

TABLE OF CONTENTS

Preface
Conventions Used in This Manual
Meanings of Abbreviations
How to Read Display Symbols
“Reference” mark
How this Manual is Organized
Precautions on Safety
CHAPTER 1 INTRODUCTION
1.1 Names of parts
Main parts
Front panel
About the displays
How to use keys
1.2 Input and Output
Input
Output
1.3 Parameters and Menus
Parameter types
Selecting modes
Selecting parameters
Fixing settings
1.4 About the Communications Function for the CompoBus/D (DeviceNet) Network
1.5 About Calibration
CHAPTER 2 PREPARATIONS
2.1 Setting up
Draw-out
Setting up the output unit
2.2 Installation
Dimensions
Panel cutout
Mounting
2.3 Wiring Terminals
Terminal arrangement
Precautions when wiring
Wiring
CHAPTER 3 BASIC OPERATION
3.1 Convention Used in this Chapter
3.2 Setting Input Specifications
Input type
Temperature input
Analog input
3.3 Setting Output Specifications
Output assignments
Direct/reverse operation
Control period
3.4 Setting Alarm Type
Alarm type
Alarm value

TABLE OF CONTENTS

Alarm hysteresis	
Close in alarm/open in alarm	
3.5 Protect Mode	
Security	
A/M key protect	
3.6 Starting and Stopping Operation	
3.7 Adjusting Control Operation	
Changing the set point	
Manual operation	
Auto-tuning (A.T.)	
CHAPTER 4 APPLIED OPERATION	
4.1 Selecting the Control Method	
Heating and cooling control	
ON/OFF control	
4.2 Operating Condition Restrictions	
Manipulated variable restrictions	
Set point limiter	
SP ramp	
4.3 How to Use the Remote SP	
Scaling	
SP mode	
Remote SP monitor	
SP tracking	
Operating conditions	
4.4 How to Use the Heater Burnout Alarm	
Heater burnout detection	
Operating conditions	
How to calculate the heater burnout set value	
4.5 LBA	
CHAPTER 5 PARAMETERS	
Conventions Used in this Chapter	
The meaning of icons used in this chapter	
About parameter display	
About the Order In Which Parameters Are Listed	
Protect Mode	
Manual Mode	
Level 0 Mode	
Level 1 Mode	
Level 2 Mode	
Setup Mode	
Expansion Mode	
Option Mode	
Calibration Mode	
CHAPTER 6 USING CompoBus/D (DEVICENET)	
6.1 Outline of CompoBus/D (DeviceNet)	
Communications defaults	
Data assignments	
Remote I/O communications	
6.2 Data Refreshing by Communications	
Flow of Communications Processing	
E5EK-DRT Internal Processing Times	
6.3 Setting the Communications Conditions	



TABLE OF CONTENTS

Baud rate
Node address
6.4 Data Assignments
How to assign data
Data format
Operation at communication error
Data type list
6.5 Data Structure
Parameters
Operation instructions
Communication error status
Status A
Status B
6.6 Data Timing
Writing parameters
Executing operation instructions
6.7 Sample Ladder
Setup Conditions
CHAPTER 7 CALIBRATION
7.1 Structure of Parameters
7.2 Calibrating Thermocouple
7.3 Calibrating Platinum Resistance Thermometers
7.4 Calibrating Current Input
7.5 Calibrating Voltage Input
7.6 Checking Indication Accuracy
Checking Indication Accuracy
CHAPTER 8 TROUBLESHOOTING
8.1 Initial Checks
8.2 How to Use the Error Display
8.3 How to Use Error Output
8.4 Checking Operation Restrictions
AppEndix
SPECIFICATIONS
Ratings
Communications Specifications
Characteristics
Setting range and Indication range of Sensor input
Output Rating and Performance
ABOUT CURRENT TRANSFORMER (CT)
CONTROL BLOCK DIAGRAM
Setting and Monitoring Parameter List
PARAMETER OPERATIONS LIST
Using the E5EK-DRT in Multi-vendor Applications
Slave Device Protocol
Object Mounting