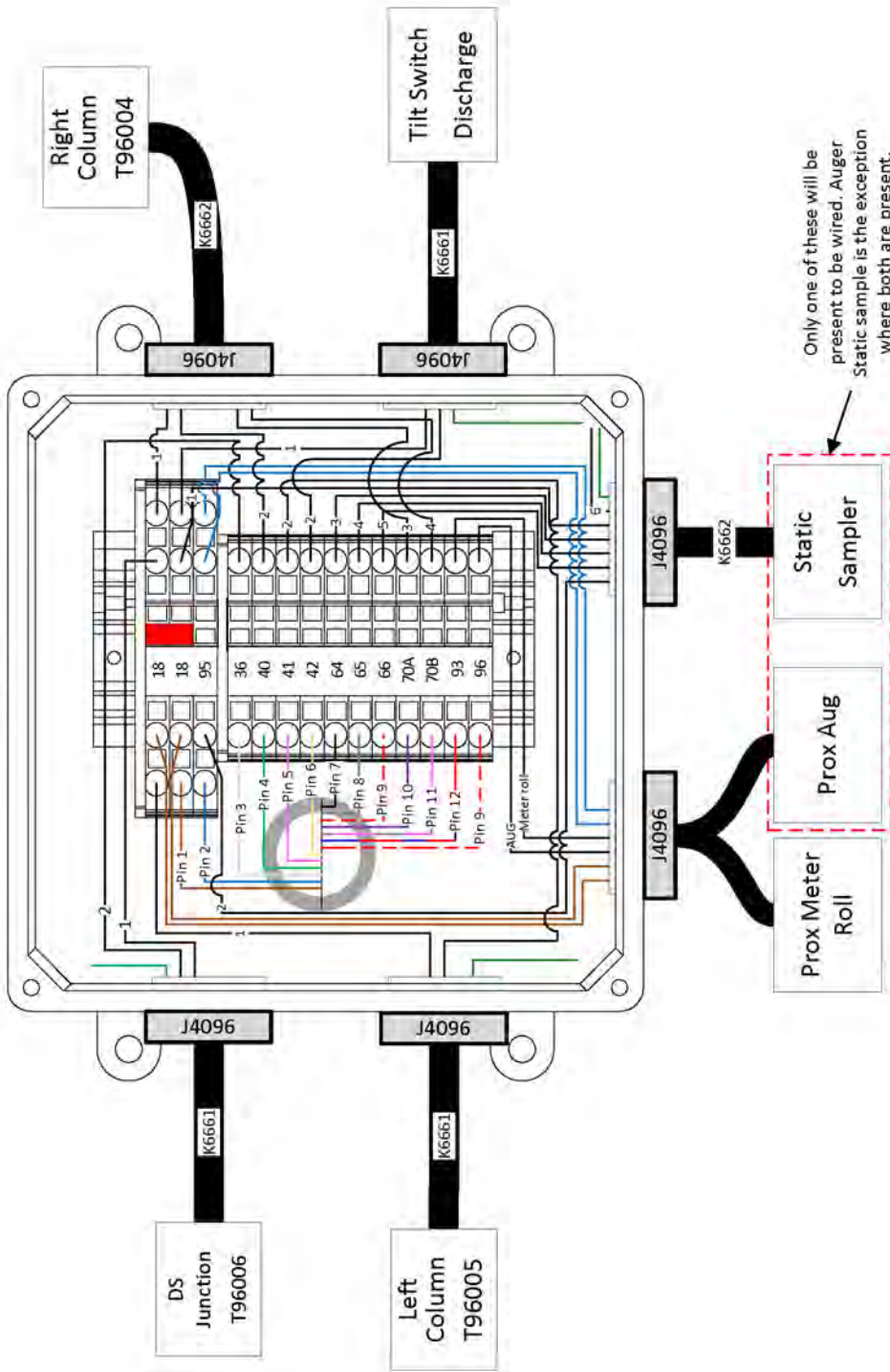
Flush-type connector - SACC-DSI-M12MS-4P-M16X1/0.5	A	J8841
Flush-type connector - SACC-DSI-M12PS-4P-M16X1/0.5	B	J8842
Flush-type connector - SACC-DSI-M12MS-12P-M16X1/0.5	C	J8843

Flush-type connector - SACC-DSI-M12MS-4P-M16X1/0.5	1411591	A	J8841
Flush-type connector - SACC-DSI-M12FS-4P-M16X1/0.5	1411584	B	J8842
Flush-type connector - SACC-DSI-M12MS-12P-M16X1/0.5	1411596	C	J8843

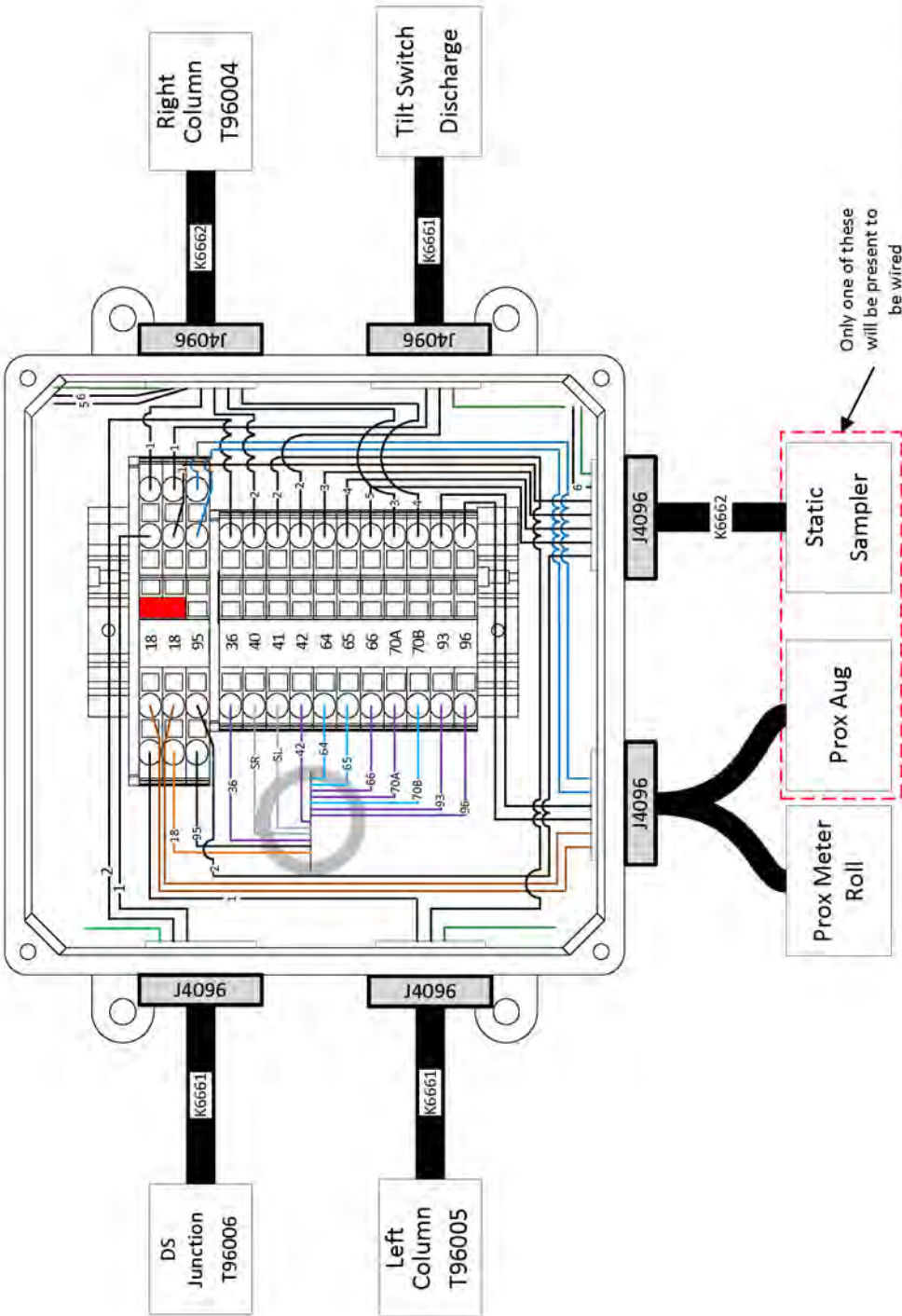


- M12 cable pinout**
- Pin 1 – Brown
 - Pin 2 – Blue
 - Pin 3 – White
 - Pin 4 – Green
 - Pin 5 – Pink
 - Pin 6 – Yellow
 - Pin 7 – Black
 - Pin 8 – Grey
 - Pin 9 – Red
 - Pin 10 – Purple
 - Pin 11 – Grey&Pink
 - Pin 12 – Red&Blue

