

EMC Thermostat Replacement Kit

Installation Instructions

PNEG-1990

Date: 01-06-15



PNEG-1990

Contents

Chapter 1 Safety	4
Safety Guidelines	4
Safety Instructions	5
Chapter 2 EMC Thermostat Replacement Kit Instructions	7
Product Description	8
Installation	9
Portable Dryer Sensor Wiring Instructions	11
Top Dry Sensor Wiring	12
Programming the Omron	13
Operation	13
Chapter 3 Warranty	15

Safety Guidelines

This manual contains information that is important for you, the owner/operator, to know and understand. This information relates to protecting **personal safety** and **preventing equipment problems**. It is the responsibility of the owner/operator to inform anyone operating or working in the area of this equipment of these safety guidelines. To help you recognize this information, we use the symbols that are defined below. Please read the manual and pay attention to these sections. Failure to read this manual and its safety instructions is a misuse of the equipment and may lead to serious injury or death.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.



This symbol indicates an imminently hazardous situation which, if not avoided, **will result in serious injury or death**.



This symbol indicates a potentially hazardous situation which, if not avoided, **may result in serious injury or death**.



This symbol indicates a potentially hazardous situation which, if not avoided, **may result in minor or moderate injury**.



This symbol indicates a potentially hazardous situation which, if not avoided, **may result in property damage**.

Safety Instructions

Our foremost concern is your safety and the safety of others associated with this equipment. We want to keep you as a customer. This manual is to help you understand safe operating procedures and some problems that may be encountered by the operator and other personnel.

As owner and/or operator, it is your responsibility to know what requirements, hazards, and precautions exist, and to inform all personnel associated with the equipment or in the area. Safety precautions may be required from the personnel. Avoid any alterations to the equipment. Such alterations may produce a very dangerous situation where **SERIOUS INJURY** or **DEATH** may occur.

This equipment shall be installed in accordance with the current installation codes and applicable regulations, which should be carefully followed in all cases. Authorities having jurisdiction should be consulted before installations are made.

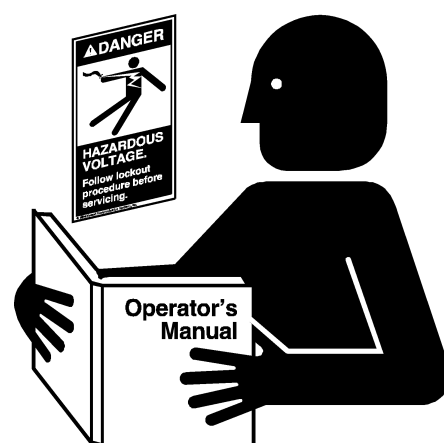
Follow Safety Instructions

Carefully read all safety messages in this manual and safety signs on your machine. Keep signs in good condition. Replace missing or damaged safety signs. Be sure new equipment components and repair parts include the current safety signs. Replacement safety signs are available from the manufacturer.

Learn how to operate the machine and how to use controls properly. Do not let anyone operate without instruction.

Keep your machinery in proper working condition. Unauthorized modifications to the machine may impair the function and/or safety and affect machine life.

If you do not understand any part of this manual or need assistance, contact your dealer.



Read and Understand Manual

Install and Operate Electrical Equipment Properly

Electrical controls should be installed by a qualified electrician and must meet the standards set by the National Electrical Code and all local and state codes.

Disconnect and lock out all power sources before installing wires/cables or servicing equipment.



Electric Shock Hazard

1. Safety

Install and Operate Gas-Fired Equipment Properly

Fuel supply should be installed by a qualified gas technician and must meet local and state codes for gaseous fuel supplies.

Disconnect and lock out all fuel sources before servicing equipment.



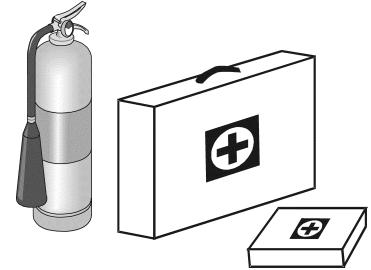
Explosive Gases

Prepare for Emergencies

Be prepared if fire starts.

Keep a first aid kit and fire extinguisher handy.

Keep emergency numbers for doctors, ambulance service, hospital, and fire department near your telephone.



Keep Emergency Equipment Quickly Accessible

Wear Protective Clothing

Wear close-fitting clothing and safety equipment appropriate to the job.

Remove all jewelry.

Tie long hair up and back.

Wear safety glasses at all times to protect eyes from debris.

Wear gloves to protect your hands from sharp edges on plastic or steel parts.

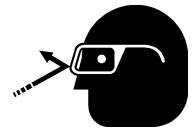
Wear steel-toed boots to help protect your feet from falling debris. Tuck in any loose or dangling shoestrings.

A respirator may be needed to prevent breathing potentially toxic fumes and dust.

