Thermocouple/Voltage Termination Panel

M/N 6[illegible]C614

Instruction Manual J-3646-1

RELIANCE ELECTRIC

The information in this user's manual is subject to change without notice.

Reliance Electric Industrial Company assumes no responsibility for errors that may appear in this user's manual.

WARNING

THIS UNIT AND ITS ASSOCIATED EQUIPMENT MUST BE INSTALLED, ADJUSTED AND MAINTAINED BY QUALIFIED PERSONNEL WHO ARE FAMILIAR WITH THE CONSTRUCTION AND OPERATION OF ALL EQUIPMENT IN THE SYSTEM AND THE POTENTIAL HAZARDS INVOLVED. FAILURE TO OBSERVE THESE PRECAUTIONS COULD RESULT IN BODILY INJURY.

WARNING

INSERTING OR REMOVING THIS MODULE OR ITS CONNECTING CABLES MAY RESULT IN UNEXPECTED MACHINE MOVEMENT. TURN OFF POWER TO THE MACHINE BEFORE INSERTING OR REMOVING THE UNIT OR ITS CONNECTING CABLES. FAILURE TO OBSERVE THESE PRECAUTIONS COULD RESULT IN BODILY INJURY.

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1.0 INTRODUCTION

The 61C614 is a passive termination panel that is used in conjunction with the 61C613 for terminating voltage and thermocouple inputs. Current inputs may also be terminated by connecting a resistor across the terminal strip.

This manual describes the functions and specifications of the panel. It also explains how to install and service the panel.

Related publications that may be of interest:

- J-2605 AUTOMATE® 30/40 PRODUCT SUMMARY
- J-2611 DCS 5000 PRODUCT SUMMARY
- J-3613-1 16 CHANNEL ANALOG INPUT MODULE INSTRUCTION MANUAL
- IEEE 518 GUIDE FOR THE INSTALLATION OF ELECTRICAL EQUIPMENT TO MINIMIZE ELECTRICAL NOISE INPUTS TO CONTROLLERS FROM EXTERNAL SOURCES

2.0 MECHANICAL/ELECTRICAL DESCRIPTION

The following is a description of the termination connectors and the electrical characteristics of the field connections.

2.1 Mechanical Description

The 6ES614 is a 19" rack-mountable termination panel that includes two 6-foot, 50-wire flat cables. See figure 2.1 for a drawing of the panel. The panel dimensions are listed in Appendix A.

When the panel is viewed from the front, the flat cable on the right side is for analog inputs 0-7 and the thermocouple cold junction compensation. This cable connects to the middle connector on the 61U613. The flat cable on the left side of the termination panel is for analog inputs 8-15. It connects to the bottom connector on the 61U613. The top connector on the 6ES613 module is not used. The termination panel includes 32 screw-activated, clamp type carrier strips for terminating field signals.

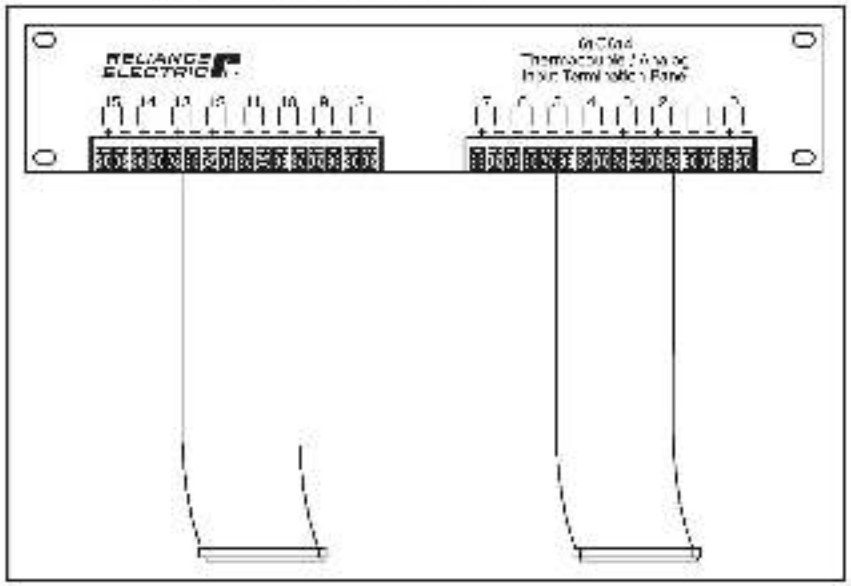


Figure 2.1- Termination Panel

2.2 Electrical Description

The termination panel is a passive device that provides a means of transmitting electrical signals from a barrier strip for field signals to a flat cable that connects to the analog input module. It also contains a cold junction compensation circuit (CJC).

3.0 INSTALLATION

This section describes how to install and remove the termination panel and its cable assembly.

3.1 Wiring

The installation of wiring should conform to all applicable codes.

To reduce the possibility of electrical noise interfering with the proper operation of the control system, exercise care when installing the wiring from the system to the external devices. For detailed recommendations refer to IEEE 518.

3.2 Initial Installation

Use the following procedure to install the module:

Step 1. Turn off power to the system. All power to the rack as well as all power to the wiring leading to the termination panel should be off.

Step 2. Mount the termination panel. It should be mounted to permit easy access to the screw terminals on the terminal board. Make certain that the terminal board is close enough to the rack so that the cable will reach between the terminal board and the module. The panel should be located so that the flat cables can be routed to the front of the module without coming in contact with high voltage wires.