Pin 9: wired according to dryer unload type:
 Drag – 66
 Auger – 96



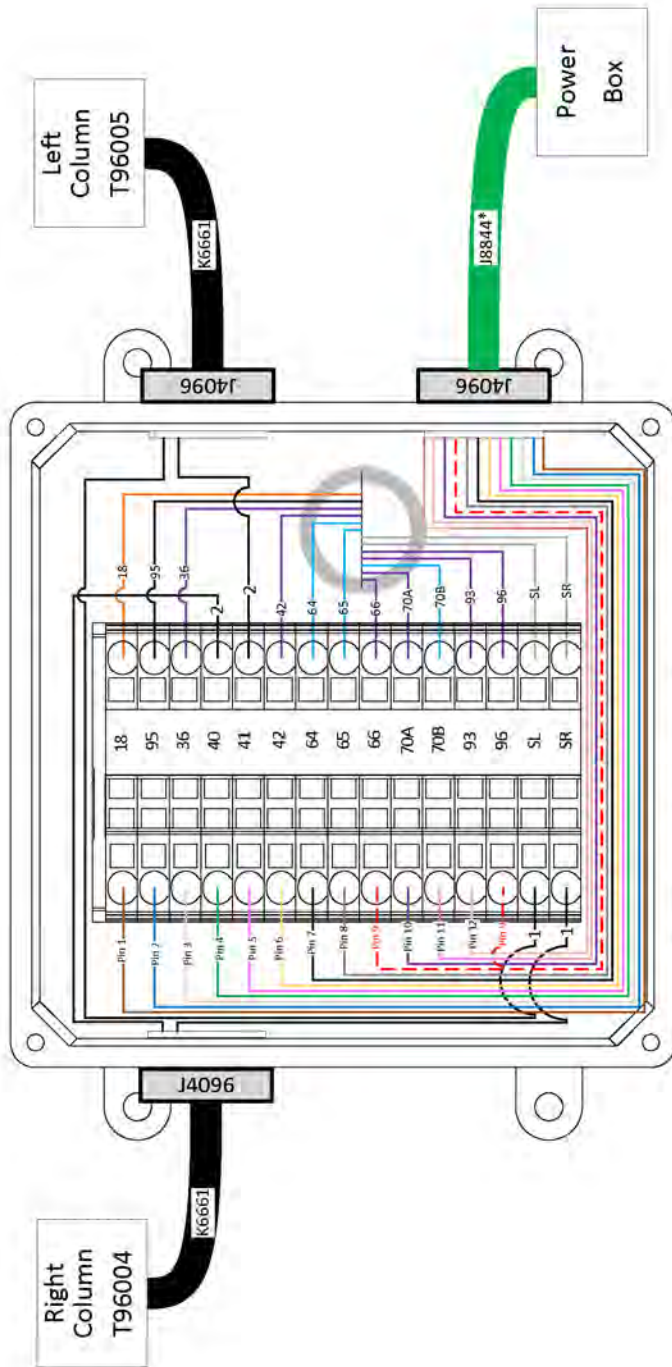
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LAYOUT, WIRING, DRYERS 2021, MIXED FLOWS AND PORTABLES		DESCRIPTION 1	DESCRIPTION 2
T96002		SHEET: 3 OF 28	



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	DESCRIPTION 1				
	DESCRIPTION 2	2021, MIXED FLOWS AND PORTABLES			
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T96002 32'

- M12 cable pinout**
Pin 1 – Brown
Pin 2 – Blue
Pin 3 – White
Pin 4 – Green
Pin 5 – Pink
Pin 6 – Yellow
Pin 7 – Black
Pin 8 – Grey
Pin 9 – Red
Pin 10 – Purple
Pin 11 – Grey&Pink
Pin 12 – Red&Blue



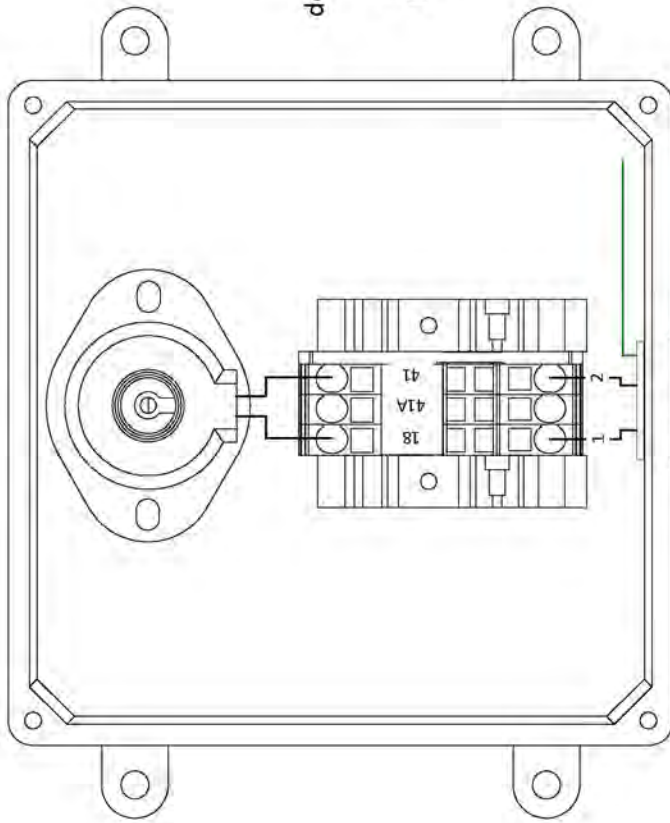
Pin 9: wired according to dryer unload

type:

- Drag – 66
- Auger – 96

T96003

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		DESCRIPTION 2 2021, MIXED FLOWS AND PORTABLES				