Wear a hard hat to help protect your head.

Wear appropriate fall protection equipment when working at elevations greater than six feet (6').

Eye Protection



Gloves



Steel-Toed Boots



Respirator



Hard Hat



Fall Protection



2. EMC Thermostat Replacement Kit Instructions

Tools you will need for this installation:

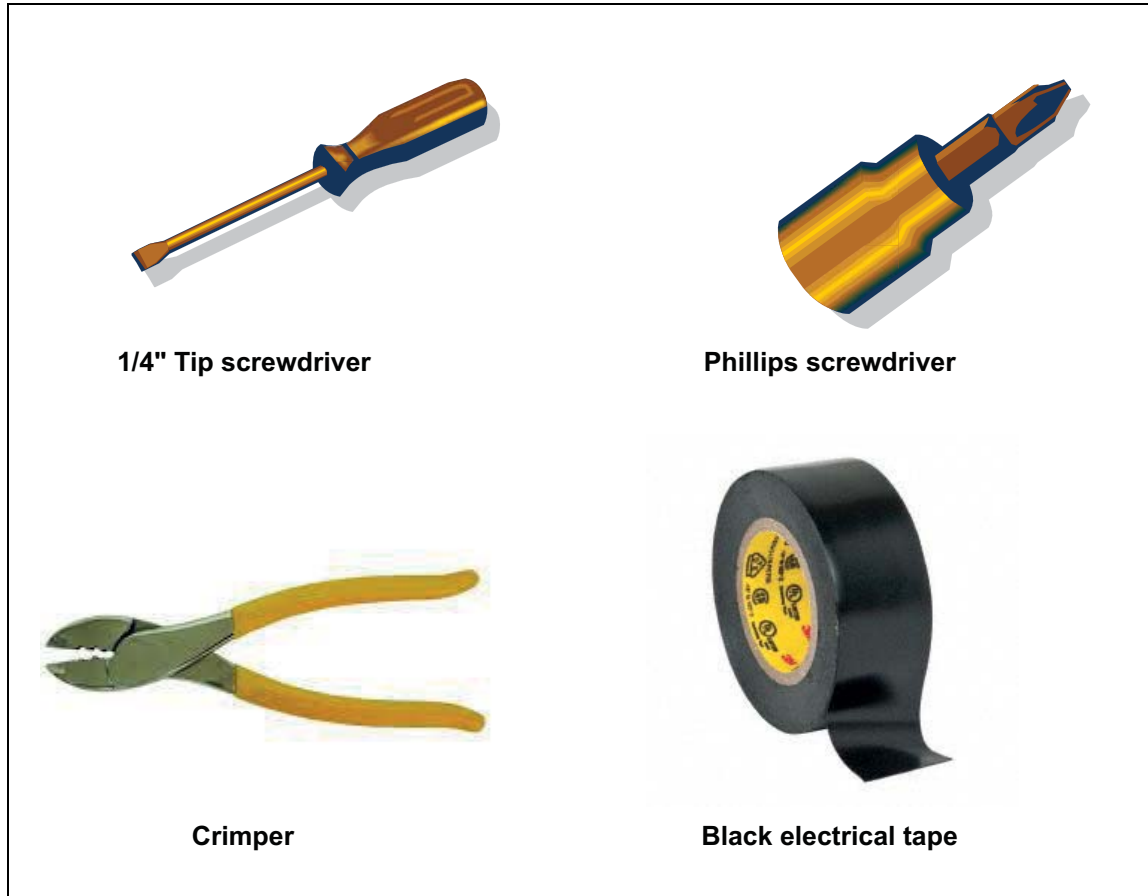


Figure 2A

Parts included with the TF-1884-KIT:

Part #	Description	Qty
D04-1049	Temperature Sensor Assembly with 25' Wire	4
FH-6998	Crimp Connectors for Wire Splice	10
FH-1310	Heyco Cord Connector	4
TF-1884	Omron Thermostat	
PNEG-1990	Installation instructions for TF-1884-KIT	

2. EMC Thermostat Replacement Kit Instructions

Product Description

The EMCS thermostat replacement kit is designed to replace the discontinued Honeywell grain thermostat (R7380J1002) that was used as a moisture control thermostat. The temperature sensors that were used to monitor the grain temperature are only compatible with this unit. So these sensors will also need replaced when replacing this thermostat.