Step 3. Fasten field wires to the terminal strip. Make certain that all field wires are securely fastened. Typical field signal connections are shown in figure 3.1.

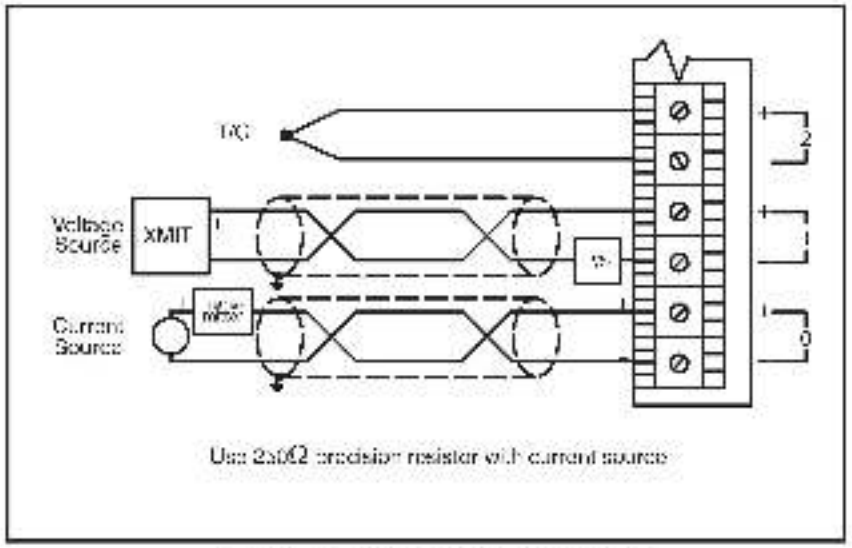


Figure 3.1 Typical Field Signal Connections

Step 4. Connect the 50-pin flat cables to the termination panel and to their corresponding connector on the analog input module (61C313). Attach the cables by aligning the triangle marks on the cable end and the board socket. Input channels 0-7 use the middle connector on the input module. Input channels 8-15 use the bottom connector. If the rack contains more than one analog input module, make certain that the connectors are the proper ones for this module.

Step 5. Turn on power to the system.

Step 6. Verify the installation. Refer to the instruction manual for the 16 Channel Analog Input Module (IC-3613-1).

3.3 Panel Replacement

Use the following procedure to replace a termination panel:

Step 1. Turn off power to the rack and all connections.

Step 2. Use a screwdriver to loosen the screws holding the field wires to the termination panel. Make certain that the wires are tagged so that they can be re-connected correctly.

Step 3. Remove the ribbon flat cables from the back of the termination panel.

Step 4. Remove the termination panel.

Step 5. Follow steps 2 through 6 in the installation procedure, section 3.2.

4.0 DIAGNOSTICS AND TROUBLESHOOTING

For details on how to troubleshoot the termination panel, refer to the Instruction manual for the 16 Channel Analog Input Module (I-3813-1).

Appendix A

Technical Specifications

Ambient Conditions

- Storage temperature: –40C - 65C
- Operating temperature: 0C - 60C
- Humidity: 5-90% non-condensing

Dimensions

- Height: 3.469 inches
- Width: 19.0 inches
- Depth: 1.5 inches behind rack rails
  0.375 inches in front of rack rails

Input Connections

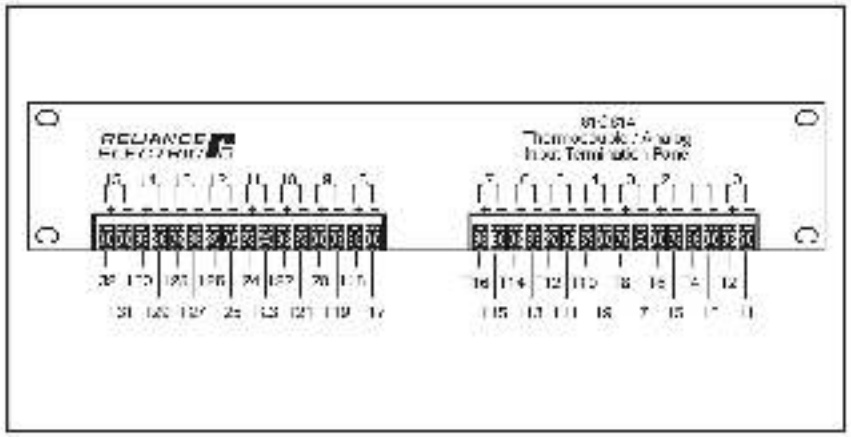
- Screw-activated, clamp type barrier strips
- Accommodates 24 to 14 AWG wire

Output Connections

- Two - 6 ft., 50-wire twisted pair flat cables
- Connector – 3M part no. 3425-7050

Appendix B

Thermocouple/Voltage Termination Panel Connections



Thermocouple Data

Thermocouple Type	Positive Lead (high)		Negative Lead (low)	
E	Chromel	(purple)	Constantan	(red)
J	Iron	(white)	Constantan	(red)
K	Chromel	(yellow)	Alumel	(red)
T	Copper	(blue)	Constantan	(red)
B	PT (6)% RHD	(black)	PT (3)% RHD	(red)
R	PT	(black)	PT (3)% RHD	(red)

Appendix C

Related Components

M/N 6" C613 16 Channel Analog Input Module

For additional information
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http://www.reliance.com/automax