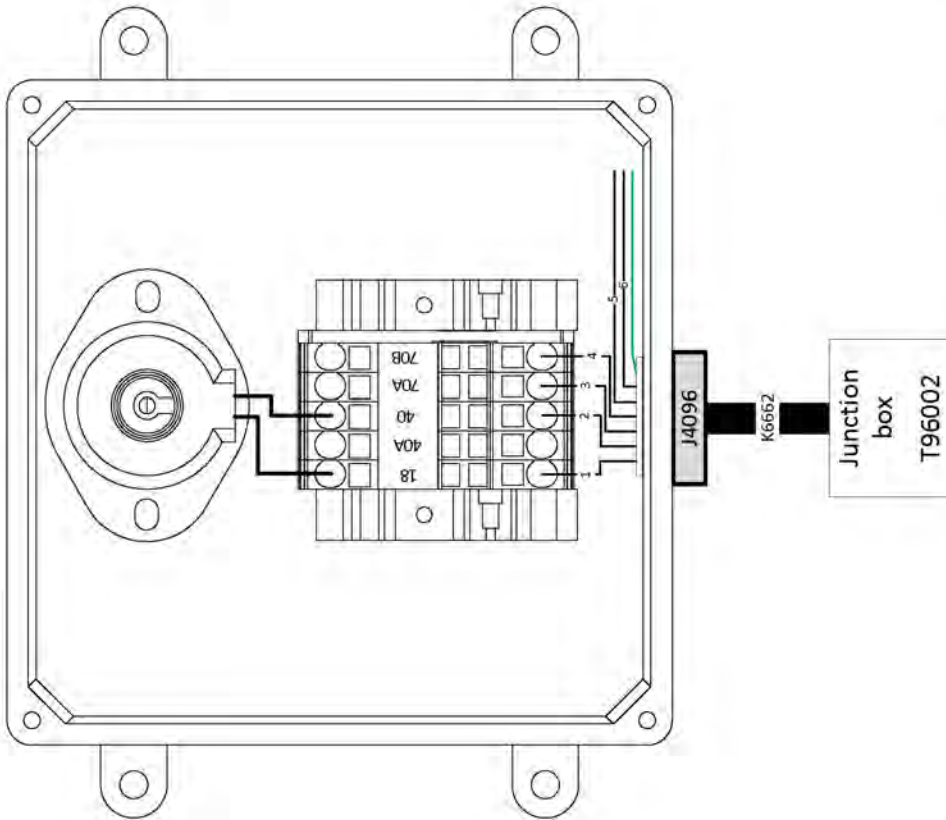


Terminal labels vary depending on which side the assembly is used for.
Left column: 18, 41A, 41
Right column: 18, 40A, 40

Junction Box
T96002

T96002					SUKUP MANUFACTURING COMPANY 1555 255 th ST. SHEFFIELD, IOWA 50475	
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T96004

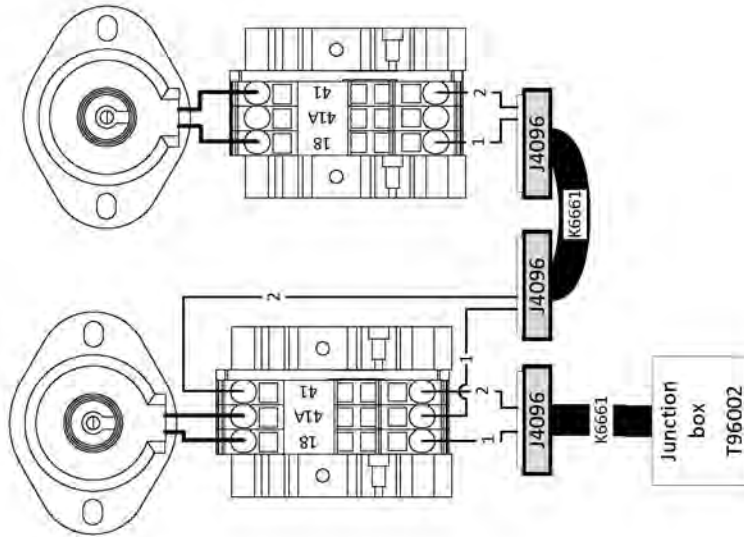


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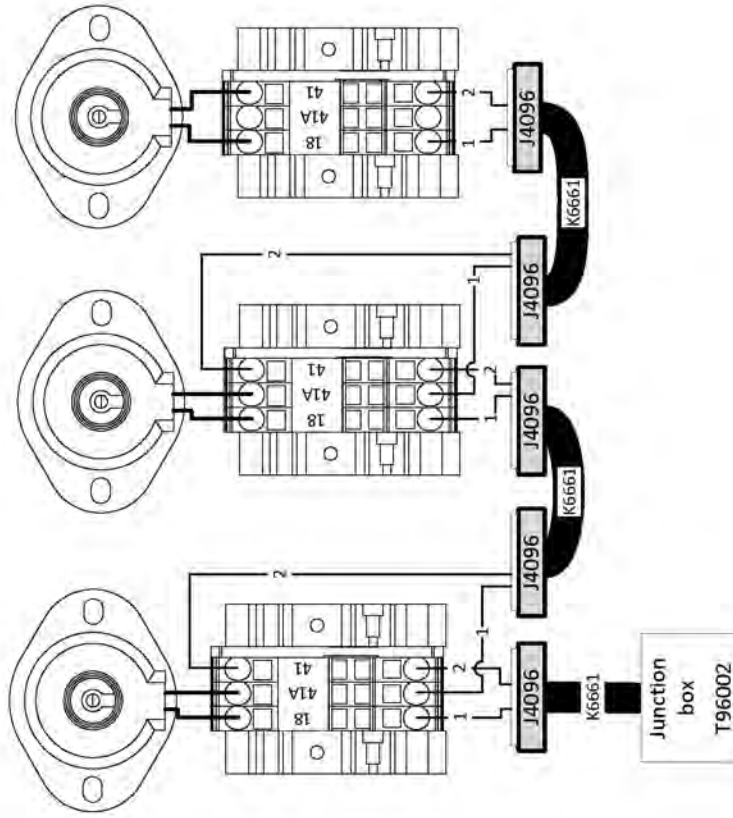
T96005

The drain holes in T96004 and T96005 serve as pilot holes for adding a 0.875" hole for additional cable glands (J4096) in the event of columns wired in series

Double Stack



Triple Stack



Terminal labeling varies depending on left or right column application. Wiring concept remains the same in both instances.

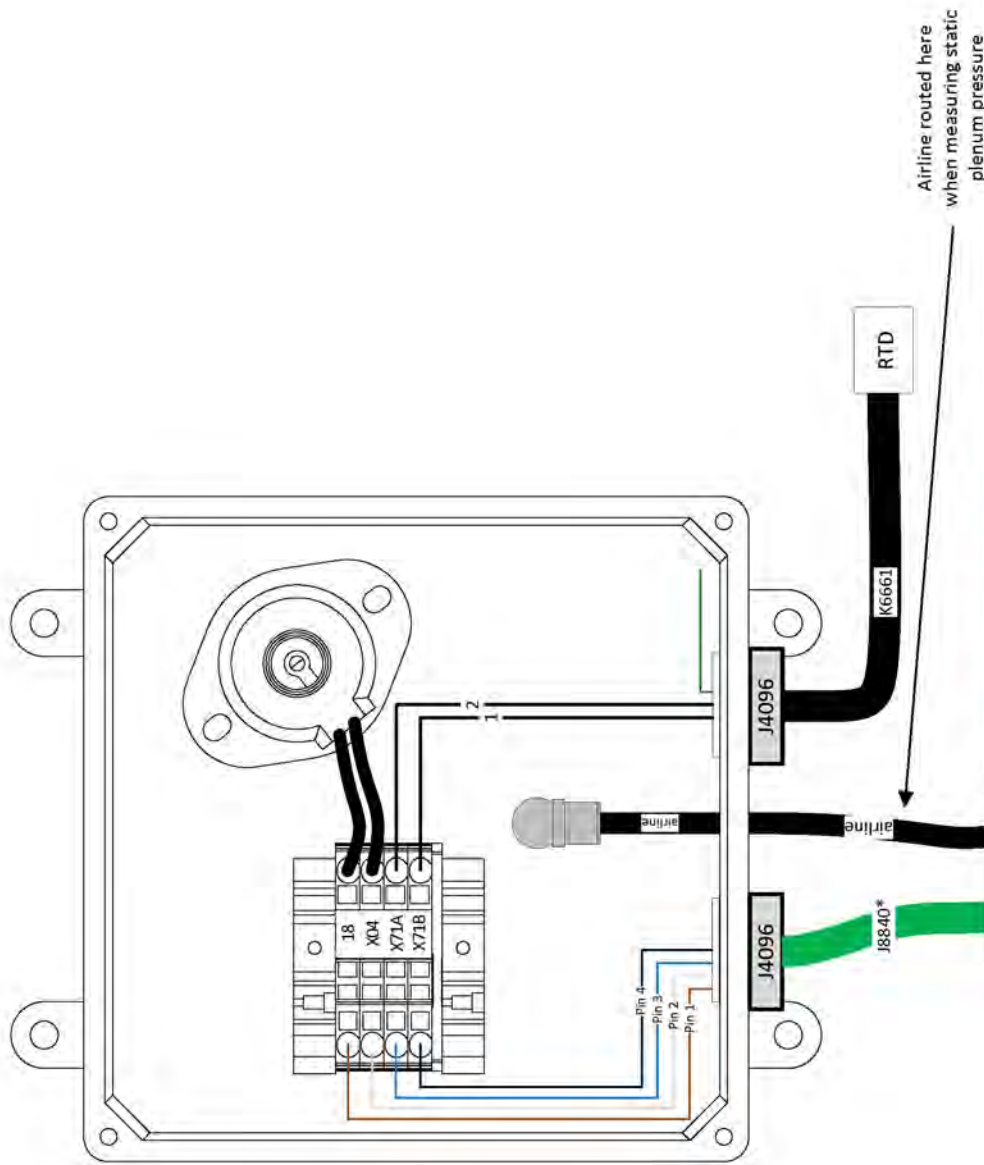
- Left column applications would be 41 and 41A as shown here.
- Right column applications would be 40 and 40A.