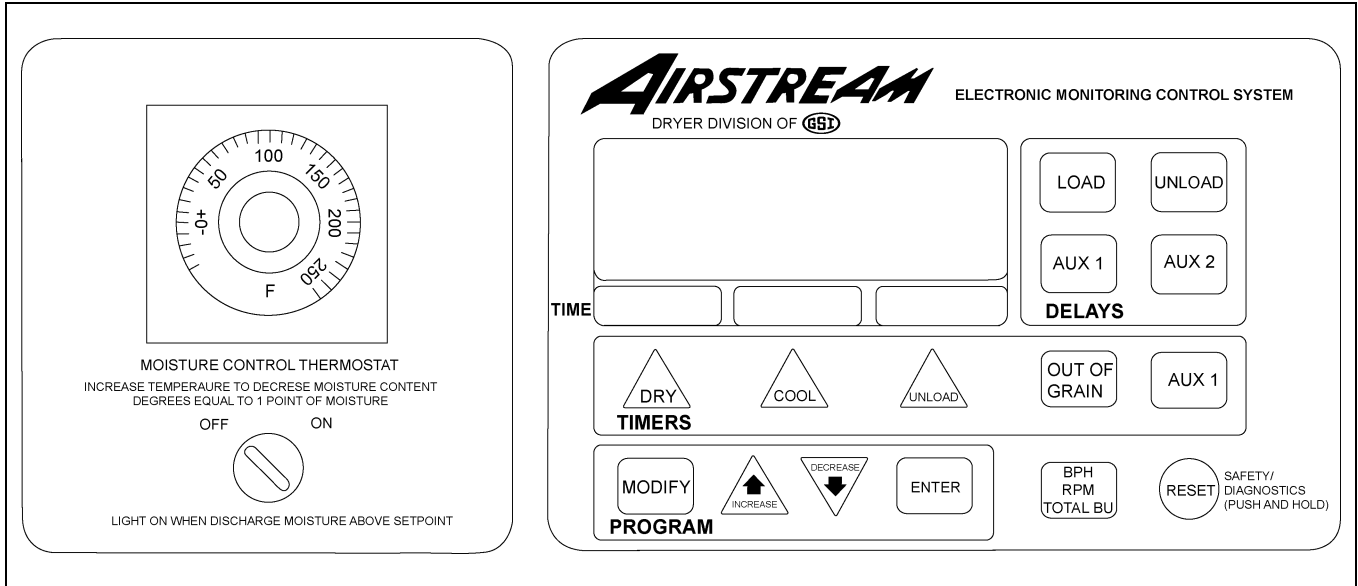


Figure 2B EMCS Moisture Control Thermostat



Figure 2C Omron Thermostat (TF-1884)



Figure 2D Thermistor Sensor Assembly (D04-1049) and Heyco Connector (FH-1310)

Installation



Disconnect power and lock out prior to performing any service or wiring changes.

Open the controls switch panel and make note of the wiring contained on the back of the Honeywell thermostat. It should resemble the hook-up shown in [Figure 2E](#). If your thermostat contains a J5-01 wire review the note [Below](#).

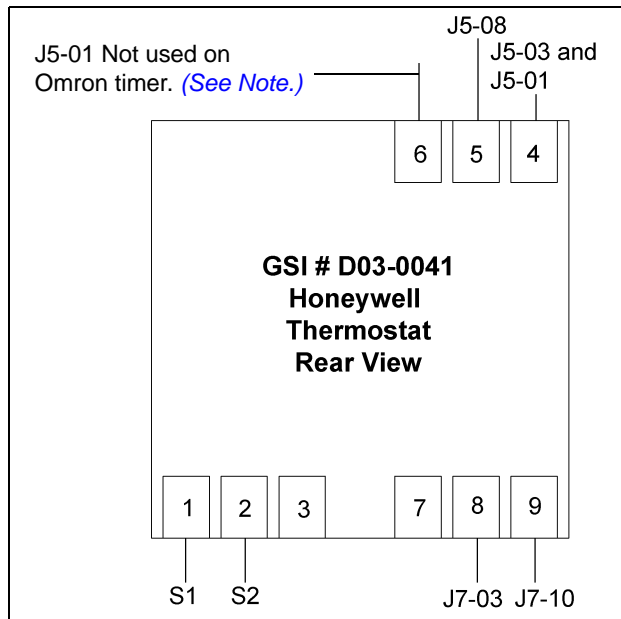


Figure 2E Honeywell Terminal Location and Wiring (D03-0041)

