

# CONTENTS

## **Chapter 1. GENERAL**

1.1 Guide to User's Manual.....	1 - 1
1.2 Features .....	1 - 2
1.3 Terminology .....	1 - 3

## **Chapter 2. SYSTEM CONFIGURATION**

2.1 Overall Configuration.....	2 - 1
2.2 Product List .....	2 - 2
2.2.1 GM6 series Configuration .....	2 - 2
2.3 System Configuration Types .....	2 - 3
2.3.1 Basic System .....	2 - 3
2.3.2 Computer Link System.....	2 - 3
2.3.3 Network System .....	2 - 4

## **Chapter 3. GENERAL SPECIFICATION**

3.1 General Specifications .....	3 - 1
----------------------------------	-------

## **Chapter 4. CPU MODULE**

4.1 Performance Specifications .....	4 - 1
4.2 Operation processing .....	4 - 2
4.2.1 Operation processing Methods .....	4 - 2
4.2.2 Operation processing at momentary power failure occurrence .....	4 - 3
4.2.3 Scan Time .....	4 - 4
4.2.4 Scan Watchdog Timer .....	4 - 4
4.2.5 Timer processing .....	4 - 5
4.2.6 Counter processing .....	4 - 7
4.3 Program .....	4 - 9
4.3.1 Program Configuration .....	4 - 9
4.3.2 Program Execution Procedures.....	4 - 10
4.3.3 Task.....	4 - 13
4.3.4 Error Handling .....	4 - 19
4.3.5 Precautions when using special modules .....	4 - 20
4.4 Operation Modes .....	4 - 24
4.4.1 RUN mode .....	4 - 24
4.4.2 STOP mode.....	4 - 25

4.4.3 PAUSE mode .....	4 - 25
4.4.4 DEBUG mode .....	4 - 25
4.4.5 Operation Mode Change .....	4 - 26
4.5 Functions .....	4 - 28
4.5.1 Restart mode .....	4 - 28
4.5.2 Self-diagnosis .....	4 - 30
4.5.3 Remote function .....	4 - 31
4.5.4 I/O Force On/Off function .....	4 - 32
4.5.5 Direct I/O Operation function .....	4 - 33
4.5.6 External Device Error Diagnosis function .....	4 - 33
4.6 Memory Configuration .....	4 - 36
4.7 I/O No. Allocation Method .....	4 - 38
4.8 Names of Parts .....	4 - 39

## **Chapter 5. BATTERY**

5.1 Specifications .....	5 - 1
5.2 Handling Instructions .....	5 - 1
5.3 Battery Replacement .....	5 - 1

## **Chapter. 6 USING THE USER PROGRAM IN FLASH MEMORY**

6.1 Structure .....	6 - 1
6.3 Handling .....	6 - 1

## **Chapter. 7 DIGITAL INPUT AND OUTPUT MODULES**

7.1 Notes on Selecting Input and Output Modules .....	7 - 1
7.2 Digital Input Module Specifications .....	7 - 2
7.2.1 16-point 24VDC input module (source/sink type) .....	7 - 2
7.2.2 16-point 24VDC input module (source type) .....	7 - 3
7.2.3 32-point 24VDC input module (source/sink type) .....	7 - 4
7.2.4 32-point 24VDC input module (source type) .....	7 - 5
7.2.5 8-point 110VAC input module .....	7 - 6
7.2.6 8-point 220VAC input module .....	7 - 7
7.3 Digital Output Module Specifications .....	7 - 8
7.3.1 16-point relay output module .....	7 - 8
7.3.2 16-point transistor output module (sink type) .....	7 - 9

7.3.3 32-point transistor output module (sink type) .....	7 - 10
7.3.4 8-point triac output module .....	7 - 11

## **Chapter 8. POWER SUPPLY MODULE**

8.1 Selection of power supply module .....	8 - 1
8.2 Specifications .....	8 - 2
8.3 Names of Parts .....	8 - 3

## **Chapter 9. BASE BOARD**

9.1 Specifications .....	9 - 1
9.2 Names of Parts .....	9 - 1

## **Chapter 10. INSTALLATION AND WIRING**

10.1 Installation .....	10 - 1
10.1.1 Installation Environment .....	10 - 1
10.1.2 Handling Instructions .....	10 - 4
10.1.3 Module Loading and Unloading .....	10 - 7
10.2 Wiring .....	10 - 9
10.2.1 Power Supply Wiring .....	10 - 9
10.2.2 Input and Output Devices Wiring .....	10 - 11
10.2.3 Grounding .....	10 - 11
10.2.4 Cable Specification for wiring .....	10 - 12

## **Chapter 11. MAINTENANCE**

11.1 Maintenance and Inspection .....	11 - 1
11.2 Daily Inspection .....	11 - 1
11.3 Periodic Inspection .....	11 - 2

## **Chapter 12. TROUBLESHOOTING**

12.1 Basic Procedures of Troubleshooting .....	12 - 1
12.2 Troubleshooting .....	12 - 1
12.2.1 Troubleshooting flowchart used when the POWER LED turns OFF .....	12 - 2
12.2.2 Troubleshooting flowchart used when the STOP LED is flickering .....	12 - 3
12.2.3 Troubleshooting flowchart used when the RUN and STOP LEDs turns off .....	12 - 4

12.2.4 Troubleshooting flowchart used when the output load of the output module does not turns on .....	12 - 5
12.2.5 Troubleshooting flowchart used when a program cannot be written to the CPU module .....	12 - 6
12.3 Troubleshooting Questionnaire .....	12 - 7
12.4 Troubleshooting Examples .....	12 - 8
12.4.1 Input circuit troubles and corrective actions .....	12 - 8
12.4.2 Output circuit troubles and corrective actions .....	12 - 9
12.5 Error Code List .....	12 - 11

## **Chapter 13. Dedicated Cnet communication for GM6**

13.1 Introduction .....	13- 1
13.2 The example of system configuration .....	13- 2
13.3 The pin assignment of RS-232C connector of the GM6 dedicated Cnet communication ...	13- 3
13.4 Frame structure .....	13- 4
13.5 List of commands .....	13- 7
13.6 Data type .....	13- 8
13.7 Execution of commands (Ex.) .....	13- 9
13.8 Error code during NAK occurrence (for GM6 dedicated communication) .....	13- 29

## **APPENDICES**

Appendix 1. System Definitions .....	APP 1 - 1
Appendix 2. Flag List .....	APP 2 - 1
Appendix 3. Function/Function Block List.....	APP 3 - 1
Appendix 4. Dimensions .....	APP 4 - 1