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Wiring columns in series (Portables)



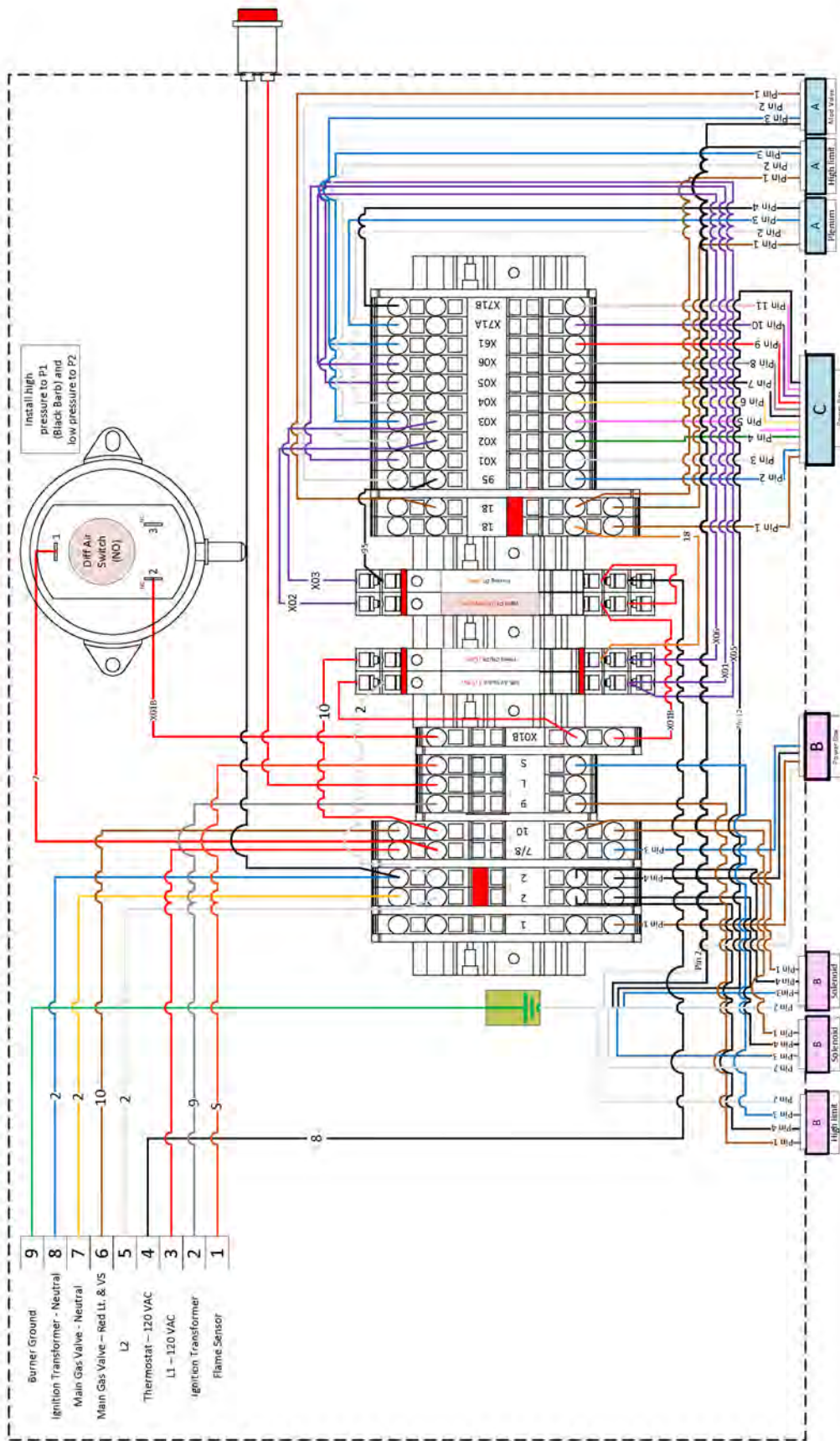
Heater Box					SUKUP MANUFACTURING COMPANY 1555 255 th ST. SHEFFIELD, IOWA 50475	
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LAYOUT, WIRING, DRYERS					2021 MIXED FLOWS AND PORTABLES	
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T96001