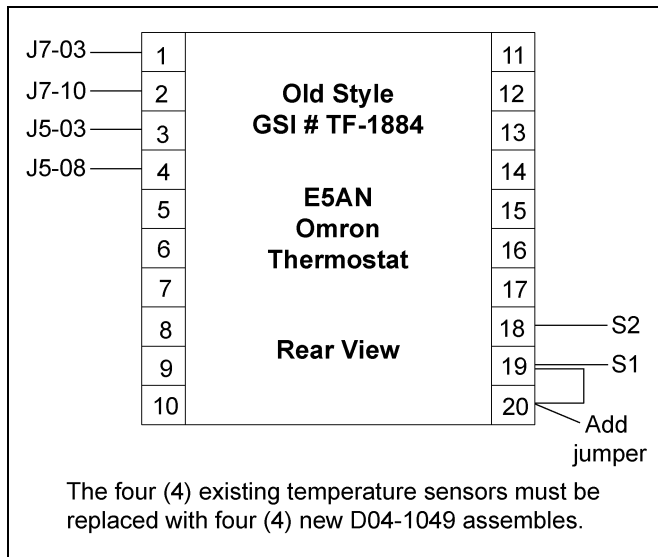


Figure 2F Thermostat Moisture Control Wiring (TF-1884) - **Old**

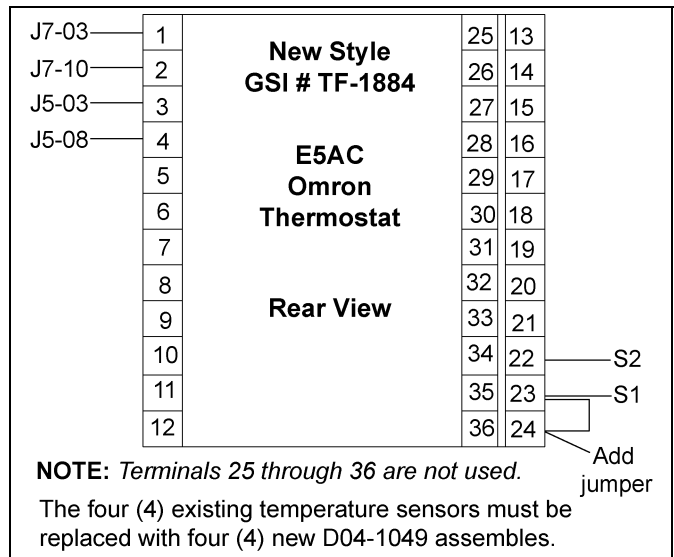


Figure 2G Thermostat Moisture Control Wiring (TF-1884) - **New**

NOTE: Software must be at 3.02 or higher for EMCS, 2.20 or higher for AUTOFLOW in order to use the Omron thermostat without the J5-01 wire that may be located on terminal 6 of the Honeywell with the older models. ([See Figure 2E.](#))

2. EMC Thermostat Replacement Kit Instructions

Installation (Continued)

Depending on which model of TF-1884 you have received in your kit, it may have a total of 20 terminals or 36 terminals. Use the appropriate reference in [Figure 2F and Figure 2G on Page 9](#) when reviewing the terminal hook-up in regards to the temperature sensor.

If you have a software version below the revisions listed above and you do not have a means of being able to upgrade the software then you will need to install an 110 VAC SPDT relay to mimic the SPDT contained in the Honeywell. [See Figure 2H and Figure 2I](#) for details. **However we HIGHLY RECOMMEND you upgrade the software to the latest revision so you can have all the latest features and possibly addressed some bugs that may be present.**

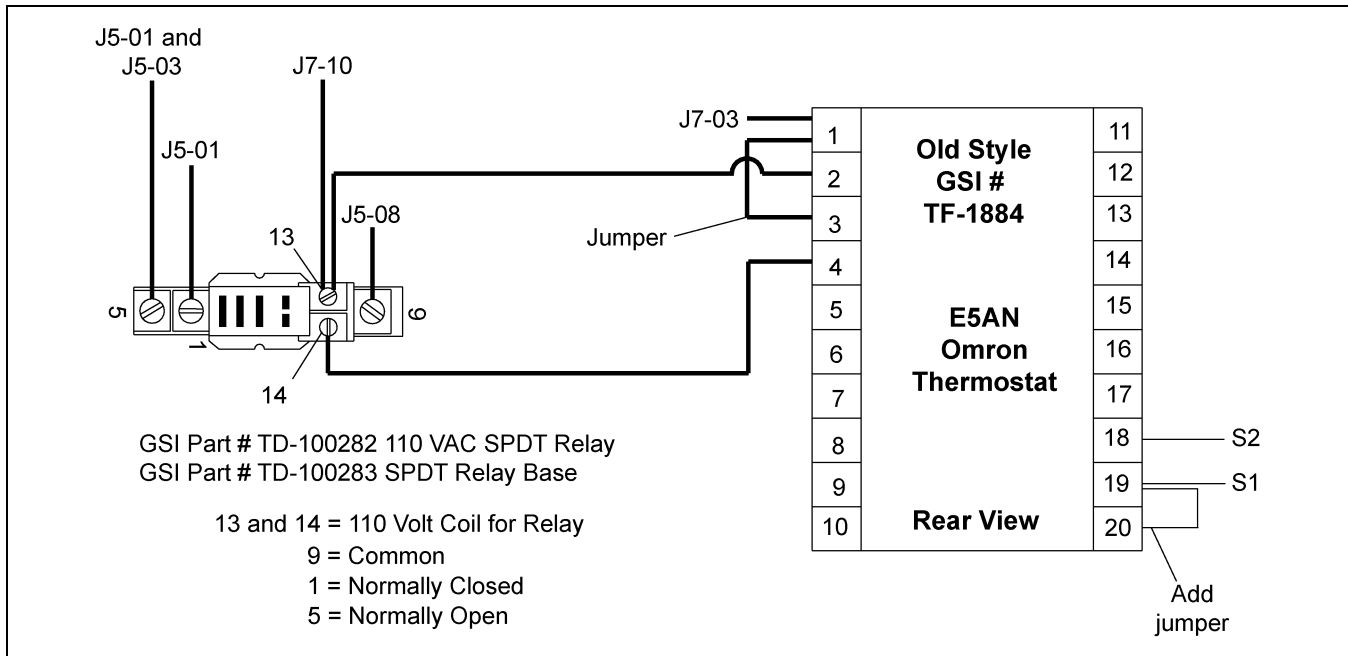


Figure 2H Add a relay to the circuit if the software has not been updated.

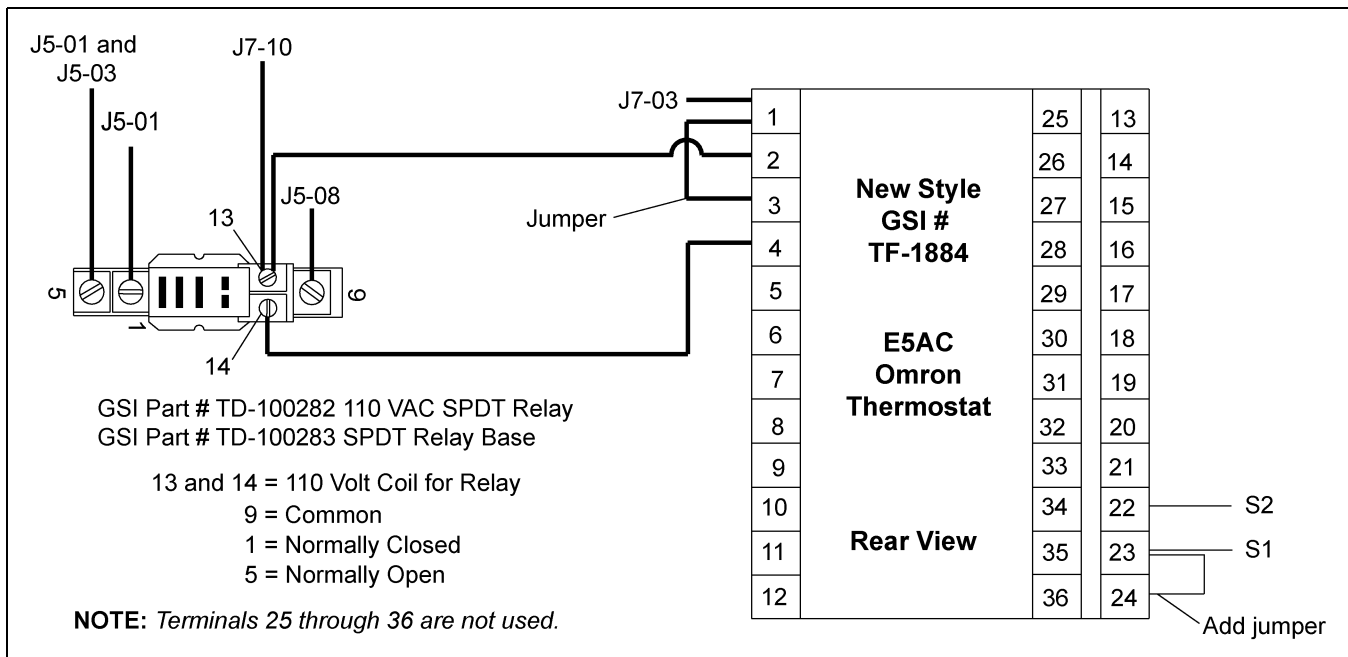


Figure 2I Add a relay to the circuit if the software has not been updated.