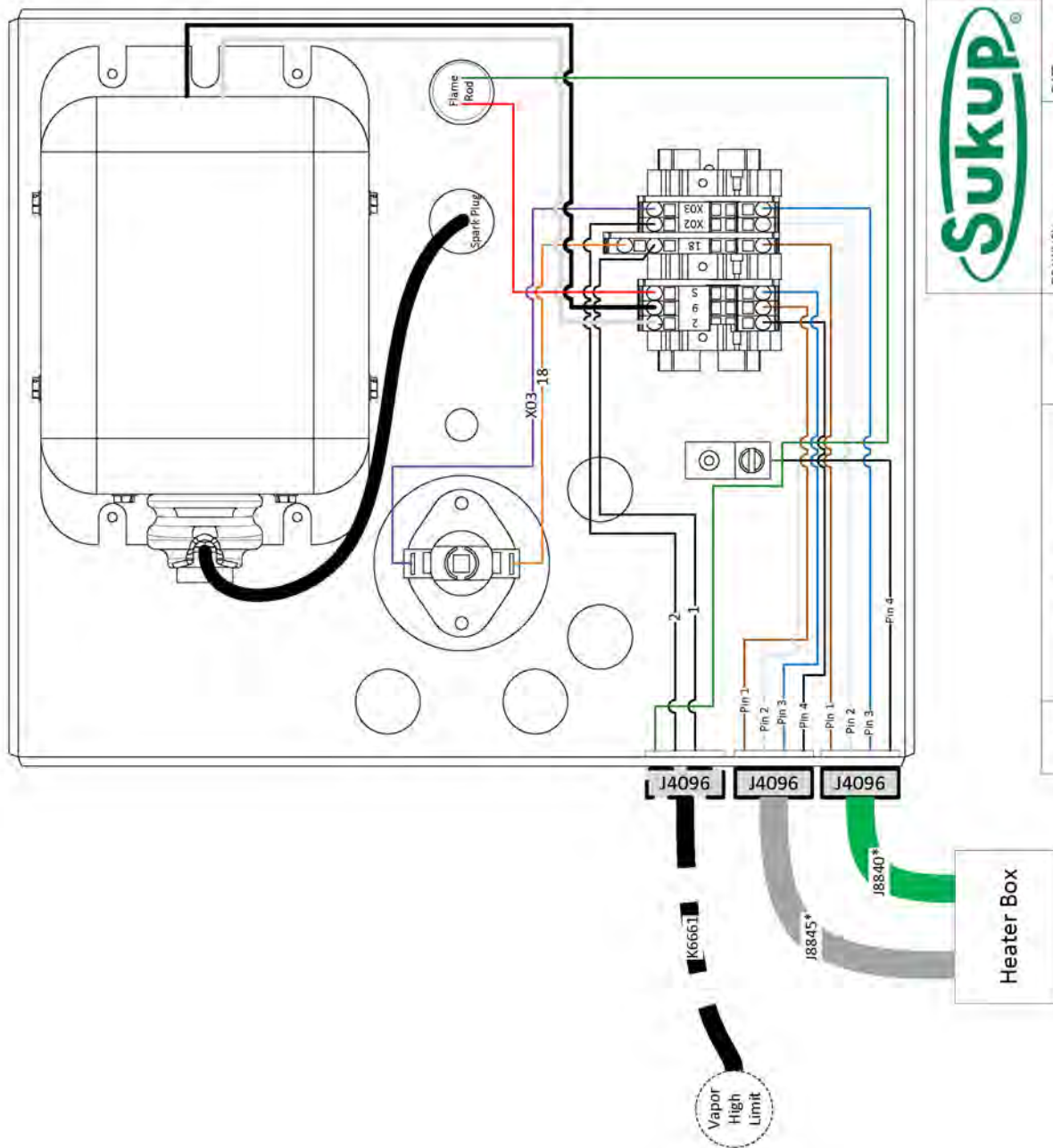


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Output position of the flame
sense and spark plug varies
according to heater housing type

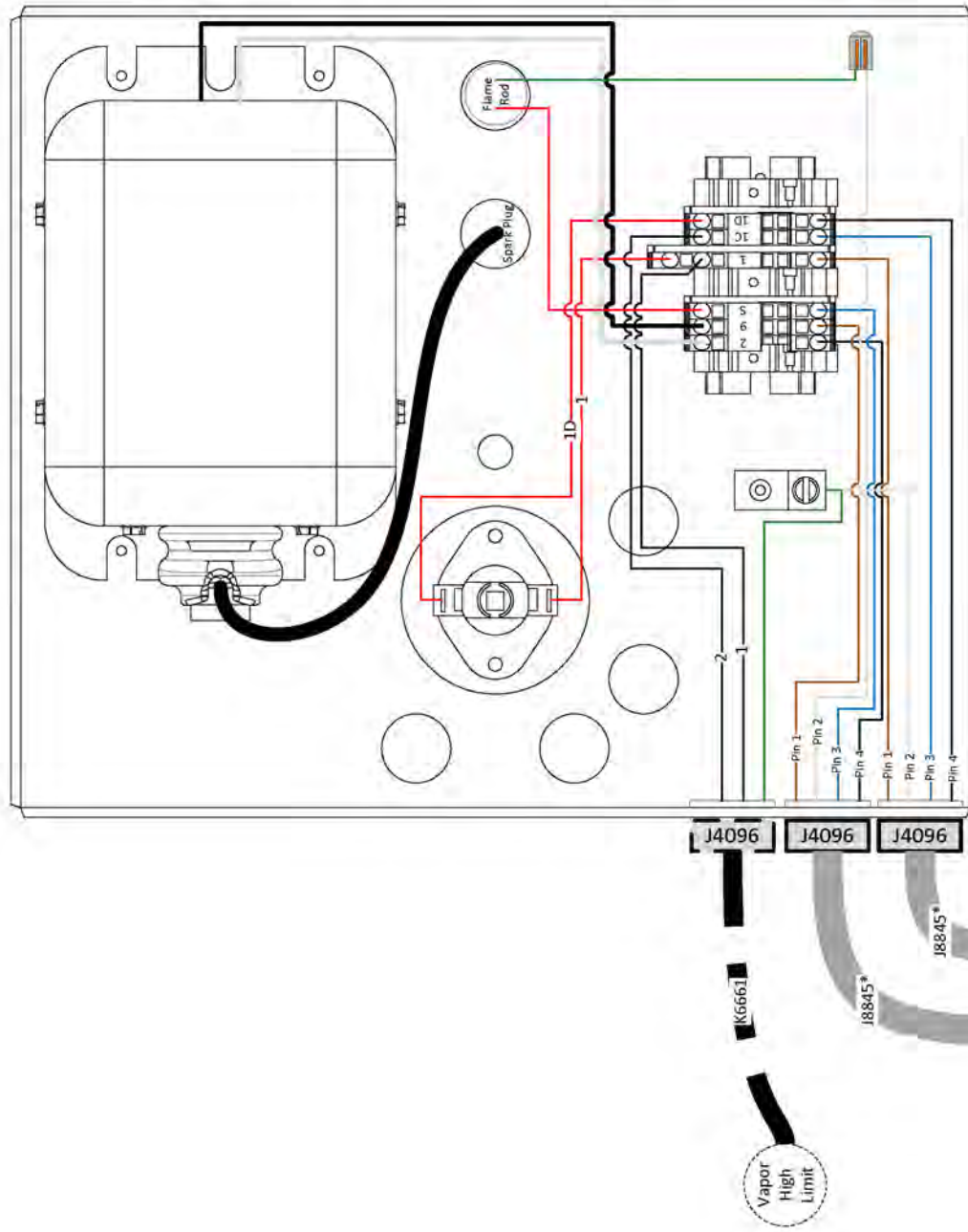


Standard
Domestic, CSA

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LAYOUT, WIRING, DRYERS 2021, MIXED FLOWS AND PORTABLES						

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Output position of the flame
sense and spark plug varies
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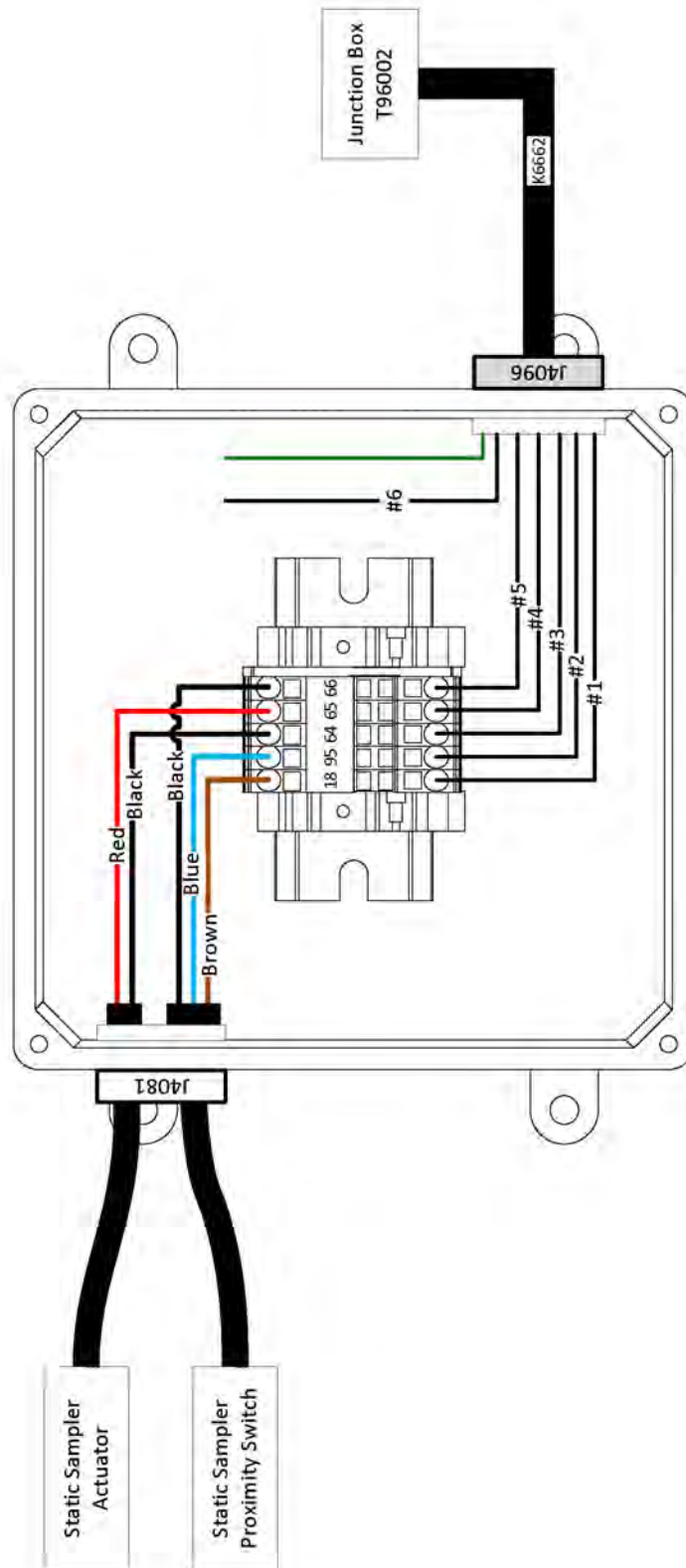