Portable Dryer Sensor Wiring Instructions

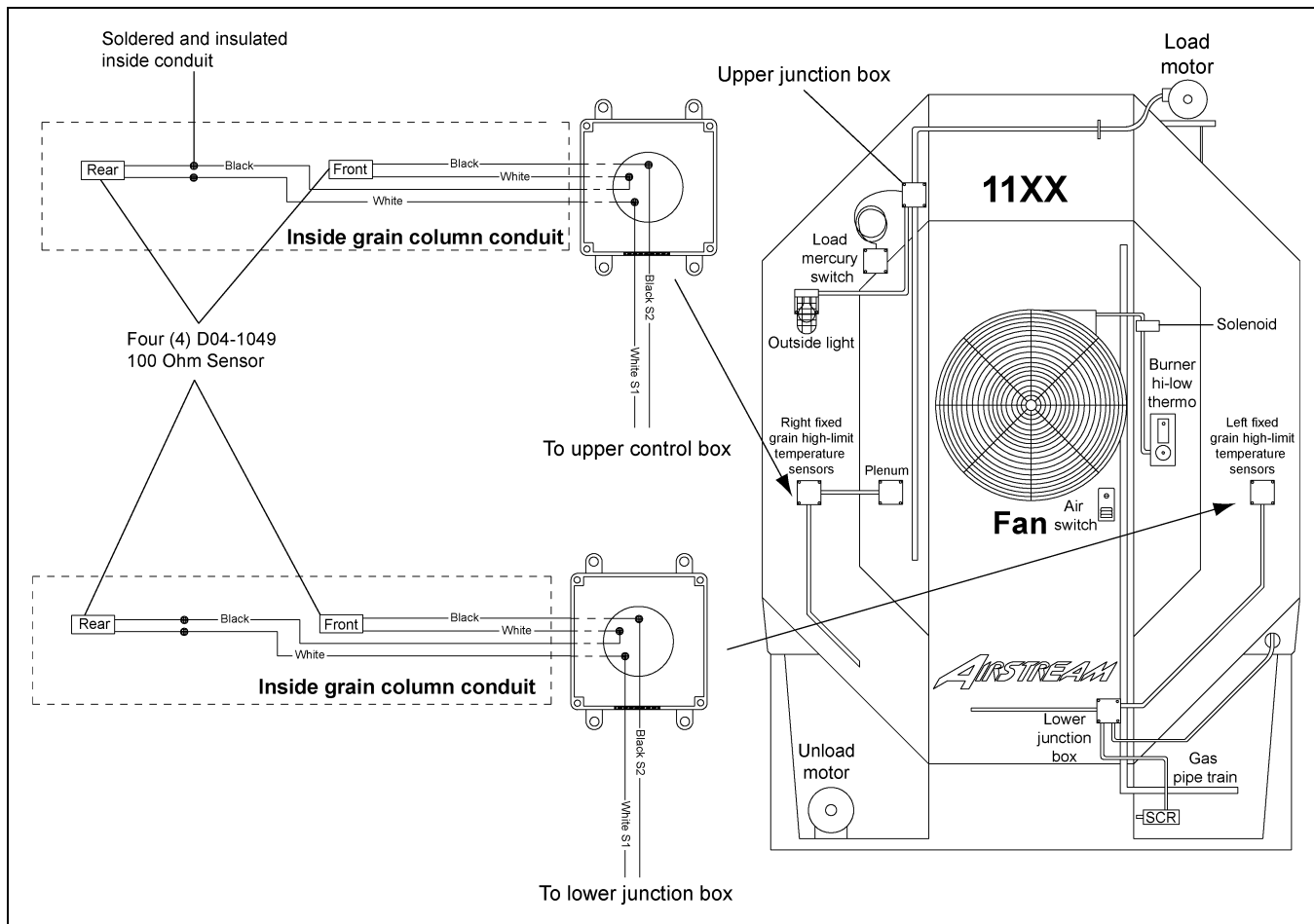


Figure 2J The Four (4) Grain Temperature Sensor Locations on a Portable Dryer

Open the grain high-limit box and make note of all the wire connections. They will need to be disconnected in order for the high-limit to be completely removed from the conduit. After the wire connections are cut remove the two (2) screws that attach the bracket of the grain high-limit to the white PVC box. Once the screws are removed, you should be able to slide the assembly completely out of the conduit by pulling it straight out.

Once the grain high-limit assembly is removed, remove or cut the tape from the grain high-limit capillary in order to remove the old Honeywell sensors.

Using black electrical tape (not supplied) attach the new D04-1049 sensors in the same approximate locations as the old sensors and run the four (4) wires along the capillary. The re-insert the assembly back into the grain high-limit conduit. Once the assembly back in the conduit re-attach the grain high-limit bracket using the two (2) screws that were removed previously.

Connect the four (4) wires in the grain high-limit boxes by connecting a white and a black wire from each of the sensors and crimp them together using the supplied crimp nuts. You will then have a white and a black remaining to reconnect to the white and black wire running into the conduit. Use two (2) crimp nuts for these connections as well. [See Figure 2J](#) for details.

Reconnect the two (2) grain high-limit wires back to the same wires they were removed from.

Repeat for the other side of the dryer.

2. EMC Thermostat Replacement Kit Instructions

Top Dry Sensor Wiring

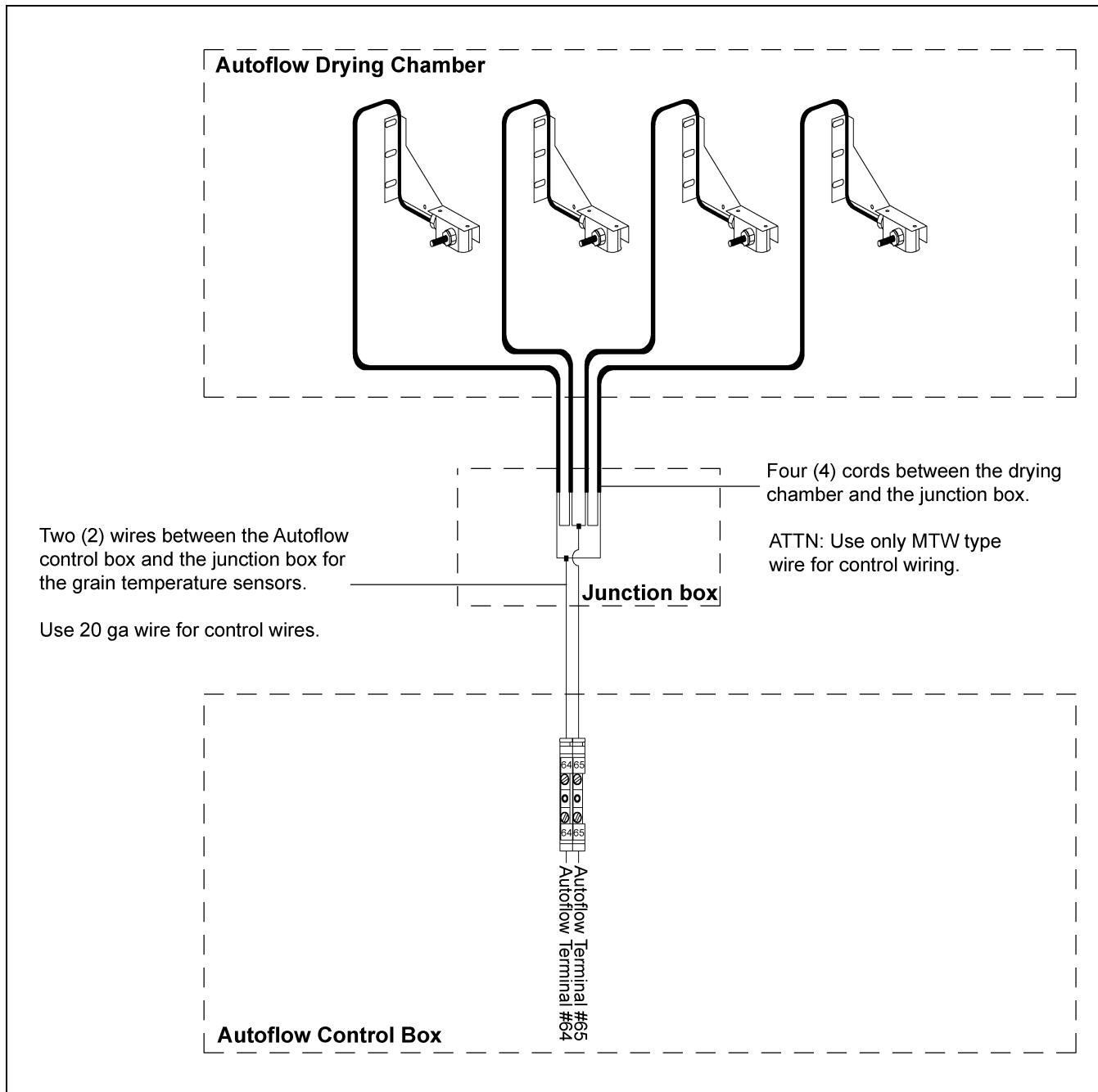


Figure 2K The Four (4) Grain Temperature Sensor Locations on a Top Dry

Remove the old sensor by cutting the two (2) wires that are attached via the SJOWA cord and then remove the old Heyco connector with the sensor as one piece. Discard.






Use the supplied D04-1049 temperature sensors and the FH-1310 Heyco connectors. Cut the black and white wires from each of the sensors as they will not be needed for use in the Top Dry system. Using the supplied Heyco connectors tighten them down with the temperature probe inserted until they no longer slide inside the connector.

Re-attach the new sensor wires to the SJOWA cord with two (2) of the supplied crimp nuts.

Programming the Omron

Program the Omron to make sure it is setup for use with the new 100 ohm sensors. Use the below given instructions.

TF-1184 Programming Instructions:

1. Press and hold the  button for 3 seconds to drop into the programming mode.
2. Change CN-t to 2.
3. Press  to advance to next parameter.
4. Change d-U to F.
5. Press  multiple times to advance to Alt2 and change it to 0.
6. Press  and advance to Alt3 and change it to 0.
7. Press and hold the  button for about 2 seconds until unit resets.

Operation

The PV will reflect the current grain temperature.

The SV will reflect your grain temperature.