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						LAYOUT, WIRING, DRYERS 2021, MIXED FLOWS AND PORTABLES	



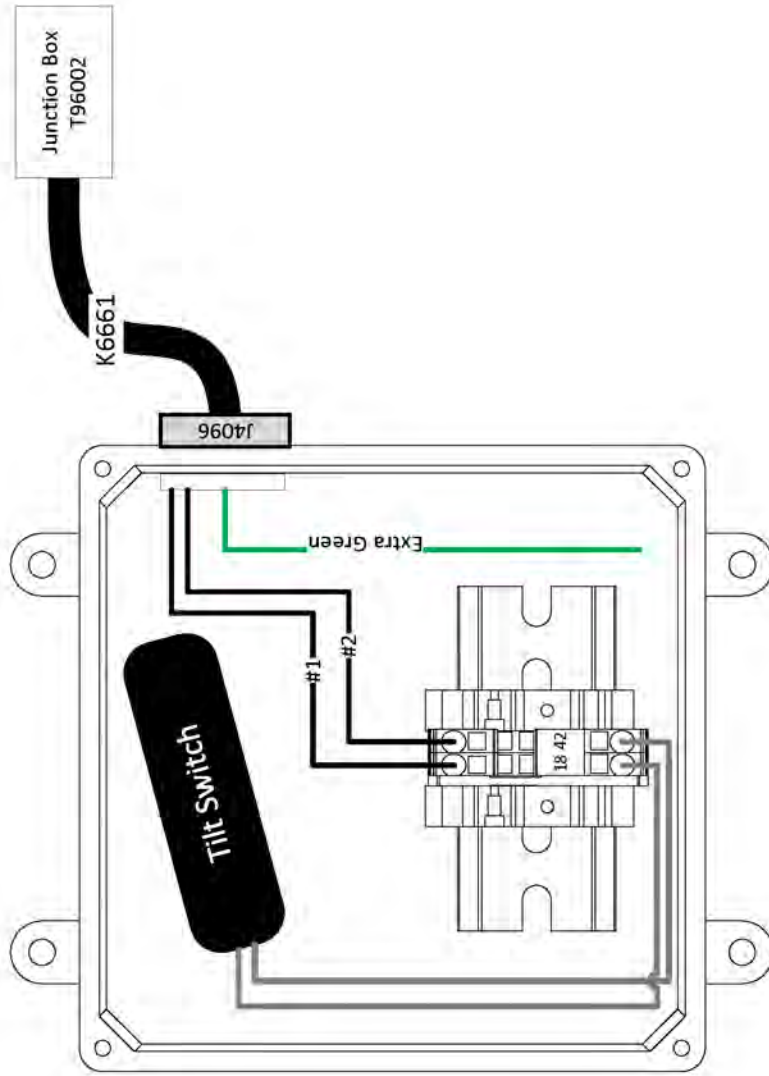
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Standard
CE



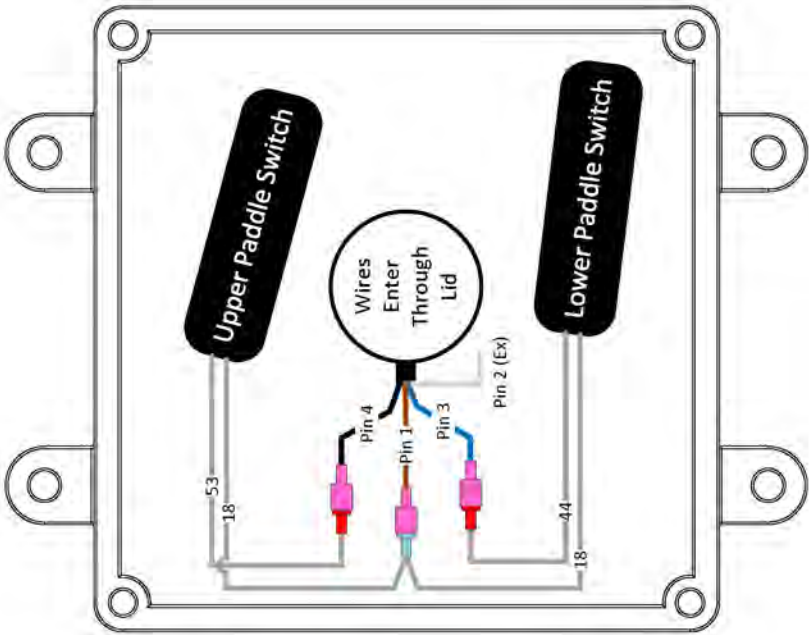
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Static Sampler								
LAYOUT, WIRING, DRYERS								
2021, MIXED FLOWS AND PORTABLES								
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T16278D
Discharge Tilt Box

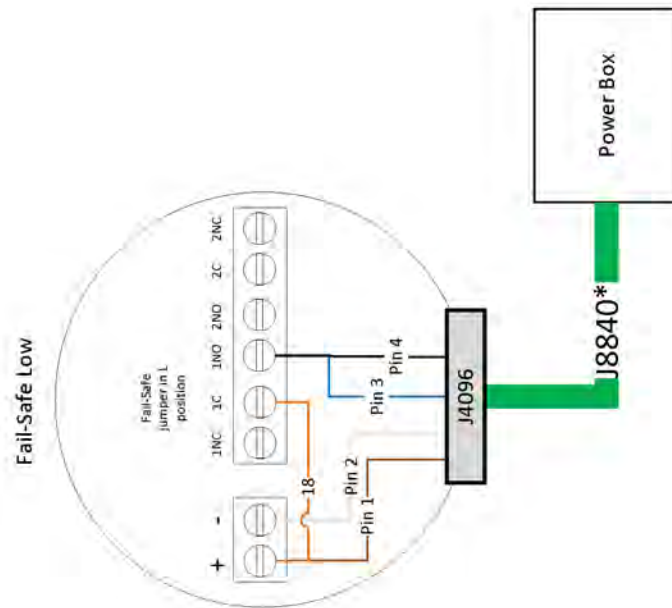
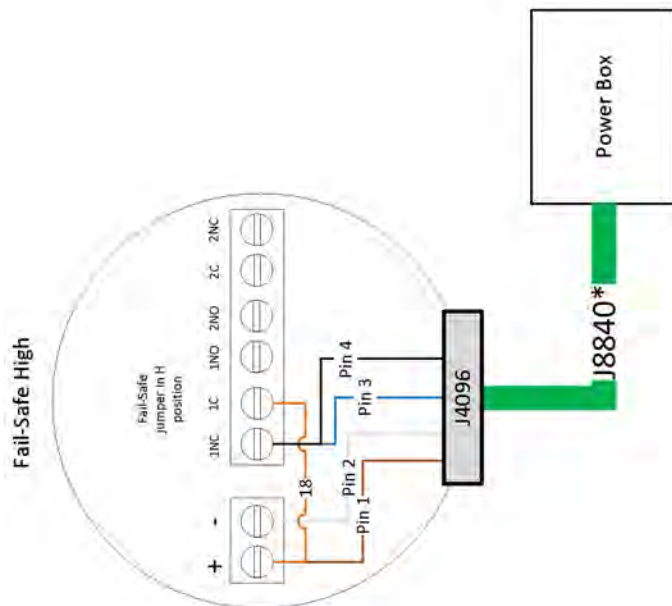
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T16244
Paddle Fill Switch