Adjust the SV by pressing the UP or DOWN arrows on the unit. Check operation by adjusting the grain temperature set point (SV) above the actual grain temperature (PV). This will put the controls into a moisture temperature hold condition. Depending on the mode of operation and the type of drying system it is installed on it will either allow the burner to continue to run (if the dry time has expired) or it will change the metering roll to low speed.

Changing the grain temperature set point (SV) below the actual grain temperature (PV) will either shut the burner OFF or it will change the metering rolls to high speed.

NOTES

GSI Group, LLC Limited Warranty

The GSI Group, LLC ("GSI") warrants products which it manufactures to be free of defects in materials and workmanship under normal usage and conditions for a period of 12 months after sale to the original end-user or if a foreign sale, 14 months from arrival at port of discharge, whichever is earlier. The end-user's sole remedy (and GSI's only obligation) is to repair or replace, at GSI's option and expense, products that in GSI's judgment, contain a material defect in materials or workmanship. Expenses incurred by or on behalf of the end-user without prior written authorization from the GSI Warranty Group shall be the sole responsibility of the end-user.

Warranty Extensions:

The Limited Warranty period is extended for the following products:

	Product	Warranty Period	
AP Fans and Flooring	Performer Series Direct Drive Fan Motor	3 Years	* Warranty prorated from list price: 0 to 3 years - no cost to end-user 3 to 5 years - end-user pays 25% 5 to 7 years - end-user pays 50% 7 to 10 years - end-user pays 75%
	All Fiberglass Housings	Lifetime	
	All Fiberglass Propellers	Lifetime	
AP and Cumberland	Flex-Flo/Pan Feeding System Motors	2 Years	
Cumberland Feeding/Watering Systems	Feeder System Pan Assemblies	5 Years **	** Warranty prorated from list price: 0 to 3 years - no cost to end-user 3 to 5 years - end-user pays 50%
	Feed Tubes (1-3/4" and 2.00")	10 Years *	
	Centerless Augers	10 Years *	
	Watering Nipples	10 Years *	
Grain Systems	Grain Bin Structural Design	5 Years	
Grain Systems Farm Fans Zimmerman	Portable and Tower Dryers	2 Years	† Motors, burner components and moving parts not included. Portable dryer screens included. Tower dryer screens not included.
	Portable and Tower Dryer Frames and Internal Infrastructure †	5 Years	

GSI further warrants that the portable and tower dryer frame and basket, excluding all auger and auger drive components, shall be free from defects in materials for a period of time beginning on the twelfth (12th) month from the date of purchase and continuing until the sixtieth (60th) month from the date of purchase (extended warranty period). During the extended warranty period, GSI will replace the frame or basket components that prove to be defective under normal conditions of use without charge, excluding the labor, transportation, and/or shipping costs incurred in the performance of this extended warranty.

Conditions and Limitations:

THERE ARE NO WARRANTIES THAT EXTEND BEYOND THE LIMITED WARRANTY DESCRIPTION SET FORTH ABOVE. SPECIFICALLY, GSI MAKES NO FURTHER WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE IN CONNECTION WITH: (I) PRODUCT MANUFACTURED OR SOLD BY GSI OR (II) ANY ADVICE, INSTRUCTION, RECOMMENDATION OR SUGGESTION PROVIDED BY AN AGENT, REPRESENTATIVE OR EMPLOYEE OF GSI REGARDING OR RELATED TO THE CONFIGURATION, INSTALLATION, LAYOUT, SUITABILITY FOR A PARTICULAR PURPOSE, OR DESIGN OF SUCH PRODUCTS.

GSI shall not be liable for any direct, indirect, incidental or consequential damages, including, without limitation, loss of anticipated profits or benefits. The sole and exclusive remedy is set forth in the Limited Warranty, which shall not exceed the amount paid for the product purchased. This warranty is not transferable and applies only to the original end-user. GSI shall have no obligation or responsibility for any representations or warranties made by or on behalf of any dealer, agent or distributor.

GSI assumes no responsibility for claims resulting from construction defects or unauthorized modifications to products which it manufactured. Modifications to products not specifically delineated in the manual accompanying the equipment at initial sale will void the Limited Warranty.

This Limited Warranty shall not extend to products or parts which have been damaged by negligent use, misuse, alteration, accident or which have been improperly/inadequately maintained. This Limited Warranty extends solely to products manufactured by GSI.

Prior to installation, the end-user has the responsibility to comply with federal, state and local codes which apply to the location and installation of products manufactured or sold by GSI.

This equipment shall be installed in accordance with the current installation codes and applicable regulations, which should be carefully followed in all cases. Authorities having jurisdiction should be consulted before installations are made.



**1004 E. Illinois St.
Assumption, IL 62510-0020
Phone: 1-217-226-4421
Fax: 1-217-226-4420
www.gsiag.com**



GSI is a worldwide brand of AGCO Corporation.