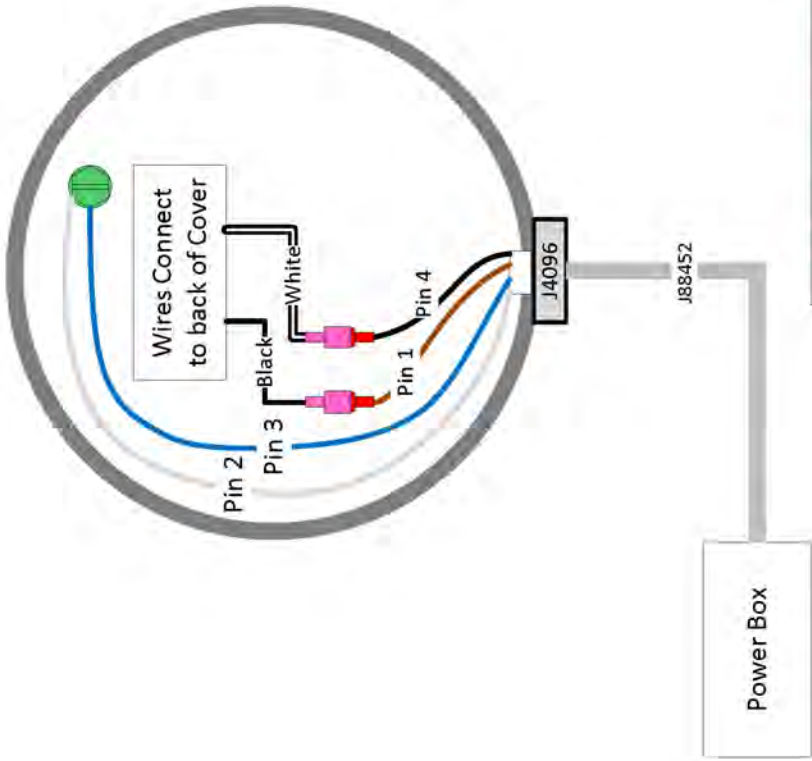
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L1986



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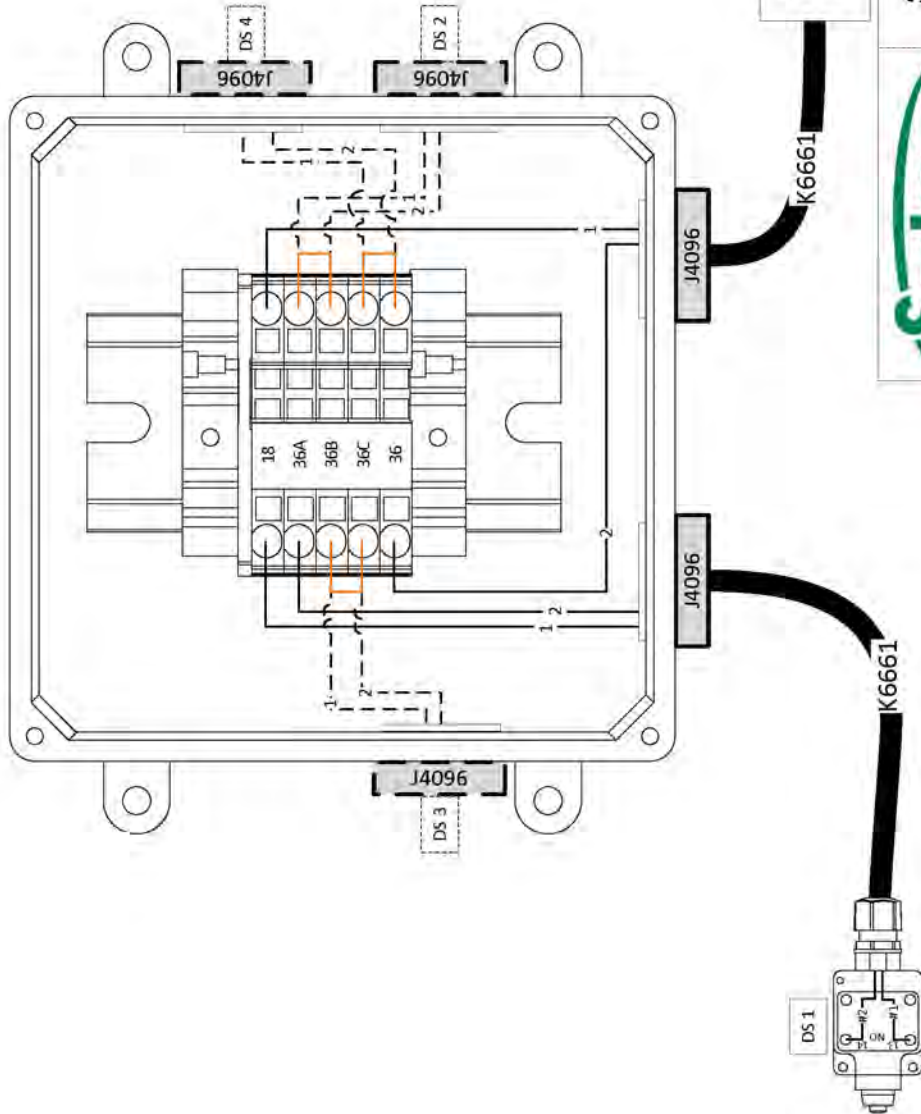
J56701
Rotary Fill Switch



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T96007

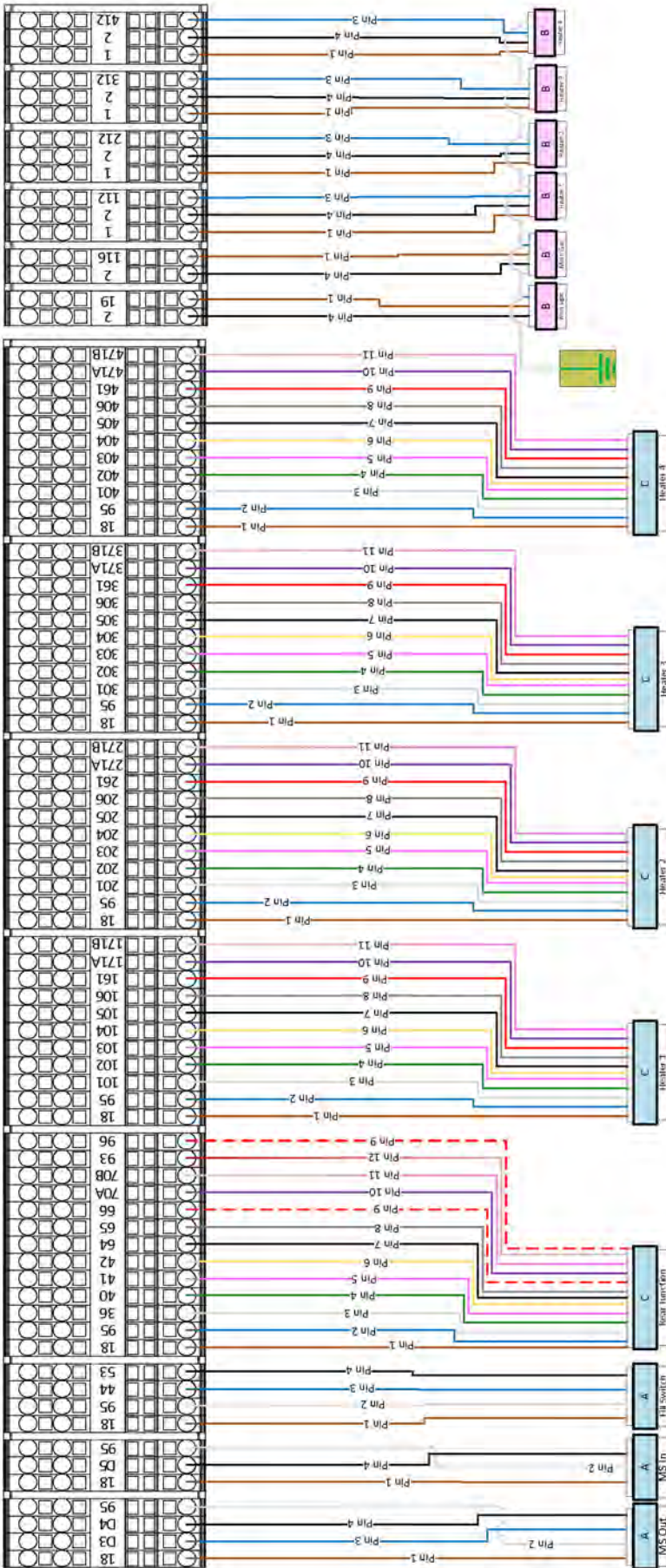
Orange jumpers get pulled out and replaced with door switch wires



Dryer #	Plenums	Doors
TM1606	1	2
TM1608	Plenum	
TM1609		
TM1610	2	3
TM1612	Plenum	
TM1613		
TM1614	3	4
TM1616	Plenum	
TM1617		
TM2405	1	2
TM2406	Plenum	
TM2409	2	3
TM2410	Plenum	
TM2413	3	4
TM2414	Plenum	
TM2418	4 Plenum	5
TM3206	2	1
TM3208	Plenum	
TM3209		
TM3210	3	2
TM3212	Plenum	
TM3213		
TM3214	4	3
TM3216	Plenum	
TM3217		

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T96006



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Tables below show M12 cable part numbers and usage. Colors in tables represent colors of M12 cables.

Length	DC 4 Pin	DC 4 Pin Shielded	DC 12 Pin		AC 4 Pin	
	M12 to Wire	M12 to M12	M12 to M12	M12 to Wire	M12 to M12	M12 to Wire
2 M (6.5')	J88401	X	X	X	X	J88451
3 M (9.8')	J88402	X	J88431	X	J88411	J88452
5 M (16.4')	J88403	X	J88432	X	J88412	J88453
10 M (32.8')	J88404	J88421	J88433	J88441	J88413	J88454
15 M (49.2')	J88405	J88422	J88434	J88442	J88414	J88455
20 M (65.6')	J88406	J88423	J88435	J88443	J88415	J88456
25 M (82.0')	J88407	J88424	X	X	X	X
30 M (98.4')	J88408	J88425	X	X	X	X

Table 1- Sukup part numbers for Phoenix cables

DC 4-PIN	DC-12 PIN	AC-4 PIN
J8841	J8843	J8842

Table 2 - Sukup part numbers for Phoenix bulkheads

CABLE	PINS	ENDS	LENGTH	PART #
Heater Box AC	4	M12 - M12	Various	J8841#
Heater Box, DC	12	M12 - M12	Various	J8843#
Moisture Sensor (Shielded)	4	M12 - M12	Various	J8842#
Fill Switch	4	M12 - Wire	Various	J8840#
Right Rear Junction Box	12	M12 - Wire	Various	J8844#
Main Gas Solenoid	4	M12 - Wire	3 M	J88452
Work Light	4	M12 - Wire	5 M	J88453
Gas Solenoids	4	M12 - Wire	3 M	J88452
Ignitor Box, AC	4	M12 - Wire	3 M	J88452
Mod. Valve	4	M12 - Wire	3 M	J88402
Ignitor Box, DC	4	M12 - Wire	3 M	J88402

NOTE

Depends on model – See Table 4
 Depends on model – See Table 4
 Depends on length, unload extension
 Depends on model – See Table 4
 10M: J88441; 15M & all others: J88442

Table 3 - M12 cable identification & usage

Model	Incoming Moisture Sensor	Fill Switch	Heater Box AC #1	Heater Box AC #2	Heater Box AC #3	Heater Box AC #4	Heater Box DC #1	Heater Box DC #2	Heater Box DC #3	Heater Box DC #4
TM1606	J88423	J88406	J88413	X	X	X	J88433	X	X	X
TM1608	J88423	J88406	J88413	X	X	X	J88433	X	X	X
TM1609	J88424	J88407	J88413	X	X	X	J88433	X	X	X
TM1610	J88424	J88407	J88413	J88414	X	X	J88433	J88434	X	X
TM1612	J88424	J88407	J88413	J88414	X	X	J88433	J88434	X	X
TM1613	J88424	J88407	J88413	J88414	X	X	J88433	J88434	X	X
TM1614	J88424	J88407	J88413	J88414	J88414	X	J88433	J88434	J88434	X
TM1616	J88424	J88407	J88413	J88414	J88415	X	J88433	J88434	J88435	X
TM1617	J88424	J88407	J88413	J88414	J88415	X	J88433	J88434	J88435	X
TM2405	J88423	J88406	J88413	X	X	X	J88433	X	X	X
TM2406	J88424	J88407	J88413	X	X	X	J88433	X	X	X
TM2409	J88424	J88407	J88413	J88414	X	X	J88433	J88434	X	X
TM2410	J88424	J88407	J88413	J88414	X	X	J88433	J88434	X	X
TM2413	J88424	J88407	J88413	J88414	J88414	X	J88433	J88434	J88434	X
TM2414	J88425	J88408	J88413	J88414	J88414	X	J88433	J88434	J88434	X
TM2418	J88425	J88408	J88413	J88414	J88414	J88415	J88433	J88434	J88434	J88435
TM3206	J88424	J88407	J88415	J88413	X	X	J88435	J88433	X	X
TM3208	J88424	J88407	J88415	J88413	X	X	J88435	J88433	X	X
TM3209	J88424	J88407	J88415	J88413	X	X	J88435	J88433	X	X
TM3210	J88424	J88407	J88415	J88413	J88414	X	J88435	J88433	J88434	X
TM3212	J88425	J88408	J88415	J88413	J88414	X	J88435	J88433	J88434	X
TM3213	J88425	J88408	J88415	J88413	J88414	X	J88435	J88433	J88434	X
TM3214	J88425	J88408	J88415	J88413	J88414	J88414	J88435	J88433	J88434	J88434
TM3216	J88425	J88408	J88415	J88413	J88414	J88415	J88435	J88433	J88434	J88435
TM3217	J88425	J88408	J88415	J88413	J88414	J88415	J88435	J88433	J88434	J88435

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Table 4 - Mixed-Flow Dryer height-dependent cables
 (Largest dryer expandability option shown)

See notes below on locations of components on common special-order dryers.

Front-Unload Portable & 16' & 24' Mixed-Flow Dryer:

If dryer unloads from front, junction box T96002 and both column over-temp switch boxes (T96004 & T96005) will be on front of dryer, and an extended door switch cable will go to door switch box T96006 on rear of dryer.

32' Mixed-Flows – Rear discharge:

As shown on Page 4, an additional T96003 junction box is used to connect column over-temp switches in series. M12 cable will terminate in T96003 junction box on front and a wire harness will run through solid conduit to T96002 junction box at rear of dryer.

32' Mixed-Flows – Front discharge:

If dryer unloads from front, junction box T96002 and column over-temp boxes T96004 and T96005 will be on front of dryer. An M12 cable will run from main power box to T96003 at rear and a wire harness will run through solid conduit to T96002 junction box at rear of dryer. Door switch cable will run from T96002 box to T96006.

Auger Unload Static Sampler:

If a static sample box is used on dryer with an unload auger, sample box will be wired directly into main power box using K6662 cable and cable gland J4096.